Quality of Surface Waters of the United States 1945

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INTRODUCTION

This volume is the fourth in a series of reports giving chemical analyses, suspended-sediment concentrations, and temperatures of the surface waters of the United States. The samples for which data are given were collected between October 1, 1944, and September 30, 1945. Quantities of suspended sediment and water temperature were measured at some of the sampling stations. In July 1945, 48 daily-sampling stations for the study of the chemical character of surface waters were being maintained by the Geological Survey. Samples were collected less frequently during the year at many other points.

In order that complete information may be readily available, descriptive statements are given for each station for which regular series of analyses 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 dissolved solids and hardness, and other pertinent data. Records of discharge of the streams for the sampling period are included in most tables of analyses.

The water analyses given on the following pages serve as a basis for determining the suitability of the waters examined for industrial or agricultural use and for domestic use 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 periods of high flow than during periods of low flow. The concentration of some streams may change materially with relatively small variations in flow, whereas for other streams the chemical quality may remain relatively uniform throughout large ranges in discharge. The quantities of suspended sediment carried by streams also are related to discharge, and during flood periods the sediment concentration in many streams may vary over a wide range.

COLLECTION AND EXAMINATION OF SAMPLES

Chemical quality.—Samples for chemical analysis were collected daily at or near points on streams where gaging stations are maintained for measurement of discharge. Most of the analyses were made of 10-day composites of daily samples collected for a period of a year at each sampling point. Three composite samples were usually prepared each month by mixing together equal quantities of daily samples collected from the 1st to the 10th, from the 11th to the 20th, and during the remainder of the month. For some streams that are subject to sudden large changes in chemical composition, composite samples were made for shorter periods on the basis of the concentration of dissolved solids indicated by measurements of specific conductance of the daily samples.

The samples were analyzed according to methods regularly used by the Geological Survey. These methods [1] are essentially the same or are modifications of methods described in recognized authoritative publications for the mineral analysis of water samples.

For those waters containing fairly large quantities of soluble salts, the value reported for dissolved solids is the sum of the quantities of the various determined constituents, using the carbonate equivalent of the reported bicarbonate. In other analyses the value reported as dissolved solids is the residue on evaporation after drying at 180° C. for 1 hour. Specific conductance is given for most analyses and was determined by means of a conductance bridge using a standard potassium chloride solution as reference.

Suspended sediment.—For streams in Iowa and for the Colorado River Basin, the reported suspended-sediment loads were computed from sediment concentrations determined in one or more sets of samples and the corresponding water discharge for each day. The U. S. D–43 depth-integrating sampler was used at the Grand Canyon and Bluff gaging stations in the Colorado River Basin, as well as in Iowa, for the collection of sediment samples from one to four times daily, depending on the rate of flow. Suspended-sediment concentrations reported with the analyses for Virginia, North Carolina, and Georgia were determined from the samples collected for chemical analysis and do not provide a reliable basis for computing the loads of suspended sediment carried by any of these streams.

Sediment concentrations were determined by filtration or evaporation of the samples as required. At some stations, concentrations were estimated for those days on which no samples were collected. In addition to the records of total quantities of sediment, records of the sizes of the particles of sediment are included for some stations. Since much of the material carried in suspension can pass through the finest sieves, it is customary to determine the sizes of the smaller particles by the bottom withdrawal-tube method.[2] As the sizes and settling

[1] Collins, W. D., Notes on practical water analysis: U. S. Geol. Survey Water-Supply Paper 596–H, pp. 235–261, 1928; Am. Public Health Assoc., Standard methods for the examination of water and sewage, 8th ed., pp. 53–123, 1936.

[2] Iowa Inst. Hydraulic Research, A study of new methods for size analysis of suspended sediment samples: Report 7 of a study of methods used in measurement and analysis of sediment loads in streams, 1943.

rates of the particles in suspension are affected by the chemical character of the water, the size analyses were made either with the native water or with a settling medium consisting of water similar in character and concentration to the water of the original suspension. The concentration of suspended sediment in the bottom-withdrawal tube was often different from the concentration in the original suspension, but the weight of sediment used is indicated in the table of analyses.

Temperature.—Daily river temperatures were obtained at some stations at the time the water samples were collected for chemical analysis. As far as was practicable, the water temperatures were observed at about the same time each day for an individual river station, in order that the data might be relatively unaffected by diurnal variations in temperature. For most large, swiftly flowing streams the diurnal variation in water temperature is probably small, but for sluggish or shallow streams the daily range in temperature may amount to several degrees. The thermometers used for the determination of water temperatures had a limit of accuracy of plus or minus 1°. Consequently, water temperatures as low as 31° F. have been included in this report.

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. Most analyses are also given in equivalents per million for those constituents entering into ionic balance. An equivalent per million is a unit chemical-combining weight of a constituent in a million unit weights of water and is calculated by dividing the concentration in parts per million by the chemical-combining weight of the constituent. 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 radicles.

The total hardness, as calcium carbonate ($CaCO_3$), is calculated from the equivalent of calcium and magnesium except for samples collected in Pennsylvania, for which the reported values also include equivalents of free mineral acid, aluminum, iron, and manganese when present in significant quantities. 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.

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" has been 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 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.

Specific-conductance values are expressed in reciprocal ohms (mhos x 10^5 at 25° C.). For convenience, the "mhos" are represented by "K" in the table of analyses. The discharge of the streams is reported in second-feet (see "Stream flow," p. 14) and the temperature in degrees Fahrenheit. Color is expressed in units of the platinum-cobalt scale proposed by Hazen [3] in 1892. Hydrogen-ion concentration (pH) is given as the negative logarithm of the number of moles of ionized hydrogen per liter of water.

Average analyses (mathematical or weighted) for the water year are given for most daily-sampling stations. A mathematical-average analysis 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. The weighted-average analysis represents approximately the composition of water that would be found in a reservoir containing all the water passing a given station during the year after thorough mixing in the reservoir. The weighted-average analysis is computed by multiplying the discharge for the sampling period by the quantities of the individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. The weighted-average analysis shows less concentrated water than that represented by the average of the individual analyses for most streams, because at times of high discharge the rivers generally have lower concentrations of dissolved solids.

Sediment concentrations for each day are expressed in percent by weight for streams in the Colorado River Basin, where concentrations in excess of 10 percent are not infrequent, and in parts per million by weight for all other streams for which sediment records are reported. One percent is equivalent to 10,000 parts per million.

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 through which the water has passed and the length of time it has been in contact with the rocks or soils. The concentration of dissolved solids in a river water is frequently increased by drainage from mines or

[3] Hazen, Allen, A new color standard for natural waters: Am. Chem. Jour., vol. 12, pp. 427-428, 1892.

oil fields, by the addition of industrial or municipal wastes, or—in irrigated regions—by return drain waters.

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, and dissolved solids. Aluminum, manganese, color, pH, acidity, oxygen consumed, and borate are reported for certain streams. 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 the more common range is from 10 to 30 parts per million. Silica affects the usefulness of a water because it contributes to the formation of boiler scales; it usually is removed from feed water for high-pressure boilers. Silica also forms troublesome deposits on the blades of steam turbines.

Aluminum (*Al*).—Aluminum is usually present in only negligible quantities in natural waters except in areas where the waters have been in contact with 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 in fabrics and on 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 clothing or other fabrics washed in the water.

Calcium (Ca).—Calcium is dissolved from practically all rocks, 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; many waters from limestone contain from 30 to 100 parts; and waters that have come in contact with deposits of gypsum may contain several hundred parts.

Magnesium (Mg).—Magnesium is dissolved from many rocks, particularly from dolomitic rocks. Its effects are similar to those of calcium. The magnesium in soft waters may amount to only 1 part 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 or more parts per million of magnesium.

Sodium and potassium (Na and K).—Sodium and potassium are dissolved from practically all rocks. Sodium is the predominant cation in some of the more highly mineralized waters found in the western United States. Natural waters that contain only 3 or 4 parts per million of the two together are likely to carry almost as much potassium as sodium. As the total quantity of these constituents increases, the proportion of sodium becomes much greater. Moderate quantities of sodium and potassium have little effect on the usefulness of the water for most purposes, but waters that carry more than 50 or 100 parts per million of the two may require careful operation of steam boilers to prevent foaming. More highly mineralized waters that contain a large proportion of sodium salts may be unsatisfactory for irrigation.

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 present in appreciable quantities in most 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—in especially large quantities from gypsum and beds of shale. It is also formed by the oxidation of sulfides of iron and is therefore present in considerable quantities in waters from mines. Sulfate in waters that contain much calcium and magnesium causes the formation of hard scale in steam boilers and may increase the cost of softening the water.

Chloride (*Cl*).—Chloride is dissolved from rock materials in all parts of the country. Surface waters in the humid regions are usually low in chloride, whereas streams in arid or semiarid regions may have several hundred parts per million of chloride that has been leached from the soils and rocks, especially where the streams receive return drainage from irrigated lands. 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 present in some rocks to about the same extent as chloride. However, the quantity of fluoride present in natural surface waters is ordinarily very small compared to that of chloride. 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. This condition becomes noticeable as the quantity of fluoride in water increases above 1 part per million. 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.

Nitrate (NO_3).—Nitrate in water is considered a final oxidation product of nitrogenous material and in some instances may indicate previous contamination by sewage or other organic matter. The quantities of nitrate usually present in the surface waters have no effect on the value of the water for ordinary uses, although 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.

Borate (BO_3).—Boron has been found to be essential for plant growth, but in large quantities it is detrimental to citrus and other crops. Boron, as borate, is reported in analyses of surface waters in arid and semiarid regions of the Southwest and West where irrigation is practiced or contemplated, but few of the surface waters analyzed have harmful concentrations of boron.

Dissolved solids.—The reported quantity of dissolved solids—the residue on evaporation—consists mainly of the dissolved mineral constituents in the water. It may also contain some organic matter and water of crystallization. Waters with less than 500 parts per million of dissolved solids are usually satisfactory for domestic and some industrial uses. Waters containing several thousands of parts per million of dissolved solids are sometimes successfully used for irrigation where irrigation practices permit the removal of soluble salts through the application of large volumes of water on well-drained lands.

PROPERTIES AND CHARACTERISTICS OF WATER

Oxygen consumed.—"Oxygen consumed" furnishes a rough indication 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. Naturally highly colored waters may have relatively high oxygen consumed, although 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 water 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 usually passes unnoticed. Some swamp waters have a natural color of 200 to 300 or more.

Hydrogen-ion concentration (pH).—The degree of acidity or alkalinity of water, indicated by the hydrogen-ion concentration expressed as pH, is related to the corrosive properties of water and is useful in determining the proper treatment for coagulation that may be necessary at water-treatment plants. A pH value of 7.0 indicates that the water is neither acid nor alkaline. Values progressively lower than 7.0 denote increasing acidity, whereas values progressively higher than 7.0 denote increasing alkalinity. The pH of water indicates its activity toward metal surfaces. As the pH increases, the corrosive activity of the water decreases. 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 values less than 4.5.

Specific conductance ($K \times 10^5$ at 25° C.).—The specific conductance of a water is a measure of its ability to conduct a current of electricity. 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 following 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 with reference to industrial and domestic use. It is usually recognized by the increased quantity of soap required to produce lather. Hard water is objectionable because of 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 in high-pressure steam boilers and in some industrial processes. Waters with hardness ranging from 121 to 200 are considered hard, and in the upper ranges laundries and industries may profitably soften the supply. Water with hardness above 200 parts per million usually requires some softening before being used for most purposes.

Total acidity.—The total acidity of a natural water represents the content of free carbon dioxide, mineral acids, and salts—especially sulfates of iron and aluminum—which hydrolyze to give hydrogen ions. Acid waters are very corrosive and generally contain excessive amounts of other objectionable constituents, such as iron, aluminum, or manganese.

Corrosiveness.—The corrosiveness of a water is that property which makes it 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. In addition, however, 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.—"Percent sodium" 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 basic constituents in the water has a bearing on the suitability of a water for irrigation. 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.[4]

PUBLICATIONS

Chemical analyses, suspended-sediment loads, and water temperatures of samples of surface water made by the Geological Survey have been published annually since 1941. Records for the years ended September 30, 1941, 1942, 1943, and 1944, for many of the stations listed in this report are given in Water-Supply Papers 942, 950, 970, and 1022.

Geological Survey reports containing analyses of surface-water samples collected prior to 1941 are listed below. Publications dealing largely with the quality of ground-water supplies and only incidentally covering the chemical composition of surface-water supplies are not included.

PROFESSIONAL PAPER

135. Composition of river and lake waters of the United States, 1924 (out of print).

BULLETINS

479. The geochemical interpretation of water analyses, 1911 (out of print).
770. The data of geochemistry, 1925 (out of print).

WATER-SUPPLY PAPERS

108. Quality of water in the Susquehanna River drainage basin, with an introductory chapter on physiographic features, 1904 (out of print).
161. Quality of water in the upper Ohio River Basin and at Erie, Pa., 1906 (out of print).
193. The quality of surface waters in Minnesota, 1907 (out of print).
236. The quality of surface waters in the United States, part 1, Analyses of waters east of the one hundredth meridian, 1909 (out of print).
237. The quality of the surface waters of California, 1910 (out of print).
239. The quality of the surface waters of Illinois, 1910 (out of print).
273. Quality of the water supplies of Kansas, with a preliminary report on stream pollution by mine waters in southeastern Kansas, 1911 (out of print).
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 (out of print).
339. Quality of the surface waters of Washington, 1914 (out of print).
363. Quality of the surface waters of Oregon, 1914 (out of print).
418. Mineral springs of Alaska, with a chapter on the chemical character of some surface waters of Alaska, 1917 (out of print).

596–B. Quality of water of Colorado River in 1925–26, 1928 (out of print).
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 (out of print).

[4] Magistad, O. C., and Christiansen, J. E., Saline soils, their nature and management: U. S. Dept. Agr. Circ. 707, Sept. 1944; Scofield, C. S., The salinity of irrigation water: Smithsonian Inst. Ann. Rept. for 1935, pp. 275–287, 1936.

636-B. Suspended matter in the Colorado River in 1925–28, 1930 (out of print).
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, Texas, 1938.
889-E. Chemical character of surface waters of Georgia, 1944.
998. Suspended sediment in the Colorado River, 1925–41, 1947.

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 AND DIVISION OF WORK

The analyses of water samples and the determinations of sediment loads given in this report were made in connection with various Federal and cooperative projects as described below. The descriptions of the work and the tables of analyses are arranged by drainage basins, according to Geological Survey practice in reporting records of stream flow.

NORTH ATLANTIC SLOPE BASINS

Pennsylvania.—Investigations of the quality of Pennsylvania surface waters with regard to industrial use began in July 1944 in cooperation with the Pennsylvania Department of Commerce, Floyd Chalfont, secretary. The investigations were under the direction of W. F. White, district chemist, Washington, D. C. The analyses were made by D. M. Derrick, E. W. Lohr, A. Theriault, A. C. Vlisidis, G. W. Whetstone, and W. F. White.

SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS

Virginia.—Quality-of-water studies in Virginia were resumed in 1945 under a cooperative agreement between the Geological Survey and the Virginia Conservation Commission, W. A. Wright, chairman. The investigations were under the direction of W. L. Lamar, district chemist, Charlottesville, Va. The analyses were made by M. J. Carr and G. W. Whetstone.

North Carolina.—Quality-of-water studies in North Carolina were begun in the fall of 1943 under a cooperative agreement between the Geological Survey and the North Carolina Department of Conservation and Development, R. Bruce Etheridge, director. The investigations were under the direction of W. L. Lamar, district chemist, Raleigh, N. C. The analyses were made by E. Holloman, W. L. Lamar, and G. W. Whetstone.

Florida.—The work on the quality of surface waters in Florida was confined to the southern part of the State. Investigations in the vicinity of Miami were carried on by the Geological Survey in cooperation with Dade County and the cities of Miami, Miami Beach, and Coral Gables. Other studies were made in cooperation with the cities of Fort Myers, Lake Worth, and Fort Pierce. The investigations were under the direction of S. K. Love, chemist, Washington, D. C. The analyses were made in the Geological Survey laboratory in Washington by E. D. Manfredi, S. K. Love, and M. B. Thomas.

Georgia.—Quality-of-water investigations in Georgia were part of a general study of State water resources under a cooperative agreement between the Geological Survey and the Georgia Department of Mines, Mining, and Geology, Garland Peyton, director. The investigations were under the direction of W. L. Lamar, district chemist, Raleigh, N. C. The analyses were made by E. Holloman.

OHIO RIVER BASIN

Pennsylvania.—Investigations of the quality of Pennsylvania surface waters with regard to industrial use began in July 1944 in cooperation with the Pennsylvania Department of Commerce, Floyd Chalfont, secretary. The investigations were under the direction of W. F. White, district chemist, Washington, D. C. The analyses were made by D. M. Derrick, E. W. Lohr, A. Theriault, A. C. Vlisidis, G. W. Whetstone, and W. F. White.

UPPER MISSISSIPPI RIVER BASIN

Iowa.—Investigations of the chemical character and suspended-sediment loads of surface waters in Iowa were begun in 1944 under a cooperative agreement between the Geological Survey and the Iowa State Geological Survey. The sampling and analysis of the water to determine its chemical quality were under the direction of S. K. Love, chemist, Washington, D. C. The analyses were made by S. E. Brien, D. M. Derrick, and E. D. Manfredi. The collection and analysis of sediment samples were under the supervision of L. C. Crawford, district engineer, Iowa City.

LOWER MISSISSIPPI RIVER BASIN

New Mexico.—In cooperation with the Corps of Engineers, United States Army, records were obtained of the contributions of the Canadian and Conchas Rivers to the storage behind Conchas Dam in New Mexico, as well as the quality of the water in the reservoir. The studies were under the direction of C. S. Howard, district chemist, Albuquerque, N. Mex. The chemical analyses were made by J. P. Bertino, T. Downer, J. D. Hem, C. S. Howard, R. T. Kiser, M. E. Krausnick, E. Reay, S. Simpson, and E. F. Williams.

Texas and Oklahoma.—Quality-of-water studies in the lower Mississippi River Basin on the Red and Washita Rivers were carried on under a cooperative agreement with the cities of Denison and Sherman and under the supervision of W. W. Hastings, district chemist, Austin, Tex. Analyses were made by M. L. Begley, W. W. Hastings, D. M. Parrish, and J. H. Rowley.

Louisiana.—Quality-of-water investigations in Louisiana were carried on under a cooperative agreement with the Louisiana State Department of Public Works and under the direction of W. W. Hastings, district chemist, Austin, Tex. The analyses were made by W. W. Hastings and J. H. Rowley.

WESTERN GULF OF MEXICO BASINS

New Mexico.—Work on the quality of surface waters in New Mexico was done under a cooperative agreement between the Geological Survey and the New Mexico Interstate Stream Commission, Thomas M. McClure, secretary. The quality-of-water investigations were under the direction of C. S. Howard, district chemist, Albuquerque, N. Mex. The analyses were made by J. P. Bertino, T. Downer, J. D. Hem, C. S. Howard, R. T. Kiser, M. E. Krausnick, E. Reay, S. Simpson, and E. F. Williams.

Texas.—Quality-of-water investigations in Texas on the Brazos and Colorado (Texas) Rivers were made in cooperation with the Texas State Board of Water Engineers. The work on the Pecos River was done under a cooperative agreement with the Red Bluff Water Power Control District. The investigations were under the direction of W. W. Hastings, district chemist, Austin, Tex. Analyses of water samples were made by M. L. Begley, W. W. Hastings, D. M. Parrish, and J. H. Rowley.

COLORADO RIVER BASIN

Investigations of the quality of the water and of suspended-sediment loads have been carried on as a continuing Federal project under the direction of C. S. Howard, district chemist, Albuquerque, N. Mex., with the cooperation of the following district engineers of the Geological Survey: Robert Follansbee, Denver, Colo.; J. H. Gardiner, Tucson, Ariz.; Berkeley Johnson, Santa Fe, N. Mex.; and M. T. Wilson, Salt Lake City, Utah. Water samples for chemical analysis were collected in the Safford Valley of the Gila River as part of an investigation undertaken at the request of, and financed by, the Defense Plants Corporation. Water samples were collected from Lake Mead by the Bureau of Reclamation. Chemical analyses were made by J. P. Bertino, T. Downer, J. D. Hem, C. S. Howard, R. T. Kiser, M. E. Krausnick, E. Reay, S. Simpson, and E. F. Williams.

STREAM FLOW

Records of stream discharge used in conjunction with the analyses 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 the mean daily discharges for the normal composite period. For some analyses, the composite periods differ from the normal 10- or 11-day period and the discharges reported are the averages of the mean daily discharges either for the sampling days or for the days indicated. The discharges reported in the tables of single analyses either are mean daily discharges or are instantaneous discharges for the particular times when the samples were collected.

CHEMICAL ANALYSES, SUSPENDED SEDIMENT, AND WATER TEMPERATURE

NORTH ATLANTIC SLOPE BASINS

DELAWARE RIVER BASIN

DELAWARE RIVER AT BELVIDERE, N. J.

LOCATION.—At Belvidere, at bridge 50 feet upstream from Pequest River.
DRAINAGE AREA.—4,535 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Water temperatures: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 51 parts per million Sept. 1–10; minimum, 33 parts per million Mar. 21–31.
Total hardness: Maximum, 35 parts per million Nov. 1–10; minimum, 20 parts per million Mar. 21–31.
Water temperatures: Maximum, 76° F. June 30; minimum, freezing point on many days in December, January, February, and March.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1031.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Oct. 1-10, 1944	1,601	62	8	7.0	7.86	1.2	0.02		9.8	2.1	2.3	1.3	26	13	2.2	0.0	0.2	48	33	12
Oct. 11-20	1,894	59	8	7.1	7.52	1.8	.01	0.0	8.6	2.0	2.9	1.3	26	12	2.0	.1	.2	44	30	8
Oct. 21-31	2,374	49	12	6.9	7.80	1.7	.01		8.9	2.2	2.5	2.1	25	12	2.6	.1	.4	45	31	11
Nov. 1-10	1,839	48	8	7.1	7.83	1.2	.01		10	2.5	1.9	1.5	26	13	2.5	.2	.4	44	35	14
Nov. 11-20	2,621	44	8	7.0	7.71	1.3	.01		9.2	2.2	2.8	1.4	27	13	2.5	.1	.2	44	32	10
Nov. 21-30	5,484	37	10	7.0	8.11	2.4	.02		9.3	2.7	2.5	1.4	26	15	2.5	.1	.6	49	34	13
Dec. 1-10	9,004	33	13	7.0	6.67	3.3	.02		7.5	2.2	2.4	1.1	18	15	2.0	.1	.6	43	28	13
Dec. 11-20	8,262	33	10	6.9	6.50	3.6	.01		7.4	2.1	2.1	1.1	20	13	2.0	.1	1.5	43	27	11
Dec. 21-31	4,669	32	8	7.0	7.34	3.0	.02		8.8	2.3	1.9	1.0	22	14	2.2	.1	1.4	46	31	13
Jan. 1-10, 1945	13,340	32	12	6.8	6.25	3.4	.01		6.8	1.9	2.5	.9	15	13	1.8	.1	1.8	43	25	12
Jan. 11-20	5,440	32	7	6.9	6.97	3.6	.02	.0	8.4	2.3	2.0	.6	20	14	1.9	.1	1.3	44	30	14
Jan. 21-31	4,172	32	5	6.9	7.04	3.3	.01	.0	8.6	2.1	2.1	1.0	20	14	2.1	.1	1.2	44	30	14

DELAWARE RIVER BASIN—Continued

DELAWARE RIVER AT BELVIDERE, N. J.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10[5] at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate
Feb. 1-10	3,806	32	20	7.0	7.30	2.6	.01		8.6	2.2	2.1	1.1	20	13	2.1	.1	1.4	45	30	14
Feb. 11-20	4,124	32	10	7.0	7.13	2.8	.02		8.2	2.1	1.9	.8	20	13	1.2	.1	1.4	45	29	13
Feb. 21-28	10,730	32	10	6.9	6.75	3.0	.01		8.1	1.9	1.9	.9	18	14	2.0	.1	1.5	44	28	13
Mar. 1-10	32,840	32	8	6.5	5.98	3.1	.01	.0	6.0	1.9	1.7	.7	13	11	1.5	.2	2.2	40	23	12
Mar. 11-20	33,700	39	10	6.6	5.57	2.9	.01	.0	6.5	1.7	.8	.6	12	11	1.6	.2	1.1	35	23	13
Mar. 21-31	26,250	44	10	6.7	5.11	3.5	.02	.0	5.6	1.4	1.8	.8	14	10	1.1	.1	1.3	33	20	8
Apr. 1-10	17,540	52	24	6.7	5.62	3.1	.01	.0	6.2	1.6	1.7	.9	14	10	1.8	.2	1.4	38	22	11
Apr. 11-20	9,085	58	13	6.8	6.15	2.5	.01		7.0	2.0	2.1	.8	20	11	1.5	.1	.6	39	26	9
Apr. 21-30	9,494	51	13	7.0	6.20	2.1	.01	.0	7.2	1.9	1.8	.8	18	12	1.2	.1	.5	38	26	11
May 1-10	12,370	50	14	6.8	5.72	2.1	.04	.0	6.4	1.7	2.0	.9	16	11	1.5	.1	.6	36	23	10
May 11-20	19,420	56	35	6.7	5.36	2.3	.40	.0	6.1	1.5	2.0	.8	15	11	1.4	.1	.6	36	21	9
May 21-31	12,280	62	10	6.8	5.90	1.9	.01	.0	6.6	1.8	2.0	.7	19	10	1.2	.1	.6	38	24	8
June 1-10	11,150	56	20	6.9	6.21	2.9	.02	.0	6.9	1.9	1.8	.9	20	11	1.5	.1	.6	40	25	9
June 11-20	9,321	69	15	6.7	6.35	2.8	.01	.0	7.2	1.9	2.2		20	10	1.2	.1	1.0	39	26	9
June 21-30	10,820	74	28	6.8	6.40	3.1	.01	.0	7.5	1.9	2.4		20	9.8	1.1	.2	1.0	42	26	10
July 1-10	6,031	73	32	6.8	7.22	2.5	.07	.0	8.2	2.1	2.0	1.1	25	10	1.5	.2	1.2	48	29	9
July 11-20	16,010	70	8	6.7	6.98	3.5	.00	.0	7.7	2.1	1.6	.8	22	10	3.0	.2	1.0	46	28	10
July 21-31	26,570	69	7	6.6	6.05	3.8	.01	.0	7.1	1.7	1.5	.6	20	9.4	1.2	.2	1.3	42	25	8
Aug. 1-10	14,880	68	7	6.8	6.48	4.0	.02	.0	7.6	1.9	1.8	.6	22	9.3	1.5	.2	.8	44	27	9
Aug. 11-20	6,899	72	8	7.0	7.50	3.5	.01	.0	8.7	2.1	2.2	.6	26	9.6	2.5	.2	.8	47	30	9
Aug. 21-31	6,963	68	20	6.8	7.96	2.9	.02	.0	9.1	2.4	2.1	1.1	28	11	1.8	.2	1.7	48	33	10
Sept. 1-10	5,244	71	20	6.5	7.90	3.1	.01	.0	8.8	2.3	2.8	1.2	30	11	1.5	.1	1.2	51	31	7
Sept. 11-20	9,269	66	23	6.4	7.50	3.3	.03	.0	8.6	2.1	2.8	.9	26	9.8	1.8	.1	1.7	50	30	9
Sept. 21-30	10,090	62		6.7	6.99	3.9	.01	.0	8.4	2.1	1.7	1.2	24	11	.8	.1	1.4	44	30	10
Average	10,730	51	14	6.8	6.78	2.8	0.03	0.0	7.8	2.0	2.1	1.0	21	12	1.8	0.1	1.0	43	28	10

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	1,601	...	...	...	...	...	...	0.489	0.173	0.100	0.033	0.426	0.271	0.062	0.000	0.003	...	...	...
Oct. 11-20	1,894	...	...	...	...	...	...	.429	.164	.126	.033	.426	.250	.056	.005	.003	...	...	...
Oct. 21-31	2,374	...	...	...	...	...	...	.444	.181	.109	.054	.410	.250	.073	.005	.006	...	...	...
Nov. 1-10	1,839	...	...	...	...	...	...	.499	.206	.083	.038	.426	.271	.071	.011	.006	...	...	...
Nov. 11-20	2,621	...	...	...	...	...	...	.459	.181	.122	.036	.443	.271	.071	.005	.003	...	...	...
Nov. 21-30	5,484	...	...	...	...	...	...	.464	.222	.109	.036	.426	.312	.071	.005	.010	...	...	...
Dec. 1-10	9,004	...	...	...	...	...	...	.374	.181	.104	.028	.295	.312	.056	.005	.010	...	...	...
Dec. 11-20	8,262	...	...	...	...	...	...	.369	.173	.091	.028	.328	.271	.056	.005	.024	...	...	...
Dec. 21-31	4,669	...	...	...	...	...	...	.439	.189	.083	.026	.361	.291	.062	.005	.023	...	...	...
Jan. 1-10, 1945	13,340	...	...	...	...	...	...	.339	.156	.109	.023	.246	.271	.051	.005	.029	...	...	...
Jan. 11-20	5,440	...	...	...	...	...	...	.419	.189	.087	.015	.328	.292	.054	.005	.021	...	...	...
Jan. 21-31	4,172	...	...	...	...	...	...	.429	.173	.091	.026	.328	.292	.059	.005	.019	...	...	...
Feb. 1-10	3,806	...	...	...	...	...	...	.429	.181	.091	.028	.328	.271	.059	.005	.023	...	...	...
Feb. 11-20	4,124	...	...	...	...	...	...	.409	.173	.083	.020	.328	.271	.034	.005	.023	...	...	...
Feb. 21-28	10,730	...	...	...	...	...	...	.404	.156	.083	.023	.295	.292	.056	.005	.024	...	...	...
Mar. 1-10	32,840	...	...	...	...	...	...	.300	.156	.074	.018	.213	.229	.042	.011	.035	...	...	...
Mar. 11-20	33,700	...	...	...	...	...	...	.324	.140	.035	.015	.197	.229	.045	.011	.018	...	...	...
Mar. 21-31	26,250	...	...	...	...	...	...	.280	.115	.078	.020	.230	.208	.031	.005	.021	...	...	...
Apr. 1-10	17,540	...	...	...	...	...	...	.309	.132	.074	.023	.230	.208	.051	.011	.023	...	...	...
Apr. 11-20	9,085	...	...	...	...	...	...	.349	.165	.091	.020	.328	.229	.042	.005	.010	...	...	...
Apr. 21-30	9,494	...	...	...	...	...	...	.359	.156	.078	.020	.295	.250	.034	.005	.008	...	...	...
May 1-10	12,370	...	...	...	...	...	...	.319	.140	.087	.023	.262	.229	.042	.005	.010	...	...	...
May 11-20	19,420	...	...	...	...	...	...	.304	.123	.087	.020	.246	.229	.040	.005	.010	...	...	...
May 21-31	12,280	...	...	...	...	...	...	.329	.148	.087	.018	.311	.208	.034	.005	.010	...	...	...
June 1-10	11,150	...	...	...	...	...	...	.344	.156	.078	.023	.328	.229	.042	.005	.010	...	...	...
June 11-20	9,321	...	...	...	...	...	...	.359	.156	0.096		.328	.208	.034	.005	.016	...	...	...
June 21-30	10,820	...	...	...	...	...	...	.374	.156	.104		.328	.204	.031	.011	.016	...	...	...
July 1-10	6,031	...	...	...	...	...	...	.409	.173	.087	.028	.410	.208	.042	.011	.019	...	...	...
July 11-20	16,010	...	...	...	...	...	...	.384	.173	.070	.020	.361	.208	.085	.011	.016	...	...	...
July 21-31	26,570	...	...	...	...	...	...	.354	.140	.065	.015	.328	.196	.034	.011	.021	...	...	...
Aug. 1-10	14,880	...	...	...	...	...	...	.379	.156	.078	.015	.361	.194	.042	.011	.013	...	...	...
Aug. 11-20	6,899	...	...	...	...	...	...	.434	.173	.096	.015	.426	.200	.070	.011	.013	...	...	...
Aug. 21-31	6,963	...	...	...	...	...	...	.454	.197	.091	.028	.459	.229	.051	.011	.027	...	...	...
Sept. 1-10	5,244	...	...	...	...	...	...	.439	.189	.122	.031	.492	.229	.042	.005	.019	...	...	...
Sept. 11-20	9,269	...	...	...	...	...	...	.429	.173	.122	.023	.426	.204	.051	.005	.027	...	...	...
Sept. 21-30	10,090	...	...	...	...	...	...	.419	.173	.074	.031	.393	.229	.023	.005	.023	...	...	...
Average	10,739	...	...	...	...	...	...	0.389	0.164	0.091	0.026	0.344	0.250	0.051	0.005	0.016	...	...	...

DELAWARE RIVER BASIN—Continued

DELAWARE RIVER AT BELVIDERE, N. J.—Continued

Temperature (° F.) of water of Delaware River, water year October 1944 to September 1945

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

DELAWARE RIVER AT TRENTON, N. J.

LOCATION.—At Trenton Water Works raw-water intake, Calhoun Street.
DRAINAGE AREA.—6,780 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Water temperatures: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 116 parts per million Oct. 1–10; minimum, 44 parts per million Mar. 21–31.
Total hardness: Maximum, 80 parts per million Oct. 1–10; minimum, 28 parts per million Mar. 21–31.
Water temperatures: Maximum, 82° F. July 2; minimum, 33° F. Dec. 20, 22–23.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1031. Records of water temperature furnished by the city of Trenton.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Oct. 1-10, 1944	2,495	62	9	7.2	18.7	2.3	0.02	-------	21	6.6	5.5	2.2	52	32	6.5	0.1	3.2	116	80	37
Oct. 11-20	2,578	59	9	7.2	18.0	2.0	.01	0.0	19	6.5	5.4	1.8	53	30	6.1	.0	3.5	102	74	31
Oct. 21-31	3,373	52	10	7.1	17.0	2.3	.02	.1	19	6.2	5.5	1.9	46	31	6.0	.1	3.2	98	78	35
Nov. 1-10	2,606	52	8	7.0	17.3	1.6	.02	-------	18	6.2	5.3	2.0	50	29	6.2	.1	3.1	96	70	29
Nov. 11-20	3,323	49	8	7.1	17.5	1.9	.02	-------	18	6.4	5.9	2.1	50	30	7.0	.2	3.3	100	71	30
Nov. 21-30	8,223	43	23	7.0	14.4	5.1	.07	-------	14	5.1	4.4	1.9	34	30	5.0	.2	4.0	87	56	28
Dec. 1-10	11,750	38	8	6.8	11.4	4.7	.02	-------	12	4.0	3.6	1.0	27	23	3.8	.2	4.5	70	46	24
Dec. 11-20	12,180	36	10	6.9	10.6	4.4	.04	-------	11	3.8	3.3	.7	24	23	3.5	.1	5.2	67	43	23
Dec. 21-31	6,631	36	8	6.8	14.0	5.3	.06	.0	15	5.0	4.3	1.8	31	30	5.8	.1	5.9	88	58	33
Jan. 1-10, 1945	17,400	36	11	6.8	11.2	4.7	.05	-------	11	3.1	4.1	1.2	21	23	3.5	.1	4.7	70	40	23
Jan. 11-20	7,390	36	10	7.0	13.8	4.6	.09	.0	16	5.0	4.1	1.0	34	28	5.8	.1	5.9	87	60	33
Jan. 21-31	5,827	35	8	7.1	14.5	4.8	.08	.0	16	4.9	4.1	1.1	37	27	5.5	.1	4.1	88	60	30
Feb. 1-10	5,280	36	15	7.1	14.4	3.6	.04	-------	15	5.0	4.1	1.5	37	27	5.0	.0	3.9	87	58	28
Feb. 11-20	5,954	36	30	7.1	13.6	3.6	.03	-------	13	4.7	3.7	1.4	35	25	4.5	.1	3.0	81	52	23
Feb. 21-28	18,650	40	10	6.6	11.9	5.2	.06	.0	13	4.0	3.3	1.2	26	23	3.8	.1	5.9	74	49	28
Mar. 1-10	42,230	40	12	6.7	8.27	2.3	.02	.0	10	2.8	2.3	.7	17	18	2.5	.2	4.0	53	36	22
Mar. 11-20	37,660	45	12	6.8	7.73	3.9	.02	.0	8.5	2.6	1.7	.8	18	15	2.2	.2	2.8	50	32	17
Mar. 21-31	31,940	51	10	6.7	7.21	4.2	.02	.0	7.6	2.3	2.3	.7	19	14	1.8	.1	1.6	44	28	13

DELAWARE RIVER BASIN—Continued

DELAWARE RIVER AT TRENTON, N. J.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Apr. 1-10	22,580	56	13	6.8	8.58	4.2	.04	.0	9.2	2.8	2.6	.7	24	16	2.2	.1	.8	52	34	15
Apr. 11-20	13,240	61	15	7.1	10.3	3.7	.03	.0	11	3.6	2.8	1.0	29	19	2.9	.2	2.5	61	42	18
Apr. 21-30	13,120	56	12	7.0	10.6	3.9	.02	.0	12	3.8	2.8	1.0	30	20	3.0	.1	2.0	64	46	21
May 1-10	16,990	54	11	6.9	9.18	3.3	.02	.0	9.6	3.0	2.9	1.1	24	18	2.5	.1	1.8	56	36	17
May 11-20	25,720	59	12	6.8	8.38	2.1	.02	.0	8.7	2.7	2.4	.9	21	17	2.2	.1	1.9	51	33	16
May 21-31	16,760	64	11	6.9	9.10	2.9	.01	.0	9.7	3.0	2.6	.8	26	16	2.4	.0	2.0	57	37	15
June 1-10	15,260	60	12	6.9	9.62	3.5	.02	.0	10	3.2	2.6	.8	27	17	2.6	.0	2.4	60	38	16
June 11-20	12,440	73	12	7.0	10.2	2.4	.01	.0	11	3.6	2.9		30	17	2.8	.1	2.1	61	42	18
June 21-30	15,130	74	18	6.9	10.0	3.7	.01	.0	11	3.3	2.8	1.1	28	17	2.8	.0	2.6	64	41	18
July 1-10	10,450	78	11	7.0	12.1	3.5	.03	.0	13	4.2	2.8	1.6	34	21	3.5	.1	3.2	76	50	22
July 11-20	26,200	72	25	6.9	13.0	5.9	.12	.0	15	3.8	3.0	1.4	35	24	2.8	.1	3.9	85	53	24
July 21-31	38,220	72	25	6.7	9.97	5.4	.05	.0	10	3.2	2.6	1.1	27	17	1.8	.2	3.0	64	38	16
Aug. 1-10	21,380	70	20	6.9	10.6	5.8	.03	.0	11	3.6	2.7	1.2	31	18	2.1	.2	2.7	67	42	17
Aug. 11-20	10,480	73	15	6.9	13.0	4.3	.02	.0	14	4.8	2.8	1.3	43	20	3.2	.1	1.6	76	55	19
Aug. 21-31	10,640	71	15	6.9	13.9	3.2	.02	.0	15	5.2	3.1	1.6	44	22	4.0	.2	2.1	82	59	23
Sept. 1-10	7,711	74	10	6.9	14.4	3.8	.10	.0	15	5.6	4.0	1.5	50	22	4.3	.1	2.0	91	60	20
Sept. 11-20	14,160	70	20	6.8	13.2	5.2	.04	.0	14	4.8	4.4	1.6	38	22	3.5	.1	3.6	82	55	24
Sept. 21-30	15,310	66	------	7.0	11.6	5.3	.04	.0	13	3.8	2.4	1.3	32	19	3.0	.2	3.1	71	48	22
Average	14,760	55	13	6.9	12.2	3.8	0.04	0.0	13	4.2	3.5	1.3	33	22	3.8	0.1	3.2	74	50	23

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	2,495									1.048	0.543	0.239	0.056	0.852	0.666	0.183	0.005	0.052			
Oct. 11-20	2,578									.948	.535	.235	.046	.869	.625	.172	.000	.056			
Oct. 21-31	3,373									.948	.510	.239	.049	.754	.645	.169	.005	.052			
Nov. 1-10	2,606									.898	.510	.230	.051	.820	.604	.175	.005	.050			
Nov. 11-20	3,323									.898	.526	.256	.054	.820	.625	.197	.011	.053			
Nov. 21-30	8,223									.699	.419	.191	.049	.557	.625	.141	.011	.064			
Dec. 1-10	11,750									.599	.329	.157	.026	.443	.479	.107	.011	.073			
Dec. 11-20	12,180									.549	.312	.144	.018	.393	.479	.099	.005	.084			
Dec. 21-31	6,631									.749	.411	.187	.046	.508	.625	.164	.005	.095			
Jan. 1-10, 1945	17,400									.549	.255	.178	.031	.344	.479	.099	.005	.076			
Jan. 11-20	7,390									.799	.411	.178	.026	.557	.583	.164	.005	.095			
Jan. 21-31	5,827									.799	.403	.178	.028	.606	.562	.155	.005	.066			
Feb. 1-10	5,280									.749	.411	.178	.038	.606	.562	.141	.000	.063			
Feb. 11-20	5,954									.649	.387	.161	.036	.574	.520	.127	.005	.048			
Feb. 21-28	18,650									.649	.329	.144	.031	.426	.479	.107	.005	.095			
Mar. 1-10	42,230									.499	.230	.100	.018	.279	.375	.071	.011	.064			
Mar. 11-20	37,660									.424	.214	.074	.020	.295	.312	.062	.011	.045			
Mar. 21-31	31,940									.379	.189	.100	.018	.311	.292	.051	.005	.026			
Apr. 1-10	22,580									.459	.230	.113	.018	.393	.333	.062	.005	.013			
Apr. 11-20	13,240									.549	.296	.121	.026	.475	.396	.082	.011	.040			
Apr. 21-30	13,120									.599	.312	.122	.026	.492	.416	.085	.005	.032			
May 1-10	16,990									.479	.247	.126	.028	.393	.375	.071	.005	.029			
May 11-20	25,720									.434	.222	.104	.023	.344	.354	.062	.005	.031			
May 21-31	16,760									.484	.247	.113	.020	.426	.333	.068	.000	.032			
June 1-10	15,260									.499	.263	.113	.020	.442	.354	.073	.000	.039			
June 11-20	12,440									.549	.296	0.126		.492	.354	.079	.005	.034			
June 21-30	15,130									.549	.271	.122	.028	.459	.354	.079	.000	.042			
July 1-10	10,450									.649	.345	.122	.041	.557	.437	.099	.005	.052			
July 11-20	26,200									.749	.312	.130	.036	.574	.500	.079	.005	.063			
July 21-31	38,220									.499	.263	.113	.028	.442	.354	.051	.011	.048			
Aug. 1-10	21,380									.549	.296	.117	.031	.508	.375	.059	.011	.044			
Aug. 11-20	10,480									.699	.395	.122	.033	.705	.416	.090	.005	.026			
Aug. 21-31	10,640									.749	.428	.135	.041	.721	.458	.113	.011	.034			
Sept. 1-10	7,711									.749	.460	.174	.038	.819	.458	.121	.005	.032			
Sept. 11-20	14,160									.699	.395	.191	.041	.623	.458	.099	.005	.058			
Sept. 21-30	15,310									.649	.312	.104	.033	.524	.396	.085	.011	.050			
Average	14,760									0.649	0.345	0.152	0.033	0.541	0.458	0.107	0.005	0.052			

DELAWARE RIVER BASIN—Continued

DELAWARE RIVER AT TRENTON, N. J.—Continued

Temperature (°F.) of water of Delaware River, water year October 1944 to September 1945

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

LEHIGH RIVER AT CATASAUQUA, PA.

LOCATION.—At Race Street bridge.
DRAINAGE AREA.—1,012 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Water temperatures: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 169 parts per million Oct. 1–10; minimum, 50 parts per million May 11–20.
Total hardness: Maximum, 106 parts per million Oct. 1–10; minimum, 29 parts per million Mar. 11–20.
Water temperatures: Maximum, 77° F. July 2; minimum, freezing point on many days in December, January, and February.
REMARKS.—Records of discharge for water year October 1944 to September 1945 computed on basis of records for Lehigh River at Bethlehem.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Oct. 1-10, 1944	432	57	6	7.1	25.4	5.0	0.02	0.7	27	9.3	6.5	3.0	35	79	3.8	0.1	3.7	169	106	77
Oct. 11-20	416	53	6	7.1	25.2	5.0	.03	.7	26	9.5	7.1	3.2	35	78	3.8	.1	4.8	157	104	75
Oct. 21-31	489	47	4	6.8	22.0	5.0	.01	.6	23	7.8	6.2	2.5	23	71	3.2	.2	3.4	136	89	71
Nov. 1-10	414	48	4	7.1	25.2	5.0	.02	.6	25	9.1	6.8	2.7	36	76	4.6	.1	4.7	154	100	70
Nov. 11-20	476	46	3	6.9	22.1	3.6	.02	.8	21	8.1	6.3	2.2	20	74	4.2	.1	4.5	136	86	69
Nov. 21-30	752	40	6	7.0	18.1	3.4	.02	.6	18	6.3	4.3	1.5	18	59	2.9	.0	2.5	109	71	56
Dec. 1-10	1,364	35	3	7.0	13.7	4.5	.02	.4	13	4.5	3.3	1.1	10	44	2.4	.1	2.8	85	51	43
Dec. 11-20	1,627	35	5	6.5	12.0	5.0	.02	.3	12	4.1	3.0	1.0	10	40	2.5	.1	2.6	77	47	39
Dec. 21-31	940	32	3	6.2	14.0	5.5	.02	.3	13	4.9	2.9	1.2	8	49	2.8	.1	2.8	90	53	46
Jan. 1-10, 1945	1,619	32	4	6.4	12.2	5.2	.03	.2	11	3.6	3.9	1.0	6	41	2.0	.1	2.4	79	42	37
Jan. 11-20	971	32	5	6.4	13.9	5.0	.01	.3	14	4.7	3.3	.8	9	48	2.6	.1	2.3	88	54	47
Jan. 21-31	759	32	5	6.6	15.9	5.5	.01	.4	16	5.3	3.9	1.3	12	53	3.0	.1	2.3	100	62	52
Feb. 1-10	690	33	5	6.6	16.7	5.4	.01	.4	16	5.6	5.1	.8	12	57	2.9	.1	2.2	105	63	53
Feb. 11-20	972	34	5	6.7	15.5	4.9	.02	.3	15	5.0	3.8	1.0	11	51	3.1	.1	2.7	95	58	49
Feb. 21-28	3,360	34	5	6.7	12.5	4.6	.02	.2	13	3.9	3.0	1.0	10	38	2.5	.1	4.0	76	48	40
Mar. 1-10	5,484	40	6	5.8	8.33	4.6	.06	.1	7.9	2.8	1.7	.4	2	26	1.8	.1	2.1	55	31	30
Mar. 11-20	3,565	44	6	5.7	7.93	3.7	.02	.2	7.2	2.8	2.1	.6	4	27	1.9	.1	1.1	51	29	26
Mar. 21-31	2,743	51	5	5.9	8.51	4.3	.04	.2	7.5	2.8	2.4	.6	5	29	1.5	.1	1.1	53	30	26

DELAWARE RIVER BASIN—Continued

LEHIGH RIVER AT CATASAUQUA, PA.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10[5] at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Apr. 1-10	3,266	52	13	6.0	8.61	3.7	.03	.2	7.7	2.7	2.0	1.0	4	29	1.8	.1	1.5	54	30	27
Apr. 11-20	2,032	56	7	6.1	9.63	3.9	.01	.2	8.6	3.2	2.6	.9	5	33	2.0	.1	1.3	60	35	30
Apr. 21-30	1,847	51	6	6.1	9.94	3.6	.02	.3	9.6	3.3	2.4	.7	6	34	1.5	.1	1.2	62	38	33
May 1-10	2,314	52	6	6.1	8.89	3.4	.02	.1	7.5	2.8	2.7	.8	4	30	1.8	.1	1.1	55	30	27
May 11-20	3,502	56	7	6.1	8.15	3.3	.03	.2	7.7	2.5	2.1	.8	4	26	1.9	.1	1.3	50	30	26
May 21-31	2,219	59	7	6.1	9.21	4.0	.01	.3	8.1	3.1	2.0	.9	6	29	2.0	.0	.9	59	33	28
June 1-10	2,340	56	6	6.1	8.60	4.4	.02	.3	8.4	2.7	1.8	.7	7	27	1.8	.1	.8	54	32	26
June 11-20	1,895	69	8	6.3	10.1	4.1	.03	.4	9.5	3.2	2.7		7	32	2.1	.1	1.5	63	37	31
June 21-30	1,975	70	12	6.4	10.1	4.4	.04	.4	9.4	3.1	2.6		8	32	1.8	.1	1.6	64	36	30
July 1-10	2,671	70	13	6.5	11.4	4.4	.06	.3	11	3.5	3.3	1.5	9	37	2.1	.2	1.8	75	42	34
July 11-20	6,941	65	12	6.4	10.7	5.1	.08	.1	10	2.8	2.6	1.2	10	32	2.1	.1	2.8	72	36	28
July 21-31	5,605	66	12	6.2	9.44	4.8	.07	.2	8.7	3.1	2.1	1.1	8	30	1.8	.1	1.5	61	34	28
Aug. 1-10	2,676	66	8	6.3	10.5	5.2	.04	.1	9.9	3.8	2.2	.9	6	34	1.8	.1	1.6	65	40	35
Aug. 11-20	1,441	68	8	6.2	13.0	5.3	.02	.3	12	4.4	2.5	1.3	7	41	2.4	.1	1.7	81	48	42
Aug. 21-31	1,819	67	10	6.5	12.2	4.6	.05	.3	11	4.2	2.6	1.4	9	39	2.1	.1	1.6	75	45	37
Sept. 1-10	1,356	70	4	6.5	13.8	5.7	.03	.2	13	4.7	3.2	1.6	14	44	2.3	.1	2.9	93	52	40
Sept. 11-20	3,037	63	10	6.5	11.7	5.4	.03	.2	11	3.6	3.5	1.2	10	34	2.6	.1	2.4	75	42	34
Sept. 21-30	2,524	60	-------	6.3	11.2	5.6	.03	.4	11	3.6	2.3	1.2	6	37	1.0	.1	2.1	70	42	37
Average	2,126	51	7	6.4	13.2	4.6	0.03	0.3	13	4.5	3.4	1.3	11	43	2.4	0.1	2.3	83	51	42

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	432								1.348	0.765	0.283	0.077	0.574	1.645	0.107	0.005	0.060			
Oct. 11-20	416								1.298	.781	.309	.082	.574	1.624	.107	.005	.077			
Oct. 21-31	489								1.148	.641	.270	.064	.377	1.478	.090	.011	.055			
Nov. 1-10	414								1.248	.748	.296	.060	.590	1.582	.130	.005	.076			
Nov. 11-20	476								1.048	.666	.274	.056	.328	1.541	.118	.005	.073			
Nov. 21-30	752								.898	.518	.187	.038	.295	1.228	.082	.000	.040			
Dec. 1-10	1,364								.649	.370	.144	.028	.164	.916	.068	.005	.045			
Dec. 11-20	1,627								.599	.337	.130	.026	.164	.833	.071	.005	.042			
Dec. 21-31	940								.649	.403	.126	.031	.131	1.020	.079	.005	.045			
Jan. 1-10, 1945	1,619								.549	.296	.170	.026	.098	.854	.056	.005	.039			
Jan. 11-20	971								.699	.387	.144	.020	.148	.999	.073	.005	.037			
Jan. 21-31	759								.799	.436	.170	.033	.197	1.103	.085	.005	.037			
Feb. 1-10	690								.799	.461	.222	.020	.197	1.187	.082	.005	.035			
Feb. 11-20	972								.749	.411	.165	.026	.180	1.062	.087	.005	.044			
Feb. 21-28	3,360								.649	.321	.130	.026	.164	.791	.071	.005	.065			
Mar. 1-10	5,484								.394	.230	.074	.010	.033	.541	.051	.005	.034			
Mar. 11-20	3,565								.359	.230	.091	.015	.066	.562	.054	.005	.018			
Mar. 21-31	2,743								.374	.230	.104	.015	.082	.604	.042	.005	.018			
Apr. 1-10	3,266								.384	.222	.087	.026	.066	.604	.051	.005	.024			
Apr. 11-20	2,032								.429	.263	.113	.023	.082	.687	.056	.005	.021			
Apr. 21-30	1,847								.479	.271	.104	.018	.098	.708	.042	.005	.019			
May 1-10	2,314								.374	.230	.117	.020	.066	.625	.051	.005	.018			
May 11-20	3,502								.384	.206	.091	.020	.066	.541	.054	.005	.021			
May 21-31	2,219								.404	.255	.087	.023	.098	.604	.056	.000	.014			
June 1-10	2,340								.419	.222	.078	.018	.115	.562	.051	.005	.013			
June 11-20	1,895								.474	.263	0.117		.115	.666	.059	.005	.024			
June 21-30	1,975								.469	.255	.113		.131	.666	.051	.005	.026			
July 1-10	2,671								.549	.288	.144	.038	.147	.770	.059	.011	.029			
July 11-20	6,941								.499	.230	.113	.031	.164	.666	.059	.005	.045			
July 21-31	5,605								.434	.255	.091	.028	.131	.625	.051	.005	.024			
Aug. 1-10	2,676								.494	.313	.096	.023	.098	.708	.051	.005	.026			
Aug. 11-20	1,441								.599	.362	.109	.033	.115	.854	.068	.005	.027			
Aug. 21-31	1,819								.549	.345	.113	.036	.147	.812	.059	.005	.026			
Sept. 1-10	1,356								.649	.386	.139	.041	.229	.916	.065	.005	.047			
Sept. 11-20	3,037								.549	.296	.152	.031	.164	.708	.073	.005	.039			
Sept. 21-30	2,524								.549	.296	.100	.031	.098	.770	.028	.005	.034			
Average	2,126								0.649	0.370	0.148	0.033	0.180	0.895	0.068	0.005	0.037			

DELAWARE RIVER BASIN—Continued

LEHIGH RIVER AT CATASAUQUA, PA.—Continued

Temperature (°F.) of water of Lehigh River, water year October 1944 to September 1945

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

SCHUYLKILL RIVER AT POTTSTOWN, PA.

LOCATION.—At Hanover Street bridge, 70 feet from west bank of river.

DRAINAGE AREA.—1,147 square miles.

RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Water temperatures: October 1944 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 393 parts per million Oct. 11–20; minimum, 119 parts per million Mar. 1–10.
Total hardness: Maximum, 258 parts per million Oct. 11–20; minimum, 79 parts per million Mar. 1–10.
Water temperatures: Maximum, 83° F. July 2; minimum, freezing point on many days in December, January, and February.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1031.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Oct. 1-10, 1944	448	60	5	6.9	51.0	8.2	0.03	------	55	22	15	3.4	48	185	12	0.2	3.6	373	228	188
Oct. 11-20	439	55	3	7.0	56.4	8.2	.02	0.0	59	27	14	3.4	45	221	11	.1	6.6	393	258	221
Oct. 21-31	574	50	3	6.8	48.8	7.6	.04	.0	49	21	14	3.9	40	178	9.9	.2	5.2	328	209	176
Nov. 1-10	411	51	3	7.0	49.6	8.8	.02	.0	51	21	15	3.9	56	171	10	.2	6.9	332	214	168
Nov. 11-20	451	47	4	7.0	48.5	6.2	.02	.0	51	21	14	2.9	52	172	11	.0	6.7	328	214	171
Nov. 21-30	1,472	41	6	6.8	38.7	6.0	.03	.0	39	16	12	2.7	44	129	8.5	.0	4.6	251	163	127
Dec. 1-10	2,245	37	5	6.5	25.4	7.4	.02	.0	26	10	7.1	2.6	24	90	5.8	.1	1.8	164	106	86
Dec. 11-20	2,469	36	5	6.5	24.5	8.0	.03	.0	25	9.7	6.2	2.2	24	85	6.2	.1	3.8	159	102	83
Dec. 21-31	1,175	33	5	6.7	32.8	9.4	.02	.0	34	14	9.0	2.6	36	112	7.2	.1	7.5	216	142	113
Jan. 1-10, 1945	2,309	33	8	6.7	26.8	8.2	.02	.0	28	11	7.1	2.6	32	85	6.5	.1	6.1	174	115	89
Jan. 11-20	984	34	4	6.7	35.6	8.8	.02	.0	36	14	12	1.0	38	115	9.0	.1	7.9	232	147	116
Jan. 21-31	714	32	3	6.8	40.0	9.0	.02	.0	42	17	12	1.6	52	127	8.9	.1	9.1	263	175	132
Feb. 1-10	660	34	5	6.7	42.5	9.0	.03	.1	45	18	13	1.8	56	136	10	.1	13	282	186	140
Feb. 11-20	1,935	37	2	6.9	31.4	7.2	.02	.0	32	12	9.9	1.8	41	98	8.2	.2	4.7	200	129	96
Feb. 21-28	5,790	37	2	6.8	20.7	6.0	.02	.0	21	7.4	6.1	1.7	28	62	5.0	.1	2.8	124	83	60
Mar. 1-10	5,675	41	6	6.7	18.5	5.2	.02	.0	20	7.1	4.3	.8	22	61	3.8	.2	4.1	119	79	61
Mar. 11-20	2,364	49	2	6.6	26.6	7.2	.02	.0	27	11	6.8	1.3	32	87	5.1	.1	3.2	174	113	86
Mar. 21-31	2,094	55	1	6.7	27.7	7.0	.01	.0	28	11	7.6	1.5	30	92	5.1	.1	4.6	178	115	90

DELAWARE RIVER BASIN—Continued

SCHUYLKILL RIVER AT POTTSTOWN, PA.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Apr. 1-10	2,811	55	5	6.5	25.0	7.8	.01	.0	25	10	6.8	1.4	28	84	4.0	.1	3.1	162	104	80
Apr. 11-20	1,976	60	4	6.7	30.4	6.8	.02	.0	30	12	7.8	1.0	27	109	5.5	.1	3.9	198	124	102
Apr. 21-30	1,828	53	8	6.8	30.7	6.0	.02	.0	32	13	7.9	1.0	28	110	5.0	.1	4.7	202	133	110
May 1-10	2,809	53	9	6.6	24.6	7.2	.03	-------	24	10	5.0	1.8	26	82	4.2	.1	2.8	161	101	80
May 11-20	4,151	59	7	6.5	20.1	7.2	.03	-------	20	8.4	4.2	1.4	20	67	3.5	.1	2.4	131	84	68
May 21-31	2,301	63	9	6.5	28.0	8.2	.03	.1	27	12	5.9	1.4	21	103	4.5	.1	2.6	186	117	100
June 1-10	1,570	60	4	6.5	32.2	7.8	.02	.0	31	13	8.4	1.7	20	121	5.8	.1	3.1	216	131	114
June 11-20	1,581	75	7	6.6	32.9	8.0	.03	.0	33	13	7.9	2.3	26	120	6.0	.1	3.0	221	136	114
June 21-30	1,519	75	6	6.7	34.6	8.0	.01	.0	34	14	9.3	2.7	30	124	6.6	.1	3.6	228	142	118
July 1-10	1,227	76	6	6.5	37.2	8.8	.01	.0	37	16	8.5	2.0	31	137	5.5	.2	5.5	252	158	133
July 11-20	4,958	70	2	6.5	29.6	8.6	.02	.0	29	12	7.6	2.2	19	111	5.0	.1	1.7	197	122	106
July 21-31	4,607	70	3	6.5	27.1	8.8	.02	.0	27	11	5.4	2.0	16	100	3.5	.1	3.6	182	113	100
Aug. 1-10	2,408	70	3	6.6	34.0	8.4	.02	.0	34	15	6.8	1.9	20	128	5.2	.2	2.9	228	147	130
Aug. 11-20	1,385	72	3	6.5	42.2	8.0	.02	.3	42	20	8.8	1.6	21	163	5.4	.2	3.7	289	187	170
Aug. 21-31	1,800	70	3	6.3	39.0	7.4	.01	.1	38	18	9.6	2.8	25	150	6.2	.1	3.4	260	169	148
Sept. 1-10	1,512	71	3	6.6	40.4	8.4	.01	.0	41	19	10	2.9	34	152	5.8	.1	4.5	277	180	153
Sept. 11-20	5,575	66	7	6.7	24.6	6.0	.02	.0	25	9.3	6.4	2.4	28	78	4.5	.1	3.4	155	101	78
Sept. 21-30	3,266	64	-------	6.6	28.2	9.2	.02	.0	30	11	5.5	1.6	26	97	4.5	.2	3.8	181	120	99
Average	2,183	54	5	6.7	33.5	7.7	0.02	0.0	34	14	8.8	2.1	32	118	6.5	0.1	4.6	223	142	116

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	448								2.745	1.809	0.652	0.087	0.787	3.852	0.338	0.011	0.058			
Oct. 11-20	439								2.945	2.220	.609	.087	.738	4.601	.310	.005	.106			
Oct. 21-31	574								2.446	1.727	.609	.100	.656	3.706	.279	.011	.084			
Nov. 1-10	411								2.546	1.727	.652	.100	.918	3.560	.282	.011	.111			
Nov. 11-20	451								2.546	1.727	.609	.074	.852	3.581	.310	.000	.108			
Nov. 21-30	1,472								1.947	1.316	.522	.069	.721	2.686	.240	.000	.074			
Dec. 1-10	2,255								1.298	.822	.309	.066	.393	1.874	.164	.005	.029			
Dec. 11-20	2,469								1.248	.798	.270	.056	.393	1.770	.175	.005	.061			
Dec. 21-31	1,175								1.697	1.151	.391	.066	.590	2.332	.203	.005	.121			
Jan. 1-10, 1945	2,309								1.398	.905	.309	.066	.524	1.770	.183	.005	.098			
Jan. 11-20	984								1.797	1.151	.522	.026	.623	2.394	.254	.005	.127			
Jan. 21-31	714								2.096	1.398	.522	.041	.852	2.644	.251	.005	.147			
Feb. 1-10	660								2.246	1.480	.565	.046	.918	2.832	.282	.005	.210			
Feb. 11-20	1,935								1.597	.987	.430	.046	.672	2.040	.231	.011	.076			
Feb. 21-28	5,790								1.048	.609	.265	.043	.459	1.291	.141	.005	.045			
Mar. 1-10	5,675								.998	.584	.187	.020	.361	1.270	.107	.011	.066			
Mar. 11-20	2,364								1.348	.905	.296	.033	.524	1.811	.144	.005	.052			
Mar. 21-31	2,094								1.398	.905	.330	.038	.492	1.915	.144	.005	.074			
Apr. 1-10	2,811								1.248	.822	.296	.036	.459	1.749	.113	.005	.050			
Apr. 11-20	1,976								1.497	.987	.339	.026	.443	2.269	.155	.005	.063			
Apr. 21-30	1,828								1.597	1.069	.344	.026	.459	2.290	.141	.005	.076			
May 1-10	2,809								1.198	.822	.217	.046	.426	1.707	.118	.005	.045			
May 11-20	4,151								.998	.691	.183	.036	.328	1.395	.099	.005	.039			
May 21-31	2,301								1.347	.987	.257	.036	.344	2.144	.127	.005	.042			
June 1-10	1,570								1.547	1.069	.365	.043	.328	2.519	.164	.005	.050			
June 11-20	1,581								1.647	1.069	.344	.059	.426	2.498	.169	.005	.048			
June 21-30	1,519								1.697	1.151	.406	.069	.492	2.582	.186	.005	.058			
July 1-10	1,227								1.846	1.316	.370	.051	.508	2.852	.155	.011	.089			
July 11-20	4,958								1.447	.987	.330	.056	.311	2.311	.141	.005	.027			
July 21-31	4,607								1.347	.905	.235	.051	.262	2.082	.099	.005	.058			
Aug. 1-10	2,408								1.697	1.234	.296	.049	.328	2.665	.147	.011	.047			
Aug. 11-20	1,385								2.096	1.645	.383	.041	.344	3.394	.152	.011	.060			
Aug. 21-31	1,800								1.896	1.480	.417	.072	.410	3.123	.175	.005	.055			
Sept. 1-10	1,512								2.046	1.562	.435	.074	.557	3.165	.164	.005	.073			
Sept. 11-20	5,575								1.248	.765	.278	.061	.459	1.624	.127	.005	.055			
Sept. 21-30	3,266								1.497	.905	.239	.041	.426	2.020	.127	.011	.061			
Average	2,183								1.697	1.151	0.383	0.054	0.524	2.457	0.183	0.005	0.074			

DELAWARE RIVER BASIN—Continued

SCHUYLKILL RIVER AT POTTSTOWN, PA.—Continued

Temperature (°F.) of water of Schuylkill River, water year October 1944 to September 1945

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

MISCELLANEOUS ANALYSES OF STREAMS IN DELAWARE RIVER BASIN IN PENNSYLVANIA

Chemical analyses, in parts per million

Date of collection	Discharge (second-feet)	Temperature (°F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Lackawaxen River at Honesdale																					
Mar. 30, 1945	203	57	11	6.8	5.92	2.1	-------	0.01	0.0	7.8	1.2	1.7	16	12	1.1	0.1	1.0	39	24	11	-------
Bushkill Creek at Shoemakers																					
Apr. 4, 1945	427	51	36	6.2	2.91	3.0	-------	0.01	0.0	3.4	1.2	0.9	7	7.6	0.8	0.2	0.2	27	13	8	-------
Lehigh River at Stoddartsville																					
Apr. 2, 1945	237	51	30	5.8	3.44	2.1	-------	0.03	0.0	3.5	0.9	1.0	5	8.0	1.0	0.2	0.3	27	12	8	-------
Lehigh River at Tannery																					
Apr. 2, 1945	770	53	27	5.9	2.86	1.7	-------	0.01	0.0	2.9	0.8	1.5	5	7.4	0.8	0.2	0.4	23	11	6	-------
Pohopoco Creek near Parryville																					
Apr. 4, 1945	238	50	13	6.3	3.33	5.1	-------	0.02	0.0	3.2	1.3	2.2	8	6.6	1.4	0.1	3.1	25	13	7	-------
Jordan Creek at Allentown																					
Apr. 5, 1945	238	50	10	7.3	16.8	6.1	-------	0.06	0.0	19	5.3	5.3	47	29	3.2	0.1	9.0	107	69	31	-------

DELAWARE RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN DELAWARE RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Discharge (second-feet)	Temperature (°F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Monocacy Creek at Bethlehem																					
Apr. 5, 1945	33.2	50	8	7.8	36.0	6.4	------	0.06	0.0	44	17	4.7	158	45	3.8	0.1	10	222	180	50	------
Tohickon Creek near Pipersville																					
Apr. 4, 1945	137	57	35	7.2	15.7	13	------	0.12	0.0	14	6.2	6.2	42	30	5.2	0.1	1.0	106	60	26	------
Neshaminy Creek near Langhorne																					
Apr. 3, 1945	186	67	12	8.4	17.1	6.7	------	0.08	0.0	14	5.4	12	45	29	8.5	0.0	5.0	104	57	20	------
Schuylkill River at Pottsville																					
Apr. 2, 1945	134	53	2	3.45	87.2	16	21	0.28	4.4	60	41	4.4	0	450	1.5	0.6	0.1	637	463	463	184
Little Schuylkill River at Tamaqua																					
Apr. 2, 1945	70.2	51	2	3.80	33.0	9.2	5.7	0.05	1.0	24	11	1.4	0	139	1.5	0.6	2.1	200	147	147	51
Perkiomen Creek at Graters Ford																					
Apr. 4, 1945	266	58	18	7.4	17.1	10	------	0.05	0.0	16	6.4	8.1	54	29	5.0	0.0	2.9	107	66	22	------

Ridley Creek at Moylan

Apr. 3, 1945	49.7	60	15	7.0	11.2	14	-------	0.10	0.0	8.0	4.7	7.1	34	13	5.8	0.0	6.4	76	39	11	-------

Chester Creek near Chester

Apr. 3, 1945	81.8	61	18	7.1	13.2	14	-------	0.17	0.0	10	4.6	8.4	38	16	6.5	0.0	6.5	87	44	13	-------

Brandywine Creek at Chadds Ford

Apr. 2, 1945	315	62	12	7.1	13.0	8.1	-------	0.06	0.0	12	4.6	6.7	44	15	5.5	0.0	0.0	80	49	13	-------

West Branch Brandywine Creek at Coatesville

May 9, 1945	63.6	55	15	7.2	9.97	11	-------	0.02	0.0	8.8	3.8	4.4	31	13	3.8	0.1	3.2	67	38	12	-------

Chemical analyses, in equivalents per million

Lackawaxen River at Honesdale

Mar. 30, 1945	203	-------	-------	-------	-------	-------	-------	-------	-------	0.389	0.099	0.076	0.262	0.250	0.031	0.005	0.016	-------	-------	-------	-------

Bushkill Creek at Shoemakers

Apr. 4, 1945	427	-------	-------	-------	-------	-------	-------	-------	-------	0.170	0.099	0.040	0.115	0.158	0.022	0.011	0.003	-------	-------	-------	-------

Lehigh River at Stoddartsville

Apr. 2, 1945	237	-------	-------	-------	-------	-------	-------	-------	-------	0.175	0.074	0.044	0.082	0.167	0.028	0.011	0.005	-------	-------	-------	-------

Lehigh River at Tannery

Apr. 2, 1945	770	-------	-------	-------	-------	-------	-------	-------	-------	0.145	0.066	0.065	0.082	0.154	0.023	0.011	0.006	-------	-------	-------	-------

DELAWARE RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN DELAWARE RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Discharge (second-feet)	Temperature (°F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H_2SO_4
Pohopoco Creek near Parryville																					
Apr. 4, 1945	238	------	------	------	------	------	------	------	------	0.160	0.107	0.095	0.131	0.137	0.039	0.005	0.050	------	------	------	------
Jordan Creek near Allentown																					
Apr. 5, 1945	238	------	------	------	------	------	------	------	------	0.948	0.436	0.230	0.770	0.604	0.090	0.005	0.145	------	------	------	------
Monocacy Creek at Bethlehem																					
Apr. 5, 1945	33.2	------	------	------	------	------	------	------	------	2.196	1.398	0.206	2.590	0.937	0.107	0.005	0.161	------	------	------	------
Tohickon Creek near Pipersville																					
Apr. 4, 1945	137	------	------	------	------	------	------	------	------	0.699	0.510	0.272	0.688	0.625	0.147	0.005	0.016	------	------	------	------
Neshaminy Creek near Langhorne																					
Apr. 3, 1945	186	------	------	------	------	------	------	------	------	0.699	0.444	0.520	0.738	0.604	0.240	0.000	0.081	------	------	------	------

Schuylkill River at Pottsville																					
Apr. 2, 1945	134	--	--	--	--	--	2.336	0.015	0.160	2.995	3.372	0.190	0.000	9.369	0.042	0.032	0.002	--	--	--	--
Little Schuylkill River at Tamaqua																					
Apr. 2, 1945	70.2	--	--	--	--	--	0.634	0.003	0.036	1.198	0.905	0.063	0.000	2.894	0.042	0.032	0.034	--	--	--	--
Perkiomen Creek at Graters Ford																					
Apr. 4, 1945	266	--	--	--	--	--	--	--	--	0.799	0.526	0.352	0.885	0.604	0.141	0.000	0.047	--	--	--	--
Ridley Creek at Moylan																					
Apr. 3, 1945	49.7	--	--	--	--	--	--	--	--	0.399	0.387	0.309	0.557	0.271	0.164	0.000	0.103	--	--	--	--
Chester Creek near Chester																					
Apr. 3, 1945	81.8	--	--	--	--	--	--	--	--	0.499	0.378	0.367	0.623	0.333	0.183	0.000	0.105	--	--	--	--
Brandywine Creek at Chadds Ford																					
Apr. 2, 1945	315	--	--	--	--	--	--	--	--	0.599	0.378	0.293	0.721	0.312	0.155	0.000	0.082	--	--	--	--
West Branch Brandywine Creek at Coatesville																					
May 9, 1945	63.6	--	--	--	--	--	--	--	--	0.439	0.312	0.192	0.508	0.271	0.107	0.005	0.052	--	--	--	--

SUSQUEHANNA RIVER BASIN

SUSQUEHANNA RIVER AT FALLS, PA.

LOCATION.—At highway bridge.
DRAINAGE AREA.—9,444 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Water temperatures: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 125 parts per million Oct. 1–10 and Oct. 11–20; minimum, 60 parts per million Mar. 11–20.
Total hardness: Maximum, 94 parts per million Oct. 11–20; minimum, 43 parts per million Mar. 11–20.
Water temperatures: Maximum, 81° F. July 1; minimum, freezing point on many days in November, December, January, and February.
REMARKS.—Records of discharge for water year October 1944 to September 1945 computed on basis of records for Susquehanna River at Wilkes-Barre.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate
Oct. 1–10, 1944	1,712	62	10	7.7	21.3	1.3	0.02		29	4.5	8.4	1.8	84	23	10	0.0	0.6	125	91	22
Oct. 11–20	2,977	56	10	7.8	22.4	.6	.01	0.0	29	5.2	8.5	1.9	90	21	10	.0	.8	125	94	20
Oct. 21–31	5,058	46	8	7.4	17.0	1.4	.02		23	4.2	5.4	1.8	66	21	5.5	.1	1.0	97	75	20
Nov. 1–10	2,868	47	8	8.3	19.3	1.0	.02		26	4.7	7.1	1.7	76	21	9.0	.2	1.0	110	84	22
Nov. 11–20	4,515	41	15	7.7	18.7	1.4	.03		25	4.7	6.1	1.8	74	20	7.2	.1	1.1	106	82	21
Nov. 21–30	6,932	36	10	7.3	14.6	2.0	.02		19	3.3	4.5	1.1	54	18	4.6	.1	1.4	83	61	17
Dec. 1–10	10,910	32	10	7.1	11.6	3.0	.03		15	2.9	3.6	1.3	39	18	3.8	.2	2.8	70	49	17
Dec. 11–20	12,700	34	10	7.2	11.7	3.1	.02		15	2.9	3.2	1.3	40	18	3.8	.1	3.2	71	49	17
Dec. 21–31	5,569	33	8	7.4	15.2	2.5	.02		20	3.6	4.2	1.2	57	20	5.0	.1	3.4	89	65	18
Jan. 1–10, 1945	17,740	33	8	7.1	12.2	3.7	.03		15	2.0	5.1	1.0	38	18	3.1	.1	2.4	72	46	14
Jan. 11–20	8,103		7	7.2	14.0	3.8	.03	.0	20	3.7	3.9	1.1	50	20	4.5	.1	3.7	84	65	24
Jan. 21–31	4,879	34	10	7.4	17.6	2.0	.02		24	4.2	4.7	1.2	64	20	5.6	.0	3.4	101	77	25
Feb. 1–10	4,579	34	10	7.3	18.2	2.2	.02		25	4.4	4.6	1.4	70	20	6.0	.0	2.9	105	80	23
Feb. 11–20	7,292	33	7	7.2	16.2	3.7	.03		21	3.7	5.3	1.1	62	18	6.2	.1	2.8	96	68	17
Feb. 21–28	31,720	35	15	7.1	11.1	3.0	.03	.0	14	3.1	3.3	1.1	35	17	3.1	.1	3.4	68	48	19
Mar. 1–10	66,180	36	25	7.0	8.90	4.2	.07	.0	11	2.2	2.2	1.0	24	15	2.2	.1	3.4	58	36	17
Mar. 11–20	52,260	42	18	7.1	9.59	4.4	.10	.0	13	2.5	1.9	.6	31	14	2.2	.2	2.1	60	43	17
Mar. 21–31	50,060	47	12	7.1	10.3	4.8	.09	.0	14	2.4	2.5	.9	38	14	2.4	.1	1.9	63	45	14

Apr. 1-10	23,500	50	12	7.1	12.4	3.5	.01	.0	16	2.8	3.0	1.0	46	17	3.1	.1	2.4	75	51	14
Apr. 11-20	10,620	58	8	7.3	15.0	1.6	.01	......	21	3.8	3.7	1.1	61	17	4.0	.1	1.9	87	68	18
Apr. 21-30	14,460	56	12	7.3	13.3	2.0	.01	.0	18	3.1	3.7	.6	54	16	3.5	.1	1.3	77	58	13
May 1-10	27,260	56	11	7.1	10.9	3.0	.02	.0	14	2.9	3.3	.5	39	16	2.2	.1	1.4	65	47	15
May 11-20	37,470	58	20	7.1	10.4	4.0	.15	.0	14	2.3	2.9	1.0	40	15	1.8	.1	1.0	65	44	12
May 21-31	18,820	62	15	7.2	14.1	2.6	.03	......	19	3.3	2.8	.9	58	15	2.6	.1	1.6	82	61	13
June 1-10	13,760	62	15	7.3	14.3	1.8	.02	......	19	3.5	3.1	.9	59	16	3.2	.1	1.0	82	62	13
June 11-20	15,490	73	14	7.2	13.6	2.1	.02	.0	18	3.1	3.2	1.2	56	14	3.0	.1	1.7	80	58	12
June 21-30	11,290	76	10	7.3	14.8	1.8	.01	.0	20	3.5	4.6	1.2	62	15	3.5	.2	1.9	86	64	14
July 1-10	6,028	76	12	7.3	17.1	1.0	.01	.0	23	4.0	5.2	1.6	74	16	4.5	.1	1.7	97	74	13
July 11-20	6,177	73	9	7.5	18.8	1.8	.01	.0	25	4.3	5.8	1.3	80	18	6.1	.1	1.6	107	80	15
July 21-31	10,880	76	10	7.2	16.2	3.8	.01	.0	22	3.7	4.4	1.2	69	15	4.6	.1	2.0	95	70	14
Aug. 1-10	8,719	73	9	7.4	14.6	3.8	.02	.0	20	3.3	3.7	1.0	62	14	3.5	.1	.9	86	63	13
Aug. 11-20	4,375	76	10	7.8	18.5	1.3	.02	.0	25	4.4	5.0	1.4	82	17	5.2	.1	.8	103	80	13
Aug. 21-31	3,400	73	7	7.2	20.2	2.2	.01	.0	26	4.9	6.3	1.7	90	16	6.5	.1	.8	113	85	11
Sept. 1-10	4,252	76	5	7.4	21.7	2.1	.01	.0	28	5.2	7.2	1.6	94	18	7.8	.1	1.0	122	91	14
Sept. 11-20	8,872	68	12	6.9	16.7	3.5	.03	.0	22	3.5	5.0	1.4	70	15	5.6	.1	1.7	96	69	12
Sept. 21-30	15,400	63	......	7.2	13.0	4.8	.05	.0	18	3.0	2.6	1.4	52	14	3.0	.1	1.8	73	57	15
Average	14,810	54	11	7.3	15.2	2.6	0.03	0.0	20	3.6	4.4	1.2	59	17	4.7	0.1	1.9	88	65	16

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	1,712	......	......	......	......	......	......	......	1.448	0.370	0.365	0.046	1.377	0.479	0.282	0.000	0.010	......	......	......
Oct. 11-20	2,977	......	......	......	......	......	......	......	1.448	.428	.370	.049	1.475	.437	.282	.000	.013	......	......	......
Oct. 21-31	5,058	......	......	......	......	......	......	......	1.148	.345	.235	.046	1.082	.437	.155	.005	.016	......	......	......
Nov. 1-10	2,868	......	......	......	......	......	......	......	1.298	.387	.309	.043	1.246	.437	.254	.011	.016	......	......	......
Nov. 11-20	4,515	......	......	......	......	......	......	......	1.248	.387	.265	.046	1.213	.416	.203	.005	.018	......	......	......
Nov. 21-30	6,932	......	......	......	......	......	......	......	.948	.271	.196	.028	.885	.375	.130	.005	.023	......	......	......
Dec. 1-10	10,910	......	......	......	......	......	......	......	.749	.238	.157	.033	.639	.375	.107	.011	.045	......	......	......
Dec. 11-20	12,700	......	......	......	......	......	......	......	.749	.238	.139	.033	.656	.375	.107	.005	.052	......	......	......
Dec. 21-31	5,569	......	......	......	......	......	......	......	.998	.296	.183	.031	.934	.416	.141	.005	.055	......	......	......
Jan. 1-10, 1945	17,740	......	......	......	......	......	......	......	.749	.164	.222	.026	.623	.375	.087	.005	.039	......	......	......
Jan. 11-20	8,103	......	......	......	......	......	......	......	.998	.304	.170	.028	.820	.416	.127	.005	.060	......	......	......
Jan. 21-31	4,879	......	......	......	......	......	......	......	1.198	.345	.204	.031	1.049	.416	.158	.000	.055	......	......	......
Feb. 1-10	4,579	......	......	......	......	......	......	......	1.248	.362	.200	.036	1.147	.416	.169	.000	.047	......	......	......
Feb. 11-20	7,292	......	......	......	......	......	......	......	1.048	.304	.230	.028	1.016	.375	.175	.005	.045	......	......	......
Feb. 21-28	31,720	......	......	......	......	......	......	......	.699	.255	.144	.028	.574	.354	.087	.005	.055	......	......	......
Mar. 1-10	66,180	......	......	......	......	......	......	......	.549	.181	.096	.026	.393	.312	.062	.005	.055	......	......	......
Mar. 11-20	52,260	......	......	......	......	......	......	......	.649	.206	.083	.015	.508	.292	.062	.011	.034	......	......	......
Mar. 21-31	50,060	......	......	......	......	......	......	......	.699	.197	.109	.023	.623	.292	.068	.005	.031	......	......	......

SUSQUEHANNA RIVER BASIN—Continued

SUSQUEHANNA RIVER AT FALLS, PA.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10^5 at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Apr. 1-10	23,500								.799	.230	.130	.026	.754	.354	.087	.005	.039			
Apr. 11-20	10,620								1.048	.313	.161	.028	1.000	.354	.113	.005	.031			
Apr. 21-30	14,460								.898	.255	.161	.015	.885	.333	.099	.005	.021			
May 1-10	27,260								.699	.238	.144	.013	.639	.333	.062	.005	.023			
May 11-20	37,470								.699	.189	.126	.026	.656	.312	.051	.005	.016			
May 21-31	18,820								.948	.271	.122	.023	.951	.312	.073	.005	.026			
June 1-10	13,760								.948	.288	.135	.023	.967	.333	.090	.005	.016			
June 11-20	15,490								.898	.255	.139	.031	.918	.291	.085	.005	.027			
June 21-30	11,290								.998	.288	.200	.031	1.016	.312	.099	.011	.031			
July 1-10	6,028								1.148	.329	.226	.041	1.213	.333	.127	.005	.027			
July 11-20	6,177								1.248	.354	.254	.033	1.311	.375	.172	.005	.026			
July 21-31	10,880								1.098	.304	.191	.031	1.131	.312	.130	.005	.032			
Aug. 1-10	8,719								.998	.271	.161	.026	1.016	.291	.099	.005	.014			
Aug. 11-20	4,375								1.248	.362	.217	.036	1.344	.354	.147	.005	.013			
Aug. 21-31	3,400								1.297	.403	.274	.044	1.475	.333	.183	.005	.013			
Sept. 1-10	4,252								1.397	.428	.313	.041	1.541	.375	.220	.005	.016			
Sept. 11-20	8,872								1.098	.288	.217	.036	1.147	.312	.158	.005	.027			
Sept. 21-30	15,400								.898	.247	.113	.036	.852	.291	.085	.005	.029			
Average	14,810								0.998	0.296	0.191	0.031	0.967	0.354	0.133	0.005	0.031			

Temperature (° F.) of water of Susquehanna River, water year October 1944 to September 1945

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

SUSQUEHANNA RIVER BASIN—Continued

SUSQUEHANNA RIVER AT HARRISBURG, PA.

LOCATION.—At Walnut Street bridge.
DRAINAGE AREA.—24,100 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1031. Because of extreme differences in the composition of the waters of the Susquehanna from one side to the other, cross-section samples were collected periodically. Analyses of composites of daily samples collected from the east channel, 1,180 feet from the east bank, are given on pages 49 to 51.

Chemical analyses of cross-section samples, in parts per million and in equivalents per million, water year October 1944 to September 1945

Date	Discharge (second-feet)	Sampling point (channel and station)	Temperature (°F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Parts per million: Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Total hardness as $CaCO_3$	Equivalents per million: Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Total hardness as $CaCO_3$
Oct. 7, 1944	4,470	East 140	62	6	5.9	51.2	5	227	6		240	0.082	4.726	0.169		
		300	62	7	6.2	50.0										
		500	62	6	6.4	44.2										
		690	62	3	6.6	36.9	20	136	8		162	.328	2.832	.226		
		920	63	4	6.8	32.9										
		1220	62	4	6.5	32.6										
		West 300	62	7	6.8	31.4										
		600	61	8	7.0	34.1										
		900	61	12	7.2	38.9										
		1100	61	13	7.5	38.9	116	77	13		144	1.901	1.603	.367		
		1300	64	6	7.5	31.4	156	19	6		150	2.557	.396	.169		
Oct. 16	7,490	East 140	49	4	5.0	52.0	1	233	7		234	.016	4.851	.197		
		300	50	3	5.7	50.3										
		500	49	3	6.2	44.8										
		690	50	6	6.7	35.9	18	135	7		153	.295	2.811	.197		
		920	50	7	6.7	29.5										
		1220	50	7	6.6	26.5										
		West 300	49	7	6.8	25.7										
		600	49	11	7.1	28.0										
		900	50	18	7.4	33.9	96	76	10		126	1.573	1.582	.282		
		1100	49	18	7.4	33.2										
		1300	49	7	7.7	30.5	153	18	6		144	2.507	.375	.169		

Oct. 24	17,800	East	140	50	3	5.9	30.3	6	115	8		132	.098	2.394	.226		
			300	50	4	6.4	30.0										
			500	50	4	6.9	28.5										
			690	51	6	7.0	25.7	45	67	8		108	.737	1.395	.226		
			920	50	6	6.9	23.4										
			1220	51	9	6.9	22.0										
		West	300	50	22	7.0	23.2										
			600	50	55	7.1	29.2										
			900		55	7.2	33.9	105	50	9		132	1.721	1.041	.254		
			1100	50	40	7.1	27.8										
			1300	50	22	7.3	22.2	82	23	3		93	1.344	.479	.085		
Nov. 1	8,960	East	140	49	5	6.5	33.1	16	131	6		162	.262	2.727	.169		
			300	50	6	6.8	32.5										
			500	50	5	6.9	27.7										
			690	50	6	7.0	23.5	43	65	6		93	.705	1.353	.169		
			920	50	6	6.9	20.9										
			1220	50	6	6.8	19.1										
		West	300	49	6	6.8	18.5										
			600	49	6	6.7	18.9										
			900	50	12	7.2	24.0										
			1100	50	21	7.4	27.7	76	59	7		108	1.246	1.228	.197		
			1300	50	7	7.7	27.5	126	21	5		132	2.065	.437	.141		
Nov. 9	6,220	East	140	47	6	6.9	39.5	15	164	6		180	.246	3.415	.169		
			300	47	6	6.9	37.8										
			500	47	9	7.2	33.8										
			690	47	9	7.2	27.5	33	90	6		114	.541	1.874	.169		
			920	47	9	7.3	23.4										
			1220	48	9	7.2	20.7										
		West	300	48	9	7.2	19.9										
			600	47	10	7.2	21.0										
			900	47	31	7.3	28.2										
			1100	47	40	7.4	32.2	93	67	8		114	1.524	1.395	.226		
			1300	48	11	7.8	29.7	137	22	10		138	2.245	.458	.282		
Nov. 17	7,620	East	140	44	5	6.0	43.9	10	185	8		186	.164	3.852	.226		
			300	44	4	6.6	42.6										
			500	45	7	6.7	37.3										
			690	44	8	6.9	32.0	43	107	8		120	.705	2.228	.226		
			920	44	4	6.9	27.9										
			1220	45	4	7.0	24.9	36	77	7		99	.590	1.603	.197		
		West	300	45	5	6.9	23.5										
			600	44	5	6.9	22.6										
			900	44	10	7.1	27.2										
			1100	44	22	7.3	33.0	94	75	12		111	1.541	1.562	.338		
			1300	45	8	7.6	33.0	167	25	8		159	2.737	.521	.226		

SUSQUEHANNA RIVER BASIN—Continued

SUSQUEHANNA RIVER AT HARRISBURG, PA.—Continued

Chemical analyses of cross-section samples, in parts per million and in equivalents per million, water year October 1944 to September 1945—Con.

Date	Discharge (second-feet)	Sampling point (channel and station)		Temperature (°F.)	Color	pH	Specific conductance (K×10^5 at 25° C.)	Parts per million					Equivalents per million				
								Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Total hardness as $CaCO_3$	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Total hardness as $CaCO_3$
Nov. 28	12,500	East	140	40	5	6.3	28.4	12	108	12		123	.197	2.249	.338		
			300	40	5	6.4	26.8										
			500	40	5	6.7	22.0	30	73	5		84	.492	1.520	.141		
			920	40	5	6.9	19.3										
			1220	41	5	6.8	19.8	27	62	5		76	.442	1.291	.141		
		West	300	41	5	7.3	19.9										
			600	41	5	6.7	20.7										
			900	41	12	7.0	23.7										
			1100	41	45	7.1	30.9	82	72	10		117	1.344	1.499	.282		
			1300	41	10	7.5	31.7	151	26	10		150	2.475	.541	.282		
Dec. 5	19,200	East	140	34	2	6.3	21.3	14	77	4		84	.229	1.603	.113		
			300	34	3	6.4	20.6										
			500	34	4	6.6	18.4										
			690	34	4	6.9	17.3	36	53	5		66	.590	1.103	.141		
			920	34	4	6.8	16.3										
			1220	35	5	6.8	16.2	30	52	4		60	.492	1.083	.113		
		West	300	34	4	6.7	16.1										
			600	34	5	6.6	16.2										
			900	34	10	6.8	17.7										
			1100	34	30	7.0	22.9	56	61	7		81	.918	1.270	.197		
			1300	34	23	7.3	24.5	85	43	7		92	1.393	.895	.197		
Dec. 15	30,300	East	140	33	2	5.5	18.5	2	77	4		74	.033	1.603	.113		
			300	33	3	5.7	18.2										
			500	32	5	6.3	16.0										
			690	32	8	6.6	14.1	22	47	2		51	.361	.979	.056		
			920	32	5	6.5	13.7										
			1220	33	4	6.7	12.8	24	42	5		48	.393	.874	.141		
		West	300	33	5	6.6	12.3										
			600	32	5	6.6	12.1										
			900	32	12	6.9	14.4										
			1100	32	17	7.0	18.1	48	44	4		66	.787	.916	.113		
			1300	32	12	7.3	18.2	64	29	4		72	1.049	.604	.113		

Dec. 26	15,500	East	960	32	3	7.0	22.5	25	86	...	...	100	.410	1.791	...	...	...
			1220	32	6	7.0	20.3	26	77	...	...	86	.426	1.603	...	...	...
		West	200	32	5	7.1	18.5	...	...	...	...	...	...	...	...	...	...
			880	32	7	7.1	16.4	...	...	...	...	...	...	...	...	...	...
			1060	32	14	7.3	19.4	49	52	...	...	72	.803	1.083	...	...	...
			1260	32	23	7.5	24.7	86	55	7	...	94	1.409	1.145	.197	...	...
Jan. 5, 1945	50,500	East	500	32	3	6.5	16.2	14	60	5	...	69	.229	1.249	.141	...	...
			920	32	5	6.6	15.5	...	...	...	...	...	...	...	...	...	...
			1170	32	5	6.6	15.3	15	55	4	...	62	.246	1.145	.113	...	...
		West	340	32	7	6.6	13.7	...	...	...	...	...	...	...	...	...	...
			520	32	12	6.7	12.6	...	...	...	...	...	...	...	...	...	...
			880	32	8	6.6	11.2	...	...	...	...	...	...	...	...	...	...
			1050	32	8	6.7	11.5	18	40	3	...	48	.295	.833	.085	...	...
			1300	32	15	7.1	15.0	42	35	4	...	57	.688	.729	.113	...	...
Jan. 15	19,600	East	1140	32	2	6.4	26.8	...	...	...	...	...	...	...	...	...	...
		West	300	32	3	6.3	24.9	...	...	...	...	...	...	...	...	...	...
			600	32	3	6.6	18.3	...	...	...	...	...	...	...	...	...	...
			900	32	3	6.8	14.4	...	...	...	...	...	...	...	...	...	...
			1100	32	4	6.9	15.0	...	...	...	...	...	...	...	...	...	...
			1300	32	7	7.1	21.2	...	...	...	...	...	...	...	...	...	...
Mar. 1	182,000	East	140	32	3	5.8	12.3	9	43	2.5	4.0	45	.148	.895	.071	0.064	...
			480	32	4	5.8	11.6	...	...	...	...	...	...	...	...	...	...
			720	32	5	5.9	10.9	11	35	3	3.0	44	.180	.729	.085	.048	...
			900	32	5	5.8	10.1	...	...	...	...	...	...	...	...	...	...
			1220	32	2	5.6	9.97	...	...	...	...	...	...	...	...	...	...
		West	320	32	1	5.3	10.1	...	...	...	...	...	...	...	...	...	...
			600	32	2	5.2	10.1	3	35	1.5	3.1	36	.049	.729	.042	.051	...
			900	32	4	5.9	10.6	...	...	...	...	...	...	...	...	...	...
			1100	32	12	6.4	11.1	...	...	...	...	...	...	...	...	...	...
			1300	32	15	6.8	12.8	39	24	1.5	6.5	50	.639	.500	.042	.105	...
Mar. 9	214,000	East	140	36	5	6.0	11.9	12	39	2	3.2	44	.197	.812	.056	.052	...
			300	37	6	6.0	11.6	...	...	...	...	...	...	...	...	...	...
			500	37	8	6.2	10.6	...	...	...	...	...	...	...	...	...	...
			690	38	9	6.3	10.8	16	29	1.5	2.7	39	.262	.604	.042	.044	...
			920	38	6	6.1	8.92	...	...	...	...	...	...	...	...	...	...
			1220	38	5	5.8	7.67	...	...	...	...	...	...	...	...	...	...
		West	300	37	5	5.5	7.46	...	...	...	...	...	...	...	...	...	...
			600	38	6	5.2	7.56	4	26	1	1.1	27	.066	.541	.028	.018	...
			900	39	10	6.3	8.90	...	...	...	...	...	...	...	...	...	...
			1100	39	17	6.6	11.0	...	...	...	...	...	...	...	...	...	...
			1300	39	23	6.8	12.0	38	23	1.5	5.6	51	.623	.479	.042	.090	...
Mar. 17	109,000	East	140	45	3	6.6	18.4	16	66	2	...	72	.262	1.374	.056	...	...
			690	44	7	6.9	13.8	28	37	2.5	...	54	.459	.770	.071	...	...
			1200	45	5	6.7	10.4	...	...	...	...	...	...	...	...	...	...
		West	600	46	2	5.8	9.20	4	35	1	...	36	.066	.729	.028	...	...
			1100	48	6	7.1	12.3	...	...	...	...	...	...	...	...	...	...
			1300	50	17	7.4	15.8	59	28	3	...	64	.967	.583	.085	...	...

SUSQUEHANNA RIVER BASIN—Continued

SUSQUEHANNA RIVER AT HARRISBURG, PA.—Continued

Chemical analyses of cross-section samples, in parts per million and in equivalents per million, water year October 1944 to September 1945—Con.

Date	Discharge (second-feet)	Sampling point (channel and station)	Temperature (°F.)	Color	pH	Specific conductance (K×10[5] at 25° C.)	Parts per million: Bicarbonate (HCO_3)	Parts per million: Sulfate (SO_4)	Parts per million: Chloride (Cl)	Parts per million: Nitrate (NO_3)	Parts per million: Total hardness as $CaCO_3$	Equivalents per million: Bicarbonate (HCO_3)	Equivalents per million: Sulfate (SO_4)	Equivalents per million: Chloride (Cl)	Equivalents per million: Nitrate (NO_3)	Equivalents per million: Total hardness as $CaCO_3$
Mar. 26	125,000	East 120	46	8	6.4	13.2	15	44	1.5	2.7	51	.246	.916	.042	.044	....
		300	46	12	6.8	13.4										
		500	46	12	6.7	11.0										
		690	45	16	6.7	10.1	24	32	1	2.4	40	.393	.666	.028	.039	....
		920	45	16	6.7	9.88										
		1220	47	15	6.6	9.09	18	25	2	1.8	36	.295	.520	.056	.029	....
		West 300	46	9	6.4	8.37										
		600	47	6	6.2	8.02	7	29	1.5	1.2	33	.115	.604	.042	.019	....
		900	47	4	6.2	8.06										
		1100	47	7	6.6	8.52										
		1300	50	13	7.1	13.1	44	24	1.5	3.1	58	.721	.500	.042	.050	....
Apr. 6	83,700	East 120	50	3	5.8	19.3	4	77	3	2.6	81	.066	1.603	.085	.042	....
		300	50	3	5.8	20.3										
		500	51	6	6.4	18.0										
		690	51	7	6.6	14.7	30	42	3	2.3	64	.492	.874	.085	.037	....
		920	51	6	6.7	13.3										
		1220	54	6	6.5	11.6	12	40	3	1.7	50	.197	.833	.085	.027	....
		West 300	52	7	6.4	11.3										
		600	52	12	6.7	11.1	22	33	2	1.8	45	.361	.687	.056	.029	....
		900	52	28	7.0	12.8										
		1100	52	30	6.9	12.8	42	27	2.5	3.3	57	.688	.562	.071	.053	....
		1300	52	20	7.1	17.9	76	21	2	6.6	81	1.246	.437	.056	.106	....
Apr. 16	31,600	East 140	58	2	5.9	27.6	4	123	3	1.1	114	.066	2.561	.085	.018	....
		300	59	1	6.1	27.1										
		500	59	2	6.7	21.9										
		690	59	6	7.0	19.2	30	60	3.5	2.4	81	.492	1.249	.099	.039	....
		920	59	7	6.9	15.7										
		1220	60	5	6.8	11.7	12	42	3	1.2	48	.197	.874	.085	.019	....
		West 300	59	4	6.7	11.2										
		600	59	5	6.9	11.2	17	37	2.5	1.3	51	.279	.770	.071	.021	....
		900	59	7	7.2	14.6										
		1100	59	11	7.3	16.0	53	30	3	2.8	64	.869	.625	.085	.045	....
		1300	58	8	7.4	26.1	128	20	4	7.2	120	2.098	.416	.113	.116	....

Apr. 26	31,600	East	140	54	2	6.2	29.0	5	124	4	1.0	123	.082	2.582	.113	.016	
			300	55	2	6.7	30.3										
			500	55	4	6.9	25.7										
			690	55	5	7.1	19.3	26	63	4	1.2	81	.426	1.312	.113	.019	
			920	54	5	6.8	13.7										
			1220	55	7	6.7	12.2	10	45	3	.8	50	.164	.937	.085	.013	
		West	300	55	7	6.9	12.2										
			600	55	12	7.2	14.2	38	33	3.5	2.1	58	.623	.687	.099	.034	
			900	55	27	7.3	17.2	50	32	8.5	1.6	72	.820	.666	.240	.026	
			1100	55	28	7.2	14.1										
			1300	55	8	7.6	24.6	124	19	3.5	6.6	123	2.032	.396	.099	.106	
May 4	59,800	East	140	49	1	6.1	18.4	8	73	2	1.5	82	.131	1.520	.056	.024	
			300	49	2	6.2	18.0										
			500	49	6	6.5	15.2										
			690	49	8	6.9	13.3	25	38	1.5	1.5	60	.410	.791	.042	.024	
			920	49	10	6.7	12.2										
			1220	50	7	6.6	9.61	14	30	2	1.1	42	.230	.625	.056	.018	
		West	300	50	5	6.5	8.64										
			600	50	3	6.5	8.35	10	28	1.5	.7	34	.164	.583	.042	.011	
			900	50	2	6.8	10.0										
			1100	51	15	7.1	13.0	42	26	2	1.7	57	.688	.541	.056	.027	
			1300	51	8	7.3	16.1	67	24	2.5	4.1	74	1.098	.500	.071	.066	
May 15	91,100	East	140	57	2	6.4	16.2	12	59	1.5	1.2	66	.197	1.228	.042	.019	
			300	56	4	6.5	15.3										
			500	56	10	6.6	13.1										
			690	56	17	6.7	11.6	27	31	1.5	1.4	51	.443	.645	.042	.023	
			920	56	13	6.7	11.0										
			1220	57	8	6.7	9.48	16	28	1.5	1.0	40	.262	.583	.042	.016	
		West	300	57	4	6.5	8.53										
			600	57	5	6.4	8.01	8	28	1.5	.5	33	.131	.583	.042	.008	
			900	57	4	6.6	8.75										
			1100	59	7	7.0	11.2	30	26	1.5	1.2	52	.492	.541	.042	.019	
			1300	61	10	7.1	14.0	48	24	2	2.4	64	.787	.500	.056	.039	
May 25	50,500	East	140	61	2	6.1	20.6	8	79	1.5	2.4	86	.131	1.645	.042	.039	
			300	62	3	6.3	19.3										
			500	62	5	6.5	16.4										
			690	62	5	6.7	14.5	33	39	1	2.1	52	.541	.812	.028	.034	
			920	62	5	6.6	13.5										
			1220	62	6	6.5	10.4	17	30	1	1.6	42	.279	.625	.028	.026	
		West	300	62	5	6.3	9.56										
			600	62	4	6.3	9.24	9	33	1	1.2	33	.147	.687	.028	.019	
			900	62	8	6.7	10.9										
			1100	62	10	7.0	14.6	49	26	1.5	2.8	52	.803	.541	.042	.045	
			1300	62	14	7.0	17.2	68	25	2.5	4.8	66	1.114	.521	.070	.077	

SUSQUEHANNA RIVER BASIN—Continued

SUSQUEHANNA RIVER AT HARRISBURG, PA.—Continued

Chemical analyses of cross-section samples, in parts per million and in equivalents per million, water year October 1944 to September 1945—Con

Date	Discharge (second-feet)	Sampling point (channel and station)	Temperature (°F.)	Color	pH	Specific conductance (K×10[5] at 25° C.)	Parts per million: Bicarbonate (HCO_3)	Parts per million: Sulfate (SO_4)	Parts per million: Chloride (Cl)	Parts per million: Nitrate (NO_3)	Parts per million: Total hardness as $CaCO_3$	Equivalents per million: Bicarbonate (HCO_3)	Equivalents per million: Sulfate (SO_4)	Equivalents per million: Chloride (Cl)	Equivalents per million: Nitrate (NO_3)	Equivalents per million: Total hardness as $CaCO_3$
June 5	59,800	East 140	57	2	6.2	23.4	12	92	2.5	2.2	90	0.197	1.915	0.070	0.036	
		300	57	2	6.5	23.0										
		500	56	4	6.6	19.3										
		690	56	4	6.5	13.2	21	39	2	2.1	51	.344	.812	.056	.034	
		920	55	10	6.4	9.79										
		1220	55	7	6.3	7.99	9	27	1.5	1.5	30	.147	.562	.042	.024	
		West 300	55	8	6.3	8.21										
		600	55	9	6.3	8.46	12	29	1	1.0	30	.197	.604	.028	.016	
		900	55	7	6.6	9.50										
		1100	57	9	6.8	13.4	42	26	2	2.5	51	.688	.541	.056	.040	
		1300	60	6	7.3	20.6	90	24	3	5.6	80	1.475	.500	.085	.090	
June 15	26,700	East 140	76	2	5.6	32.6	3	137	2	2.6	130	.049	2.852	.056	.042	
		300	76	2	6.0	30.1										
		500	76	3	6.8	24.3										
		690	76	5	6.9	21.1	32	67	3	1.4	69	.524	1.395	.085	.023	
		920	76	4	6.9	18.8										
		1220	75	3	6.7	13.4	18	44	1.5	1.6	52	.295	.916	.042	.026	
		West 300	76	4	6.9	12.1										
		600	76	5	6.8	11.4	18	34	1	1.4	42	.295	.708	.028	.023	
		900	77	7	7.2	14.2										
		1100	78	10	7.2	18.8	66	32	3	2.0	69	1.082	.666	.085	.032	
		1300	79	10	7.4	22.9	102	25	4.5	4.3	96	1.672	.521	.127	.069	
June 25	25,300	East 140	78	2	6.0	28.7	6	118	3.5	3.4	118	.098	2.457	.099	.055	
		300	78	3	6.2	26.3										
		500	78	5	6.6	20.6										
		690	78	7	6.8	18.7	33	54	2.5	2.8	74	.541	1.124	.070	.045	
		920	77	6	7.0	18.0										
		1220	78	5	6.9	16.8	30	50	2.5	2.2	66	.492	1.041	.070	.036	
		West 300	79	8	6.8	16.2										
		600	79	5	6.8	14.9	22	45	1.5	1.1	63	.361	.937	.042	.018	
		900	79	7	6.9	15.8										
		1100	80	8	7.1	19.5	60	40	3	2.1	66	.983	.833	.085	.034	
		1300	80	5	7.5	23.1	97	28	4	3.7	96	1.590	.583	.113	.060	

July 5	14,300	East	140	75	3	6.4	37.6	4	164	3	.8	174	.066	3.415	.085	.013	
			300	75	2	6.3	35.4										
			500	75	5	6.6	29.2										
			690	75	7	6.8	25.1	36	81	3.5	1.0	108	.590	1.686	.099	.016	
			920	75	6	6.8	22.8										
			1220	75	8	6.6	19.2	24	63	2.5	1.9	72	.393	1.312	.070	.031	
		West	300	75	5	6.7	17.8										
			600	75	6	6.6	16.5	21	54	3	2.1	63	.344	1.124	.085	.034	
			900	75	7	7.0	17.0										
			1100	76	9	7.1	21.7	62	47	3.5	2.3	72	1.016	.979	.099	.037	
			1300	77	10	7.4	26.3	110	30	7	4.2	100	1.803	.625	.197	.068	
July 13	10,700	East	140		2	4.6	45.6	[1]0	205	5	1.5	207	.000	4.268	.141	.024	
			300	74	5	5.0	43.2										
			500	74	7	6.4	35.1										
			690	75	5	6.7	28.9	33	98	4.5	1.9	105	.541	2.040	.127	.031	
			920	74	8	6.7	24.4										
			1220	74	10	6.8	19.6										
		West	300	75	10	7.0	18.5										
			600	75	8	7.1	18.5	25	45	3.5	1.4	69	.410	.937	.099	.023	
			900	76	10	7.4	23.7										
			1100	76	10	7.5	26.8	100	44	5	1.9	102	1.639	.916	.141	.031	
			1300	76	9	7.7	26.3	121	25	6.5	4.6	120	1.983	.521	.183	.074	
July 25	18,400	East	140	72	5	4.30	29.1	[2]0	124	2.5	1.9	93	.000	2.582	.070	.031	
			300	74	5	4.10	37.1										
			500	74	4	4.15	37.9	[3]0	164	2.5	1.0	150	.000	3.415	.070	.016	
			690	76	4	4.45	31.9										
			920	76	5	4.8	29.1	[1]0	121	3	1.4	105	.000	2.519	.085	.023	
			1220	76	7	6.0	25.3	5	103	3	2.3	116	.082	2.144	.085	.037	
		West	300	76	5	6.3	24.1										
			600	76	6	6.6	21.7	14	81	4	2.4	92	.229	1.686	.113	.039	
			900	76	7	6.8	20.2										
			1100	77	8	7.3	23.9	66	51	6.5	2.0	98	1.082	1.062	.183	.032	
			1300	77	10	7.5	28.6	115	36	8	3.4	123	1.885	.750	.226	.055	
Aug. 3	31,600	East	140	73	5	4.45	30.0	[4]0	134	3	1.4	114	.000	2.790	.085	.023	
			300	74	4	4.6	29.2										
			500	74	5	6.1	23.0										
			690	74	5	6.6	19.4	20	70	2	2.3	82	.328	1.457	.056	.037	
			920	75	7	6.7	17.9										
			1220	74	9	6.8	16.7										
		West	300	75	10	6.8	16.1	22	52	2.5	2.2	58	.361	1.083	.070	.036	
			600	75	10	6.9	16.6										
			900	76	35	7.2	22.0	68	48	5	2.4	80	1.114	.999	.141	.039	
			1100	74	50	7.1	20.2	74	36	4	3.4	78	1.213	.750	.113	.055	
			1300	73	36	7.2	21.6	98	26	2	8.6	99	1.606	.541	.056	.139	

See footnotes at end of table.

SUSQUEHANNA RIVER BASIN—Continued

SUSQUEHANNA RIVER AT HARRISBURG, PA.—Continued

Chemical analyses of cross-section samples, in parts per million and in equivalents per million, water year October 1944 to September 1945—Con.

Date	Discharge (second-feet)	Sampling point (channel and station)	Temperature (°F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Parts per million: Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Total hardness as $CaCO_3$	Equivalents per million: Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Total hardness as $CaCO_3$
Aug. 20	7,620	East 140	75	3	4.30	57.7	[2] 0	282	3	.8	261	.000	5.871	.085	.013	
		300	75	2	4.40	56.6										
		500	75	5	4.6	47.6										
		690	75	4	6.5	37.2	10	162	3	1.0	174	.164	3.373	.085	.016	
		920	74	7	7.0	30.9										
		1220	74	5	7.2	24.9	19	93	3.5	1.0	114	.311	1.936	.099	.016	
		West 300	75	8	7.2	23.0										
		600	75	7	7.3	21.2	28	73	4	.8	87	.459	1.520	.113	.013	
		900	75	10	8.0	23.6										
		1100	75	10	8.6	25.7	86	51	6	.2	96	1.409	1.062	.169	.003	
		1300	75	8	7.9	20.6	93	22	5.5	3.1	100	1.524	.458	.155	.050	
Aug. 27	18,200	East 140	62	2	4.5	24.8	[1] 0	98	2	5.2	105	.000	2.040	.056	.084	
		300	63	3	4.20	32.7	[3] 0	134	3	5.0	141	.000	2.790	.085	.081	
		500	64	3	4.40	41.2	[4] 0	184	4	2.2	192	.000	3.831	.113	.036	
		690	64	2	5.9	37.3	11	160	5	2.0	174	.180	3.331	.141	.032	
		920	64	2	6.6	28.7										
		1220	64	4	6.6	18.3	38	49	5	2.4	72	.623	1.020	.141	.039	
		West 300	64	9	6.8	17.1	43	38	4	3.2	70	.705	.791	.113	.052	
		600	65	18	6.9	23.9										
		900	65	22	7.1	27.0	100	42	8	3.2	111	1.639	.874	.226	.052	
		1100	65	13	7.0	25.9										
		1300		13	7.2	25.2	132	19	4	7.0	120	2.163	.396	.113	.113	
Sept. 4	12,000	East 140	71	1	3.80	57.6	[5] 0	268	5	0.7	228	.000	5.580	.141	.011	
		300	72		3.90	60.5										
		500	72	5	4.10	55.0										
		690	72	5	4.9	41.0	[1] 5	181	5	1.2	168	.082	3.768	.141	.019	
		970	71	5	6.5	30.7										
		1,220	71	5	6.7	26.0	32	90	5	1.7	108	.524	1.874	.141	.027	
		West 300	71	5	6.8	23.8										
		600	72	5	6.9	21.6	43	61	5	1.6	90	.705	1.270	.141	.026	
		900	73	6	7.0	23.9										
		1100	73	10	7.3	25.0	92	47	6	1.9	114	1.508	.979	.169	.031	
		1300	72	10	7.3	27.0	129	25	6	6	129	2.114	.521	.169	.097	

Sept. 18	19,500	East	140	59	5	4.8	27.7	[1]2	117	3	3	114	.033	2.436	.085	.048	
			300	60	5	4.8	32.8										
			500	61	5	6.2	31.3										
			690	61	5	6.7	24.8	30	80	6	2.2	102	.492	1.666	.169	.036	
			920	61	7	6.7	18.2										
			1220	60	30	6.7	13.1	37	30	2	4.7	54	.606	.625	.056	.076	
		West	300	59	35	6.7	14.7										
			600	59	35	6.7	13.5										
			900	58	35	6.5	9.36	31	14	1	5.8	45	.508	.291	.028	.094	
			1100	58	40	7.1	18.2										
			1300	59	40	7.2	19.0	93	25	1	8.2	90	1.524	.521	.028	.132	
Sept. 25	32,800	East	140	63	1	4.9	25.4	5	108	2	1.7	102	.082	2.249	.056	.027	
			300	63	5	4.9	24.5										
			500	63	10	6.1	18.4										
			690	64	10	6.4	16.1	23	56	2	2	60	.377	1.166	.056	.032	
			920	63	10	6.5	14.5										
			1220	63	10	6.5	13.5	22	43	2	2.1	51	.361	.895	.056	.034	
		West	300	63	5	6.6	12.9										
			600	63	5	6.5	12.9	19	45	2	2.1	45	.311	.937	.056	.034	
			900	64	10	6.8	15.9										
			1100	64	20	7.0	17.4	54	36	2	4.3	69	.885	.750	.056	.069	
			1300	63	10	7.4	26.0	121	27	3	10	105	1.983	.562	.085	.161	

[1] Free acid as $H_2SO_4=0$.
[2] Free acid as $H_2SO_4=2$.
[3] Free acid as $H_2SO_4=3$.
[4] Free acid as $H_2SO_4=1$.
[5] Free acid as $H_2SO_4=8$.

Chemical analyses of samples from east channel, station 1180, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)[1]	Temperature (° F.)	Color	pH	Specific conductance ($K\times10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$	
																			Total	Noncarbonate
Oct. 1-10, 1944	4,546	61	7	7.0	32.6	2.6	0.01		36	11	10	2.4	29	112	10	0.1	1.5	224	135	111
Oct. 11-20	6,366	55	7	7.0	29.3	2.6	.02	0.0	31	9.6	9.7	2.7	26	101	7.8	.1	1.6	185	117	96
Oct. 21-31	14,650	49	6	6.7	22.9	3.8	.02	.0	24	7.1	6.8	2.6	20	75	6.1	.1	2.1	141	89	73
Nov. 1-10	7,207	49	5	7.0	19.9	4.0	.02	.0	21	6.3	6.1	2.3	22	61	5.2	.1	1.8	119	78	60
Nov. 11-20	7,200	45	6	7.2	23.9	2.4	.05	.0	26	7.0	7.2	1.9	33	68	6.5	.1	1.3	143	94	67
Nov. 21-30	12,700	40	5	7.2	21.8	3.4	.04	.0	25	6.8	7.5	2.1	35	63	5.8	.1	2.2	130	90	62

See footnote at end of table.

SUSQUEHANNA RIVER BASIN—Continued

SUSQUEHANNA RIVER AT HARRISBURG, PA.—Continued

Chemical analyses of samples from east channel, station 1180, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet [1])	Temperature (° F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$	
																			Total	Noncarbonate
Dec. 1-10	20,110	33	4	7.1	17.3	4.0	.04	.0	20	5.4	5.4	1.4	28	48	4.1	.1	2.6	104	72	49
Dec. 11-20	30,630	33	5	7.0	13.9	4.7	.08	.0	16	4.2	3.9	1.3	22	38	3.5	.1	2.8	85	57	39
Dec. 21-31	14,860	32	5	6.9	20.1	4.5	.04	.0	22	7.2	4.7	1.4	26	62	4.8	.1	3.5	128	84	63
Jan. 1-10, 1945	42,070	32	3	6.7	18.6	4.4	.02	-------	19	6.9	6.0	1.2	19	60	3.4	.1	3.1	117	76	60
Jan. 11-20	19,040	32	5	6.8	22.9	4.1	.02	-------	23	9.3	4.1	1.5	17	79	4.2	.0	2.7	146	96	82
Jan. 21-31	12,700	32	10	7.1	20.4	3.6	.04	-------	22	6.3	6.3	1.4	34	54	5.2	.0	3.4	126	81	53
Feb. 1-10	12,120	32	8	7.1	22.0	4.4	.06	.1	24	7.1	9.7	1.0	44	60	5.6	.1	3.4	134	89	53
Feb. 11-20	23,550	32	17	6.9	19.4	5.4	.16	-------	22	5.5	7.5	1.0	43	47	5.0	.2	4.3	122	78	42
Feb. 21-28	81,120	33	5	6.8	14.2	5.2	.03	-------	15	4.1	4.4	1.1	20	38	3.2	.1	3.7	89	54	38
Mar. 1-10	186,800	36	12	6.3	8.97	4.2	.10	.0	10	2.7	2.0	.5	8	26	1.8	.2	2.6	58	36	30
Mar. 11-20	116,200	43	7	6.6	9.77	4.7	.05	.0	11	3.1	2.7	.5	12	28	2.1	.1	2.0	62	40	30
Mar. 21-31	123,200	49	11	6.7	9.58	4.4	.08	.0	11	2.9	2.2	.6	18	24	1.9	.1	1.9	61	39	25
Apr. 1-10	67,350	53	6	6.7	11.6	4.8	.04	.0	13	3.4	3.0	.9	19	32	2.1	.1	1.6	70	46	31
Apr. 11-20	36,060	59	7	6.8	11.7	3.4	.01	.0	12	3.6	2.6	1.1	11	36	2.5	.1	1.9	70	45	31
Apr. 21-30	43,540	52	3	6.6	12.2	4.4	.03	.1	13	4.1	2.4	.8	10	40	2.2	.1	.8	76	49	41
May 1-10	75,930	51	8	6.8	9.42	4.6	.04	.0	10	2.9	2.3	.9	16	25	1.5	.1	1.4	57	37	24
May 11-20	101,000	56	12	6.8	9.40	4.2	.07	.0	10	2.9	2.2	.7	16	25	2.1	.1	1.2	58	37	24
May 21-31	60,410	60	8	6.8	10.6	4.5	.05	-------	12	3.4	2.1	.8	17	29	1.8	.1	1.6	66	44	30
June 1-10	43,690	58	8	6.7	10.3	4.3	.04	-------	11	3.1	1.9	.8	14	29	2.0	.1	1.3	63	40	29
June 11-20	29,120	72	8	7.0	14.4	3.1	.01	.0	16	4.5	3.2	1.0	26	39	3.0	.1	1.1	88	58	37
June 21-30	25,410	74	8	7.1	16.6	4.0	.03	.0	19	5.2	3.7	1.4	32	44	3.0	.1	1.8	104	69	43
July 1-10	14,570	75	8	6.9	18.6	4.6	.03	.0	21	6.2	5.4		28	53	4.0	.1	2.1	113	78	55
July 11-20	13,240	71	6	7.0	21.7	3.8	.03	.0	23	7.7	6.0		28	68	4.5	.1	1.6	134	89	66
July 21-31	24,280	74	4	6.8	25.3	3.6	.02	.3	25	9.6	6.1	1.6	12	91	4.5	.1	2.0	162	102	92
Aug. 1-10	24,070	72	5	6.9	18.2	5.4	.02	.0	18	5.9	4.4	1.2	17	59	3.5	.1	1.9	113	69	55
Aug. 11-20	10,790	73	5	6.8	21.3	4.0	.02	.0	22	7.8	4.7	1.4	22	72	4.1	.1	1.5	134	87	69
Aug. 21-31	10,880	70	5	7.0	23.1	2.4	.03	.0	24	9.0	5.4	2.1	25	77	4.5	.1	1.7	143	97	76
Sept. 1-10	9,279	73	2	6.7	27.1	3.8	.01	.0	26	12	6.4	1.9	20	98	5.0	.1	1.9	178	114	98
Sept. 11-20	22,980	67	8	6.7	26.3	4.8	.02	.0	27	9.7	6.7	1.7	22	89	5.5	.1	2.9	164	107	89
Sept. 21-30	44,570	64	-------	6.8	14.5	5.2	.03	.0	16	4.4	3.2	1.5	16	45	2.8	.1	2.0	89	58	45
Average	38,410	53	7	6.9	18.1	4.1	0.04	0.0	19	6.1	4.9	1.4	22	55	4.0	0.1	2.1	113	72	54

[1] Total discharge of river.

Chemical analyses of samples from east channel, station 1180, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	4,546								1.797	0.905	0.435	0.061	0.475	2.332	0.282	0.005	0.024			
Oct. 11-20	6,366								1.547	.789	.422	.069	.426	2.103	.220	.005	.026			
Oct. 21-31	14,650								1.198	.584	.296	.066	.328	1.562	.172	.005	.034			
Nov. 1-10	7,207								1.048	.518	.265	.059	.361	1.270	.147	.005	.029			
Nov. 11-20	7,200								1.298	.576	.313	.049	.541	1.416	.183	.005	.021			
Nov. 21-30	12,700								1.248	.559	.326	.054	.574	1.312	.164	.005	.035			
Dec. 1-10	20,110								.998	.444	.235	.036	.459	.999	.116	.005	.042			
Dec. 11-20	30,630								.799	.345	.170	.033	.361	.791	.099	.005	.045			
Dec. 21-31	14,860								1.098	.592	.204	.036	.426	1.291	.135	.005	.056			
Jan. 1-10, 1945	42,070								.948	.567	.261	.031	.311	1.249	.096	.005	.050			
Jan. 11-20	19,040								1.148	.765	.178	.038	.279	1.645	.118	.000	.044			
Jan. 21-31	12,700								1.098	.518	.274	.036	.557	1.124	.147	.000	.055			
Feb. 1-10	12,120								1.198	.584	.422	.026	.721	1.249	.158	.005	.055			
Feb. 11-20	23,550								1.098	.452	.326	.026	.705	.978	.141	.011	.069			
Feb. 21-28	81,120								.749	.337	.191	.028	.328	.791	.090	.005	.060			
Mar. 1-10	186,800								.499	.222	.087	.013	.131	.541	.051	.011	.042			
Mar. 11-20	116,200								.549	.255	.117	.013	.197	.583	.059	.005	.032			
Mar. 21-31	123,200								.549	.238	.096	.015	.295	.500	.054	.005	.031			
Apr. 1-10	67,350								.649	.280	.130	.023	.311	.666	.059	.005	.026			
Apr. 11-20	36,060								.599	.296	.113	.028	.180	.750	.071	.005	.031			
Apr. 21-30	43,540								.649	.337	.104	.020	.164	.833	.062	.005	.013			
May 1-10	75,930								.499	.238	.100	.023	.262	.520	.042	.005	.023			
May 11-20	101,000								.499	.238	.096	.018	.262	.520	.059	.005	.019			
May 21-31	60,410								.599	.280	.091	.020	.279	.604	.051	.005	.026			
June 1-10	43,690								.549	.255	.083	.020	.229	.604	.056	.005	.021			
June 11-20	29,120								.798	.370	.139	.026	.426	.812	.085	.005	.018			
June 21-30	25,410								.948	.428	.161	.036	.524	.916	.085	.005	.029			
July 1-10	14,570								1.048	.510	0.235		.459	1.103	.113	.005	.034			
July 11-20	13,240								1.148	.633	.261		.459	1.416	.127	.005	.026			
July 21-31	24,280								1.248	.789	.265	.041	.197	1.895	.127	.005	.032			
Aug. 1-10	24,070								.898	.485	.191	.031	.279	1.228	.099	.005	.031			
Aug. 11-20	10,790								1.098	.641	.204	.036	.361	1.499	.116	.005	.024			
Aug. 21-31	10,880								1.198	.740	.235	.054	.410	1.603	.127	.005	.027			
Sept. 1-10	9,279								1.297	.987	.278	.049	.328	2.040	.141	.005	.031			
Sept. 11-20	22,980								1.347	.798	.291	.044	.361	1.853	.155	.005	.047			
Sept. 21-30	44,570								.798	.362	.139	.038	.262	.937	.079	.005	.032			
Average	38,410								0.948	0.502	0.213	0.036	0.361	1.145	0.113	0.005	0.034			

[1] Total discharge of river.

SUSQUEHANNA RIVER BASIN—Continued

WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA.

LOCATION.—At Market Street bridge, 560 feet from east bank of river.
DRAINAGE AREA.—6,847 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Water temperatures: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 219 parts per million Oct. 1–10; minimum, 46 parts per million May 1–10.
Total hardness: Maximum, 133 parts per million Oct. 1–10; minimum, 29 parts per million May 1–10.
Water temperatures: Maximum, 80° F. June 30, July 1, 26, Aug. 22; minimum, freezing point on many days in December, January, and February.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1031.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$	
																			Total	Noncarbonate
Oct. 1–10, 1944	1,368	61	5	6.7	31.8	5.2	0.02	------	37	10	11	2.5	8	128	10	0.2	1.5	219	133	127
Oct. 11–20	1,916	58	5	6.5	26.0	4.4	.01	0.2	27	8.3	9.7	1.9	8	96	7.0	.1	1.4	166	102	95
Oct. 21–31	4,276	50	7	5.5	20.8	4.8	.02	.4	21	6.5	6.5	2.9	4	79	4.6	.1	1.1	132	79	76
Nov. 1–10	1,772	49	5	6.6	17.9	4.8	.02	.4	18	5.4	5.3	2.0	11	60	5.1	.1	1.6	106	67	58
Nov. 11–20	1,841	46	4	6.9	20.4	5.8	.01	.4	20	6.4	6.9	2.1	14	67	5.8	.1	1.0	125	76	65
Nov. 21–30	2,766	40	4	6.4	21.7	4.4	.02	.4	22	7.2	7.5	1.8	6	81	5.2	.2	1.3	135	84	80
Dec. 1–10	4,414	33	5	6.6	16.1	5.4	.03	.2	16	5.2	5.4	1.7	10	54	4.2	.1	2.1	98	61	53
Dec. 11–20	5,683	32	5	6.7	13.2	4.7	.02	.2	14	4.3	3.6	1.1	8	44	3.2	.1	2.3	82	53	46
Dec. 21–31	5,345	31	4	6.4	14.7	5.2	.02	.2	15	4.9	3.8	1.4	8	50	4.0	.1	1.6	93	58	51
Jan. 1–10, 1945	13,020	32	3	6.2	10.7	4.8	.01	.2	10	3.5	3.7	1.0	5	37	2.1	.1	1.7	68	39	35
Jan. 11–20	5,600	32	8	6.2	12.2	5.1	.01	.1	12	4.1	3.6	.6	6	42	3.0	.1	1.5	76	47	42
Jan. 21–31	4,200	32	8	6.0	15.5	5.3	.01	.2	16	4.9	4.4	.8	6	54	3.8	.1	1.7	97	60	55
Feb. 1–10	3,810	32	6	6.1	16.7	5.2	.01	.2	17	5.3	3.3	.9	6	58	4.2	.1	1.8	105	64	59
Feb. 11–20	6,690	32	4	5.5	17.0	4.7	.02	.3	18	4.8	4.4	.9	3	63	4.0	.2	1.9	108	65	62
Feb. 21–28	29,180	32	5	5.7	11.1	3.4	.02	.2	11	3.4	2.7	.9	3	38	2.2	.0	2.1	68	41	39
Mar. 1–10	74,820	38	8	4.9	8.62	4.0	.03	.2	8.1	2.7	1.5	.4	1	28	2.0	.1	1.2	53	31	30
Mar. 11–20	43,550	45	3	5.3	8.28	4.1	.02	.0	7.9	2.5	1.7	.6	2	29	1.6	.1	1.0	53	30	28
Mar. 21–31	40,140	50	3	5.7	8.39	4.3	.02	.0	8.5	2.7	1.8	.6	3	29	1.8	.1	1.0	54	32	30

Apr. 1-10	20,910	53	2	6.0	9.80	5.0	.02	.1	9.6	3.0	2.2	.9	5	34	1.6	.1	1.0	61	36	32
Apr. 11-20	11,160	58	7	6.2	11.3	4.1	.01	.2	12	3.6	2.6	1.0	5	39	2.4	.1	.8	71	45	41
Apr. 21-30	18,710	52	3	5.9	10.7	4.0	.01	.1	11	3.5	2.4	.9	4	38	2.0	.1	.6	68	42	39
May 1-10	27,970	49	7	6.1	7.46	2.1	.02	.1	8.0	2.3	1.9	.4	6	25	1.5	.1	.6	46	29	24
May 11-20	36,230	56	10	5.9	7.83	4.2	.03	.1	8.6	2.5	1.7	.7	6	27	1.5	.1	.6	48	32	27
May 21-31	18,140	60	8	6.3	9.45	4.4	.03	.2	9.2	2.9	1.5	.8	6	30	1.6	.1	.8	60	35	30
June 1-10	18,650	55	7	6.4	8.91	4.5	.02	.2	9.3	2.7	1.8	1.2	6	29	2.0	.2	.8	58	34	29
June 11-20	7,660	72	6	6.6	11.8	4.3	.02	.2	12	3.5	2.7	1.0	8	39	2.6	.1	.8	76	44	38
June 21-30	5,282	77	9	6.8	14.3	4.3	.03	.3	15	4.4	3.4	1.3	12	47	3.1	.1	1.0	91	56	46
July 1-10	4,122	76	8	6.7	14.2	4.8	.02	.0	15	4.2	4.1		14	44	3.2	.1	1.8	89	55	43
July 11-20	2,690	74	8	6.9	18.6	4.6	.02	.0	18	5.0	5.6		14	62	4.2	.1	1.8	113	65	54
July 21-31	3,674	77	7	6.7	18.2	4.5	.02	.0	18	5.4	5.7	1.3	13	60	4.5	.1	1.9	112	67	56
Aug. 1-10	5,563	74	3	6.7	14.5	5.5	.02	.0	14	4.3	4.1	1.2	8	49	3.2	.1	1.2	89	53	46
Aug. 11-20	2,347	77	5	6.7	16.7	4.2	.02	.0	17	5.2	4.0	1.4	16	54	3.8	.1	1.7	102	64	51
Aug. 21-31	1,971	73	3	6.9	18.3	2.9	.01	.0	19	5.8	5.4	1.5	25	53	4.9	.1	1.7	110	71	51
Sept. 1-10	1,414	78	3	6.6	23.9	5.2	.02	.0	24	7.6	7.7	1.8	14	83	5.5	.1	1.6	152	91	80
Sept. 11-20	5,731	68	8	6.7	21.6	3.4	.02	.1	22	6.5	8.0	1.3	22	68	6.2	.1	1.9	132	82	64
Sept. 21-30	11,280	64	10	6.3	12.5	5.1	.02	.1	13	3.5	3.2	1.0	4	43	2.5	.1	.8	77	47	44
Average	12,210	53	6	6.3	15.0	4.5	0.02	0.2	15	4.7	4.2	1.2	8	52	3.6	0.1	1.4	94	57	50

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	1,368	----	----	----	----	----	----	----	1.847	0.822	0.478	0.064	0.131	2.665	0.282	0.011	0.024	----	----	----
Oct. 11-20	1,916	----	----	----	----	----	----	----	1.348	.683	.422	.049	.131	1.999	.197	.005	.023	----	----	----
Oct. 21-31	4,276	----	----	----	----	----	----	----	1.048	.535	.283	.074	.066	1.645	.130	.005	.018	----	----	----
Nov. 1-10	1,772	----	----	----	----	----	----	----	.898	.444	.230	.051	.180	1.250	.144	.005	.026	----	----	----
Nov. 11-20	1,841	----	----	----	----	----	----	----	.998	.526	.300	.054	.229	1.395	.164	.005	.016	----	----	----
Nov. 21-30	2,766	----	----	----	----	----	----	----	1.098	.592	.326	.046	.098	1.686	.147	.011	.021	----	----	----
Dec. 1-10	4,414	----	----	----	----	----	----	----	.799	.428	.235	.043	.164	1.124	.118	.005	.034	----	----	----
Dec. 11-20	5,683	----	----	----	----	----	----	----	.699	.354	.157	.028	.131	.916	.090	.005	.037	----	----	----
Dec. 21-31	5,345	----	----	----	----	----	----	----	.749	.403	.165	.036	.131	1.041	.113	.005	.026	----	----	----
Jan. 1-10, 1945	13,020	----	----	----	----	----	----	----	.499	.288	.161	.026	.082	.770	.059	.005	.027	----	----	----
Jan. 11-20	5,600	----	----	----	----	----	----	----	.599	.337	.157	.015	.098	.874	.085	.005	.024	----	----	----
Jan. 21-31	4,200	----	----	----	----	----	----	----	.799	.403	.191	.020	.098	1.124	.107	.005	.027	----	----	----
Feb. 1-10	3,810	----	----	----	----	----	----	----	.848	.436	.144	.023	.098	1.208	.118	.005	.029	----	----	----
Feb. 11-20	6,690	----	----	----	----	----	----	----	.898	.395	.191	.023	.049	1.312	.113	.011	.031	----	----	----
Feb. 21-28	29,180	----	----	----	----	----	----	----	.549	.280	.117	.023	.049	.791	.062	.000	.034	----	----	----
Mar. 1-10	64,820	----	----	----	----	----	----	----	.404	.222	.065	.010	.016	.583	.056	.005	.019	----	----	----
Mar. 11-20	43,550	----	----	----	----	----	----	----	.394	.206	.074	.015	.033	.604	.045	.005	.016	----	----	----
Mar. 21-31	40,140	----	----	----	----	----	----	----	.424	.222	.078	.015	.049	.604	.051	.005	.016	----	----	----

SUSQUEHANNA RIVER BASIN—Continued

WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Apr. 1-10	20,910								.479	.247	.096	.023	.082	.708	.045	.005	.016			
Apr. 11-20	11,160								.599	.296	.113	.026	.082	.812	.068	.005	.013			
Apr. 21-30	18,710								.549	.288	.104	.023	.066	.791	.056	.005	.010			
May 1-10	27,970								.399	.189	.083	.010	.098	.520	.042	.005	.010			
May 11-20	36,230								.429	.206	.074	.018	.098	.562	.042	.005	.010			
May 21-31	18,140								.459	.238	.065	.020	.098	.625	.045	.005	.013			
June 1-10	18,650								.464	.222	.078	.031	.098	.604	.056	.011	.013			
June 11-20	7,660								.599	.288	.117	.026	.131	.812	.073	.005	.013			
June 21-30	5,282								.749	.362	.148	.033	.197	.979	.087	.005	.016			
July 1-10	4,122								.749	.345	0.178		.229	.916	.090	.005	.029			
July 11-20	2,690								.898	.411	.244		.229	1.291	.118	.005	.029			
July 21-31	3,674								.898	.444	.248	.033	.213	1.249	.127	.005	.031			
Aug. 1-10	5,563								.699	.354	.178	.031	.131	1.020	.090	.005	.019			
Aug. 11-20	2,347								.848	.428	.174	.036	.262	1.124	.107	.005	.027			
Aug. 21-31	1,971								.948	.477	.235	.038	.410	1.103	.138	.005	.027			
Sept. 1-10	1,414								1.198	.625	.335	.046	.229	1.728	.155	.005	.026			
Sept. 11-20	5,731								1.098	.534	.348	.033	.361	1.416	.175	.005	.031			
Sept. 21-30	11,280								.649	.288	.139	.026	.066	.895	.071	.005	.013			
Average	12,210								0.749	0.387	0.183	0.031	0.131	1.083	0.102	0.005	0.023			

Temperature (° F.) of water of West Branch Susquehanna River, water year October 1944 to September 1945

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

SUSQUEHANNA RIVER BASIN—Continued

JUNIATA RIVER AT NEWPORT, PA.

LOCATION.—At highway bridge, 230 feet from west bank of river.
DRAINAGE AREA.—3,354 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Water temperatures: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 282 parts per million Oct. 1–10; minimum, 78 parts per million Mar. 1–10.
Total hardness: Maximum, 167 parts per million Oct. 1–10; minimum, 52 parts per million Mar. 1–10.
Water temperatures: Maximum, 83° F. July 2, 26; minimum, freezing point on many days in December, January, and February.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1031.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Oct. 1-10, 1944	649	59	37	7.6	44.4	4.8	0.12	-------	44	14	30	2.7	130	92	15	0.2	1.2	282	167	61
Oct. 11-20	689	55	40	7.6	41.5	2.6	.11	0.0	40	13	26	2.8	124	92	13	.2	1.4	252	153	52
Oct. 21-31	2,163	46	30	7.2	32.1	4.0	.14	.0	34	10	14	3.2	89	69	7.8	.2	2.8	195	126	53
Nov. 1-10	684	49	40	7.3	35.5	5.8	.13	.1	34	9.4	23	3.0	96	78	10	.1	2.4	221	124	45
Nov. 11-20	625	45	37	7.5	38.9	5.2	.16	.0	36	10	27	2.9	109	82	12	.1	1.8	243	131	42
Nov. 21-30	760	38	85	7.4	38.6	5.6	.35	.0	38	11	27	2.0	122	76	13	.5	2.0	243	140	40
Dec. 1-10	1,434	33	55	7.4	29.6	6.6	.24	.0	31	8.7	17	2.2	98	54	9.5	.4	2.4	184	113	33
Dec. 11-20	2,368	33	35	7.4	25.2	6.0	.16	.0	28	7.6	12	2.2	75	49	7.0	.3	3.8	155	101	40
Dec. 21-31	1,833	32	40	7.2	28.1	5.8	.14	.0	31	8.8	14	2.3	88	56	8.2	.2	4.1	180	114	41
Jan. 1-10, 1945	2,480	32	20	7.1	20.8	5.6	.08	.0	25	6.3	8.3	1.4	60	45	5.0	.1	6.0	129	88	39
Jan. 11-20	1,610	32	25	7.1	25.9	5.6	.13	.0	29	7.4	11	1.2	72	51	7.5	.1	5.1	162	103	44
Jan. 21-31	1,441	32	35	7.1	29.7	4.0	.08	-------	30	8.0	17	2.2	79	65	9.0	.1	4.3	184	108	43
Feb. 1-10	1,410	32	33	6.9	30.5	4.2	.14	-------	32	8.5	18	1.8	88	63	9.0	.2	5.1	192	115	43
Feb. 11-20	7,332	32	30	6.9	20.8	5.8	.14	-------	24	6.1	9.6	1.6	62	42	6.0	.2	6.9	137	85	34
Feb. 21-28	12,190	35	23	7.0	15.0	6.2	.14	-------	19	4.3	4.7	.9	42	27	3.5	.2	6.7	96	65	31
Mar. 1-10	21,940	41	30	7.2	12.4	6.0	.19	.0	15	3.5	3.3	1.2	34	22	2.5	.1	4.9	78	52	24
Mar. 11-20	8,111	47	9	7.0	15.4	5.6	.06	.0	18	4.7	4.3	.9	47	26	3.5	.1	4.6	94	64	26
Mar. 21-31	9,642	54	20	7.1	15.1	6.3	.16	.0	18	4.8	3.7	1.0	49	24	3.1	.1	4.1	95	65	24

Apr. 1-10	8, 784	56	20	7.1	15.5	6.7	.16	.0	18	4.7	4.7	1.3	53	25	3.2	.1	3.3	94	64	21
Apr. 11-20	5, 278	58	25	7.2	16.6	4.6	.07	.0	19	5.0	5.0	1.2	56	28	3.6	.1	3.1	98	68	22
Apr. 21-30	7, 566	53	20	7.2	15.2	5.8	.10		18	4.8	4.7	.6	48	26	3.0	.1	2.8	92	65	25
May 1-10	6, 406	53	13	7.3	15.1	4.7	.08	.0	17	4.4	5.0	1.2	50	25	3.4	.1	2.8	89	60	20
May 11-20	11, 140	57	22	7.1	15.0	5.4	.11	.0	17	4.3	5.0	1.0	50	25	2.9	.1	2.5	91	60	19
May 21-31	6, 565	61	24	7.2	16.4	5.8	.08	.0	19	4.7	5.4	1.2	57	26	3.0	.1	2.9	99	67	20
June 1-10	3, 622	62	16	7.3	19.8	5.2	.08	.0	23	5.8	7.2	1.4	69	32	3.9	.1	3.6	117	81	25
June 11-20	2, 839	74	18	7.3	22.5	3.8	.06	.0	27	6.9	7.5	1.7	78	37	5.2	.2	2.8	138	96	32
June 21-30	2, 345	78	19	7.4	24.1	3.8	.06	.0	28	7.4	9.3	1.5	84	41	5.5	.2	2.5	146	100	31
July 1-10	1, 315	78	18	7.5	26.8	2.8	.04	.0	31	8.5	9.0	2.3	102	39	7.1	.1	2.5	157	112	29
July 11-20	1, 170	74	20	7.6	29.6	2.0	.02	.0	33	9.4	12	1.4	102	47	8.5	.2	2.3	173	121	37
July 21-31	1, 607	78	30	7.4	29.8	4.4	.12	.0	32	9.0	15	2.0	102	49	8.6	.1	2.6	177	117	33
Aug. 1-10	2, 999	78	26	7.2	24.6	4.8	.05	.0	28	7.6	8.7	2.2	83	41	5.1	.2	4.2	151	101	33
Aug. 11-20	1, 053	78	28	7.2	27.8	2.8	.02	.0	30	8.0	14	2.0	96	47	8.1	.2	2.0	165	108	29
Aug. 21-31	2, 108	73	65	7.2	28.1	2.4	.12	.0	30	8.9	13	2.8	96	47	7.8	.2	1.7	169	111	33
Sept. 1-10	1, 206	78	10	7.4	27.8	3.6	.04	.0	30	8.8	12	2.3	94	46	8.0	.1	2.4	166	111	34
Sept. 11-20	5, 656	68	33	7.1	28.2	2.8	.08	.0	30	8.1	12	2.3	90	44	9.0	.1	2.4	159	108	34
Sept. 21-30	6, 253	66		7.0	19.7	8.8	.14	.0	23	5.5	5.0	2.2	64	31	3.9	.1	4.4	116	80	28
Average	4, 257	54	29	7.2	25.1	4.9	0.11	0.0	27	7.4	11	1.8	79	46	6.8	0.2	3.3	153	98	33

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	649								2.196	1.151	1.304	0.069	2.131	1.915	0.423	0.011	0.019			
Oct. 11-20	689								1.997	1.069	1.131	.072	2.032	1.915	.367	.011	.023			
Oct. 21-31	2, 163								1.697	.822	.609	.082	1.459	1.436	.220	.011	.045			
Nov. 1-10	684								1.697	.773	1.000	.077	1.573	1.624	.282	.005	.039			
Nov. 11-20	625								1.797	.822	1.174	.074	1.787	1.707	.338	.005	.029			
Nov. 21-30	760								1.897	.905	1.174	.051	2.000	1.582	.367	.026	.032			
Dec. 1-10	1, 434								1.547	.715	.739	.056	1.606	1.124	.268	.021	.039			
Dec. 11-20	2, 368								1.398	.625	.522	.056	1.229	1.020	.197	.016	.061			
Dec. 21-31	1, 833								1.547	.724	.609	.059	1.442	1.166	.231	.011	.066			
Jan. 1-10, 1945	2, 480								1.248	.518	.361	.036	.984	.937	.141	.005	.097			
Jan. 11-20	1, 610								1.448	.609	.478	.031	1.180	1.062	.212	.005	.082			
Jan. 21-31	1, 441								1.497	.658	.739	.056	1.295	1.353	.254	.005	.069			
Feb. 1-10	1, 410								1.597	.699	.783	.046	1.442	1.312	.254	.011	.082			
Feb. 11-20	7, 332								1.198	.502	.417	.041	1.016	.874	.169	.011	.111			
Feb. 21-28	12, 190								.948	.354	.204	.023	.688	.562	.099	.011	.108			
Mar. 1-10	21, 940								.749	.288	.144	.031	.557	.458	.071	.005	.079			
Mar. 11-20	8, 111								.898	.387	.187	.023	.770	.541	.099	.005	.074			
Mar. 21-31	9, 642								.898	.395	.161	.026	.803	.500	.087	.005	.066			

SUSQUEHANNA RIVER BASIN—Continued

JUNIATA RIVER AT NEWPORT, PA.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Apr. 1-10	8,784								.898	.387	.204	.033	.869	.520	.090	.005	.053			
Apr. 11-20	5,278								.948	.411	.217	.031	.918	.583	.102	.005	.050			
Apr. 21-30	7,566								.898	.395	.204	.015	.787	.541	.085	.005	.045			
May 1-10	6,406								.848	.362	.217	.031	.819	.521	.096	.005	.045			
May 11-20	11,140								.848	.354	.217	.026	.819	.521	.082	.005	.040			
May 21-31	6,565								.948	.386	.235	.031	.934	.541	.085	.005	.047			
June 1-10	3,622								1.148	.477	.313	.036	1.131	.666	.111	.005	.058			
June 11-20	2,839								1.347	.567	.326	.044	1.278	.770	.147	.011	.045			
June 21-30	2,345								1.397	.609	.404	.038	1.377	.854	.155	.011	.040			
July 1-10	1,315								1.547	.699	.391	.059	1.672	.812	.200	.005	.040			
July 11-20	1,170								1.647	.773	.522	.036	1.672	.979	.240	.011	.037			
July 21-31	1,607								1.597	.740	.652	.051	1.672	1.020	.243	.005	.042			
Aug. 1-10	2,999								1.397	.625	.378	.056	1.360	.854	.144	.011	.068			
Aug. 11-20	1,053								1.497	.658	.609	.051	1.573	.979	.228	.011	.032			
Aug. 21-31	2,108								1.497	.732	.565	.072	1.573	.979	.220	.011	.027			
Sept. 1-10	1,206								1.497	.724	.522	.059	1.541	.958	.226	.005	.039			
Sept. 11-20	5,656								1.497	.666	.522	.059	1.475	.916	.254	.005	.039			
Sept. 21-30	6,253								1.148	.452	.217	.056	1.049	.645	.111	.005	.071			
Average	4,257								1.347	0.609	0.478	0.046	1.295	0.958	0.192	0.011	0.053			

Temperature (° F.) of water of Juniata River, water year October 1944 to September 1945

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

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA

Chemical analyses, in parts per million

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Susquehanna River at Towanda																						
Mar. 28, 1945	26,000	53	6	6.6	13.0	3.4	-------	0.01	0.0	17	3.2	3.5		44	18	3.4	0.1	4.2	78	56	20	-------
Susquehanna River at Wilkes-Barre																						
Apr. 4, 1945	22,900	53	5	7.1	16.1	3.7	-------	0.01	0.0	20	5.1	3.0		40	37	2.6	0.1	2.8	94	71	38	-------
Susquehanna River at Sunbury																						
Mar. 16, 1945	76,900	46	4	6.8	11.6	4.3	-------	0.03	0.0	13	3.6	2.8		16	33	2.5	0.1	2.6	69	47	34	-------
Susquehanna River at Marietta																						
May 31, 1945	53,500	64	5	7.1	22.1	4.4	-------	0.02	0.0	24	7.7	5.4		32	67	3.2	0.2	2.8	131	92	65	-------
Towanda Creek near Monroeton																						
Mar. 28, 1945	420	55	8	6.7	6.32	3.7	-------	0.03	0.0	7.4	1.7	2.2		14	15	1.2	0.1	1.5	38	25	14	-------
North Branch Mehoopany Creek near Lovelton																						
Mar. 29, 1945	68.2	52	11	7.0	5.74	3.7	-------	0.02	0.0	7.0	1.4	1.9		16	12	0.8	0.1	0.3	36	23	10	-------

Tunkhannock Creek at Dixon																						
Mar. 29, 1945	695	55	9	7.2	8.18	3.0	-------	0.01	0.0	11	1.5	2.6		22	16	1.8	0.1	2.2	49	34	16	-------
Lackawanna River at Archbald																						
Mar. 31, 1945	199	51	3	4.00	31.3	6.0	2.0	0.04	1.1	21	14	2.6	1.4	0	126	1.4	0.1	0.4	188	128	128	28
Toby Creek at Luzerne																						
Apr. 3, 1945	265	53	27	6.2	7.51	3.7	-------	0.01	0.0	8.4	1.7	3.0		14	16	2.1	0.1	3.9	51	28	16	-------
Solomon Creek at Wilkes-Barre																						
Apr. 3, 1945	20.3	61	4	3.00	123	19	18	2.8	3.8	77	45	13	1.9	0	542	6.5	0.2	0.4	760	548	548	188
Wapwallopen Creek at Wapwallopen																						
Apr. 1, 1945	61.9	50	12	6.6	4.40	4.7	-------	0.03	0.0	4.0	1.4	2.3		8	11	1.4	0.1	0.7	30	16	9	-------
Fishing Creek at Bloomsburg																						
Mar. 22, 1945	3,400	45	17	5.9	3.93	3.6	-------	0.02	0.0	3.6	1.1	1.9		6	8.7	0.9	0.1	2.6	29	14	9	-------
Little Fishing Creek at Eyers Grove																						
Apr. 1, 1945	71.4	55	22	6.7	4.72	4.9	-------	0.15	0.0	4.8	1.5	3.1		12	8.6	1.5	0.1	4.7	34	18	8	-------
West Branch Susquehanna River at Barnesboro																						
Sept. 10, 1945	12.1	76	15	2.70	276	31	31	70	6.0	176	58	162		0	1,450	5.0	-------	1.0	-------	1,170	1,170	632

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10^5 at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
West Branch Susquehanna River at McGhees Mill																						
Sept. 11, 1945	-------	------	2	3.40	110	9.5	6.9	1.0	1.6	108	33	47		0	544	4.5	-------	0.9	780	471	471	82
West Branch Susquehanna River at Bower																						
Apr. 16, 1945	454	54	1	4.20	36.4	7.6	2.6	0.03	0.4	33	11	9.0	1.2	0	153	2.0	0.1	1.4	233	146	146	22
Sept. 11	-------	------	2	3.65	57.3	6.0	3.7	.45	0.8	48	16	12		0	228	6.0	-------	1.0	353	220	220	45
West Branch Susquehanna River near Coudley																						
Sept. 10, 1945	-------	75	2	3.50	46.4	6.0	3.2	0.20	1.4	33	11	8.0		0	170	3.2	-------	1.0	244	165	165	46
West Branch Susquehanna River at Karthaus																						
Apr. 17, 1945	2,490	56	2	3.60	33.3	6.8	2.8	0.07	0.4	22	7.6	4.8	1.0	0	114	1.4	0.1	1.0	167	116	116	35
West Branch Susquehanna River at Renovo																						
Apr. 18, 1945	4,960	55	3	4.25	13.4	4.8	1.0	0.02	0.2	9.0	3.1	2.8	1.4	0	45	3.4	0.1	0.3	74	44	44	15
West Branch Susquehanna River at Lock Haven																						
Sept. 10, 1945	-------	77	2	3.40	43.9	6.0	3.7	0.40	1.2	30	10	(1)		0	143	8.0	-------	1.2	215	161	161	49

West Branch Susquehanna River at Williamsport																					
Mar. 22, 1945	55,000	44	5	6.1	5.83	4.6	-------	0.04	0.0	5.8	1.8	2.2		7	17	1.1	0.1	1.6	39	22	16	-------
Chest Creek at Mahaffey																					
Sept. 11, 1945	23.6	70	12	6.8	30.2	5.4	-------	0.06	-------	35	10	5.8		25	101	10	0.1	1.3	192	128	108	-------
Anderson Creek at Curwensville																					
Sept. 11, 1945	16.5	72	4	3.85	17.0	4.6	2.1	0.24	0.8	8.8	3.1	(1)		0	53	1.0	-------	0.6	84	56	56	25
Clearfield Creek at Ashville																					
Sept. 10, 1945	19.6	68	4	3.35	76.5	16	8.7	0.16	1.2	62	23	13		0	334	2.8	-------	1.4	490	325	325	88
Clearfield Creek at Faunce																					
Sept. 11, 1945	-------	74	3	3.35	52.8	10	4.2	0.35	1.4	38	14	(1)		0	191	3.0	-------	1.2	284	204	204	58
Clearfield Creek at Dimeling																					
Apr. 16, 1945	568	55	3	3.50	34.7	7.5	3.0	0.18	0.6	19	7.1	2.6	1.1	0	113	2.0	0.2	0.8	162	111	111	44
Clearfield Creek near Clearfield																					
Sept. 11, 1945	-------	75	2	3.50	36.3	6.4	2.3	0.44	1.0	24	8.6	1.9		0	123	1.8	-------	1.2	183	127	127	40
Little Clearfield Creek at Dimeling																					
Sept. 11, 1945	10.9	72	25	6.1	12.0	4.7	-------	0.13	-------	14	4.0	(1)		22	31	1.4	0.1	1.1	76	51	33	-------

[1] Less than 5 parts per million.

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Moshannon Creek at Osceola Mills																						
Apr. 16, 1945	116	50	4	2.95	78.8	9.8	7.9	2.3	1.6	30	13	1.7	1.4	0	236	1.4	0.2	0.4	349	245	245	126
Moshannon Creek above Black Moshannon Creek near Moshannon																						
Sept. 11, 1945	------	73	3	2.85	123	14	8.5	15	2.8	53	20	8.0		0	380	6.0	------	1.2	573	388	388	226
Moshannon Creek below Black Moshannon Creek near Moshannon																						
Sept. 11, 1945	90.1	73	8	2.85	115	14	10	16	2.8	48	19	20		0	402	4.0	------	1.3	577	382	382	220
Black Moshannon Creek at junction with Moshannon Creek near Moshannon																						
Sept. 11, 1945	11.1	72	17	6.2	3.57	2.5	------	0.10	------	4.2	1.3	(1)		6	9.1	0.8	0.1	0.3	25	16	11	------
Mosquito Creek at Karthaus																						
Sept. 12, 1945	4.5	59	12	4.45	11.6	1.8	0.8	0.04	0.2	9.9	3.5	(1)		0	43	1.2	------	0.2	66	45	45	10
Driftwood Branch Sinnemahoning Creek at Emporium																						
Sept. 12, 1945	10.8	70	35	6.3	37.4	4.0	------	0.02	------	20	2.0	46		36	17	75	0.1	5.5	212	58	29	------

Driftwood Branch Sinnemahoning Creek at Sterling Run																				
Apr. 17, 1945	348	57	8	6.8	5.89	3.4	-------	0.04	0.0	6.0	1.8	2.2	10	15	2.2	0.0	0.4	36	22	14	-------
Sept. 12	-------	68	7	6.5	11.4	2.9	-------	.01	-------	10	2.3	7.5	20	18	9.5	.1	2.4	68	34	18	-------
Sinnemahoning Creek at Sinnemahoning																				
May 23, 1945	1,490	58	5	7.3	5.94	3.4	-------	0.05	0.0	5.8	1.8	2.3	6	18	1.8	0.1	0.4	35	22	17	-------
Sept. 12	-------	70	5	3.70	38.0	10	7.1	.30	1.2	26	10	(1)	0	141	8.0	-------	1.0	223	159	159	64
Sinnemahoning Creek at Keating																				
Sept. 12, 1945	-------	71	2	4.5	19.8	6.0	3.0	0.08	0.6	16	6.2	1.0	0	76	4.2	-------	0.8	124	83	83	22
West Creek at Emporium																				
Sept. 12, 1945	5.2	71	8	6.4	9.94	5.1	-------	0.02	-------	9.6	2.8	3.2	7	29	4.2	0.1	0.4	63	35	30	-------
Sinnemahoning Portage Creek at Emporium Junction																				
Sept. 12, 1945	4.1	72	7	7.0	9.86	3.4	-------	0.02	-------	10	2.4	5.1	24	14	7.9	0.1	0.3	58	35	15	-------
Bennett Branch Sinnemahoning Creek at Penfield																				
Sept. 12, 1945	3.2	62	18	6.9	11.8	6.0	-------	0.14	-------	13	3.3	5.6	41	15	6.0	0.1	0.3	71	46	12	-------
Bennett Branch Sinnemahoning Creek at Driftwood																				
Sept. 12, 1945	-------	65	6	3.20	63.6	14	12	1.3	1.8	28	13	1.2	0	223	1.8	-------	0.6	321	233	233	108
First Fork at Sinnemahoning																				
Sept. 13, 1945	20.7	63	8	6.8	6.97	1.5	-------	0.01	-------	7.4	2.2	3.3	24	10	3.0	0.1	0.2	41	28	8	-------

[1] Less than 5 parts per million.

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Kettle Creek near Cross Forks																						
Apr. 18, 1945	142	47	9	6.6	4.12	2.8	-------	0.03	0.0	4.6	1.3	1.9		14	7.1	0.8	0.1	1.0	25	17	5	-------
Young Womans Creek near Renovo																						
Sept. 13, 1945	6.2	61	18	6.4	21.3	3.6	-------	0.01	-------	15	1.3	25		34	17	34	0.1	5.2	119	43	15	-------
North Bald Eagle Creek at Port Matilda																						
Sept. 11, 1945	5.5	73	14	7.1	14.2	5.5	-------	0.02	-------	17	4.9	2.9		52	21	2.5	0.1	0.8	86	63	20	-------
North Bald Eagle Creek at Beach Creek Station																						
Apr. 18, 1945	903	55	8	7.6	19.9	4.5	-------	0.03	0.0	26	8.2	2.3		96	17	2.8	0.0	4.1	112	99	20	-------
Spring Creek near Axemann																						
Apr. 18, 1945	115	53	7	7.8	33.7	3.8	-------	0.05	0.0	45	16	1.3		190	13	2.8	0.0	9.6	182	178	22	-------
Beech Creek at Beech Creek																						
Sept. 13, 1945	23.6	66	7	5.0	12.0	5.0	-------	0.01	-------	12	4.1	1.8		2	44	2.2	0.0	0.2	80	47	45	-------

Pine Creek at Cedar Run																					
Mar. 27, 1945	2,240	49	10	6.5	5.80	4.3	-------	0.14	0.1	6.0	1.6	2.1	8	16	1.4	0.1	1.0	38	22	15	-------
Little Pine Creek at Waterville																					
Sept. 13, 1945	14.0	75	3	6.8	4.81	3.1	-------	0.01	-------	6.2	1.2	2.1	18	7.4	1.5	0.1	0.3	28	20	6	-------
Blockhouse Creek near English Center																					
Mar. 27, 1945	127	48	6	6.6	4.84	4.4	-------	0.02	0.0	5.6	1.0	1.6	10	10	1.0	0.1	1.6	31	18	10	-------
Lycoming Creek near Trout Run																					
Mar. 27, 1945	572	49	4	6.5	4.39	3.6	-------	0.01	0.0	4.6	1.2	2.6	10	11	1.0	0.0	1.4	29	16	8	-------
Loyalsock Creek at Loyalsock																					
Mar. 28, 1945	1,360	49	5	6.7	4.11	3.2	-------	0.01	0.0	4.5	1.0	1.4	7	10	1.0	0.0	0.9	28	15	10	-------
Muncy Creek at Sonestown																					
Mar. 28, 1945	67.8	50	8	6.4	3.51	3.8	-------	0.01	0.0	4.0	0.8	1.7	7	8.4	0.8	0.1	1.4	24	13	8	-------
Muncy Creek near Muncy																					
Sept. 14, 1945	154.0	65	6	6.7	6.70	4.1	-------	0.01	-------	8.4	2.0	(1)	19	9.3	2.1	0.1	3.0	41	29	14	-------
White Deer Creek at White Deer																					
Sept. 14, 1945	26.5	64	18	6.7	3.75	3.7	-------	0.02	-------	4.5	1.5	(1)	17	3.3	0.9	0.1	0.4	26	17	3	-------

[1] Less than five parts per million.

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Shamokin Creek at Weigh Scale																						
Mar. 16, 1945	141	55	5	2.75	210	20	19	8.3	10	148	82	8.6	2.1	0	994	3.2	0.2	0.3	1,430	957	957	276
Penn Creek at Penns Creek																						
Mar. 15, 1945	1,000	44	10	7.5	13.9	4.9	------	0.05	0.0	21	3.1	2.2		66	11	1.2	0.0	3.4	81	65	11	------
Mahantango Creek East near Dalmatia																						
Mar. 16, 1945	269	55	1	4.30	11.8	5.9	0.4	0.03	0.3	7.0	4.6	2.2	0.9	0	35	1.6	0.1	5.4	65	41	41	8
Frankstown Branch Juniata River at Williamsburg																						
Apr. 17, 1945	550	56	7	7.4	22.6	4.9	------	0.02	------	24	8.9	5.3	1.2	70	36	6.5	0.1	4.9	130	96	39	------
Frankstown Branch Juniata River at Huntingdon																						
May 17, 1945	1,860	64	20	7.3	20.2	4.7	------	0.03	0.0	24	6.5	6.1		77	24	5.9	0.2	3.7	113	87	24	------
Little Juniata River at Spruce Creek																						
Apr. 17, 1945	353	54	60	7.2	22.9	5.0	------	0.03	------	24	6.6	12	1.3	78	27	15	0.2	1.9	136	87	23	------

Little Bald Eagle Creek at Tyrone																					
Apr. 17, 1945	116	54	45	6.7	14.0	5.0	-------	0.01	-------	13	2.9	9.0	1.1	26	19	17	0.2	0.2	88	44	23	-------
Standing Stone Creek near Huntingdon																					
May 17, 1945	502	61	31	7.1	8.46	5.6	-------	0.10	0.0	10	2.9	2.5		34	11	1.2	0.2	0.8	55	37	9	-------
Raystown Branch Juniata River at Saxton																					
Apr. 19, 1945	1,460	50	27	7.3	11.8	6.7	-------	0.13	0.0	14	4.0	2.4		40	19	1.6	0.1	2.0	75	51	19	-------
Dunning Creek at Belden																					
Apr. 19, 1945	211	51	9	7.4	11.3	5.8	-------	0.03	0.0	14	3.8	2.4		39	18	1.8	0.1	2.9	67	51	19	-------
Brush Creek at Gapsville																					
Apr. 19, 1945	88.3	49	8	6.5	2.72	4.7	-------	0.06	0.0	3.2	0.9	1.4		9	5.3	1.1	0.0	0.4	21	12	4	-------
Great Trough Creek near Marklesburg																					
Apr. 18, 1945	268	51	6	3.95	14.9	5.9	1.1	0.11	0.2	9.2	3.2	1.7	1.0	0	47	0.6	0.1	0.6	74	48	48	18
Aughwick Creek near Three Springs																					
May 18, 1945	2,680	59	38	------	5.09	5.7	-------	0.04	0.0	6.0	1.5	1.1		14	9.4	0.9	0.2	0.6	45	21	10	-------
Kishacoquillas Creek at Reedsville																					
May 28, 1945	490	58	10	7.9	17.7	6.9	-------	0.05	0.0	24	5.7	3.2		85	11	3.0	0.1	5.8	100	83	14	-------

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$		Total acidity as H_2SO_4
																				Total	Noncarbonate	
Tuscarora Creek near Port Royal																						
May 28, 1945	250	61	10	7.9	11.6	5.6	-------	0.04	0.0	16	3.6	1.9		53	11	1.5	0.1	1.9	67	55	11	-------
Cocolamus Creek near Millerstown																						
May 29, 1945	670	54	18	------	5.69	5.3	-------	0.03	0.0	6.0	1.6	2.4		16	9.3	1.2	0.2	2.2	41	22	8	-------
Sherman Creek at Shermandale																						
Mar. 23, 1945	638	44	15	7.3	9.94	6.5	-------	0.10	0.0	14	2.4	1.4		40	10	1.4	0.1	3.1	61	45	12	-------
Clarks Creek near Carsonville																						
Mar. 20, 1945	6.4	44	7	6.0	2.55	4.1	-------	0.04	0.0	2.5	0.6	2.5		9	4.8	1.1	0.0	0.2	19	9	1	-------
Stony Creek near Dauphin																						
Mar. 20, 1945	75.8	52	10	6.5	2.40	4.9	-------	0.02	0.0	2.2	0.8	2.1		7	5.5	1.2	0.0	0.2	20	9	3	-------
Conodoguinet Creek at Hogestown																						
Mar. 23, 1945	916	47	25	7.4	19.5	9.8	-------	0.24	0.0	28	5.1	3.7		88	16	2.9	0.1	7.1	120	91	19	-------

Paxton Creek near Pembrook																					
Mar. 21, 1945	11.0	58	20	7.1	15.0	9.0	-------	0.01	0.0	19	3.8	5.7	52	23	2.6	0.2	5.5	95	63	20	-------
Yellow Breeches Creek at Olmstead Mill																					
May 31, 1945	670	60	12	7.7	15.4	8.0	-------	0.05	0.0	20	5.3	2.8	73	11	2.1	0.1	4.1	88	72	12	-------
Swatara Creek at Harper Tavern																					
Mar. 21, 1945	930	56	10	6.5	11.1	6.3	-------	0.06	0.0	11	3.7	4.0	23	24	3.0	0.0	4.0	70	43	24	-------
West Conewago Creek near Manchester																					
Mar. 22, 1945	704	53	8	7.5	14.2	10	-------	0.04	0.0	16	4.4	4.1	48	17	3.9	0.1	5.2	87	58	19	-------
Codorus Creek near York																					
Mar. 22, 1945	321	53	35	6.7	19.0	5.3	-------	0.02	0.0	18	4.5	13	66	14	12	0.1	7.2	114	63	9	-------
South Branch Codorus Creek at York																					
Mar. 22, 1945	196	53	10	6.3	9.76	3.4	-------	0.02	0.0	8.3	2.9	4.8	21	8.9	5.5	0.0	11	64	33	15	-------
Conestoga Creek at Lancaster																					
Apr. 2, 1945	407	58	13	6.3	30.8	4.6	-------	0.38	0.0	41	7.3	14	153	18	5.0	0.0	15	184	132	7	-------

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$		Total acidity as H_2SO_4
																				Total	Noncarbonate	
Susquehanna River at Towanda																						
Mar. 28, 1945	26,000	------	------	------	------	------	------	------	------	0.848	0.263	0.154		0.721	0.375	0.096	0.005	0.068	------	------	------	------
Susquehanna River at Wilkes-Barre																						
Apr. 4, 1945	22,900	------	------	------	------	------	------	------	------	0.998	0.419	0.132		0.656	0.770	0.073	0.005	0.045	------	------	------	------
Susquehanna River at Sunbury																						
Mar. 16, 1945	76,900	------	------	------	------	------	------	------	------	0.649	0.296	0.122		0.262	0.687	0.071	0.005	0.042	------	------	------	------
Susquehanna River at Marietta																						
May 31, 1945	53,500	------	------	------	------	------	------	------	------	1.198	0.633	0.234		0.524	1.395	0.090	0.011	0.045	------	------	------	------
Towanda Creek near Monroeton																						
Mar. 28, 1945	420	------	------	------	------	------	------	------	------	0.369	0.140	0.096		0.230	0.312	0.034	0.005	0.024	------	------	------	------
North Branch Mehoopany Creek near Lovelton																						
Mar. 29, 1945	68.2	------	------	------	------	------	------	------	------	0.349	0.115	0.081		0.262	0.250	0.023	0.005	0.005	------	------	------	------

Tunkhannock Creek at Dixon

Mar. 29, 1945	695	-----	-----	-----	-----	-----	-----	-----	-----	0.549	0.123	0.113		0.361	0.333	0.051	0.005	0.035	-----	-----	-----	-----

Lackawanna River at Archbald

Mar. 31, 1945	199	-----	-----	-----	-----	-----	0.222	0.002	0.040	1.048	1.151	0.113	0.036	0.000	2.623	0.039	0.005	0.006	-----	-----	-----	-----

Toby Creek at Luzerne

Apr. 3, 1945	265	-----	-----	-----	-----	-----	-----	-----	-----	0.419	0.140	0.131		0.230	0.333	0.059	0.005	0.063	-----	-----	-----	-----

Solomon Creek at Wilkes-Barre

Apr. 3, 1945	20.3	-----	-----	-----	-----	-----	2.002	0.150	0.138	3.843	3.701	0.565	0.049	0.000	11.284	0.183	0.011	0.006	-----	-----	-----	-----

Wapwallopen Creek at Wapwallopen

Apr. 1, 1945	61.9	-----	-----	-----	-----	-----	-----	-----	-----	0.200	0.115	0.100		0.131	0.229	0.039	0.005	0.011	-----	-----	-----	-----

Fishing Creek at Bloomsburg

Mar. 22, 1945	3,400	-----	-----	-----	-----	-----	-----	-----	-----	0.180	0.090	0.081		0.098	0.181	0.025	0.005	0.042	-----	-----	-----	-----

Little Fishing Creek at Eyers Grove

Apr. 1, 1945	71.4	-----	-----	-----	-----	-----	-----	-----	-----	0.240	0.123	0.136		0.197	0.179	0.042	0.005	0.076	-----	-----	-----	-----

West Branch Susquehanna River at Barnesboro

Sept. 10, 1945	12.1	-----	-----	-----	-----	-----	3.448	3.760	0.218	8.782	4.770	7.023		0.000	30.189	0.141	-----	0.016	-----	-----	-----	-----

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	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	Hardness as $CaCO_3$		Total acidity as H_2SO_4
																				Total	Noncarbonate	
West Branch Susquehanna River at McGhees Mill																						
Sept. 11, 1945	-------	-------	-------	-------	-------	-------	0.768	0.054	0.058	5.389	2.714	2.057		0.000	11.326	0.127	-------	0.015	-------	-------	-------	-------
West Branch Susquehanna River at Bower																						
Apr. 16, 1945	454	-------	-------	-------	-------	-------	0.289	0.002	0.015	1.647	0.905	0.391	0.031	0.000	3.185	0.056	0.005	0.023	-------	-------	-------	-------
Sept. 11, 1945	-------	-------	-------	-------	-------	-------	.412	.024	.029	2.395	1.136	0.532		.000	4.747	.169	-------	.016	-------	-------	-------	-------
West Branch Susquehanna River near Coudley																						
Sept. 10, 1945	-------	-------	-------	-------	-------	-------	0.356	0.011	0.051	1.647	0.905	0.349		0.000	3.539	0.090	-------	0.016	-------	-------	-------	-------
West Branch Susquehanna River at Karthaus																						
Apr. 17, 1945	2,490	-------	-------	-------	-------	-------	0.312	0.004	0.015	1.098	0.625	0.209	0.026	0.000	2.373	0.039	0.005	0.016	-------	-------	-------	-------
West Branch Susquehanna River at Renovo																						
Apr. 18, 1945	4,960	-------	-------	-------	-------	-------	0.111	0.001	0.007	0.449	0.255	0.122	0.036	0.000	0.937	0.096	0.005	0.005	-------	-------	-------	-------
West Branch Susquehanna River at Lock Haven																						
Sept. 10, 1945	-------	-------	-------	-------	-------	-------	0.412	0.021	0.044	1.497	0.822	-------------		0.000	2.977	0.226	-------	0.019	-------	-------	-------	-------

West Branch Susquehanna River at Williamsport																						
Mar. 22, 1945	55,000	------	------	------	------	------	------	------	------	0.289	0.148	0.094		0.115	0.354	0.031	0.005	0.026	------	------	------	------
Chest Creek at Mahaffey																						
Sept. 11, 1945	23.6	------	------	------	------	------	------	------	------	1.747	0.822	0.252		0.410	2.103	0.282	0.005	0.021	------	------	------	------
Anderson Creek at Curwensville																						
Sept. 11, 1945	16.5	------	------	------	------	------	0.234	0.013	0.029	0.439	0.255	------		0.000	1.103	0.028	------	0.010	------	------	------	------
Clearfield Creek at Ashville																						
Sept. 10, 1945	19.6	------	------	------	------	------	0.968	0.009	0.044	3.094	1.891	0.561		0.000	6.954	0.079	------	0.023	------	------	------	------
Clearfield Creek at Faunce																						
Sept. 11, 1945	------	------	------	------	------	------	0.467	0.019	0.051	1.896	1.151	------		0.000	3.977	0.085	------	0.019	------	------	------	------
Clearfield Creek at Dimeling																						
Apr. 16, 1945	568	------	------	------	------	------	0.334	0.010	0.022	0.948	0.584	0.113	0.028	0.000	2.353	0.056	0.011	0.013	------	------	------	------
Clearfield Creek near Clearfield																						
Sept. 11, 1945	------	------	------	------	------	------	0.256	0.024	0.036	1.198	0.707	0.084		0.000	2.561	0.051	------	0.019	------	------	------	------
Little Clearfield Creek at Dimeling																						
Sept. 11, 1945	10.9	------	------	------	------	------	------	------	------	0.699	0.329	------		0.361	0.645	0.040	0.005	0.018	------	------	------	------

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Moshannon Creek at Osceola Mills																						
Apr. 16, 1945	116	------	------	------	------	------	0.879	0.124	0.058	1.497	1.069	0.074	0.036	0.000	4.913	0.039	0.011	0.006	------	------	------	------
Moshannon Creek above Black Moshannon Creek near Moshannon																						
Sept. 11, 1945	------	------	------	------	------	------	0.945	0.806	0.102	2.645	1.645	0.346		0.000	7.912	0.169	------	0.019	------	------	------	------
Moshannon Creek below Black Moshannon Creek near Moshannon																						
Sept. 11, 1945	90.1	------	------	------	------	------	1.112	0.859	0.102	2.395	1.562	0.863		0.000	8.370	0.113	------	0.021	------	------	------	------
Black Moshannon Creek at junction with Moshannon Creek near Moshannon																						
Sept. 11, 1945	11.1	------	------	------	------	------	------	------	------	0.210	0.107	------		0.098	0.190	0.023	0.005	0.005	------	------	------	------
Mosquito Creek at Karthaus																						
Sept. 12, 1945	4.5	------	------	------	------	------	0.089	0.002	0.007	0.494	0.288	------		0.000	0.895	0.034	------	0.003	------	------	------	------
Driftwood Branch Sinnemahoning Creek at Emporium																						
Sept. 12, 1945	10.8	------	------	------	------	------	------	------	------	0.998	0.164	1.991		0.590	0.354	2.115	0.005	0.089	------	------	------	------

Driftwood Branch Sinnemahoning Creek at Sterling Run

Apr. 17, 1945	348									0.299	0.148	0.097	0.164	0.312	0.062	0.000	0.006				
Sept. 12										.499	.189	.327	.328	.375	.268	.005	.039				

Sinnemahoning Creek at Sinnemahoning

May 23, 1945	1,490									0.289	0.148	0.098	0.098	0.375	0.051	0.005	0.006				
Sept. 12							0.790	0.016	0.044	1.297	.822		.000	2.936	.226		.016				

Sinnemahoning Creek at Keating

Sept. 12, 1945							0.334	0.004	0.022	0.798	0.510	0.045	0.000	1.582	0.118		0.013				

West Creek at Emporium

Sept. 12, 1945	5.2									0.479	0.230	0.139	0.115	0.604	0.118	0.005	0.006				

Sinnemahoning Portage Creek at Emporium Junction

Sept. 12, 1945	4.1									0.499	0.197	0.221	0.393	0.291	0.223	0.005	0.005				

Bennett Branch Sinnemahoning Creek at Penfield

Sept. 12, 1945	3.2									0.649	0.271	0.243	0.672	0.312	0.169	0.005	0.005				

Bennett Branch Sinnemahoning Creek at Driftwood

Sept. 12, 1945							1.335	0.070	0.066	1.397	1.069	0.053	0.000	4.643	0.051		0.010				

First Fork at Sinnemahoning

Sept. 13, 1945	20.7									0.369	0.181	0.144	0.393	0.208	0.085	0.005	0.003				

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$		Total acidity as H_2SO_4
																				Total	Noncarbonate	
Kettle Creek near Cross Forks																						
Apr. 18, 1945	142									0.230	0.107	0.084		0.230	0.148	0.202	0.005	0.016				
Young Womans Creek near Renovo																						
Sept. 13, 1945	6.2									0.749	0.107	1.103		0.557	0.354	0.959	0.005	0.084				
North Bald Eagle Creek at Port Matilda																						
Sept. 11, 1945	5.5									0.848	0.403	0.126		0.852	0.437	0.070	0.005	0.013				
North Bald Eagle Creek at Beech Creek Station																						
Apr. 18, 1945	903									1.298	0.674	0.101		1.574	0.354	0.079	0.000	0.066				
Spring Creek near Axemann																						
Apr. 18, 1945	115									2.246	1.316	0.057		3.114	0.271	0.079	0.000	0.155				
Beech Creek at Beech Creek																						
Sept. 13, 1945	23.6									0.599	0.337	0.078		0.033	0.916	0.062	0.000	0.003				

Pine Creek at Cedar Run																					
Mar. 27, 1945	2,240									0.300	0.132	0.092	0.131	0.333	0.039	0.005	0.016				
Little Pine Creek at Waterville																					
Sept. 13, 1945	14.0									0.309	0.099	0.093	0.295	0.154	0.042	0.005	0.005				
Blockhouse Creek near English Center																					
Mar. 27, 1945	127									0.280	0.082	0.069	0.164	0.208	0.028	0.005	0.026				
Lycoming Creek near Trout Run																					
Mar. 27, 1945	572									0.230	0.099	0.115	0.164	0.229	0.028	0.000	0.023				
Loyalsock Creek at Loyalsock																					
Mar. 28, 1945	1,360									0.225	0.082	0.059	0.115	0.208	0.028	0.000	0.015				
Muncy Creek at Sonestown																					
Mar. 28, 1945	67.8									0.200	0.066	0.075	0.115	0.175	0.023	0.005	0.023				
Muncy Creek near Muncy																					
Sept. 14, 1945	154.0									0.419	0.164		0.311	0.194	0.059	0.005	0.048				
White Deer Creek at White Deer																					
Sept. 14, 1945	26.5									0.225	0.123		0.279	0.069	0.025	0.005	0.006				

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10[5] at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Shamokin Creek at Weigh Scale																						
Mar. 16, 1945	141	------	------	------	------	------	2.113	0.446	0.364	7.387	6.743	0.374	0.054	0.000	20.695	0.090	0.011	0.005	------	------	------	------
Penn Creek at Penns Creek																						
Mar. 15, 1945	1,000	------	------	------	------	------	------	------	------	1.048	0.255	0.097		1.082	0.229	0.034	0.000	0.055	------	------	------	------
Mahantango Creek East near Dalmatia																						
Mar. 16, 1945	269	------	------	------	------	------	0.044	0.002	0.011	0.349	0.378	0.096	0.023	0.000	0.729	0.045	0.005	0.087	------	------	------	------
Frankstown Branch Juniata River at Williamsburg																						
Apr. 17, 1945	550	------	------	------	------	------	------	------	------	1.198	0.732	0.230	0.031	1.147	0.750	0.183	0.005	0.079	------	------	------	------
Frankstown Branch Juniata River at Huntingdon																						
May 17, 1945	1,860	------	------	------	------	------	------	------	------	1.198	0.535	0.266		1.262	0.500	0.166	0.011	0.060	------	------	------	------
Little Juniata River at Spruce Creek																						
Apr. 17, 1945	353	------	------	------	------	------	------	------	------	1.198	0.543	0.522	0.033	1.278	0.562	0.423	0.011	0.031	------	------	------	------

Little Bald Eagle Creek at Tyrone

Apr. 17, 1945	116	-------	-------	-------	-------	-------	-------	-------	-------	0.649	0.238	0.391	0.028	0.426	0.396	0.480	0.011	0.003	-------	-------	-------	-------

Standing Stone Creek near Huntingdon

May 17, 1945	502	-------	-------	-------	-------	-------	-------	-------	-------	0.499	0.238	0.107		0.557	0.229	0.034	0.011	0.013	-------	-------	-------	-------

Raystown Branch Juniata River at Saxton

Apr. 19, 1945	1,460	-------	-------	-------	-------	-------	-------	-------	-------	0.699	0.329	0.106		0.656	0.396	0.045	0.005	0.032	-------	-------	-------	-------

Dunning Creek at Belden

Apr. 19, 1945	211	-------	-------	-------	-------	-------	-------	-------	-------	0.699	0.312	0.106		0.639	0.375	0.051	0.005	0.047	-------	-------	-------	-------

Brush Creek at Gapsville

Apr. 19, 1945	88.3	-------	-------	-------	-------	-------	-------	-------	-------	0.160	0.074	0.061		0.148	0.110	0.031	0.000	0.006	-------	-------	-------	-------

Great Trough Creek near Marklesburg

Apr. 18, 1945	268	-------	-------	-------	-------	-------	0.122	0.006	0.007	0.459	0.263	0.074	0.026	0.000	0.978	0.017	0.005	0.010	-------	-------	-------	-------

Aughwick Creek near Three Springs

May 18, 1945	2,680	-------	-------	-------	-------	-------	-------	-------	-------	0.300	0.123	0.049		0.230	0.196	0.025	0.011	0.010	-------	-------	-------	-------

Kishacoquillas Creek at Reedsville

May 28, 1945	490	-------	-------	-------	-------	-------	-------	-------	-------	1.198	0.469	0.139		1.393	0.229	0.085	0.005	0.094	-------	-------	-------	-------

SUSQUEHANNA RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$		Total acidity as H_2SO_4
																				Total	Noncarbonate	
Tuscarora Creek near Port Royal																						
May 28, 1945	250	------	------	------	------	------	------	------	------	0.799	0.296	0.081		0.869	0.229	0.042	0.005	0.031	------	------	------	------
Cocolamus Creek near Millerstown																						
May 29, 1945	670	------	------	------	------	------	------	------	------	0.300	0.132	0.104		0.262	0.194	0.034	0.011	0.035	------	------	------	------
Sherman Creek at Shermandale																						
Mar. 23, 1945	638	------	------	------	------	------	------	------	------	0.699	0.197	0.062		0.656	0.208	0.039	0.005	0.050	------	------	------	------
Clarks Creek near Carsonville																						
Mar. 20, 1945	6.4	------	------	------	------	------	------	------	------	0.125	0.049	0.108		0.148	0.100	0.031	0.000	0.003	------	------	------	------
Stony Creek near Dauphin																						
Mar. 20, 1945	75.8	------	------	------	------	------	------	------	------	0.110	0.066	0.091		0.115	0.115	0.034	0.000	0.003	------	------	------	------

Conodoguinet Creek at Hogestown																					
Mar. 23, 1945	916	------	------	------	------	------	------	------	------	1.398	0.419	0.159	1.442	0.333	0.082	0.005	0.114	------	------	------	------
Paxton Creek near Pembrook																					
Mar. 21, 1945	11.0	------	------	------	------	------	------	------	------	0.948	0.312	0.249	0.852	0.479	0.073	0.016	0.089	------	------	------	------
Yellow Breeches Creek at Olmstead Mill																					
May 31, 1945	670	------	------	------	------	------	------	------	------	0.998	0.436	0.122	1.197	0.229	0.059	0.005	0.066	------	------	------	------
Swatara Creek at Harper Tavern																					
Mar. 21, 1945	930	------	------	------	------	------	------	------	------	0.549	0.304	0.173	0.377	0.500	0.085	------	0.064	------	------	------	------
West Conewago Creek near Manchester																					
Mar. 22, 1945	704	------	------	------	------	------	------	------	------	0.799	0.362	0.179	0.787	0.354	0.110	0.005	0.084	------	------	------	------
Codorus Creek near York																					
Mar. 22, 1945	321	------	------	------	------	------	------	------	------	0.898	0.370	0.564	1.081	0.292	0.338	0.005	0.116	------	------	------	------
South Branch Codorus Creek at York																					
Mar. 22, 1945	196	------	------	------	------	------	------	------	------	0.414	0.238	0.209	0.344	0.185	0.155	0.000	0.177	------	------	------	------
Conestoga Creek at Lancaster																					
Apr. 2, 1945	407	------	------	------	------	------	------	------	------	2.046	0.600	0.620	2.508	0.375	0.141	0.000	0.242	------	------	------	------

SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS

MISCELLANEOUS ANALYSES OF STREAMS IN VIRGINIA

Chemical analyses, in parts per million

Source	Date	Discharge (second-feet)	Suspended matter	Color	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
	1945																
Appomattox River at Farmville	July 17	222	68	21	6.3	16	0.13	5.1	2.0	4.6	29	3.2	2.0	0.2	0.5	57	21
Appomattox River at Mattoax	July 30	1,250	208	37	6.3	14	.02	4.3	1.9	4.2	25	3.7	2.2	.0	.3	52	19
Appomattox River near Petersburg	July 17	2,600	298	47	6.1	9.2	.01	3.2	1.3	3.2	17	3.7	1.6	.0	.6	45	13
Banister River at Halifax	Aug. 30	214	74	2	7.0	18	.09	5.6	2.2	5.3	35	2.1	2.4	.0	.2	55	23
Beaverdam Creek at State Farm	July 31	28	104	18	6.5	15	.02	5.0	2.3	3.4	27	3.0	2.5	.1	.5	53	22
Blackwater River near Franklin	Aug. 1	3,580	6	140	6.0	5.3	.04	6.0	1.1	4.0	16	4.7	1.8	--	.2	[1] 66	19
Blackwater River near Union Hall	Sept. 5	65	5	2	6.9	11	.14	4.8	2.0	3.8	28	3.3	1.2	.1	.1	41	20
Calfpasture River above Mill Creek at Goshen	May 8	70	1	5	7.0	4.6	.06	5.3	1.4	2.0	21	4.9	.6	.0	.1	30	19
Catawba Creek near Catawba	May 10	15	2	4	7.6	4.0	.02	43	14	1.4	193	6.4	1.6	.1	.5	168	165
Cat Point Creek near Montross	Apr. 6	16	1	75	--	6.8	.41	1.9	1.1	3.8	7	4.6	4.9	.0	.2	39	9
Cedar Creek near Winchester	Mar. 8	239	3	7	--	6.3	.03	10	2.4	1.5	30	10	1.4	.1	1.0	54	35
Chickahominy River near Providence Forge	July 30	890	8	120	5.9	7.8	.02	4.0	1.3	2.8	16	4.0	3.1	--	.7	[2] 59	16
Craig Creek at Parr	May 10	206	2	4	7.4	6.0	.06	9.0	2.1	1.3	34	4.5	.9	.0	.1	40	31
Dan River at Danville	Aug. 31	635	43	6	6.7	16	.18	5.4	2.2	13	35	6.5	10	.1	.9	76	23
Dan River at South Boston	Aug. 30	888	148	4	6.7	14	.07	5.6	2.3	9.6	37	5.3	5.6	.1	.4	66	23
Dan River at Clarksville	Aug. 30	1,850	94	4	6.6	15	.04	5.8	2.5	7.1	34	5.3	4.5	.1	.4	62	25
Difficult Run near Great Falls	Apr. 3	67	73	20	--	11	.01	3.9	1.9	3.4	18	4.6	2.8	.1	1.4	47	18
Dunlap Creek near Covington	May 8	83	2	4	7.7	7.2	.03	31	6.6	3.8	91	33	2.6	.0	.1	133	104
Falling Creek near Drewrys Bluff	July 30	114	187	63	6.1	12	.55	3.6	1.2	3.2	7	9.5	2.8	.0	.5	54	14
Falling River near Naruna	Aug. 29	73	6	4	6.8	16	.14	4.8	2.2	4.4	28	4.3	1.9	.1	.2	47	21
Fine Creek at Fine Creek Mills	July 31	16	7	22	6.5	18	.28	4.2	2.0	3.6	25	2.0	2.4	.1	.4	53	19
Fontaine Creek near Emporia	Aug. 1	165	13	90	6.0	13	.22	3.2	1.6	1.7	14	2.3	2.5	.1	.7	45	15
Goose Creek near Huddleston	Sept. 4	43	22	10	7.1	15	.04	12	5.2	4.5	54	13	2.1	.1	.1	82	51
Goose Creek near Leesburg	Apr. 3	214	14	12	--	9.8	.07	7.8	2.8	3.4	32	7.2	2.4	.0	1.6	57	31
Hardware River below Briery Run near Scottsville	Aug. 1	138	675	18	6.1	5.8	.01	2.8	.9	2.5	10	3.5	1.4	.1	1.6	31	11
Hazel River at Rixeyville	Apr. 2	167	1	5	--	11	.03	3.5	1.0	3.4	19	2.3	1.2	.1	.5	34	13
Hyco River near Omega	Aug. 30	76	25	10	6.8	17	.02	7.7	3.3	7.8	45	5.6	4.5	.1	.4	73	33
Jackson River at Falling Spring	May 8	266	1	5	7.7	5.0	.04	24	3.6	1.4	74	15	1.0	.0	.1	89	75
James River at Lick Run	May 9	785	12	70	6.4	6.2	.07	27	3.6	23	93	43	7.5	--	.1	166	82
James River at Buchanan	July 17	404	17	32	7.3	5.1	.03	41	7.6	29	140	59	14	.1	.4	238	134

James River at Holcombs Rock	May	11	1,970	7	28	6.7	6.1	.10	24	4.8	7.1	88	17	3.6	.0	.1	110	80
James River at Bent Creek	July	17	1,180	30	45	7.1	5.7	.19	23	5.0	11	88	21	5.2	.1	1.6	126	78
James River at Scottsville	Aug.	1	6,810	131	37	7.0	6.6	.18	27	5.8	16	97	33	7.5	.1	.7	150	91
James River at Cartersville	July	31	7,970	228	16	6.3	11	.02	5.8	1.9	2.8	22	7.4	1.5	.1	.4	52	22
James River near Richmond	July	31	6,840	89	22	6.7	10	.02	9.9	2.9	5.9	38	13	2.9	.1	.4	75	37
Johns Creek at Newcastle	Sept.	4	11	6	5	7.5	2.8	.02	19	4.2	1.4	74	5.0	1.0	.1	.2	75	65
Kerrs Creek near Lexington	May	7	20	3	4	7.6	5.3	.03	43	7.3	2.6	162	7.9	1.1	.0	.5	149	137
Lickinghole Creek near Goochland	July	31	48	15	25	6.7	18	.05	7.3	3.1	3.5	40	2.3	2.1	.1	.3	66	31
Mattaponi River near Beulahville	Apr.	6	280	1	80	--	9.0	1.4	2.7	1.4	3.7	14	3.2	4.0	.0	.2	46	12
Mattaponi River near Bowling Green	Apr.	5	104	2	72	--	13	1.3	3.2	1.7	3.4	20	2.5	2.2	.1	.1	49	15
Meadow Creek near Newcastle	Sept.	4	2.0	18	2	7.6	5.7	.06	40	8.6	1.6	162	3.8	1.0	.0	.6	141	135
Mechum River near Ivy	Aug.	2	55	59	13	6.7	12	.04	4.3	1.1	3.8	21	2.6	2.2	.1	.4	43	15
Meherrin River near Lawrenceville	Sept.	1	186	301	12	6.3	13	.02	4.4	1.9	2.9	21	3.4	2.4	.1	.8	50	19
Middle River near Grottoes	Mar.	5	435	16	5	--	4.6	.02	40	10	3.1	160	11	2.4	.0	3.7	153	141
Moorman River near Whitehall	Aug.	2	2.3	1	6	6.7	12	.03	2.7	1.1	2.0	15	2.1	.8	.0	.0	31	11
North Anna River near Doswell	July	16	4,650	317	37	5.7	6.7	.01	3.4	1.5	1.6	8	9.5	1.1	.0	.2	46	15
North Fork Shenandoah River at Cootes Store	Mar.	7	337	6	5	--	5.0	.03	5.1	1.7	2.9	19	7.1	1.2	.1	1.5	34	20
North Fork Shenandoah River near Mount Jackson	Mar.	7	645	7	4	--	4.6	.02	29	6.6	3.4	109	11	2.1	.1	3.8	115	100
North Fork Shenandoah River near Strasburg	Mar.	8	970	28	4	--	5.3	.02	30	7.3	3.2	113	12	2.4	.1	3.9	121	105
North Mayo River near Spencer	Aug.	31	48	15	4	6.9	17	.22	4.6	2.1	3.6	28	3.1	1.0	.1	.1	48	20
North River near Burketown	Mar.	6	801	36	4	--	5.6	.03	16	4.8	1.8	65	6.2	1.6	.0	2.1	70	60
North River at Rockbridge Baths	May	8	170	1	6	7.3	4.2	.07	10	1.6	2.8	35	7.4	.8	.0	.1	47	32
North River near Lexington	May	7	262	1	5	7.3	5.5	.06	21	5.6	2.6	88	6.5	1.4	.0	.4	86	75
North River near Buena Vista	May	7	392	3	5	7.3	4.5	.04	23	5.9	2.0	94	6.5	1.2	.0	.6	92	82
Nottoway River near Stony Creek	Aug.	1	1,110	72	25	6.4	14	.02	4.2	1.9	2.3	20	3.3	2.2	.1	.2	51	18
Nottoway River near Sebrell	Aug.	1	4,550	13	90	5.9	9.4	.02	5.0	1.8	.7	18	3.2	2.2	.1	.7	[2] 55	20
Occoquan Creek near Occoquan	Apr.	4	212	5	13	--	11	.10	8.9	3.3	6.0	40	11	3.2	.0	.2	66	36
Opequon Creek near Berryville	Mar.	9	68	8	7	--	6.6	.08	39	7.8	5.0	122	30	3.1	.1	5.4	162	129
Otter River near Bedford	Sept.	4	16	15	12	6.7	10	.12	4.0	1.2	3.1	20	2.1	2.0	.1	.1	39	15
Otter River near Evington	Sept.	1	76	40	7	6.7	13	.04	5.6	2.3	6.0	30	3.6	5.2	.1	.5	55	23
Pamunkey River near Hanover	Apr.	6	482	4	35	--	15	.33	4.8	2.2	4.6	26	5.7	2.5	.0	.3	54	21
Passage Creek at Buckton	Mar.	8	99	1	6	--	6.2	.02	6.8	2.0	.9	18	9.5	1.2	.0	.9	42	25
Pedlar River near Pedlar Mills	May	11	58	1	12	6.8	11	.08	3.0	.7	2.7	15	1.7	1.4	.1	.1	32	10
Pigg River near Toshes	Sept.	5	131	17	5	6.8	13	.06	5.7	2.1	2.6	29	2.1	1.5	.1	.2	45	23
Potts Creek near Covington	May	9	127	1	7	7.4	4.9	.08	12	1.7	1.6	41	5.4	.8	.0	.1	48	37
Rapidan River near Ruckersville	Apr.	2	92	4	4	--	9.1	.03	2.7	.9	2.8	15	2.0	1.2	.1	.3	28	10
Rapidan River near Culpeper	Apr.	2	316	31	8	--	10	.09	3.8	1.3	3.3	20	2.4	1.8	.1	.4	36	15
Rappahannock River near Warrenton	Apr.	3	134	6	10	--	12	.10	4.2	1.4	3.7	22	3.0	1.8	.1	.5	40	16
Rappahannock River at Kellys Ford	Apr.	4	389	4	12	--	11	.12	4.1	1.4	3.1	20	2.8	1.9	.1	.6	39	16
Rappahannock River near Fredericksburg	Apr.	5	926	4	7	--	11	.04	4.4	1.5	3.5	23	2.7	1.9	.1	.2	39	17

[1] Large proportion of organic matter; sum of mineral constituents 31 parts.

[2] Large proportion of organic matter; sum of mineral constituents 32 parts.

MISCELLANEOUS ANALYSES OF STREAMS IN VIRGINIA—Continued

Chemical analyses, in parts per million—Continued

Source	Date	Discharge (second-feet)	Suspended matter	Color	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
	1945																
Rivanna River at Palmyra	Aug. 1	2,510	155	19	6.3	11	.02	4.2	1.6	1.9	17	4.4	1.2	0.1	1.0	40	17
Roanoke River at Lafayette	Sept. 5	32	15	8	7.1	6.7	.02	48	19	1.4	204	27	3.5	.1	.5	207	198
Roanoke River at Roanoke	Sept. 5	79	3	8	7.2	5.3	.02	50	13	12	187	27	15	.1	3.2	224	178
Roanoke River at Niagara	Sept. 5	108	2	8	6.7	7.5	.04	46	20	48	178	112	28	.1	.1	360	197
Roanoke River near Toshes	Sept. 5	214	1	8	7.5	7.8	.02	27	11	32	105	65	19	.1	.6	220	113
Roanoke River at Altavista	Sept. 1	396	8	5	7.2	6.8	.02	16	6.6	21	70	37	12	.1	.2	132	67
Roanoke River at Brookneal	Sept. 3	633	18	5	7.1	4.4	.02	13	5.3	11	54	26	4.8	.1	.2	102	54
Roanoke River near Clover	Aug. 30	879	13	6	7.0	8.7	.02	11	4.3	9.1	51	15	5.0	.1	.2	79	45
Robertson River near Locust Dale	Apr. 2	133	2	5		10	.04	3.4	1.0	3.2	18	2.0	1.6	.1	.4	33	13
Rockfish River near Greenfield	July 17	24	26	21	6.4	11	.08	3.4	.9	2.3	16	1.7	1.2	.1	.4	34	11
Sandy River near Danville	Aug. 31	37	9	4	7.1	19	.16	4.4	1.9	5.0	29	3.1	1.6	.1	.1	49	19
Slate River near Arvonia	Aug. 1	194	22	25	6.6	16	.04	4.7	2.6	2.9	27	3.2	2.0	.1	.3	50	22
Smith Creek near Clifton Forge	May 9	12	1	5	7.4	7.7	.03	13	1.9	1.0	46	3.7	.6	.0	.1	51	40
Smith River at Bassetts	Aug. 31	110	10	8	6.7	13	.03	5.4	2.2	3.1	29	2.9	1.5	.1	.2	43	23
Smith River at Martinsville	Aug. 31	150	27	4	6.5	13	.09	5.7	2.3	4.3	31	4.0	1.9	.1	.5	48	24
South Anna River near Ashland	July 16	1,360	706	34	6.3	11	.01	3.4	1.6	3.3	19	3.3	1.5	.0	.9	44	15
South Fork Shenandoah River near Lynnwood	Mar. 6	1,860	48	4		4.6	.03	29	7.3	2.9	110	11	2.2	.1	3.4	114	102
South Fork Shenandoah River near Luray	Mar. 7	2,390	91	4		5.1	.04	26	6.8	1.8	99	9.9	2.2	.1	2.4	105	93
South Fork Shenandoah River at Front Royal	Mar. 8	2,710	16	4		5.2	.03	24	6.5	2.7	95	9.1	2.5	.0	2.2	100	87
South River at Harriston	Mar. 5	260	3	3		6.9	.03	22	6.2	3.1	83	14	2.6	.1	.8	97	80
South River at Waynesboro	Mar. 5	162	55	4		6.5	.04	16	5.7	2.4	71	5.2	1.4	.1	1.1	72	63
Swift Creek near Chester	July 17	1,280	102	73	5.9	8.2	.07	2.8	1.0	1.3	10	3.5	1.2	.0	.5	[3] 46	11
Thornton River near Laurel Mills	Apr. 3	106	4	8		11	.08	3.4	1.2	3.3	18	2.8	1.6	.1	.6	36	13
Tye River near Lovingston	July 17	37	48	9	6.5	9.7	.02	3.0	.8	2.2	15	1.7	1.0	.0	.2	31	11
Willis River at Flanagan Mills	July 31	183	58	24	6.5	17	.02	6.0	2.6	3.3	32	3.3	1.9	.1	.3	60	26

Chemical analyses, in equivalents per million

	1945																
Appomattox River at Farmville	July 17	222	-----	-----	-----	-----	-----	0.254	0.164	0.199	0.475	0.067	0.056	0.011	0.008	-----	-----
Appomattox River at Mattoax	July 30	1,250	-----	-----	-----	-----	-----	.215	.156	.181	.410	.077	.062	.000	.005	-----	-----
Appomattox River near Petersburg	July 17	2,600	-----	-----	-----	-----	-----	.160	.107	.137	.279	.077	.045	.000	.010	-----	-----
Banister River at Halifax	Aug. 30	214	-----	-----	-----	-----	-----	.279	.181	.229	.574	.044	.068	.000	.003	-----	-----
Beaverdam Creek at State Farm	July 31	28	-----	-----	-----	-----	-----	.250	.189	.149	.442	.062	.071	.005	.008	-----	-----
Blackwater River near Franklin	Aug. 1	3,580	-----	-----	-----	-----	-----	.299	.090	.172	.262	.098	.051	-----	.003	-----	-----
Blackwater River near Union Hall	Sept. 5	65	-----	-----	-----	-----	-----	.240	.164	.165	.459	.069	.034	.005	.002	-----	-----
Calfpasture River above Mill Creek at Goshen	May 8	70	-----	-----	-----	-----	-----	.265	.115	.085	.344	.102	.017	.000	.002	-----	-----
Catawba Creek near Catawba	May 10	15	-----	-----	-----	-----	-----	2.146	1.151	.059	3.163	.133	.045	.005	.008	-----	-----
Cat Point Creek near Montross	Apr. 6	16	-----	-----	-----	-----	-----	.095	.090	.167	.115	.096	.138	.000	.003	-----	-----
Cedar Creek near Winchester	Mar. 8	239	-----	-----	-----	-----	-----	.499	.197	.064	.492	.208	.039	.005	.016	-----	-----
Chickahominy River near Providence Forge	July 30	890	-----	-----	-----	-----	-----	.200	.107	.122	.262	.083	.087	-----	.011	-----	-----
Craig Creek at Parr	May 10	206	-----	-----	-----	-----	-----	.449	.173	.056	.557	.094	.025	.000	.002	-----	-----
Dan River at Danville	Aug. 31	635	-----	-----	-----	-----	-----	.270	.181	.560	.574	.135	.282	.005	.015	-----	-----
Dan River at South Boston	Aug. 30	888	-----	-----	-----	-----	-----	.279	.189	.417	.606	.110	.158	.005	.006	-----	-----
Dan River at Clarksville	Aug. 30	1,850	-----	-----	-----	-----	-----	.289	.206	.310	.557	.110	.127	.005	.006	-----	-----
Difficult Run near Great Falls	Apr. 3	67	-----	-----	-----	-----	-----	.195	.156	.147	.295	.096	.079	.005	.023	-----	-----
Dunlap Creek near Covington	May 8	83	-----	-----	-----	-----	-----	1.547	.543	.165	1.491	.687	.073	.000	.002	-----	-----
Falling Creek near Drewrys Bluff	July 30	114	-----	-----	-----	-----	-----	.180	.099	.137	.115	.198	.079	.000	.008	-----	-----
Falling River near Naruna	Aug. 29	73	-----	-----	-----	-----	-----	.240	.181	.190	.459	.090	.054	.005	.003	-----	-----
Fine Creek at Fine Creek Mills	July 31	16	-----	-----	-----	-----	-----	.210	.164	.157	.410	.042	.068	.005	.006	-----	-----
Fontaine Creek near Emporia	Aug. 1	165	-----	-----	-----	-----	-----	.160	.132	.072	.229	.048	.071	.005	.011	-----	-----
Goose Creek near Huddleston	Sept. 4	43	-----	-----	-----	-----	-----	.599	.428	.195	.885	.271	.059	.005	.002	-----	-----
Goose Creek near Leesburg	Apr. 3	214	-----	-----	-----	-----	-----	.389	.230	.150	.525	.150	.068	.000	.026	-----	-----
Hardware River below Briery Run near Scottsville	Aug. 1	138	-----	-----	-----	-----	-----	.140	.074	.107	.164	.073	.039	.005	.026	-----	-----
Hazel River at Rixeyville	Apr. 2	167	-----	-----	-----	-----	-----	.175	.082	.149	.311	.048	.034	.005	.008	-----	-----
Hyco River near Omega	Aug. 30	76	-----	-----	-----	-----	-----	.384	.271	.337	.737	.117	.127	.005	.006	-----	-----
Jackson River at Falling Spring	May 8	266	-----	-----	-----	-----	-----	1.198	.296	.061	1.213	.312	.028	.000	.002	-----	-----
James River at Lick Run	May 9	785	-----	-----	-----	-----	-----	1.348	.296	.989	1.524	.895	.212	-----	.002	-----	-----
James River at Buchanan	July 17	404	-----	-----	-----	-----	-----	2.046	.625	1.257	2.294	1.228	.395	.005	.006	-----	-----
James River at Holcombs Rock	May 11	1,970	-----	-----	-----	-----	-----	1.198	.395	.307	1.442	.354	.102	.000	.002	-----	-----
James River at Bent Creek	July 17	1,180	-----	-----	-----	-----	-----	1.148	.411	.498	1.442	.437	.147	.005	.026	-----	-----
James River at Scottsville	Aug. 1	6,810	-----	-----	-----	-----	-----	1.347	.477	.681	1.590	.687	.212	.005	.011	-----	-----
James River at Cartersville	July 31	7,970	-----	-----	-----	-----	-----	.289	.156	.123	.361	.154	.042	.005	.006	-----	-----
James River near Richmond	July 31	6,840	-----	-----	-----	-----	-----	.494	.238	.255	.623	.271	.082	.005	.006	-----	-----

[3] Large proportion of organic matter; sum of mineral constituents 23 parts.

MISCELLANEOUS ANALYSES OF STREAMS IN VIRGINIA—Continued

Chemical analyses, in equivalents per million—Continued

Source	Date	Discharge (second-feet)	Suspended matter	Color	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
	1945																
Johns Creek at Newcastle	Sept. 4	11						0.948	0.345	0.060	1.213	0.104	0.028	0.005	0.003		
Kerrs Creek near Lexington	May 7	20						2.146	.600	.111	2.655	.164	.031	.000	.008		
Lickinghole Creek near Goochland	July 31	48						.364	.255	.154	.656	.048	.059	.005	.005		
Mattaponi River near Beulahville	Apr. 6	280						.135	.115	.162	.229	.067	.113	.000	.003		
Mattaponi River near Bowling Green	Apr. 5	104						.160	.140	.149	.328	.052	.062	.005	.002		
Meadow Creek at Newcastle	Sept. 4	2.0						1.996	.707	.068	2.655	.079	.028	.000	.010		
Mechum River near Ivy	Aug. 2	55						.215	.090	.166	.344	.054	.062	.005	.006		
Meherrin River near Lawrenceville	Sept. 1	186						.220	.156	.125	.344	.071	.068	.005	.013		
Middle River near Grottoes	Mar. 5	435						1.996	.822	.135	2.492	.229	.068	.000	.060		
Moorman River near Whitehall	Aug. 2	2.3						.135	.090	.088	.246	.044	.023	.000	.000		
North Anna River near Doswell	July 16	4,650						.170	.123	.070	.131	.198	.031	.000	.003		
North Fork Shenandoah River at Cootes Store	Mar. 7	337						.255	.140	.127	.311	.148	.034	.005	.024		
North Fork Shenandoah River near Mount Jackson	Mar. 7	645						1.448	.543	.150	1.787	.229	.059	.005	.061		
North Fork Shenandoah River near Strasburg	Mar. 8	970						1.497	.600	.141	1.852	.250	.068	.005	.063		
North Mayo River near Spencer	Aug. 31	48						.230	.173	.156	.459	.065	.028	.005	.002		
North River near Burketown	Mar. 6	801						.799	.395	.079	1.065	.129	.045	.000	.134		
North River at Rockbridge Baths	May 8	170						.499	.132	.122	.574	.154	.023	.000	.002		
North River near Lexington	May 7	262						1.048	.461	.113	1.442	.135	.039	.000	.006		
North River near Buena Vista	May 7	392						1.148	.485	.087	1.541	.135	.034	.000	.010		
Nottoway River near Stony Creek	Aug. 1	1,110						.210	.156	.101	.328	.069	.062	.005	.003		
Nottoway River near Sebrell	Aug. 1	4,550						.250	.148	.032	.295	.067	.062	.005	.011		
Occoquan Creek near Occoquan	Apr. 4	212						.444	.271	.263	.656	.229	.090	.000	.003		
Opequon Creek near Berryville	Mar. 9	68						1.947	.641	.216	2.000	.625	.087	.005	.087		
Otter River near Bedford	Sept. 4	16						.200	.099	.136	.328	.044	.156	.005	.002		
Otter River near Evington	Sept. 1	76						.279	.189	.260	.492	.075	.148	.005	.008		
Pamunkey River near Hanover	Apr. 6	482						.240	.181	.200	.426	.119	.071	.000	.005		
Passage Creek at Buckton	Mar. 8	99						.339	.164	.039	.295	.198	.034	.000	.015		
Pedlar River near Pedlar Mills	May 11	58						.150	.058	.119	.246	.035	.039	.005	.002		
Pigg River near Toshes	Sept. 5	131						.284	.173	.112	.475	.044	.042	.005	.003		
Potts Creek near Covington	May 9	127						.599	.140	.070	.672	.112	.023	.000	.002		

Rapidan River near Ruckersville	Apr. 2	92	.135	.074	.123	.246	.042	.034	.005	.005
Rapidan River near Culpeper	Apr. 2	316	.190	.107	.143	.328	.050	.051	.005	.006
Rappahannock River near Warrenton	Apr. 3	134	.210	.115	.162	.361	.062	.051	.005	.008
Rappahannock River at Kellys Ford	Apr. 4	389	.205	.115	.135	.328	.058	.054	.005	.010
Rappahannock River near Fredericksburg	Apr. 5	926	.220	.123	.152	.377	.056	.054	.005	.003
Rivanna River at Palmyra	Aug. 1	2,510	.210	.132	.084	.279	.092	.034	.005	.016
Roanoke River at Lafayette	Sept. 5	32	2.395	1.562	.060	3.343	.562	.099	.005	.008
Roanoke River at Roanoke	Sept. 5	79	2.495	1.069	.543	3.065	.562	.423	.005	.052
Roanoke River at Niagara	Sept. 5	108	2.295	1.645	2.106	2.917	2.332	.790	.005	.002
Roanoke River near Toshes	Sept. 5	214	1.347	.905	1.374	1.721	1.353	.536	.005	.010
Roanoke River at Altavista	Sept. 1	396	.798	.543	.922	1.147	.770	.338	.005	.003
Roanoke River at Brookneal	Sept. 3	633	.649	.436	.484	.885	.541	.135	.005	.003
Roanoke River near Clover	Aug. 30	879	.549	.354	.394	.836	.312	.141	.005	.003
Robertson River near Locust Dale	Apr. 2	133	.170	.082	.141	.295	.042	.045	.005	.006
RockfishRiver near Greenfield	July 17	24	.170	.074	.098	.262	.035	.034	.005	.006
Sandy River near Danville	Aug. 31	37	.220	.156	.216	.475	.065	.045	.005	.002
Slate River near Arvonia	Aug. 1	194	.234	.214	.127	.442	.067	.056	.005	.005
Smith Creek near Clifton Forge	May 9	12	.649	.156	.045	.754	.077	.017	.000	.002
Smith River at Bassetts	Aug. 31	110	.270	.181	.134	.475	.060	.042	.005	.003
Smith Rover at Martinsville	Aug. 31	150	.284	.189	.185	.508	.083	.054	.005	.008
South Anna River near Ashland	July 16	1,360	.170	.132	.142	.311	.069	.042	.000	.015
South Fork Shenandoah River near Lynwood	Mar. 6	1,860	1.448	.600	.128	1.803	.229	.062	.005	.055
South Fork Shenandoah River near Luray	Mar. 7	2,390	1.298	.559	.078	1.623	.206	.062	.005	.039
South Fork Shenandoah River at Front Royal	Mar. 8	2,710	1.198	.535	.119	1.557	1.189	.071	.000	.035
South River at Harriston	Mar. 5	260	1.098	.510	.134	1.360	.291	.073	.005	.013
South River at Waynesboro	Mar. 5	162	.799	.469	.104	1.164	.108	.039	.005	.018
Swift Creek near Chester	July 17	1,280	.140	.082	.057	.164	.073	.034	.000	.008
Thornton River near Laurel Mills	Apr. 3	106	.170	.099	.144	.295	.058	.045	.005	.010
Tye River near Lovingston	July 17	37	.150	.066	.096	.246	.035	.028	.000	.003
Willis River at Flanagan Mills	July 31	183	.299	.214	.144	.524	.069	.054	.005	.005

ROANOKE RIVER BASIN

ROANOKE RIVER NEAR SCOTLAND NECK, N. C.

LOCATION.—At gaging station at bridge on U. S. Highway 258, 3 miles downstream from Bridgers Creek and 5¾ miles northeast of Scotland Neck, Halifax County.

DRAINAGE AREA.—8,700 square miles.

RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Water temperatures: October 1944 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 173 parts per million Apr. 1–10; minimum, 47 parts per million Oct. 1–10.
Total hardness: Maximum, 57 parts per million Apr. 1–10; minimum, 18 parts per million Oct. 1–10.
Water temperatures: Maximum, 85° F. July 3, 4, 6, 7, 8; minimum, 35° F. Jan. 31.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1032.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed		Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
				Unfiltered	Filtered														
Oct. 1-10, 1944	28,090	68	127	10	5.8	23	9.6	0.04	4.8	1.4	3.3	1.7	23	5.0	2.1	0.0	0.4	47	18
Oct. 11-20	5,002	63	43	3.8	2.7	38	15	.06	7.8	2.8	7.7		41	7.0	4.2	.1	.8	71	31
Oct. 21-31	17,350																		
Nov. 1-10	4,896	56	23	3.7	2.4	20	16	.25	8.8	3.0	8.5		47	7.5	4.2	.1	.3	74	34
Nov. 11-20	4,486	51	16	3.2	2.2	9	14	.10	8.4	2.9	8.4		46	6.9	4.2	.1	.2	70	33
Nov. 21-30	8,150																		
Dec. 1-10	13,230	40	56	5.4	3.1	17	14	.09	5.9	2.3	7.6		32	7.6	4.0	.1	.7	62	24
Dec. 11-20	11,250	39	51	4.5	2.6	10	14	.02	5.7	2.3	6.0		29	6.6	3.6	.1	.8	57	24
Dec. 21-31	6,456	38	17	3.1	1.8	7	14	.03	6.6	2.6	7.8		36	8.8	3.5	.1	.5	62	27
Jan. 1-10, 1945	17,190	39	82	7.1	3.8	13	11	.04	6.0	1.9	4.5	1.6	26	6.6	3.5	.0	1.4	54	23
Jan. 11-20	12,140	38	37	4.5	3.2	16	13	.07	6.2	2.1	5.6		27	7.1	3.8	.1	1.4	59	24
Jan. 21-31	7,709	37	32	3.2	2.1	5	15	.03	7.2	2.6	8.6		36	7.7	4.5	.1	4.1	72	29
Feb. 1-10	5,663	38	47	3.6	2.1	11	13	.04	7.0	2.4	8.4		36	8.3	4.2	.1	1.5	65	27
Feb. 11-19	16,870	37	206	15	14	28	11	.06	6.2	2.0	12	3.2	11	10	9.1	.2	.5	[1] 84	24
Feb. 20-28	22,390	40	87	20	16	20	11	.06	5.8	2.1	16	3.4	22	12	14	.2	1.1	[1] 95	23
Mar. 1-10	14,110	44	22	3.4	2.2	8	13	.06	7.0	3.3	7.3		35	6.4	5.2	.0	5.2	69	31
Mar. 11-20	8,340	44	36	18	20	15	13	.04	6.8	3.5	17	3.1	107	11	19	.2	.7	[2] 127	31
Mar. 21-31	6,709																		

Apr. 1-10	5,956	57	98	66	11	80	13	3.3	13	5.9	16	13	124	2.1	16	.2	.0	[2] 173	57
Apr. 11-20	6,784	63	134	14	8.6	49	8.2	1.2	8.4	2.9	15	7.9	131	9.5	17	.2	.2	[2] 160	33
Apr. 21-30	10,740	64	54	4.9	2.8	18	14	.04	6.3	2.4	9.8		40	6.2	3.5	.0	3.3	68	26
May 1-10	6,320	62	70	4.4	2.2	11	14	.03	7.3	2.8	6.5		39	5.9	3.6	.0	.7	63	30
May 11-20	6,660	65	169	6.3	3.0	19	13	.03	6.8	2.4	8.5		37	6.2	4.9	.1	1.6	65	27
May 21-31	11,730	72	214	8.0	3.9	20	12	.03	6.8	2.4	9.7		33	9.0	6.6	.2	2.0	75	27
June 1-10	4,764	76	174	8.0	3.2	16	14	.05	7.6	2.7	13		23	8.9	6.6	.1	26	103	30
June 11-20	4,394	81	191	7.7	2.9	15	14	.03	7.8	2.8	11		44	6.7	4.9	.0	5.3	80	31
June 21-30	3,703	82	141	6.5	3.2	19	13	.02	7.1	2.5	7.9	2.2	41	6.8	4.4	.1	2.5	70	28
July 1-10	2,815	84	300	10	4.0	19	10	.02	6.4	2.2	6.0	1.7	33	7.2	2.9	.1	1.8	60	25
July 11-20	11,920	79	64	7.1	5.2	28	13	.04	6.0	2.1	6.1	2.1	31	6.5	4.2	.0	.7	64	24
July 21-31	11,870	81	168	8.8	5.3	22	11	.03	5.0	1.8	7.6		28	5.7	4.2	.1	1.8	60	20
Aug. 1-10	8,191	79	97	5.9	4.2	14	14	.02	6.8	2.4	9.1		34	8.1	5.4	.1	2.9	71	27
Aug. 11-20	4,760	79	168	9.2	3.8	13	14	.03	6.6	2.4	7.2		32	6.8	4.9	.1	1.8	69	26
Aug. 21-31	5,254	78	168	8.0	4.2	18	12	.02	6.3	2.4	7.9		36	6.1	4.1	.1	1.1	64	26
Sept. 1-10	3,123	81	56	5.8	3.8	17	12	.02	7.9	2.8	11		46	7.1	5.9	.1	.5	76	31
Sept. 11-20	17,160	76	216	11	6.2	28	8.6	.01	5.2	1.9	7.2		29	6.0	4.2	.0	.5	57	21
Sept. 21-30	49,540	73	77	8.1	4.8	16	12	.03	6.5	1.9	5.9		29	6.7	3.4	.1	1.4	58	24
Average	10,640	61	104	9.3	5.0	20	13	0.18	6.9	2.5	9.7		41	7.3	5.9	0.1	2.2	76	28

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	28,090	68							0.240	0.115	0.144	0.043	0.377	0.104	0.059	0.000	0.006		
Oct. 11-20	5,002	63							.389	.230	0.335		.672	.146	.118	.005	.013		
Oct. 21-31	17,350																		
Nov. 1-10	4,896	56							.439	.247	.368		.770	.156	.118	.005	.005		
Nov. 11-20	4,486	51							.419	.238	.367		.754	.144	.118	.005	.003		
Nov. 21-30	8,150																		
Dec. 1-10	13,230	40							.294	.189	.329		.525	.158	.113	.005	.011		
Dec. 11-20	11,250	39							.284	.189	.259		.475	.137	.102	.005	.013		
Dec. 21-31	6,456	38							.329	.214	.342		.590	.183	.099	.005	.008		
Jan. 1-10, 1945	17,190	39							.299	.156	.196	.041	.426	.137	.099	.000	.023		
Jan. 11-20	12,140	38							.309	.173	.244		.443	.148	.107	.005	.023		
Jan. 21-31	7,709	37							.359	.214	.375		.590	.160	.127	.005	.066		
Feb. 1-10	5,663	38							.349	.197	.364		.590	.173	.118	.005	.024		
Feb. 11-19	16,870	37							.309	.164	.522	.082	.180	.208	.257	.011	.008		
Feb. 20-28	22,300	40							.289	.173	.696	.087	.361	.250	.395	.011	.018		
Mar. 1-10	14,110	44							.349	.271	.318		.574	.133	.147	.000	.084		
Mar. 11-20	8,340	44							.339	.288	.739	.079	1.754	.229	.536	.011	.011		
Mar. 21-31	6,709																		

[1] Includes sulfur compounds from industrial wastes. [2] Includes ammonium and sulfur compounds from industrial wastes.

ROANOKE RIVER BASIN—Continued

ROANOKE RIVER NEAR SCOTLAND NECK, N. C.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed		Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
				Unfiltered	Filtered														
Apr. 1-10	5,956	57							0.649	0.485	0.696	0.333	2.032	0.044	0.451	0.011	0.003		
Apr. 11-20	6,784	63							.419	.238	.652	.202	2.147	.198	.479	.011	.003		
Apr. 21-30	10,740	64							.314	.197	.426		.656	.129	.099	.000	.053		
May 1-10	6,320	62							.364	.230	.281		.639	.123	.102	.000	.011		
May 11-20	6,660	65							.339	.197	.368		.606	.129	.138	.005	.026		
May 21-31	11,730	72							.339	.197	.421		.541	.187	.186	.011	.032		
June 1-10	4,764	76							.379	.222	.571		.377	.185	.186	.005	.419		
June 11-20	4,394	81							.389	.230	.464		.721	.139	.138	.000	.085		
June 21-30	3,703	82							.354	.206	.344	.056	.672	.142	.124	.005	.040		
July 1-10	2,815	84							.319	.181	.261	.043	.541	.150	.082	.005	.029		
July 11-20	11,920	79							.299	.173	.265	.054	.508	.135	.118	.000	.011		
July 21-31	11,870	81							.250	.148	.332		.459	.119	.118	.005	.029		
Aug. 1-10	8,191	79							.339	.197	.304		.557	.169	.152	.005	.047		
Aug. 11-20	4,760	79							.329	.197	.312		.524	.142	.138	.005	.029		
Aug. 21-31	5,254	78							.314	.197	.345		.590	.127	.116	.005	.018		
Sept. 1-10	3,123	81							.394	.230	.457		.754	.148	.166	.005	.008		
Sept. 11-20	17,160	76							.259	.156	.311		.475	.125	.118	.000	.008		
Sept. 21-30	49,540	73							.324	.156	.258		.475	.139	.096	.005	.023		
Average	10,640	61							0.344	0.206	0.422		0.672	0.152	0.166	0.005	0.036		

Temperature (° F.) of water of Roanoke River near Scotland Neck, N. C., water year October 1944 to September 1945

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

ROANOKE RIVER BASIN—Continued

DAN RIVER AT LEAKSVILLE, N. C.

LOCATION.—At the water-supply intake of the Marshall Field & Co. Karastan rug mill just downstream from bridge on State Highway 87 at Leaksville, Rockingham County, and 0.4 mile upstream from gaging station.

DRAINAGE AREA.—1,150 square miles.

RECORDS AVAILABLE.—Chemical analyses: November 1944 to October 1945.
Water temperatures: November 1944 to October 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 47 parts per million Sept. 1–10; minimum, 35 parts per million Sept. 11–20.
Total hardness: Maximum, 17 parts per million Nov. 1–10, 11–20, July 1–10, Aug. 21–31, Sept. 1–10; minimum, 12 parts per million Jan. 1–10, July 21–31, Sept. 11–20.
Water temperatures: Maximum, 87° F. July 1; minimum, freezing point on several days in December and February.

REMARKS.—Records of discharge for year November 1944 to October 1945 are given in Water-Supply Papers 1032 and 1052.

Chemical analyses, in parts per million, year November 1944 to October 1945

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed		Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
				Unfiltered	Filtered														
Nov. 1-10, 1944	695	50	18	2.5	1.8	7	15	0.06	3.8	1.8	4.1	1.5	28	2.2	1.8	0.1	0.1	45	17
Nov. 11-20	670	48	11	2.1	1.7	11	15	.11	4.1	1.7	4.5		26	2.6	1.9	.1	.1	44	17
Nov. 21-30	1,193	41	91	3.3	1.8	3	13	.03	4.6	1.0	4.6		23	3.3	1.9	.1	.3	40	16
Dec. 1-10	1,157	36	36	2.6	1.7	7	13	.05	3.5	1.6	4.5		22	3.7	1.9	.1	.3	41	15
Dec. 11-20	1,485	34	64	3.2	1.7	2	13	.04	3.4	1.5	4.5		21	3.9	1.8	.1	.4	40	15
Dec. 21-31	881	37	17	1.7	1.3	1	14	.03	3.6	1.6	4.6		24	2.9	1.8	.1	.2	41	16
Jan. 1-10, 1945	2,591	38	192	5.4	2.6	9	11	.02	3.0	1.2	4.0	1.5	17	4.5	2.1	.1	.6	39	12
Jan. 11-20	1,355	38	26	2.4	2.0	7	12	.02	3.2	1.4	3.2	1.2	19	3.2	2.0	.0	.3	39	14
Jan. 21-31	1,005	39	12	1.6	1.2	3	14	.05	3.8	1.2	4.4		22	2.7	1.8	.1	.4	41	14
Feb. 1-10	871	34	14	1.4	1.2	2	15	.06	4.1	1.1	4.9		24	2.3	1.9	.1	.4	41	15
Feb. 11-19	2,340	45	176	6.3	2.4	7	12	.04	3.2	1.2	4.2		18	4.0	1.8	.1	.4	39	13
Feb. 20-28	2,370	45	94	3.4	1.4	5	11	.03	3.1	1.4	3.0		16	4.0	1.5	.1	.5	37	14
Mar. 1-10	1,538	49	46	2.5	1.4	4	13	.03	3.4	1.5	3.3		19	3.4	1.6	.1	.4	40	15
Mar. 11-20	1,095	54	56	2.4	1.2	5	14	.04	3.5	1.5	3.6		21	2.8	1.6	.1	.2	40	15
Mar. 21-31	1,126	60	111	4.3	2.0	4	13	.01	3.5	1.7	3.9		23	2.6	1.6	.1	.2	41	16
Apr. 1-10	948	60	27	2.4	1.6	10	15	.08	3.8	1.6	3.4	1.3	23	2.8	1.8	.1	.3	41	16
Apr. 11-20	1,226	64	167	6.3	2.2	9	12	.03	3.6	1.3	4.8		22	4.0	1.6	.1	.2	41	14
Apr. 21-30	1,395	60	140	4.6	1.8	7	13	.03	3.6	1.5	3.4		21	2.6	1.5	.1	.5	40	15

May 1-10	960	57	29	2.2	1.6	16	14	.15	4.0	1.5	4.3		24	2.6	1.9	.1	.4	45	16
May 11-20	1,009	65	204	5.6	1.7	2	13	.01	3.8	1.4	4.6		24	2.5	1.6	.1	.5	41	15
May 21-31	1,295	68	350	8.0	2.1	14	12	.04	3.2	1.3	4.5		20	3.3	1.6	.1	.9	41	13
June 1-10	792	67	51	2.8	1.6	12	14	.04	3.6	1.6	4.9		25	2.5	1.8	.1	.5	44	16
June 11-20	748	75	68	3.1	1.8	8	14	.01	3.7	1.6	4.6		25	2.4	1.6	.1	.4	46	16
June 21-30	613	76	84	3.7	2.0	2	14	.02	3.7	1.6	5.0		25	2.6	2.0	.1	.6	44	16
July 1-10	589	80	264	6.3	1.9	15	14	.02	4.3	1.5	3.0	1.3	24	2.8	1.6	.1	.8	44	17
July 11-20	726	74	322	4.5	2.3	9	14	.07	3.4	1.4	5.5		25	2.3	1.9	.2	.1	43	14
July 21-31	1,548	77	949	18	15	16	11	.04	2.9	1.1	4.0		17	3.1	1.5	.2	.6	42	12
Aug. 1-10	826	76	142	5.8	2.6	6	13	.03	3.4	1.3	4.1		21	2.8	1.5	.1	.4	42	14
Aug. 11-20	575	74	124	4.6	2.1	7	14	.01	3.8	1.6	4.1		24	2.6	1.6	.1	.3	43	16
Aug. 21-31	535	73	145	4.8	2.2	7	14	.03	3.9	1.7	4.2		25	2.7	1.5	.1	.2	43	17
Sept. 1-10	528	74	57	3.4	3.0	9	15	.02	4.0	1.7	5.0		28	2.3	1.5	.1	.2	47	17
Sept. 11-20	10,310	68	728	12	3.0	7	9.4	.02	2.9	1.2	3.3		15	4.1	1.2	.2	.7	35	12
Sept. 21-30	1,316	71	109	4.6	1.8	5	13	.02	3.4	1.5	4.2		21	3.3	1.6	.2	.5	41	15
Oct. 1-10	920	61	46	2.8	2.0	5	14	.01	3.6	1.5	4.4		23	2.8	1.6	.2	.2	40	15
Oct. 11-20	733	53	22	2.2	1.8	4	15	.06	3.6	1.6	4.7		25	2.3	1.6	.2	.1	41	16
Oct. 21-31	921	56	122	5.0	2.1	10	14	.02	3.6	1.5	5.0		25	2.6	1.6	.2	.1	41	15
Average	1,347	58	142	4.4	2.3	7	13	0.04	3.6	1.5	4.3		22	3.0	1.7	0.1	0.4	41	15

Chemical analyses, in equivalents per million, year November 1944 to October 1945

Nov. 1-10, 1944	695	50							0.190	0.148	0.178	0.038	0.459	0.046	0.051	0.005	0.002		
Nov. 11-20	670	48							.205	.140	0.196		.426	.054	.054	.005	.002		
Nov. 21-30	1,193	41							.230	.082	.198		.377	.069	.054	.005	.005		
Dec. 1-10	1,157	36							.175	.132	.195		.361	.077	.054	.005	.005		
Dec. 11-20	1,485	34							.170	.123	.194		.344	.081	.051	.005	.006		
Dec. 21-31	881	37							.180	.132	.200		.393	.060	.051	.005	.003		
Jan. 1-10, 1945	2,591	38							.150	.099	.174	.038	.279	.094	.059	.005	.010		
Jan. 11-20	1,355	38							.160	.115	.139	.031	.311	.067	.056	.000	.005		
Jan. 21-31	1,005	39							.190	.099	.190		.361	.056	.051	.005	.006		
Feb. 1-10	871	34							.205	.090	.211		.393	.048	.054	.005	.006		
Feb. 11-19	2,340	45							.160	.099	.181		.295	.083	.051	.005	.006		
Feb. 20-28	2,370	45							.155	.115	.130		.262	.083	.042	.005	.008		
Mar. 1-10	1,538	49							.170	.123	.145		.311	.071	.045	.005	.006		
Mar. 11-20	1,095	54							.175	.123	.157		.344	.058	.045	.005	.003		
Mar. 21-31	1,126	60							.175	.140	.169		.377	.054	.045	.005	.003		
Apr. 1-10	948	60							.190	.132	.148	.033	.377	.058	.051	.005	.005		
Apr. 11-20	1,226	64							.180	.107	.210		.361	.083	.045	.005	.003		
Apr. 21-30	1,395	60							.180	.123	.150		.344	.054	.042	.005	.008		

ROANOKE RIVER BASIN—Continued

DAN RIVER AT LEAKSVILLE, N. C.—Continued

Chemical analyses, in equivalents per million, year November 1944 to October 1945—Continued

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed		Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
				Unfiltered	Filtered														
May 1-10	960	57							0.200	0.123	0.189		0.393	0.054	0.054	0.005	0.006		
May 11-20	1,009	65							.190	.115	.198		.393	.052	.045	.005	.008		
May 21-31	1,295	68							.160	.107	.195		.328	.069	.045	.005	.015		
June 1-10	792	67							.180	.132	.214		.410	.052	.051	.005	.008		
June 11-20	748	75							.185	.132	.199		.410	.050	.045	.005	.006		
June 21-30	613	76							.185	.132	.218		.410	.054	.056	.005	.010		
July 1-10	589	80							.215	.123	.130	.033	.393	.058	.045	.005	.013		
July 11-20	726	74							.170	.115	.240		.410	.048	.054	.011	.002		
July 21-31	1,548	77							.145	.090	.172		.279	.065	.042	.011	.010		
Aug. 1-10	826	76							.170	.107	.178		.344	.058	.042	.005	.006		
Aug. 11-20	575	74							.190	.132	.180		.393	.054	.045	.005	.005		
Aug. 21-31	535	73							.195	.140	.181		.410	.056	.042	.005	.003		
Sept. 1-10	528	74							.200	.140	.217		.459	.048	.042	.005	.003		
Sept. 11-20	10,310	68							.145	.099	.143		.246	.085	.034	.011	.011		
Sept. 21-30	1,316	71							.170	.123	.184		.344	.069	.045	.011	.008		
Oct. 1-10	920	61							.180	.123	.191		.377	.058	.045	.011	.003		
Oct. 11-20	733	53							.180	.132	.204		.410	.048	.045	.011	.002		
Oct. 21-31	921	56							.180	.123	.219		.410	.054	.045	.011	.002		
Average	1,347	58							0.180	0.123	0.187		0.361	0.062	0.048	0.005	0.006		

Temperature (° F.) of water of Dan River at Leaksville, N. C., year November 1944 to October 1945

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

PAMLICO RIVER BASIN

TAR RIVER AT TARBORO, N. C.

LOCATION.—At gaging station at bridge on U. S. Highway 64 at Tarboro, Edgecombe County, and 6½ miles downstream from Fishing Creek.
DRAINAGE AREA.—2,100 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Water temperatures: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 62 parts per million May 1–10, June 11–20; minimum, 45 parts per million Feb. 20–28.
Total hardness: Maximum, 22 parts per million Apr. 11–20; minimum, 11 parts per million Oct. 1–10.
Water temperatures: Maximum, 84° F. July 2; minimum, 34° F. Dec. 20, Jan. 27, Feb. 2, 3, 4.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1032.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed		Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
				Unfiltered	Filtered														
Oct. 1-10, 1944	9,685	66	50	14	12	65	8.4	0.11	2.9	1.0	3.0	1.8	14	4.2	2.5	0.0	0.2	48	11
Oct. 11-20	959	60	17	8.6	6.2	40	15	.25	4.4	1.4	6.8		24	4.1	5.2	.0	.4	59	17
Oct. 21-31	2,097	54	44	10	7.1	60	15	.27	3.7	1.6	4.3		18	4.0	4.2	.0	.4	58	16
Nov. 1-10	816	53	9	7.6	5.5	51	18	.39	4.2	1.9	5.6		25	3.1	4.6	.0	.3	61	18
Nov. 11-20	956	51	9	6.5	4.7	28	17	.07	4.6	1.9	7.2		29	3.3	5.1	.1	.4	61	19
Nov. 21-30	1,714	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Dec. 1-10	7,177	39	30	10	7.7	39	9.8	.04	3.0	1.3	5.2		14	6.2	4.0	.1	.4	50	13
Dec. 11-20	3,951	37	24	7.3	6.0	32	11	.03	3.0	1.3	5.1		14	5.5	4.5	.0	.4	48	13
Dec. 21-31	1,784	39	10	5.5	4.8	23	14	.02	3.6	1.4	6.4		20	4.7	4.9	.0	.6	52	15
Jan. 1-10, 1945	3,465	40	34	7.3	6.8	30	13	.10	3.6	1.4	5.1	1.4	19	5.1	4.6	.0	.5	52	15
Jan. 11-20	4,028	40	18	8.8	6.1	33	11	.05	3.2	1.3	5.8		17	5.3	4.4	.0	.5	49	13
Jan. 21-31	2,145	39	12	5.4	4.1	20	14	.04	3.8	1.4	5.8		19	4.7	4.8	.0	.7	50	15
Feb. 1-10	1,665	36	9	4.6	3.7	27	14	.26	3.8	1.5	7.3		24	4.2	4.9	.0	.8	54	16
Feb. 11-19	4,966	46	46	9.1	6.7	38	11	.17	4.1	1.2	5.7		19	5.4	4.1	.0	.8	52	15
Feb. 20-28	8,766	44	32	9.2	7.6	40	8.8	.09	3.0	1.2	4.7		14	5.8	3.4	.0	.5	45	12
Mar. 1-10	6,262	50	23	8.8	6.9	38	9.2	.02	3.5	1.3	4.7		16	4.9	3.9	.0	.8	46	14
Mar. 11-20	2,616	54	17	7.6	5.9	30	10	.04	4.0	1.8	5.0		21	4.1	4.4	.0	.7	49	17
Mar. 21-31	1,686	62	9	7.3	6.5	56	12	.53	4.9	1.7	6.4		28	3.3	4.5	.0	.6	59	19

Apr. 1-10	1,018	64	11	6.4	5.8	55	14	.67	5.2	1.9	6.3	1.7	33	3.0	4.2	.0	.6	60	21
Apr. 11-20	887	66	11	5.0	3.8	16	15	.06	5.4	2.1	6.9		34	2.5	4.4	.0	.5	58	22
Apr. 21-30	1,515	62	41	7.7	6.9	32	16	.07	4.8	1.9	6.4		29	3.5	4.0	.0	.9	60	20
May 1-10	867	60	15	6.0	5.2	39	16	.27	5.0	1.9	6.3		29	3.1	4.2	.1	.9	62	20
May 11-20	770	66	34	4.6	3.8	27	14	.11	5.0	1.8	7.2		31	2.8	4.5	.1	.7	56	20
May 21-31	2,634	68	59	7.5	5.2	28	13	.03	4.4	1.6	5.2		24	3.7	3.5	.0	.6	53	18
June 1-10	2,576	68	34	9.1	7.2	36	12	.05	4.1	1.5	4.6		20	4.6	3.4	.0	.5	55	16
June 11-20	763	78	21	4.8	4.6	37	16	.29	4.7	1.8	6.5		28	4.1	4.0	.0	.5	62	19
June 21-30	584	79	26	5.0	4.8	21	15	.04	5.0	1.9	7.1		30	3.6	4.2	.1	1.4	60	20
July 1-10	478	80	28	5.5	4.2	26	15	.04	5.5	1.8	5.6	1.7	29	3.9	4.4	.1	1.4	59	21
July 11-20	3,141	75	141	12	7.6	38	10	.02	3.6	1.4	3.7	1.4	17	4.3	3.1	.1	.7	51	15
July 21-31	9,365	76	53	13	12	58	9.0	.04	3.6	1.3	3.2	1.5	17	4.3	2.4	.0	.2	53	14
Aug. 1-10	5,950	75	58	13	11	63	10	.07	4.0	1.3	3.1	1.3	19	3.4	2.6	.0	.3	51	15
Aug. 11-20	2,812	74	46	12	9.9	45	13	.07	4.5	1.6	4.0		22	3.2	3.5	.0	.3	55	18
Aug. 21-31	2,523	74	33	11	7.8	37	14	.05	4.6	1.8	4.4		23	3.5	4.0	.0	.5	56	19
Sept. 1-10	1,231	74	22	6.2	5.2	28	16	.09	5.0	2.0	5.8		28	3.6	4.4	.0	.6	59	21
Sept. 11-20	6,571	73	49	12	9.8	58	11	.04	3.7	1.3	4.4		20	3.0	3.2	.0	.2	51	15
Sept. 21-30	14,930	73	17	13	11	63	9.5	.05	3.9	1.3	4.0		18	3.9	3.5	.0	.1	52	15
Average	3,403	60	31	8.3	6.7	39	13	0.13	4.2	1.6	5.6		22	4.1	4.0	0.0	0.6	54	17

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	9,685	66	------	------	------	------	------	------	0.145	0.082	0.130	0.046	0.229	0.087	0.071	0.000	0.003	------	------
Oct. 11-20	959	60	------	------	------	------	------	------	.220	.115	0.296		.393	.085	.147	.000	.006	------	------
Oct. 21-31	2,097	54	------	------	------	------	------	------	.185	.132	.185		.295	.083	.118	.000	.006	------	------
Nov. 1-10	816	53	------	------	------	------	------	------	.210	.156	.244		.410	.065	.130	.000	.005	------	------
Nov. 11-20	956	51	------	------	------	------	------	------	.230	.156	.313		.475	.069	.144	.005	.006	------	------
Nov. 21-30	1,714	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Dec. 1-10	7,177	39	------	------	------	------	------	------	.150	.107	.225		.229	.129	.113	.005	.006	------	------
Dec. 11-20	3,951	37	------	------	------	------	------	------	.150	.107	.220		.229	.115	.127	.000	.006	------	------
Dec. 21-31	1,784	39	------	------	------	------	------	------	.180	.115	.279		.328	.098	.138	.000	.010	------	------
Jan. 1-10, 1945	3,465	40	------	------	------	------	------	------	.180	.115	.222	.036	.311	.106	.130	.000	.008	------	------
Jan. 11-20	4,028	40	------	------	------	------	------	------	.160	.107	.254		.279	.110	.124	.000	.008	------	------
Jan. 21-31	2,145	39	------	------	------	------	------	------	.190	.115	.250		.311	.098	.135	.000	.011	------	------
Feb. 1-10	1,665	36	------	------	------	------	------	------	.190	.123	.318		.393	.087	.138	.000	.013	------	------
Feb. 11-19	4,966	46	------	------	------	------	------	------	.205	.099	.248		.311	.112	.116	.000	.013	------	------
Feb. 20-28	8,766	44	------	------	------	------	------	------	.150	.099	.205		.229	.121	.096	.000	.008	------	------
Mar. 1-10	6,262	50	------	------	------	------	------	------	.175	.107	.205		.262	.102	.110	.000	.013	------	------
Mar. 11-20	2,616	54	------	------	------	------	------	------	.200	.148	.216		.344	.085	.124	.000	.011	------	------
Mar. 21-31	1,686	62	------	------	------	------	------	------	.245	.140	.280		.459	.069	.127	.000	.010	------	------

PAMLICO RIVER BASIN—Continued

TAR RIVER AT TARBORO, N. C.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed		Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
				Unfiltered	Filtered														
Apr. 1-10	1,018	64							0.260	0.156	0.274	0.043	0.541	0.062	0.118	0.000	0.010		
Apr. 11-20	887	66							.270	.173	.298		.557	.052	.124	.000	.008		
Apr. 21-30	1,515	62							.240	.156	.280		.475	.073	.113	.000	.015		
May 1-10	867	60							.250	.156	.272		.475	.065	.118	.005	.015		
May 11-20	770	66							.250	.148	.311		.508	.058	.127	.005	.011		
May 21-31	2,634	68							.220	.132	.227		.393	.077	.099	.000	.010		
June 1-10	2,576	68							.205	.123	.200		.328	.096	.096	.000	.008		
June 11-20	763	78							.235	.148	.282		.459	.085	.113	.000	.008		
June 21-30	584	79							.250	.156	.307		.492	.075	.118	.005	.023		
July 1-10	478	80							.274	.148	.244	.043	.475	.081	.124	.005	.023		
July 11-20	3,141	75							.180	.115	.161	.036	.279	.090	.087	.005	.011		
July 21-31	9,365	76							.180	.107	.139	.038	.279	.090	.068	.000	.003		
Aug. 1-10	5,950	75							.200	.107	.135	.033	.311	.071	.073	.000	.005		
Aug. 11-20	2,812	74							.225	.132	.175		.361	.067	.099	.000	.005		
Aug. 21-31	2,523	74							.230	.148	.193		.377	.073	.113	.000	.008		
Sept. 1-10	1,231	74							.250	.164	.254		.459	.075	.124	.000	.010		
Sept. 11-20	6,571	73							.185	.107	.191		.328	.062	.090	.000	.003		
Sept. 21-30	14,930	73							.195	.107	.175		.295	.081	.099	.000	.002		
Average	3,403	60							0.210	0.132	0.244		0.361	0.085	0.113	0.000	0.010		

Temperature (° F.) of water of Tar River at Tarboro, N. C., water year October 1944 to September 1945

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

CAPE FEAR RIVER BASIN

CAPE FEAR RIVER AT LILLINGTON, N. C.

LOCATION.—At gaging station at bridge on U. S. Highway 15A just downstream from Norfolk Southern Railway bridge at Lillington, Harnett County, and 1 mile downstream from Neill Creek.

DRAINAGE AREA.—3,440 square miles.

RECORDS AVAILABLE.—Chemical analyses: November 1944 to October 1945.
Water temperatures: November 1944 to October 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 92 parts per million June 1–10; minimum, 48 parts per million Feb. 20–28, Mar. 1–10.
Total hardness: Maximum, 28 parts per million June 1–10; minimum, 11 parts per million July 1–10.
Water temperatures: Maximum, 85° F. June 18, 20, July 29, Aug. 3; minimum, 34° F. Dec. 20.

REMARKS.—Records of discharge for year November 1944 to October 1945 are given in Water-Supply Papers 1032 and 1052.

Chemical analyses, in parts per million, year November 1944 to October 1945

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed		Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
				Unfiltered	Filtered														
Nov. 1-10, 1944	909	56	8	6.2	5.1	85	15	0.38	4.6	2.0	7.8	1.6	29	5.2	5.6	0.1	0.2	68	20
Nov. 11-20	899	54	2	3.6	3.4	30	13	.31	5.5	2.4	14		43	7.0	7.4	.1	.2	75	24
Nov. 21-30	4,300	48	22	4.5	3.4	24	12	.11	5.1	2.4	15		43	6.9	8.5	.2	.3	75	23
Dec. 1-10	4,770	39	32	7.0	5.5	33	11	.01	3.8	1.7	6.9		22	6.2	4.6	.1	.4	53	16
Dec. 11-20	3,469	36	18	5.2	4.1	20	12	.03	4.3	1.9	6.7		21	7.0	5.5	.1	.7	57	19
Dec. 21-31	1,660	39	10	4.2	3.3	17	14	.07	4.6	1.9	7.9	1.4	27	6.0	6.1	.1	.8	61	19
Jan. 1-10, 1945	5,547	40	45	6.4	5.2	27	12	.05	4.6	2.1	6.7	1.2	22	6.7	5.8	.1	.9	59	20
Jan. 11-20	3,292	44	22	5.2	3.9	17	12	.04	4.4	1.8	6.8		22	6.4	5.4	.1	.8	55	18
Jan. 21-31	2,022	41	14	3.9	2.9	9	13	.05	4.9	2.0	7.8		25	6.5	6.5	.1	.8	60	20
Feb. 1-10	1,531	37	10	2.8	2.5	9	14	.04	5.2	2.1	10		33	5.6	7.1	.1	.7	65	22
Feb. 11-19	11,480	45	91	6.6	4.8	26	11	.01	4.7	1.7	6.3		21	6.5	5.1	.1	1.4	56	19
Feb. 20-28	12,450	46	46	8.2	5.2	28	9.8	.03	4.1	1.5	3.7		14	7.0	3.5	.1	.5	48	16
Mar. 1-10	7,264	51	28	5.8	4.7	26	10	.03	3.8	1.7	4.8		18	5.7	3.9	.1	.5	48	16
Mar. 11-20	2,389	53	10	4.0	3.2	20	12	.11	4.4	1.9	7.2		25	5.9	5.2	.1	.4	56	19
Mar. 21-31	2,062	62	6	3.6	3.4	28	12	.19	5.8	2.0	9.7		35	5.5	6.1	.1	.5	61	23
Apr. 1-10	1,231	66	4	4.2	3.7	25	11	.19	6.0	2.3	9.8	1.5	39	6.2	6.6	.1	.4	65	24
Apr. 11-20	1,825	68	21	4.3	3.5	18	9.7	.10	6.0	2.3	9.9		38	4.7	6.4	.1	.7	64	24
Apr. 21-30	3,313	64	48	8.7	6.6	37	12	.04	4.7	1.9	8.1		28	4.8	5.6	.1	1.4	62	20

May 1-10	1,259	62	18	6.1	5.6	29	13	.05	5.6	2.3	8.2		32	5.3	5.8	.1	1.4	64	23
May 11-20	1,956	65	37	5.0	4.0	21	9.6	.05	5.7	2.3	12		41	5.3	6.4	.1	.7	66	24
May 21-31	1,405	71	39	5.6	3.4	27	13	.03	5.4	2.2	8.1		31	5.6	5.4	.2	1.0	67	22
June 1-10	613	74	13	8.1	------	20	13	.03	6.9	2.5	14		46	6.4	7.8	.2	1.7	92	28
June 11-20	390	81	8	4.6	3.8	22	8.0	.04	5.6	2.4	12		41	6.1	6.6	.2	.7	69	24
June 21-30	341	81	8	4.2	3.6	19	9.0	.05	6.4	2.5	16	2.0	52	6.6	9.6	.3	.8	86	26
July 1-10	577	80	16	4.9	4.2	27	10	.06	6.3	2.5	15	2.0	50	6.0	8.2	.3	1.1	83	11
July 11-20	5,427	80	142	12	11	28	8.0	.02	5.2	1.9	9.8	2.0	35	5.0	6.5	.2	.1	71	21
July 21-31	3,241	80	70	11	8.3	52	9.1	.05	3.8	1.4	4.7		19	4.8	3.2	.1	.3	52	15
Aug. 1-10	1,115	82	21	12	9.4	39	11	.04	4.9	1.6	6.4		25	4.6	4.9	.1	.5	61	19
Aug. 11-20	1,000	79	17	4.8	4.6	31	12	.06	5.6	2.3	13		39	5.8	8.9	.3	.8	73	23
Aug. 21-31	3,439	76	53	11	10	55	8.2	.04	3.6	1.5	4.8		18	4.2	4.0	.1	.7	53	15
Sept. 1-10	745	78	44	7.5	7.7	43	9.8	.12	4.6	2.0	9.2		29	5.3	6.5	.3	.6	63	20
Sept. 11-20	58,820	77	45	7.9	6.3	33	9.7	.06	4.4	1.7	7.0		24	5.8	4.8	.1	.7	56	18
Sept. 21-30	14,020	78	29	6.8	4.6	20	11	.03	4.2	1.6	5.1		19	5.6	3.9	.1	1.1	49	17
Oct. 1-10	3,100	68	21	6.0	5.0	27	12	.09	4.3	1.7	6.5		24	4.8	4.6	.1	.7	54	18
Oct. 11-20	1,315	57	9	5.2	4.8	20	12	.04	4.8	1.9	8.7		28	6.0	5.9	.2	.8	60	20
Oct. 21-31	1,540	63	5	4.8	4.2	16	11	.02	5.2	2.1	9.0		32	5.1	6.4	.1	.5	59	22
Average	4,742	62	29	6.2	5.0	28	11	.07	5.0	2.0	9.0		30	5.8	6.0	0.1	0.7	63	21

Chemical analyses, in equivalents per million, year November 1944 to October 1945

Nov. 1-10, 1944	909	56	------	------	------	------	------	------	0.230	0.164	0.339	0.041	0.475	0.108	0.158	0.005	0.003	------	------
Nov. 11-20	899	54	------	------	------	------	------	------	.275	.197	0.596		.705	.146	.209	.005	.003	------	------
Nov. 21-30	4,300	48	------	------	------	------	------	------	.255	.197	.652		.705	.144	.240	.011	.005	------	------
Dec. 1-10	4,770	39	------	------	------	------	------	------	.190	.140	.301		.361	.129	.130	.005	.006	------	------
Dec. 11-20	3,469	36	------	------	------	------	------	------	.215	.156	.290		.344	.146	.155	.005	.011	------	------
Dec. 21-31	1,660	39	------	------	------	------	------	------	.230	.156	.344	.036	.443	.125	.172	.005	.013	------	------
Jan. 1-10, 1945	5,547	40	------	------	------	------	------	------	.230	.178	.291	.031	.361	.139	.164	.005	.015	------	------
Jan. 11-20	3,292	44	------	------	------	------	------	------	.220	.148	.296		.361	.133	.152	.005	.013	------	------
Jan. 21-31	2,022	41	------	------	------	------	------	------	.245	.164	.337		.410	.135	.183	.005	.013	------	------
Feb. 1-10	1,531	37	------	------	------	------	------	------	.260	.173	.441		.541	.117	.200	.005	.011	------	------
Feb. 11-19	11,480	45	------	------	------	------	------	------	.235	.140	.276		.344	.135	.144	.005	.023	------	------
Feb. 20-28	12,450	46	------	------	------	------	------	------	.205	.123	.159		.229	.146	.099	.005	.008	------	------
Mar. 1-10	7,264	51	------	------	------	------	------	------	.190	.140	.207		.295	.119	.110	.005	.008	------	------
Mar. 11-20	2,389	53	------	------	------	------	------	------	.220	.156	.315		.410	.123	.147	.005	.006	------	------
Mar. 21-31	2,062	62	------	------	------	------	------	------	.289	.164	.421		.574	.115	.172	.005	.008	------	------
Apr. 1-10	1,231	66	------	------	------	------	------	------	.299	.189	.426	.038	.639	.129	.186	.005	.006	------	------
Apr. 11-20	1,825	68	------	------	------	------	------	------	.299	.189	.429		.623	.098	.180	.005	.011	------	------
Apr. 21-30	3,313	64	------	------	------	------	------	------	.235	.156	.354		.459	.100	.158	.005	.023	------	------

CAPE FEAR RIVER BASIN—Continued

CAPE FEAR RIVER AT LILLINGTON, N. C.—Continued

Chemical analyses, in equivalents per million, year November 1944 to October 1945—Continued

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed: Unfiltered	Oxygen consumed: Filtered	Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
May 1-10	1,259	62	------	------	------	------	------	------	0.280	0.189	0.358		0.525	0.110	0.164	0.005	0.023	------	------
May 11-20	1,956	65	------	------	------	------	------	------	.284	.189	.505		.672	.110	.180	.005	.011	------	------
May 21-31	1,405	71	------	------	------	------	------	------	.269	.181	.354		.508	.117	.152	.011	.016	------	------
June 1-10	613	74	------	------	------	------	------	------	.344	.206	.595		.754	.133	.220	.011	.027	------	------
June 11-20	390	81	------	------	------	------	------	------	.279	.197	.531		.672	.127	.186	.011	.011	------	------
June 21-30	341	81	------	------	------	------	------	------	.319	.206	0.696	0.051	.852	.137	.271	.016	.013	------	------
July 1-10	577	80	------	------	------	------	------	------	.314	.206	.652	.051	.819	.125	.231	.016	.018	------	------
July 11-20	5,427	80	------	------	------	------	------	------	.259	.156	.426	.051	.574	.104	.183	.011	.002	------	------
July 21-31	3,241	80	------	------	------	------	------	------	.190	.115	.206		.311	.100	.090	.005	.005	------	------
Aug. 1-10	1,115	82	------	------	------	------	------	------	.245	.132	.280		.410	.096	.138	.005	.008	------	------
Aug. 11-20	1,000	79	------	------	------	------	------	------	.279	.189	.572		.639	.121	.251	.016	.013	------	------
Aug. 21-31	3,439	76	------	------	------	------	------	------	.180	.123	.208		.295	.087	.113	.005	.011	------	------
Sept. 1-10	745	78	------	------	------	------	------	------	.230	.164	.400		.475	.110	.183	.016	.010	------	------
Sept. 11-20	58,820	77	------	------	------	------	------	------	.220	.140	.305		.393	.121	.135	.005	.011	------	------
Sept. 21-30	14,020	78	------	------	------	------	------	------	.210	.132	.220		.311	.117	.111	.005	.018	------	------
Oct. 1-10	3,100	68	------	------	------	------	------	------	.215	.140	.284		.393	.100	.130	.005	.011	------	------
Oct. 11-20	1,315	57	------	------	------	------	------	------	.240	.156	.378		.459	.125	.166	.011	.013	------	------
Oct. 21-31	1,540	63	------	------	------	------	------	------	.259	.173	.392		.524	.106	.181	.005	.008	------	------
Average	4,742	62	------	------	------	------	------	------	0.250	0.164	0.391		0.492	0.121	0.169	0.005	0.011	------	------

Temperature (° F.) of water of Cape Fear River at Lillington, N. C., year November 1944 to October 1945

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

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH CAROLINA

Chemical analyses, in parts per million

Source	Date	Mean discharge (second-feet)	Suspended matter	Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Aberdeen Creek at Aberdeen	May 25, 1945		4	16	1.8	0.02	0.7	0.3	2.1	4	1.1	2.1	0.0	0.2	13	3
Bear Creek at Robbins	Oct. 30, 1944	46	2	39	8.2	.04	2.2	.9	4.7	16	1.7	3.2	.0	.1	36	9
Beetree Creek near Swannanoa	Apr. 14, 1945	9.1	1	4	7.9	.01	1.3	.6	2.1	7	3.1	.9	.0	.1	20	6
Big Laurel Creek near Stackhouse	May 9	235	30	8	9.3	.03	2.7	1.0	3.0	16	2.5	.6	.1	.6	28	11
Big Rockfish Creek near Hope Mills	Nov. 9, 1944	[1] 193	6	26	4.4	.04	.4	.4	3.4	6	1.3	2.5	.0	.3	19	3
Black Mountain Reservoir at Black Mountain	Mar. 2, 1945		2	7	7.9	.02	1.8	.6	2.7	12	2.0	.6	.0	.1	23	7
Boylston Creek near Horseshoe	Mar. 8	31	20	4	6.5	.03	2.4	1.0	2.0	13	1.9	.9	.1	.4	22	10
Broad River near Chimney Rock	Nov. 11, 1944	84	2	5	11	.01	2.2	.9	3.3	16	1.3	1.0	.1	.4	30	9
Broad River near Boiling Springs	Nov. 10	805	58	5	13	.07	2.2	1.1	4.5	19	1.7	1.5	.1	.2	35	10
Brown Creek near Polkton	Oct. 31	4.4	18	37	9.2	.02	3.7	2.1	4.5	17	6.3	4.9	.0	.3	53	18
Cane Creek at Fletcher	Aug. 9, 1945	34	35	9	13	.09	4.0	1.4	3.8	24	2.1	1.2	.1	.3	38	16
Cane River near Sioux	Sept. 27	162	6	4	10	.02	2.6	1.1	3.3	17	2.3	.9	.0	.8	29	11
Cape Fear River at Lillington [2]	1944–45		29	28	11	.07	5.0	2.0	9.0	30	5.8	6.0	.1	.7	63	21
Cape Fear River at Lock 3 near Tarheel	Nov. 4, 1944	1,700	5	35	10	.32	2.8	1.4	5.1	14	4.7	4.9	.0	.8	46	13
Cataloochee Creek near Cataloochee	Apr. 2, 1945	159	17	20	6.0	.01	1.2	.4	1.5	7	1.2	.5	.0	.2	19	5
Catawba River near Marion	Nov. 13, 1944	145	2	7	12	.03	2.4	1.0	3.7	17	1.9	1.2	.1	.2	31	10
Catawba River at Rhodhiss	Sept. 14, 1945			11	9.0	.01	3.3	1.2	4.4	20	2.6	2.6	.0	.1	35	13
Catheys Creek near Brevard	Mar. 8	33	1	5	5.7	.02	.6	.4	2.2	7	1.1	.5	.1	.1	14	3
Clear Creek near Hendersonville	Sept. 26	59	28	3	13	.02	2.0	.7	3.1	13	1.7	1.4	.0	.4	32	8
Contentnea Creek near Wilson	Nov. 17, 1944	35	9	57	12	.17	2.7	1.2	6.6	20	2.9	4.6	.0	.1	53	12
Contentnea Creek at Hookerton	Oct. 26	501	26	56	8.0	.08	2.4	1.0	5.6	12	5.7	4.5	.0	.2	48	10
Crab Creek near Penrose	Mar. 9, 1945	26	7	10	8.4	.04	.8	.4	2.9	9	1.0	.9	.1	.1	20	4
Crystal Lake at Lakeview	Apr. 5		7	28	1.6	.01	1.0	.1	6.1	11	2.1	3.4	.0	.2	23	3
Dan River near Wentworth	Oct. 23, 1944	1,340	129	7	12	.04	3.2	1.2	5.6	22	3.8	2.1	.0	.2	40	13
Dan River at Leaksville [2]	1944–45	1,347	142	7	13	.04	3.6	1.5	4.3	22	3.0	1.7	.1	.4	41	15
Davidson River near Brevard	Mar. 9, 1945	113	0	7	5.9	.02	.9	.4	2.0	7	1.4	.5	.1	.1	15	4
Deep River at Ramseur	Nov. 2, 1944	106	10	44	16	.05	6.0	2.6	7.6	31	6.9	5.8	.0	1.8	74	26
Denson Creek near Troy	Jan. 3, 1945			100	14	.12	2.4	.9	3.5	11	4.1	2.8	.0	.2	[3] 56	10
Drowning Creek near Hoffman	Oct. 30, 1944	204	4	34	5.0	.04	2.0	.3	2.5	7	1.2	2.8	.0	1.0	26	6
Elk Creek near Elk Park	Sept. 26, 1945	67	4	8	9.2	.04	2.7	.9	2.9	15	2.0	1.0	.1	1.0	28	10

First Broad River near Lawndale	Nov. 10, 1944	154	5	3	12	.01	2.4	1.2	[4] 11	30	3.4	3.6	.1	.3	46	11
French Broad River at Rosman	Mar. 8, 1945	202	6	8	5.9	.04	.7	.3	2.3	7	1.1	.5	.1	.1	14	3
French Broad River at Calvert	Mar. 8	302	7	9	6.8	.05	1.0	.3	2.6	8	1.2	.8	.1	.1	17	4
French Broad River at Blantyre	Mar. 9	848	17	38	7.1	.06	2.6	.5	7.6	21	3.6	2.9	.0	.1	40	9
French Broad River at Bent Creek	Aug. 9	1,000	34	25	9.7	.01	3.4	.9	8.0	24	3.7	4.2	.0	.4	45	12
French Broad River at Asheville	Aug. 9, 1945	1,190	46	28	9.3	.06	4.4	1.3	19	34	17	7.9	.0	1.8	81	16
French Broad River at Marshall	May 7	2,230	28	10	11	.07	4.6	1.8	8.6	12	23	2.0	.1	.9	60	19
French Broad River at Hot Springs	May 8	2,400	28	19	9.3	.06	2.6	1.4	9.1	13	16	2.8	.0	1.1	50	12
Green River near Mill Spring	Nov. 11, 1944	297	69	6	10	.01	1.9	1.0	3.6	16	1.3	1.2	.1	.3	28	9
Haw River near Pittsboro	Oct. 19	286	6	17	16	.02	5.8	2.4	21	54	9.5	11	.3	.3	95	24
Hominy Creek at Candler	Aug. 9, 1945	38	45	6	13	.03	3.8	1.4	4.9	24	3.2	1.5	.1	.6	40	15
Ivy River near Marshall	May 9	141	17	6	13	.07	3.6	1.7	3.4	22	3.0	1.0	.1	.7	39	16
Jonathan Creek near Cove Creek	Apr. 2	236	95	20	7.4	.07	1.6	.5	1.5	8	1.5	.4	.0	.9	24	6
Linville River at Branch	Nov. 13, 1944	48	2	7	7.6	.01	1.8	.7	2.6	12	1.1	1.2	.1	.2	21	7
Little River (French Broad River Basin) near Penrose	Mar. 9, 1945	130	3	9	6.4	.04	.7	.3	2.3	7	1.1	.6	.1	.1	15	3
Little River (Pee Dee River Basin) near Troy	Jan. 3	------	------	75	14	.19	3.7	1.2	3.7	16	4.9	2.8	.0	.2	58	14
Little Rockfish Creek near Hope Mills	Nov. 9, 1944	[1] 148	13	28	4.6	.19	.6	.5	3.8	7	1.7	2.9	.0	.3	22	4
Lovel Creek at Mount Airy	July 4, 1945	------	10	3	11	.02	3.2	.9	3.3	19	1.3	1.1	.1	.3	31	12
Lower Little River at Linden	Nov. 10, 1944	346	2	34	5.5	.01	1.0	.6	4.1	7	2.1	2.9	.0	2.2	28	5
Lumber River at Boardman	Nov. 3	827	2	83	7.4	.06	.9	.7	5.0	11	2.3	3.2	------	.2	38	5
Mackeys Creek (at highway bridge) at Mackeys	Dec. 12	------	10	220	16	.64	14	4.4	9.5	41	14	18	------	.2	[5] 168	53
Mackeys Creek (at railway bridge) at Mackeys	Dec. 12	------	6	220	------	1.4	14	4.3	12	39	12	24	------	.1	------	53
Mills River near Mills River	Mar. 8, 1945	145	3	8	5.2	.03	.8	.4	2.1	7	1.4	.5	.1	.1	14	4
Mud Creek at Naples	Aug. 9	120	54	6	12	.02	2.6	.9	4.5	17	2.2	1.8	.1	1.2	36	10
Neuse River near Northside	Oct. 23, 1944	731	43	34	8.6	.05	4.2	1.5	4.5	19	5.1	3.5	.0	.8	49	17
Nolichucky River at Poplar	Sept. 27, 1945	764	56	6	9.3	.02	2.8	1.1	2.3	15	2.4	1.0	.0	.4	29	12
North Buffalo Creek near Greensboro [6]	Oct. 23, 1944	32	53	33	14	.02	14	2.0	[7] 165	[8] 307	46	73	.0	.2	466	43
North Fork New River at Crumpler	May 12, 1945	495	6	7	9.2	.03	2.8	1.0	3.0	17	1.9	.5	.1	.8	29	11
North Fork Swannanoa River near Black Mountain	Apr. 14	31	1	2	7.0	.01	1.4	.5	1.7	8	1.6	.6	.0	.2	18	6
North Toe River at Altapass	May 14	238	21	12	7.9	.07	2.2	1.0	2.3	14	1.5	.6	.0	.8	24	10
Oconalufty River at Cherokee	Aug. 17	218	186	27	4.5	.01	1.2	.5	1.6	6	2.4	.4	.0	.7	20	8
Oconalufty River at Birdtown	Aug. 7	987	106	17	4.5	.02	1.6	.5	1.2	6	2.3	.4	.0	.9	20	6
Pee Dee River near Rockingham	Oct. 30, 1944	4,950	64	18	8.9	.06	3.8	1.4	5.0	19	4.0	3.0	.1	2.4	44	15
Pigeon River at Canton	Apr. 14, 1945	250	------	7	6.2	.02	1.3	.6	2.2	9	1.6	.8	.0	.3	19	6
Pigeon River near Hepco	Apr. 2	1,540	325	42	7.7	.02	10	1.0	11	38	7.6	9.0	.1	.4	76	29

See footnotes at end of table.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH CAROLINA—Continued

Chemical analyses, in parts per million—Continued

Source	Date	Mean discharge (second-feet)	Suspended matter	Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Rays Mill Creek at Aberdeen	May 22	[1] 4.46	6	12	4.0	0.04	1.6	0.5	2.2	6	1.4	3.0	0.0	0.4	20	6
Reedy Fork near Gibsonville	Oct. 23, 1944	262	31	22	11	.10	3.6	1.6	4.6	22	3.8	2.2	.1	.2	46	16
Reems Creek near Weaverville	May 7, 1945	[1] 31.4	16	10	12	.08	2.4	1.0	3.3	15	2.8	1.2	.0	.4	34	10
Richland Creek at Waynesville	Apr. 2	232	478	12	7.7	.03	2.6	.8	2.9	13	2.5	.9	.1	1.7	27	10
Roanoke River near Scotland Neck [2]	1944–45	10,640	104	20	13	.18	6.9	2.5	9.7	41	7.3	5.9	.1	2.2	76	28
Rockfish Creek at Lakefield	May 22, 1945	[1] 101	4	26	4.1	.04	1.6	.3	1.8	6	1.0	2.1	.0	.4	19	5
Rocky River near Norwood	Oct. 31, 1944	231	7	30	16	.29	7.8	3.9	22	61	10	16	.0	.2	110	36
Sandymush Creek near Alexander	May 7, 1945	50	17	8	16	.08	4.4	2.0	4.8	30	2.8	1.0	.1	.5	47	19
Scott Creek above Sylva	Aug. 6	116	887	2	9.6	.01	2.3	1.0	2.8	12	2.4	1.5	.1	1.6	28	10
Second Broad River at Cliffside	Nov. 11, 1944	202	8	6	15	.10	2.9	1.4	12	32	3.1	6.2	.1	.4	57	13
South Fork Catawba River at Lowell	Nov. 10	452	9	12	15	.14	3.6	1.9	6.2	26	2.5	3.9	.1	.8	48	17
South Fork Mills River at the Pink Beds	Mar. 9, 1945	29	1	7	5.5	.03	.6	.3	2.0	6	1.2	.5	.1	.1	14	3
South Fork New River near Jefferson	May 3	482	14	11	8.0	.08	2.2	.8	2.2	13	1.4	.9	.0	.2	24	9
South Toe River at Newdale	May 14	184	7	13	5.8	.05	1.4	.6	1.9	9	1.7	.5	.0	.3	18	6
Spring Creek at Hot Springs	May 8	[1] 78.6	18	4	11	.03	2.8	.9	3.3	17	2.5	.5	.1	.5	31	11
Swannanoa River at Biltmore	Apr. 14	130	8	6	8.5	.04	2.3	1.0	3.8	13	3.2	2.0	.0	1.6	32	10
Tar River at Tarboro [2]	1944–45	3,403	31	39	13	.13	4.2	1.6	5.6	22	4.1	4.0	.0	.6	54	17
Tuckasegee River at Tuckaseigee	Aug. 6, 1945	373	207	10	5.4	.02	1.2	.4	2.3	7	2.1	.6	.0	1.0	24	5
Tuckasegee River at Dillsboro	Aug. 6	728	525	7	7.0	.03	2.1	.7	2.4	10	2.8	.8	.0	1.5	27	8
Tuckasegee River at Bryson City	Aug. 7	1,970	260	13	7.4	.04	2.0	.7	3.8	12	4.1	.8	.0	1.1	30	8
Uwharrie River near Eldorado	Oct. 31, 1944	91	6	41	16	.28	5.8	3.1	5.1	36	4.1	3.2	.0	.2	61	27
Waccama River at Freeland	Nov. 2	146	3	170	6.8	.05	2.8	1.0	6.2	14	1.6	8.0		.1	[3] 80	11
Watauga River near Sugar Grove	Sept. 26, 1945	124	47	5	12	.03	4.8	1.8	3.8	25	3.3	1.5	.1	1.8	42	19
Yadkin River at Patterson	Nov. 13, 1944	18	155	3	10	.01	2.3	1.1	3.7	18	1.5	1.2	.1	.2	30	10

Chemical analyses, in equivalents per million

Aberdeen Creek at Aberdeen	May 25, 1945						0.035	0.025	0.091	0.066	0.023	0.059	0.000	0.003		
Bear Creek at Robbins	Oct. 30, 1944	46					.110	.074	.205	.262	.035	.090	.000	.002		
Beetree Creek near Swannanoa	Apr. 14, 1945	9.1					.065	.049	.093	.115	.065	.025	.000	.002		
Big Laurel Creek near Stackhouse	May 9	235					.135	.082	.129	.262	.052	.017	.005	.010		
Big Rockfish Creek near Hope Mills	Nov. 9, 1944	[1] 193					.020	.033	.148	.098	.027	.071	.000	.005		
Black Mountain Reservoir at Black Mountain	Mar. 2, 1945						.090	.049	.119	.197	.042	.017	.000	.002		
Boylston Creek near Horseshoe	Mar. 8	31					.120	.082	.087	.213	.040	.025	.005	.006		
Broad River near Chimney Rock	Nov. 11, 1944	84					.110	.074	.144	.262	.027	.028	.005	.006		
Broad River near Boiling Springs	Nov. 10	805					.110	.090	.196	.311	.035	.042	.005	.003		
Brown Creek near Polkton	Oct. 31	4.4					.185	.173	.195	.279	.131	.138	.000	.005		
Cane Creek at Fletcher	Aug. 9. 1945	34					.200	.115	.166	.393	.044	.034	.005	.005		
Cane River near Sioux	Sept. 27	162					.130	.090	.145	.279	.048	.025	.000	.013		
Cape Fear River at Lillington [2]	1944–45						.250	.164	.391	.492	.121	.169	.005	.011		
Cape Fear River at Lock 3 near Tarheel	Nov. 4, 1944	1,700					.140	.115	.223	.229	.098	.138	.000	.013		
Cataloochee Creek near Cataloochee	Apr. 2, 1945	159					.060	.033	.064	.115	.025	.014	.000	.003		
Catawba River near Marion	Nov. 13, 1944	145					.120	.082	.159	.279	.040	.034	.005	.003		
Catawba River at Rhodhiss	Sept. 14, 1945						.165	.099	.193	.328	.054	.073	.000	.002		
Catheys Creek near Brevard	Mar. 8	33					.030	.033	.096	.115	.023	.014	.005	.002		
Clear Creek near Hendersonville	Sept. 26	59					.100	.058	.135	.213	.035	.039	.000	.006		
Contentnea Creek near Wilson	Nov. 17, 1944	35					.135	.099	.286	.328	.060	.130	.000	.002		
Contentnea Creek at Hookerton	Oct. 26	501					.120	.082	.244	.197	.119	.127	.000	.003		
Crab Creek near Penrose	Mar. 9, 1945	26					.040	.033	.128	.148	.021	.025	.005	.002		
Crystal Lake at Lakeview	Apr. 5						.050	.008	.265	.180	.044	.096	.000	.003		
Dan River near Wentworth	Oct. 23, 1944	1,340					.160	.099	.243	.361	.079	.059	.000	.093		
Dan River at Leaksville [2]	1944–45	1,347					.180	.123	.187	.361	.062	.048	.005	.006		
Davidson River near Brevard	Mar. 9, 1945	113					.045	.033	.087	.115	.029	.014	.005	.002		
Deep River at Ramseur	Nov. 2, 1944	106					.299	.214	.332	.508	.144	.164	.000	.029		
Denson Creek near Troy	Jan. 3, 1945						.120	.074	.153	.180	.085	.079	.000	.003		
Drowning Creek near Hoffman	Oct. 30, 1944	204					.100	.025	.110	.115	.025	.079	.000	.016		
Elk Creek near Elk Park	Sept. 26, 1945	67					.135	.074	.128	.246	.042	.028	.005	.016		
First Broad River near Lawndale	Nov. 10, 1944	154					.120	.099	.457	.492	.071	.012	.005	.005		
French Broad River at Rosman	Mar. 8, 1945	202					.035	.025	.099	.115	.023	.014	.005	.002		
French Broad River at Calvert	Mar. 8	302					.050	.025	.111	.131	.025	.023	.005	.002		
French Broad River at Blantyre	Mar. 9	848					.130	.041	.332	.344	.075	.082	.000	.002		
French Broad River at Bent Creek	Aug. 9	1,000					.170	.074	.350	.393	.077	.118	.000	.006		

See footnotes at end of table.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH CAROLINA—Continued

Chemical analyses, in equivalents per million—Continued

Source	Date	Mean discharge (second-feet)	Suspended matter	Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
French Broad River at Asheville	Aug. 9	1,190					0.220	0.107	0.836	0.557	0.354	0.223	0.000	0.029		
French Broad River at Marshall	May 7	2,230					.230	.148	.374	.197	.479	.056	.005	.015		
French Broad River at Hot Springs	May 8	2,400					.130	.115	.398	.213	.333	.079	.000	.018		
Green River near Mill Spring	Nov. 11, 1944	297					.095	.082	.156	.262	.027	.034	.005	.005		
Haw River near Pittsboro	Oct. 19	286					.289	.197	.928	.885	.198	.310	.016	.005		
Hominy Creek at Candler	Aug. 9, 1945	38					.190	.115	.212	.393	.067	.042	.005	.010		
Ivy River near Marshall	May 9	141					.180	.140	.147	.361	.062	.028	.005	.011		
Jonathan Creek near Cove Creek	Apr. 2	236					.080	.041	.067	.131	.031	.011	.000	.015		
Linville River at Branch	Nov. 13, 1944	48					.090	.058	.114	.197	.023	.034	.005	.003		
Little River (French Broad River Basin) near Penrose	Mar. 9, 1945	130					.035	.025	.102	.115	.023	.017	.005	.002		
Little River (Pee Dee River Basin) near Troy	Jan. 3						.185	.099	.162	.262	.102	.079	.000	.003		
Little Rockfish Creek near Hope Mills	Nov. 9, 1944	[1] 148					.030	.041	.166	.115	.035	.082	.000	.005		
Lovel Creek at Mount Airy	July 4, 1945						.160	.074	.145	.311	.027	.031	.005	.005		
Lower Little River at Linden	Nov. 10, 1944	346					.050	.049	.177	.115	.044	.082	.000	.035		
Lumber River at Boardman	Nov. 3	827					.045	.058	.218	.180	.048	.090		.003		
Mackeys Creek (at highway bridge) at Mackeys	Dec. 12						.699	.362	.413	.672	.291	.508		.003		
Mackeys Creek (at railway bridge) at Mackeys	Dec. 12						.699	.354	.515	.639	.250	.677		.002		
Mills River near Mills River	Mar. 8, 1945	145					.040	.033	.092	.115	.029	.014	.005	.002		
Mud Creek at Naples	Aug. 9	120					.130	.074	.196	.279	.046	.051	.005	.019		
Neuse River near Northside	Oct. 23, 1944	731					.210	.123	.196	.311	.106	.099	.000	.013		
Nolichucky River at Poplar	Sept. 27, 1945	764					.140	.090	.100	.246	.050	.028	.000	.006		
North Buffalo Creek near Greensboro [6]	Oct. 23, 1944	32					.699	.164	7.187	5.031	.958	2.059	.000	.003		
North Fork New River at Crumpler	May 12, 1945	495					.140	.082	.129	.279	.040	.014	.005	.013		
North Fork Swannanoa River near Black Mountain	Apr. 14	31					.070	.041	.073	.131	.033	.017	.000	.003		
North Toe River at Altapass	May 14	238					.110	.082	.098	.229	.031	.017	.000	.013		
Oconalufty River at Cherokee	Aug. 17	218					.060	.041	.069	.098	.050	.011	.000	.011		
Oconalufty River at Birdtown	Aug. 7	987					.080	.041	.051	.098	.048	.011	.000	.015		
Pee Dee River near Rockingham	Oct. 30, 1944	4,950					.190	.115	.218	.311	.083	.085	.005	.039		
Pigeon River at Canton	Apr. 14, 1945	250					.065	.049	.095	.148	.033	.023	.000	.005		
Pigeon River near Hepco	Apr. 2	1,540					.499	.082	.465	.023	.158	.254	.005	.006		

Rays Mill Creek at Aberdeen	May 22	[1] 4.46					.080	.041	.097	.098	.029	.085	.000	.006		
Reedy Fork near Gibsonville	Oct. 23, 1944	262					.180	.132	.198	.361	.079	.062	.005	.003		
Reems Creek near Weaverville	May 7, 1945	[1] 31.4					.120	.082	.142	.246	.058	.034	.000	.006		
Richland Creek at Waynesville	Apr. 2	232					.130	.066	.126	.213	.052	.025	.005	.027		
Roanoke River near Scotland Neck [2]	1944-45	10,640					.344	.206	.422	.672	.152	.166	.005	.036		
Rockfish Creek at Lakefield	May 22, 1945	[1] 101					.080	.025	.079	.098	.021	.059	.000	.006		
Rocky River near Norwood	Oct. 31, 1944	231					.389	.321	.952	1.000	.208	.451	.000	.003		
Sandymush Creek near Alexander	May 7, 1945	50					.220	.164	.207	.492	.058	.028	.005	.008		
Scott Creek above Sylva	Aug. 6	116					.115	.082	.123	.197	.050	.042	.005	.026		
Second Broad River at Cliffside	Nov. 11, 1944	202					.145	.115	.516	.525	.065	.175	.005	.006		
South Fork Catawba River at Lowell	Nov. 10	452					.180	.156	.270	.426	.052	.110	.005	.013		
South Fork Mills River at the Pink Beds	Mar. 9, 1945	29					.030	.025	.089	.098	.025	.014	.005	.002		
South Fork New River near Jefferson	May 3	482					.110	.066	.094	.213	.029	.025	.000	.003		
South Toe River at Newdale	May 14	184					.070	.049	.083	.148	.035	.014	.000	.005		
Spring Creek at Hot Springs	May 8	[1] 78.6					.140	.074	.144	.279	.052	.014	.005	.008		
Swannanoa River at Biltmore	Apr. 14	130					.115	.082	.165	.213	.067	.056	.000	.026		
Tar River at Tarboro [2]	1944-45	3,403					.210	.132	.244	.361	.085	.113	.000	.010		
Tuckasegee River at Tuckaseigee	Aug. 6, 1945	373					.060	.033	.099	.115	.044	.017	.000	.016		
Tuckasegee River at Dillsboro	Aug. 6	728					.105	.058	.106	.164	.058	.023	.000	.024		
Tuckasegee River at Bryson City	Aug. 7	1,970					.100	.058	.165	.197	.085	.023	.000	.018		
Uwharrie River near Eldorado	Oct. 31, 1944	91					.289	.255	.224	.590	.085	.090	.000	.008		
Waccamaw River at Freeland	Nov. 2	146					.140	.082	.268	.229	.033	.226		.002		
Watauga River near Sugar Grove	Sept. 26, 1945	124					.240	.148	.167	.410	.069	.042	.005	.029		
Yadkin River at Patterson	Nov. 13, 1944	18					.115	.090	.163	.295	.031	.034	.005	.003		

[1] Measured discharge.
[2] Average of analyses of composites of daily samples.
[3] Large proportion of organic matter; sum of mineral constituents 33 parts.
[4] Includes equivalent of 1.2 parts of potassium (K).
[5] Large proportion of organic matter; sum of mineral constituents 97 parts.
[6] Water polluted with industrial wastes and sewage.
[7] Includes equivalent of 10 parts of potassium (K).
[8] Includes equivalent of 58 parts of carbonate (CO_3).

MISCELLANEOUS ANALYSES OF CANALS AND STREAMS IN SOUTHERN FLORIDA

Chemical analyses, in parts per million

Date of collection	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Ten Mile Creek near Fort Pierce												
Oct. 26, 1944	55	6.9	40.6	44	6.9	24	114	34	44	0.8	210	138
Nov. 14	57	7.1	36.0	35	5.8	25	98	32	36	.4	182	112
Dec. 4	54	5.8	44.7	------	------	------	100	35	66	------	------	123
Jan. 18, 1945	36	5.9	51.1	------	------	------	110	40	76	------	------	141
Feb. 15	85	6.0	59.5	------	------	------	124	35	92	------	------	156
Mar. 14	36	6.1	80.1	------	------	------	172	70	122	------	------	216
Apr. 18	17	6.4	129	------	------	------	254	95	205	------	------	368
May 22	27	6.4	123	------	------	------	252	100	192	------	------	352
West Palm Beach Canal at Canal Point												
May 26, 1945	30	7.1	46.0	43	12	38	164	32	50	1.4	257	157
Sept. 22	640	7.0	78.3	83	29	40	286	76	71	.2	440	326
West Palm Beach Canal at Big Mound Canal												
May 26, 1945	------	------	64.9	------	------	------	256	24	68	------	------	186
Sept. 22	280	6.3	13.5	17	4.0	1.8	56	4	9	0.6	64	59
West Palm Beach Canal at Twenty-six Mile Bend near Loxahatchee												
May 26, 1945	70	7.3	77.8	52	16	83	202	38	121	0.0	410	196
Sept. 22	320	6.5	21.5	24	5.9	6.0	82	8	15	1.3	101	84
West Palm Beach Canal at West Palm Beach												
May 26, 1945	40	7.1	67.5	56	14	64	200	40	92	0.7	365	197
Sept. 22	200	6.6	21.6	28	4.0	7.1	84	10	16	.1	107	86
Lake Osborne at Lake Worth												
Oct. 9, 1944	80	7.4	61.5	58	16	40	196	25	78	0.6	314	210
Oct. 25	70	6.6	27.9	33	3.9	19	108	9	29	1.2	148	98
Nov. 6	50	7.2	31.7	38	5.9	18	122	15	30	1.0	168	120
Nov. 30	60	7.2	35.1	48	4.6	15	146	6	32	1.4	179	139
Jan. 9, 1945	50	7.4	41.4	54	5.5	24	166	15	42	.2	222	158
Feb. 1	30	7.1	51.3	------	------	------	186	15	54	------	------	168
Feb. 28	55	7.3	71.0	------	------	------	224	26	94	------	------	189
Apr. 2	32	7.0	76.2	------	------	------	212	32	108	------	------	192
Apr. 30	38	7.5	73.1	------	------	------	208	30	105	------	------	186
May 31	37	------	76.7	------	------	------	232	20	113	------	------	189
June 28	43	6.0	44.1	------	------	------	132	40	53	------	------	123
Lake Osborne near Lantana												
Oct. 9, 1944	70	7.5	34.4	53	8.7	5.1	152	15	28	0.2	185	168
Nov. 6	80	7.1	31.7	51	5.5	6.7	138	15	25	.4	172	150
Nov. 30	70	7.4	36.9	23	3.7	54	174	7	28	.6	202	72
Jan. 9, 1945	60	7.5	53.4	63	7.0	41	204	20	61	.5	293	186
Feb. 1	45	7.8	58.7	------	------	------	212	20	69	------	------	180
Feb. 28	40	7.6	82.3	------	------	------	224	40	124	------	------	204
Apr. 2	45	7.2	70.7	------	------	------	208	30	99	------	------	180
Apr. 30	35	7.2	68.5	------	------	------	202	12	95	------	------	183
May 31	43	7.1	70.4	------	------	------	196	30	104	------	------	180
June 28	75	5.9	44.2	------	------	------	134	26	53	------	------	132

MISCELLANEOUS ANALYSES OF CANALS AND STREAMS IN SOUTHERN FLORIDA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Equalizing Canal 4 at Lake Worth												
Nov. 11, 1944	80	7.2	30.3	46	7.0	7.6	132	15	26	0.4	167	144
Nov. 30	70	7.1	35.4	52	3.7	15	156	10	28	.8	186	145
Jan. 9, 1945	70	7.4	58.3	57	9.3	52	192	26	76	.5	315	180
Feb. 1	60	7.6	86.2	------	------	---------	234	46	133	-------	-------	207
Feb. 28	50	7.4	78.4	------	------	---------	220	40	117	-------	-------	186
Apr. 2	45	6.3	67.5	------	------	---------	186	32	94	-------	-------	180
Apr. 30	40	7.0	72.4	------	------	---------	208	18	101	-------	-------	192
May 31	45	6.9	69.5	------	------	---------	208	40	96	-------	-------	204
June 28	130	5.7	42.7	------	------	---------	134	20	50	-------	-------	129
Lateral 14 at De Weese Road at Lake Worth												
Oct. 9, 1944	80	7.1	40.9	70	7.9	2.5	200	8	28	0.4	215	207
Nov. 6	80	7.1	26.0	------	------	---------	122	3	18	.4	-------	134
Nov. 30	70	7.3	42.2	74	3.4	12	218	5	28	.6	230	198
Jan. 9, 1945	80	7.4	67.5	63	6.4	73	222	31	90	.4	373	184
Feb. 1	55	7.1	54.7	------	------	---------	220	15	56	-------	-------	186
Feb. 28	57	7.4	75.8	------	------	---------	228	28	109	-------	-------	198
Apr. 2	55	7.1	61.0	------	------	---------	204	13	76	-------	-------	177
Apr. 30	50	7.0	57.6	------	------	---------	192	18	71	-------	-------	165
May 31	61	5.9	60.9	------	------	---------	216	26	74	-------	-------	189
June 28	102	5.8	32.3	------	------	---------	134	20	27	-------	-------	123
Sept. 23	95	6.3	12.6	16	2.2	5.8	48	3	13	.9	64	49
Hillsboro Canal at Belle Glade												
May 25, 1945	50	6.9	52.7	54	17	28	168	44	54	9.0	289	205
Sept. 23	400	7.3	148	154	61	95	504	238	122	12	930	635
Hillsboro Canal at junction with Cross Canal												
May 25, 1945	------	-----	52.6	------	------	---------	188	30	52	-------	-------	162
Hillsboro Canal at Shawano Plantation near Belle Glade												
May 25, 1945	560	7.0	122	101	38	110	520	10	150	0.2	665	408
Sept. 23	360	7.1	119	108	43	99	520	44	129	8.4	688	446
Hillsboro Canal at Indian Run near Deerfield Beach												
May 26, 1945	80	-----	216	160	39	244	488	72	435	1.2	1,190	560
Sept. 23	400	7.0	50.0	47	15	36	196	20	52	2.6	269	178
Hillsboro Canal near Deerfield Beach												
May 26, 1945	160	7.1	156	121	21	186	412	57	280	0.0	868	388
Sept. 23	320	6.8	47.8	52	11	27	178	20	48	.2	246	175
Cypress Creek Canal at Pompano												
May 26, 1945	40	6.8	46.9	89	2.5	6.4	264	7	16	0.0	251	232
Sept. 21	80	6.9	66.2	99	5.5	35	256	59	53	.1	378	270

MISCELLANEOUS ANALYSES OF CANALS AND STREAMS IN SOUTHERN FLORIDA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
North New River Canal at South Bay												
May 25, 1945	50	7.1	52.8	52	15	32	160	48	53	7.0	286	192
Sept. 21	300	6.9	111	147	48	6.7	380	212	22	20	643	564
North New River Canal north of Bolles Canal at Okeelanta												
May 25, 1945	------	-----	60.7	------	------	---------	204	55	58	-------	-------	210
Sept. 21	------	-----	134	------	------	---------	---------	-------	85	-------	-------	--------
North New River Canal, 16 miles south of South Bay												
May 25, 1945	50	6.9	52.1	49	15	37	180	36	56	0.2	282	184
Sept. 21	340	6.9	93.8	125	36	28	308	173	52	18	584	460
North New River Canal at Palm Beach County-Broward County line												
May 25, 1945	------	-----	55.6	------	------	---------	204	50	56	-------	-------	180
Sept. 21	------	-----	111	------	------	---------	---------	-------	110	-------	-------	--------
North New River Canal at Twenty-six Mile Bend near Fort Lauderdale												
May 25, 1945	50	6.5	54.7	54	15	35	202	26	57	0.0	286	196
Sept. 21	320	6.9	82.7	109	31	22	280	133	47	16	496	400
North New River Canal, 6 miles southwest of Fort Lauderdale												
May 25, 1945	45	7.1	58.8	60	16	42	222	40	58	0.8	326	216
Sept. 21	280	7.0	74.6	100	26	14	262	107	43	.4	420	356
Miami Canal at Lake Harbor												
Sept. 23, 1945	190	7.1	41.8	65	11	12	186	57	14	0.4	251	207
Miami Canal, 2.6 miles south of Lake Harbor												
May 29, 1945	180	7.3	147	168	39	99	568	69	178	8.3	841	580
Miami Canal at water plant, Hialeah												
Dec. 11, 1944	90	7.2	52.5	96	7.2	7.6	308	3	20	2.2	288	269
Jan. 11, 1945	64	7.6	53.5	97	7.6	8.3	320	3	18	.5	292	273
Feb. 1	62	7.4	53.8	96	7.3	8.3	314	1	20	1.2	288	270
Mar. 1	65	7.4	53.5	94	7.3	9.0	310	1	20	1.2	285	264
Apr. 5	65	7.5	52.5	91	7.4	9.0	298	1	22	1.2	278	258
May 7	60	7.6	303	90	32	509	264	113	800	-------	1,670	356
June 2	50	7.5	823	108	137	1,600	228	368	2,650	-------	4,980	833
July 13	60	7.4	53.3	92	8.3	8.5	308	1	20	.6	282	264
July 30	65	7.1	54.9	98	8.3	6.4	315	4	21	1.4	294	278
Aug. 31	60	7.3	53.8	94	8.2	9.0	307	4	22	1.3	290	268
Sept. 24	75	7.1	57.2	102	8.3	8.7	308	20	24	.2	315	288

MISCELLANEOUS ANALYSES OF CANALS AND STREAMS IN SOUTHERN FLORIDA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Color	pH	Specific conductance ($K \times 10^6$ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
South New River Canal at Florida Highway 25 near Miami												
May 26, 1945	60	7.1	34.5	51	7.6	6.4	172	5	18	0.7	173	158
Sept. 27	110	7.1	52.9	90	7.9	12	224	63	22	2.8	308	257
South New River Canal above lock and dam near Davie												
May 25, 1945	140	7.0	55.2	84	10	19	288	10	32	0.0	297	250
Sept. 21	82	7.1	60.2	102	8.8	20	310	32	29	5.6	350	290
Tamiami Canal near Coral Gables												
Oct. 4, 1944	60	7.3	49.8	----	----	----	272	5	17	1.0	----	268
Nov. 7	70	7.4	48.1	----	----	----	272	3	17	.6	----	292
Jan. 11, 1945	43	7.5	52.0	92	5.2	8.0	288	9	16	.8	273	251
Feb. 1	40	7.3	49.9	91	5.2	5.3	286	2	16	1.0	261	248
Mar. 1	42	7.3	50.1	92	5.2	6.4	292	2	16	1.2	267	251
Apr. 5	42	7.4	46.1	83	5.2	6.9	264	2	17	1.5	246	228
May 2	35	7.3	39.3	68	5.2	6.2	216	4	16	1.0	207	191
June 4	32	7.3	41.7	70	5.0	12	228	6	20	.8	226	195
July 3	35	7.0	39.2	66	5.5	9.0	212	8	17	.4	210	187
Aug. 1	37	7.1	44.2	80	6.0	2.3	228	17	17	.7	235	224
Aug. 30	37	7.1	48.2	86	6.1	7.4	251	24	17	1.0	265	240
Sept. 24	38	7.1	55.3	118	6.3	1.4	292	54	19	1.6	344	320
Caloosahatchee River at Ortona [Samples collected from upstream side of locks]												
Feb. 22, 1945	55	7.3	60.8	47	15	58	222	38	59	1.2	328	179
Mar. 28	50	7.1	57.6	49	15	46	204	34	58	.1	303	184
Aug. 22	320	7.2	49.2	62	11	26	192	40	39	.4	273	200

Chemical analyses, in equivalents per million

Date of collection	Color	pH	Specific conductance	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Ten Mile Creek near Fort Pierce												
Oct. 26, 1944	----	----	----	2.20	0.57	1.06	1.87	0.71	1.24	0.01	----	----
Nov. 14	----	----	----	1.75	.48	1.08	1.61	.67	1.02	.01	----	----
Dec. 4	----	----	----	----	----	----	----	----	----	----	----	----
Jan. 18, 1945	----	----	----	----	----	----	----	----	----	----	----	----
Feb. 15	----	----	----	----	----	----	----	----	----	----	----	----
Mar. 14	----	----	----	----	----	----	----	----	----	----	----	----
Apr. 18	----	----	----	----	----	----	----	----	----	----	----	----
May 22	----	----	----	----	----	----	----	----	----	----	----	----
West Palm Beach Canal at Canal Point												
May 26, 1945	----	----	----	2.15	0.99	1.65	2.69	0.67	1.41	0.02	----	----
Sept. 22	----	----	----	4.14	2.38	1.75	4.69	1.58	2.00	.00	----	----

MISCELLANEOUS ANALYSES OF CANALS AND STREAMS IN SOUTHERN FLORIDA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
West Palm Beach Canal at Big Mound Canal												
May 26, 1945	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sept. 22	-----	-----	-----	0.85	0.33	0.08	0.92	0.08	0.25	0.01	-----	-----
West Palm Beach Canal at Twenty-six Mile Bend near Loxahatchee												
May 26, 1945	-----	-----	-----	2.60	1.32	3.59	3.31	0.79	3.41	0.00	-----	-----
Sept. 22	-----	-----	-----	1.20	.49	.26	1.34	.17	.42	.02	-----	-----
West Palm Beach Canal at West Palm Beach												
May 26, 1945	-----	-----	-----	2.79	1.15	2.78	3.28	0.83	2.60	0.01	-----	-----
Sept. 22	-----	-----	-----	1.40	.33	.31	1.38	.21	.45	.00	-----	-----
Lake Osborne at Lake Worth												
Oct. 9, 1944	-----	-----	-----	2.89	1.31	1.73	3.21	0.52	2.20	0.01	-----	-----
Oct. 25	-----	-----	-----	1.65	.32	.83	1.77	.19	.82	.02	-----	-----
Nov. 6	-----	-----	-----	1.90	.49	.79	2.00	.31	.85	.02	-----	-----
Nov. 30	-----	-----	-----	2.40	.38	.65	2.39	.12	.90	.02	-----	-----
Jan. 9, 1945	-----	-----	-----	2.70	.45	1.06	2.72	.31	1.18	.00	-----	-----
Feb. 1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Feb. 28	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Apr. 2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Apr. 30	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
May 31	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
June 28	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Lake Osborne near Lantana												
Oct. 9, 1944	-----	-----	-----	2.65	0.72	0.22	2.49	0.31	0.79	0.00	-----	-----
Nov. 6	-----	-----	-----	2.55	.45	.29	2.26	.31	.71	.01	-----	-----
Nov. 30	-----	-----	-----	1.15	.30	2.35	2.85	.15	.79	.01	-----	-----
Jan. 9, 1945	-----	-----	-----	3.14	.58	1.77	3.34	.42	1.72	.01	-----	-----
Feb. 1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Feb. 28	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Apr. 2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Apr. 30	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
May 31	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
June 28	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Equalizing Canal 4 at Lake Worth												
Nov. 6, 1944	-----	-----	-----	2.30	0.58	0.33	2.16	.31	0.73	0.01	-----	-----
Nov. 30	-----	-----	-----	2.60	.30	.67	2.56	.21	.79	.01	-----	-----
Jan. 9, 1945	-----	-----	-----	2.84	.76	2.24	3.15	.54	2.14	.01	-----	-----
Feb. 1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Feb. 28	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Apr. 2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Apr. 30	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
May 31	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
June 28	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

MISCELLANEOUS ANALYSES OF CANALS AND STREAMS IN SOUTHERN FLORIDA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Lateral 14 at De Weese Road at Lake Worth												
Oct. 9, 1944	-----	-----	-----	3.49	0.65	0.11	3.28	0.17	0.79	0.01	-----	-----
Nov. 6	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Nov. 30	-----	-----	-----	3.69	.28	.51	3.57	.10	.79	.01	-----	-----
Jan. 9, 1945	-----	-----	-----	3.14	.53	3.17	3.64	.65	2.54	.01	-----	-----
Feb. 1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Feb. 28	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Apr. 2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Apr. 30	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
May 31	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
June 28	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sept. 23	-----	-----	-----	.80	.18	.25	.79	.06	.37	.01	-----	-----
Hillsboro Canal at Belle Glade												
May 25, 1945	-----	-----	-----	2.70	1.40	1.23	2.75	0.92	1.52	0.14	-----	-----
Sept. 23	-----	-----	-----	7.68	5.02	4.15	8.26	4.96	3.44	.19	-----	-----
Hillsboro Canal at junction with Cross Canal												
May 25, 1945	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Hillsboro Canal at Shawano Plantation near Belle Glade												
May 25, 1945	-----	-----	-----	5.04	3.12	4.80	8.52	0.21	4.23	0.00	-----	-----
Sept. 23	-----	-----	-----	5.39	3.54	4.29	8.52	.92	3.64	.14	-----	-----
Hillsboro Canal at Indian Run near Deerfield Beach												
May 26, 1945	-----	-----	-----	7.98	3.21	10.60	8.00	1.50	12.27	0.02	-----	-----
Sept. 23	-----	-----	-----	2.34	1.23	1.57	3.21	.42	1.47	.04	-----	-----
Hillsboro Canal near Deerfield Beach												
May 26, 1945	-----	-----	-----	6.04	1.73	8.07	6.75	1.19	7.90	0.00	-----	-----
Sept. 23	-----	-----	-----	2.60	.90	1.19	2.92	.42	1.35	.00	-----	-----
Cypress Creek Canal at Pompano												
May 26, 1945	-----	-----	-----	4.44	0.21	0.28	4.33	0.15	0.45	0.00	-----	-----
Sept. 21	-----	-----	-----	4.94	.45	1.54	4.20	1.23	1.50	.00	-----	-----
North New River Canal at South Bay												
May 25, 1945	-----	-----	-----	2.60	1.23	1.40	2.62	1.00	1.50	0.11	-----	-----
Sept. 21	-----	-----	-----	7.34	3.95	.29	6.23	4.41	.62	.32	-----	-----
North New River Canal north of Bolles Canal at Okeelanta												
May 25, 1945	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sept. 21	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

MISCELLANEOUS ANALYSES OF CANALS AND STREAMS IN SOUTHERN FLORIDA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
North New River Canal, 16 miles south of South Bay												
May 25, 1945	------	------	------	2.44	1.23	1.61	2.95	0.75	1.58	0.00	------	------
Sept. 21	------	------	------	6.24	2.96	1.21	5.05	3.60	1.47	.29	------	------
North New River Canal at Palm Beach County-Broward County line												
May 25, 1945	------	------	------	------	------	------	------	------	------	------	------	------
Sept. 21	------	------	------	------	------	------	------	------	------	------	------	------
North New River Canal at Twenty-six Mile Bend near Fort Lauderdale												
May 25, 1945	------	------	------	2.70	1.23	1.53	3.31	0.54	1.61	0.00	------	------
Sept. 21	------	------	------	5.44	2.55	.96	4.59	2.77	1.33	.26	------	------
North New River Canal, 6 miles southwest of Fort Lauderdale												
May 25, 1945	------	------	------	2.99	1.32	1.81	3.64	0.83	1.64	0.01	------	------
Sept. 21	------	------	------	4.99	2.14	.61	4.29	2.23	1.21	.01	------	------
Miami Canal at Lake Harbor												
Sept. 23, 1945	------	------	------	3.24	0.90	0.51	3.05	1.19	0.40	0.01	------	------
Miami Canal, 2.6 miles south of Lake Harbor												
May 29, 1945	------	------	------	8.38	3.21	4.31	9.31	1.44	5.02	0.13	------	------
Miami Canal at water plant, Hialeah												
Dec. 11, 1944	------	------	------	4.79	0.59	0.33	5.05	0.06	0.56	0.04	------	------
Jan. 11, 1945	------	------	------	4.84	.62	.36	5.24	.06	.51	.01	------	------
Feb. 1	------	------	------	4.79	.60	.36	5.15	.02	.56	.02	------	------
Mar. 1	------	------	------	4.69	.60	.39	5.08	.02	.56	.02	------	------
Apr. 5	------	------	------	4.54	.61	.39	4.88	.02	.62	.02	------	------
May 7	------	------	------	4.49	2.63	22.12	4.33	2.35	22.56	------	------	------
June 2	------	------	------	5.39	11.27	69.48	3.74	7.66	74.74	------	------	------
July 13	------	------	------	4.59	.68	.37	5.05	.02	.56	.01	------	------
July 30	------	------	------	4.89	.68	.28	5.16	.08	.59	.02	------	------
Aug. 31	------	------	------	4.69	.67	.39	5.03	.08	.62	.02	------	------
Sept. 24	------	------	------	5.09	.68	.38	5.05	.42	.68	------	------	------
South New River Canal at Florida Highway 25 near Miami												
May 26, 1945	------	------	------	2.54	0.62	0.28	2.82	0.10	0.51	0.01	------	------
Sept. 27	------	------	------	4.49	.65	.51	3.67	1.31	.62	.05	------	------
South New River Canal above lock and dam near Davie												
May 25, 1945	------	------	------	4.19	0.82	0.82	4.72	0.21	0.90	0.00	------	------
Sept. 21	------	------	------	5.09	.72	.85	5.08	.67	.82	.09	------	------

MISCELLANEOUS ANALYSES OF CANALS AND STREAMS IN SOUTHERN FLORIDA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Tamiami Canal near Coral Gables												
Oct. 4, 1944												
Nov. 7												
Jan. 11				4.59	0.43	0.35	4.72	0.19	0.45	0.01		
Feb. 1				4.54	.43	.23	4.69	.04	.45	.02		
Mar. 1				4.59	.43	.28	4.79	.04	.45	.02		
Apr. 5				4.14	.43	.30	4.33	.04	.48	.02		
May 2				3.39	.43	.27	3.54	.08	.45	.02		
June 4				3.49	.41	.53	3.74	.12	.56	.01		
July 3				3.29	.45	.39	3.47	.17	.48	.01		
Aug. 1				3.99	.49	.10	3.74	.35	.48	.01		
Aug. 30				4.29	.50	.32	4.11	.50	.48	.02		
Sept. 24				5.89	.52	.06	4.78	1.12	.54	.03		
Caloosahatchee River at Ortona [Samples collected from upstream side of locks]												
Feb. 22, 1945				2.35	1.23	2.53	3.64	0.79	1.66	0.02		
Mar. 28				2.45	1.23	2.01	3.34	.71	1.64	.00		
Aug. 22				3.09	.90	1.11	3.15	.83	1.11	.01		

Specific conductance and chloride in samples

Date	Specific conductance ($K \times 10^5$ at 25° C.)	Chloride (Cl), p. p. m.
Caloosahatchee River at Ortona [Samples collected from downstream side of locks]		
Aug. 9, 1945	33.4	22
Aug. 14	35.1	25
Aug. 22	49.7	34
Aug. 29	35.3	26
Sept. 4	31.8	24
Sept. 12	36.3	23
Sept. 21	12.4	7.0
Orange River near Fort Myers		
Oct. 11, 1944	53.5	31
Nov. 16	53.9	31
Jan. 10, 1945	53.5	36
Feb. 22	48.2	33
Mar. 28	45.6	35
May 3	36.1	40

APALACHICOLA RIVER BASIN

ICHAWAYNOCHAWAY CREEK NEAR NEWTON, GA.

LOCATION.—At Haggards Mill Bridge on State Highway 91, 5 miles downstream from gaging station at Barnetts Bridge, 9½ miles downstream from Chickasawhatchee Creek, and 12 miles southwest of Newton, Baker County.

DRAINAGE AREA.—1,040 square miles.

RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 84 parts per million May 21–31, June 1–10, June 21–30; minimum, 48 parts per million Dec. 11–20.

Total hardness: Maximum, 66 parts per million June 1–10; minimum, 28 parts per million Dec. 11–20.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1032.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed		Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
				Unfiltered	Filtered														
Oct. 1-10, 1944	476	-------	7	4.6	3.0	6	7.4	0.04	20	0.9	2.0	0.7	64	1.3	4.0	0.0	0.8	73	54
Oct. 11-20	418	-------	6	3.5	2.6	23	7.2	.28	18	.8	2.6		60	.9	2.2	.0	.8	69	48
Oct. 21-31	469	-------	5	3.3	2.6	12	7.1	.10	16	.9	1.5		51	.9	2.5	.0	.7	60	44
Nov. 1-10	400	-------	4	2.8	2.3	7	6.9	.02	17	.9	2.0		55	.8	2.8	.0	.6	61	46
Nov. 11-20	504	-------	7	3.5	3.0	10	7.9	.02	13	1.1	2.7		46	.3	2.9	.1	.5	58	37
Nov. 21-30	542	-------	8	3.3	2.6	9	8.0	.26	13	.9	2.5		43	1.2	3.0	.1	.6	54	36
Dec. 1-10	730	-------	9	4.8	3.9	16	11	.04	10	.9	2.9		34	1.7	3.4	.1	.4	53	29
Dec. 11-20	725	-------	6	4.2	3.6	15	7.9	.03	10	.8	2.9		34	1.7	3.1	.1	.3	48	28
Dec. 21-31	569	-------	5	3.5	2.6	10	7.5	.25	13	.8	2.3		42	1.4	2.9	.1	.6	54	36
Jan. 1-10, 1945	754	-------	6	5.0	3.9	15	7.7	.02	11	.9	2.7	.9	37	1.2	3.1	.0	.4	51	31
Jan. 11-20	884	-------	9	5.6	5.1	19	7.8	.01	10	1.0	2.7		35	1.6	3.1	.0	.4	52	29
Jan. 21-31	1,054	-------	12	5.7	4.6	19	6.7	.15	12	.9	2.1		38	1.6	3.4	.1	.4	55	34
Feb. 1-10	1,178	-------	11	5.6	5.0	23	6.6	.04	14	.8	2.1		44	1.5	3.4	.0	.6	59	38
Feb. 11-19	1,774	-------	13	7.1	6.0	33	6.9	.02	13	.8	2.6		43	1.5	3.1	.0	.4	58	36
Feb. 20-28	1,461	-------	12	6.9	6.5	39	6.7	.20	17	.8	2.0		54	1.1	3.2	.0	.4	70	46
Mar. 1-10	1,191	-------	10	6.8	6.0	32	6.6	.14	18	1.1	2.6		59	1.2	3.5	.0	.5	74	49
Mar. 11-20	964	-------	10	5.6	5.1	17	6.9	.01	19	1.2	2.1		62	1.3	3.1	.0	.6	72	52
Mar. 21-31	980	-------	7	7.2	6.2	57	7.1	.52	18	.9	2.1		57	1.6	3.1	.0	.5	73	49

Apr. 1-10	699	-------	8	5.1	4.2	17	7.4	.02	18	.9	2.1	.7	61	.9	3.0	.0	.9	71	49
Apr. 11-20	514	-------	6	3.8	3.4	14	7.5	.06	19	.8	2.8		62	1.1	2.8	.0	1.1	70	51
Apr. 21-30	1,264	-------	19	6.6	5.0	31	8.8	.26	15	.9	2.1		48	1.6	3.1	.0	.5	65	41
May 1-10	1,432	-------	11	6.8	5.9	50	7.2	.35	17	.9	2.6		56	1.4	3.0	.0	.4	71	46
May 11-20	1,726	-------	16	7.6	6.1	28	6.1	.02	16	.7	1.8		50	1.2	2.8	.0	.6	64	43
May 21-31	829	-------	6	5.2	4.8	27	8.2	.18	23	.8	1.3		70	1.2	3.1	.0	.8	84	61
June 1-10	406	-------	2	3.0	3.0	19	6.7	.13	25	.8	2.2		78	1.6	2.8	.0	1.1	84	66
June 11-20	355	-------	3	2.6	2.5	14	6.2	.07	23	.7	2.8		74	1.2	2.5	.0	1.1	78	60
June 21-30	411	-------	8	3.6	3.9	28	7.8	.01	19	.9	2.0	.4	62	1.9	2.8	.0	.2	84	51
July 1-10	644	-------	10	5.3	6.0	26	7.6	.01	14	1.1	1.9	.7	48	1.8	2.6	.0	.3	77	39
July 11-20	752	-------	10	6.8	4.8	28	8.3	.03	14	.8	2.1	.8	45	1.8	2.6	.0	.6	62	38
July 21-31	1,182	-------	8	8.2	9.3	31	8.6	.03	14	.9	2.3		46	1.7	2.8	.0	.2	67	39
Aug. 1-10	970	-------	9	7.4	5.2	18	8.7	.03	18	1.0	2.2		57	2.0	2.9	.1	.7	72	49
Aug. 11-20	812	-------	8	5.7	4.5	16	8.7	.04	18	.9	3.2		59	2.0	3.1	.1	.6	72	49
Aug. 21-31	1,028	-------	13	7.8	6.1	21	8.5	.02	16	.8	1.5		49	1.7	3.0	.0	.5	66	43
Sept. 1-10	523	-------	13	5.6	4.2	29	8.5	.28	20	.8	2.9		65	1.5	3.0	.0	.6	75	53
Sept. 11-20	1,376	-------	14	7.3	6.8	44	8.2	.28	15	.8	1.9		47	1.9	2.9	.0	.3	68	41
Sept. 21-30	944	-------	7	7.9	6.4	37	8.5	.20	21	.9	2.5		67	1.8	3.2	.0	.4	82	56
Average	856	-------	9	5.4	4.6	23	7.4	0.12	16	0.9	2.4		53	1.4	3.0	0.0	0.6	67	44

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	476	-------	-------	-------	-------	-------	-------	-------	0.998	0.074	0.087	0.018	1.049	0.027	0.113	0.000	0.013	-------	-------
Oct. 11-20	418	-------	-------	-------	-------	-------	-------	-------	.898	.066	.114		.984	.019	.062	.000	.013	-------	-------
Oct. 21-31	469	-------	-------	-------	-------	-------	-------	-------	.799	.074	.064		.836	.019	.071	.000	.011	-------	-------
Nov. 1-10	400	-------	-------	-------	-------	-------	-------	-------	.849	.074	.085		.902	.017	.079	.000	.010	-------	-------
Nov. 11-20	504	-------	-------	-------	-------	-------	-------	-------	.649	.090	.116		.754	.006	.082	.005	.008	-------	-------
Nov. 21-30	542	-------	-------	-------	-------	-------	-------	-------	.649	.074	.107		.705	.025	.085	.005	.010	-------	-------
Dec. 1-10	730	-------	-------	-------	-------	-------	-------	-------	.499	.074	.126		.557	.035	.096	.005	.006	-------	-------
Dec. 11-20	725	-------	-------	-------	-------	-------	-------	-------	.499	.066	.124		.557	.035	.087	.005	.005	-------	-------
Dec. 21-31	569	-------	-------	-------	-------	-------	-------	-------	.649	.066	.099		.688	.029	.082	.005	.010	-------	-------
Jan. 1-10, 1945	754	-------	-------	-------	-------	-------	-------	-------	.549	.074	.117	.023	.606	.025	.087	.000	.006	-------	-------
Jan. 11-20	884	-------	-------	-------	-------	-------	-------	-------	.499	.082	.119		.574	.033	.087	.000	.006	-------	-------
Jan. 21-31	1,054	-------	-------	-------	-------	-------	-------	-------	.599	.074	.090		.623	.033	.096	.005	.006	-------	-------
Feb. 1-10	1,178	-------	-------	-------	-------	-------	-------	-------	.699	.066	.093		.721	.031	.096	.000	.010	-------	-------
Feb. 11-19	1,774	-------	-------	-------	-------	-------	-------	-------	.649	.066	.114		.705	.031	.087	.000	.006	-------	-------
Feb. 20-28	1,461	-------	-------	-------	-------	-------	-------	-------	.849	.066	.089		.885	.023	.090	.000	.006	-------	-------
Mar. 1-10	1,191	-------	-------	-------	-------	-------	-------	-------	.898	.090	.111		.967	.025	.099	.000	.008	-------	-------
Mar. 11-20	964	-------	-------	-------	-------	-------	-------	-------	.948	.099	.093		1.016	.027	.087	.000	.010	-------	-------
Mar. 21-31	980	-------	-------	-------	-------	-------	-------	-------	.898	.074	.090		.934	.033	.087	.000	.008	-------	-------

APALACHICOLA RIVER BASIN—Continued

ICHAWAYNOCHAWAY CREEK NEAR NEWTON, GA.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date	Mean discharge (second-feet)	Temperature (° F.)	Suspended matter	Oxygen consumed: Unfiltered	Oxygen consumed: Filtered	Color	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Apr. 1-10	699	------	------	------	------	------	------	------	0.898	0.074	0.091	0.018	1.000	0.019	0.085	0.000	0.015	------	------
Apr. 11-20	514	------	------	------	------	------	------	------	.948	.066	.122		1.016	.023	.079	.000	.018	------	------
Apr. 21-30	1,264	------	------	------	------	------	------	------	.749	.074	.092		.787	.033	.087	.000	.008	------	------
May 1-10	1,432	------	------	------	------	------	------	------	.849	.074	.115		.918	.029	.085	.000	.006	------	------
May 11-20	1,726	------	------	------	------	------	------	------	.798	.058	.077		.819	.025	.079	.000	.010	------	------
May 21-31	829	------	------	------	------	------	------	------	1.148	.066	.058		1.147	.025	.087	.000	.013	------	------
June 1-10	406	------	------	------	------	------	------	------	1.248	.066	.094		1.278	.033	.079	.000	.018	------	------
June 11-20	355	------	------	------	------	------	------	------	1.148	.058	.121		1.213	.025	.071	.000	.018	------	------
June 21-30	411	------	------	------	------	------	------	------	.948	.074	.087	.010	1.016	.040	.079	.000	.003	------	------
July 1-10	644	------	------	------	------	------	------	------	.699	.090	.083	.018	.787	.037	.073	.000	.005	------	------
July 11-20	752	------	------	------	------	------	------	------	.699	.066	.091	.020	.737	.037	.073	.000	.010	------	------
July 21-31	1,182	------	------	------	------	------	------	------	.699	.074	.098		.754	.035	.079	.000	.003	------	------
Aug. 1-10	970	------	------	------	------	------	------	------	.898	.082	.094		.934	.042	.082	.005	.011	------	------
Aug. 11-20	812	------	------	------	------	------	------	------	.898	.074	.139		.967	.042	.087	.005	.010	------	------
Aug. 21-31	1,028	------	------	------	------	------	------	------	.798	.066	.067		.803	.035	.085	.000	.008	------	------
Sept. 1-10	523	------	------	------	------	------	------	------	.998	.066	.127		1.065	.031	.085	.000	.010	------	------
Sept. 11-20	1,376	------	------	------	------	------	------	------	.749	.066	.082		.770	.040	.082	.000	.005	------	------
Sept. 21-30	944	------	------	------	------	------	------	------	1.048	.074	.109		1.098	.037	.090	.000	.006	------	------
Average	856	------	------	------	------	------	------	------	0.798	0.074	0.104		0.869	0.029	0.085	0.000	0.010	------	------

OHIO RIVER BASIN

ALLEGHENY RIVER AT KITTANNING, PA.

LOCATION.—At highway bridge on U. S. Highway 422.
DRAINAGE AREA.—8,973 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 231 parts per million Oct. 1–10; minimum, 63 parts per million Mar. 1–10.
Total hardness: Maximum, 115 parts per million Oct. 1–10; minimum, 36 parts per million Mar. 1–10.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1033.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Oct. 1-10, 1944	2,952	-------	15	7.1	38.6	1.0	0.03	-------	34	7.3	30	2.2	67	48	52	0.1	0.4	231	115	60
Oct. 11-20	2,433	-------	15	7.2	37.6	.6	.08	0.0	32	6.8	29	2.9	58	58	46	.0	.4	215	108	60
Oct. 21-31	4,914	-------	15	7.1	36.4	2.0	.18	.0	31	6.6	27	2.2	56	52	50	.1	.4	210	104	59
Nov. 1-10	2,562	-------	30	7.0	31.5	3.3	.28	-------	28	6.6	24	2.0	46	51	40	.1	.5	182	97	59
Nov. 11-20	3,904	-------	25	7.2	35.7	1.0	.29	-------	33	7.3	27	2.0	60	54	46	.1	.3	205	112	63
Nov. 21-30	6,912	-------	28	7.2	30.4	2.5	.29	-------	28	6.6	20	1.8	54	44	39	.1	.4	173	97	53
Dec. 1-10	9,611	-------	18	7.1	25.0	3.8	.28	.0	24	5.1	16	1.5	42	38	30	.2	.6	147	81	46
Dec. 11-20	11,150	-------	15	6.7	20.5	4.4	.16	.0	20	4.3	12	1.5	28	38	21	.2	1.2	123	68	45
Dec. 21-31	10,080	-------	15	6.9	22.2	4.5	.32	.0	22	5.1	11	1.4	38	45	18	.1	.8	136	76	45
Jan. 1-10, 1945	14,950	-------	15	6.7	19.5	4.8	.20	.0	19	4.3	10	1.6	26	40	18	.1	1.2	115	65	44
Jan. 11-20	8,741	-------	10	6.8	20.3	5.1	.19	.0	20	4.6	11	1.3	30	37	20	.1	1.1	111	69	44
Jan. 21-31	5,920	-------	10	6.8	23.6	4.9	.14	.2	23	5.4	13	1.1	34	49	21	.1	1.1	143	80	52
Feb. 1-10	4,950	-------	10	7.0	26.2	3.4	.08	-------	26	5.6	15	1.7	40	51	26	.0	1.2	155	88	55
Feb. 11-20	12,720	-------	15	7.0	26.0	3.4	.12	-------	25	5.5	14	2.2	40	46	25	.0	1.2	151	85	52
Feb. 21-28	62,920	-------	15	6.2	15.3	4.5	.06	-------	15	3.5	8.1	1.3	16	32	16	.2	2.8	95	52	39
Mar. 1-10	87,620	-------	15	6.7	10.5	3.8	.05	.0	10	2.6	4.3	1.0	11	24	7.1	.1	2.1	63	36	27
Mar. 11-20	51,530	-------	15	6.6	11.0	4.2	.16	.0	11	2.8	4.8	.4	14	24	8.0	.3	1.5	68	39	27
Mar. 21-31	67,270	-------	15	6.6	10.1	4.8	.09	.0	10	2.6	4.1	1.0	13	22	6.8	.2	1.0	64	36	25

ALLEGHENY RIVER AT KITTANNING, PA.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10^5 at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Apr. 1-10	47,160	------	20	6.5	11.5	5.1	.13	0.0	11	2.6	5.5	1.0	17	25	7.9	0.2	0.9	70	38	24
Apr. 11-20	16,620	------	15	6.7	17.1	3.5	.36	.1	17	3.9	7.6	1.3	20	42	12	.1	.6	101	58	42
Apr. 21-30	20,350	------	10	6.9	17.6	2.9	.08	------	17	4.1	9.6	.7	24	36	15	.1	.6	103	59	40
May 1-10	20,130	------	10	6.7	15.3	2.9	.12	.0	14	3.3	8.2	1.2	20	31	13	.1	.6	88	48	32
May 11-20	33,060	------	12	6.7	13.0	3.4	.09	.0	12	3.0	6.8	1.2	20	25	11	.1	.8	77	42	26
May 21-31	15,200	------	12	6.7	16.9	3.9	.16	.1	16	3.8	8.3	1.0	20	40	12	.1	.6	100	56	39
June 1-10	14,300	------	15	6.8	17.6	3.1	.18	.0	16	3.7	9.9	1.1	27	35	14	.1	.8	104	55	33
June 11-20	16,790	------	17	6.8	17.1	3.4	.08	.0	16	3.6	9.2	1.4	29	31	15	.1	1.0	105	55	31
June 21-30	10,150	------	15	6.8	17.6	3.5	.20	.0	16	3.8	11		30	31	15	.1	1.0	106	56	31
July 1-10	5,253	------	12	7.0	22.8	1.9	.09	.0	21	4.5	15	1.6	37	38	23	.2	.4	132	71	41
July 11-20	9,295	------	12	6.9	23.4	1.8	.08	.0	20	4.5	16	1.6	38	37	24	.2	.8	145	68	37
July 21-31	6,345	------	20	6.9	19.7	3.0	.16	.0	17	3.8	14	1.4	28	33	21	.1	.8	115	58	35
Aug. 1-10	6,420	------	15	6.8	21.5	1.6	.13	.0	19	4.3	14	1.8	32	40	22	.1	.7	122	65	39
Aug. 11-20	3,776	------	12	6.9	24.6	2.4	.07	.0	21	5.0	17	2.0	37	42	25	.1	.9	138	73	43
Aug. 21-31	2,185	------	12	7.0	28.3	1.2	.02	.0	24	5.6	21	2.5	51	40	33	.2	.8	158	83	41
Sept. 1-10	1,768	------	7	7.1	30.8	2.0	.02	.0	26	6.2	23	2.4	46	53	32	.2	.7	185	90	53
Sept. 11-20	5,189	------	10	7.0	33.8	1.8	.02	.0	29	6.2	26	2.1	50	59	38	.2	.6	191	98	57
Sept. 21-30	19,390	------	------	6.9	23.5	5.0	.12	.0	21	4.6	14	2.2	34	41	22	.2	1.0	137	71	43
Average	17,070	------	15	6.9	22.6	3.2	0.14	0.0	21	4.7	14	1.6	34	40	23	0.1	0.9	132	72	44

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10^5 at 25° C.)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Oct. 1-10, 1944	2,952	------	------	------	------	------	------	------	1.697	0.600	1.304	0.056	1.098	0.999	1.467	0.005	0.006	------	------	------
Oct. 11-20	2,433	------	------	------	------	------	------	------	1.597	.559	1.261	.074	.951	1.208	1.297	.000	.006	------	------	------
Oct. 21-31	4,914	------	------	------	------	------	------	------	1.547	.543	1.174	.056	.918	1.083	1.410	.005	.006	------	------	------
Nov. 1-10	2,562	------	------	------	------	------	------	------	1.398	.543	1.044	.051	.754	1.062	1.128	.005	.008	------	------	------
Nov. 11-20	3,904	------	------	------	------	------	------	------	1.647	.600	1.174	.051	.984	1.124	1.297	.005	.005	------	------	------
Nov. 21-30	6,912	------	------	------	------	------	------	------	1.398	.543	.870	.046	.885	.916	1.100	.005	.006	------	------	------

Dec. 1-10	9,611								1.198	.419	.696	.038	.688	.791	.846	.011	.010			
Dec. 11-20	11,150								.998	.354	.522	.038	.459	.791	.592	.011	.019			
Dec. 21-31	10,080								1.098	.419	.478	.036	.623	.937	.508	.005	.013			
Jan. 1-10, 1945	14,950								.948	.354	.435	.041	.426	.833	.508	.005	.019			
Jan. 11-20	8,741								.998	.378	.478	.033	.492	.770	.534	.005	.018			
Jan. 21-31	5,920								1.148	.444	.565	.028	.557	1.020	.592	.005	.018			
Feb. 1-10	4,950								1.298	.461	.652	.043	.656	1.062	.733	.000	.019			
Feb. 11-20	12,720								1.248	.452	.609	.056	.656	.958	.705	.000	.019			
Feb. 21-28	62,920								.749	.288	.352	.033	.262	.666	.451	.011	.045			
Mar. 1-10	87,620								.499	.214	.187	.026	.180	.500	.200	.005	.034			
Mar. 11-20	51,530								.549	.230	.209	.010	.230	.500	.226	.016	.024			
Mar. 21-31	67,270								.499	.214	.178	.026	.213	.458	.192	.011	.016			
Apr. 1-10	47,160								.549	.214	.239	.026	.279	.520	.223	.011	.015			
Apr. 11-20	16,620								.848	.321	.330	.033	.328	.874	.338	.005	.010			
Apr. 21-30	20,350								.849	.337	.417	.018	.393	.750	.423	.005	.010			
May 1-10	20,130								.699	.271	.357	.031	.328	.645	.367	.005	.010			
May 11-20	33,060								.599	.247	.296	.031	.328	.521	.310	.005	.013			
May 21-31	15,200								.798	.312	.361	.026	.328	.833	.338	.005	.010			
June 1-10	14,300								.798	.304	.430	.028	.442	.729	.395	.005	.013			
June 11-20	16,790								.798	.296	.400	.036	.475	.645	.423	.005	.016			
June 21-30	10,150								.798	.312	0.478		.492	.645	.423	.005	.016			
July 1-10	5,253								1.048	.370	.652	.041	.606	.791	.649	.011	.006			
July 11-20	9,295								.998	.370	.696	.041	.623	.770	.677	.011	.013			
July 21-31	6,345								.848	.312	.609	.036	.459	.687	.592	.005	.013			
Aug. 1-10	6,420								.948	.354	.609	.046	.524	.833	.620	.005	.011			
Aug. 11-20	3,776								1.048	.411	.739	.051	.606	.874	.705	.005	.015			
Aug. 21-31	2,185								1.198	.461	.913	.064	.836	.833	.931	.011	.013			
Sept. 1-10	1,768								1.297	.510	1.000	.061	.754	1.103	.902	.011	.011			
Sept. 11-20	5,189								1.447	.510	1.131	.054	.819	1.228	1.072	.011	.010			
Sept. 21-30	19,390								1.048	.378	.609	.056	.557	.854	.620	.011	.016			
Average	17,070								1.048	0.387	0.609	0.041	0.557	0.833	0.649	0.005	0.015			

MONONGAHELA RIVER AT CHARLEROI, PA.

LOCATION.—At Mercantile Bridge Co. toll bridge located downstream from lock 4.
DRAINAGE AREA.—5,213 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945. Water temperatures: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 404 parts per million July 21–31; minimum, 107 parts per million Mar. 1–10.
Total hardness: Maximum 231 parts per million July 21–31; minimum, 66 parts per million Feb. 21–28.
Water temperatures: Maximum, 80° F. July 1, 9; minimum, freezing point on several days in December, January, and February.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1033.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10^5 at 25° C.)	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	Hardness as $CaCO_3$ total	Hardness as $CaCO_3$ non-carbonate	Total acidity as H_2SO_4
Oct. 1–10, 1944	5,961	66	5	3.50	54.1	7.0	4.6	0.11	1.2	34	11	29	4.3	0	217	8.5	0.2	0.6	342	166	166	46
Oct. 11–20	3,370	60	5	4.00	36.1	6.0	1.1	.15	.7	26	7.9	17	2.9	0	141	5.6	.1	.8	211	110	110	24
Oct. 21–31	14,240	52	3	4.30	22.8	4.8	1.0	.01	.6	18	5.5	8.5	2.7	0	88	4.0	.1	1.9	136	76	76	21
Nov. 1–10	2,235	51	5	4.30	31.8	5.0	2.2	.03	.6	22	7.4	16	1.9	0	120	4.2	.1	1.0	187	101	101	20
Nov. 11–20	2,845	48	5	3.70	42.4	5.8	4.0	.05	.8	26	9.5	19	1.8	0	158	4.9	.2	.8	235	138	138	39
Nov. 21–30	8,391	44	5	3.80	38.3	5.6	3.2	.05	.8	25	8.3	16	1.7	0	143	4.6	.2	.6	210	124	124	29
Dec. 1–10	10,320	38	6	4.8	20.7	4.4	.6	.03	.3	17	5.1	9.7	1.5	1	79	3.9	.1	1.0	126	67	67	8
Dec. 11–20	9,739	33	5	5.1	18.9	5.6	.8	.04	.4	17	5.7	9.6	1.6	6	73	3.0	.2	.9	123	71	66	5
Dec. 21–31	33,520	35	2	4.40	20.1	5.6	1.1	.03	.2	16	5.1	8.5	1.6	0	76	3.4	.1	2.2	124	68	68	15
Jan. 1–10, 1945	33,970	36	3	4.10	19.6	5.0	1.7	.03	.2	14	4.8	6.1	1.2	0	72	1.9	.0	2.0	112	69	69	21
Jan. 11–20	12,940	34	4	3.75	30.8	6.2	3.2	.09	.1	21	7.2	11	1.2	0	114	2.5	.1	1.9	174	109	109	32
Jan. 21–31	7,409	33	4	3.55	39.3	6.8	3.4	.11	.6	24	9.2	15	1.2	0	144	3.0	.1	2.0	208	134	134	43
Feb. 1–10	6,608	32	2	3.50	46.1	6.2	3.7	.11	.6	28	9.7	13	2.3	0	102	4.2	.4	1.8	240	148	148	47
Feb. 11–20	22,930	37	2	4.20	20.0	4.9	.8	.02	.3	16	4.8	6.8	1.0	0	72	2.8	.4	2.8	115	68	68	13
Feb. 21–28	36,300	40	2	4.35	18.3	4.5	.7	.03	.2	16	4.9	5.4	.8	0	65	2.2	.3	2.6	108	66	66	11
Mar. 1–10	53,850	44	2	4.35	18.1	4.5	1.2	.02	.3	16	4.5	4.7	1.2	0	67	2.0	.3	1.9	107	68	68	11
Mar. 11–20	15,250	48	3	3.65	33.8	5.2	3.3	.06	.5	21	7.1	10	1.0	0	117	3.8	.4	1.4	174	114	114	36
Mar. 21–31	18,990	51	2	3.90	28.5	5.6	2.3	.04	.4	20	6.4	11	.8	0	102	6.0	.3	1.2	161	96	96	24
Apr. 1–10	10,310	56	6	3.80	35.1	5.2	2.1	.03	.4	22	8.0	11	1.8	0	121	4.0	.2	1.6	190	108	108	36
Apr. 11–20	8,004	59	6	3.80	40.9	5.4	2.3	.03	.5	28	9.4	14	1.9	0	150	4.8	.2	1.4	234	130	130	39
Apr. 21–30	8,897	59	6	4.00	33.6	5.0	2.4	.02	.3	24	7.9	13	1.6	0	126	3.8	.2	1.0	200	111	111	25
May 1–10	8,164	57	6	3.90	38.2	5.6	2.6	.02	.3	24	8.7	18	1.8	0	134	12	.2	.8	220	117	117	32
May 11–20	19,420	59	4	4.8	20.6	5.0	1.2	.02	.3	17	5.2	7.9	1.4	2	75	4.0	.2	1.2	124	71	69	6
May 21–31	6,809	64	7	3.90	34.6	5.0	2.2	.05	.3	22	7.6	15	1.6	0	122	5.8	.1	1.0	194	105	105	28

June 1-10	4,099	64	3	3.60	43.4	4.4	3.6	.05	.8	26	10	18	1.8	0	153	6.1	.2	1.8	227	140	140	38
June 11-20	9,796	69	3	3.80	36.2	5.4	2.3	.04	.8	24	8.7	13	1.8	0	126	3.9	.2	2.1	194	118	118	27
June 21-30	4,101	74	2	3.90	36.6	5.2	2.4	.05	.4	24	8.7	16	1.8	0	134	4.5	.2	1.0	204	116	116	28
July 1-10	1,834	78	4	3.50	57.4	6.4	4.3	.26	.9	33	13	25	1.9	0	211	7.1	.1	.8	316	178	178	51
July 11-20	1,513	76	4	3.40	69.2	6.4	5.5	.35	1.0	40	14	33	2.7	0	260	8.5	.3	.8	389	212	212	61
July 21-31	3,492	78	3	3.30	77.3	6.4	7.2	.29	1.0	40	15	32	3.0	0	280	7.5	.3	1.0	404	231	231	82
Aug. 1-10	6,684	77	2	3.70	43.1	5.8	2.6	.10	.8	28	9.4	20	1.7	0	157	6.0	.4	1.0	239	135	135	29
Aug. 11-20	1,738	76	7	3.70	40.3	2.8	1.8	.11	.5	25	8.5	17	2.4	0	141	5.0	.2	1.0	215	119	119	32
Aug. 21-31	6,226	74	6	3.90	43.2	4.4	1.4	.07	.7	27	8.9	20	2.5	0	145	7.6	.2	1.4	232	119	119	32
Sept. 1-10	4,125	74	6	3.90	32.1	4.8	.8	.09	.4	20	6.0	15	2.2	0	104	10	.1	.9	171	86	86	24
Sept. 11-20	14,910	70	7	3.90	32.7	5.2	1.6	.12	.6	24	7.3	12	2.1	0	118	4.8	.1	.9	185	106	106	22
Sept. 21-30	20,860	65	6	5.7	18.7	5.8	.4	.02	.2	19	5.0	5.4	1.8	3	75	2.8	.1	1.4	117	71	68	------
Average	12,100	56	4	3.95	35.4	5.4	2.4	0.08	0.5	23	7.9	14	1.8	0	129	5.0	0.2	1.3	199	109	109	30

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	5,961	------	------	------	------	------	0.512	0.005	0.044	1.697	0.905	1.261	0.110	0.000	4.518	0.240	0.011	0.010	------	------	------	------
Oct. 11-20	3,370	------	------	------	------	------	.122	.008	.026	1.298	.650	.739	.074	.000	2.936	.158	.005	.013	------	------	------	------
Oct. 21-31	14,240	------	------	------	------	------	.111	.000	.022	.898	.452	.370	.069	.000	1.832	.113	.005	.031	------	------	------	------
Nov. 1-10	2,235	------	------	------	------	------	.245	.002	.022	1.098	.609	.696	.049	.000	2.498	.118	.005	.016	------	------	------	------
Nov. 11-20	2,845	------	------	------	------	------	.445	.003	.029	1.298	.781	.826	.046	.000	3.290	.138	.011	.013	------	------	------	------
Nov. 21-30	8,391	------	------	------	------	------	.356	.003	.029	1.248	.683	.696	.043	.000	2.977	.130	.011	.010	------	------	------	------
Dec. 1-10	10,320	------	------	------	------	------	.067	.003	.011	.848	.419	.422	.038	.016	1.645	.110	.005	.016	------	------	------	------
Dec. 11-20	9,739	------	------	------	------	------	.089	.002	.015	.848	.469	.417	.041	.098	1.520	.085	.011	.015	------	------	------	------
Dec. 21-31	33,520	------	------	------	------	------	.122	.002	.007	.799	.419	.370	.041	.000	1.582	.096	.005	.035	------	------	------	------
Jan. 1-10, 1945	33,970	------	------	------	------	------	.189	.002	.007	.699	.395	.265	.031	.000	1.499	.054	.000	.032	------	------	------	------
Jan. 11-20	12,940	------	------	------	------	------	.356	.005	.004	1.048	.592	.478	.031	.000	2.372	.071	.005	.031	------	------	------	------
Jan. 21-31	7,409	------	------	------	------	------	.378	.006	.022	1.198	.757	.652	.031	.000	2.998	.085	.005	.032	------	------	------	------
Feb. 1-10	6,608	------	------	------	------	------	.412	.006	.022	1.398	.798	.565	.059	.000	3.373	.118	.021	.029	------	------	------	------
Feb. 11-20	22,930	------	------	------	------	------	.089	.001	.011	.799	.395	.296	.026	.000	1.499	.079	.021	.045	------	------	------	------
Feb. 21-28	36,300	------	------	------	------	------	.078	.002	.007	.799	.403	.235	.020	.000	1.353	.062	.016	.042	------	------	------	------
Mar. 1-10	53,850	------	------	------	------	------	.134	.001	.011	.799	.370	.204	.031	.000	1.395	.056	.016	.031	------	------	------	------
Mar. 11-20	15,250	------	------	------	------	------	.367	.003	.020	1.048	.584	.435	.026	.000	2.436	.107	.021	.023	------	------	------	------
Mar. 21-31	18,990	------	------	------	------	------	.256	.002	.015	.998	.526	.478	.020	.000	2.124	.169	.016	.019	------	------	------	------
Apr. 1-10	10,310	------	------	------	------	------	.234	.002	.015	1.098	.658	.478	.046	.000	2.519	.113	.011	.026	------	------	------	------
Apr. 11-20	8,004	------	------	------	------	------	.256	.002	.018	1.397	.773	.609	.049	.000	3.123	.135	.011	.023	------	------	------	------
Apr. 21-30	8,897	------	------	------	------	------	.267	.001	.011	1.198	.650	.565	.041	.000	2.623	.107	.011	.016	------	------	------	------
May 1-10	8,164	------	------	------	------	------	.289	.001	.011	1.198	.716	.783	.046	.000	2.790	.338	.011	.013	------	------	------	------
May 11-20	19,420	------	------	------	------	------	.133	.001	.011	.848	.428	.344	.036	.033	1.562	.113	.011	.019	------	------	------	------
May 21-31	6,809	------	------	------	------	------	.245	.003	.011	1.098	.625	.652	.041	.000	2.540	.164	.005	.016	------	------	------	------

MONONGAHELA RIVER AT CHARLEROI, PA.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10^5 at 25° C.)	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	Hardness as $CaCO_3$		Total acidity as H_2SO_4
																				Total	Noncarbonate	
June 1-10	4,099	-------	-------	-------	-------	-------	0.400	0.002	0.029	1.297	0.822	0.783	0.046	0.000	3.186	0.172	0.011	0.029	-------	-------	-------	-------
June 11-20	9,796	-------	-------	-------	-------	-------	.256	.001	.029	1.198	.716	.565	.046	.000	2.623	.111	.011	.034	-------	-------	-------	-------
June 21-30	4,101	-------	-------	-------	-------	-------	.267	.002	.015	1.198	.716	.696	.046	.000	2.790	.127	.011	.016	-------	-------	-------	-------
July 1-10	1,834	-------	-------	-------	-------	-------	.478	.009	.033	1.647	1.069	1.087	.049	.000	4.393	.200	.005	.013	-------	-------	-------	-------
July 11-20	1,513	-------	-------	-------	-------	-------	.612	.013	.036	1.996	1.151	1.435	.069	.000	5.413	.240	.016	.013	-------	-------	-------	-------
July 21-31	3,492	-------	-------	-------	-------	-------	.801	.010	.036	1.996	1.234	1.391	.077	.000	5.830	.212	.016	.016	-------	-------	-------	-------
Aug. 1-10	6,684	-------	-------	-------	-------	-------	.289	.004	.029	1.397	.773	.870	.044	.000	3.269	.169	.021	.016	-------	-------	-------	-------
Aug. 11-20	1,738	-------	-------	-------	-------	-------	.200	.006	.018	1.248	.699	.739	.061	.000	2.936	.141	.011	.016	-------	-------	-------	-------
Aug. 21-31	6,226	-------	-------	-------	-------	-------	.156	.004	.025	1.347	.732	.870	.064	.000	3.019	.214	.011	.023	-------	-------	-------	-------
Sept. 1-10	4,125	-------	-------	-------	-------	-------	.089	.005	.015	.998	.493	.652	.056	.000	2.165	.282	.005	.014	-------	-------	-------	-------
Sept. 11-20	14,910	-------	-------	-------	-------	-------	.178	.006	.022	1.198	.600	.522	.054	.000	2.457	.135	.005	.014	-------	-------	-------	-------
Sept. 21-30	20,860	-------	-------	-------	-------	-------	.044	.001	.007	.948	.411	.235	.046	.049	1.562	.079	.005	.023	-------	-------	-------	-------
Average	12,100	-------	-------	-------	-------	-------	0.267	0.004	0.018	1.148	0.650	0.609	0.046	0.000	2.686	0.141	0.011	0.021	-------	-------	-------	-------

Temperature (° F.) of water of Monongahela River, water year October 1944 to September 1945

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

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN IN PENNSYLVANIA

Chemical analyses, in parts per million

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$		Total acidity as H_2SO_4
																				Total	Noncarbonate	
Allegheny River at Eldred																						
Apr. 14, 1945	930	58	10	6.8	15.2	3.4	-------	0.05	0.0	10	2.4	15		17	9.9	30	0.2	0.9	90	35	21	-------
Allegheny River near Kinzua																						
Apr. 15, 1945	3,180	50	10	7.2	19.9	2.8	-------	0.03	0.0	15	3.3	18		35	14	33	0.1	1.0	112	51	22	-------
Allegheny River at West Hickory																						
Apr. 12, 1945	8,260	60	9	7.1	14.3	3.1	-------	0.01	0.0	14	2.9	8.3		37	13	14	0.2	1.0	79	47	17	-------
Allegheny River near Rimer																						
Apr. 8, 1945	42,800	55	18	6.7	9.68	4.3	-------	0.06	0.0	9.2	2.3	5.4		17	18	7.4	0.1	1.0	60	32	18	-------
Allegheny River near Natrona																						
Mar. 31, 1945	37,000	54	2	5.3	16.4	5.1	-------	0.02	0.4	15	4.4	7.3		5	54	7.0	0.1	1.2	100	56	51	-------
Ohio River at Sewickley																						
Oct. 13, 1944	7,480	65	5	5.1	54.5	5.6	-------	0.02	-------	48	13	39		2	215	22	0.3	0.8	354	173	172	-------
Mar. 27, 1945	90,400	54	4	4.7	19.8	5.4	0.7	.02	0.4	18	5.5	7.0	0.8	0	73	5.5	.4	1.5	122	72	72	7

Conewango Creek at Russell																					
May 29, 1945	532	64	13	7.0	19.1	1.9	-------	0.01	0.0	27	4.6	4.5	86	19	2.8	0.1	2.0	109	86	16	-------
Brokenstraw Creek at Youngsville																					
May 29, 1945	228	67	17	8.6	14.5	3.4	-------	0.02	0.0	20	4.0	3.6	59	13	2.2	0.1	1.0	84	66	9.6	-------
Tionesta Creek at Mayburg																					
May 25, 1945	475	59	16	6.4	5.06	2.9	-------	0.07	0.0	4.7	1.4	2.7	12	8.1	3.2	0.1	0.3	.31	18	7.6	-------
Oil Creek at Rouseville																					
Apr. 11, 1945	574	54	14	7.3	15.4	3.7	-------	0.05	0.0	14	3.3	11	36	13	20	0.1	0.4	93	48	19	-------
French Creek at Venango																					
Apr. 17, 1945	545	56	18	7.5	16.5	1.7	-------	0.04	0.0	25	4.6	0.9	74	18	1.8	0.1	1.2	96	81	21	-------
French Creek at Utica																					
Apr. 19, 1945	926	49	21	7.6	20.8	1.5	-------	0.04	0.2	28	5.1	6.6	76	35	3.0	0.0	2.6	126	91	29	-------
Clarion River at Cooksburg																					
Apr. 12, 1945	1,870	56	18	6.5	12.6	4.7	-------	0.22	0.0	12	2.9	5.8	8	34	8.5	0.1	0.2	84	42	35	-------
Clarion River at St. Petersburg																					
Apr. 10, 1945	3,140	46	3	5.6	10.5	3.8	-------	0.03	0.2	9.2	3.3	3.2	2	33	4.8	0.1	0.6	65	36	35	-------

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Redbank Creek at St. Charles																						
Apr. 8, 1945	2,160	50	4	4.8	11.7	5.4	-------	0.02	0.4	10	3.5	3.7		1	40	2.8	0.1	0.8	73	39	39	-------
Mahoning Creek at Punxsutawney																						
Apr. 7, 1945	697	44	1	5.9	26.2	6.4	-------	0.02	0.4	25	7.7	12	1.3	10	102	2.8	0.1	1.8	168	94	86	-------
Crooked Creek at Idaho																						
Apr. 5, 1945	2,080	49	4	5.8	10.6	7.0	0.4	0.47	0.0	9.0	3.3	3.6	1.2	4	37	2.2	0.1	1.8	72	39	36	9
Stony Creek at Ferndale																						
Apr. 3, 1945	1,560	55	1	3.65	26.0	3.9	2.0	0.13	0.6	16	5.5	1.4	1.2	0	86	1.2	0.2	1.4	128	86	86	32
Conemaugh River at Seward																						
Apr. 3, 1945	2,660	57	2	3.90	30.5	7.6	2.6	0.06	1.9	25	7.4	3.5	2.3	0	119	3.2	0.1	1.8	185	117	117	34
Kiskiminetas River at Vandergrift																						
Mar. 31, 1945	3,520	62	3	3.10	72.4	13	9.0	0.68	2.2	39	14	8.1	2.4	0	251	3.9	0.2	2.2	345	254	254	108

Little Conemaugh River at East Conemaugh																						
Apr. 3, 1945	686	57	3	3.35	45.4	8.9	4.5	0.31	1.2	28	9.4	3.1	2.0	0	150	2.2	0.1	1.8	214	161	161	64
Blacklick Creek at Blacklick																						
Apr. 4, 1945	1,080	60	4	3.20	46.2	8.3	4.4	0.47	0.5	18	7.2	5.8	1.2	0	133	2.4	0.1	1.2	185	136	136	70
Loyalhanna Creek at Kingston																						
Apr. 2, 1945	239	56	5	5.1	16.2	5.2	-------	0.02	0.4	16	5.9	2.1		2	61	1.8	0.0	1.3	103	64	63	-------
Buffalo Creek near Freeport																						
Mar. 31, 1945	200	55	5	6.6	17.0	6.9	-------	0.08	0.0	16	4.3	8.3		20	42	10	0.1	1.7	101	58	41	-------
Monongahela River at Greensboro																						
Apr. 17, 1945	9,230	60	2	3.35	39.7	6.0	4.0	0.11	0.5	18	6.2	7.7	1.0	0	123	1.6	0.2	1.0	176	118	118	54
Monongahela River at Braddock																						
Apr. 2, 1945	8,780	60	2	3.70	44.7	6.8	4.1	0.08	0.9	32	11	17	0.6	0	185	4.5	0.8	1.4	263	160	160	41
Dunkard Creek at Shannopin																						
Apr. 17, 1945	1,280	63	18	6.6	20.0	4.3	-------	0.06	0.0	19	4.7	9.8	1.5	32	49	11	0.1	0.8	117	67	41	-------
South Fork Tenmile Creek at Jefferson																						
Apr. 16, 1945	128	63	8	7.6	23.1	2.8	-------	0.02	0.0	29	4.8	10		84	32	8.2	0.1	0.8	134	92	23	-------

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$		Total acidity as H_2SO_4
																				Total	Noncarbonate	
Dunlap Creek at Allison																						
Apr. 16, 1945	38.6	63	5	6.9	286	6.0	-------	0.04	0.0	224	86	336	7.2	170	1,350	75	0.8	5.5	2,340	913	773	-------
Redstone Creek at Waltersburg																						
Apr. 16, 1945	83	58	40	2.50	332	26	67	174	9.0	190	89	62	1.8	0	1,850	11	1.1	0.8	2,540	1,780	------	1,010
Youghiogheny River at Connellsville																						
Apr. 20, 1945	2,680	52	8	5.4	7.72	3.8	-------	0.02	0.1	8.1	2.3	1.4		3	26	1.5	0.1	1.0	49	30	27	-------
Youghiogheny River at Sutersville																						
Apr. 21, 1945	3,110	53	3	3.50	39.8	6.0	2.6	0.06	0.4	22	8.2	13	1.0	0	138	2.6	0.1	1.6	199	120	120	36
Casselman River at Markleton																						
Apr. 18, 1945	980	53	3	4.35	12.3	4.6	0.6	0.04	0.2	9.8	3.1	1.3	0.8	0	42	1.0	0.1	1.5	68	42	42	15
Laurel Hill Creek at Ursina																						
Apr. 18, 1945	381	53	13	6.6	3.91	4.0	-------	0.10	0.0	4.8	1.4	0.4		8	9.2	1.0	0.1	1.1	28	18	11	-------

Turtle Creek at Trafford																						
Apr. 2, 1945	83	62	5	2.80	132	20	21	7.5	2.2	76	26	13	1.6	0	528	7.5	0.2	1.7	723	529	529	260
Chartiers Creek at Carnegie																						
Mar. 27, 1945	597	59	2	3.90	111	15	16	0.08	1.7	97	37	56	1.9	0	571	20	0.2	2.5	866	493	493	120
Beaver River at Wampum																						
Mar. 29, 1945	3,380	65	10	6.6	32.0	5.6	-------	0.09	0.0	37	8.7	10		41	91	11	0.3	6.7	207	128	94	------
Shenango River at Sharpsville																						
June 1, 1945	198	62	18	7.2	18.5	1.3	------	0.01	0.0	24	5.2	4.4		66	29	3.5	0.1	1.7	110	81	27	------
Little Shenango River at Greenville																						
Apr. 19, 1945	76	48	28	7.5	17.3	5.8	-------	0.08	0.0	24	5.2	2.2		69	25	2.0	0.1	0.6	107	81	25	------
Connoquenessing Creek at Hazen																						
Mar. 29, 1945	503	59	7	6.5	28.0	8.2	-------	0.12	0.0	22	7.5	18		20	63	27	0.2	4.4	168	86	69	------
Slippery Rock Creek at Wurtemburg																						
Mar. 29, 1945	604	58	5	6.9	20.0	6.1	-------	0.06	0.0	23	5.4	5.8		26	57	7.0	0.1	1.9	124	80	58	------
Raccoon Creek at Moffatts Mill																						
Oct. 12, 1944	29	55	------	4.00	117	-------	-------	0.18	-------	121	49	69		0	576	40	-------	0.5	-------	507	507	86
Mar. 29, 1945	286	56	4	3.45	86.8	14	13	.20	3.6	74	33	14	2.1	0	407	10	0.2	2.8	601	419	419	132

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Allegheny River at Eldred																						
Apr. 14, 1945	930	------	------	------	------	------	------	------	------	0.499	0.197	0.661		0.279	0.206	0.846	0.011	0.015	------	------	------	------
Allegheny River near Kinzua																						
Apr. 15, 1945	3,180	------	------	------	------	------	------	------	------	0.749	0.271	0.798		0.574	0.292	0.931	0.005	0.016	------	------	------	------
Allegheny River at West Hickory																						
Apr. 12, 1945	8,260	------	------	------	------	------	------	------	------	0.699	0.238	0.362		0.606	0.271	0.395	0.011	0.016	------	------	------	------
Allegheny River near Rimer																						
Apr. 8, 1945	42,800	------	------	------	------	------	------	------	------	0.459	0.189	0.236		0.279	0.375	0.209	0.005	0.016	------	------	------	------
Allegheny River near Natrona																						
Mar. 31, 1945	37,000	------	------	------	------	------	------	------	------	0.749	0.362	0.316		0.082	1.124	0.197	0.005	0.019	------	------	------	------
Ohio River at Sewickley																						
Oct. 13, 1944	7,480	------	------	------	------	------	------	------	------	2.396	1.069	1.693		0.033	4.476	0.620	0.016	0.013	------	------	------	------
Mar. 27, 1945	90,400	------	------	------	------	------	0.078	0.001	0.015	.898	.452	0.304	0.020	.000	1.520	.155	.021	.024	------	------	------	------

Conewango Creek at Russell																					
May 29, 1945	532	------	------	------	------	------	------	------	------	1.374	0.378	0.196	1.409	0.396	0.079	0.005	0.032	------	------	------	------
Brokenstraw Creek at Youngsville																					
May 29, 1945	228	------	------	------	------	------	------	------	------	0.998	0.329	0.157	1.131	0.271	0.062	0.005	0.016	------	------	------	------
Tionesta Creek at Mayburg																					
May 25, 1945	475	------	------	------	------	------	------	------	------	0.235	0.115	0.116	0.197	0.169	0.090	0.005	0.005	------	------	------	------
Oil Creek at Rouseville																					
Apr. 11, 1945	574	------	------	------	------	------	------	------	------	0.699	0.271	0.466	0.590	0.271	0.564	0.005	0.006	------	------	------	------
French Creek at Venango																					
Apr. 17, 1945	545	------	------	------	------	------	------	------	------	1.248	0.378	0.037	1.213	0.375	0.051	0.005	0.019	------	------	------	------
French Creek at Utica																					
Apr. 19, 1945	926	------	------	------	------	------	------	------	------	1.398	0.419	0.285	1.246	0.729	0.085	0.000	0.042	------	------	------	------
Clarion River at Cooksburg																					
Apr. 12, 1945	1,870	------	------	------	------	------	------	------	------	0.599	0.238	0.250	0.131	0.708	0.240	0.005	0.003	------	------	------	------
Clarion River at St. Petersburg																					
Apr. 10, 1945	3,140	------	------	------	------	------	------	------	------	0.459	0.271	0.140	0.033	0.687	0.135	0.005	0.010	------	------	------	------

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	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	Hardness as $CaCO_3$		Total acidity as H_2SO_4
																				Total	Noncarbonate	
Redbank Creek at St. Charles																						
Apr. 8, 1945	2,160	-----	-----	-----	-------	-------	-------	-------	-------	0.499	0.288	0.159		0.016	0.833	0.079	0.005	0.013	-------	-------	------	-------
Mahoning Creek at Punxsutawney																						
Apr. 7, 1945	697	-----	-----	-----	-------	-------	-------	-------	-------	1.284	0.633	0.522	0.033	0.164	2.124	0.078	0.005	0.029	-------	-------	------	-------
Crooked Creek at Idaho																						
Apr. 5, 1945	2,030	-----	-----	-----	-------	-------	0.014	0.025	0.000	0.449	0.271	0.157	0.031	0.633	0.770	0.062	0.005	0.029	-------	-------	------	-------
Stony Creek at Ferndale																						
Apr. 3, 1945	1,560	-----	-----	-----	-------	-------	0.222	0.007	0.002	0.799	0.452	0.061	0.031	0.000	1.790	0.034	0.011	0.023	-------	-------	------	-------
Conemaugh River at Seward																						
Apr. 3, 1945	2,660	-----	-----	-----	-------	-------	0.289	0.003	0.069	1.248	0.609	0.152	0.059	0.000	2.478	0.090	0.005	0.029	-------	-------	------	-------
Kiskiminetas River at Vandergrift																						
Mar. 31, 1945	3,520	-----	-----	-----	-------	-------	1.001	0.037	0.080	1.947	1.151	0.352	0.051	0.000	5.226	0.110	0.011	0.035	-------	-------	------	-------

Little Conemaugh River at East Conemaugh																						
Apr. 3, 1945	686	------	------	------	------	------	0.501	0.017	0.044	1.398	0.773	0.135	0.051	0.000	3.123	0.062	0.005	0.029	------	------	------	------
Blacklick Creek at Blacklick																						
Apr. 4, 1945	1,080	------	------	------	------	------	0.489	0.025	0.018	0.898	0.592	0.252	0.031	0.000	2.769	0.068	0.005	0.019	------	------	------	------
Loyalhanna Creek at Kingston																						
Apr. 2, 1945	239	------	------	------	------	------	------	------	------	0.799	0.485	0.091		0.033	1.270	0.051	0.000	0.021	------	------	------	------
Buffalo Creek near Freeport																						
Mar. 31, 1945	200	------	------	------	------	------	------	------	------	0.799	0.354	0.363		0.323	0.874	0.282	0.005	0.027	------	------	------	------
Monongahela River at Greensboro																						
Apr. 17, 1945	9,230	------	------	------	------	------	0.445	0.006	0.018	0.898	0.510	0.335	0.026	0.000	2.561	0.045	0.011	0.016	------	------	------	------
Monongahela River at Braddock																						
Apr. 2, 1945	8,780	------	------	------	------	------	0.456	0.004	0.033	1.597	0.905	0.739	0.015	0.000	3.852	0.127	0.042	0.023	------	------	------	------
Dunkard Creek at Shannopin																						
Apr. 17, 1945	1,280	------	------	------	------	------	------	------	------	0.948	0.387	0.426	0.038	0.524	1.020	0.310	0.005	0.013	------	------	------	------
South Fork Tenmile Creek at Jefferson																						
Apr. 16, 1945	128	------	------	------	------	------	------	------	------	1.448	0.395	0.449		1.377	0.666	0.231	0.005	0.013	------	------	------	------

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN IN PENNSYLVANIA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Discharge (second-feet)	Temperature (° F.)	Color	pH	Specific conductance (K×10[5] at 25° C.)	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	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate	Total acidity as H_2SO_4
Dunlap Creek at Allison																						
Apr. 16, 1945	38.6	------	------	------	------	------	------	------	------	11.180	7.072	14.611	0.184	2.786	28.106	2.115	0.042	0.089	------	------	------	------
Redstone Creek at Waltersburg																						
Apr. 16, 1945	83	------	------	------	------	------	7.453	7.215	0.328	9.483	7.319	2.696	0.046	0.000	33.518	0.310	0.058	0.013	------	------	------	------
Youghiogheny River at Connellsville																						
Apr. 20, 1945	2,680	------	------	------	------	------	------	------	------	0.404	0.189	0.030		0.049	0.541	0.042	0.005	0.016	------	------	------	------
Youghiogheny River at Sutersville																						
Apr. 21, 1945	3,110	------	------	------	------	------	0.289	0.003	0.015	1.098	0.674	0.565	0.026	0.000	2.873	0.073	0.005	0.026	------	------	------	------
Casselman River at Markleton																						
Apr. 18, 1945	980	------	------	------	------	------	0.067	0.002	0.007	0.489	0.255	0.056	0.020	0.000	0.874	0.028	0.005	0.024	------	------	------	------
Laurel Hill Creek at Ursina																						
Apr. 18, 1945	381	------	------	------	------	------	------	------	------	0.240	0.115	0.019		0.131	0.192	0.028	0.005	0.018	------	------	------	------

Turtle Creek at Trafford																						
Apr. 2, 1945	83	------	------	------	------	------	2.336	0.403	0.080	3.793	2.138	0.565	0.041	0.000	10.993	0.212	0.011	0.027	------	------	------	------
Chartiers Creek at Carnegie																						
Mar. 27, 1945	597	------	------	------	------	------	1.780	0.004	0.062	4.842	3.043	2.435	0.049	0.000	11.888	0.564	0.011	0.040	------	------	------	------
Beaver River at Wampum																						
Mar. 29, 1945	3,380	------	------	------	------	------	------	------	------	1.847	0.715	0.439		0.672	1.895	0.310	0.016	0.108	------	------	------	------
Shenango River at Sharpsville																						
June 1, 1945	198	------	------	------	------	------	------	------	------	1.198	0.428	0.191		1.082	0.604	0.099	0.005	0.027	------	------	------	------
Little Shenango River at Greenville																						
Apr. 19, 1945	76	------	------	------	------	------	------	------	------	1.198	0.428	0.097		1.131	0.521	0.056	0.005	0.010	------	------	------	------
Connoquenessing Creek at Hazen																						
Mar. 29, 1945	503	------	------	------	------	------	------	------	------	1.098	0.617	0.769		0.328	1.312	0.762	0.011	0.071	------	------	------	------
Slippery Rock Creek at Wurtemburg																						
Mar. 29, 1945	604	------	------	------	------	------	------	------	------	1.148	0.444	0.254		0.426	1.187	0.197	0.005	0.031	------	------	------	------
Raccoon Creek at Moffatts Mill																						
Oct. 12, 1944	29	------	------	------	------	------	------	0.010	------	6.039	4.030	2.981		0.000	11.992	1.128	------	0.008	------	------	------	------
Mar. 29, 1945	286	------	------	------	------	------	1.446	.011	0.131	3.694	2.714	0.609	0.054	.000	8.474	.282	0.011	.045	------	------	------	------

UPPER MISSISSIPPI RIVER BASIN

IOWA RIVER BASIN

IOWA RIVER AT IOWA CITY, IOWA

LOCATION.—At Benton Street bridge.
DRAINAGE AREA.—3,230 square miles.
RECORDS AVAILABLE.—Chemical analyses: January 1944 to September 1945.
Sediment records: October 1943 to September 1945.
Water temperatures: January 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 400 parts per million Dec. 21–31; minimum, 203 parts per million Mar. 1–10.
Total hardness: Maximum, 345 parts per million Dec. 21–31; minimum, 156 parts per million Mar. 1–10.
Sediment loads: Maximum, 51,700 tons per day June 10; minimum, 3 tons per day Jan. 24.
Water temperatures: Maximum, 86° F. July 24; minimum, freezing point on several days in December, January, February, and March.
EXTREMES, 1943–45.—Dissolved solids: Maximum, 402 parts per million Jan. 11–20, 1944; minimum, 167 parts per million May 21–31, 1944.
Total hardness: Maximum, 345 parts per million Dec. 21–31, 1944; minimum, 133 parts per million May 21–31, 1944.
Sediment loads: Maximum, 177,000 tons per day May 23, 1944; minimum, 3 tons per day Jan. 24, 1945.
Water temperatures: Maximum, 86° F. July 24, 1945; minimum, freezing point on several days during winter months of 1944 and 1945.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1035.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Color	pH	Specific conductance ($K \times 10^5$ at 25°C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids	Total hardness as $CaCO_3$
Oct. 1-10, 1944	674	20	7.5	50.5	13	0.09	64	26	8.8	4.0	268	48	6.0	0.3	2.5	0.2	305	266
Oct. 11-20	530	25	7.6	49.1	12	.21	58	28	10	2.5	254	52	6.0	.3	1.0	.1	294	260
Oct. 21-31	459	30	7.9	48.6	6.3	.18	59	26	15	2.7	258	36	9.0	.3	.5	.1	297	254
Nov. 1-10	505	20	7.9	49.3	10	.16	65	27	11	2.5	256	48	9.0	.2	1.5	.1	304	273
Nov. 11-20	472	10	7.9	51.7	9.9	.02	69	28	11	2.2	284	51	8.0	.3	2.5	.1	320	287
Nov. 21-26, 28-29	456	10	8.1	51.1	12	.01	68	29	10	2.3	278	50	7.5	.3	2.5	.1	320	288
Dec. 1-10	383	5	7.7	55.6	12	.02	72	26	8.5	2.0	286	55	10	.2	4.3	.2	331	287
Dec. 11-20	329	2	7.8	58.2	12	.02	77	27	9.0	1.9	300	57	10	.2	5.5	.2	348	303
Dec. 21-31	297	2	7.8	65.4	13	.02	87	31	9.7	1.8	342	65	10	.2	6.5	.1	400	345
Jan. 1, 3-10, 1945	267	1	7.7	63.5	14	.02	86	29	8.4	1.3	332	63	11	.2	5.9	.4	385	334
Jan. 11-20	245	8	7.7	59.3	18	.05	78	28	12	2.0	308	60	10	.2	5.6	.3	366	310
Jan. 21-31	267	10	7.5	58.3	15	.02	76	26	11	2.0	298	56	8.8	.2	6.2	.1	353	296

Feb. 1-10	258	10	7.5	60.6	15	.03	80	27	12	2.1	310	58	10	.2	5.6	.1	368	310
Feb. 11-17, 19-20	1,528	37	7.3	40.1	12	.28	50	17	7.3	4.2	193	38	6.0	.2	6.7	.1	246	195
Feb. 21-28	1,961	25	7.6	38.4	12	.30	50	17	5.3	4.6	182	38	4.1	.2	8.6	.2	249	195
Mar. 1-10	2,979	25	7.5	31.5	12	.24	41	13	4.5	4.5	145	31	3.5	.2	7.6	.3	203	156
Mar. 11-20	3,953	15	7.6	37.0	13	.12	50	15	4.8	3.6	176	35	3.2	.2	11	.0	240	186
Mar. 21-31	6,819	14	8.1	40.1	14	.06	55	17	5.1	3.3	178	42	3.8	.4	24	.1	255	207
Apr. 1-10	4,005	10	8.0	47.5	16	.10	65	21	6.1	2.2	227	48	4.2	.4	17	.0	302	248
Apr. 11-20	4,658	7	8.3	43.4	14	.08	60	19	6.3	2.2	206	44	3.5	.4	19	.1	275	228
Apr. 21-30	5,410	10	8.0	49.7	16	.06	68	22	6.1	1.9	238	49	4.2	.4	25	.2	313	260
May 1-10	2,981	15	8.0	52.3	15	.04	72	24	7.3	1.9	259	50	4.2	.2	18	.1	335	278
May 11-12, 14-20	4,263	15	7.9	41.4	12	.06	55	18	5.7	2.2	195	41	3.8	.2	12	.1	263	211
May 21-31	4,765	10	8.0	46.3	15	.05	63	21	6.0	2.2	226	44	4.0	.3	17	.1	293	244
June 1-9	5,189	15	7.3	43.3	14	.05	59	20	5.0	2.2	217	39	3.2	.2	16	.3	276	229
June 11-18, 20	6,051	18	7.3	42.9	15	.05	60	19	5.2	2.2	214	39	3.4	.2	17	.2	274	228
June 21-30	3,057	10	7.4	47.7	15	.07	67	21	6.8	2.2	244	43	4.1	.3	17	.3	306	254
July 1-10	2,132	13	7.6	51.1	19	.06	69	22	7.5	2.2	256	45	4.2	.3	12	.2	322	262
July 11-20	1,293	9	7.8	55.3	18	.06	75	25	8.7	2.0	284	49	5.4	.3	12	.2	347	290
July 23-26, 28-31	834	9	7.9	54.5	16	.06	72	25	8.7	2.0	284	52	4.8	.3	8.6	.3	338	282
Aug. 1-10	660	10	7.8	53.4	15	.06	72	25	9.5	2.4	277	52	5.8	.3	4.4	.3	325	282
Aug. 11-15, 18-20	1,400	17	7.7	42.0	14	.06	55	19	6.9	2.8	208	39	4.5	.4	7.2	.1	351	215
Aug. 21-24, 26-31	2,080	33	7.6	41.6	19	.05	56	17	6.6	3.3	215	32	3.4	.5	7.6	.0	258	210
Sept. 1-8, 10	740	32	7.7	48.3	15	.15	62	23	10	3.6	255	43	6.0	.5	2.0	.1	293	249
Sept. 11-20	509	27	7.7	44.9	8.5	.12	53	23	13	3.3	230	46	7.2	.3	.7	.3	265	226
Sept. 21-30	639	32	7.7	44.0	9.5	.20	48	22	8.7	4.5	220	44	6.4	.3	1.0	.2	260	210
Weighted average	2,033	15	-----	44.7	14	0.08	60	20	6.4	2.6	219	43	4.3	0.2	14	0.1	284	232

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	674	-----	-----	-----	-----	-----	3.19	2.14	0.38	0.10	4.39	1.00	0.17	0.02	0.04	-----	-----	-----
Oct. 11-20	530	-----	-----	-----	-----	-----	2.89	2.30	.43	.06	4.16	1.08	.17	.02	.02	-----	-----	-----
Oct. 21-31	459	-----	-----	-----	-----	-----	2.94	2.14	.65	.07	4.23	.75	.25	.02	.01	-----	-----	-----
Nov. 1-10	505	-----	-----	-----	-----	-----	3.24	2.22	.48	.06	4.36	1.00	.25	.01	.02	-----	-----	-----
Nov. 11-20	472	-----	-----	-----	-----	-----	3.44	2.30	.48	.06	4.66	1.06	.23	.02	.04	-----	-----	-----
Nov. 21-26, 28-29	456	-----	-----	-----	-----	-----	3.39	2.38	.43	.06	4.56	1.04	.21	.02	.04	-----	-----	-----
Dec. 1-10	383	-----	-----	-----	-----	-----	3.59	2.14	.37	.05	4.69	1.15	.28	.01	.07	-----	-----	-----
Dec. 11-20	329	-----	-----	-----	-----	-----	3.84	2.22	.39	.05	4.92	1.19	.28	.01	.09	-----	-----	-----
Dec. 21-31	297	-----	-----	-----	-----	-----	4.34	2.55	.42	.05	5.61	1.35	.28	.01	.10	-----	-----	-----
Jan. 1, 3-10, 1945	267	-----	-----	-----	-----	-----	4.29	2.38	.37	.03	5.44	1.31	.31	.01	.10	-----	-----	-----
Jan. 11-20	245	-----	-----	-----	-----	-----	3.89	2.30	.52	.05	5.05	1.25	.28	.01	.09	-----	-----	-----
Jan. 21-31	267	-----	-----	-----	-----	-----	3.79	2.14	.48	.05	4.88	1.17	.25	.01	.10	-----	-----	-----

IOWA RIVER BASIN—Continued

IOWA RIVER AT IOWA CITY, IOWA—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Color	pH	Specific conductance (K×10[5] at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids	Total hardness as $CaCO_3$
Feb. 1-10	258						3.99	2.22	0.52	0.05	5.08	1.21	0.28	0.01	0.09			
Feb. 11-17, 19-20	1,528						2.50	1.40	.32	.11	3.16	.79	.17	.01	.11			
Feb. 21-28	1,961						2.50	1.40	.23	.12	2.98	.79	.12	.01	.14			
Mar. 1-10	2,979						2.05	1.07	.20	.12	2.38	.65	.10	.01	.12			
Mar. 11-20	3,953						2.50	1.23	.21	.09	2.88	.73	.09	.01	.18			
Mar. 21-31	6,819						2.74	1.40	.22	.08	2.92	.87	.11	.02	.39			
Apr. 1-10	4,005						3.24	1.73	.27	.06	3.72	1.00	.12	.02	.27			
Apr. 11-20	4,658						2.99	1.56	.27	.06	3.38	.92	.10	.02	.31			
Apr. 21-30	5,410						3.39	1.81	.27	.05	3.90	1.02	.12	.02	.40			
May 1-10	2,981						3.59	1.97	.32	.05	4.24	1.04	.12	.01	.29			
May 11-12, 14-20	4,263						2.74	1.48	.25	.06	3.20	.85	.11	.01	.19			
May 21-31	4,765						3.14	1.73	.26	.06	3.70	.92	.11	.02	.27			
June 1-9	5,189						2.94	1.64	.22	.06	3.56	.81	.09	.01	.26			
June 11-18, 20	6,051						2.99	1.56	.23	.06	3.51	.81	.10	.01	.27			
June 21-30	3,057						3.34	1.73	.30	.06	4.00	.90	.12	.02	.27			
July 1-10	2,132						3.44	1.81	.33	.06	4.20	.94	.12	.02	.19			
July 11-20	1,293						3.74	2.06	.38	.05	4.65	1.02	.15	.02	.19			
July 23-26, 28-31	834						3.59	2.06	.38	.05	4.66	1.08	.14	.02	.14			
Aug. 1-10	660						3.59	2.06	.41	.06	4.54	1.08	.16	.02	.07			
Aug. 11-15, 18-20	1,400						2.74	1.56	.30	.07	3.41	.81	.13	.02	.12			
Aug. 21-24, 26-31	2,080						2.79	1.40	.29	.08	3.52	.67	.10	.03	.12			
Sept. 1-8, 10	740						3.09	1.89	.43	.09	4.18	.90	.17	.03	.03			
Sept. 11-20	509						2.64	1.89	.57	.08	3.77	.96	.20	.02	.01			
Sept. 21-30	639						2.40	1.81	.38	.12	3.61	.92	.18	.02	.02			
Weighted average	2,033						2.99	1.64	0.28	0.07	3.59	0.90	0.12	0.01	0.23			

Temperature (° F.) of water of Iowa River, water year October 1944 to September 1945

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

IOWA RIVER BASIN—Continued

IOWA RIVER AT IOWA CITY, IOWA—Continued

Suspended sediment, water year October 1944 to September 1945

Day	October: Mean discharge (second-feet)	October: Suspended sediment: Mean concentration (p. p. m.)	October: Suspended sediment: Tons per day	November: Mean discharge (second-feet)	November: Suspended sediment: Mean concentration (p. p. m.)	November: Suspended sediment: Tons per day	December: Mean discharge (second-feet)	December: Suspended sediment: Mean concentration (p. p. m.)	December: Suspended sediment: Tons per day
1	620	73	122	439	84	100	261	9	6
2	674	71	129	473	84	107	245	9	6
3	696	70	132	564	91	139	295	10	8
4	708	71	136	550	83	123	354	11	11
5	862	93	216	447	69	83	452	13	16
6	702	112	212	517	66	92	435	15	18
7	669	102	184	545	63	93	490	17	22
8	642	83	144	508	62	85	435	17	20
9	579	71	111	536	62	90	408	17	19
10	584	66	104	473	61	78	452	17	21
11	589	65	103	494	59	79	264	16	11
12	579	67	105	504	58	79	320	16	14
13	540	73	106	452	58	71	304	15	12
14	550	87	129	464	58	73	334	14	13
15	536	88	127	481	57	74	331	13	12
16	504	80	109	452	56	68	361	9	9
17	508	74	101	473	47	60	351	13	12
18	522	76	107	499	39	53	348	18	17
19	490	81	107	464	34	43	334	21	19
20	486	86	113	439	30	36	344	24	22
21	490	91	120	468	26	33	338	28	26
22	481	95	123	435	23	27	307	29	24
23	473	94	120	435	21	25	313	30	25
24	464	89	111	435	20	23	301	30	24
25	468	84	106	427	18	21	298	30	24
26	460	80	99	452	17	21	295	31	25
27	456	76	94	504	16	22	257	32	22
28	416	72	81	456	15	18	302	33	27
29	443	69	83	494	13	17	289	33	26
30	447	68	82	456	11	14	292	34	27
31	452	80	98				273	34	25
Total load (tons)			3,714			1,847			563

Day	January: Mean discharge (second-feet)	January: Mean concentration (p. p. m.)	January: Tons per day	February: Mean discharge (second-feet)	February: Mean concentration (p. p. m.)	February: Tons per day	March: Mean discharge (second-feet)	March: Mean concentration (p. p. m.)	March: Tons per day
1	332	34	30	276	8	6	2,110	192	1,090
2	294	34	27	276	7	5	2,110	163	929
3	237	32	20	276	7	5	2,300	214	1,330
4	305	28	23	273	7	5	2,730	580	4,280
5	235	21	13	243	7	5	2,920	670	5,280
6	265	15	11	246	7	5	3,150	530	4,510
7	257	14	10	257	7	5	3,450	415	3,870
8	266	14	10	224	6	4	3,800	485	4,980
9	226	13	8	251	5	3	3,670	500	4,950
10	251	12	8	254	4	3	3,550	850	8,150
11	251	11	7	277	4	3	3,450	1,030	9,590
12	243	12	8	310	4	3	3,360	1,040	9,430
13	240	12	8	390	13	14	3,450	1,170	10,900
14	241	12	8	1,300	85	316	3,580	1,210	11,700
15	242	12	8	2,150	316	1,830	3,750	1,190	12,000
16	223	12	7	2,200	267	1,590	4,000	1,170	12,600
17	290	12	9	2,160	355	2,070	4,180	1,230	13,900
18	229	11	7	2,250	372	2,260	4,390	1,310	15,500
19	250	10	7	2,310	238	1,480	4,570	1,110	13,700
20	244	9	6	1,920	141	731	4,800	890	11,500
21	257	8	6	1,600	89	384	5,420	770	11,300
22	256	7	5	1,610	61	265	7,440	1,020	20,500
23	259	6	4	1,490	51	205	8,470	660	15,100
24	253	5	3	1,370	43	159	7,760	410	8,590
25	265	5	4	1,710	74	367	8,230	1,130	26,000
26	277	7	5	2,820	282	2,150	9,270	1,020	25,500
27	274	9	7	2,710	273	2,000	7,280	520	10,200
28	302	10	8	2,380	247	1,590	5,710	690	10,600
29	247	10	7				5,160	600	8,360
30	301	10	8				5,070	420	5,750
31	245	9	6				5,200	319	4,480
Total load (tons)			298			17,463			306,569

IOWA RIVER BASIN—Continued

IOWA RIVER AT IOWA CITY, IOWA—Continued

Suspended sediment, water year October 1944 to September 1945—Continued

Day	April			May			June		
	Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment	
		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day
1	5,260	295	4,190	3,810	238	2,450	5,270	480	6,830
2	4,130	360	4,010	3,840	218	2,260	5,070	1,070	14,600
3	3,220	330	2,870	3,610	192	1,870	4,920	580	7,700
4	3,640	990	10,500	3,260	170	1,500	4,800	560	7,260
5	4,350	2,160	25,400	2,980	151	1,210	4,490	575	6,970
6	4,210	1,820	20,700	2,740	143	1,060	4,440	370	4,440
7	4,000	780	8,420	2,580	134	933	4,560	265	3,260
8	4,020	650	7,060	2,480	124	830	4,790	200	2,590
9	3,820	455	4,690	2,360	116	739	5,190	162	2,270
10	3,400	415	3,810	2,150	102	592	8,360	2,200	51,700
11	3,310	400	3,570	2,200	72	428	8,240	640	14,200
12	3,360	390	3,540	2,120	62	355	7,460	560	11,300
13	3,450	390	3,630	2,070	51	285	8,210	415	9,200
14	3,960	1,000	10,900	3,060	430	4,180	7,750	270	5,650
15	4,200	1,090	12,400	4,740	1,080	13,800	6,720	265	4,810
16	4,890	1,050	14,300	4,870	1,360	17,900	5,430	385	5,640
17	5,510	1,380	20,500	5,750	920	14,300	4,400	445	5,290
18	5,420	700	10,200	5,950	490	7,870	4,220	560	6,380
19	5,970	455	7,330	5,870	300	4,750	4,110	520	5,770
20	6,510	350	6,150	6,000	215	3,480	3,970	550	5,900
21	6,510	268	4,710	6,140	196	3,250	3,460	360	3,360
22	6,460	208	3,630	5,570	295	4,440	3,120	290	2,440
23	6,670	190	3,420	4,350	440	5,170	3,200	310	2,680
24	6,610	170	3,030	3,820	335	3,460	2,950	1,060	8,440
25	6,240	159	2,680	3,900	420	4,420	2,790	499	3,760
26	5,600	168	2,540	4,190	770	8,710	2,660	340	2,440
27	4,540	207	2,540	4,500	1,200	14,600	2,920	700	5,520
28	3,910	225	2,380	4,880	620	8,170	2,920	830	6,540
29	3,780	238	2,430	4,980	410	5,510	2,640	670	4,780
30	3,780	248	2,530	5,020	295	4,000	3,910	3,590	39,700
31				5,070	290	3,970			
Total load (tons)			195,610			146,492			261,420

Day	July			August			September		
1	2,660	1,150	8,260	685	93	172	967	82	214
2	2,350	580	3,680	707	100	191	885	72	172
3	2,340	425	2,690	680	116	213	819	68	150
4	2,460	375	2,490	660	116	207	784	85	180
5	2,250	430	2,610	670	125	226	746	72	145
6	2,060	385	2,140	712	116	223	702	60	114
7	1,950	225	1,180	675	100	182	654	73	129
8	1,840	192	954	654	102	180	649	67	118
9	1,780	174	836	565	103	157	552	64	95
10	1,630	174	766	587	102	162	639	72	124
11	1,500	152	616	583	100	157	550	76	113
12	1,620	510	3,700	583	102	161	543	72	106
13	1,860	1,930	11,900	1,120	130	393	531	66	95
14	1,310	185	654	825	190	423	525	62	88
15	1,230	145	482	712	220	423	610	58	96
16	1,160	116	363	1,010	195	532	539	58	84
17	1,120	112	339	2,090	430	2,520	432	59	69
18	1,060	90	258	2,450	850	5,620	479	59	76
19	1,060	95	272	2,280	480	2,950	436	58	68
20	1,010	84	229	2,350	350	2,220	443	49	59
21	1,030	87	242	2,550	380	2,620	408	57	63
22	1,000	84	227	2,630	410	2,980	457	69	85
23	941	90	229	2,880	440	3,420	429	68	79
24	843	91	207	3,110	670	5,630	543	74	108
25	873	85	200	2,890	680	5,310	436	66	78
26	813	90	198	2,140	310	1,850	468	71	90
27	756	84	171	1,730	175	817	571	84	130
28	751	77	156	1,460	125	493	1,090	150	441
29	734	85	168	1,260	104	354	941	180	457
30	724	92	180	1,120	92	278	1,050	116	329
31	707	95	181	1,050	87	247			
Total load (tons)			46,578			41,311			4,154

IOWA RIVER BASIN—Continued

CEDAR RIVER AT CEDAR RAPIDS, IOWA

LOCATION.—At 8th Avenue bridge, 500 feet downstream from gaging station and 2.6 miles upstream from Prairie Creek.

DRAINAGE AREA.—6,640 square miles.

RECORDS AVAILABLE.—Chemical analyses: January 1944 to September 1945.
Sediment records: October 1943 to September 1945.
Water temperatures: January 1944 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 370 parts per million Dec. 21, 23–31; minimum, 193 parts per million Aug. 11–20.
Total hardness: Maximum, 300 parts per million Dec. 21, 23–31; minimum, 151 parts per million Aug. 11–20.
Sediment loads: Maximum, 73,700 tons per day Mar. 19; minimum, 2 tons per day Jan. 31.
Water temperatures: Maximum, 84° F. several days in August; minimum, freezing point on several days in December and January.

EXTREMES, 1943–45.—Dissolved solids: Maximum, 374 parts per million Jan. 11–20, 1944; minimum, 193 parts per million Aug. 11–20, 1945.
Total hardness: Maximum, 300 parts per million Dec. 21, 23–31, 1944; minimum, 151 parts per million Aug. 11–20, 1945.
Sediment loads: Maximum, 78,700 tons per day June 17, 1944; minimum, 1.6 tons per day January 21, 1944.
Water temperatures: Maximum, 85° F. Aug. 11, 14, and 15, 1944; minimum, freezing point on several days during winter months of 1944 and 1945.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1035.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Color	pH	Specific conductance (K×10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids	Total hardness as $CaCO_3$
Oct. 1–10, 1944	1,591	10	7.4	46.5	11	0.02	58	22	12	3.8	234	38	13	0.3	5.7	0.1	276	235
Oct. 11–20	1,322	10	7.7	41.4	10	.08	48	24	14	2.2	210	39	14	.2	2.0	.1	246	218
Oct. 21–28, 30–31	1,160	10	7.9	40.4	7.1	.10	43	24	8.4	1.7	196	38	16	.2	1.0	.1	240	206
Nov. 1–10	1,181	10	7.9	42.8	6.3	.05	48	23	14	2.1	210	36	16	.2	2.5	.1	271	214
Nov. 11–20	1,153	10	7.7	45.7	6.0	.02	56	25	14	2.0	224	38	18	.2	4.6	.1	272	243
Nov. 21–30	1,160	10	7.9	48.9	6.7	.04	62	26	16	2.2	246	39	18	.2	5.5	.1	300	262
Dec. 1–10	964	5	7.6	54.0	8.5	.02	68	23	14	1.8	259	42	20	.2	8.6	.2	316	264
Dec. 11–20	787	4	7.6	57.9	11	.03	72	23	14	1.7	274	43	23	.2	9.8	.0	336	274
Dec. 21, 23–31	708	5	7.6	63.0	11	.02	79	25	17	1.8	300	45	26	.2	11	.1	370	300
Jan. 1–10, 1945	690	5	7.6	61.7	11	.02	76	24	17	2.0	287	43	27	.2	11	.1	362	288
Jan. 11–20	652	2	7.4	60.3	12	.02	72	23	17	1.7	276	42	28	.1	11	.2	354	274
Jan. 21–31	662	9	7.3	57.9	12	.02	70	21	20	2.4	263	39	27	.2	11	.1	352	261

Feb. 1-10	638	8	7.4	61.5	12	.10	75	23	23	2.2	282	42	29	.2	11	.1	366	282
Feb. 11-20	1,390	14	7.2	46.7	11	.02	55	17	16	3.2	198	36	20	2	11	.1	275	208
Feb. 21-28	2,109	25	7.5	42.9	13	.12	53	16	12	4.6	189	36	15	.2	12	.3	274	198
Mar. 1-10	3,692	10	7.5	35.7	9.6	.11	46	12	7.3	4.2	156	29	9.1	.2	11	.1	224	164
Mar. 11-20	19,884	25	7.5	32.1	10	.12	45	9.7	4.6	4.5	149	24	5.8	.2	9.4	.0	204	152
Mar. 21-31	14,[illegible]36	25	7.6	38.0	12	.12	52	14	6.0	3.6	166	38	6.9	.2	13	.0	256	188
Apr. 1-10	7,159	6	8.0	44.4	13	.08	62	18	7.8	2.2	210	41	10	.4	12	.5	275	228
Apr. 11-20	10,444	10	8.1	41.6	12	.07	57	17	7.0	2.2	194	40	6.5	.4	14	.5	260	212
Apr. 21-30	10,153	15	8.1	43.9	12	.06	60	18	6.8	2.2	208	41	6.2	.4	14	.1	274	224
May 1-10	6,046	15	8.1	48.5	11	.04	67	21	7.5	2.2	240	43	7.5	.3	10	.0	305	254
May 11-20	6,395	10	8.2	43.5	9.8	.03	58	18	7.8	2.2	210	40	6.8	.3	10	.1	269	218
May 21-31	11,291	25	7.7	37.3	10	.06	50	15	6.3	2.1	176	32	5.5	.3	9.8	.1	235	186
June 1-10	15,010	30	8.0	37.2	13	.08	52	15	5.6	2.1	182	31	4.6	.2	10	.1	241	191
June 11-20	9,470	15	7.3	42.9	13	.06	61	18	5.9	2.1	218	35	5.9	.2	11	.2	271	226
June 21-30	5,801	12	7.4	46.0	13	.06	65	20	6.8	2.0	236	37	7.0	.1	12	.2	285	244
July 1-10	4,815	10	7.5	46.9	13	.05	66	19	7.1	2.0	241	38	7.5	.2	11	.1	292	242
July 11-20	3,044	10	7.7	46.5	20	.07	62	20	10	2.1	236	38	8.4	.3	8.2	.1	293	236
July 21-31	2,184	10	7.5	45.1	14	.10	56	20	10	2.3	222	40	11	.3	3.0	.3	270	222
Aug. 1-10	3,074	15	7.6	45.1	14	.12	56	19	11	2.3	216	38	12	.3	5.4	.3	273	218
Aug. 11-20	8,555	25	7.5	31.5	14	.08	44	10	6.2	2.9	160	23	5.0	.4	4.3	.1	193	151
Aug. 21-31	4,922	25	7.6	41.0	15	.08	53	18	7.9	2.5	210	32	6.6	.3	3.3	.0	245	206
Sept. 1-10	2,063	20	7.6	39.1	10	.15	42	20	11	2.4	190	36	10	.3	.5	.0	225	187
Sept. 11-20	1,607	17	7.7	40.3	10	.11	44	21	11	1.5	197	37	12	.2	.4	.1	231	196
Sept. 21-30	1,715	23	7.6	39.7	7.7	.12	44	20	11	1.9	192	35	12	.2	1.2	.2	226	192
Weighted average	4,682	18	-----	40.6	11	0.08	55	16	7.6	2.7	195	35	7.9	0.3	9.7	0.1	254	201

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	1,591	------	------	------	------	------	2.89	1.81	0.52	0.10	3.84	0.79	0.37	0.02	0.09	------	------	------
Oct. 11-20	1,322	------	------	------	------	------	2.40	1.97	.61	.06	3.44	.81	.39	.01	.03	------	------	------
Oct. 21-28, 30-31	1,160	------	------	------	------	------	2.15	1.97	.37	.04	3.21	.79	.45	.01	.02	------	------	------
Nov. 1-10	1,181	------	------	------	------	------	2.40	1.89	.61	.05	3.44	.75	.45	.01	.04	------	------	------
Nov. 11-20	1,153	------	------	------	------	------	2.80	2.06	.61	.05	3.67	.79	.51	.01	.07	------	------	------
Nov. 21-30	1,160	------	------	------	------	------	3.09	2.14	.70	.06	4.03	.81	.51	.01	.09	------	------	------
Dec. 1-10	964	------	------	------	------	------	3.39	1.89	.61	.05	4.25	.87	.56	.01	.14	------	------	------
Dec. 11-20	787	------	------	------	------	------	3.59	1.89	.61	.04	4.49	.90	.65	.01	.16	------	------	------
Dec. 21, 23-31	708	------	------	------	------	------	3.94	2.06	.74	.05	4.92	.94	.73	.01	.18	------	------	------
Jan. 1-10, 1945	690	------	------	------	------	------	3.79	1.97	.74	.05	4.70	.90	.76	.01	.18	------	------	------
Jan. 11-20	652	------	------	------	------	------	3.59	1.89	.74	.04	4.52	.87	.79	.01	.18	------	------	------
Jan. 21-31	662	------	------	------	------	------	3.49	1.73	.87	.06	4.31	.81	.76	.01	.18	------	------	------

IOWA RIVER BASIN—Continued

CEDAR RIVER AT CEDAR RAPIDS, IOWA—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids	Total hardness as $CaCO_3$
Feb. 1-10	638						3.74	1.89	1.00	0.06	4.62	0.87	0.82	0.01	0.18			
Feb. 11-20	1,390						2.75	1.40	.70	.08	3.25	.75	.56	.01	.18			
Feb. 21-28	2,109						2.65	1.32	.52	.12	3.10	.75	.42	.01	.19			
Mar. 1-10	3,692						2.30	.99	.32	.11	2.56	.60	.26	.01	.18			
Mar. 11-20	19,884						2.25	.80	.20	.12	2.44	.50	.16	.01	.15			
Mar. 21-31	14,286						2.60	1.15	.26	.09	2.72	.79	.19	.01	.21			
Apr. 1-10	7,159						3.09	1.48	.34	.06	3.44	.85	.28	.02	.19			
Apr. 11-20	10,444						2.84	1.40	.30	.06	3.18	.83	.18	.02	.23			
Apr. 21-30	10,153						2.99	1.48	.30	.06	3.41	.85	.17	.02	.23			
May 1-10	6,046						3.34	1.73	.33	.06	3.93	.90	.21	.02	.16			
May 11-20	6,395						2.89	1.48	.34	.06	3.44	.83	.19	.02	.16			
May 21-31	11,291						2.50	1.23	.27	.05	2.88	.67	.16	.02	.16			
June 1-10	15,010						2.59	1.23	.24	.05	2.98	.65	.13	.01	.16			
June 11-20	9,470						3.04	1.48	.26	.05	3.57	.73	.17	.01	.18			
June 21-30	5,801						3.24	1.64	.30	.05	3.87	.77	.20	.01	.19			
July 1-10	4,815						3.29	1.56	.31	.05	3.95	.79	.21	.01	.18			
July 11-20	3,044						3.09	1.64	.43	.05	3.87	.79	.24	.02	.13			
July 21-31	2,184						2.79	1.64	.43	.06	3.64	.83	.31	.02	.05			
Aug. 1-10	3,074						2.79	1.56	.48	.06	3.54	.79	.34	.02	.09			
Aug. 11-20	8,555						2.20	.82	.27	.07	2.62	.48	.14	.02	.07			
Aug. 21-31	4,922						2.64	1.48	.34	.06	3.44	.67	.19	.02	.05			
Sept. 1-10	2,063						2.10	1.64	.48	.06	3.11	.75	.28	.02	.01			
Sept. 11-20	1,607						2.20	1.73	.48	.04	3.23	.77	.34	.01	.01			
Sept. 21-30	1,715						2.20	1.64	.48	.05	3.15	.73	.34	.01	.02			
Weighted average	4,682						2.74	1.32	0.33	0.07	3.20	0.73	0.22	0.02	0.16			

Temperature (° F.) of water of Cedar River, water year October 1944 to September 1945

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

IOWA RIVER BASIN—Continued

CEDAR RIVER AT CEDAR RAPIDS, IOWA—Continued

Suspended sediment, water year October 1944 to September 1945

Day	October			November			December		
	Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment	
		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day
1	1,630	62	273	1,140	54	166	740	10	20
2	1,610	55	239	1,130	60	183	655	10	18
3	1,600	40	173	1,200	61	198	611	10	16
4	1,580	40	171	1,220	56	184	655	10	18
5	1,560	44	185	1,190	36	116	913	9	22
6	1,600	43	186	1,190	32	103	1,170	9	28
7	1,610	48	209	1,220	29	96	1,250	9	30
8	1,580	46	196	1,240	37	124	1,110	8	24
9	1,560	41	173	1,170	48	152	1,320	8	29
10	1,580	37	158	1,110	42	126	1,220	8	26
11	1,520	40	164	1,160	29	91	1,020	7	19
12	1,380	46	171	1,140	36	111	800	7	15
13	1,400	46	174	1,140	47	145	800	7	15
14	1,370	51	189	1,140	61	188	740	6	12
15	1,330	46	165	1,130	53	162	750	8	16
16	1,250	44	148	1,100	38	113	780	7	15
17	1,270	43	147	1,130	29	88	760	5	10
18	1,280	50	173	1,170	22	69	740	4	8
19	1,170	58	183	1,220	21	69	740	4	8
20	1,250	55	186	1,200	23	75	740	3	6
21	1,240	53	177	1,200	19	62	720	3	6
22	1,200	53	172	1,190	15	48	700	3	6
23	1,200	55	178	1,140	13	40	700	3	6
24	1,190	58	186	1,130	15	46	700	3	6
25	1,130	46	140	1,140	15	46	700	3	6
26	1,100	39	116	1,220	9	30	680	3	6
27	1,190	34	109	1,200	9	29	680	2	4
28	1,110	27	81	1,220	8	26	700	3	6
29	1,130	34	104	1,220	10	33	720	6	12
30	1,130	42	128	940	10	25	740	6	12
31	1,140	45	139				750	5	10
Total load (tons)			5,193			2,944			435

Day	January			February			March		
1	760	5	10	620	2	3	1,940	28	147
2	740	5	10	620	3	5	2,720	70	551
3	720	5	10	640	4	7	3,550	140	1,340
4	700	5	9	640	4	7	3,750	112	1,130
5	680	5	9	640	3	5	3,940	105	1,120
6	680	5	9	640	3	5	4,800	230	2,980
7	680	5	9	640	3	5	4,710	120	1,580
8	660	5	9	640	4	7	4,110	90	999
9	640	4	7	640	4	7	3,600	80	778
10	640	3	5	660	3	5	3,800	180	1,850
11	650	2	4	680	2	4	4,800	475	6,160
12	650	2	4	710	2	4	4,830	470	6,130
13	650	3	5	760	2	4	5,800	335	5,250
14	650	3	5	1,200	23	77	7,250	490	9,590
15	650	3	5	1,900	82	421	8,960	530	12,800
16	640	3	5	2,100	72	408	12,500	610	21,100
17	650	3	5	1,800	60	292	22,300	620	37,300
18	660	3	5	1,600	26	112	35,900	600	58,200
19	660	3	5	1,500	17	69	49,600	550	73,700
20	660	3	5	1,650	14	62	46,900	380	48,100
21	660	3	5	1,700	30	138	32,000	270	23,300
22	660	3	5	1,900	20	103	20,600	200	11,100
23	660	4	7	1,850	9	45	14,800	125	5,000
24	680	10	18	1,750	8	38	11,500	100	3,100
25	700	11	21	2,300	30	208	12,000	640	20,700
26	700	4	8	3,200	116	1,000	11,300	300	9,150
27	680	8	15	2,350	60	405	10,200	210	5,780
28	660	12	21	1,820	20	98	11,300	260	7,930
29	640	9	16				12,500	185	6,240
30	620	4	7				11,400	150	4,620
31	620	1	2				9,550	128	3,300
Total load (tons)			260			3,544			391,025

IOWA RIVER BASIN—Continued

CEDAR RIVER AT CEDAR RAPIDS, IOWA—Continued

Suspended sediment, water year October 1944 to September 1945—Continued

Day	April			May			June		
	Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment	
		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day
1	7,940	130	2,790	8,080	80	1,750	17,200	170	7,890
2	6,890	132	2,460	7,240	78	1,520	14,000	150	5,670
3	6,120	120	1,980	6,640	75	1,340	11,800	160	5,100
4	8,080	630	14,100	6,220	66	1,110	14,400	420	16,300
5	7,840	370	7,990	5,980	66	1,070	20,500	310	17,200
6	7,380	145	2,890	5,880	80	1,270	19,700	210	11,200
7	7,480	165	3,330	5,660	81	1,240	16,600	145	6,500
8	6,780	125	2,290	5,350	80	1,160	13,500	125	4,560
9	6,300	115	1,960	4,840	71	928	10,900	135	3,970
10	6,780	135	2,470	4,570	57	703	11,500	820	25,500
11	7,380	140	2,790	4,370	52	614	10,200	285	8,150
12	8,120	140	3,070	4,210	47	534	8,600	175	4,060
13	8,960	160	3,870	4,050	42	459	9,020	235	5,720
14	8,740	115	2,710	6,050	170	3,190	10,500	205	5,810
15	8,640	110	2,570	8,540	430	9,910	11,300	185	5,640
16	11,000	370	11,500	8,120	250	5,480	11,100	165	4,950
17	12,500	270	9,110	8,120	195	4,280	10,000	160	4,320
18	13,000	175	6,140	8,010	165	3,570	8,740	156	3,680
19	12,900	150	5,220	6,640	120	2,150	8,040	164	3,560
20	13,200	115	4,100	5,840	105	1,660	7,200	148	2,880
21	12,600	90	3,060	5,420	98	1,430	6,500	125	2,190
22	11,300	82	2,500	5,110	100	1,380	6,120	116	1,920
23	9,660	85	2,220	4,770	78	1,000	6,050	126	2,060
24	8,320	86	1,930	6,020	140	2,330	5,560	160	2,400
25	7,590	80	1,640	8,180	265	5,850	6,470	530	9,560
26	8,360	90	2,030	10,400	190	5,340	5,280	195	2,780
27	9,900	118	3,150	13,600	190	6,980	5,080	225	3,090
28	11,500	115	3,570	17,100	300	13,900	5,380	320	4,650
29	12,100	102	3,330	16,600	255	11,400	5,490	265	3,930
30	10,200	90	2,480	17,700	230	11,000	6,080	260	4,270
31				19,300	190	9,900			
Total load (tons)			119,250			114,448			189,510

Day	July			August			September		
1	6,300	310	5,270	2,130	76	437	2,490	39	262
2	5,980	260	4,200	2,130	86	495	2,330	35	220
3	5,560	205	3,080	2,330	78	491	2,190	45	266
4	5,080	175	2,400	2,330	70	440	2,070	50	279
5	4,700	160	2,030	2,280	58	357	1,960	53	280
6	4,280	125	1,440	2,280	60	369	1,860	54	271
7	4,050	95	1,040	2,220	55	330	1,900	45	231
8	3,930	100	1,060	2,790	52	392	2,090	50	282
9	3,830	82	848	5,110	102	1,450	1,880	68	335
10	4,440	110	1,320	7,140	220	4,240	1,860	54	271
11	4,240	102	1,170	8,290	260	5,820	1,760	40	190
12	3,710	98	982	6,220	150	2,640	1,760	38	181
13	3,410	85	783	4,740	106	1,360	1,670	42	189
14	3,160	65	555	6,330	360	6,780	1,720	44	204
15	2,940	60	476	7,450	510	10,300	1,670	35	158
16	2,780	58	435	8,180	405	8,940	1,610	38	165
17	2,610	56	395	9,340	355	8,950	1,430	41	158
18	2,510	56	380	10,800	335	9,770	1,570	45	191
19	2,490	56	376	12,200	270	8,890	1,500	57	231
20	2,590	55	385	12,000	186	6,030	1,380	38	142
21	2,590	50	350	9,760	148	3,900	1,480	32	128
22	2,560	60	415	7,730	145	3,030	1,480	30	120
23	2,370	60	384	6,680	186	3,350	1,500	32	130
24	2,260	55	336	5,660	150	2,290	1,470	39	155
25	2,190	54	319	4,700	102	1,290	1,540	44	183
26	2,110	61	348	4,080	83	914	1,650	42	187
27	2,020	72	393	3,710	75	751	1,700	40	184
28	2,070	81	453	3,350	65	588	2,170	73	428
29	1,880	73	371	2,970	52	417	2,090	53	299
30	1,960	65	344	2,840	46	353	2,070	30	168
31	2,020	75	409	2,660	43	309			
Total load (tons)			32,747			95,673			6,488
Total load for year								tons	961,517

DES MOINES RIVER BASIN

DES MOINES RIVER BELOW RACCOON RIVER NEAR DES MOINES, IOWA

LOCATION.—At 14th Avenue bridge, 1 mile below gaging station.
DRAINAGE AREA.—9,770 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1944 to September 1945.
Sediment records: October 1934 to September 1945.
Water temperatures: October 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 574 parts per million Jan. 13, 15–20; minimum, 294 parts per million Mar. 11, 13–20.
Total hardness: Maximum, 486 parts per million Jan. 7–8, 10; minimum, 228 parts per million Mar. 11, 13–20.
Sediment loads: Maximum, 232,000 tons per day May 22; minimum, 27 tons per day Dec. 21.
Water temperature: Maximum, 81° F. Aug. 3; minimum, freezing point on several days in January and February.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1035.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids	Total hardness as $CaCO_3$
Oct. 1-10, 1944	1,745	15	7.3	64.7	20	0.02	79	35	13	5.2	298	90	10	0.4	13	0.2	414	341
Oct. 11-20	1,290	20	7.3	64.5	18	.02	73	38	14	4.0	292	103	9.5	.4	8.3	.2	415	338
Oct. 21-31	1,049	20	7.4	63.0	13	.03	69	39	15	3.9	282	104	9.0	.4	5.2	.3	401	332
Nov. 1-9	904	10	7.9	62.2	12	.05	73	40	15	2.7	288	104	10	.4	2.0	.2	404	346
Dec. 21, 26-28	504	10	------	80.8	------	.05	103	40	25		384	133	10	.4	8.8	.5	------	422
Jan. 7-8, 10, 1945	425	5	------	91.6	------	.08	122	44	25		438	148	13	.4	8.0	.5	------	486
Jan. 13, 15-20	449	2	7.8	87.0	20	.02	117	41	17	2.7	408	132	16	.3	10	.4	574	460
Jan. 21-29, 31	522	7	7.6	80.6	18	.02	108	39	19	2.6	384	114	14	.3	10	.3	538	430
Feb. 1-10	566	10	7.6	83.5	18	.02	112	40	20	2.5	400	116	12	.3	11	.3	556	444
Feb. 11-20	4,148	26	7.4	52.5	17	.06	68	22	8.9	3.8	242	60	6.0	.2	9.6	.1	330	260
Feb. 21-24, 26-28	3,072	15	7.9	55.2	18	.09	78	25	7.6	3.9	267	64	4.8	.4	21	.1	378	298
Mar. 1-10	5,480	10	7.6	50.1	18	.11	69	22	6.8	3.4	236	54	4.2	.3	21	.1	338	262
Mar. 11, 13-20	20,490	16	7.8	44.2	17	.12	62	18	5.0	3.7	205	48	3.2	.3	17	.1	294	228
Mar. 21-31	11,586	10	8.1	60.2	20	.05	84	26	7.9	2.6	272	79	4.5	.5	26	.3	408	316
Apr. 1-10	8,598	5	8.0	60.9	19	.06	85	27	8.6	2.2	277	77	5.0	.5	26	.4	397	323
Apr. 11-20	17,020	5	8.5	61.6	20	.06	80	25	8.0	2.2	261	68	4.2	.5	37	.4	380	302
Apr. 21-22, 24-30	18,040	15	8.0	55.6	21	.04	77	25	7.1	2.1	251	64	3.8	.4	28	.1	366	295
May 1-7, 9-10	10,103	10	8.0	64.0	21	.03	89	30	8.6	1.8	301	78	4.5	.4	28	.2	430	346
May 11-15, 17-20	11,076	10	8.2	58.0	20	.04	81	26	8.1	2.0	272	68	4.5	.4	25	.1	385	309
May 21-31	21,770	10	7.3	50.1	18	.07	70	22	6.4	2.2	235	55	3.5	.5	22	.2	323	265

June 1-10	23,930	12	7.3	49.0	17	.04	68	21	6.3	2.1	226	53	3.2	.4	21	.4	319	256
June 11-20	17,640	8	7.4	54.6	19	.05	76	24	7.3	2.0	255	61	3.5	.4	21	.2	360	288
June 21-30	10,291	10	7.5	64.5	21	.07	91	30	8.6	2.0	303	84	4.2	.4	24	.3	434	350
July 1-7, 9-10	6,880	10	7.7	66.0	23	.06	89	31	9.4	2.2	302	84	4.4	.5	23	.2	434	350
July 11-20	4,293	10	7.7	62.4	22	.06	82	29	9.2	1.9	286	80	4.8	.5	19	.2	407	324
July 21-31	3,886	13	7.7	62.4	24	.08	83	28	9.8	2.4	292	72	4.8	.5	21	.2	408	322
Aug. 1-10	4,981	12	7.7	53.6	21	.04	73	23	8.1	3.0	253	60	3.9	.5	16	.1	340	276
Aug. 11-20	7,606	15	7.7	52.9	23	.04	72	24	7.9	3.0	256	56	3.2	.5	14	.2	335	278
Aug. 21-31	4,771	17	7.8	60.6	27	.03	84	28	8.5	3.0	304	66	4.0	.5	13	.1	390	324
Sept. 1-10	1,668	27	7.7	54.8	21	.14	62	31	11	3.1	249	85	5.9	.5	2.0	.1	348	282
Sept. 11-20	1,012	35	7.6	56.2	18	.31	59	33	12	3.1	252	93	6.9	.4	.2	.2	360	282
Sept. 21-30	1,101	25	7.7	55.3	14	.20	62	30	12	3.3	248	89	7.4	.3	1.0	.2	348	278

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	1,745						3.94	2.88	0.57	0.13	4.88	1.87	0.28	0.02	0.21			
Oct. 11-20	1,290						3.64	3.12	.61	.10	4.79	2.14	.27	.02	.13			
Oct. 21-31	1,049						3.44	3.21	.65	.10	4.62	2.17	.25	.02	.08			
Nov. 1-9	904						3.64	3.29	.65	.07	4.72	2.17	.28	.02	.03			
Dec. 21, 26-28	504						5.14	3.29	1.07		6.29	2.77	.28	.02	.14			
Jan. 7-8, 10, 1945	425						6.09	3.62	1.07		7.18	3.08	.37	.02	.13			
Jan. 13, 15-20	449						5.84	3.37	.74	.07	6.69	2.75	.45	.02	.16			
Jan. 21-29, 31	522						5.39	3.21	.83	.07	6.29	2.37	.39	.02	.16			
Feb. 1-10	566						5.59	3.29	.87	.06	6.56	2.42	.34	.02	.18			
Feb. 11-20	4,148						3.39	1.81	.39	.10	3.97	1.25	.17	.01	.15			
Feb. 21-24, 26-28	3,072						3.89	2.06	.33	.10	4.38	1.33	.14	.02	.34			
Mar. 1-10	5,480						3.44	1.81	.30	.09	3.87	1.12	.12	.02	.34			
Mar. 11, 13-20	20,490						3.09	1.48	.22	.09	3.36	1.00	.09	.02	.27			
Mar. 21-31	11,586						4.19	2.14	.34	.07	3.46	1.64	.13	.03	.42			
Apr. 1-10	8,598						4.24	2.22	.37	.06	4.54	1.60	.14	.03	.42			
Apr. 11-20	17,020						3.99	2.06	.35	.06	4.28	1.42	.12	.03	.60			
Apr. 21-22, 24-30	18,040						3.84	2.06	.31	.05	4.11	1.33	.11	.02	.45			
May 1-7, 9-10	10,103						4.44	2.47	.37	.05	4.93	1.62	.13	.02	.45			
May 11-15, 17-20	11,076						4.04	2.14	.35	.05	4.46	1.42	.13	.02	.40			
May 21-31	21,770						3.49	1.81	.28	.06	3.85	1.15	.10	.03	.36			
June 1-10	23,930						3.39	1.73	.27	.05	3.70	1.10	.09	.02	.34			
June 11-20	17,640						3.79	1.97	.32	.05	4.18	1.27	.10	.02	.34			
June 21-30	10,291						4.54	2.47	.37	.05	4.97	1.75	.12	.02	.39			
July 1-7, 9-10	6,880						4.44	2.55	.41	.06	4.95	1.75	.12	.03	.37			
July 11-20	4,293						4.09	2.38	.40	.05	4.69	1.67	.14	.03	.31			
July 21-31	3,886						4.14	2.30	.43	.06	4.79	1.50	.14	.03	.34			

DES MOINES RIVER BASIN—Continued

DES MOINES RIVER BELOW RACCOON RIVER NEAR DES MOINES, IOWA—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Color	pH	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids	Total hardness as $CaCO_3$
Aug. 1-10	4,981						3.64	1.89	.35	.08	4.15	1.25	.11	.03	.26			
Aug. 11-20	7,606						3.59	1.97	.34	.08	4.20	1.17	.09	.03	.23			
Aug. 21-31	4,771						4.19	2.30	.37	.08	4.98	1.37	.11	.03	.21			
Sept. 1-10	1,668						3.09	2.55	.48	.08	4.08	1.77	.17	.03	.03			
Sept. 11-20	1,012						2.94	2.71	.52	.08	4.13	1.94	.19	.02	.00			
Sept. 21-30	1,101						3.09	2.47	.52	.08	4.06	1.85	.21	.02	.02			

Temperature (° F.) of water of Des Moines River, water year October 1944 to September 1945

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

DES MOINES RIVER BASIN—Continued

DES MOINES RIVER BELOW RACCOON RIVER NEAR DES MOINES, IOWA—Continued

Suspended sediment, water year October 1944 to September 1945

Day	October			November			December		
	Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment	
		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day
1	2,120	284	1,630	935	45	114	400	31	33
2	1,900	144	739	935	45	114	355	31	30
3	1,800	106	515	935	40	101	491	31	41
4	1,730	106	495	911	34	84	630	31	53
5	1,700	106	487	863	29	68	672	31	56
6	1,800	106	515	887	26	62	754	31	63
7	1,730	107	500	887	27	65	863	32	75
8	1,600	90	389	911	39	96	839	30	68
9	1,570	66	280	887	41	98	911	29	71
10	1,510	54	220	887	32	77	774	27	56
11	1,480	53	212	863	26	61	595	26	42
12	1,420	52	199	863	31	72	560	24	36
13	1,390	51	191	863	44	103	630	23	39
14	1,360	48	176	863	51	119	650	22	39
15	1,300	45	158	887	45	108	795	20	43
16	1,240	44	147	839	33	75	865	19	44
17	1,220	44	145	935	23	58	840	18	41
18	1,190	44	141	935	22	56	755	18	37
19	1,160	45	141	935	22	56	755	16	33
20	1,140	43	132	911	22	54	775	15	31
21	1,110	43	129	911	25	61	595	17	27
22	1,110	44	132	887	24	57	560	24	36
23	1,080	43	125	863	24	56	575	44	68
24	1,080	42	122	839	25	57	510	74	102
25	1,060	41	117	839	25	57	510	79	109
26	1,030	40	111	887	25	60	425	82	94
27	1,060	38	109	935	25	63	440	84	100
28	1,030	37	103	887	26	62	455	86	106
29	983	39	104	863	28	65	475	85	109
30	983	41	109	630	29	49	490	80	106
31	1,010	44	120				510	78	107
Total load (tons)			8,693			2,228			1,895

Day	January			February			March		
1	490	76	101	475	52	67	2,890	182	1,420
2	455	74	91	510	50	69	4,290	625	7,240
3	440	70	83	540	50	73	5,230	635	8,970
4	440	62	74	560	51	77	6,060	738	12,100
5	425	56	64	560	50	76	6,990	774	14,600
6	400	53	58	575	49	76	6,730	335	6,090
7	400	52	56	595	49	79	5,620	350	5,310
8	400	51	54	610	48	79	4,990	390	5,250
9	400	50	54	610	48	79	5,320	585	8,400
10	400	50	54	630	48	82	6,680	1,440	26,000
11	425	50	57	630	48	82	10,000	3,900	105,000
12	440	50	59	630	133	225	15,500	3,130	131,000
13	457	49	60	1,000	485	1,310	19,200	1,480	76,700
14	457	46	57	1,900	702	3,600	20,600	952	53,000
15	440	40	48	3,500	2,020	19,100	24,200	762	49,800
16	425	37	42	5,230	1,510	21,300	25,500	1,440	99,100
17	440	36	43	7,520	1,130	22,900	26,200	620	43,900
18	457	35	43	8,340	605	13,600	24,000	585	37,900
19	474	34	44	7,260	264	5,170	21,300	530	30,500
20	474	33	42	5,470	188	2,780	18,400	525	26,100
21	491	32	42	4,850	262	3,430	15,700	505	21,400
22	525	31	44	3,610	88	890	14,000	450	17,000
23	525	32	45	3,060	68	562	12,100	455	14,900
24	542	31	45	2,980	130	1,050	11,200	595	18,000
25	540	31	45	2,980	325	2,610	14,000	4,510	170,000
26	540	32	47	2,300	202	1,250	12,700	1,650	58,300
27	525	34	48	2,340	47	297	11,600	620	19,400
28	525	41	58	2,460	35	232	10,500	485	13,700
29	525	50	71				9,460	410	10,500
30	510	52	72				8,450	370	8,440
31	490	52	69				7,740	350	7,310
Total load (tons)			1,770			101,145			1,107,330

DES MOINES RIVER BASIN—Continued

DES MOINES RIVER BELOW RACCOON RIVER NEAR DES MOINES, IOWA—Continued

Suspended sediment, water year October 1944 to September 1945—Continued

Day	April			May			June		
	Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment	
		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day		Mean concentration (p. p. m.)	Tons per day
1	7,050	330	6,280	13,400	435	15,700	23,100	2,130	133,000
2	6,420	294	5,100	12,000	405	13,100	22,200	2,880	173,000
3	6,270	585	9,900	11,300	415	12,700	25,200	1,310	89,100
4	9,630	2,650	68,900	10,900	435	12,800	28,400	625	47,900
5	8,500	911	20,900	10,500	440	12,500	28,300	515	39,400
6	7,850	640	13,600	9,870	370	9,860	27,100	415	30,400
7	8,060	791	17,200	9,180	330	8,180	26,600	1,310	94,100
8	9,400	650	16,500	8,400	320	7,260	23,300	718	45,200
9	11,000	762	22,600	7,790	305	6,420	17,900	959	54,600
10	11,800	711	22,700	7,690	340	7,060	17,200	2,250	104,000
11	12,100	724	23,700	7,150	400	7,720	17,000	831	38,100
12	14,000	2,210	83,500	6,780	310	5,670	19,100	1,190	61,400
13	14,300	856	33,100	6,630	325	5,820	20,900	605	34,100
14	15,000	672	27,200	10,600	1,630	54,600	19,200	460	23,800
15	16,300	787	34,600	16,300	2,710	119,000	17,500	460	21,700
16	19,700	1,730	92,000	15,400	1,560	64,900	17,800	590	28,400
17	21,300	1,640	94,300	14,100	706	26,900	17,500	683	32,300
18	19,900	787	42,300	12,300	535	17,800	16,700	550	24,800
19	19,400	560	29,300	11,200	445	13,500	15,600	465	19,600
20	18,200	495	24,300	10,300	415	11,500	15,100	1,070	43,600
21	16,100	450	19,600	10,400	685	26,500	13,700	515	19,000
22	13,200	420	15,000	16,000	5,370	232,000	12,400	385	12,900
23	11,800	415	13,200	22,100	2,240	126,000	11,600	370	11,600
24	13,900	777	36,200	26,100	754	53,100	10,700	350	10,100
25	18,600	2,060	103,000	28,000	580	43,800	10,300	655	18,200
26	22,200	681	40,800	27,200	460	33,800	9,630	745	19,400
27	23,500	560	35,500	25,000	455	30,700	9,060	440	10,800
28	23,500	470	29,800	23,400	793	50,100	8,400	430	9,750
29	20,900	400	22,600	20,900	858	50,600	8,340	390	8,780
30	16,700	430	19,400	19,600	555	29,400	8,780	400	9,480
31				20,800	2,050	109,000			
Total load (tons)			1,023,080			1,217,9[illegible]0			1,268,510

Day	July			August			September		
1	9,010	490	11,900	3,270	380	3,360	2,230	116	698
2	8,670	475	11,100	3,480	455	4,280	2,040	126	694
3	8,010	390	8,430	3,700	515	5,140	1,870	80	404
4	7,200	355	6,900	4,610	615	7,650	1,830	62	306
5	6,840	340	6,280	5,710	1,650	25,400	1,700	60	275
6	6,370	325	5,590	6,630	2,720	48,700	1,540	64	266
7	5,910	320	5,110	5,710	1,420	21,900	1,480	68	272
8	5,710	325	5,010	5,470	649	9,580	1,390	56	210
9	5,710	390	6,010	5,520	632	9,420	1,300	45	158
10	5,370	375	5,440	5,710	533	8,220	1,300	50	176
11	4,990	296	3,990	4,990	438	5,900	1,220	44	145
12	4,660	246	3,100	4,290	420	4,860	1,190	42	135
13	4,380	220	2,600	4,190	904	10,600	1,110	39	117
14	4,060	212	2,320	4,610	510	6,350	1,060	43	123
15	3,830	198	2,050	5,180	490	6,850	1,010	54	147
16	3,660	188	1,860	6,320	545	9,300	959	74	192
17	3,750	192	1,940	9,180	680	16,900	935	60	151
18	4,240	355	4,060	10,900	640	18,800	911	49	121
19	4,800	355	4,450	12,900	480	16,700	887	54	129
20	4,560	620	7,630	13,500	360	13,100	839	54	122
21	4,560	465	5,730	10,200	340	9,360	839	56	127
22	4,470	405	4,890	7,420	310	6,210	863	72	168
23	4,190	350	3,960	6,160	292	4,860	863	112	261
24	3,970	310	3,320	5,320	296	4,250	911	68	167
25	3,830	298	3,080	4,660	256	3,220	863	60	140
26	3,790	350	3,580	4,010	182	1,970	911	66	162
27	3,790	400	4,090	3,530	168	1,600	1,140	98	302
28	3,700	435	4,350	3,180	138	1,180	1,540	330	1,370
29	3,570	425	4,100	2,850	124	954	1,510	380	1,550
30	3,480	400	3,760	2,630	136	988	1,570	275	1,170
31	3,400	365	3,350	2,460	140	930			
Total load (tons)			149,980			288,532			10,258

LOWER MISSISSIPPI RIVER BASIN

ARKANSAS RIVER BASIN

CANADIAN RIVER NEAR SANCHEZ, N. MEX.

LOCATION.—At Sabinoso, N. Mex., about 5 miles upstream from gaging station which is at bridge on State Highway 65, 1 mile upstream from Lagartija Creek, 3 miles northeast of Sanchez, 10 miles downstream from Mora River, and 24 miles southwest of Mosquero.

DRAINAGE AREA.—6,000 square miles.

RECORDS AVAILABLE.—Chemical analyses: October 1940 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 2,120 parts per million July 17–18; minimum, 373 parts per million May 6–10.
Total hardness: Maximum, 1,170 parts per million July 17–18; minimum, 245 parts per million May 6–10, 11–15.

EXTREMES, 1941–45.—Dissolved solids: Maximum, 2,320 parts per million June 10–11, 1943; minimum, 264 parts per million May 11–20, 1941.
Total hardness: Maximum, 1,260 parts per million June 10–11, 1943; minimum, 104 parts per million Sept. 22, 28–29, 1941.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1037.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-6, 1944	33.8	113	------	------	6.5	0.11	94	50	95		160	458	25	0.4	1.0	0.5	809	1.10	73.8	440	309	32
Oct. 7-12	29.5	173	------	------	5.0	.06	149	81	160		167	826	38	.4	.8	.5	1,340	1.82	107	705	568	33
Oct. 13-19	540	115	------	------	6.0	.06	106	47	91		159	470	23	.4	2.3	.4	824	1.12	1,200	458	328	30
Oct. 20-31	115	110	------	------	9.5	.06	108	46	81		179	438	21	.4	1.5	.4	794	1.08	247	458	312	28
Nov. 1-10	98	135	------	------	8.0	.05	122	61	110		184	577	29	.3	.4	.4	998	1.36	264	556	404	30
Nov. 11-20	77.8	135	------	------	11	.04	122	61	108		202	562	27	.3	.3	.5	991	1.35	208	556	390	30
Nov. 21-30	69.4	140	------	------	10	.05	123	66	113		203	590	30	.3	.4	.2	1,030	1.40	193	578	412	30
Dec. 1-10	53.2	143	------	------	9.0	.05	129	67	112		210	600	30	.3	.4	.2	1,050	1.43	151	598	426	29
Dec. 11-20	54.6	151	------	------	10	.05	138	71	119		224	639	32	.3	.6	.2	1,120	1.52	165	636	453	29
Dec. 21-31	73.3	153	------	------	10	.05	138	73	121		217	656	32	.3	1.0	.2	1,140	1.55	226	644	466	29
Jan. 1-10, 1945	53.7	146	------	8.0	9.5	.05	132	69	109		212	608	30	.3	1.0	.3	1,060	1.44	154	613	440	28
Jan. 11-20	82.3	150	------	7.9	9.0	.04	134	70	115		209	630	31	.3	1.0	.3	1,090	1.48	242	622	451	29
Jan. 21-31	67.3	139	------	7.9	7.5	.05	124	65	106		214	565	29	.3	1.0	.3	1,000	1.36	182	577	402	28

Feb. 1-10	104	158	------	7.9	8.5	.05	139	77	120	203	687	29	.3	1.0	.3	1,160	1.58	326	664	497	28
Feb. 11-19	68.1	156	------	7.9	5.0	.05	130	76	127	196	679	31	.4	.5	.3	1,150	1.56	211	637	476	30
Feb. 20-28	60.9	156	------	7.9	6.5	.12	130	77	124	186	681	34	.3	.2	.3	1,140	1.55	187	641	488	30
Mar. 1-10	57.2	167	------	7.5	9	.05	139	83	141	199	751	35	.4	.5	.5	1,260	1.71	195	688	526	31
Mar. 11-20	50.3	166	------	7.6	7	.04	134	82	144	185	748	37	.4	.5	.5	1,240	1.69	168	672	520	32
Mar. 21-31	43.9	161	------	7.7	7	.04	131	78	144	191	722	36	.4	.4	.6	1,210	1.65	143	648	491	33
Apr. 1-3, 5-10	37.4	171	------	7.7	7.0	.05	138	85	140	178	770	35	.2	.5	.5	1,260	1.71	127	694	548	30
Apr. 11-20	30.5	190	------	7.7	8.5	.06	154	95	163	186	879	42	.3	1.0	.6	1,430	1.94	118	775	622	31
Apr. 21-25	59.6	219	------	7.7	8.0	.07	182	114	198	182	1,090	48	.3	.8	.6	1,730	2.35	278	922	774	32
Apr. 26-30	84.6	119	------	7.8	9.5	.06	98	55	95	192	465	23	.4	1.0	.4	842	1.15	192	470	313	30
May 1-5	105	98.7	------	7.9	10	.07	86	44	71	182	358	19	.3	1.0	.4	679	.92	192	396	246	28
May 6-10	245	58.6	------	8.0	13	.10	62	22	29	160	157	8.0	.3	2.5	.3	373	.51	247	245	114	21
May 11-15	212	56.9	------	7.7	------	------	62	22	38	164	173	8.0	------	1.7	.1	386	.52	221	245	110	25
May 16-20	175	89.0	------	7.7	14	.06	81	36	64	176	305	18	.3	2.2	.1	607	.83	287	350	206	29
May 21-31	85.0	66.4	------	7.7	14	.02	69	26	47	204	188	12	.2	1.8	.1	459	.62	105	279	112	27
June 1-7	28.7	76.6	------	7.6	20	.09	96	42	64	194	348	20	.3	1.6	.1	688	.94	53.3	412	253	25
June 8-13, 15-20	51.5	133	------	7.6	10	.08	92	61	124	162	549	30	.3	1.7	.2	948	1.29	132	480	348	36
June 21-27	27.6	101	------	7.8	11	.05	84	45	77	176	368	22	.4	3.1	.1	697	.95	51.9	394	250	30
June 28-30, July 1-4	28.6	61.8	------	7.8	15	.06	58	26	39	190	155	12	.4	1.4	.1	400	.54	30.9	252	96	25
July 5-10	29.7	213	------	7.6	12	.05	186	102	191	150	1,060	50	.5	1.4	.6	1,680	2.28	135	884	760	32
July 11-16, 19-20	126	148	------	7.7	12	.16	134	62	118	164	642	28	.5	2.1	.3	1,080	1.47	367	590	455	30
July 17-18	168	260	------	------	------	------	263	124	224	194	1,360	56	------	.2	------	2,120	2.88	962	1,170	1,010	30
July 21-29	34.1	159	------	7.7	12	.06	141	69	132	162	711	33	.6	2.2	.4	1,180	1.60	109	636	503	31
July 30-31	71.0	92.4	------	------	------	------	84	35	69	139	348	18	------	2.9	------	625	.85	120	354	240	30
Aug. 1-6, 8-10	225	153	------	7.7	13	.42	136	66	127	170	675	31	.5	.9	.4	1,130	1.54	686	611	472	31
Aug. 7	417	59.1	------	------	------	------	------	------	------	------	180	------	------	------	------	------	------	------	------	------	------
Aug. 11-21	386	102	------	7.8	12	.07	102	39	72	160	398	15	.5	2.8	.2	720	.98	750	415	284	27
Aug. 22-31	467	70.4	------	7.8	13	.16	77	24	43	170	217	11	.5	2.3	.1	472	.64	595	290	151	24
Sept. 1-9	183	78.2	------	7.8	11	.11	81	27	51	168	249	16	.5	3.1	.1	522	.71	258	313	176	26
Sept. 10-20	26.0	106	------	------	13	.01	102	47	72	190	398	22	.4	1.7	------	750	1.02	526	448	292	26
Sept. 21-30	9.0	94.8	------	------	15	.01	88	40	77	218	330	20	.3	.9	------	679	.92	16.5	384	206	30
Weighted average	105	116	------	------	10	0.10	108	51	90	178	471	23	0.4	1.7	0.3	843	1.15	239	479	333	29

ARKANSAS RIVER BASIN—Continued

CANADIAN RIVER NEAR SANCHEZ, N. MEX.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-6, 1944	33.8						4.69	4.11	4.11		2.62	9.54	0.71	0.02	0.02							32
Oct. 7-12	29.5						7.44	6.66	6.94		2.74	17.20	1.07	.02	.01							33
Oct. 13-19	540						5.29	3.87	3.95		2.61	9.79	.65	.02	.04							30
Oct. 20-31	115						5.39	3.78	3.51		2.93	9.12	.59	.02	.02							28
Nov. 1-10	98						6.09	5.02	4.77		3.02	12.01	.82	.02	.01							30
Nov. 11-20	77.8						6.09	5.02	4.68		3.31	11.70	.76	.02	.00							30
Nov. 21-30	69.4						6.14	5.43	4.92		3.33	12.28	.85	.02	.01							30
Dec. 1-10	53.2						6.44	5.51	4.86		3.44	12.49	.85	.02	.01							29
Dec. 11-20	54.6						6.89	5.84	5.17		3.67	13.30	.90	.02	.01							29
Dec. 21-31	73.3						6.89	6.00	5.27		3.56	13.66	.90	.02	.02							29
Jan. 1-10, 1945	53.7						6.59	5.67	4.76		3.47	12.66	.85	.02	.02							28
Jan. 11-20	82.3						6.69	5.76	5.01		3.43	13.12	.87	.02	.02							29
Jan. 21-31	67.3						6.19	5.35	4.59		3.51	11.76	.82	.02	.02							28
Feb. 1-10	104						6.94	6.33	5.22		3.33	14.30	.82	.02	.02							28
Feb. 11-19	68.1						6.49	6.25	5.51		3.21	14.14	.87	.02	.01							30
Feb. 20-28	60.9						6.49	6.33	5.39		3.05	14.18	.96	.02	.00							30
Mar. 1-10	57.2						6.94	6.83	6.15		3.26	15.64	.99	.02	.01							31
Mar. 11-20	50.3						6.69	6.74	6.24		3.03	15.57	1.04	.02	.01							32
Mar. 21-31	43.9						6.54	6.41	6.26		3.13	15.03	1.02	.02	.01							33
Apr. 1-3, 5-10	37.4						6.89	6.99	6.08		2.92	16.03	.99	.01	.01							30
Apr. 11-20	30.5						7.69	7.81	7.07		3.05	18.30	1.18	.02	.02							31
Apr. 21-25	59.6						9.08	9.37	8.60		2.98	22.69	1.35	.02	.01							32
Apr. 26-30	84.6						4.89	4.52	4.11		3.15	9.68	.65	.02	.02							30
May 1-5	105						4.29	3.62	3.10		2.98	7.45	.54	.02	.02							28
May 6-10	245						3.09	1.81	1.28		2.62	3.27	.23	.02	.04							21
May 11-15	212						3.09	1.81	1.65		2.69	3.60	.23		.03							25
May 16-20	175						4.04	2.96	2.80		2.88	6.35	.51	.02	.04							29
May 21-31	85.0						3.44	2.14	2.05		3.34	3.91	.34	.01	.03							27

June 1-7	28.7						4.79	3.45	2.80	3.18	7.25	.56	.02	.03							25
June 8-13, 15-20	51.5						4.59	5.02	5.37	2.65	11.43	.85	.02	.03							36
June 21-27	27.6						4.19	3.70	3.34	2.88	7.66	.62	.02	.05							30
June 28-30, July 1-4	28.6						2.89	2.14	1.69	3.11	3.23	.34	.02	.02							25
July 5-10	29.7						9.28	8.39	8.32	2.46	22.07	1.41	.03	.02							32
July 11-16, 19-20	126						6.69	5.10	5.12	2.69	13.37	.79	.03	.03							30
July 17-18	168						13.12	10.20	9.76	3.18	28.32	1.58		.00							30
July 21-29	34.1						7.04	5.67	5.74	2.65	14.80	.93	.03	.04							31
July 30-31	71.0						4.19	2.88	3.02	2.28	7.25	.51		.05							30
Aug. 1-6, 8-10	225						6.79	5.43	5.53	2.79	14.05	.87	.03	.01							31
Aug. 7	417										3.75										
Aug. 11-21	386						5.09	3.21	3.11	2.62	8.29	.42	.03	.05							27
Aug. 22-31	467						3.84	1.97	1.88	2.79	4.52	.31	.03	.04							24
Sept. 1-9	183						4.04	2.22	2.20	2.75	5.18	.45	.03	.05							26
Sept. 10-20	26.0						5.09	3.87	3.11	3.11	8.29	.62	.02	.03							26
Sept. 21-30	9.0						4.39	3.29	3.35	3.57	6.87	.56	.02	.01							30
Weighted average	105						5.39	4.19	3.91	2.92	9.81	0.65	0.02	0.03							29

ARKANSAS RIVER BASIN—Continued.

CONCHAS RIVER NEAR VARIADERO, N. MEX.

LOCATION.—At the Quintana Ranch approximately 4 miles upstream from the gaging station which is located on Highway 104 at Variadero; approximately 14 miles west of Conchas Dam. Samples are obtained at this point only when rainfall is sufficient to cause the river to flow.

Chemical analyses, in parts per million

[Composites of daily samples]

Date of collection	Specific conductance (K×10[5] at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Oct. 1, 1944	78.0				184	208	18		
Oct. 16, 18–21	61.7				186	137	14		
Oct. 17	36.6				142	58	4		
July 11–17, 1945	55.2	44	17	45	196	84	21	325	180
Aug. 7, 9, 12–17	56.4	43	17	53	172	114	22	352	178
Aug. 8	92.7				208	242			
Aug. 10, 11	34.5				160	33			

ARKANSAS RIVER BASIN—Continued

RESERVOIR BEHIND CONCHAS DAM, N. MEX.

Chemical analyses, in parts per million

Date of collection	Sampling point	Depth (feet)	Specific conductance (K×10⁵ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Monthly composite samples											
Oct. 6, 12, 1944	Station 1 [1]		101					379			
Oct. 19, 27	Station 1 [1]		102					376			
Nov. 2, 9	Station 1 [1]		102					374			
Nov. 16, 23, 30	Station 1 [1]		103					388			
Dec. 7, 16, 21, 30	Station 1 [1]		101					385			
Jan. 7, 19, 25, 1945	Station 1 [1]		103					387			
Feb. 4, 9, 16, 23	Station 1 [1]		103					386			
Mar. 1, 3, 14, 23, 29	Station 1 [1]		103					400			
Apr. 7, 11, 19, 26	Station 1 [1]		105					391			
May 2, 12, 16, 26, 31	Station 1 [1]		106					398			
June 8, 14, 23, 30	Station 1 [1]		107				165	411			
July 4, 19, 27	Station 1 [1]		107				160	412			
Aug. 4, 11, 19, 23, 29	Station 1 [1]		107				147	416			
Sept. 6, 13, 21	Station 1 [1]		106				154	411			
Oct. 6, 12, 1944	Station 2 [2]		101					382			
Oct. 19, 27	Station 2 [2]		102					377			
Nov. 2, 9	Station 2 [2]		102					382			
Nov. 16, 23, 30	Station 2 [2]		101					379			
Dec. 7, 16, 21, 30	Station 2 [2]		101					382			
Jan. 7, 19, 25, 1945	Station 2 [2]		103					387			
Feb. 4, 9, 16, 23	Station 2 [2]		103					385			
Mar. 1, 8, 14, 23, 29	Station 2 [2]		104					391			
Apr. 7, 11, 19, 26	Station 2 [2]		105					393			
May 2, 12, 16, 26, 31	Station 2 [2]		105					398			
June 8, 14, 23, 30	Station 2 [2]		107				164	410			
July 4, 19, 27	Station 2 [2]		107				159	416			
Aug. 4, 11, 19, 23, 29	Station 2 [2]		107				151	405			
Sept. 6, 13, 21	Station 2 [2]		106				158	392			
Oct. 6, 12, 1944	Station 3 [3]		101					379			
Oct. 19, 27	Station 3 [3]		102					373			
Nov. 2, 9	Station 3 [3]		101					381			
Nov. 11, 23, 30	Station 3 [3]		102					379			
Dec. 7, 16, 21, 30	Station 3 [3]		102					384			
Jan. 7, 19, 25, 1945	Station 3 [3]		102					387			
Feb. 4, 9, 16, 23	Station 3 [3]		103					384			
Mar. 1, 8, 14, 23, 29	Station 3 [3]		104					389			
Apr. 7, 11, 19, 26	Station 3 [3]		105					392			
May 2, 12, 16, 26, 31	Station 3 [3]		106					397			
June 8, 14, 23, 30	Station 3 [3]		107				163	407			
July 4, 19, 27	Station 3 [3]		107				161	413			
Aug. 4, 11, 19, 23, 29	Station 3 [3]		107				148	407			
Sept. 6, 13, 21	Station 3 [3]		106				153	414			
Samples from different depths											
Oct. 20, 1944	Station 1 [1]	Surface	102	85	40	74	154	381	11	667	376
		25	102								
		50	102								
		75	101								
		99	101								
		104	101								
		109	101								
		114	101								
		119	105	100	42	72	201	382	12	707	422

See footnotes at end of table.

ARKANSAS RIVER BASIN—Continued

RESERVOIR BEHIND CONCHAS DAM, N. MEX.—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Sampling point	Depth (feet)	Specific conductance (K×10⁵ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Samples from different depths—Continued											
Jan. 12, 1945	Station 1 [1]	Surface	102	86	42	83	162	384	24	699	387
		25	102	------	------	------	------	------	------	------	------
		50	102	------	------	------	------	------	------	------	------
		75	102	------	------	------	------	------	------	------	------
		100	105	------	------	------	------	------	------	------	------
		105	105	------	------	------	------	------	------	------	------
		110	105	------	------	------	------	------	------	------	------
		115	104	------	------	------	------	------	------	------	------
		120	108	99	43	84	186	402	24	746	424
Apr. 21	Station 1 [1]	Surface	97.8	87	44	85	170	393	24	717	398
		25	103	------	------	------	------	------	------	------	------
		50	104	------	------	------	------	------	------	------	------
		75	104	------	------	------	------	------	------	------	------
		100	105	------	------	------	------	------	------	------	------
		112	104	------	------	------	------	------	------	------	------
		117	105	------	------	------	------	------	------	------	------
		122	105	87	44	87	168	394	28	723	398
		127	105	------	------	------	166	------	------	------	------
July 14	Station 1 [1]	Surface	107	91	44	87	161	414	24	740	408
		25	107	------	------	------	------	------	------	------	------
		50	107	------	------	------	------	------	------	------	------
		75	108	------	------	------	------	------	------	------	------
		100	109	------	------	------	------	------	------	------	------
		Bottom	109	100	47	81	181	416	25	762	443
Sept. 27	Station 1 [1]	Surface	108	------	------	------	154	411	24	------	------
		25	107	------	------	------	------	------	------	------	------
		50	108	------	------	------	------	------	------	------	------
		75	108	------	------	------	------	------	------	------	------
		103	108	------	------	------	------	------	------	------	------
		108	108	------	------	------	------	------	------	------	------
		113	108	------	------	------	------	------	------	------	------
		118	109	------	------	------	------	------	------	------	------
		123	114	------	------	------	216	416	22	------	------
Oct. 20, 1944	Station 2 [2]	Surface	102	90	40	67	157	377	10	661	389
		25	102	------	------	------	------	------	------	------	------
		50	102	------	------	------	------	------	------	------	------
		75	102	------	------	------	------	------	------	------	------
		100	101	------	------	------	------	------	------	------	------
		107	101	------	------	------	------	------	------	------	------
		112	101	------	------	------	------	------	------	------	------
		117	101	------	------	------	------	------	------	------	------
		122	101	------	------	------	------	------	------	------	------
		127	103	98	40	72	195	374	11	691	409
Jan. 12, 1945	Station 2 [2]	Surface	102	86	42	86	164	386	26	707	387
		25	102	------	------	------	------	------	------	------	------
		50	102	------	------	------	------	------	------	------	------
		75	102	------	------	------	------	------	------	------	------
		100	104	------	------	------	------	------	------	------	------
		107	104	------	------	------	------	------	------	------	------
		112	105	------	------	------	------	------	------	------	------
		117	105	------	------	------	------	------	------	------	------
		122	105	------	------	------	------	------	------	------	------
		127	107	95	44	80	176	399	22	728	418

See footnotes at end of table.

ARKANSAS RIVER BASIN—Continued

RESERVOIR BEHIND CONCHAS DAM, N. MEX.—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Sampling point	Depth (feet)	Specific conductance (K×10[5] at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Samples from different depths—Continued											
Apr. 21	Station 2 [2]	Surface	104								
		25	105	89	44	84	168	396	26	722	403
		50	104								
		75	105								
		100	104								
		112	104								
		117	105								
		122	105								
		125	105								
		127	107				192				
July 14	Station 2 [2]	Surface	107	90	43	84	159	409	20	725	402
		25	107								
		50	107								
		75	107								
		100	108								
		Bottom	116	115	46	88	236	419	25	812	476
Sept. 27	Station 2 [2]	Surface	108				154	415	24		
		25	108								
		50	108								
		75	108								
		100	109								
		109	108								
		114	109								
		119	109								
		124	109								
		129	114				346	324	22		
Oct. 20, 1944	Station 3 [3]	Surface	101	84	39	83	156	388	13	684	370
		25	102								
		50	102								
		75	101								
		100	101								
		105	101								
		110	101								
		115	101								
		120	107	104	40	76	228	372	11	715	424
Jan. 12, 1945	Station 3 [3]	Surface	103	86	43	83	164	386	24	703	392
		25	103								
		50	102								
		75	102								
		100	104								
		105	105								
		110	105								
		115	105								
		125	108	98	44	73	186	380	24	712	426
Apr. 21	Station 3 [3]	Surface	104								
		25	104	87	45	85	168	396	26	722	402
		50	104								
		75	105								
		100	105								
		107	104								
		112	105								
		117	105								
		122	110	104	46	92	220	395	40	785	448
July 14	Station 3 [3]	Surface	106	90	43	87	159	409	24	732	402
		25	107								
		50	107								
		75	108								
		100	108								
		Bottom	115	110	46	87	214	421	23	801	464

See footnotes at end of table.

ARKANSAS RIVER BASIN—Continued

RESERVOIR BEHIND CONCHAS DAM, N. MEX.—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Sampling point	Depth (feet)	Specific conductance (K×10⁵ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Samples from different depths—Continued											
Sept. 27	Station 3 [3]	Surface	107	----	----	----	162	448	23	----	----
		25	108	----	----	----	----	----	----	----	----
		50	108	----	----	----	----	----	----	----	----
		75	108	----	----	----	----	----	----	----	----
		98	109	----	----	----	----	----	----	----	----
		103	108	----	----	----	----	----	----	----	----
		108	109	----	----	----	----	----	----	----	----
		113	109	----	----	----	----	----	----	----	----
		118	109	----	----	----	----	----	----	----	----
		123	110	----	----	----	198	411	23	----	----
Oct. 20, 1944	Station 6 [4]	Surface	102	84	40	80	158	382	15	679	374
		25	102	----	----	----	----	----	----	----	----
		50	102	----	----	----	----	----	----	----	----
		70	102	----	----	----	----	----	----	----	----
		75	102	----	----	----	----	----	----	----	----
		80	102	----	----	----	----	----	----	----	----
		85	102	----	----	----	----	----	----	----	----
		90	103	87	39	77	158	382	12	675	378
Jan. 12, 1945	Station 6 [4]	Surface	102	87	43	79	162	383	24	696	394
		25	102	----	----	----	----	----	----	----	----
		50	102	----	----	----	----	----	----	----	----
		70	102	----	----	----	----	----	----	----	----
		75	102	----	----	----	----	----	----	----	----
		80	103	----	----	----	----	----	----	----	----
		85	102	----	----	----	----	----	----	----	----
		90	111	112	43	84	232	399	24	777	456
Apr. 21	Station 6 [4]	Surface	104	----	----	----	----	----	----	----	----
		25	105	87	44	86	168	394	26	720	398
		50	105	----	----	----	----	----	----	----	----
		71	105	----	----	----	----	----	----	----	----
		76	105	----	----	----	----	----	----	----	----
		81	104	----	----	----	----	----	----	----	----
		86	106	----	----	----	----	----	----	----	----
		91	106	----	----	----	170	----	----	----	----
July 14	Station 6 [4]	Surface	107	92	44	86	163	412	25	740	410
		25	103	----	----	----	----	----	----	----	----
		50	107	----	----	----	----	----	----	----	----
		Bottom	107	98	47	81	173	420	24	757	438
Sept. 27	Station 6 [4]	Surface	108	----	----	----	162	417	24	----	----
		25	108	----	----	----	----	----	----	----	----
		50	108	----	----	----	----	----	----	----	----
		73	108	----	----	----	----	----	----	----	----
		78	108	----	----	----	----	----	----	----	----
		83	108	----	----	----	----	----	----	----	----
		88	108	----	----	----	----	----	----	----	----
		93	112	----	----	----	200	410	23	----	----
Oct. 20, 1944	Station 7 [5]	Surface	101	80	35	65	157	332	8	597	344
		25	101	----	----	----	154	----	----	----	----
		50	101	----	----	----	160	----	----	----	----
		75	98.0	----	----	----	156	----	----	----	----
		87	92.6	----	----	----	145	----	----	----	----
		92	92.1	----	----	----	147	----	----	----	----
		97	90.7	78	35	63	143	333	9	588	338
		102	90.8	----	----	----	150	----	----	----	----
		107	99.4	90	39	66	178	355	10	648	385

See footnotes at end of table.

ARKANSAS RIVER BASIN—Continued

RESERVOIR BEHIND CONCHAS DAM, N. MEX.—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Sampling point	Depth (feet)	Specific conductance ($K \times 10^5$ at 25° C.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Samples from different depths—Continued											
Jan. 12, 1945	Station 7 [5]	Surface	102	89	43	76	162	385	22	695	349
		25	103	------	------	------	------	------	------	------	------
		50	103	------	------	------	------	------	------	------	------
		75	104	------	------	------	------	------	------	------	------
		88	106	------	------	------	------	------	------	------	------
		93	106	------	------	------	------	------	------	------	------
		98	106	------	------	------	------	------	------	------	------
		103	107	94	46	80	168	410	24	737	424
		108	107	------	------	------	------	------	------	------	------
Apr. 21	Station 7 [5]	Surface	105	------	------	------	------	------	------	------	------
		25	105	89	45	84	166	401	26	727	407
		50	106	------	------	------	------	------	------	------	------
		75	105	------	------	------	------	------	------	------	------
		88	105	------	------	------	------	------	------	------	------
		93	105	------	------	------	------	------	------	------	------
		98	105	------	------	------	------	------	------	------	------
		103	105	------	------	------	------	------	------	------	------
		108	106	------	------	------	168	------	------	------	------
July 14	Station 7 [5]	Surface	107	92	44	86	162	414	24	740	410
		25	107	------	------	------	------	------	------	------	------
		50	108	------	------	------	------	------	------	------	------
		75	109	------	------	------	------	------	------	------	------
		Bottom	120	126	52	74	263	426	21	830	528
Sept. 27	Station 7 [5]	Surface	107	------	------	------	154	416	22	------	------
		25	107	------	------	------	------	------	------	------	------
		50	108	------	------	------	------	------	------	------	------
		75	108	------	------	------	------	------	------	------	------
		95	108	------	------	------	------	------	------	------	------
		100	109	------	------	------	------	------	------	------	------
		105	109	------	------	------	------	------	------	------	------
		110	109	------	------	------	------	------	------	------	------
		115	110	------	------	------	178	407	23	------	------

[1] Station 1: Conchas River arm of reservoir, approximately 3,000 feet above dam.
[2] Station 2: 400 feet above dam.
[3] Station 3: Canadian River arm of reservoir, 800 feet above dam.
[4] Station 6: Conchas River arm of reservoir, 5 miles above dam.
[5] Station 7: Canadian River arm of reservoir, 5 miles above dam.

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA

Chemical analyses, in parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Arkansas River at Ralston												
Aug. 16, 1944	1,990	167	8.0	87	26	185	170	211	258	4.0	967	324
Sept. 7	5,560	182	7.2	74	18	276	157	126	422	3.5	1,010	258
Oct. 11	5,530	174	7.6	69	20	213	148	106	344	.0	927	254
Oct. 19	2,880	244	7.6	103	28	353	223	159	559	1.5	1,320	372
Nov. 2	1,760	256	7.2	110	33	370	172	206	606	5.0	1,430	410
Nov. 16	2,000	188	7.6	108	29	300	237	167	475	3.5	1,210	388
Arkansas River at Tulsa												
Sept. 27, 1944	1,720	292	7.2	98	35	464	170	212	734	4.0	1,630	389
Nov. 16	3,230	227	7.6	98	36	316	201	143	542	2.0	1,250	392
Arkansas River near Webbers Falls												
Dec. 12, 1944		47.6	7.2	32	6.3	43	94	23	68	2.0	225	106
Aug. 23		169	7.3	67	28	247	138	170	374	.0	956	282
Salt Fork Arkansas River at Tonkawa												
Aug. 15, 1944	30	651	7.6	166	50	1,030	151	191	1,800	2.0	3,310	620
Nov. 15	220	482	7.2	123	35	986	193	236	1,550	3.0	3,040	451
Chikaskia River near Blackwell												
Aug. 15, 1944	51	129	7.6	92	22	128	137	37	315	2.8	828	320
Oct. 11	268	80.0	7.5	66	23	66	218	54	118	2.0	498	259
Nov. 15	144	97.8	7.4	77	24	92	238	64	160	3.0	572	290

Red Rock Creek near Red Rock											
Sept. 7, 1944		31.6	7.4	19	7.2	34	92	11	44	2.0	184	77
Oct. 11		43.7	7.5	36	18	38	168	28	56	.0	298	164
Nov. 15		54.0	7.0	45	11	64	209	33	62	3.5	332	158
Dec. 5		7.4	6.6	9.1	4.5	7.8	43	6.8	8.0	5.5	88	41
Black Bear Creek near Pawnee											
Aug. 16, 1944		88.6	7.6	65	27	64	267	22	119	1.8	478	273
Oct. 11		30.3	6.8	33	22	3.9	67	6.8	84	1.0	239	173
Nov. 2		68.8	7.4	58	20	4.1	234	16	76	1.5	350	226
Dec. 8	700	25.2	7.0	23	8.6	20	90	11	34	5.0	152	93
Cleveland Lake at Cleveland											
Sept. 20, 1944		20.8	7.2	24	7.7	12	106	8.8	14	1.0	131	92
Nov. 19		20.6	7.2	25	5.7	16	112	8.2	14	1.5	133	86
Cimarron River near Mocane											
Aug. 11, 1944	8	323	7.6	78	49	492	214	223	750	2.0	1,950	396
Oct. 6		216	7.6	86	50	279	254	171	455	1.0	1,180	420
Cimarron River near Waynoka											
Aug. 9, 1944	2	2,240	7.5	389	125	4,900	197	885	7,830	3.0	14,200	1,480
Oct. 9		2,640	7.7	420	275	5,360	192	1,110	8,880	3.0	16,100	2,180
Dec. 20	88	2,400	8.1	311	93	5,030	237	754	7,880	6.5	14,200	1,160
Cimarron River near Guthrie											
Aug. 14, 1944	91	765	7.9	175	51	1,310	175	441	2,050	2.0	4,120	646
Sept. 6	199	807	7.3	200	45	1,510	123	400	2,440	4.0	4,670	684
Oct. 10	779	436	7.2	124	31	814	94	278	1,300	5.0	2,600	437
Oct. 18	119	1,250	7.5	236	74	2,420	206	419	3,940	2.0	7,200	893
Nov. 1	58	1,020	7.5	380	105	2,100	212	503	3,680	3.5	6,880	1,330
Dec. 9	851	744	7.4	160	41	1,470	114	358	2,330	8.0	4,420	568

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Cimarron River at Oilton												
Sept. 1-8, 1944	208	1,090	7.6	346	125	1,800	163	298	3,410	6.5	6,080	1,380
Sept. 9-10	440	506	7.5	163	42	824	150	139	1,480	5.1	2,730	580
Sept. 11-20	136	1,330	7.4	455	113	2,310	158	275	4,370	3.5	7,610	1,600
Sept. 21-27	64	2,060	7.6	689	154	3,550	170	285	6,800	2.8	11,600	2,350
Sept. 28-29	453	733	7.8	259	62	1,380	126	125	2,600	1.5	4,500	902
Sept. 30, Oct. 1-10	2,774	216	8.1	100	17	327	108	149	535	3.2	1.190	320
Oct. 11, 14	610	449	8.0	158	30	731	103	190	1,280	3.5	2,450	518
Oct. 12-13, 15-16	608	684	8.1	203	38	1,170	116	269	2,000	3.2	3,750	662
Oct. 17-20	247	1,120	8.0	303	61	2,000	165	330	3,450	3.5	6,240	1,010
Oct. 21-31	152	1,330	7.8	389	97	2,300	212	313	4,130	4.5	7,340	1,370
Nov. 1-4	134	1,470	7.9	465	105	2,590	211	306	4,760	4.0	8,340	1,590
Nov. 5-6, 8	1,877	205	8.1	73	16	300	108	56	528	3.0	1,040	248
Nov. 7, 9-10	1,837	140	7.7	59	12	201	95	42	352	8.6	768	196
Nov. 11-12	935	308	8.0	95	22	494	115	99	850	5.5	1,630	328
Nov. 13-20	329	1,000	8.0	270	62	1,790	158	267	3,110	4.5	5,580	929
Nov. 21-28	240	1,350	7.9	349	88	2,540	227	320	4,410	5.5	8,480	1,230
Nov. 29-30	496	492	8.1	150	41	827	184	132	1,440	7.0	2.700	543
Dec. 1-4, 10	570	905	8.2	238	60	1,680	172	228	2,900	7.5	5,200	840
Dec. 5-9	5,654	200	8.2	60	14	324	116	66	538	3.8	1,080	207
Dec. 11-13	1,063	554	7.9	147	37	968	126	235	1,600	5.5	3.060	519
Dec. 14-20	643	1,080	8.3	217	64	2,090	193	281	3,450	5.5	6,210	804
Dec. 21-31	433	1,080	8.1	219	67	2,070	244	285	3,400	7.5	6,170	822
Crooked Creek near Nye, Kans.												
Aug. 11, 1944	14	186	7.4	133	22	214	284	95	392	3.0	1,010	424
Oct. 6	----------	369	7.6	102	29	683	166	301	997	3.0	2,200	374

Cottonwood Creek near Guthrie											
Dec. 9, 1944	------	54.7	7.6	67	26	23	345	9.5	18	3.0	328	274
Council Creek near Stillwater											
Oct. 12, 1944	0	16.2	6.8	15	17	4.1	115	7.7	10	0.5	132	108
Dec. 9	0.9	28.1	7.4	27	14	10	138	15	11	4.0	162	125
Lagoon Creek near Oilton											
Sept. 8, 1944	------	48.4	7.1	44	26	3.2	116	18	78	0.5	276	217
Oct. 12	0	51.8	7.1	37	16	40	123	16	90	.0	311	158
Dec. 8	------	34.0	7.0	22	7.7	39	73	13	68	2.0	197	88
Pole Cat Creek near Sapulpa											
Aug. 23, 1944	------	987	6.6	350	113	1,620	123	64	3,320	15	5,550	1,340
Nov. 16	------	72.0	6.6	24	10	101	48	9.1	191	1.5	385	101
Verdigris River near Lenapah											
Sept. 27, 1944	38	44.6	7.4	40	11	26	100	58	42	0.0	284	145
Nov. 17	204	76.1	7.6	63	13	65	281	44	88	2.0	440	260
Dec. 6	20,000	32.1	7.2	33	6.2	25	102	18	42	3.0	193	108
Verdigris River near Sageeyah											
Aug. 10, 1944	964	61.1	7.4	59	10	53	166	36	92	1.5	400	188
Dec. 14	2,080	61.2	8.0	77	11	25	222	35	50	3.8	338	237
Verdigris River near Claremore											
Aug. 10, 1944	100	66.1	7.5	65	11	54	187	33	96	0.5	440	207
Sept. 19	66	41.9	7.2	27	6.6	56	131	23	59	1.0	272	94
Oct. 17	746	60.6	7.5	60	17	43	228	25	70	1.0	374	220
Nov. 15	1,660	59.5	7.2	44	10	68	173	29	86	2.0	341	151
Dec. 14	3,070	60.6	8.0	76	10	31	214	34	60	3.2	347	230

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Caney River near Hulah												
Sept. 27, 1944	3	40.3	7.2	50	8.6	28	200	13	29	1.0	245	160
Nov. 16	44	66.8	7.6	88	16	35	332	32	38	2.5	387	286
Bird Creek near Sperry												
Aug. 3, 1944	174	73.0	7.0	40	13	82	92	16	170	2.0	454	154
Aug. 23	7	416	7.2	154	45	656	162	25	1,300	4.0	2,270	570
Oct. 10	94	74.7	7.0	28	17	92	98	12	174	1.0	469	140
Nov. 16	73	87.5	7.1	49	12	103	108	20	202	2.0	476	172
Hominy Creek near Sperry												
Oct. 10, 1944	----------	65.7	6.8	38	11	79	97	10	156	2.0	398	140
Nov. 15	----------	59.5	7.6	46	11	66	184	59	63	1.0	358	160
Neosho River near Commerce												
Aug. 27, 1944	20,500	13.2	6.2	16	6.3	12	66	23	10	1.0	161	66
Sept. 21	233	41.4	7.5	54	10	19	175	51	14	3.0	289	176
Oct. 20	624	47.2	7.5	40	25	28	213	59	19	2.0	305	203
Nov. 2	334	53.9	7.5	50	13	44	207	64	26	2.5	331	178
Dec. 7	19,300	18.6	6.8	21	5.9	7.6	72	20	7.0	3.5	121	76

Neosho River near Langley												
Aug. 6, 1944	1,240	29.4	7.2	41	6.5	12	114	40	12	4.0	240	129
Sept. 17	1,020	27.6	7.2	36	6.5	17	116	42	10	2.0	200	116
Oct. 18	6,400	28.2	7.2	30	11	15	116	41	11	2.0	177	120
Nov. 23	2,200	26.8	7.4	34	6.8	12	96	40	12	2.5	179	113
Dec. 13	6,140	27.7	7.1	39	6.6	4.1	99	40	6.0	2.8	164	124
Neosho River near Choteau												
Aug. 7, 1944	2,580	27.4	7.3	38	6.3	12	112	38	9.6	4.0	200	121
Sept. 18	1,000	27.6	7.6	38	6.6	9.7	119	37	10	1.0	171	127
Dec. 8	6,750	26.3	7.4	33	6.9	12	99	37	10	3.5	156	111
Neosho River near Wagoner												
Aug. 8, 1944	3,800	32.7	6.9	43	6.6	5.3	82	52	11	12	260	134
Sept. 18	1,400	29.8	7.1	38	7.1	13	95	57	10	7.0	216	124
Dec. 20	10,700	28.8	6.9	38	6.6	7.2	92	45	8.0	5.0	168	122
Spring River near Quapaw												
Aug. 25, 1944	268	48.4	7.0	55	15	24	126	128	11	0.3	326	199
Oct. 20	248	45.1	7.4	56	15	16	133	106	8.2	7.0	305	202
Dec. 16	251	50.9	7.7	75	9.7	14	117	141	7.0	6.9	330	227
Elk River near Tiff City, Mo.												
Aug. 26, 1944	287	24.8	7.6	32	6.8	6.1	132	5.5	5.0	0.4	149	108
Sept. 21	152	25.5	7.5	46	3.2	7.1	154	4.7	6.6	3.0	167	128
Oct. 19	255	25.8	7.6	46	3.2	8.1	153	5.5	7.8	4.0	158	128
Nov. 3	157	26.7	7.4	28	2.9	30	158	3.6	9.0	2.0	159	82
Dec. 15	222	27.7	8.1	51	3.2	1.9	156	5.0	6.0	3.8	167	140
Big Cabin Creek near Vinita												
Sept. 20, 1944	---------	30.7	7.2	48	7.7	11	147	39	9.2	1.0	218	152
Nov. 12	---------	36.4	7.0	50	9.5	9.4	106	78	11	1.5	230	164

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K\times10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Spavinaw Creek near Spavinaw												
Aug. 30, 1944		16.9	7.4	30	2.8	9.0	110	7.9	5.5	0.0	118	82
Nov. 21		26.4	7.4	33	2.6	18	110	4.0	26	1.0	147	93
Pryor Creek near Pryor												
Oct. 6, 1944		30.2	6.1	18	7.6	32	25	35	62	1.0	207	76
Nov. 7		55.7	6.8	20	9.7	76	50	42	120	1.0	314	90
Spring Creek near Peggs												
Sept. 14, 1944		15.2	6.9	26	1.8	9.0	93	7.7	5.0	1.0	116	72
Nov. 14		15.0	7.0	21	1.3	4.8	73	3.7	6.0	1.5	91	63
Illinois River near Tahlequah												
Aug. 7, 1944	810	15.8	7.0	28	1.4	6.9	87	9.4	4.6	4.0	120	76
Sept. 19	146	18.2	7.2	30	2.5	10	115	6.3	5.4	.0	128	86
Oct. 11	436	18.7	7.2	24	6.1	9.4	108	7.4	5.7	2.0	113	85
Nov. 14	155	20.4	7.2	35	2.8	1.4	102	4.9	9.0	1.5	116	94
Dec. 5	174	19.3	7.4	35	3.0	3.9	112	4.0	8.0	2.0	116	100

Illinois River near Gore												
Sept. 1-10, 1944	676	18.3	7.9	31	1.6	6.6	95	5.0	6.0	4.4	114	84
Sept. 11-20	287	19.9	7.9	32	2.7	6.4	100	4.7	4.0	.8	120	91
Sept. 21-30	204	20.9	7.9	34	4.1	8.5	119	4.2	4.0	.5	128	102
Oct. 1-10	766	20.7	8.0	32	2.3	7.7	104	4.9	6.0	1.8	119	89
Oct. 11-20	495	20.2	8.1	33	1.9	7.7	101	5.0	6.0	1.2	116	90
Oct. 21-31	280	20.1	7.9	33	1.7	6.3	102	4.8	7.0	1.5	119	89
Nov. 1-10	243	24.2	8.4	34	2.1	6.6	108	4.5	9.0	1.0	122	94
Nov. 11-20	253	20.8	8.3	37	2.4	5.8	116	4.8	8.0	1.2	131	102
Nov. 21-30	233	20.5	8.2	33	2.7	7.4	107	4.9	7.0	2.5	122	93
Dec. 1-10	312	20.8	7.8	34	2.4	8.1	105	4.8	9.0	2.8	122	95
Dec. 11-20	463	20.6	7.5	34	2.1	6.9	104	5.3	6.0	5.0	123	94
Dec. 21-31	335	20.6	7.4	38	2.3	10	107	6.0	13	1.8	134	104
Dirty Creek near Warner												
Aug. 23, 1944	----------	18.3	6.8	12	6.7	20	97	5.3	11	0.0	121	58
Oct. 4	----------	4.7	6.0	4.2	3.7	12	42	10	3.7	.0	80	26
Nov. 22	6	15.4	6.2	18	6.6	5.5	39	23	18	3.0	100	72
Canadian River near Newcastle												
Aug. 5, 1944	----------	148	7.6	80	26	152	121	301	159	1.5	874	306
Nov. 24	51	88.1	7.2	86	27	71	196	232	53	3.0	606	326
Canadian River at Calvin												
Aug. 19, 1944	----------	869	7.4	304	95	1,290	137	44	2,690	1.5	4,490	1,150
Canadian River near Whitefield												
Sept. 1-2, 7-10, 1944	1,943	542	7.8	190	49	850	102	50	1,680	4.2	2,890	676
Sept. 3-6	899	987	7.9	358	86	1,650	89	42	3,330	3.8	5,520	1,250
Sept. 11-20	1,404	307	7.8	156	47	433	178	284	740	6.2	1,760	583
Sept. 21-30	245	598	8.4	226	61	860	161	148	1,680	1.8	3,070	815
Oct. 1-2, 4	5,278	613	8.3	218	59	895	147	83	1,770	2.8	3,110	786
Oct. 3, 5-7	11,508	198	8.2	85	21	258	114	85	462	2.8	977	298
Oct. 8-10	8,817	102	8.1	56	14	128	97	59	225	3.0	582	198
Oct. 11-12, 17-20	1,770	190	7.8	88	22	261	114	62	500	4.8	1,000	310
Oct. 13-16	2,060	314	7.8	122	29	463	102	55	905	4.2	1,630	424
Oct. 21-24	604	263	7.9	122	27	380	150	56	740	3.2	1,400	416

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Canadian River near Whitefield—Continued												
Oct. 25–31	426	460	7.7	184	44	700	140	53	1,400	3.0	2,450	640
Nov. 1–7	327	766	7.6	242	62	1,000	135	45	2,030	.8	3,460	859
Nov. 8–10	791	1,020	8.1	344	83	1,450	132	44	2,950	2.0	4,940	1,200
Nov. 11–13	1,230	972	8.0	340	83	1,580	103	44	3,160	6.5	5,270	1,190
Nov. 14–20	1,448	459	8.2	170	42	675	85	30	1,380	5.3	2,350	597
Nov. 21–24, 29–30	912	584	8.2	211	54	904	126	42	1,810	4.0	3,100	748
Nov. 25–28	1,854	870	8.2	326	86	1,380	125	55	2,840	5.5	4,760	1,170
Dec. 1–7	2,943	385	8.2	145	37	573	125	37	1,140	4.6	2,010	514
Dec. 8–9	6,537	163	8.3	75	19	193	110	30	390	3.8	906	265
Dec. 11–16	2,930	198	8.2	94	26	373	126	93	510	4.6	1,070	342
Dec. 17–20	1,225	363	7.8	153	42	532	163	111	1,020	5.8	1,950	554
Dec. 21–31	965	587	7.7	245	67	881	203	121	1,760	8.2	3,190	887
Little River near Sasakwa												
Aug. 18, 1944	5	2,300	7.2	908	241	4,400	142	60	8,970	1.8	14,700	3,260
Sept. 13	10	1,480	7.2	548	170	2,550	146	72	5,260	5.0	8,680	2,070
Oct. 10	203	485	6.8	302	83	1,450	97	21	2,940	4.5	4,850	1,090
Oct. 20	21	2,790	7.1	1,060	294	5,170	113	54	10,600	5.5	17,200	3,850
Nov. 9	235	411	7.0	256	81	1,290	116	18	2,590	5.5	4,300	977
Dec. 1	59	1,740	7.0	729	204	3,450	136	41	7,100	3.5	11,600	2,660
Gaines Creek near Krebs												
Aug. 9, 1944		43.8	6.6	27	16	47	67	155	13	0.1	294	134
Sept. 21		26.2	6.6	17	11	25	68	70	10	.0	174	88
Oct. 4	7	22.2	6.4	14	9.8	43	122	53	8.7	.0	193	76
Oct. 25		15.1	6.4	12	5.6	13	62	12	11	2.5	114	53
Nov. 23	2	16.6	6.6	14	7.1	12	82	11	8.0	2.0	110	64
Dec. 13	30	12.6	6.5	9.9	3.3	20	50	20	9.0	1.5	93	38

North Canadian River near Guymon												
Oct. 17, 1944	--	58.7	7.6	49	28	63	294	63	18	2.0	386	238
Nov. 11	4	55.5	7.7	51	28	28	272	52	17	1.5	343	242
North Canadian River at Woodward												
Oct. 9, 1944	--	60.0	7.6	56	13	53	157	86	64	0.0	353	194
Nov. 16	8	169	7.6	142	40	180	249	322	262	1.0	1,090	519
North Canadian River near El Reno												
Aug. 5, 1944	292	53.3	7.6	42	11	38	137	49	48	1.0	287	150
Sept. 4	.03	113	7.4	76	38	116	241	227	115	1.0	743	346
Oct. 11	259	44.5	7.4	39	11	40	150	42	44	1.5	269	142
Oct. 13	--	48.9	7.1	45	11	36	156	45	42	2.2	283	158
Nov. 24	73	137	7.4	97	28	111	230	193	148	1.0	746	357
North Canadian River near Oklahoma City												
Sept. 11, 1944	58	2,590	6.8	--	--	--	--	--	10,700	--	--	--
North Canadian River near Wetumpka												
Aug. 17, 1944	93	581	7.2	178	59	835	121	57	1,660	2.5	3,830	686
Sept. 12	83	1,096	7.0	408	119	1,800	98	148	3,670	3.0	6,200	1,510
Oct. 11	203	442	7.1	150	38	666	120	40	1,300	7.0	2,270	530
Nov. 10	223	1,790	6.8	984	301	4,380	86	64	9,260	15	15,100	3,690
Dec. 1	166	583	6.8	213	68	917	121	41	1,880	10	3,200	811
Kiowa Creek near Logan												
Nov. 24, 1944	4	75.6	7.6	68	21	73	268	54	98	0.5	478	256
Clear Creek near May												
Aug. 30, 1944	--	51.6	7.6	47	11	47	190	26	57	0.5	313	162

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Wolf Creek near Fort Supply												
Oct. 9, 1944		78.5	7.6	75	21	67	186	166	66	0.0	505	274
Indian Creek near Woodward												
Nov. 25, 1944	5	167	7.6	183	29	163	310	346	223	1.0	1,110	576
Persimmon Creek near Richmond												
Nov. 25, 1944	6	97.1	7.6	137	30	61	371	202	58	1.5	722	466
Deep Fork near Dewar												
Aug. 17, 1944	16	131	7.2	60	24	176	158	15	345	0.2	756	248
Sept. 12	79	240	7.5	80	18	356	66	25	684	4.0	1,200	274
Oct. 11	388	63.1	6.8	21	13	63	80	12	117	1.5	293	106
Oct. 21	66	50.8	7.0	29	13	65	111	12	115	2.5	310	126
Nov. 10	252	275	6.8	106	33	415	138	11	833	4.0	1,620	400
Nov. 30	284	163	7.0	61	24	217	126	20	424	1.5	893	250
Sallisaw Creek near Sallisaw												
Aug. 23, 1944		17.6	6.9	12	10	12	99	6.5	6.0	0.0	109	72
Dec. 12	37	17.8	7.2	31	1.6	5.1	95	7.3	6.0	1.0	102	84

Poteau River near Wister

Aug. 8, 1944	----------	8.0	6.4	3.7	2.9	12	41	5.1	6.5	0.2	54	21
Sept. 21	6	6.5	6.2	4.8	3.8	6.9	36	4.4	5.6	.0	49	28
Oct. 3	0.5	7.4	6.2	5.2	3.9	9.7	43	6.8	5.8	.0	64	29
Oct. 24	----------	7.1	6.2	6.0	3.4	6.0	29	4.6	8.5	1.0	47	29
Nov. 24	26	6.4	6.2	7.1	4.4	4.6	38	6.0	5.0	1.0	65	35

Poteau River at Poteau

Aug. 8, 1944	----------	8.7	6.4	5.0	2.6	11	34	7.9	7.0	0.3	68	23
Sept. 21	10	9.0	6.4	5.8	4.4	9.7	39	9.0	7.8	1.0	63	32
Oct. 3	2	9.3	6.2	5.4	3.7	13	40	8.8	8.8	3.0	67	28
Oct. 24	2	9.7	6.2	5.8	3.7	8.7	28	7.5	10	4.5	62	30
Nov. 24	30	7.8	6.4	5.4	4.0	6.0	34	6.7	5.0	1.5	55	30

Fourche Maline near Red Oak

Aug. 9, 1944	----------	21.1	6.8	14	9.2	18	99	18	8.6	0.0	130	13
Sept. 21	----------	22.9	6.8	14	9.3	26	109	25	10	.0	142	73
Nov. 23	0.1	20.9	6.6	12	10	19	101	14	10	1.0	133	71
Dec. 13	2	24.5	6.6	14	9.8	22	71	45	12	1.0	160	76

Chemical analyses, in equivalents per million

Arkansas River at Ralston

Aug. 16, 1944	1,990	----------	----------	4.34	2.14	8.04	2.79	4.39	7.28	0.06	----------	----------
Sept. 7	5,560	----------	----------	3.69	1.48	11.98	2.57	2.62	11.90	.06	----------	----------
Oct. 11	5,530	----------	----------	3.44	1.64	9.26	2.43	2.21	9.70	.00	----------	----------
Oct. 19	2,880	----------	----------	5.14	2.30	15.33	3.67	3.31	15.77	.02	----------	----------
Nov. 2	1,760	----------	----------	5.49	2.71	16.07	2.82	4.28	17.09	.08	----------	----------
Nov. 16	2,000	----------	----------	5.39	2.38	13.06	3.89	3.48	13.40	.06	----------	----------

Arkansas River at Tulsa

Sept. 27, 1944	1,720	----------	----------	4.89	2.88	20.19	2.79	4.41	20.70	0.06	----------	----------
Nov. 16	3,230	----------	----------	4.89	2.96	13.74	3.29	2.98	15.29	.03	----------	----------

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Arkansas River near Webbers Falls												
Dec. 12, 1944				1.60	0.52	1.85	1.54	0.48	1.92	0.03		
Aug. 23				3.34	2.30	10.73	2.26	3.54	10.55	.00		
Salt Fork Arkansas River at Tonkawa												
Aug. 15, 1944	30			8.29	4.11	44.36	2.48	3.98	50.77	0.03		
Nov. 15	220			6.14	2.88	42.82	3.16	4.91	43.72	.05		
Chikaskia River near Blackwell												
Aug. 15, 1944	51			4.59	1.81	5.55	2.25	0.77	8.88	0.05		
Oct. 11	268			3.29	1.89	2.89	3.59	1.12	3.33	.03		
Nov. 15	144			3.84	1.97	3.98	3.90	1.33	4.51	.05		
Red Rock Creek near Red Rock												
Sept. 7, 1944				0.95	0.59	1.47	1.51	0.23	1.24	0.03		
Oct. 11				1.80	1.48	1.66	2.78	.58	1.58	.00		
Nov. 15				2.25	.90	2.77	3.42	.69	1.75	.06		
Dec. 5				.45	.37	.34	.70	.14	.23	.09		
Black Bear Creek near Pawnee												
Aug. 16, 1944				3.24	2.22	2.77	4.38	0.46	3.36	0.03		
Oct. 11				1.65	1.81	.17	1.10	.14	2.37	.02		
Nov. 2				2.89	1.64	1.80	3.84	.33	2.14	.02		
Dec. 8	700			1.15	.71	.89	1.48	.23	.96	.08		

Cleveland Lake at Cleveland												
Sept. 20, 1944				1.20	0.63	0.50	1.74	0.18	0.39	0.02		
Nov. 19				1.25	.47	.70	1.84	.17	.39	.02		
Cimarron River near Mocane												
Aug. 11, 1944	8			3.89	4.03	21.41	3.51	4.64	21.15	0.03		
Oct. 6				4.29	4.11	12.11	4.17	3.56	12.84	.02		
Cimarron River near Waynoka												
Aug. 9, 1944	2			19.42	10.28	213.06	3.23	18.42	220.06	0.05		
Oct. 9				20.96	22.61	233.10	3.16	23.11	250.40	.05		
Dec. 20	88			15.52	7.65	218.77	3.89	15.70	222.24	.11		
Cimarron River near Guthrie												
Aug. 14, 1944	91			8.73	4.19	56.98	2.87	9.18	57.82	0.03		
Sept. 6	199			9.98	3.70	65.55	2.02	8.33	68.82	.06		
Oct. 10	779			6.19	2.55	35.37	1.54	5.74	36.70	.08		
Oct. 18	119			11.78	6.08	109.40	3.38	8.72	111.13	.03		
Nov. 1	58			18.97	8.63	91.20	3.48	10.47	103.79	.06		
Dec. 9	851			7.99	3.37	63.81	1.87	7.46	65.71	.13		
Cimarron River at Oilton												
Sept. 1–8, 1944	208			17.27	10.28	76.10	2.67	6.20	96.17	0.10		
Sept. 9–10	440			8.14	3.45	34.00	2.46	2.89	41.74	.08		
Sept. 11–20	136			22.71	9.29	98.58	2.59	5.73	123.25	.06		
Sept. 21–27	64			34.39	12.66	152.55	2.79	5.93	191.78	.05		
Sept. 28–29	453			12.93	5.10	59.70	2.07	2.60	73.33	.02		
Sept. 30, Oct. 1–10	2,774			4.99	1.40	13.50	1.77	3.10	15.09	.05		
Oct. 11, 14	610			7.89	2.47	30.99	1.69	3.96	36.10	.06		
Oct. 12–13, 15–16	608			10.13	3.12	50.44	1.91	5.60	56.41	.05		
Oct. 17–20	247			15.12	5.02	86.44	2.71	6.87	97.30	.06		
Oct. 21–31	152			19.42	7.98	98.48	3.48	6.52	116.48	.07		
Nov. 1–4	134			23.21	8.63	111.82	3.49	6.37	134.25	.06		
Nov. 5–6, 8	1,877			3.64	1.32	12.75	1.77	1.17	14.89	.05		
Nov. 7, 9–10	1,837			2.94	.99	8.34	1.56	.87	9.93	.14		
Nov. 11–12	935			4.74	1.81	21.47	1.89	2.06	23.97	.09		
Nov. 13–20	329			13.48	5.10	76.80	2.60	5.56	87.71	.07		

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K\times10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Cimarron River at Oilton—Continued												
Nov. 21-28	240			17.42	7.24	109.30	3.75	6.66	124.38	.09		
Nov. 29-30	496			7.49	3.37	35.30	3.02	2.75	40.61	.11		
Dec. 1-4, 10	570			11.88	4.93	72.09	2.83	4.75	81.79	.12		
Dec. 5-9	5,654			2.99	1.15	14.18	1.90	1.37	15.17	.06		
Dec. 11-13	1,063			7.34	3.04	41.39	2.07	4.89	45.13	.09		
Dec. 14-20	643			10.83	5.26	89.84	3.18	5.85	97.30	.09		
Dec. 21-31	433			10.93	5.51	89.05	4.01	5.93	95.89	.12		
Crooked Creek near Nye, Kans.												
Aug. 11, 1944	14			6.64	1.81	9.30	4.66	1.98	11.06	0.05		
Oct. 6				5.09	2.38	29.70	2.73	6.27	28.12	.05		
Cottonwood Creek near Guthrie												
Dec. 9, 1944				3.34	2.14	1.00	5.67	0.20	0.51	0.05		
Council Creek near Stillwater												
Oct. 12, 1944	0			0.75	1.40	0.18	1.88	0.16	0.28	0.01		
Dec. 9	0.9			1.35	1.15	.44	2.26	.31	.31	.06		
Lagoon Creek near Oilton												
Sept. 8, 1944				2.20	2.14	0.14	1.90	0.37	2.20	0.01		
Oct. 12	0			1.85	1.32	1.72	2.02	.33	2.54	.00		
Dec. 8				1.10	.63	1.69	1.20	.27	1.92	.03		

Pole Cat Creek near Sapulpa												
Aug. 23, 1944				17.47	9.30	70.46	2.02	1.33	93.64	0.24		
Nov. 16				1.20	.82	4.37	.79	.19	5.39	.02		
Verdigris River near Lenapah												
Sept. 27, 1944	38			2.00	0.90	1.13	1.64	1.21	1.18	0.00		
Nov. 17	204			3.14	1.07	2.83	4.61	.92	2.48	.03		
Dec. 6	20,000			1.65	.52	1.10	1.67	.37	1.18	.05		
Verdigris River near Sageeyah												
Aug. 10, 1944	964			2.94	0.82	2.32	2.72	0.75	2.59	0.02		
Dec. 14	2,080			3.84	.90	1.10	3.64	.73	1.41	.06		
Verdigris River near Claremore												
Aug. 10, 1944	100			3.24	0.90	2.33	3.06	0.69	2.71	0.01		
Sept. 19	66			1.35	.54	2.42	2.15	.48	1.66	.02		
Oct. 17	746			3.00	1.40	1.85	3.74	.52	1.97	.02		
Nov. 15	1,660			2.20	.82	2.97	2.84	.60	2.42	.03		
Dec. 14	3,070			3.79	.82	1.35	3.51	.71	1.69	.05		
Caney River near Hulah												
Sept. 27, 1944	3			2.50	0.90	1.20	3.28	0.27	0.82	0.02		
Nov. 16	44			4.39	1.32	1.51	5.44	.67	1.07	.04		
Bird Creek near Sperry												
Aug. 9, 1944	174			2.00	1.08	3.58	1.51	0.33	4.79	0.03		
Aug. 23	7			7.69	3.70	28.51	2.66	.52	36.66	.06		
Oct. 10	94			1.40	1.40	3.99	1.61	.25	4.91	.02		
Nov. 16	73			2.44	.99	4.49	1.77	.42	5.70	.03		

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Hominy Creek near Sperry												
Oct. 10, 1944				1.90	0.90	3.43	1.59	0.21	4.40	0.03		
Nov. 15				2.30	.90	2.85	3.02	1.23	1.78	.02		
Neosho River near Commerce												
Aug. 27, 1944	20,500			0.80	0.52	0.54	1.08	0.48	0.28	0.02		
Sept. 21	233			2.70	.82	.84	2.86	1.06	.39	.05		
Oct. 20	624			2.00	2.06	1.23	3.49	1.23	.54	.03		
Nov. 2	334			2.50	1.07	1.92	3.39	1.33	.73	.04		
Dec. 7	19,300			1.05	.48	.33	1.18	.42	.20	.06		
Neosho River near Langley												
Aug. 6, 1944	1,240			2.05	0.53	0.52	1.87	0.83	0.34	0.06		
Sept. 17	1,020			1.80	.53	.75	1.90	.87	.28	.03		
Oct. 18	6,400			1.50	.90	.66	1.87	.85	.31	.03		
Nov. 23	2,200			1.70	.56	.52	1.57	.83	.34	.04		
Dec. 13	6,140			1.95	.54	.18	1.62	.83	.17	.04		
Neosho River near Choteau												
Aug. 7, 1944	2,580			1.90	0.52	0.54	1.84	0.79	0.27	0.06		
Sept. 18	1,000			1.90	.54	.42	1.89	.77	.28	.02		
Dec. 8	6,750			1.65	.57	.51	1.62	.77	.28	.06		

Neosho River near Wagoner												
Aug. 8, 1944	3,800			2.15	0.54	0.23	1.34	1.08	0.31	0.19		
Sept. 18	1,400			1.90	.58	.56	1.56	1.19	.28	.11		
Dec. 20	10,700			1.90	.54	.31	1.51	.94	.23	.08		
Spring River near Quapaw												
Aug. 25, 1944	268			2.75	1.23	1.06	2.06	2.66	0.31	0.01		
Oct. 20	248			2.80	1.23	.71	2.19	2.21	.23	.11		
Dec. 16	251			3.74	.80	.63	1.92	2.94	.20	.11		
Elk River near Tiff City, Mo.												
Aug. 26, 1944	287			1.60	0.56	0.27	2.17	0.11	0.14	0.01		
Sept. 21	152			2.30	.26	.31	2.53	.10	.19	.05		
Oct. 19	255			2.30	.26	.35	2.52	.11	.22	.06		
Nov. 3	157			1.40	.24	1.30	2.59	.07	.25	.03		
Dec. 15	222			2.54	.26	.08	2.55	.10	.16	.06		
Big Cabin Creek near Vinita												
Sept. 20, 1944				2.40	0.63	0.47	2.41	0.81	0.26	0.02		
Nov. 12				2.50	.78	.41	1.74	1.62	.31	.02		
Spavinaw Creek near Spavinaw												
Aug. 30, 1944				1.50	0.23	0.39	1.80	0.16	0.16	0.00		
Nov. 21				1.65	.21	.77	1.80	.08	.73	.02		
Pryor Creek near Pryor												
Oct. 6, 1944				0.90	0.63	1.38	0.41	0.73	1.75	0.02		
Nov. 7				1.00	.80	3.29	.82	.87	3.38	.02		

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Spring Creek near Peggs												
Sept. 14, 1944				1.30	0.15	0.39	1.52	0.16	0.14	0.02		
Nov. 14				1.05	.11	.21	1.20	.08	.17	.02		
Illinois River near Tahlequah												
Aug. 7, 1944	810			1.40	0.12	0.30	1.43	0.20	0.13	0.06		
Sept. 19	146			1.50	.21	.45	1.88	.13	.15	.00		
Oct. 11	436			1.20	.50	.41	1.77	.15	.16	.03		
Nov. 14	155			1.75	.23	.06	1.67	.10	.25	.02		
Dec. 5	174			1.75	.25	.17	1.84	.08	.22	.03		
Illinois River near Gore												
Sept. 1-10, 1944	676			1.547	0.132	0.239	1.557	0.104	0.169	0.071		
Sept. 11-20	287			1.597	.222	.234	1.638	.098	.113	.013		
Sept. 21-30	204			1.697	.337	.321	1.951	.087	.113	.008		
Oct. 1-10	766			1.597	.189	.299	1.705	.102	.169	.029		
Oct. 11-20	495			1.647	.156	.295	1.656	.104	.169	.019		
Oct. 21-31	280			1.647	.140	.245	1.672	.100	.197	.024		
Nov. 1-10	243			1.697	.173	.258	1.780	.094	.254	.016		
Nov. 11-20	253			1.847	.197	.221	1.908	.100	.226	.019		
Nov. 21-30	233			1.647	.222	.286	1.753	.102	.197	.040		
Dec. 1-10	312			1.697	.197	.316	1.721	1.100	.254	.045		
Dec. 11-20	463			1.697	.173	.266	1.705	.110	.169	.081		
Dec. 21-31	335			1.897	.189	.414	1.754	.125	.367	.029		

Dirty Creek near Warner

Aug. 23, 1944	0			0.60	0.55	0.86	1.59	0.11	0.31	0.00		
Oct. 4				.21	.30	.50	.69	.21	.11	.00		
Nov. 22	6			.90	.54	.24	.64	.48	.51	.05		

Canadian River near Newcastle

Aug. 5, 1944				3.99	2.14	6.62	1.98	6.27	4.48	0.02		
Nov. 24	51			4.29	2.22	3.07	3.21	4.83	1.49	.05		

Canadian River at Calvin

Aug. 19, 1944				15.17	7.81	56.08	2.25	0.92	75.87	0.02		

Canadian River near Whitefield

Sept. 1-2, 7-10, 1944	1,943			9.48	4.03	36.14	1.67	1.04	47.38	0.07		
Sept. 3-6	899			17.87	7.07	70.63	1.46	.87	93.92	.06		
Sept. 11-20	1,404			7.79	3.87	17.87	2.92	5.91	20.87	.10		
Sept. 21-30	245			11.28	5.02	36.14	2.65	3.08	47.38	.03		
Oct. 1-2, 4	5,278			10.88	4.85	37.65	2.41	1.73	49.92	.05		
Oct. 3, 5-7	11,508			4.24	1.73	10.20	1.87	1.77	13.03	.05		
Oct. 8-10	8,817			2.80	1.15	4.83	1.59	1.23	6.35	.05		
Oct. 13-16	2,060			6.09	2.38	19.77	1.67	1.15	25.52	.07		
Oct. 11-12, 17-20	1,770			4.39	1.81	10.95	1.87	1.29	14.10	.08		
Oct. 21-24	604			6.09	2.22	15.98	2.46	1.17	20.87	.05		
Oct. 25-31	426			9.18	3.62	29.78	2.29	1.10	39.48	.05		
Nov. 1-7	327			12.08	5.10	42.78	2.21	.94	57.25	.01		
Nov. 8-10	791			17.17	6.83	61.36	2.17	.92	83.20	.03		
Nov. 11-13	1,230			16.97	6.83	67.30	1.70	.92	89.12	.10		
Nov. 14-20	1,448			8.49	3.45	28.73	1.39	.62	38.92	.09		
Nov. 21-24, 29-30	912			10.53	4.44	38.81	2.07	.87	51.05	.06		
Nov. 25-28	1,854			16.27	7.07	59.68	2.06	1.15	80.10	.09		
Dec. 1-7	2,943			7.24	3.04	24.57	2.05	.77	32.15	.07		
Dec. 8-9	6,537			3.74	1.56	7.94	1.81	.62	11.00	.06		
Dec. 11-16	2,930			4.69	2.14	11.27	2.06	1.94	14.38	.07		
Dec. 17-20	1,225			7.64	3.45	22.26	2.68	2.31	28.77	.09		
Dec. 21-31	965			12.23	5.51	37.28	3.33	2.52	49.64	.13		

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Little River near Sasakwa												
Aug. 18, 1944	5			45.32	19.82	191.45	2.33	1.25	252.98	0.03		
Sept. 13	10			27.35	13.98	110.97	2.39	1.50	148.35	.08		
Oct. 10	203			15.07	6.82	63.13	1.59	.44	82.92	.07		
Oct. 20	21			52.91	24.18	224.92	1.85	1.12	298.95	.09		
Nov. 9	235			12.78	6.66	55.97	1.90	.37	73.05	.09		
Dec. 1	59			36.39	16.78	150.21	2.23	.85	200.24	.06		
Gaines Creek near Krebs												
Aug. 9, 1944				1.35	1.32	2.03	1.10	3.23	0.37	0.00		
Sept. 21				.85	.90	1.10	1.11	1.46	.28	.00		
Oct. 4	7			.70	.81	1.87	2.03	1.10	.25	.00		
Oct. 25				.60	.46	.56	1.02	.25	.31	.04		
Nov. 23	2			.70	.59	.54	1.34	.23	.23	.03		
Dec. 13	30			.49	.27	.85	.82	.42	.25	.02		
North Canadian River near Guymon												
Oct. 17, 1944				2.45	2.30	1.95	4.73	1.31	0.31	0.02		
Nov. 11	4			2.55	2.30	1.21	5.56	1.09	.48	.02		
North Canadian River at Woodward												
Oct. 9, 1944				2.80	1.07	2.29	2.57	1.79	1.00	0.00		
Nov. 16	8			7.09	3.29	7.82	4.09	6.70	7.39	.02		

North Canadian River near El Reno

Aug. 5, 1944	292			2.09	0.90	1.63	2.24	1.02	1.35	0.01		
Sept. 4	.03			3.79	3.12	5.03	3.95	4.73	3.24	.02		
Oct. 11	259			1.95	.90	1.74	2.46	.87	1.24	.02		
Oct. 13				2.24	.90	1.56	2.55	.93	1.18	.03		
Nov. 24	73			4.84	2.30	4.84	3.77	4.02	4.17	.02		

North Canadian River near Oklahoma City

Sept. 11, 1944	58											

North Canadian River near Wetumpka

Aug. 17, 1944	93			8.88	4.85	36.30	1.98	1.19	46.82	0.04		
Sept. 12	83			20.36	9.79	78.09	1.61	3.08	103.50	.05		
Oct. 11	203			7.49	3.12	28.96	1.97	.83	36.66	.11		
Nov. 10	223			49.11	24.75	190.28	1.41	1.33	261.16	.24		
Dec. 1	166			10.63	5.59	39.85	1.98	.85	53.08	.16		

Kiowa Creek near Logan

Nov. 24, 1944	4			3.39	1.73	3.17	4.40	1.12	2.76	0.01		

Clear Creek near May

Aug. 30, 1944				2.35	0.90	2.03	3.12	0.54	1.61	0.01		

Wolf Creek near Fort Supply

Oct. 9, 1944				3.74	1.73	2.91	3.06	3.46	1.86	0.00		

Indian Creek near Woodward

Nov. 25, 1944	5			9.13	2.38	7.09	5.09	7.20	6.29	0.02		

ARKANSAS RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN ARKANSAS RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Persimmon Creek near Richmond												
Nov. 25, 1944	6			6.84	2.47	2.66	6.11	4.20	1.64	0.02		
Deep Fork near Dewar												
Aug. 17, 1944	16			2.99	1.97	7.67	2.59	0.31	9.73	0.00		
Sept. 12	79			3.99	1.48	15.48	1.08	.52	19.29	.06		
Oct. 11	388			1.05	1.07	2.76	1.31	.25	3.30	.02		
Oct. 21	66			1.45	1.07	2.83	1.82	.25	3.24	.04		
Nov. 10	252			5.29	2.71	18.04	2.26	.23	23.49	.06		
Nov. 30	284			3.04	1.97	9.44	2.06	.42	11.95	.02		
Sallisaw Creek near Sallisaw												
Aug. 23, 1944				0.60	0.82	0.51	1.62	0.14	0.17	0.00		
Dec. 12	37			1.55	.13	.22	1.56	.15	.17	.02		
Poteau River near Wister												
Aug. 8, 1944				0.18	0.24	0.54	0.67	0.11	0.18	0.00		
Sept. 21	6			.24	.31	.30	.59	.09	.16	.00		
Oct. 3	0.5			.26	.32	.42	.70	.14	.16	.00		
Oct. 24				.30	.28	.26	.48	.10	.24	.02		
Nov. 24	26			.35	.36	.20	.63	.12	.14	.02		

Poteau River at Poteau

Aug. 8, 1944	----------	----------	----------	0.25	0.21	0.46	0.56	0.16	0.20	0.00	----------	----------
Sept. 21	10	----------	----------	.29	.36	.42	.64	.19	.22	.02	----------	----------
Oct. 3	2	----------	----------	.27	.30	.57	.66	.18	.25	.05	----------	----------
Oct. 24	2	----------	----------	.29	.30	.38	.46	.16	.28	.07	----------	----------
Nov. 24	30	----------	----------	.27	.33	.26	.56	.14	.14	.02	----------	----------

Fourche Maline near Red Oak

Aug. 9, 1944	----------	----------	----------	0.70	0.76	0.77	1.62	0.37	0.24	0.00	----------	----------
Sept. 21	----------	----------	----------	.70	.76	1.13	1.79	.52	.28	.00	----------	----------
Nov. 23	0.1	----------	----------	.60	.82	.83	1.66	.29	.28	.02	----------	----------
Dec. 13	2	----------	----------	.70	.81	.95	1.16	.94	.34	.02	----------	----------

RED RIVER BASIN

RED RIVER NEAR GAINESVILLE, TEX.

LOCATION.—At gaging station at bridge on U. S. Highway 77, a quarter of a mile downstream from Gulf, Colorado & Santa Fe Railway bridge, 5 miles downstream from Fish Creek, and 7 miles north of Gainesville.

DRAINAGE AREA.—29,460 square miles.

RECORDS AVAILABLE.—Chemical analyses: May 1944 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 4,040 parts per million Jan. 11–20; minimum, 250 parts per million Sept. 30.
Total hardness: Maximum, 1,170 parts per million Jan. 11–20; minimum, 120 parts per million Sept. 30.

EXTREMES, May 1944 to September 1945.—Dissolved solids: Maximum, 4,790 parts per million Sept. 21–30, 1944; minimum, 220 parts per million Sept. 30, 1945.
Total hardness: Maximum, 1,380 parts per million July 21–25, 1944; minimum, 120 parts per million Sept. 30, 1945.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1037.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	7,398	118					66	15	145		96	113	243		3.8		633	0.86	12,600	226	148	58
Oct. 11-13	2,103	282					137	37	360		103	314	612		3.2		1,510	2.05	8,570	494	410	61
Oct. 14-20	721	397					211	51	588		132	495	985		2.8		2,400	3.26	4,670	736	628	63
Oct. 21-31	333	429					222	58	622		138	487	1,080		3.0		2,540	3.45	2,280	792	680	63
Nov. 1-7	390	468		8.0	9.0	0.00	242	75	641	5.6	159	522	1,160	0.3	3.2	0.2	2,740	3.73	2,890	912	782	60
Nov. 8-10	1,233	171		8.0	5.5	.05	90	24	206	8.0	123	155	365	.4	3.2	.0	996	1.35	3,320	323	222	57
Nov. 11-14	884	162		8.0	8.5	.05	88	25	190	10	122	149	348	.4	1.2	.2	956	1.30	2,280	322	222	55
Nov. 15-20	440	333		7.9	4.0	.05	175	56	428	16	147	353	800	.4	1.2	.8	1,910	2.60	2,270	667	546	58
Nov. 21-24	440	583					284	81	860		156	639	1,500		2.8		3,440	4.68	4,090	1,040	914	64
Nov. 25-30	2,758	187					94	27	226		104	163	410		4.7		976	1.33	7,270	346	260	59
Dec. 1	1,100	183					92	28	241		115	138	445		4.7		1,010	1.37	3,000	344	250	60
Dec. 2-10	1,623	352					177	53	467		153	346	840		4.7		1,960	2.67	8,590	660	534	61
Dec. 11-20	1,117	588					306	74	880		168	683	1,510		4.1		3,540	4.81	10,700	1,070	930	64
Dec. 21-31	483	581					316	80	885		214	675	1,530		6.9		3,600	4.90	4,690	1,120	942	63

Jan. 1-10, 1945	569	567					288	88	856		226	665	1,460		6.0		3,470	4.72	5,330	1,080	896	63
Jan. 11-20	504	655					310	97	1,030		214	751	1,740		3.5		4,040	5.49	5,500	1,170	997	66
Jan. 21, 29-31	1,450	480					216	60	729		167	477	1,230		4.0		2,800	3.81	11,000	786	648	67
Jan. 22-28	2,591	302					140	40	437		135	296	740		4.0		1,720	2.34	12,000	514	404	65
Feb. 1-10	790	589					283	78	903		197	616	1,550		3.9		3,530	4.80	7,530	1,030	866	66
Feb. 11-19	695	506		7.9	11	.06	252	70	741	11	197	535	1,290	.7	2.8	.5	3,010	4.09	5,650	917	756	63
Feb. 20-22	3,843	227					123	33	301		139	207	538		12		1,280	1.74	13,300	442	328	60
Feb. 23-28	6,110	113					68	18	135		124	91	240		2.8		702	.95	11,600	244	142	55
Mar. 1-10	9,222	123					80	20	162		111	106	302		7.6		732	1.00	18,200	282	190	55
Mar. 11-14	5,320	187					110	30	268		131	172	490		5.0		1,140	1.55	16,400	398	290	59
Mar. 15-20	32,370	54.1					45	10	57		104	42	104		1.8		362	.49	31,600	154	68	44
Mar. 21-23, 30-31	15,890	115					72	19	134		120	101	242		3.8		736	1.00	31,600	258	159	53
Mar. 24-29	6,450	165					101	28	197		161	157	352		4.8		919	1.25	16,000	367	235	54
Apr. 1-3	18,090	59.2					49	11	54		125	50	91		1.8		360	.49	17,600	168	65	41
Apr. 4-6	6,500	95.9					62	18	104		143	82	179		.0		594	.81	10,400	228	112	50
Apr. 7-10	2,152	227					142	43	283		227	244	500		3.2		1,330	1.81	7,730	532	346	54
Apr. 11-14	10,940	172					107	33	205		161	198	360		3.4		986	1.34	29,100	402	270	53
Apr. 15-20	22,700	70.6					88	14	44		227	90	65		2.8		476	.65	29,100	277	91	26
Apr. 21, 23-24	6,990	89.4					92	21	132		186	140	212		8.7		768	1.04	14,500	316	164	48
Apr. 22, 25-30	6,820	209					110	28	270		155	218	440		3.7		1,150	1.56	21,200	390	262	60
May 1-10	2,002	288					177	53	372		225	346	652		5.6		1,720	2.34	9,300	660	475	55
May 11-15	7,302	150					86	26	182		137	136	325		5.3		828	1.13	16,300	322	209	55
May 16-20	2,044	240					138	40	312		195	235	552		5.9		1,380	1.88	7,620	509	349	57
May 21-31	901	326					172	61	459		202	386	785		3.8		1,970	2.68	4,790	680	514	59
June 1-5, 8	646	341					187	74	450		201	383	840		2.2		2,040	2.77	3,560	771	606	56
June 6-7, 9-10	992	210					116	45	253		158	200	485		2.8		1,180	1.60	3,160	474	345	54
June 11-12, 20	4,773	235					136	41	298		139	309	505		10		1,370	1.86	17,700	508	394	56
June 13-19	7,493	97.1					66	17	104		122	79	195		3.5		525	.71	10,600	234	134	49
June 21-29	4,834	191					135	30	230		126	288	392		4.5		1,140	1.55	14,900	460	357	52
June 30, July 1-6	3,886	236					146	32	320		147	295	540		4.4		1,410	1.92	14,800	496	376	58
July 7-10	2,648	153					100	24	185		135	170	322		10		878	1.19	6,280	348	238	54
July 11, 18-20	7,435	127					85	18	156		112	152	265		1.2		732	1.00	14,700	286	194	54
July 12-17	11,470	201					132	24	273		108	309	432		2.8		1,230	1.67	38,100	428	340	58
July 21, 27-28, 30-31	2,342	164					102	29	201		128	205	348		2.2		950	1.29	6,010	374	268	54
July 22-26, 29	1,698	261					165	35	344		156	353	572		2.0		1,550	2.11	7,110	556	428	57
Aug. 1-5, 7	1,333	135					92	24	159		157	156	269		3.2		887	1.21	2,810	328	199	51
Aug. 6, 8-10	1,020	271					158	45	372		170	337	635		3.5		1,630	2.22	4,490	580	440	58
Aug. 11-13	4,490	131					78	21	162		126	139	272		2.8		836	1.14	10,100	281	178	56
Aug. 14-20	2,571	246					179	34	308		128	422	502		3.8		1,510	2.05	10,500	586	482	53
Aug. 21-22, 30-31	974	466					254	57	635		160	597	1,060		2.2		2,680	3.64	7,050	868	738	61
Aug. 23-29	758	705					340	73	993		166	836	1,630		3.2		3,960	5.39	8,100	1,150	1,010	65
Sept. 1-10	332	427					218	67	634		170	514	1,080		1.8		2,600	3.54	2,330	820	680	63
Sept. 11-20	255	443					240	78	635		168	570	1,110		5.3		2,720	3.70	1,870	920	782	60
Sept. 21-27	1,131	428					224	77	638		156	546	1,110		.2		2,670	3.63	8,150	876	748	61
Sept. 28-29	31,250	68.7					46	14	66		94	53	130		.8		418	.57	35,300	172	96	45
Sept. 30	42,300	40.3					36	7.3	36		94	31	62		1.2		250	.34	28,600	120	43	39
Weighted average	4,193	154					97	24	194		137	169	335		3.5		891	1.21	10,100	340	228	55

RED RIVER BASIN—Continued

RED RIVER NEAR GAINESVILLE, TEX.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	7,398						3.29	1.23	6.31		1.57	2.35	6.85		0.06							
Oct. 11-13	2,103						6.84	3.04	15.66		1.69	6.54	17.26		.05							
Oct. 14-20	721						10.53	4.19	25.58		2.16	10.31	27.78		.05							
Oct. 21-31	333						11.08	4.77	27.06		2.26	10.14	30.46		.05							
Nov. 1-7	390						12.08	6.17	27.88	0.14	2.61	10.87	32.72	0.02	.05							
Nov. 8-10	1,233						4.49	1.97	8.95	.20	2.02	3.23	10.29	.02	.05							
Nov. 11-14	884						4.39	2.06	8.24	.26	2.00	3.10	9.81	.02	.02							
Nov. 15-20	440						8.73	4.61	18.61	.41	2.41	7.35	22.56	.02	.02							
Nov. 21-24	440						14.18	6.66	37.37		2.56	13.30	42.30		.05							
Nov. 25-30	2,758						4.69	2.22	9.82		1.70	3.39	11.56		.08							
Dec. 1	1,100						4.59	2.30	10.49		1.88	2.87	12.55		.08							
Dec. 2-10	1,623						8.83	4.36	20.29		2.51	7.20	23.69		.08							
Dec. 11-20	1,117						15.27	6.09	38.27		2.75	14.22	42.59		.07							
Dec. 21-31	483						15.77	6.58	38.47		3.51	14.05	43.15		.11							
Jan. 1-10, 1945	569						14.37	7.24	37.21		3.70	13.84	41.18		.10							
Jan. 11-20	504						15.47	7.98	44.83		3.51	15.64	49.07		.06							
Jan. 21, 29-31	1,450						10.78	4.93	31.71		2.74	9.93	34.69		.06							
Jan. 22-28	2,591						6.99	3.29	19.02		2.21	6.16	20.87		.06							
Feb. 1-10	790						14.13	6.41	39.28		3.23	12.82	43.71		.06							
Feb. 11-19	695						12.58	5.76	32.22	.28	3.23	11.14	36.38	.04	.05							
Feb. 20-22	3,843						6.14	2.71	13.10		2.28	4.31	15.17		.19							
Feb. 23-28	6,110						3.39	1.48	5.87		2.03	1.89	6.77		.05							
Mar. 1-10	9,222						3.99	1.64	7.04		1.82	2.21	8.52		.12							
Mar. 11-14	5,320						5.49	2.47	11.67		2.15	3.58	13.82		.08							
Mar. 15-20	32,370						2.25	.82	2.46		1.70	.87	2.93		.03							
Mar. 21-23, 30-31	15,890						3.59	1.56	5.81		1.97	2.10	6.83		.06							
Mar. 24-29	6,450						5.04	2.30	8.58		2.64	3.27	9.93		.08							

Apr. 1-3	18,090	......	......	......	......	......	2.45	.90	2.34	2.05	1.04	2.57	......	.03	......	......	......	......	......	......	......
Apr. 4-6	6,500	......	......	......	......	......	3.09	1.48	4.53	2.34	1.71	5.05	......	.00	......	......	......	......	......	......	......
Apr. 7-10	2,152	......	......	......	......	......	7.09	3.54	12.32	3.72	5.08	14.10	......	.05	......	......	......	......	......	......	......
Apr. 11-14	10,940	......	......	......	......	......	5.34	2.71	8.91	2.64	4.12	10.15	......	.05	......	......	......	......	......	......	......
Apr. 15-20	22,700	......	......	......	......	......	4.39	1.15	1.93	3.72	1.87	1.83	......	.05	......	......	......	......	......	......	......
Apr. 21, 23-24	6,990	......	......	......	......	......	4.59	1.73	5.76	3.05	2.91	5.98	......	.14	......	......	......	......	......	......	......
Apr. 22, 25-30	6,820	......	......	......	......	......	5.49	2.30	11.76	2.54	4.54	12.41	......	.06	......	......	......	......	......	......	......
May 1-10	2,002	......	......	......	......	......	8.83	4.36	16.18	3.69	7.20	18.39	......	.09	......	......	......	......	......	......	......
May 11-15	7,302	......	......	......	......	......	4.29	2.14	7.91	2.25	2.83	9.17	......	.09	......	......	......	......	......	......	......
May 16-20	2,044	......	......	......	......	......	6.89	3.29	13.58	3.20	4.89	15.57	......	.10	......	......	......	......	......	......	......
May 21-31	901	......	......	......	......	......	8.58	5.02	19.95	3.31	8.04	22.14	......	.06	......	......	......	......	......	......	......
June 1-5, 8	646	......	......	......	......	......	9.33	6.09	19.57	3.29	7.97	23.69	......	.04	......	......	......	......	......	......	......
June 6-7, 9-10	992	......	......	......	......	......	5.79	3.70	10.99	2.59	4.16	13.68	......	.05	......	......	......	......	......	......	......
June 11-12, 20	4,773	......	......	......	......	......	6.79	3.37	12.95	2.28	6.43	14.24	......	.16	......	......	......	......	......	......	......
June 13-19	7,493	......	......	......	......	......	3.29	1.40	4.51	2.00	1.64	5.50	......	.06	......	......	......	......	......	......	......
June 21-29	4,834	......	......	......	......	......	6.74	2.47	9.99	2.07	6.00	11.06	......	.07	......	......	......	......	......	......	......
June 30, July 1-6	3,886	......	......	......	......	......	7.29	2.63	13.93	2.41	6.14	15.23	......	.07	......	......	......	......	......	......	......
July 7-10	2,648	......	......	......	......	......	4.99	1.97	8.03	2.21	3.54	9.08	......	.16	......	......	......	......	......	......	......
July 11, 18-20	7,435	......	......	......	......	......	4.24	1.48	6.77	1.84	3.16	7.47	......	.02	......	......	......	......	......	......	......
July 12-17	11,470	......	......	......	......	......	6.59	1.97	11.87	1.77	6.43	12.18	......	.05	......	......	......	......	......	......	......
July 21, 27-28, 30-31	2,342	......	......	......	......	......	5.09	2.38	8.75	2.10	4.27	9.81	......	.04	......	......	......	......	......	......	......
July 22-26, 29	1,698	......	......	......	......	......	8.24	2.88	14.95	2.56	7.35	16.13	......	.03	......	......	......	......	......	......	......
Aug. 1-5, 7	1,333	......	......	......	......	......	4.59	1.97	6.91	2.58	3.25	7.59	......	.05	......	......	......	......	......	......	......
Aug. 6, 8-10	1,020	......	......	......	......	......	7.89	3.70	16.18	2.78	7.02	17.91	......	.06	......	......	......	......	......	......	......
Aug. 11-13	4,490	......	......	......	......	......	3.89	1.73	7.06	2.07	2.89	7.67	......	.05	......	......	......	......	......	......	......
Aug. 14-20	2,571	......	......	......	......	......	8.93	2.80	13.38	2.10	8.79	14.16	......	.06	......	......	......	......	......	......	......
Aug. 21-22, 30-31	974	......	......	......	......	......	12.68	4.69	27.62	2.62	12.43	29.90	......	.04	......	......	......	......	......	......	......
Aug. 23-29	758	......	......	......	......	......	16.97	6.00	43.19	2.73	17.41	45.97	......	.05	......	......	......	......	......	......	......
Sept. 1-10	332	......	......	......	......	......	10.88	5.51	27.58	2.78	10.70	30.46	......	.03	......	......	......	......	......	......	......
Sept. 11-20	255	......	......	......	......	......	11.98	6.41	27.63	2.75	11.87	31.31	......	.09	......	......	......	......	......	......	......
Sept. 21-27	1,131	......	......	......	......	......	11.18	6.33	27.73	2.56	11.37	31.31	......	.00	......	......	......	......	......	......	......
Sept. 28-29	31,250	......	......	......	......	......	2.30	1.15	2.87	1.54	1.10	3.67	......	.01	......	......	......	......	......	......	......
Sept. 30	42,300	......	......	......	......	......	1.80	.60	1.56	1.54	.64	1.75	......	.02	......	......	......	......	......	......	......
Weighted average	4,193	......	......	......	......	......	4.84	1.97	8.43	2.25	3.52	9.45	......	0.06	......	......	......	......	......	......	......

RED RIVER BASIN—Continued

RED RIVER AT DENISON DAM NEAR DENISON, TEX.

LOCATION.—Immediately below dam on Red River, 1.7 miles upstream from Sand Creek and 5 miles north of Denison. Discharge records reported are for gaging station at old highway toll bridge 1.3 miles downstream from Sand Creek and 2 miles south of Colbert. No appreciable inflow between dam and gaging station except during periods of heavy local rains.

DRAINAGE AREA.—38,290 square miles above dam. 38,330 square miles above gaging station.

RECORDS AVAILABLE.—Chemical analyses: May 1944 to September 1945.
Water temperatures: May 1944 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 1,300 parts per million Jan. 1–10; minimum, 489 parts per million July 1–10.
Total hardness: Maximum, 488 parts per million Jan. 21–31; minimum, 233 parts per million May 21–31.

EXTREMES, MAY 1944–SEPTEMBER 1945.—Dissolved solids: Maximum, 1,430 parts per million Aug. 11–20, 1944, and Sept. 1–10, 1944; minimum, 489 parts per million July 1–10, 1945.
Total hardness: Maximum, 522 parts per million Aug. 11–20, 1944, and Sept. 1–10, 1944; minimum, 233 parts per million May 21–31, 1945.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1037.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^6 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–10, 1944	208	167		7.9			110	31	190		163	219	320		3.0		953	1.30	535	402	268	45
Oct. 11–20	171	162		8.2			108	30	187		163	216	312		2.0		935	1.27	432	393	260	51
Oct. 21–31	70.9	161		8.0			110	30	192		165	219	320		1.8		954	1.30	183	398	263	51
Nov. 1–10	221	166		8.2	3.5	0.10	114	28	189	11	166	225	320	0.4	1.8	0.2	975	1.33	582	400	264	50
Nov. 11–20	61.4	170		8.2			112	31	187		153	231	315		3.0		954	1.30	158	407	282	50
Nov. 21–30	94.7	168		8.1			110	33	195		156	230	328		3.8		977	1.33	250	410	282	51
Dec. 1–10	318	169		8.1			114	30	198		160	234	328		3.2		986	1.34	847	408	277	51
Dec. 11–20	340	172		8.2			106	29	210		154	235	332		2.0		990	1.35	909	384	258	54
Dec. 21–31	1,128	187		8.2			117	34	229		168	284	352		1.5		1,100	1.50	3,350	432	294	54
Jan. 1–10, 1945	149	220		8.0			127	34	296		172	290	465		2.0		1,300	1.77	523	457	316	58
Jan. 11–20	294	187		7.9			116	31	233		162	250	375		1.5		1,090	1.48	865	417	284	55
Jan. 21–31	361	183		8.2			138	35	201		164	244	378		3.9		1,080	1.47	1,050	488	354	47

Feb. 1-10	486	177		8.2	5.5	.07	110	30	209	9.6	147	237	352	.4	.8	.2	1,030	1.40	1,350	398	278	53
Feb. 11-19	627	173		8.3	3.0	.07	116	28	205	11	169	233	340	.6	3.0	.3	1,020	1.39	1,730	404	266	52
Feb. 20-28	943	169		8.2			113	30	197		165	225	328		3.2		978	1.33	2,490	406	270	51
Mar. 1-10	1,022	166		8.2			112	29	197		164	223	325		3.2		970	1.32	2,680	398	264	52
Mar. 11-20	9,669	162		8.2			120	30	176		154	214	322		3.2		941	1.28	24,600	423	296	48
Mar. 21-31	14,570	145		8.0			103	27	171		158	194	288		3.2		864	1.18	34,000	368	238	50
Apr. 1-10	10,060	136		7.9			92	27	148		150	171	255		1.2		768	1.04	20,900	340	218	49
Apr. 11-20	17,460	124		8.0			87	24	133		143	156	230		1.0		701	.95	33,000	316	198	48
Apr. 21-30	33,680	109		7.9			77	22	112		129	134	198		2.8		609	.83	55,400	282	177	46
May 1-10	42,080	100		8.2			70	18	108		130	115	181		1.2		557	.76	63,300	248	142	48
May 11-20	8,143	99.4		8.0			68	17	109		125	112	182		1.2		551	.75	12,100	240	137	50
May 21-31	11,680	94.1		8.2			67	16	99		127	106	164		2.2		517	.70	16,300	233	129	48
June 1-10	2,805	90.8		8.1			72	21	80		130	105	158		2.2		502	.68	3,800	266	160	40
June 11-20	5,160	89.6		8.0			70	17	90		131	104	158		2.0		506	.69	7,050	244	137	44
June 21-30	15,800	86.6		8.0			70	19	84		140	103	150		1.5		496	.67	21,200	252	138	42
July 1-10	25,880	85.2		8.0			68	19	84		149	98	146		.8		489	.67	34,200	248	126	43
July 11-20	24,080	90.0		8.0			69	19	93		145	102	160		1.2		516	.70	33,500	250	131	45
July 21-31	10,500	94.7		8.0			70	18	101		143	105	170		1.0		535	.73	15,200	248	132	47
Aug. 1-10	5,177	99.4		7.7			75	19	105		147	114	180		1.2		567	.77	7,930	265	144	46
Aug. 11-20	5,051	97.1		8.0			71	19	107		137	116	180		1.2		562	.76	7,660	255	143	48
Aug. 21-31	4,441	99.7		8.0			73	20	108		139	119	184		1.0		574	.78	6,880	264	150	47
Sept. 1-10	2,190	99.7		8.0			72	20	109		144	121	180		.8		574	.78	3,390	262	144	48
Sept. 11-20	2,640	92.5		7.8			69	17	92		132	109	152		8.6		513	.70	3,660	242	134	45
Sept. 21-30	3,340	96.2		8.1			73	18	98		145	113	164		1.0		538	.73	4,850	256	137	45
Weighted average	7,261	107					78	21	114		140	129	195		1.7		607	0.83	11,900	281	166	47

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	208						5.49	2.55	7.28		2.68	4.56	9.03		0.05							
Oct. 11-20	171						5.39	2.47	8.14		2.67	4.50	8.80		.03							
Oct. 21-31	70.9						5.49	2.47	8.36		2.70	4.56	9.03		.03							
Nov. 1-10	221						5.69	2.30	8.21	0.28	2.72	4.68	9.03	0.02	.03							
Nov. 11-20	61.4						5.59	2.55	8.11		2.51	4.81	8.88		.05							
Nov. 21-30	94.7						5.49	2.71	8.46		2.56	4.79	9.25		.06							
Dec. 1-10	318						5.69	2.47	8.63		2.62	4.87	9.25		.05							
Dec. 11-20	340						5.29	2.38	9.13		2.52	4.89	9.36		.03							
Dec. 21-31	1,128						5.84	2.80	9.97		2.75	5.91	9.93		.02							
Jan. 1-10, 1945	149						6.34	2.80	12.86		2.82	6.04	13.11		.03							
Jan. 11-20	294						5.79	2.55	10.12		2.46	5.20	10.58		.02							
Jan. 21-31	361						6.89	2.88	8.72		2.69	5.08	10.66		.06							

RED RIVER BASIN—Continued

RED RIVER AT DENISON DAM NEAR DENISON, TEX.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10[5] at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Feb. 1-10	486						5.49	2.47	9.09	0.25	2.41	4.93	9.93	0.02	0.01							
Feb. 11-19	627						5.79	2.30	8.92	.28	2.77	4.85	9.59	.03	.05							
Feb. 20-28	943						5.64	2.47	8.57		2.70	4.68	9.25		.05							
Mar. 1-10	1,022						5.59	2.38	8.58		2.69	4.64	9.17		.05							
Mar. 11-20	9,669						5.99	2.47	7.66		2.53	4.46	9.08		.05							
Mar. 21-31	14,570						5.14	2.22	7.44		2.59	4.04	8.12		.05							
Apr. 1-10	10,060						4.59	2.22	6.42		2.46	3.56	7.19		.02							
Apr. 11-20	17,460						4.34	1.97	5.79		2.34	3.25	6.49		.02							
Apr. 21-30	33,680						3.84	1.81	4.88		2.11	2.79	5.58		.05							
May 1-10	42,080						3.49	1.48	4.68		2.14	2.39	5.10		.02							
May 11-20	8,143						3.39	1.40	4.74		2.05	2.33	5.13		.02							
May 21-31	11,680						3.34	1.32	4.30		2.08	2.21	4.63		.04							
June 1-10	2,805						3.59	1.73	3.50		2.13	2.19	4.46		.04							
June 11-20	5,160						3.49	1.40	3.92		2.15	2.17	4.46		.03							
June 21-30	15,800						3.49	1.56	3.64		2.30	2.14	4.23		.02							
July 1-10	25,880						3.39	1.56	3.66		2.44	2.04	4.12		.01							
July 11-20	24,080						3.44	1.56	4.03		2.38	2.12	4.51		.02							
July 21-31	10,500						3.49	1.48	4.37		2.34	2.19	4.79		.02							
Aug. 1-10	5,177						3.74	1.56	4.58		2.41	2.37	5.08		.02							
Aug. 11-20	5,051						3.54	1.56	4.66		2.24	2.42	5.08		.02							
Aug. 21-31	4,441						3.64	1.64	4.69		2.28	2.48	5.19		.02							
Sept. 1-10	2,190						3.59	1.64	4.74		2.36	2.52	5.08		.01							
Sept. 11-20	2,640						3.44	1.40	4.02		2.16	2.27	4.29		.14							
Sept. 21-30	3,340						3.64	1.48	4.26		2.38	2.35	4.63		.02							
Weighted average	7,261						3.89	1.73	4.96		2.29	2.69	5.50		0.03							

Temperature (° F.) of water of Red River, water year October 1944 to September 1945

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

RED RIVER BASIN—Continued

WASHITA RIVER NEAR DURWOOD, OLKA.

LOCATION.—At gaging station at Mulkey Bridge on State Highway 18, 1½ miles downstream from Caddo Creek and 4 miles north of Durwood.

DRAINAGE AREA.—7,310 square miles.

RECORDS AVAILABLE.—Chemical analyses: May 1944 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 804 parts per million Feb. 1–10; minimum, 159 parts per million July 11–12.
Total hardness: Maximum, 512 parts per million Feb. 1–10; minimum, 120 parts per million July 11–12.

EXTREMES, MAY 1944–SEPTEMBER 1945.—Dissolved solids: Maximum, 936 parts per million July 21–25, 30–31, 1944; minimum, 159 parts per million July 11–12, 1945.
Total hardness: Maximum, 568 parts per million July 21–25, 30–31, 1944; minimum, 120 parts per million July 11–12, 1945.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1037.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10^5 at 25° C.)	Temperature (° F)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–10, 1944	2,002	50.9					58	19	22		154	104	24		3.2		340	0.46	1,840	222	96	18
Oct. 11–20	546	51.4					56	17	22		156	91	23		2.8		328	.45	484	210	82	18
Oct. 21–31	236	76.4					85	31	33		218	166	42		1.8		516	.70	329	340	161	18
Nov. 1–10	388	89.7		8.2	12	0.10	99	37	39	8.2	224	214	62	0.2	.8	0.2	615	.84	644	399	216	17
Nov. 11–12, 16–17	413	72.8		8.1	11	.15	84	28	29	6.7	203	155	45	.4	2.8	.0	509	.69	568	324	158	16
Nov. 13–15, 18–20	320	108		7.9	14	.10	117	41	56	8.5	328	197	84	.0	1.8	.0	737	1.00	637	460	192	21
Nov. 21–24	322	95.9					88	39	63		392	65	89		4.2		580	.79	504	380	58	27
Nov. 25–30	1,131	56.4					62	18	25		167	94	33		1.8		346	.47	1,060	228	92	19
Dec. 1–5	547	89.3					87	30	40		212	173	51		2.8		514	.70	759	340	167	20
Dec. 6–10	1,914	48.9					56	16	20		166	73	24		3.8		275	.37	1,420	206	70	17
Dec. 11–20	600	79.7					100	28	32		218	184	43		3.5		540	.73	875	364	186	16
Dec. 21–31	427	98.2					102	40	55		230	245	64		5.0		624	.85	719	419	230	22
Jan. 1–10, 1945	403	120					110	46	70		248	275	88		3.0		771	1.05	839	464	260	25
Jan. 11–20	485	114					104	47	68		244	286	72		1.0		748	1.02	980	453	253	24
Jan. 21–31	664	110					127	40	60		286	253	80		1.5		758	1.03	1,360	482	247	21
Feb. 1–10	491	118					134	43	61		286	281	81		3.0		804	1.09	1,070	512	277	21
Feb. 11–19	491	108		8.2	14	.08	122	46	51	9.4	246	295	74	.6	2.8	.2	780	1.06	1,030	494	292	18
Feb. 20–28	2,900	54.4					67	18	25		191	80	37		3.0		347	.47	2,720	241	84	18

Mar. 1-10	5,629	41.2	------	------	------	------	55	15	17	154	62	30	------	3.0	------	287	.39	4,360	199	73	16
Mar. 11-14, 18	8,306	43.2	------	------	------	------	58	16	17	169	64	28	------	2.8	------	291	.40	6,530	211	72	15
Mar. 15-17, 19-20	29,280	23.1	------	------	------	------	39	9.3	5.1	128	25	10	------	2.2	------	168	.23	13,300	136	31	8
Mar. 21-31	4,244	70.8	------	------	------	------	90	26	27	237	126	44	------	3.5	------	524	.71	6,000	332	138	15
Apr. 1-10	2,754	76.4	------	------	------	------	96	28	32	267	130	47	------	2.2	------	522	.71	3,880	354	136	16
Apr. 11-13	3,910	65.8	------	------	------	------	73	27	28	223	98	47	------	3.2	------	426	.58	4,500	293	110	17
Apr. 14-20	10,700	39.5	------	------	------	------	52	13	15	145	69	16	------	3.2	------	262	.36	7,570	183	64	15
Apr. 21-25	12,870	40.1	------	------	------	------	52	13	13	130	77	15	------	3.2	------	263	.36	9,140	183	77	13
Apr. 26-30	4,364	72.1	------	------	------	------	96	27	25	243	147	35	------	3.2	------	516	.70	6,080	350	150	13
May 1-10	1,868	91.3	------	------	------	------	100	42	38	236	223	54	------	3.2	------	576	.78	2,910	422	228	16
May 11-20	2,149	82.5	------	------	------	------	88	37	40	185	195	50	------	3.5	------	522	.71	3,030	372	190	19
May 21-31	943	106	------	------	------	------	109	52	53	271	273	66	------	1.8	------	688	.94	1,750	486	264	19
June 1-4	985	109	------	------	------	------	112	54	51	269	280	70	------	1.2	------	701	1.06	2,070	502	281	18
June 5-7	3,080	59.3	------	------	------	------	56	22	35	174	86	52	------	1.8	------	396	.54	3,290	230	88	25
June 8-10	16,950	28.5	------	------	------	------	37	11	6.9	128	29	11	------	2.5	------	206	.28	9,430	138	33	10
June 11-20	17,610	33.0	------	------	------	------	42	11	13	134	44	14	------	3.8	------	194	.26	9,220	150	40	16
June 21-26	5,632	56.3	------	------	------	------	68	20	23	194	99	26	------	3.5	------	335	.46	5,090	252	92	17
June 27-30	2,265	83.1	------	------	------	------	102	34	34	286	168	40	------	3.5	------	522	.71	3,190	394	160	16
July 1-7, 9	1,989	80.4	------	------	------	------	90	36	38	260	164	48	------	4.8	------	509	.69	2,730	372	159	18
July 8, 10	5,800	51.0	------	------	------	------	59	19	22	174	93	22	------	3.2	------	304	.41	4,760	225	82	18
July 11-12	20,200	27.3	------	------	------	------	40	5.0	12	118	29	13	------	1.8	------	159	.22	8,670	120	24	18
July 13-20	4,962	50.1	------	------	------	------	62	16	23	160	102	21	------	3.8	------	307	.42	4,110	220	90	18
July 21-27	2,253	79.3	------	------	------	------	94	27	46	250	182	34	------	3.1	------	509	.69	3,100	346	140	22
July 28-31	5,712	41.4	------	------	------	------	48	13	23	160	56	23	------	1.2	------	243	.33	3,750	173	42	22
Aug. 1-6	1,487	71.8	------	------	------	------	97	28	23	240	151	36	------	3.8	------	528	.72	2,120	357	160	12
Aug. 7-10	5,528	37.4	------	------	------	------	47	13	22	165	46	24	------	1.2	------	247	.34	3,690	171	35	22
Aug. 11-17	3,007	45.4	------	------	------	------	52	16	29	191	58	28	------	1.8	------	289	.39	2,350	196	40	24
Aug. 18-20	1,760	75.4	------	------	------	------	90	31	41	266	153	44	------	1.5	------	563	.77	2,680	352	134	20
Aug. 21-31	928	85.2	------	------	------	------	104	36	46	274	208	44	------	5.6	------	632	.86	1,580	408	182	20
Sept. 1-10	469	90.1	------	------	------	------	86	46	47	274	193	56	------	1.2	------	636	.86	805	404	178	20
Sept. 11-20	350	99.3	------	------	------	------	86	54	52	305	197	66	------	.5	------	655	.89	619	436	186	20
Sept. 21-25	354	97.1	------	------	------	------	71	59	53	259	210	70	------	6.5	------	648	.88	619	420	208	21
Sept. 26-30	23,630	27.6	------	------	------	------	37	9.6	5.5	122	23	13	------	1.8	------	170	.23	10,800	132	32	8
Weighted average	3,520	46.7	------	------	------	------	58	17	19	167	80	25	------	2.8	------	329	0.39	2,710	214	78	16

RED RIVER BASIN—Continued

WASHITA RIVER NEAR DURWOOD, OKLA.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	2,002						2.89	1.56	0.97		2.52	2.17	0.68		0.05							
Oct. 11-20	546						2.80	1.40	.95		2.56	1.89	.65		.05							
Oct. 21-31	236						4.24	2.55	1.45		3.57	3.46	1.18		.03							
Nov. 1-10	388						4.94	3.04	1.71	0.21	3.67	4.46	1.75	0.01	.01							
Nov. 11-12, 16-17	413						4.19	2.30	1.24	.17	3.33	3.23	1.27	.02	.05							
Nov. 13-15, 18-20	320						5.84	3.37	2.45	.22	5.38	4.10	2.37	.00	.03							
Nov. 21-24	322						4.39	3.21	2.76		6.43	1.35	2.51		.07							
Nov. 25-30	1,131						3.09	1.48	1.09		2.74	1.96	.93		.03							
Dec. 1-5	547						4.34	2.47	1.75		3.47	3.60	1.44		.05							
Dec. 6-10	1,914						2.80	1.32	.87		2.72	1.52	.68		.06							
Dec. 11-20	600						4.99	2.30	1.38		3.57	3.83	1.21		.06							
Dec. 21-31	427						5.09	3.29	2.38		3.77	5.10	1.81		.08							
Jan. 1-10, 1945	403						5.49	3.78	3.06		4.07	5.73	2.48		.05							
Jan. 11-20	485						5.19	3.87	2.94		4.00	5.95	2.03		.02							
Jan. 21-31	664						6.34	3.29	2.61		4.69	5.27	2.26		.02							
Feb. 1-10	491						6.69	3.54	2.64		4.69	5.85	2.28		.05							
Feb. 11-19	491						6.09	3.78	2.23	.24	4.03	6.14	2.09	.03	.05							
Feb. 20-28	2,900						3.34	1.48	1.07		3.13	1.67	1.04		.05							
Mar. 1-10	5,629						2.74	1.23	.73		2.52	1.29	.85		.05							
Mar. 11-14, 18	8,306						2.90	1.32	.73		2.77	1.33	.79		.04							
Mar. 15-17, 19-20	29,280						1.95	.76	.22		2.10	.52	.28		.04							
Mar. 21-31	4,244						4.49	2.14	1.17		3.88	2.62	1.24		.06							
Apr. 1-10	2,754						4.79	2.30	1.37		4.38	2.71	1.33		.04							
Apr. 11-13	3,910						3.64	2.22	1.22		3.66	2.04	1.33		.05							
Apr. 14-20	10,700						2.60	1.07	.65		2.38	1.44	.45		.05							
Apr. 21-25	12,870						2.60	1.07	.54		2.13	1.60	.42		.05							
Apr. 26-30	4,364						4.79	2.22	1.09		4.00	3.06	.99		.05							
May 1-10	1,868						4.99	3.45	1.65		3.88	4.64	1.52		.05							
May 11-20	2,149						4.39	3.04	1.73		3.63	4.06	1.41		.06							
May 21-31	943						5.44	4.28	2.30		4.45	5.68	1.86		.03							

June 1-4	985						5.59	4.44	2.20	4.41	5.83	1.97		.02							
June 5-7	3,080						2.80	1.81	1.53	2.85	1.79	1.47		.03							
June 8-10	16,950						1.85	.90	.30	2.10	.60	.31		.04							
June 11-20	17,610						2.10	.90	.57	2.20	.92	.40		.06							
June 21-26	5,632						3.39	1.64	1.00	3.18	2.06	.73		.06							
June 27-30	2,265						5.09	2.80	1.49	4.69	3.50	1.13		.06							
July 1-7, 9	1,989						4.49	2.96	1.66	4.27	3.41	1.35		.08							
July 8, 10	5,800						2.94	1.56	.96	2.85	1.94	.62		.05							
July 11-12	20,200						2.00	.41	.53	1.93	.60	.37		.03							
July 13-20	4,962						3.09	1.32	.98	2.62	2.12	.59		.06							
July 21-27	2,253						4.69	2.22	1.99	4.10	3.79	.96		.05							
July 28-31	5,712						2.40	1.07	.99	2.62	1.17	.65		.02							
Aug. 1-6	1,487						4.84	2.30	1.02	3.94	3.14	1.02		.06							
Aug. 7-10	5,528						2.35	1.07	.95	2.71	.96	.68		.02							
Aug. 11-17	3,007						2.60	1.32	1.24	3.13	1.21	.79		.03							
Aug. 18-20	1,760						4.49	2.55	1.78	4.37	3.19	1.24		.02							
Aug. 21-31	928						5.19	2.96	2.01	4.50	4.33	1.24		.09							
Sept. 1-10	469						4.29	3.78	2.05	4.50	4.02	1.58		.02							
Sept. 11-20	350						4.29	4.44	2.25	5.01	4.10	1.86		.01							
Sept. 21-25	354						3.54	4.85	2.29	4.24	4.37	1.97		.10							
Sept. 26-30	23,630						1.85	.79	.24	2.00	.48	.37		.03							
Weighted average	3,520						2.89	1.40	0.83	2.74	1.67	0.71		0.05							

RED RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN RED RIVER BASIN IN OKLAHOMA

Chemical analyses, in parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Red River near Grant at Arthur City, Tex.												
Sept. 13, 1944		144	7.5	92	34	159	270	135	251	0.0	893	370
Dec. 20	492	110	8.1	85	20	105	200	116	167	1.2	609	294
Elm Fork of North Fork Red River near Mangum												
Sept. 29, 1944		473	7.2	431	85	471	89	912	1,010	2.0	2,960	1,420
North Fork Red River near Headrick												
Sept. 6, 1944	104	492	7.4	207	44	822	113	528	1,280	3.0	2,940	698
Elk Creek near Hobart												
Aug. 9, 1944		168	8.2	206	88	150	405	552	205	7.5	1,410	876
Oct. 18		199	7.5	262	90	106	376	745	120	4.0	1,520	1,020
Nov. 24		159	7.6	201	85	115	463	552	102	3.5	1,320	851
Cache Creek near Walters												
Aug. 18, 1944		58.8	7.4	48	9.2	58	198	35	54	10	343	158
Sept. 8	24	63.3	7.2	50	11	70	249	27	58	10	355	170
Nov. 23	17	65.8	7.0	52	16	70	248	34	69	15	402	196
Dec. 5	60	36.3	7.0	34	7.8	38	163	17	33	3.5	221	117

Beaver Creek near Waurika												
Aug. 10, 1944		43.8	7.6	48	15	23	184	44	23	2.5	268	182
Nov. 23		130	7.6	131	49	123	338	229	198	2.0	928	528
Mud Creek near Grady												
Aug. 10, 1944	0.4	27.7	7.4	25	12	13	124	14	16	1.2	175	112
Nov. 23		29.1	7.0	28	14	15	153	18	11	1.5	192	128
Washita River near Cheyenne												
Oct. 3, 1944		99.7	7.4	100	30	81	233	282	46	0.0	678	374
Washita River near Clinton												
Sept. 26, 1944	8	161	7.6	226	99	44	240	807	21	0.5	1,320	971
Dec. 6	161	148	7.4	182	69	61	248	590	36	3.5	1,080	738
Washita River at Carnegie												
Aug. 16, 1944	70	173	7.5	212	54	116	316	533	134	1.5	1,220	750
Oct. 3	690	44.2	7.2				122	119	16	2.0	319	
Nov. 24	60	185	7.6	244	66	86	360	602	102	4.0	1,300	880
Washita River near Tabler												
Oct. 4, 1944	2,850	46.4	7.0	87	17	35	249	139	10	1.0	416	287
Nov. 2	62	139	7.3	165	49	73	248	414	97	2.0	933	614
Nov. 22	324	121	7.5	186	44	51	326	405	46	2.0	910	645
Washita River near Pauls Valley												
Dec. 2, 1944	236	122	7.6	163	50	51	359	331	58	3.0	907	612

RED RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN RED RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Saddle Mountain Creek near Carnegie												
Dec. 8, 1944	5	66.4	7.6	74	23	39	300	34	54	8.0	389	279
Pond Creek near Fort Cobb												
Aug. 15, 1944	5	77.5	8.0	104	23	66	270	190	24	3.5	560	354
Oct. 3	61	44.1	7.1	59	12	22	193	63	12	4.0	284	196
Nov. 24	40	70.3	7.6	108	23	34	340	123	20	3.5	499	364
Little Washita River near Chikaskia												
Nov. 21, 1944	10	225	7.5	327	43	201	291	672	347	4.0	1,750	993
Rush Creek at Purdy												
Nov. 2, 1944	6	128	7.5	98	68	93	326	168	200	1.5	838	524
Dec. 7	19	214	7.6	126	55	237	322	140	456	2.5	1,180	540
Wildhorse Creek near Hoover												
Sept. 29, 1944	290	26.8	7.0	34	13	5.3	126	22	16	1.0	170	138
Dec. 2	----------	43.8	7.4	53	18	10	202	33	20	1.0	256	206

Caddo Creek near Ardmore												
Sept. 11, 1944		113	7.2	59	20	134	117	32	276	2.5	604	229
Dec. 2	8	54.7	7.6	72	12	32	239	29	50	1.0	325	229
Pennington Creek near Tishomingo												
Aug. 31, 1944		72.7	7.5	22	9.6	46	204	9.3	12	1.5	214	94
Blue River near Blue												
Sept. 16, 1944		46.9	7.6	46	33	15	320	6.4	9.0	1.0	275	250
Dec. 20	62	51.5	8.3	58	24	3.1	281	11	5.0	1.8	250	243
Muddy Boggy River near Farris												
Sept. 13, 1944	11	21.2	6.8	16	7.9	18	76	22	18	1.0	149	72
Dec. 21	19	14.4	7.7	9.8	6.6	5.2	31	15	15	.8	163	52
Clear Boggy Creek near Caney												
Sept. 13, 1944	17	84.7	7.5	52	20	87	176	14	171	1.0	520	212
Dec. 22	56	101	7.8	96	23	74	301	32	152	.8	533	334
Kiamichi River near Belzoni												
Sept. 14, 1944	25	6.1	6.6	3.2	3.4	8.7	32	6.0	6.0	0.5	50	22
Dec. 21	274	5.8	5.8	3.5	3.2	2.5	14	7.8	5.0	.8	66	22
Little River near Idabel												
Aug. 29, 1944		22.5	6.6	14	3.8	34	49	24	42	0.0	143	50
Sept. 27		12.3	6.5	8.7	3.8	18	51	5.9	20	.0	90	37
Oct. 14		17.8	6.6	11	3.4	20	42	4.1	32	1.5	102	42
Oct. 26		20.2	6.6	12	3.7	23	46	5.2	37	.5	112	45
Nov. 14	440	5.7	6.0	7.0	4.0	3.4	24	6.3	10	2.0	66	34
Dec. 27	4,740	5.3	6.0	3.2	1.9	15	11	4.1	25	.5	56	16

RED RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN RED RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Mountain Fork River near Eagletown												
Aug. 29, 1944	----	7.3	6.6	5.5	1.4	13	32	8.7	8.7	0.0	67	19
Oct. 26	0.3	9.0	6.4	6.3	2.7	9.7	19	2.7	20	1.0	59	26
Dec. 27	3,980	3.6	8.1	3.4	1.8	.3	11	4.0	2.0	.8	44	16

Chemical analyses, in equivalents per million

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Red River near Grant at Arthur City, Tex.												
Sept. 13, 1944	----	----	----	4.59	2.80	6.91	4.41	2.81	7.08	0.00	----	----
Dec. 20	492	----	----	4.24	1.64	4.55	3.28	2.42	4.71	.02	----	----
Elm Fork of North Fork Red River near Mangum												
Sept. 29, 1944	----	----	----	21.51	6.99	20.46	1.46	18.99	28.48	0.03	----	----
North Fork Red River near Headrick												
Sept. 6, 1944	104	----	----	10.33	3.62	35.74	1.85	10.99	36.10	0.05	----	----
Elk Creek near Hobart												
Aug. 9, 1944	----	----	----	10.28	7.24	6.51	6.64	11.49	5.78	0.12	----	----
Oct. 18	----	----	----	13.08	7.40	4.63	6.16	15.51	3.38	.06	----	----
Nov. 24	----	----	----	10.03	6.99	5.02	7.61	11.49	2.88	.06	----	----

Cache Creek near Walters												
Aug. 18, 1944				2.40	0.76	2.50	3.25	0.73	1.52	0.16		
Sept. 8	24			2.50	.90	3.04	4.08	.56	1.64	.16		
Nov. 23	17			2.60	1.32	3.04	4.06	.71	1.95	.24		
Dec. 5	60			1.70	.64	1.67	2.67	.35	.93	.06		
Beaver Creek near Waurika												
Aug. 10, 1944				2.39	1.23	0.99	3.01	0.90	0.64	0.04		
Nov. 23				6.54	4.03	5.35	5.54	4.77	5.58	.03		
Mud Creek near Grady												
Aug. 10, 1944	0.4			1.24	0.98	0.55	2.03	0.29	0.45	0.01		
Nov. 23				1.40	1.15	.66	2.51	.37	.31	.02		
Washita River near Cheyenne												
Oct. 3, 1944				5.00	2.47	3.52	3.82	5.87	1.30	0.00		
Washita River near Clinton												
Sept. 26, 1944	8			11.28	8.14	1.93	3.94	16.81	0.59	0.01		
Dec. 6	161			9.08	5.67	2.67	4.06	12.28	1.02	.06		
Washita River at Carnegie												
Aug. 16, 1944	70			10.58	4.44	5.05	5.18	11.09	3.78	0.02		
Oct. 3	690						2.00	2.48	.45	.03		
Nov. 24	60			12.18	5.43	3.76	5.90	12.53	2.88	.06		
Washita River near Tabler												
Oct. 4, 1944	2,850			4.34	1.40	1.53	4.08	2.89	0.28	0.02		
Nov. 2	62			8.24	4.03	3.18	4.06	8.62	2.74	.03		
Nov. 22	324			9.28	3.62	2.21	5.35	8.43	1.30	.03		
Washita River near Pauls Valley												
Dec. 2, 1944	236			8.14	4.11	2.22	5.89	6.89	1.64	0.05		

RED RIVER BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN RED RIVER BASIN IN OKLAHOMA—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	pH	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
Saddle Mountain Creek near Carnegie												
Dec. 8, 1944	5			3.69	1.89	1.70	4.92	0.71	1.52	0.13		
Pond Creek near Fort Cobb												
Aug. 15, 1944	5			5.19	1.89	2.86	4.44	3.96	0.68	0.06		
Oct. 3	61			2.94	.99	.94	3.16	1.31	.34	.06		
Nov. 24	40			5.39	1.89	1.49	5.59	2.56	.56	.06		
Little Washita River near Chikaskia												
Nov. 21, 1944	10			16.32	3.54	8.76	4.78	13.99	9.79	0.06		
Rush Creek at Purdy												
Nov. 2, 1944	6			4.89	5.59	4.03	5.35	3.50	5.64	0.02		
Dec. 7	19			6.29	4.52	10.29	5.28	2.92	12.86	.04		
Wildhorse Creek near Hoover												
Sept. 29, 1944	290			1.70	1.07	0.23	2.07	0.46	0.45	0.02		
Dec. 2				2.64	1.48	.44	3.31	.69	.56	.02		
Caddo Creek near Ardmore												
Sept. 11, 1944				2.94	1.64	5.83	1.92	0.67	7.78	0.04		
Dec. 2	8			3.59	.99	1.38	3.93	.60	1.41	.02		

Pennington Creek near Tishomingo

Aug. 31, 1944				1.10	0.79	2.02	3.36	0.19	0.34	0.02		

Blue River near Blue

Sept. 16, 1944				2.30	2.71	0.64	5.25	0.13	0.25	0.02		
Dec. 20	62			2.89	1.97	.13	4.60	.22	.14	.02		

Muddy Boggy River near Farris

Sept. 13, 1944	11			0.80	0.65	0.79	1.25	0.46	0.51	0.02		
Dec. 21	19			.48	.54	.22	.50	.31	.42	.01		

Clear Boggy Creek near Caney

Sept. 13, 1944	17			2.60	1.64	3.79	2.90	0.29	4.82	0.02		
Dec. 22	56			4.79	1.89	3.22	4.93	.67	4.29	.01		

Kiamichi River near Belzoni

Sept. 14, 1944	25			0.16	0.28	0.38	0.52	0.12	0.17	0.01		
Dec. 21	274			.17	.26	.10	.22	.16	.14	.01		

Little River near Idabel

Aug. 29, 1944				0.70	0.31	1.47	0.80	0.50	1.18	0.00		
Sept. 27				.43	.31	.78	.84	.12	.56	.00		
Oct. 14				.55	.28	.86	.69	.08	.90	.02		
Oct. 26				.60	.30	1.01	.75	.11	1.04	.01		
Nov. 14	440			.35	.33	.15	.39	.13	.28	.03		
Dec. 27	4,740			.16	.15	.66	.18	.08	.70	.00		

Mountain Fork River near Eagletown

Aug. 29, 1944				0.27	0.11	0.56	0.52	0.18	0.24	0.00		
Oct. 26	0.3			.31	.22	.42	.31	.06	.56	.02		
Dec. 27	3,980			.17	.14	.01	.18	.08	.05	.01		

MISSISSIPPI RIVER DELTA

COMITE RIVER NEAR COMITE, LA.

LOCATION.—At bridge on State Highway 877 in NW¼ sec. 24, T. 6 S., R. 1 E., St. Helena meridian, 0.5 mile downstream from Black Water Bayou and 2.6 miles west of Comite.

DRAINAGE AREA.—332 square miles.

RECORDS AVAILABLE.—Chemical analyses: April 1944 to March 1945.
Water temperatures: October 1944 to March 1945.

EXTREMES, OCTOBER 1944–MARCH 1945.—Dissolved solids: Maximum, 84 parts per million Feb. 20–28; minimum, 61 parts per million Nov. 1–10.
Total hardness: Maximum, 22 parts per million Feb. 20–28; minimum, 13 parts per million Nov. 1–10, Nov. 21–30, Jan. 1–10, and Feb. 1–10.

EXTREMES, APRIL 1944–MARCH 1945.—Dissolved solids: Maximum, 74 parts per million June 11–20, 1944, and Feb. 20–28, 1945; minimum, 61 parts per million Nov. 1–10, 1944.
Total hardness: Maximum, 22 parts per million June 21–30, 1944, and Feb. 20–28, 1945; minimum, 12 parts per million Apr. 21–30, 1944.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1037.

Chemical analyses, in parts per million, October 1944 to March 1945

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids	Hardness as $CaCO_3$ Total	Hardness as $CaCO_3$ Noncarbonate
Oct. 1-10, 1944	174	6.4	....	7.5	16	0.37	3.4	1.6	5.4	2.4	20	3.3	6.0	0.5	1.8	75	15	0
Oct. 11-20	77.4	8.0	....	7.5	17	.49	4.3	1.5	7.2	1.9	18	3.2	12	.9	1.8	73	17	2
Oct. 21-31	71.5	7.9	....	7.1	14	.04	3.7	1.6	6.4	3.2	20	1.9	8.0	.9	2.2	69	16	0
Nov. 1-10	269	8.2	....	6.8	14	.22	3.4	1.2	8.6	1.7	17	2.1	10	.9	2.8	61	13	0
Nov. 11-20	255	7.6	....	7.0	17	.42	4.2	1.5	7.5	2.5	19	4.1	9.0	.8	2.0	72	16	1
Nov. 21-30	634	5.2	....	6.4	16	.86	3.3	1.2	4.5	2.5	13	4.9	5.0	.8	2.0	72	13	3
Dec. 1-10	723	6.3	....	7.0	15	.56	3.4	1.4	5.5	2.2	13	4.2	7.0	.9	2.2	68	14	
Dec. 11-20	197	7.2	....	6.9	16	.21	3.4	2.0	6.5	1.8	15	4.3	7.0	.9	3.0	69	16	4
Dec. 21-31	535	6.8	....	6.5	16	.56	3.6	1.3	7.2	1.8	15	4.0	7.0	.9	2.2	72	14	4
Jan. 1-10, 1945	1,718	5.6	....	6.7	18	.73	3.2	1.3	5.0	1.7	15	4.1	5.0	.7	1.8	81	13	2
Jan. 11-20	337	6.3	....	6.6	19	.59	3.8	1.4	6.1	1.4	18	3.8	8.0	.8	1.2	74	15	1
Jan. 21-31	1,018	5.5	....	6.2	17	.64	3.4	1.4	5.1	1.1	15	4.0	5.0	.8	1.2	77	14	1

Feb. 1-10	1,608	4.9		7.4	16	.54	3.2	1.3	4.4	1.1	14	3.3	5.0	.7	1.5	72	13	2
Feb. 11-19	1,208	5.1		7.4	17	.56	3.6	1.4	4.5	1.1	17	3.1	6.0	.7	1.2	75	15	1
Feb. 20-28	773	7.0		7.4	16	.54	6.0	1.6	5.0	1.0	23	3.4	7.0	.7	1.8	84	22	3
Mar. 1-10	173	6.8		7.2	16	.44	3.8	1.5	6.3	1.0	19	2.7	9.0	.6	1.2	69	16	0
Mar. 11-20	174	7.3		7.0	12	.29	4.4	1.6	5.0	1.0	21	3.0	9.0	.6	1.2	67	18	0
Mar. 21-31	552	6.4		6.6	13	.53	4.7	1.6	5.2	.9	19	3.5	8.0	.6	1.2	80	18	3
Weighted average	578	5.9			16	0.58	3.7	1.3	5.3	1.5	16	3.7	6.2	0.7	1.7	75	15	2

Chemical analyses, in equivalents per million, October 1944 to March 1945

Oct. 1-10, 1944	174						0.170	0.132	0.235	0.061	0.328	0.069	0.169	0.026	0.029			
Oct. 11-20	77.4						.215	.123	.313	.049	.295	.067	.338	.047	.029			
Oct. 21-31	71.5						.185	.132	.277	.082	.328	.040	.226	.047	.035			
Nov. 1-10	269						.170	.099	.374	.043	.279	.044	.282	.047	.045			
Nov. 11-20	255						.210	.123	.326	.064	.311	.085	.254	.042	.045			
Nov. 21-30	634						.165	.099	.196	.064	.213	.102	.141	.042	.032			
Dec. 1-10	723						.170	.115	.239	.056	.213	.087	.197	.047	.035			
Dec. 11-20	197						.170	.164	.283	.046	.246	.090	.197	.047	.048			
Dec. 21-31	535						.180	.107	.313	.046	.246	.083	.197	.047	.035			
Jan. 1-10, 1945	1,718						.160	.107	.217	.043	.246	.085	.141	.037	.029			
Jan. 11-20	337						.190	.115	.265	.036	.295	.079	.226	.042	.019			
Jan. 21-31	1,018						.170	.115	.222	.028	.246	.083	.141	.042	.019			
Feb. 1-10	1,608						.160	.107	.191	.028	.229	.069	.141	.037	.024			
Feb. 11-19	1,208						.180	.115	.196	.028	.279	.065	.169	.037	.019			
Feb. 20-28	773						.299	.132	.217	.026	.377	.071	.197	.037	.029			
Mar. 1-10	173						.190	.123	.274	.026	.311	.056	.254	.032	.019			
Mar. 11-20	174						.220	.132	.217	.026	.344	.062	.254	.032	.019			
Mar. 21-31	552						.235	.132	.226	.023	.311	.073	.226	.032	.019			
Weighted average	578						0.185	0.107	0.230	0.038	0.262	0.077	0.175	0.037	0.027			

MISSISSIPPI RIVER DELTA—Continued

COMITE RIVER NEAR COMITE, LA.—Continued

Temperature (° F.) of water of Comite River near Comite, La., October 1944 to March 1945

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

WESTERN GULF OF MEXICO BASINS

BRAZOS RIVER BASIN

BRAZOS RIVER NEAR SOUTH BEND, TEX.

LOCATION.—At gaging station at bridge on State Highway 67, 0.3 mile upstream from Wichita Falls and Southern Railroad bridge, 1.6 miles downstream from Clear Fork of Brazos River, and 2 miles northeast of South Bend.

DRAINAGE AREA.—21,600 square miles, of which 9,240 square miles is probably noncontributing.

RECORDS AVAILABLE.—Chemical analyses: January 1942 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 13,800 parts per million Dec. 11; minimum, 257 parts per million July 8.
Total hardness: Maximum, 1,900 parts per million Oct. 1–3; minimum 143 parts per million July 8.

EXTREMES, JANUARY 1942–SEPTEMBER 1945.—Dissolved solids: Maximum, 13,800 parts per million Dec. 11, 1944; minimum, 257 parts per million July 8, 1945.
Total hardness: Maximum, 1,900 parts per million Dec. 11–20, 1943; minimum, 123 parts per million Apr. 8–10, 1942.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–3, 1944	234	1,520					615	88	2,830		106	1,450	4,580		4.5		9,620	13.08	6,080	1,900	1,810	76
Oct. 4, 9–10	2,657	185					105	19	246		96	226	395		4.8		1,040	1.41	7,460	340	262	61
Oct. 5–8	3,908	76.7					54	11	80		98	86	129		2.2		410	.56	4,330	180	100	49
Oct. 11–20	121	300					172	31	421		104	375	705		2.8		1,760	2.39	575	556	472	62
Oct. 21–31	30.2	537					256	46	789		128	553	1,320		1.8		3,030	4.12	247	828	723	67
Nov. 1–7	24.1	611					302	58	961		139	654	1,620		1.8		3,670	4.99	239	992	878	68
Nov. 8–10	50.7	307					160	32	426		107	271	770		1.8		1,710	2.33	234	531	444	64
Nov. 11–13, 19–20	74.8	444		7.9	2.0	0.10	207	45	653	14	109	478	1,100	0.1	2.0	1.0	2,560	3.48	517	702	612	67
Nov. 14–18	47.4	335		8.0	3.0	.05	188	38	456	7.6	108	436	765	.3	3.2	1.2	1,950	2.65	250	625	546	61
Nov. 21–28	168.8	377					204	37	538		120	388	940		3.2		2,170	2.95	989	661	562	64
Nov. 29–30	84.5	708					316	60	1,110		123	574	1,950		2.8		4,070	5.54	929	1,040	934	70
Dec. 1–7	79.9	989					326	65	1,700		141	666	2,810		3.2		5,640	7.67	1,220	1,080	966	77
Dec. 8–10	266	664					270	54	1,100		132	579	1,830		4.8		3,900	5.30	2,800	896	788	73
Dec. 11	350	2,270					535	113	4,550		111	1,130	7,380		9.7		13,800	18.77	13,000	1,800	1,710	85
Dec. 12	274	994					372	62	1,810		112	977	2,840		8.8		6,120	8.32	4,530	1,180	1,090	77
Dec. 13–20	126	588					260	50	948		122	641	1,520		6.0		3,490	4.75	1,190	854	754	71
Dec. 21–31	88.7	764					314	63	1,270		155	644	2,120		7.3		4,490	6.11	1,080	1,040	916	73

BRAZOS RIVER BASIN—Continued

BRAZOS RIVER NEAR SOUTH BEND, TEX.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	Temperature (° F)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Jan. 1–10, 1945	74.1	906					374	83	1,540		154	789	2,610		6.5		5,480	7.45	1,100	1,280	1,150	72
Jan. 11–20	57.2	1,300					418	104	2,380		145	978	3,900		3.0		7,850	10.68	1,210	1,470	1,350	78
Jan. 21, 28–31	88.6	1,200					427	106	2,130		157	981	3,530		6.0		7,260	9.87	1,740	1,500	1,370	76
Jan. 22–27	90.3	639					242	58	1,050		132	537	1,740		7.0		3,700	5.03	902	842	734	73
Feb. 1–10	50.3	1,680					521	135	3,300		156	1,140	5,470		6.5		10,600	14.42	1,440	1,860	1,730	79
Feb. 11–19	40.0	1,230					472	120	2,180		144	910	3,780		6.5		7,540	10.25	814	1,670	1,550	74
Feb. 20–22	63.3	1,140		8.0	3.0	.07	443	105	1,980	14	147	801	3,470	.6	5.5	.8	6,890	9.37	1,180	1,540	1,430	73
Feb. 23–28	137	551		7.9	3.0	.07	240	61	865	8.0	124	309	1,640	.8	3.2	.2	3,190	4.34	1,180	850	758	69
Mar. 1–10	233	521					223	63	796		125	272	1,530		3.0		2,950	4.01	1,860	816	713	68
Mar. 11–12, 15–17	492	449					177	45	699		125	239	1,270		4.0		2,500	3.40	3,320	626	524	71
Mar. 14	237	1,240					357	88	2,400		111	761	3,960		3.5		7,620	10.36	4,880	1,250	1,160	81
Mar. 13, 18–19	2,673	293					134	33	414		117	177	770		4.4		1,590	2.16	11,500	470	374	66
Mar. 20	9,950	92.9					60	10	113		98	73	197		2.2		504	.69	13,500	190	110	56
Mar. 21–23	2,270	86.2					72	16	78		121	116	136		2.2		480	.65	2,940	246	146	41
Mar. 26–30	263	346					210	41	488		114	433	855		4.0		2,090	2.84	1,480	692	599	60
Mar. 24–25, 31	829	211					124	27	275		106	214	500		4.2		1,200	1.63	2,690	420	334	59
Apr. 1–5	438	206					114	24	277		110	169	508		3.2		1,150	1.56	1,360	383	293	61
Apr. 6–10	82.6	396					201	44	590		136	370	1,040		3.8		2,320	3.16	517	682	571	65
Apr. 11–12	2,575	209					112	26	280		124	125	540		3.1		1,150	1.56	800	386	285	61
Apr. 13–20	2,406	77.0					56	12	81		119	60	144		3.2		415	.56	2,700	190	92	48
Apr. 21–27, 29–30	496	162					88	21	213		115	114	392		3.2		888	1.21	1,100	306	212	60
Apr. 28	504	419					194	59	593		108	115	1,280		3.0		2,300	3.13	3,130	726	638	64
May 1–6	123	302					156	34	447		132	307	760		3.2		1,770	2.41	588	530	422	65
May 7–10	85.0	641					280	65	1,070		146	640	1,770		2.2		2,900	3.94	666	966	847	71
May 11, 13–15	676	110					76	15	123		134	100	215		2.2		597	.81	1,090	251	141	52
May 12, 16–20	388	255					138	29	357		133	255	612		2.2		1,460	1.99	1,530	354	464	63
May 21–24, 30–31	56.8	277					155	35	378		143	270	675		2.2		1,590	2.16	244	531	414	61
May 25–29	35.6	352					190	48	492		150	361	880		2.0		2,050	2.79	197	672	548	61

June 1-5, 10	318	223	------	------	------	------	139	33	277	147	234	510	------	2.2	------	1,270	1.73	1,090	482	362	56
June 6-8	447	116	------	------	------	------	88	24	118	137	183	192	------	.5	------	673	.92	812	318	206	45
June 9	641	590	------	------	------	------	368	57	904	131	938	1,440	------	3.8	------	3,780	5.14	6,540	1,150	1,050	63
June 11, 14	1,730	209	------	------	------	------	156	27	163	122	147	425	------	2.8	------	981	1.33	4,580	500	400	41
June 12-13	3,540	104	------	------	------	------	82	13	115	116	120	202	------	3.0	------	592	.81	5,660	258	163	49
June 15	3,950	1,040	------	------	------	------	462	74	1,850	110	1,030	3,060	------	3.5	------	6,530	8.88	69,600	1,460	1,370	73
June 16-17, 20	889	419	------	------	------	------	315	37	573	95	787	910	------	4.0	------	2,670	3.63	6,410	938	860	57
June 18-19	746	326	------	------	------	------	293	28	424	92	715	670	------	4.2	------	2,180	2.96	4,390	846	770	52
June 21-30	214	397	------	------	------	------	280	37	570	106	663	930	------	3.4	------	2,540	3.45	1,470	851	764	59
July 1-2	158	683	------	------	------	------	438	60	1,060	116	1,060	1,730	------	2.5	------	4,410	6.00	1,880	1,340	1,240	63
July 3	789	105	------	------	------	------	83	16	115	121	141	196	------	1.5	------	612	.83	1,300	273	174	48
July 4-5	293	314	------	------	------	------	164	40	449	104	199	890	------	3.5	------	1,800	2.45	1,420	574	488	63
July 6-7, 9-10	2,692	81.4	------	------	------	------	60	9.9	93	102	86	154	------	1.8	------	455	.62	3,310	190	106	51
July 8	959	45.3	------	------	------	------	42	9.2	39	96	48	69	------	2.5	------	257	.35	665	143	64	37
July 11-12	4,235	73.3	------	------	------	------	50	9.1	80	122	94	114	------	3.2	------	420	.57	4,800	187	87	48
July 13, 17-20	3,128	302	------	------	------	------	253	22	427	101	663	620	------	3.9	------	2,040	2.77	17,200	722	639	56
July 14-16	6,523	202	------	------	------	------	176	16	248	112	431	355	------	4.2	------	1,290	1.75	22,700	505	413	52
July 21-26	2,186	305	------	------	------	------	192	21	460	123	489	675	------	3.7	------	1,900	2.58	1,870	566	464	64
July 27-31	113	431	------	------	------	------	235	38	676	116	569	1,080	------	2.2	------	2,660	3.62	812	742	648	66
Aug. 1-10	51.0	532	------	------	------	------	270	55	838	121	635	1,390	------	1.8	------	3,250	4.42	448	900	801	67
Aug. 11, 15-17	284	253	------	------	------	------	159	38	302	121	421	475	------	1.2	------	1,460	1.99	1,120	553	454	54
Aug. 12-14	576	127	------	------	------	------	100	21	144	120	197	244	------	1.8	------	767	1.04	1,190	336	238	48
Aug. 18-20	83.7	459	------	------	------	------	243	61	666	110	665	1,080	------	1.5	------	2,770	3.77	626	858	768	63
Aug. 21-26	30.5	421	------	------	------	------	246	69	595	126	691	970	------	1.2	------	2,630	3.58	217	898	794	59
Aug. 27-31	11.4	542	------	------	------	------	304	78	815	120	826	1,340	------	3.2	------	3,430	4.66	106	1,080	980	62
Sept. 1-10	3.56	610	------	------	------	------	344	93	890	122	869	1,540	------	.8	------	3,800	5.17	37	1,240	1,140	61
Sept. 11-20	.66	682	------	------	------	------	380	116	1,000	127	874	1,840	------	1.5	------	4,270	5.81	8	1,430	1,320	61
Sept. 21-25, 27-28	.53	683	------	------	------	------	376	111	1,030	132	838	1,880	------	.8	------	4,300	5.85	6	1,400	1,290	62
Sept. 26, 29	170	494	------	------	------	------	289	66	714	99	713	1,220	------	.8	------	3,050	4.15	1,400	992	912	61
Sept. 30	1,460	890	------	------	------	------	452	71	1,510	87	891	2,620	------	1.8	------	5,590	7.60	22,000	1,420	1,350	70
Weighted average	545	247	------	------	------	------	146	24	358	113	294	598	------	3.3	------	1,480	2.01	2,170	463	370	63

BRAZOS RIVER BASIN—Continued

BRAZOS RIVER NEAR SOUTH BEND, TEX.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-3, 1944	234						30.70	7.24	123.23		1.74	30.19	129.17		0.07							
Oct. 4, 9-10	2,657						5.24	1.56	10.70		1.57	4.71	11.14		.08							
Oct. 5-8	3,908						2.70	.90	3.48		1.61	1.79	3.64		.04							
Oct. 11-20	121						8.58	2.55	18.31		1.70	7.81	19.88		.05							
Oct. 21-31	30.2						12.78	3.78	34.31		2.10	11.51	37.23		.03							
Nov. 1-7	24.1						15.07	4.77	41.78		2.28	13.62	45.69		.03							
Nov. 8-10	50.7						7.99	2.63	18.52		1.75	5.64	21.72		.03							
Nov. 11-13, 19-20	74.8						10.33	3.70	28.41	.36	1.79	9.95	31.02	0.01	.03							
Nov. 14-18	47.4						9.38	3.12	19.81	.19	1.77	9.08	21.58	.02	.05							
Nov. 21-28	168.8						10.18	3.04	23.39		1.97	8.08	26.51		.05							
Nov. 29-30	84.5						15.77	4.93	48.32		2.02	11.95	55.00		.05							
Dec. 1-7	79.9						16.27	5.35	73.86		2.31	13.87	79.25		.05							
Dec. 8-10	266						13.48	4.44	47.98		2.16	12.05	51.61		.08							
Dec. 11	350						26.70	9.29	197.66		1.82	23.53	208.14		.16							
Dec. 12	274						18.57	5.10	78.75		1.84	20.34	80.10		.14							
Dec. 13-20	126						12.98	4.11	41.23		2.00	13.35	42.87		.10							
Dec. 21-31	88.7						15.67	5.18	55.01		2.54	13.41	59.79		.12							
Jan. 1-10, 1945	74.1						18.67	6.83	67.16		2.52	16.43	73.61		.10							
Jan. 11-20	57.2						20.86	8.55	103.37		2.38	20.36	109.99		.05							
Jan. 21, 28-31	88.6						21.31	8.72	92.62		2.57	20.42	99.56		.10							
Jan. 22-27	90.3						12.08	4.77	45.67		2.16	11.18	49.07		.11							
Feb. 1-10	50.3						26.00	11.10	143.56		2.56	23.73	154.27		.10							
Feb. 11-19	40.0						23.56	9.87	94.59		2.36	18.95	106.61		.10							
Feb. 20-22	63.3						22.11	8.63	85.98	.36	2.41	16.68	97.87	.03	.09							
Feb. 23-28	137						11.98	5.02	37.60	.20	2.03	6.43	46.25	.04	.05							
Mar. 1-10	233						11.13	5.18	34.60		2.05	5.66	43.15		.05							
Mar. 11-12, 15-17	492						8.83	3.70	30.38		2.05	4.98	35.82		.06							
Mar. 14	237						17.82	7.24	104.34		1.82	15.84	111.68		.06							
Mar. 13, 18-19	2,673						6.69	2.71	18.00		1.92	3.69	21.72		.07							
Mar. 20	9,950						2.99	.82	4.92		1.61	1.52	5.56		.04							
Mar. 21-23	2,270						3.59	1.32	3.37		1.98	2.42	3.84		.04							

Mar. 26-30	263						10.48	3.37	21.20	1.87	9.01	24.11	.06							
Mar. 24-25, 31	829						6.19	2.22	11.96	1.74	4.46	14.10	.07							
Apr. 1-5	438						5.69	1.97	12.04	1.80	3.52	14.33	.05							
Apr. 6-10	82.6						10.03	3.62	25.67	2.23	7.70	29.33	.06							
Apr. 11-12	2,575						5.59	2.14	12.18	2.03	2.60	15.23	.05							
Apr. 13-20	2,406						2.80	.99	3.52	1.95	1.25	4.06	.05							
Apr. 21-27, 29-30	496						4.39	1.73	9.24	1.88	2.37	11.06	.05							
Apr. 28	504						9.68	4.85	25.78	1.77	2.39	36.10	.05							
May 1-6	123						7.79	2.80	19.44	2.16	6.39	21.43	.05							
May 7-10	85.0						13.98	5.35	46.34	2.39	13.32	49.92	.04							
May 11, 13-15	676						3.79	1.23	5.36	2.20	2.08	6.06	.04							
May 12, 16-20	388						6.89	2.38	15.52	2.18	5.31	17.26	.04							
May 21-24, 30-31	56.8						7.74	2.88	16.43	2.35	5.62	19.04	.04							
May 25-29	35.6						9.48	3.95	21.41	2.47	7.52	24.82	.03							
June 1-5, 10	318						6.94	2.71	12.06	2.42	4.87	14.38	.04							
June 6-8	447						4.39	1.97	5.13	2.25	3.81	5.42	.01							
June 9	641						18.37	4.69	39.29	2.15	19.53	40.61	.06							
June 11, 14	1,730						7.79	2.22	7.09	2.00	3.06	11.99	.05							
June 12-13	3,540						4.09	1.07	4.99	1.90	2.50	5.70	.05							
June 15	3,950						23.06	6.09	80.45	1.80	21.44	86.30	.06							
June 16-17, 20	889						15.72	3.04	24.90	1.56	16.38	25.66	.06							
June 18-19	746						14.62	2.30	18.45	1.51	14.89	18.90	.07							
June 21-30	214						13.98	3.04	24.80	1.74	13.80	26.23	.05							
July 1-2	158						21.86	4.93	46.01	1.90	22.07	48.79	.04							
July 3	789						4.14	1.32	5.02	1.99	2.94	5.53	.02							
July 4-5	293						8.19	3.29	19.53	1.71	4.14	25.10	.06							
July 6-7, 9-10	2,692						2.99	.81	4.03	1.67	1.79	4.34	.03							
July 8	959						2.10	.76	1.71	1.57	1.00	1.95	.04							
July 11-12	4,235						2.99	.75	3.49	2.00	1.96	3.22	.05							
July 13, 17-20	3,128						12.63	1.81	18.57	1.66	13.80	17.49	.06							
July 14-16	6,523						8.78	1.32	10.79	1.84	8.97	10.01	.07							
July 21-26	364						9.58	1.73	19.99	2.02	10.18	19.04	.06							
July 27-31	113						11.73	3.12	29.40	1.90	11.85	30.46	.04							
Aug. 1-10	51.0						13.48	4.52	36.43	1.98	13.22	39.20	.03							
Aug. 11, 15-17	284						7.94	3.12	13.11	1.98	8.77	13.40	.02							
Aug. 12-14	576						4.99	1.73	6.26	1.97	4.10	6.88	.03							
Aug. 18-20	83.7						12.13	5.02	28.97	1.80	13.84	30.46	.02							
Aug. 21-26	30.5						12.28	5.67	25.88	2.06	14.39	27.36	.02							
Aug. 27-31	11.4						15.17	6.41	35.43	1.97	17.20	37.79	.05							
Sept. 1-10	3.56						17.17	7.65	38.71	2.00	18.09	43.43	.01							
Sept. 11-20	.66						18.97	9.54	43.68	2.08	18.20	51.89	.02							
Sept. 21-25, 27-28	.53						18.77	9.13	44.74	2.16	17.45	53.02	.01							
Sept. 26, 29	170						14.42	5.43	31.03	1.62	14.84	34.41	.01							
Sept. 30	1,460						22.56	5.84	65.50	1.43	18.55	73.89	.03							
Weighted average	545						7.29	1.97	15.57	1.85	6.12	16.87	0.05							

BRAZOS RIVER BASIN—Continued

BRAZOS RIVER AT POSSUM KINGDOM DAM NEAR GRAFORD, TEX.

LOCATION.—Immediately below dam on Brazos River, 2.6 miles upstream from Loving Creek and 11.3 miles southwest of Graford. Discharge records reported are for gaging station at bridge on Palo Pinto-Graford highway, 300 feet downstream from Dark Valley Creek and 6½ miles north of Palo Pinto. The gage is about 15 miles downstream from Possum Kingdom Dam. No appreciable inflow between dam and gaging station except during periods of heavy local rains.

DRAINAGE AREA.—22,500 square miles above dam; 22,760 square miles above gaging station.

RECORDS AVAILABLE.—Chemical analyses: January 1942 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 1,570 parts per million Mar. 21–31; minimum, 1,220 parts per million Nov. 1–10 and Sept. 21–30.

Total hardness: Maximum, 506 parts per million Mar. 21–31; minimum, 374 parts per million Aug. 21–31.

EXTREMES, JANUARY 1942 to SEPTEMBER 1945.—Dissolved solids: Maximum, 2,131 parts per million Feb. 2–9, 1942; minimum, 829 parts per million Sept. 1–10, 1942.

Total hardness: Maximum, 661 parts per million Feb. 2–9, 1942; minimum, 318 parts per million Dec. 21–31, 1942.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	312	234					136	27	295		152	266	488		2.2		1,290	1.75	1,090	450	326	59
Oct. 11-20	179	223					133	29	298		158	267	488		2.8		1,300	1.77	628	451	322	59
Oct. 21-31	500	239					136	26	301		147	264	498		4.2		1,300	1.77	1,760	446	326	59
Nov. 1-10	629	225					133	26	273		148	263	450		2.0		1,220	1.66	2,070	439	318	57
Nov. 11-20	335	228		8.2	4.0	0.05	136	27	303	17	150	267	515	0.4	3.8	0.2	1,350	1.84	1,220	450	328	58
Nov. 21-30	201	235					136	26	311		140	272	512		2.8		1,330	1.81	722	446	332	60
Dec. 1-10	495	216					138	26	312		142	274	515		3.7		1,340	1.82	1,790	452	335	60
Dec. 11-20	415	229					132	30	310		146	268	515		3.2		1,330	1.81	1,490	453	334	60
Dec. 21-31	339	243					138	27	331		135	273	552		3.2		1,390	1.89	1,270	456	345	61
Jan. 1-10, 1945	542	253					138	28	330		135	274	552		4.3		1,390	1.89	2,030	460	349	61
Jan. 11-20	503	255					135	30	359		142	279	590		1.5		1,460	1.99	1,980	460	344	63
Jan. 21-31	257	254					136	28	353		136	276	582		3.0		1,440	1.96	999	454	343	63

Feb. 1-10	426	251	------	------	------	------	140	29	342		138	271	578	------	3.2	------	1,430	1.94	1,640	468	356	61
Feb. 11-19	452	259	------	------	------	------	144	29	360		140	279	605	------	2.8	------	1,490	2.03	1,820	478	364	62
Feb. 20-28	544	263	------	8.0	4.0	.07	144	29	360	22	143	282	620	.6	2.5	6.5	1,530	2.08	2,250	478	362	61
Mar. 1-10	707	256	------	------	------	------	142	29	361		141	276	605	------	3.8	------	1,490	2.03	2,840	474	358	62
Mar. 11-20	777	264	------	------	------	------	142	29	390		136	277	652	------	3.2	------	1,560	2.12	3,270	474	362	64
Mar. 21-31	883	274	------	------	------	------	150	32	381		137	279	658	------	3.2	------	1,570	2.14	3,740	506	394	62
Apr. 1-10	436	266	------	------	------	------	142	29	380		144	279	630	------	3.2	------	1,530	2.08	1,800	474	356	64
Apr. 11-20	739	256	------	------	------	------	140	30	358		138	272	605	------	2.8	------	1,480	2.01	2,950	473	360	62
Apr. 21-30	453	251	------	------	------	------	138	30	355		140	268	598	------	2.2	------	1,460	1.99	1,790	468	354	62
May 1-10	625	251	------	------	------	------	138	27	359		138	270	595	------	2.2	------	1,460	1.99	2,460	456	342	63
May 11-20	636	249	------	------	------	------	140	26	348		138	255	590	------	2.2	------	1,430	1.94	2,460	456	344	62
May 21-31	347	242	------	------	------	------	136	28	334		135	258	568	------	1.2	------	1,390	1.89	1,300	454	344	62
June 1-10	678	238	------	------	------	------	128	28	330		134	252	552	------	2.2	------	1,360	1.85	2,490	434	325	62
June 11-20	706	233	------	------	------	------	126	27	342		136	249	565	------	1.8	------	1,380	1.88	2,630	426	344	61
June 21-30	600	234	------	------	------	------	129	25	329		134	242	550	------	2.2	------	1,340	1.82	2,170	425	315	63
July 1-10	769	228	------	------	------	------	130	26	342		137	241	575	------	.5	------	1,380	1.88	2,870	432	319	63
July 11-20	752	227	------	------	------	------	132	25	317		137	237	540	------	1.8	------	1,320	1.80	2,680	432	320	61
July 21-31	934	227	------	------	------	------	128	27	315		137	232	538	------	2.2	------	1,310	1.78	3,300	430	318	61
Aug. 1-10	800	227	------	------	------	------	127	27	300		146	220	518	------	1.5	------	1,270	1.73	2,740	428	308	60
Aug. 11-20	581	227	------	------	------	------	124	26	306		150	217	518	------	2.2	------	1,270	1.73	1,990	416	294	61
Aug. 21-31	500	217	------	------	------	------	122	17	312		143	208	510	------	1.5	------	1,240	1.69	1,670	374	258	64
Sept. 1-10	320	222	------	------	------	------	125	26	308		147	214	525	------	4.2	------	1,270	1.73	1,100	419	298	61
Sept. 11-20	320	214	------	------	------	------	122	26	293		136	209	510	------	1.8	------	1,230	1.67	1,060	412	300	61
Sept. 21-30	320	213	------	------	------	------	118	26	296		140	204	508	------	1.8	------	1,220	1.66	1,050	402	287	62
Weighted average	528	241	------	------	------	------	135	27	335		140	256	561	------	2.5	------	1,390	1.89	1,980	448	334	62

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	312	------	------	------	------	------	6.79	2.22	12.82		2.49	5.45	13.76	------	0.04	------	------	------	------	------	------	------
Oct. 11-20	179	------	------	------	------	------	6.64	2.38	12.94		2.59	5.56	13.76	------	.05	------	------	------	------	------	------	------
Oct. 21-31	500	------	------	------	------	------	6.79	2.14	13.10		2.41	5.50	14.05	------	.07	------	------	------	------	------	------	------
Nov. 1-10	629	------	------	------	------	------	6.64	2.14	11.85		2.43	5.48	12.69	------	.03	------	------	------	------	------	------	------
Nov. 11-20	335	------	------	------	------	------	6.79	2.22	13.18	0.43	2.46	5.56	14.52	0.02	.06	------	------	------	------	------	------	------
Nov. 21-30	201	------	------	------	------	------	6.79	2.14	13.51		2.29	5.66	14.44	------	.05	------	------	------	------	------	------	------
Dec. 1-10	495	------	------	------	------	------	6.89	2.14	13.58		2.33	5.70	14.52	------	.06	------	------	------	------	------	------	------
Dec. 11-20	415	------	------	------	------	------	6.59	2.47	13.48		2.39	5.58	14.52	------	.05	------	------	------	------	------	------	------
Dec. 21-31	339	------	------	------	------	------	6.89	2.22	14.40		2.21	5.68	15.57	------	.05	------	------	------	------	------	------	------
Jan. 1-10, 1945	542	------	------	------	------	------	6.89	2.30	14.36		2.21	5.70	15.57	------	.07	------	------	------	------	------	------	------
Jan. 11-20	503	------	------	------	------	------	6.74	2.47	15.59		2.33	5.81	16.64	------	.02	------	------	------	------	------	------	------
Jan. 21-31	257	------	------	------	------	------	6.79	2.30	15.35		2.23	5.75	16.41	------	.05	------	------	------	------	------	------	------

BRAZOS RIVER BASIN—Continued

BRAZOS RIVER AT POSSUM KINGDOM DAM NEAR GRAFORD, TEX.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Feb. 1-10	426						6.99	2.38	14.88		2.26	5.64	16.30		0.05							
Feb. 11-19	452						7.19	2.38	15.61		2.29	5.81	17.06		.05							
Feb. 20-28	544						7.19	2.38	15.64	.56	2.34	5.87	17.49	.03	.04							
Mar. 1-10	707						7.09	2.38	15.71		2.31	5.75	17.06		.06							
Mar. 11-20	777						7.09	2.38	16.97		2.23	5.77	18.39		.05							
Mar. 21-31	883						7.49	2.63	16.55		2.25	5.81	18.56		.05							
Apr. 1-10	436						7.09	2.38	16.52		2.36	5.81	17.77		.05							
Apr. 11-20	739						6.99	2.47	15.57		2.26	5.66	17.06		.05							
Apr. 21-30	459						6.89	2.47	15.42		2.29	5.58	16.87		.04							
May 1-10	625						6.89	2.22	15.59		2.26	5.62	16.78		.04							
May 11-20	636						6.99	2.14	15.12		2.26	5.31	16.64		.04							
May 21-31	347						6.79	2.30	14.54		2.22	5.37	16.02		.02							
June 1-10	678						6.39	2.30	14.36		2.19	5.25	15.57		.04							
June 11-20	706						6.89	2.22	14.26		2.23	5.18	15.93		.03							
June 21-30	600						6.44	2.06	14.29		2.20	5.04	15.51		.04							
July 1-10	769						6.49	2.14	14.87		2.02	5.02	16.22		.01							
July 11-20	752						6.59	2.06	13.79		2.25	4.93	15.23		.03							
July 21-31	934						6.39	2.22	13.68		2.25	4.83	15.17		.04							
Aug. 1-10	800						6.34	2.22	13.04		2.39	4.58	14.61		.02							
Aug. 11-20	581						6.19	2.14	13.30		2.46	4.52	14.61		.04							
Aug. 21-31	500						6.09	1.40	13.58		2.34	4.33	14.38		.02							
Sept. 1-10	320						6.24	2.14	13.37		2.41	4.46	14.81		.07							
Sept. 11-20	320						6.09	2.14	12.76		2.23	4.35	14.38		.03							
Sept. 21-30	320						5.89	2.14	12.87		2.29	4.25	14.33		.03							
Weighted average	528						6.74	2.22	14.57		2.29	5.33	15.82		0.04							

COLORADO RIVER BASIN (TEXAS)

COLORADO RIVER AT WHARTON, TEX.

LOCATION.—At gaging station on bridge on U. S. Highway 96 in Wharton, 1,000 feet downstream from Texas & New Orleans Railroad bridge and 12 miles upstream from Jones Creek.

DRAINAGE AREA.—29,350 square miles (contributing area).

RECORDS AVAILABLE.—Chemical analyses: April 1944 to September 1945.
Water temperatures: April 1944 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 324 parts per million Mar. 1–10; minimum, 180 parts per million Jan. 19–24.
Total hardness: Maximum, 218 parts per million Mar. 1–10 and May 11–20; minimum, 114 parts per million Apr. 1–4.

EXTREMES, APRIL 1944 to SEPTEMBER 1945.—Dissolved solids: Maximum, 324 parts per million Mar. 1–10, 1945; minimum, 180 parts per million Jan. 19–24, 1945.
Total hardness: Maximum, 218 parts per million Mar. 1–10, 1945; minimum, 114 parts per million Apr. 1–4, 1945.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	2,992	42.2	----	----	----	----	44	14	20		169	22	35	----	0.8	----	247	0.34	2,000	168	29	21
Oct. 11-20	2,405	43.9	----	----	----	----	44	15	25		182	24	36	----	1.2	----	260	.35	1,690	172	22	24
Oct. 21-31	2,357	48.0	----	----	----	----	46	16	24		183	26	39	----	1.5	----	267	.36	1,700	181	31	23
Nov. 1-10	1,869	48.8	----	----	----	----	48	18	26		192	30	43	----	1.2	----	290	.39	1,460	194	36	22
Nov. 11-20	1,828	48.8	----	8.2	7.0	0.08	54	17	15	6.5	207	16	41	0.4	1.8	0.0	294	.40	1,450	205	35	14
Nov. 21-30	5,385	33.9	----	----	----	----	40	8.1	9.5		128	15	22	----	2.8	----	207	.28	3,010	133	28	13
Dec. 1-10	7,414	40.2	----	----	----	----	46	10	14		142	31	26	----	2.2	----	232	.32	4,640	156	40	17
Dec. 11-20	2,925	45.7	----	----	----	----	56	13	17		181	30	35	----	2.8	----	277	.38	2,190	193	45	16
Dec. 21-28	2,368	50.5	----	----	----	----	56	16	24		200	30	42	----	3.2	----	296	.40	1,890	206	42	20
Dec. 29-31	6,700	31.1	----	----	----	----	37	9.6	6.3		114	16	24	----	1.8	----	196	.27	3,550	132	38	9
Jan. 1-10, 1945	4,168	39.2	----	----	----	----	46	10	16		137	34	29	----	3.4	----	251	.34	2,820	156	44	19
Jan. 11-18	2,828	46.1	----	----	----	----	54	15	19		188	30	36	----	1.0	----	266	.36	2,030	196	42	17
Jan. 19-24	14,700	29.3	----	----	----	----	41	7.6	4.3		121	22	14	----	1.5	----	180	.24	7,140	134	34	7

COLORADO RIVER BASIN (TEXAS)—Continued

COLORADO RIVER AT WHARTON, TEX.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Jan. 25-31	3,190	44.9					55	13	20		193	30	30		2.5		269	.37	2,320	191	32	18
Feb. 1-10	3,417	45.6					53	14	21		188	31	34		2.5		278	.38	2,560	190	36	20
Feb. 11-19	4,272	43.7					52	14	15		178	22	34		2.8		287	.39	3,310	187	41	14
Feb. 20-28	4,629	42.8		8.2	11	0.06	49	12	20	7.2	169	36	31	.8	2.5	.5	260	.35	3,250	172	33	19
Mar. 1-10	3,179	50.2					61	16	23		214	34	39		2.5		324	.44	2,780	218	42	19
Mar. 11-20	3,540	48.5					54	15	23		196	30	38		1.8		281	.38	2,690	196	36	20
Mar. 21-31	3,878	43.3					51	15	19		176	30	38		.8		255	.35	2,670	189	45	18
Apr. 1-4	23,380	23.7					34	7.2	4.8		107	18	12		1.8		182	.25	11,500	114	27	8
Apr. 5-10	4,565	37.4					49	9.4	14		153	28	24		2.8		247	.34	3,040	161	36	16
Apr. 11-20	3,310	45.6					50	16	27		190	33	42		.5		290	.39	2,590	191	35	24
Apr. 21-30	5,986	39.7					49	12	21		169	34	30		2.2		260	.35	4,200	172	33	21
May 1-10	3,454	47.6					50	16	27		201	28	38		1.8		278	.38	2,590	191	26	23
May 11-20	2,697	48.4					58	18	16		208	29	37		1.5		294	.40	2,140	218	48	14
May 21-31	1,735	49.2					54	18	20		199	29	41		.8		289	.39	1,350	209	46	17
June 1-10	1,718	48.6					50	18	20		193	28	39		.5		281	.38	1,300	199	41	18
June 11-20	3,392	47.1					51	17	21		187	32	39		1.5		297	.40	2,720	197	44	19
June 21-30	3,320	36.2					45	9.2	18		144	30	26		3.0		237	.32	2,120	150	32	20
July 1-10	1,624	47.2					48	17	29		186	31	48		1.2		296	.40	1,300	190	38	25
July 11-20	1,838	49.6					49	18	28		200	27	45		1.5		297	.40	1.470	196	32	23
July 21-31	4,739	45.5					48	18	20		191	25	37		2.2		274	.37	3,510	194	37	18
Aug. 1-10	4,444	44.1					46	17	28		[illegible]	24	37		2.2		258	.35	3,100	185	19	25
Aug. 11-20	3,075	45.4					46	17	23		191	23	37		1.2		271	.37	2,250	185	28	21
Aug. 21-26	2,345	45.4					44	18	30		200	25	42		.5		268	.36	1,700	184	20	26
Aug. 27-31	6,430	30.8					37	11	18		150	14	27		1.2		215	.29	3,730	138	14	22
Sept. 1-10	2,934	46.2					47	16	24		179	28	41		1.2		300	.41	2,380	183	36	22
Sept. 11-20	2,248	46.2					46	18	25		192	24	42		1.5		300	.41	1.820	189	31	22
Sept. 21-30	2,358	46.2					47	19	23		193	26	42		.2		276	.38	1,760	195	37	20
Weighted average	3,766	41.3					47	13	18		168	27	32		1.9		255	0.35	2,590	171	33	19

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	2,992						2.196	1.151	0.881		2.770	0.458	0.987		0.013							
Oct. 11-20	2,405						2.196	1.234	1.087		2.983	.500	1.015		.019							
Oct. 21-31	2,357						2.296	1.316	1.053		3.000	.541	1.100		.024							
Nov. 1-10	1,869						2.395	1.480	1.129		3.147	.625	1.213		.019							
Nov. 11-20	1,828						2.695	1.398	0.673	0.166	3.393	.333	1.156	0.021	.029							
Nov. 21-30	5,385						1.997	.666	.412		2.098	.312	.620		.045							
Dec. 1-10	7,414						2.296	.822	.623		2.328	.645	.733		.035							
Dec. 11-20	2,925						2.795	1.069	.760		2.967	.625	.987		.045							
Dec. 21-28	2,368						2.794	1.316	1.030		3.278	.625	1.185		.052							
Dec. 29-31	6,700						1.847	.789	.272		1.869	.333	.677		.029							
Jan. 1-10, 1945	4,168						2.296	.822	.709		2.246	.708	.818		.055							
Jan. 11-18	2,828						2.695	1.234	.808		3.081	.625	1.015		.016							
Jan. 19-24	14,700						2.046	.625	.189		1.983	.458	.395		.024							
Jan. 25-31	3,190						2.745	1.069	.861		3.164	.625	.846		.040							
Feb. 1-10	3,417						2.645	1.151	.930		3.082	.645	.959		.040							
Feb. 11-19	4,272						2.595	1.151	.634		2.918	.458	.959		.045							
Feb. 20-28	4,629						2.446	.987	.859	.184	2.770	.750	.874	.042	.040							
Mar. 1-10	3,179						3.044	1.316	1.005		3.507	.708	1.110		.040							
Mar. 11-20	3,540						2.695	1.234	1.010		3.213	.625	1.072		.029							
Mar. 21-31	3,878						2.546	1.234	.815		2.885	.625	1.072		.013							
Apr. 1-4	23,380						1.697	.592	.207		1.754	.375	.338		.029							
Apr. 5-10	4,565						2.446	.773	.594		2.508	.583	.677		.045							
Apr. 11-20	3,310						2.496	1.316	1.182		3.114	.687	1.185		.008							
Apr. 21-30	5,986						2.446	.987	.926		2.770	.708	.846		.035							
May 1-10	3,454						2.496	1.316	1.167		3.295	.583	1.072		.029							
May 11-20	2,697						2.894	1.480	.707		3.409	.604	1.044		.024							
May 21-31	1,735						2.695	1.480	.859		3.261	.604	1.156		.013							
June 1-10	1,718						2.496	1.480	.879		3.164	.583	1.100		.008							
June 11-20	3,392						2.546	1.398	.911		3.065	.666	1.100		.024							
June 21-30	3,320						2.246	.757	.763		2.360	.625	.733		.048							
July 1-10	1,624						2.395	1.398	1.273		3.048	.645	1.354		.019							
July 11-20	1,838						2.445	1.480	1.208		3.278	.562	1.269		.024							
July 21-31	4,739						2.396	1.480	.862		3.139	.520	1.044		.035							
Aug. 1-10	4,444						2.296	1.398	1.204		3.319	.500	1.044		.035							
Aug. 11-20	3,075						2.296	1.398	.979		3.131	.479	1.044		.019							
Aug. 21-26	2,345						2.196	1.480	1.322		3.285	.520	1.185		.008							
Aug. 27-31	6,430						1.847	.905	.786		2.467	.291	.761		.019							
Sept. 1-10	2,934						2.346	1.316	1.030		2.934	.583	1.156		.019							
Sept. 11-20	2,248						2.296	1.480	1.080		3.147	.500	1.185		.024							
Sept. 21-30	2,358						2.346	1.562	.985		3.164	.541	1.185		.003							
Weighted average	3,766						2.346	1.069	0.783		2.754	0.562	0.903		0.031							

COLORADO RIVER BASIN (TEXAS)—Continued

COLORADO RIVER AT WHARTON, TEX.—Continued

Temperature (° F.) of water of Colorado River, water year October 1944 to September 1945

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

RIO GRANDE BASIN

RIO GRANDE AT SAN ACACIA, N. MEX.

LOCATION.—At San Acacia diversion dam, which is 0.2 mile above the San Acacia gaging station, half a mile east of San Acacia, and 2 miles downstream from Rio Salado.

DRAINAGE AREA.—26,770 square miles, including 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.

RECORDS AVAILABLE.—Chemical analyses: July 1937 to December 1937 and March 1939 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 2,380 parts per million, Aug. 13–14; minimum, 217 parts per million, May 21–31.
Total hardness: Maximum, 1,180 parts per million Aug. 13–14; minimum, 124 parts per million May 11–20, 21–31.

EXTREMES, 1937, 1939–45.—Dissolved solids: Maximum, 2,380 parts per million Aug. 13–14, 1945; minimum, 183 parts per million June 1–10, 1942.
Total hardness: Maximum, 1,180 parts per million Aug. 13–14, 1945; minimum, 101 parts per million June 11–20, 1942.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–10, 1944	339	74.0			33	0.02	70	14	71	6.9	205	170	31	0.5	1.6	0.3	499	0.68	457	232	64	39
Oct. 11–15	234	74.5					71	13	76		212	165	34		2.0		465	.63	294	230	57	42
Oct. 16–21	2,256	120			20	.30	125	25	110	6.8	227	385	49	.5	.4	.8	834	1.13	5,080	415	229	36
Oct. 22–31	666	72.6			27	.03	71	13	65	5.9	197	157	35	.5	2.0	.3	473	.64	851	230	69	37
Nov. 1–6, 8–10	485	66.7			30	.02	65	12	60	5.1	194	144	31	.5	1.3	.3	445	.61	583	212	52	37
Nov. 11–20	502	66.7			28	.02	66	12	60	5.0	198	140	32	.5	1.0	.5	442	.60	599	214	52	37
Nov. 21–30	615	70.7			29	.02	66	13	65	4.6	199	143	39	.5	1.2	.3	459	.62	762	218	55	39
Dec. 1–10	738	70.1			29	.02	65	12	66	4.6	199	140	41	.4	1.4	.4	457	.62	911	212	48	40
Dec. 11–20	809	65.9			28	.02	63	12	61	4.5	192	131	37	.4	1.0	.4	433	.59	946	206	49	38
Dec. 21–31	861	64.5			28	.02	60	12	59	4.3	185	127	37	.4	.8	.4	420	.57	976	199	48	39
Jan. 1–10, 1945	780	63.8			28	.02	60	11	58	4.3	188	126	36	.4	.5	.4	417	.57	878	194	40	39
Jan. 11–20	781	64.8		7.8	25	.02	60	12	63	5.8	186	123	39	.4	1.0	.4	421	.57	888	199	46	49
Jan. 21–31	763	63.7		7.8	34	.02	60	12	61	5.6	187	120	38	.4	1.8	.4	425	.58	876	199	46	30

RIO GRANDE BASIN—Continued

RIO GRANDE AT SAN ACACIA, N. MEX.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Feb. 1-10	920	67.1	------	7.7	31	.02	63	12	65	5.4	188	144	33	0.5	2.1	.4	449	0.61	1,120	206	52	40
Feb. 11-13, 16-19	911	61.1	------	7.7	30	.02	59	11	56	5.1	183	121	30	.4	2.4	.4	405	.55	996	192	42	38
Feb. 20-28	895	59.3	------	7.7	29	.02	57	11	54	4.6	172	123	29	.4	1.7	.4	394	.54	952	188	46	38
Mar. 1-10	763	57.7	------	7.7	32	.02	56	11	52	5.1	175	111	28	.4	1.5	.4	383	.52	789	185	42	37
Mar. 11-20	687	59.4	------	7.7	30	.02	57	11	55	5.1	179	117	31	.4	1.8	.4	397	.54	736	188	41	38
Mar. 21-30	528	62.6	------	7.7	32	.03	60	12	59	4.3	186	128	32	.4	.9	.4	420	.57	599	199	46	39
Apr. 1-5, 7-10	387	67.6	------	7.5	37	.06	63	12	64	5.9	200	134	33	.5	1.9	.4	450	.61	470	206	42	39
Apr. 11-20	931	60.1	------	7.5	32	.17	58	11	54	5.6	189	106	29	.4	2.3	.6	392	.53	985	190	34	37
Apr. 21-30	2,562	52.3	------	7.7	31	.08	54	9.7	41	6.1	176	94	17	.4	1.1	.1	341	.46	2,360	175	31	33
May 1-10	5,798	43.9	------	7.8	26	.08	46	8.4	35	4.6	149	81	14	.4	.7	.2	290	.39	4,540	150	28	33
May 11-20	8,408	34.3	------	7.9	26	.11	39	6.6	23	3.7	131	53	9.5	.3	1.1	.1	227	.31	5,150	124	17	28
May 21-31	5,292	33.4	------	7.9	22	.14	39	6.4	21	3.8	129	51	8.5	.3	1.3	.1	217	.30	3,100	124	18	26
June 1-10	3,332	37.1	------	7.8	26	.10	40	7.1	27	3.7	126	64	12	.3	1.1	.2	243	.33	2,190	129	26	30
June 11-20	1,546	48.4	------	7.7	28	.10	49	8.9	38	5.0	152	89	18	.4	1.8	.3	313	.43	1,310	159	34	33
June 21-22, 28-30	620	62.1	------	7.6	36	.13	60	11	57	5.9	181	126	26	.4	4.3	.3	416	.57	696	194	46	38
July 1-10	431	65.6	------	7.7	33	.07	65	12	60	5.3	197	136	27	.4	2.1	.3	438	.60	510	212	50	37
July 11-20	324	67.4	------	7.7	38	.04	63	12	63	5.6	192	145	28	.4	1.4	.2	451	.61	395	206	49	39
July 21-31	333	68.2	------	7.8	32	.04	65	13	61	6.4	193	148	29	.4	1.3	.3	451	.61	405	216	58	37
Aug. 1-2, 4-7, 9-10	342	84.5	------	7.5	36	.05	78	17	86	8.4	250	181	42	.5	1.0	.1	573	.78	529	264	60	40
Aug. 8	584	217	------	7.5	------	------	191	48	255		565	469	197	------	.0	------	1,440	1.96	2,270	674	211	45
Aug. 11-12, 15-20	653	93.5	------	7.7	26	.33	94	18	89	8.0	215	253	43	.6	1.4	.3	639	.87	1,130	308	132	38
Aug. 13-14	1,895	288	------	7.5	24	.07	358	71	290	17	340	1,340	108	.9	.0	.8	2,380	3.24	12,200	1,180	906	34
Aug. 21-22	237	165	------	7.6	19	.17	160	36	178		274	614	48	.7	.9	1.0	1,190	1.62	761	547	322	41
Aug. 23-31	217	80.7	------	7.7	32	.06	77	15	79	7.6	202	200	39	.5	2.3	.4	552	.75	323	254	88	40
Sept. 1-10	316	75.0	------	7.7	34	.03	70	14	72	8.2	207	170	32	.5	1.9	.3	505	.69	431	232	62	39
Sept. 11-20	133	73.8	------	7.8	33	.03	70	13	68	7.8	207	162	32	.4	2.0	.2	490	.67	176	228	58	38
Sept. 21-30	221	75.0	------	7.7	32	.03	70	14	71	7.8	209	167	33	.4	1.8	.3	500	.68	298	232	60	39
Weighted average	1,267	53.8	------	------	27	0.09	56	10	46	4.8	163	113	22	0.4	1.3	0.3	361	0.49	1,230	180	47	35

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	339						3.49	1.15	3.09	0.18	3.36	3.54	0.87	0.03	0.03							39
Oct. 11-15	234						3.54	1.07	3.29		3.47	3.44	.96		.03							42
Oct. 16-21	2,256						6.24	2.06	4.78	.17	3.72	8.02	1.38	.03	.01							36
Oct. 22-31	666						3.54	1.07	2.83	.15	3.23	3.27	.99	.03	.03							37
Nov. 1-6, 8-10	485						3.24	.99	2.61	.13	3.18	3.00	.87	.03	.02							37
Nov. 11-20	502						3.29	.99	2.61	.13	3.25	2.91	.90	.03	.02							37
Nov. 21-30	615						3.29	1.07	2.83	.12	3.26	2.98	1.10	.03	.02							39
Dec. 1-10	738						3.24	.99	2.87	.12	3.26	2.91	1.16	.02	.02							40
Dec. 11-20	809						3.14	.99	2.65	.12	3.15	2.73	1.04	.02	.02							38
Dec. 21-31	861						2.99	.99	2.57	.11	3.03	2.64	1.04	.02	.01							39
Jan. 1-10, 1945	780						2.99	.90	2.52	.11	3.08	2.62	1.02	.02	.01							39
Jan. 11-20	781						2.99	.99	2.74	.15	3.05	2.56	1.10	.02	.02							40
Jan. 21-31	763						2.99	.99	2.65	.14	3.07	2.50	1.07	.02	.03							39
Feb. 1-10	920						3.14	.99	2.83	.14	3.08	3.00	.93	.03	.03							40
Feb. 11-13, 16-19	911						2.94	.90	2.44	.13	3.00	2.52	.85	.02	.04							38
Feb. 20-28	895						2.85	.90	2.35	.12	2.82	2.56	.82	.02	.03							38
Mar. 1-10	763						2.80	.90	2.26	.13	2.87	2.31	.79	.02	.02							37
Mar. 11-20	687						2.85	.90	2.39	.13	2.93	2.44	.87	.02	.03							38
Mar. 21-30	528						2.99	.99	2.57	.11	3.05	2.66	.90	.02	.01							39
Apr. 1-5, 7-10	387						3.14	.99	2.78	.15	3.28	2.79	.93	.03	.03							39
Apr. 11-20	931						2.89	.90	2.35	.14	3.10	2.21	.82	.02	.04							37
Apr. 21-30	2,562						2.70	.80	1.78	.16	2.88	1.96	.48	.02	.02							33
May 1-10	5,798						2.30	.69	1.52	.12	2.44	1.69	.39	.02	.01							33
May 11-20	8,408						1.95	.54	1.00	.09	2.15	1.10	.27	.02	.02							28
May 21-31	5,292						1.95	.53	.91	.10	2.11	1.06	.24	.02	.02							26
June 1-10	3,332						2.00	.58	1.17	.09	2.07	1.33	.34	.02	.02							30
June 11-20	1,546						2.45	.73	1.65	.13	2.49	1.85	.51	.02	.03							33
June 21-22, 28-30	620						2.99	.90	2.48	.15	2.97	2.62	.73	.02	.07							38
July 1-10	431						4.24	.99	2.61	.14	3.23	2.83	.76	.02	.03							37
July 11-20	324						3.14	.99	2.74	.14	3.15	3.02	.79	.02	.02							39
July 21-31	333						3.24	1.07	2.65	.16	3.16	3.08	.82	.02	.02							37
Aug. 1-2, 4-7, 9-10	342						3.89	1.40	3.74	.21	4.10	3.77	1.18	.03	.02							40
Aug. 8	584						9.53	3.95	11.10		9.26	9.76	5.56		.00							45
Aug. 11-12, 15-20	653						4.69	1.48	3.87	.20	3.52	5.27	1.21	.03	.02							38
Aug. 13-14	1,895						17.86	5.84	12.61	.43	5.57	27.90	3.05	.05	.00							34
Aug. 21-22	237						7.98	2.96	7.73		4.49	12.78	1.35	.04	.01							41
Aug. 23-31	217						3.84	1.23	3.44	.19	3.31	4.16	1.11	.03	.04							40
Sept. 1-10	316						3.49	1.15	3.13	.21	3.39	3.54	.90	.03	.03							39
Sept. 11-20	133						3.49	1.07	2.96	.20	3.39	3.37	.90	.02	.03							38
Sept. 21-30	221						3.49	1.15	3.09	.20	3.43	3.48	.93	.02	.03							39
Weighted average	1,267						2.79	0.82	2.00	0.12	2.67	2.35	0.62	0.02	0.02							35

RIO GRANDE BASIN—Continued

RIO GRANDE AT MISSION PUMPING PLANT NEAR MISSION, TEX.

LOCATION.—At Mission pumping plant, 3 miles south of Mission, Tex.
RECORDS AVAILABLE.—Chemical analyses: July 1945 to September 1945.
EXTREMES, JULY 1945–SEPTEMBER 1945.—Dissolved solids: Maximum, 940 parts per million Sept. 21–30; minimum, 514 parts per million July 12–20.
Total hardness: Maximum, 360 parts per million Sept. 21–30; minimum, 233 parts per million July 12–20.

Chemical analyses, in parts per million, July 1945 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	Temperature (°F.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
July 1-11, 1945		135		87	30	162	152	242	222	3.5	929	340
July 12-20		74.9		72	13	70	160	157	60	8.2	514	233
July 21-31		99.8		84	16	106	154	206	114	4.7	660	276
Aug. 1-10		97.1		81	17	95	149	188	111	5.9	660	272
Aug. 11-20		120		81	22	121	127	226	152	1.8	779	292
Aug. 21-31		131		86	26	145	126	274	175	1.8	866	322
Sept. 1-10		140		92	30	164	134	302	200	2.2	908	353
Sept. 11-20		137		82	28	167	136	257	213	1.8	874	320
Sept. 21-30		146		88	34	173	142	292	222	2.5	940	360

Chemical analyses, in equivalents per million, July 1945 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	Temperature (°F.)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Nitrate (NO_3)	Dissolved solids	Total hardness as $CaCO_3$
July 1-11, 1945				4.34	2.47	7.05	2.50	5.04	6.26	0.06		
July 12-20				3.59	1.07	3.06	2.63	3.27	1.69	.13		
July 21-31				4.19	1.32	4.61	2.53	4.29	3.22	.08		
Aug. 1-10				4.04	1.40	4.14	2.44	3.91	3.13	.10		
Aug. 11-20				4.04	1.81	5.27	2.19	4.71	4.29	.03		
Aug. 21-31				4.29	2.14	6.31	2.07	5.70	4.94	.03		
Sept. 1-10				4.59	2.47	7.12	2.21	6.29	5.64	.04		
Sept. 11-20				4.09	2.30	7.24	2.24	5.35	6.01	.03		
Sept. 21-30				4.39	2.80	7.52	2.33	6.08	6.26	.04		

PECOS RIVER BELOW ALAMOGORDO DAM, N. MEX.

LOCATION.— Approximately 600 feet upstream from gaging station which is located 1,200 feet downstream from Alamogordo Dam, 1½ miles downstream from Alamogordo Creek, and 4½ miles northeast of Guadalupe.

DRAINAGE AREA.— 4,390 square miles (contributing area).

RECORDS AVAILABLE.— Chemical analyses: June 1937 to September 1945.

EXTREMES, 1944–45.— Dissolved solids: Maximum, 2,270 parts per million Apr. 11–20; minimum, 962 parts per million June 1–10. Total hardness: Maximum, 1,550 parts per million Apr. 11–20; minimum, 683 parts per million June 1–10.

EXTREMES, 1937–45.— Dissolved solids: Maximum, 2,590 parts per million Apr. 21–30, 1938; minimum, 435 parts per million Oct. 1–8, 1941. Total hardness: Maximum, 1,640 parts per million Apr. 11–30, 1938; minimum, 294 parts per million Oct. 1–8, 12–20, 1941.

REMARKS.— Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	94.4	238	------	------	18	0.03	443	66	73		122	1,230	109	0.5	0.5	0.1	2,000	2.72	510	1,380	1,280	10
Oct. 11-20	96.1	219	------	------	18	.02	409	59	67		123	1,120	99	.4	.5	.1	1,830	2.49	475	1,260	1,160	10
Oct. 21-31	82.8	208	------	------	15	.03	383	55	66		125	1,050	92	.3	.8	.1	1,720	2.34	385	1,180	1,080	11
Nov. 1-10	22.0	215	------	------	16	.02	402	58	64		134	1,090	95	.4	.8	.1	1,790	2.43	106	1,240	1,130	10
Nov. 11-20	1.6	218	------	------	18	.08	410	60	64		138	1,110	98	.4	.8	.2	1,830	2.49	7.9	1,270	1,160	10
Nov. 21-31	1.7	225	------	------	16	.06	419	64	69		149	1,140	105	.4	.5	.2	1,890	2.57	8.7	1,310	1,190	10
Dec. 1-10	1.8	220	------	------	17	.07	400	63	74		140	1,120	102	.4	.5	.2	1,850	2.52	9.0	1,260	1,150	11
Dec. 11-20	1.8	224	------	------	15	.08	419	62	70		145	1,140	103	.4	.5	.2	1,880	2.56	9.1	1,300	1,180	10
Dec. 21-30	1.5	228	------	------	16	.10	428	64	68		145	1,160	107	.4	.8	.2	1,920	2.61	7.8	1,330	1,210	10
Jan. 1-10, 1945	1.4	233	------	8.1	19	.10	428	70	68		149	1,180	108	.4	.8	.2	1,950	2.65	7.4	1,360	1,230	10
Jan. 11-20	1.6	232	------	7.9	15	.05	428	72	70		156	1,180	112	.4	.9	.2	1,960	2.67	8.5	1,360	1,240	10
Jan. 21-31	1.2	234	------	7.8	17	.05	432	72	74		153	1,200	112	.4	1.0	.2	1,980	2.69	6.4	1,370	1,250	10
Feb. 1-10	.9	234	------	7.9	15	.15	432	69	69		127	1,200	112	.4	.2	.4	1,960	2.67	4.8	1,360	1,260	10
Feb. 11-19	.4	230	------	7.8	14	.05	410	70	77		130	1,170	109	.4	.2	.4	1,910	2.60	2.1	1,310	1,200	11
Feb. 20-28	.7	234	------	7.7	15	.05	428	69	73		138	1,190	111	.4	.2	.4	1,950	2.65	3.9	1,350	1,240	10
Mar. 1-10	1.1	239	------	7.7	12	.05	444	69	73		129	1,230	115	.5	.2	.4	2,010	2.73	6.0	1,390	1,290	10
Mar. 11-20	1.2	239	------	------	17	.07	433	69	85		143	1,220	114	.4	.7	.4	2,010	2.73	6.5	1,360	1,250	12
Mar. 21-31	229	246	------	------	15	.08	450	69	84		144	1,250	120	.4	.6	.4	2,060	2.80	1,270	1,410	1,290	12

RIO GRANDE BASIN—Continued

PECOS RIVER BELOW ALAMOGORDO DAM, N. MEX.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
																	Parts per million	Tons per acre-foot	Tons per day	Total	Noncarbonate	
Apr. 1-10	1,536	248	------	------	16	0.10	484	66	78		132	1,320	118	0.4	0.6	0.4	2,150	2.92	8,920	1,480	1,370	10
Apr. 11-20	501	259	------	7.6	17	.06	504	70	91		133	1,400	124	.3	.8	.4	2,270	3.09	3,070	1,550	1,440	11
Apr. 21-30	112	249	------	7.6	14	.09	474	66	89		131	1,320	116	.4	1.0	.6	2,140	2.91	647	1,450	1,350	12
May 1-10	105	195	------	7.7	14	.06	359	49	61		128	968	82	.4	1.0	.6	1,600	2.18	454	1,100	992	11
May 11-20	111	161	------	7.5	19	.08	277	41	47		129	739	60	.4	.8	.5	1,250	1.70	375	860	754	11
May 21-24, 26-31	107	131	------	7.7	19	.08	225	35	30		122	577	49	.4	.9	.6	996	1.35	288	706	606	8
June 1-10	107	128	------	7.7	16	.05	221	32	29		123	556	46	.3	.8	.5	962	1.31	278	683	582	9
June 11-20	585	134	------	7.8	18	.05	234	33	39		132	604	46	.3	.6	.3	1,040	1.41	1,640	720	612	10
June 21-30	618	160	------	7.7	20	.05	289	41	41		133	750	62	.4	.8	.5	1,270	1.73	2,120	890	780	9
July 1-10	112	191	------	7.6	19	.07	352	49	62		136	948	80	.5	1.0	.6	1,580	2.15	478	1,080	968	11
July 11-20	102	204	------	7.6	17	.05	378	55	64		112	1,050	86	.4	.5	.6	1,710	2.33	471	1,170	1,080	11
July 21-31	103	198	------	7.5	16	.06	372	51	61		120	1,020	77	.4	.8	.6	1,660	2.26	462	1,140	1,040	10
Aug. 1-10	107	206	------	7.9	16	.07	382	53	59		123	1,040	80	.5	2.7	.1	1,690	2.30	488	1,170	1,070	10
Aug. 11-20	93.2	194	------	7.9	14	.08	357	52	54		121	976	74	.3	1.6	.2	1,590	2.16	400	1,100	1,010	10
Aug. 21-27, 29-31	558	147	------	6.0	15	.27	264	36	37		141	680	44	.4	2.0	.2	1,150	1.56	1,730	806	691	9
Sept. 1-10	662	138	------	7.5	14	.03	264	35	34		139	660	52	.3	2.5	.1	1,130	1.54	2,020	802	688	9
Sept. 11-20	88.6	174	------	7.5	16	.03	327	44	57		149	861	71	.3	1.7	.2	1,450	1.97	347	997	875	11
Sept. 21-30	80.0	201	------	7.5	15	.03	389	53	62		153	1,030	87	.3	1.7	.3	1,710	2.33	369	1,190	1,060	10
Weighted average	174	195	------	------	16	0.08	366	51	59		133	983	83	0.4	1.1	0.3	1,630	2.22	766	1,120	1,010	10

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	94.4						22.11	5.43	3.18	2.00	25.61	3.07	0.03	0.01							10
Oct. 11-20	96.1						20.41	4.85	2.90	2.02	23.32	2.79	.02	.01							10
Oct. 21-31	82.8						19.12	4.52	2.89	2.05	21.86	2.59	.02	.01							11
Nov. 1-10	22.0						20.06	4.77	2.77	2.20	22.69	2.68	.02	.01							10
Nov. 11-20	1.6						20.46	4.93	2.77	2.26	23.11	2.76	.02	.01							10
Nov. 21-30	1.7						20.91	5.26	2.99	2.44	23.73	2.96	.02	.01							10
Dec. 1-10	1.8						20.11	5.18	3.23	2.29	23.32	2.88	.02	.01							11
Dec. 11-20	1.8						20.91	5.10	3.03	2.38	23.73	2.90	.02	.01							10
Dec. 21-30	1.5						21.36	5.26	2.96	2.38	24.15	3.02	.02	.01							10
Jan. 1-10, 1945	1.4						21.36	5.76	2.97	2.44	24.57	3.05	.02	.01							10
Jan. 11-20	1.6						21.36	5.92	3.04	2.56	24.57	3.16	.02	.01							10
Jan. 21-31	1.2						21.56	5.92	3.21	2.51	24.98	3.16	.02	.02							10
Feb. 1-10	.9						21.56	5.67	3.01	2.08	24.98	3.16	.02	.00							10
Feb. 11-19	.4						20.46	5.76	3.36	2.13	24.36	3.07	.02	.00							11
Feb. 20-28	.7						21.36	5.67	3.16	2.26	24.78	3.13	.02	.00							10
Mar. 1-10	1.1						22.16	5.67	3.16	2.11	25.61	3.24	.03	.00							10
Mar. 11-20	1.2						21.61	5.67	3.71	2.34	25.40	3.22	.02	.01							12
Mar. 21-31	229						22.46	5.67	3.66	2.36	26.02	3.38	.02	.01							12
Apr. 1-10	1,536						24.16	5.43	3.41	2.16	27.48	3.33	.02	.01							10
Apr. 11-20	501						25.16	5.76	3.94	2.18	29.15	3.50	.02	.01							11
Apr. 21-30	112						23.66	5.43	3.85	2.15	27.48	3.27	.02	.02							12
May 1-10	105						17.92	4.03	2.65	2.10	20.15	2.31	.02	.02							11
May 11-20	111						13.82	3.37	2.03	2.11	15.39	1.69	.02	.01							11
May 21-24, 26-31	107						11.23	2.88	1.31	2.00	12.01	1.38	.02	.01							8
June 1-10	107						11.03	2.63	1.27	2.02	11.58	1.30	.02	.01							9
June 11-20	585						11.68	2.71	1.68	2.16	12.58	1.30	.02	.01							10
June 21-30	618						14.42	3.37	1.79	2.18	15.62	1.75	.02	.01							9
July 1-10	112						17.56	4.03	2.69	2.23	19.74	2.26	.03	.02							11
July 11-20	102						18.86	4.52	2.78	1.84	21.86	2.43	.02	.01							11
July 21-31	103						18.56	4.19	2.66	1.97	21.24	2.17	.02	.01							10
Aug. 1-10	107						19.06	4.36	2.58	2.02	21.65	2.26	.03	.04							10
Aug. 11-20	93.2						17.81	4.28	2.35	1.98	20.32	2.09	.02	.03							10
Aug. 21-27, 29-31	558						13.17	2.96	1.63	2.31	14.16	1.24	.02	.03							9
Sept. 1-10	662						13.17	2.88	1.50	2.28	13.74	1.47	.02	.04							9
Sept. 11-20	88.6						16.32	3.62	2.48	2.44	17.93	2.00	.02	.03							11
Sept. 21-30	80.0						19.41	4.36	2.68	2.51	21.44	2.45	.02	.03							10
Weighted average	174						18.26	4.19	2.57	2.18	20.47	2.34	0.02	0.02							10

RIO GRANDE BASIN—Continued

PECOS RIVER NEAR ACME, N. MEX.

Location.—At highway bridge on U. S. Highway 70, approximately 3 miles above gaging station which is located 1 mile southeast of Melena railroad station, 3½ miles downstream from Salt Creek, 5 miles southwest of Acme, and 13 miles northeast of Roswell.

Drainage area.—11,380 square miles (contributing area).

Records available.—Chemical analyses: July 1937 to September 1945.

Extremes, 1944–45.—Dissolved solids: Maximum, 12,700 parts per million Mar. 21–31; minimum, 1,400 parts per million Oct. 16–17.
Total hardness: Maximum, 3,520 parts per million March 21–31; minimum, 711 parts per million Oct. 16–17.

Extremes, 1937–45.—Dissolved solids: Maximum, 19,870 parts per million May 23–June 2, 1938; minimum, 806 parts per million May 24, 1941.
Total hardness: Maximum, 5,320 parts per million May 23–June 2, 1938; minimum, 528 parts per million May 24, 1941.

Remarks.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–10, 1944	53.3	319			18		460	90	234		103	1,420	328		2.8		2,600	3.54	374	1,520	1,430	25
Oct. 11–15, 18–20	66.6	333			20		472	92	248		104	1,450	355		2.0		2,690	3.66	484	1,560	1,470	26
Oct. 16–17	400	202					219	40	187		117	639	250		4.5		1,400	1.90	1,510	711	615	36
Oct. 21–31	151	288			18		382	78	215		109	1,180	300		1.2		2,230	3.03	909	1,270	1,180	27
Nov. 1–10	71.6	345			18		454	94	275		120	1,390	405		1.2		2,700	3.67	522	1,520	1,420	28
Nov. 11–17, 19–20	18.4	412			18		492	107	393		122	1,540	580		2.0		3,190	4.34	158	1,670	1,570	34
Nov. 21–29	30.8	479			19		520	123	521		138	1,660	775		2.0		3,690	5.02	307	1,800	1,690	39
Dec. 1–10	30.1	439			15		492	114	453		139	1,550	675		2.0		3,370	4.58	274	1,700	1,580	37
Dec. 11–20	18.4	494			13		526	124	550		151	1,660	825		2.5		3,770	5.13	187	1,820	1,700	40
Dec. 21–31	21.6	533			12		534	129	622		150	1,690	945		1.5		4,010	5.45	234	1,860	1,740	42
Jan. 1–10, 1945	20.1	580		7.6	16		556	141	688		148	1,760	1,070		.5		4,300	5.85	233	1,970	1,850	43
Jan. 11–20	15.5	643		7.6	15		584	154	806		145	1,870	1,260		.2		4,760	6.47	199	2,090	1,970	46
Jan. 21–31	24.0	576		7.7	13		550	142	677		141	1,760	1,050		.2		4,260	5.79	276	1,960	1,840	43
Feb. 1–10	11.7	783		7.6	11		632	176	1,080		151	2,060	1,680		.2		5,710	7.77	180	2,300	2,180	50
Feb. 11–15, 17–19	4.1	1,100		7.6	9		734	230	1,710		171	2,420	2,720		.5		7,910	10.8	87.6	2,780	2,640	57
Feb. 20–24, 26–28	[1]3.8	1,090			11		738	222	1,680		168	2,410	2,660		1.1		7,800	10.6	80	2,760	2,620	57
Feb. 25	3.3	664											1,310									
Mar. 2–10	2.02	1,450			9		807	270	2,470		179	2,700	3,920		.9		10,300	14.0	56	3,120	2,980	63
Mar. 11–15, 17–20	1.0	1,750			8		871	308	3,160		193	2,960	5,010		1.2		12,400	16.9	33	3,440	3,280	67
Mar. 21–31	.3	1,780			8		882	320	3,220		190	3,040	5,110		1.3		12,700	17.3	10	3,520	3,360	67

Apr. 1-10	1,049	348	-----	7.6	23	-----	548	115	199	141	1,670	295	-----	3.7	-----	2,920	3.97	8,270	1,840	1,720	19
Apr. 11-20	673	318	-----	7.6	20	-----	554	95	147	133	1,570	245	-----	3.1	-----	2,700	3.67	4,910	1,770	1,660	15
Apr. 21-30	48.4	408	-----	7.5	20	-----	602	115	299	122	1,800	460	-----	2.2	-----	3,360	4.57	439	1,980	1,880	25
May 1-10	19.3	494	-----	7.5	22	-----	668	142	419	122	2,060	650	-----	1.3	-----	4,020	5.47	209	2,250	2,150	29
May 11-20	8.9	535	-----	7.4	23	-----	726	160	466	136	2,270	715	-----	.8	-----	4,430	6.02	106	2,470	2,360	29
May 21-31	3.2	630	-----	7.1	28	-----	880	212	443	124	2,450	975	-----	2.6	-----	5,050	6.87	44	3,070	2,970	24
June 1-10	(2)	772	-----	7.2	26	-----	860	226	860	140	2,740	1,400	-----	2.9	-----	6,180	8.40	-----	3,080	2,960	38
June 11-18	(2)	770	-----	7.3	25	-----	876	236	845	156	2,830	1,360	-----	2.5	-----	6,250	8.50	-----	3,160	3,030	37
June 19-20	770	271	-----	7.6	23	-----	434	75	145	140	1,250	206	-----	.7	-----	2,200	2.99	4,570	1,390	1,280	18
June 21-30	660	212	-----	7.7	18	-----	344	51	105	118	958	142	-----	2.5	-----	1,680	2.28	2,990	1,070	972	18
July 1-10	[3] 7.00	338	-----	7.4	22	-----	492	85	246	104	1,450	366	-----	1.9	-----	2,710	3.69	51	1,580	1,490	25
July 11-20	[4] 3.6	371	-----	7.2	25	-----	552	125	252	102	1,740	385	-----	1.8	-----	3,130	4.26	30.4	1,890	1,810	22
July 21-31	(2)	386	-----	7.3	20	-----	628	132	234	93	1,980	340	-----	2.2	-----	3,380	4.60	-----	2,110	2,030	19
Aug. 1, 3-4	(2)	353	-----	7.5	21	-----	580	112	204	79	1,760	320	-----	5.2	-----	3,040	4.13	-----	1,910	1,840	19
Aug. 5-8, 10	(2)	977	-----	7.4	17	-----	636	187	1,590	106	2,320	2,340	-----	1.8	-----	7,140	9.71	-----	2,360	2,270	59
Aug. 9	(2)	3,930	-----	7.3	-----	-----	-----	-----	-----	-----	-----	7,840	-----	-----	-----	-----	-----	-----	-----	-----	-----
Aug. 11-12	(2)	2,540	-----	7.4	-----	-----	-----	-----	-----	-----	-----	14,100	-----	-----	-----	-----	-----	-----	-----	-----	-----
Aug. 13-19	(2)	367	-----	7.6	12	-----	556	105	253	90	1,700	370	-----	3.7	-----	3,040	4.13	-----	1,820	1,740	23
Aug. 20-21	4.65	817	-----	7.7	-----	-----	666	178	1,150	94	2,240	1,760	-----	2.4	-----	6,040	8.21	76	2,390	2,320	51
Aug. 22-26	176	280	-----	7.8	26	-----	334	76	238	127	1,020	350	-----	4.3	-----	2,110	2.87	1,000	1,150	1,040	31
Aug. 27-28	20.5	497	-----	7.7	-----	-----	550	126	529	122	1,690	835	-----	4.4	-----	3,790	5.15	210	1,890	1,790	38
Aug. 29-31	601	281	-----	7.8	21	-----	418	76	196	149	1,220	275	-----	2.0	-----	2,280	3.10	3,700	1,360	1,230	24
Sept. 1-10	697	197	-----	7.7	23	-----	324	52	92	128	922	110	-----	2.0	-----	1,590	2.16	2,990	1,020	918	16
Sept. 11-20	[5] 15.1	265	-----	7.6	17	-----	402	70	153	118	1,160	225	-----	2.0	-----	2,090	2.84	85	1,290	1,190	20
Sept. 21-30	[6] .4	300	-----	7.6	20	-----	489	86	167	114	1,450	235	-----	1.4	-----	2,500	3.40	2.7	1,570	1,480	19
Weighted average	116	297	-----	-----	21	-----	451	85	187	131	1,330	274	-----	2.7	-----	2,420	3.29	758	1,470	1,360	22

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	53.3	-----	-----	-----	-----	-----	22.96	7.40	10.19	1.69	29.56	9.25	-----	0.05	-----	-----	-----	-----	-----	-----	25
Oct. 11-15, 18-20	66.6	-----	-----	-----	-----	-----	23.56	7.57	10.80	1.70	30.19	10.01	-----	.03	-----	-----	-----	-----	-----	-----	26
Oct. 16-17	400	-----	-----	-----	-----	-----	10.93	3.29	8.12	1.92	13.30	7.05	-----	.07	-----	-----	-----	-----	-----	-----	36
Oct. 21-31	151	-----	-----	-----	-----	-----	19.07	6.41	9.36	1.79	24.57	8.46	-----	.02	-----	-----	-----	-----	-----	-----	27
Nov. 1-10	71.6	-----	-----	-----	-----	-----	22.66	7.73	11.96	1.97	28.94	11.42	-----	.02	-----	-----	-----	-----	-----	-----	28
Nov. 11-17, 19-20	18.4	-----	-----	-----	-----	-----	24.56	8.80	17.09	2.00	32.06	16.36	-----	.03	-----	-----	-----	-----	-----	-----	34
Nov. 21-29	30.8	-----	-----	-----	-----	-----	25.95	10.12	22.64	2.26	34.56	21.86	-----	.03	-----	-----	-----	-----	-----	-----	39
Dec. 1-10	30.1	-----	-----	-----	-----	-----	24.56	9.37	19.69	2.28	32.27	19.04	-----	.03	-----	-----	-----	-----	-----	-----	37
Dec. 11-20	18.4	-----	-----	-----	-----	-----	26.25	10.20	23.90	2.48	34.56	23.27	-----	.04	-----	-----	-----	-----	-----	-----	40
Dec. 21-31	21.6	-----	-----	-----	-----	-----	26.65	10.61	27.05	2.46	35.18	26.65	-----	.02	-----	-----	-----	-----	-----	-----	42
Jan. 1-10, 1945	20.1	-----	-----	-----	-----	-----	27.75	11.60	29.91	2.43	36.64	30.18	-----	.01	-----	-----	-----	-----	-----	-----	43
Jan. 11-20	15.5	-----	-----	-----	-----	-----	29.15	12.66	35.04	2.38	38.93	35.54	-----	.00	-----	-----	-----	-----	-----	-----	46
Jan. 21-31	24.0	-----	-----	-----	-----	-----	27.45	11.68	29.43	2.31	36.64	29.61	-----	.00	-----	-----	-----	-----	-----	-----	43

See footnotes at end of table.

RIO GRANDE BASIN—Continued

PECOS RIVER NEAR ACME, N. MEX.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Feb. 1-10	11.7						31.54	14.47	46.74		2.48	42.89	47.38		0.00							50
Feb. 11-15, 17-19	4.1						36.64	18.91	74.35		2.80	50.38	76.71		.01							57
Feb. 20-24, 26-28	[1] 3.8						36.84	18.26	72.86		2.75	50.17	75.02		.02							57
Feb. 25	3.3												36.95									
Mar. 2-10	2.02						40.28	22.20	107.63		2.93	56.21	110.56		.01							63
Mar. 11-15, 17-20	1.0						43.47	25.33	137.31		3.16	61.63	141.30		.02							67
Mar. 21-31	.3						44.02	26.32	140.20		3.11	63.29	144.12		.02							67
Apr. 1-10	1,049						27.35	9.46	8.65		2.31	34.77	8.32		.06							19
Apr. 11-20	673						27.65	7.81	6.37		2.18	32.69	6.91		.05							15
Apr. 21-30	48.4						30.05	9.46	12.98		2.00	37.48	12.97		.04							25
May 1-10	19.3						33.34	11.68	18.22		2.00	42.89	18.33		.02							29
May 11-20	8.9						36.24	13.16	20.27		2.23	47.26	20.17		.01							29
May 21-31	3.2						43.91	17.43	19.24		2.03	51.01	27.50		.04							24
June 1-10	([2])						42.91	18.59	37.37		2.29	57.05	39.48		.05							38
June 11-18	([2])						43.71	19.41	36.76		2.56	58.92	38.36		.04							37
June 19-20	770						21.66	6.17	6.31		2.29	26.03	5.81		.01							18
June 21-30	660						17.17	4.19	4.56		1.93	19.95	4.00		.04							18
July 1-10	[3] 7.00						24.55	6.99	10.70		1.70	30.19	10.32		.03							25
July 11-20	[4] 3.6						27.54	10.28	10.97		1.67	36.23	10.86		.03							22
July 21-31	([2])						31.34	10.86	10.17		1.52	41.22	9.59		.04							19
Aug. 1, 3-4	([2])						28.94	9.21	8.89		1.29	36.64	9.03		.08							19
Aug. 5-8, 10	([2])						31.74	15.38	68.95		1.74	48.30	66.00		.03							59
Aug. 9	([2])												221.11									
Aug. 11-12	([2])												397.66									
Aug. 13-19	([2])						27.74	8.63	10.99		1.47	35.39	10.44		.06							23
Aug. 20-21	4.65						33.23	14.64	49.99		1.54	46.64	49.64		.04							51
Aug. 22-26	176						16.67	6.25	10.34		2.08	21.24	9.87		.07							31
Aug. 27-28	20.5						27.45	10.36	23.00		2.00	35.19	23.55		.07							38

Aug. 29-31	601	------	------	------	------	------	20.86	6.25	8.52	2.44	25.40	7.76	------	.03	------	------	------	------	------	------	24
Sept. 1-10	697	------	------	------	------	------	16.17	4.28	3.98	2.10	19.20	3.10	------	.03	------	------	------	------	------	------	16
Sept. 11-20	[5] 15.1	------	------	------	------	------	20.06	5.76	6.64	1.93	24.15	6.35	------	.03	------	------	------	------	------	------	20
Sept. 21-30	[6] .4	------	------	------	------	------	24.40	7.07	7.24	1.87	30.19	6.63	------	.02	------	------	------	------	------	------	19
Weighted average	116	------	------	------	------	------	22.46	6.99	8.13	2.15	27.69	7.73	------	0.04	------	------	------	------	------	------	22

[1] Mean discharge for Feb. 25 included in computing mean for Feb. 20-28.
[2] No flow at gage on June 1-10, 11-18, July 21-31, Aug. 1-19.
[3] No flow at gage July 8-10.
[4] No flow at gage on July 11-15, 19-20.
[5] No flow at gage on Sept. 19-20.
[6] No flow at gage on Sept. 21-28.

RIO GRANDE BASIN—Continued

PECOS RIVER NEAR ARTESIA, N. MEX.

LOCATION.—At gaging station at bridge on Artesia-Lovington highway 4.2 miles east of Artesia, 6.5 miles north of mouth of Rio Penasco, and 16.5 miles north of McMillan Dam.

DRAINAGE AREA.—15,300 square miles (contributing area).

RECORDS AVAILABLE.—Chemical analyses: July 1937 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 10,900 parts per million Aug. 11–13, 17–21; minimum, 2,000 parts per million Sept 1–10.
Total hardness: Maximum, 3,430 parts per million Aug. 11–13, 17–21; minimum, 1,200 parts per million Sept. 1–10.

EXTREMES, 1937–45.—Dissolved solids: Maximum, 10,900 parts per million Aug. 11–13, 17–21, 1945; minimum, 681 parts per million Sept. 6, 1938.
Total hardness: Maximum, 3,430 parts per million Aug. 11–13, 17–20, 1945; minimum, 404 parts per million Sept. 6, 1938.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na) / Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	172	484	------	------	25	0.07	462	144	520	141	1,530	825	0.9	2.5	0.4	3,580	4.87	1,660	1,740	1,630	39
Oct. 11-20	300	484	------	------	22	.08	458	135	523	140	1,470	840	.7	3.6	.4	3,520	4.79	2,850	1,700	1,580	40
Oct. 21-31	249	478	------	------	23	.07	456	132	525	160	1,470	820	.9	3.2	.4	3,510	4.77	2,360	1,680	1,550	40
Nov. 1-10	193	464	------	------	23	.07	468	137	478	162	1,500	760	.9	3.2	.4	3,450	4.69	1,800	1,730	1,600	38
Nov. 11-20	139	581	------	------	25	.08	496	176	681	178	1,670	1,100	.9	4.1	.4	4,240	5.77	1,590	1,960	1,820	43
Nov. 21-30	141	605	------	------	25	.08	508	180	736	193	1,710	1,180	.9	4.5	.4	4,440	6.04	1,690	2,010	1,850	44
Dec. 1-10	151	583	------	------	20	.07	510	175	688	210	1,690	1,100	.9	5.0	.4	4,290	5.83	1,750	1,990	1,820	43
Dec. 11-14, 16-20	146	583	------	------	22	.08	504	175	689	202	1,670	1,110	.9	5.0	.4	4,280	5.82	1,690	1,980	1,810	43
Dec. 21-31	152	594	------	------	24	.07	502	182	708	216	1,680	1,140	.9	5.0	.4	4,350	5.92	1,790	2,000	1,820	43
Jan. 1-6, 8-10, 1945	150	619	------	7.6	23	.10	500	180	767	203	1,720	1,200	.9	3.9	.6	4,490	6.11	1,820	1,990	1,820	46
Jan. 11-20	121	646	------	7.7	21	.05	508	197	815	200	1,800	1,280	1.0	4.1	.6	4,720	6.42	1,540	2,080	1,910	46
Jan. 21-31	129	638	------	7.7	20	.08	516	197	788	198	1,820	1,240	1.0	4.0	.4	4,680	6.36	1,630	2,100	1,940	45
Feb. 1-5, 7-10	120	656	------	7.7	21	.08	518	203	829	202	1,850	1,300	1.0	3.6	.4	4,830	6.57	1,560	2,130	1,960	46
Feb. 11-19	106	692	------	7.7	20	.10	528	217	890	199	1,910	1,410	1.0	3.1	.6	5,080	6.91	1,450	2,210	2,050	47
Feb. 20-28	101	706	------	------	26	.15	534	223	889	202	1,930	1,420	1.0	4.5	.4	5,130	6.98	1,400	2,250	2,080	46
Mar. 1-2, 4-10	85.2	730	------	------	24	.07	542	225	946	198	1,970	1,500	1.0	3.8	.2	5,310	7.22	1,220	2,280	2,120	47
Mar. 11-20	86.4	741	------	------	23	.07	544	234	963	195	2,020	1,520	1.0	3.8	.2	5,400	7.34	1,260	2,320	2,160	47
Mar. 21-31	71.0	756	------	------	25	.06	560	241	978	200	2,060	1,560	1.2	3.8	.2	5,530	7.52	1,060	2,390	2,220	47

Apr. 1-3	238	794	------	7.3	24	.05	568	248	1,060	216	2,100	1,680	.9	2.3	.6	5,790	7.87	3,720	2,440	2,260	49
Apr. 4-10	1,110	350	------	7.6	20	.05	544	108	218	146	1,640	315	.7	2.2	.4	2,920	3.97	8,750	1,800	1,680	21
Apr. 11-13, 15-20	770	340	------	7.8	24	.05	548	98	211	139	1,610	310	.5	1.8	.4	2,870	3.90	5,970	1,770	1,660	21
Apr. 21-29	126	554	------	7.6	29	.03	578	166	606	147	1,920	935	.8	1.8	.5	4,310	5.86	1,470	2,120	2,000	38
May 1-10	83.4	667	------	7.5	27	.02	584	206	812	144	2,070	1,270	.9	2.3	.5	5,040	6.85	1,130	2,300	2,190	43
May 11-14, 16-20	52.6	781	------	7.5	27	.03	610	232	1,040	150	2,230	1,620	.9	2.2	.6	5,840	7.94	829	2,480	2,350	48
May 21-31	45.7	787	------	7.5	22	.03	586	239	1,060	156	2,150	1,680	.9	2.8	.7	5,820	7.92	718	2,440	2,320	48
June 1-10	21.7	904	------	7.6	25	.03	618	257	1,280	131	2,330	2,020	1.1	2.5	.8	6,600	8.98	387	2,600	2,490	52
June 11-20	13.0	994	------	7.5	22	.02	646	273	1,470	132	2,500	2,280	1.1	1.7	.8	7,260	9.87	255	2,730	2,630	54
June 21-30	657	286	------	8.0	11	.03	422	73	187	116	1,240	262	.6	2.9	.6	2,260	3.07	4,010	1,350	1,260	23
July 1-10	93.3	432	------	7.7	12	.05	428	121	437	102	1,400	690	.5	1.0	.4	3,140	4.27	791	1,570	1,480	38
July 11-20	44.2	642	------	7.5	25	.12	532	225	770	124	1,990	1,240	1.0	2.8	.1	4,850	6.60	579	2,250	2,150	43
July 21-31	14.8	760	------	7.7	19	.10	590	246	978	104	2,230	1,560	.9	1.9	.2	5,680	7.72	227	2,480	2,400	46
Aug. 1-8, 10	2.0	1,310	------	7.7	15	.14	794	316	2,170	85	2,960	3,430	1.0	4.5	.2	9,730	13.2	53	3,280	3,210	59
Aug. 11-13, 17-21	.6	1,490	------	7.6	27	.12	815	340	2,560	86	3,080	4,050	1.0	2.4	.3	10,900	14.8	17.7	3,430	3,360	62
Aug. 14-16	3.7	812	------	7.7	24	.09	606	269	1,120	122	2,500	1,660	1.0	2.0	.2	6,240	8.49	62.3	2,620	2,520	48
Aug. 22-24	85.7	839	------	7.7	17	.08	548	212	1,220	123	2,030	1,890	.8	3.9	.2	5,980	8.13	1,380	2,240	2,140	54
Aug. 25-31	139	499	------	7.8	28	.08	496	128	547	114	1,560	870	.7	8.3	.3	3,690	5.02	1,384	1,760	1,670	40
Sept. 1-10	772	254	------	7.6	17	.08	362	73	164	121	1,110	214	.7	2.2	.1	2,000	2.72	4,170	1,200	1,100	23
Sept. 11-17	92.1	350	------	7.4	19	.04	398	101	307	96	1,270	476	.8	2.7	.2	2,620	3.56	652	1,410	1,330	32
Sept. 18-30	22.1	695	------	7.4	17	.04	450	177	1,050	112	1,950	1,420	.8	2.2	.2	5,120	6.96	306	1,850	1,760	55
Weighted average	176	460	------	------	21	0.06	489	136	471	153	1,580	729	0.8	3.0	0.4	3,510	4.77	1,670	1,780	1,650	37

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	172	------	------	------	------	------	23.06	11.84	22.62	2.31	31.85	23.27	0.05	0.04	------	------	------	------	------	------	39
Oct. 11-20	300	------	------	------	------	------	22.86	11.10	22.72	2.29	30.60	23.69	.04	.06	------	------	------	------	------	------	40
Oct. 21-31	249	------	------	------	------	------	22.76	10.86	22.83	2.62	30.60	23.13	.05	.05	------	------	------	------	------	------	40
Nov. 1-10	193	------	------	------	------	------	23.36	11.27	20.79	2.66	31.23	21.43	.05	.05	------	------	------	------	------	------	38
Nov. 11-20	139	------	------	------	------	------	24.76	14.47	29.60	2.92	34.77	31.02	.05	.07	------	------	------	------	------	------	43
Nov. 21-30	141	------	------	------	------	------	25.36	14.80	32.00	3.16	35.80	33.28	.05	.07	------	------	------	------	------	------	44
Dec. 1-10	151	------	------	------	------	------	25.46	14.39	29.92	3.44	35.18	31.02	.05	.08	------	------	------	------	------	------	43
Dec. 11-14, 16-20	146	------	------	------	------	------	25.16	14.39	29.97	3.31	34.77	31.31	.05	.08	------	------	------	------	------	------	43
Dec. 21-31	152	------	------	------	------	------	25.06	14.97	30.77	3.54	34.98	32.15	.05	.08	------	------	------	------	------	------	43
Jan. 1-6, 8-10, 1945	150	------	------	------	------	------	24.96	14.80	33.33	3.33	35.81	33.84	.05	.06	------	------	------	------	------	------	46
Jan. 11-20	121	------	------	------	------	------	25.36	16.20	35.42	3.28	37.48	36.10	.05	.07	------	------	------	------	------	------	46
Jan. 21-31	129	------	------	------	------	------	25.75	16.20	34.27	3.25	37.89	34.97	.05	.06	------	------	------	------	------	------	45
Feb. 1-5, 7-10	120	------	------	------	------	------	25.85	16.69	36.06	3.31	38.52	36.66	.05	.06	------	------	------	------	------	------	46
Feb. 11-19	106	------	------	------	------	------	26.35	17.85	38.70	3.26	39.77	39.77	.05	.05	------	------	------	------	------	------	47
Feb. 20-28	101	------	------	------	------	------	26.65	18.34	38.67	3.31	40.18	40.05	.05	.07	------	------	------	------	------	------	46
Mar. 1-2, 4-10	85.2	------	------	------	------	------	27.05	18.50	41.12	3.25	41.01	42.30	.05	.06	------	------	------	------	------	------	47
Mar. 11-20	86.4	------	------	------	------	------	27.15	19.24	41.85	3.20	42.06	42.87	.05	.06	------	------	------	------	------	------	47
Mar. 21-31	71.0	------	------	------	------	------	27.95	19.82	42.52	3.28	42.89	44.00	.06	.06	------	------	------	------	------	------	47

RIO GRANDE BASIN—Continued

PECOS RIVER NEAR ARTESIA, N. MEX.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10[5] at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1–3	238						28.34	20.39	46.00		3.54	43.72	47.38	0.05	0.04							49
Apr. 4–10	1,110						27.15	8.88	9.47		2.39	34.15	8.88	.04	.04							21
Apr. 11–13, 15–20	770						27.35	8.06	9.19		2.28	33.52	8.74	.03	.03							21
Apr. 21–29	126						28.84	13.65	26.33		2.41	39.97	26.37	.04	.03							38
May 1–10	83.4						29.14	16.94	35.29		2.36	43.10	35.82	.05	.04							43
May 11–14, 16–20	52.6						30.44	19.08	45.15		2.46	46.43	45.69	.05	.04							48
May 21–31	45.7						29.24	19.65	45.91		2.56	44.76	47.38	.05	.05							48
June 1–10	21.7						30.84	21.13	55.76		2.15	48.51	56.97	.06	.04							52
June 11–20	13.0						32.24	22.45	63.91		2.16	52.05	64.30	.06	.03							54
June 21–30	657						21.06	6.00	8.13		1.90	25.82	7.39	.03	.05							23
July 1–10	93.3						21.36	9.95	19.02		1.67	29.15	19.46	.03	.02							38
July 11–20	44.2						26.55	18.50	33.48		2.03	41.43	34.97	.05	.05							43
July 21–31	14.8						29.44	20.23	42.54		1.70	46.43	44.00	.05	.03							46
Aug. 1–8, 10	2.0						39.62	25.99	94.27		1.39	61.63	96.74	.05	.07							59
Aug. 11–13, 17–21	.6						40.67	27.96	111.22		1.41	64.13	114.22	.05	.04							62
Aug. 14–16	3.7						30.24	22.12	48.59		2.00	52.05	46.82	.05	.03							48
Aug. 22–24	85.7						27.35	17.43	52.91		2.02	42.27	53.30	.04	.06							54
Aug. 25–31	139						24.75	10.53	23.78		1.87	32.48	24.54	.04	.13							40
Sept. 1–10	772						18.06	6.00	7.15		1.98	23.11	6.04	.04	.04							23
Sept. 11–17	92.1						19.86	8.31	13.34		1.57	26.44	13.42	.04	.04							32
Sept. 18–30	22.1						22.46	14.56	45.55		1.84	40.60	40.05	.04	.04							55
Weighted average	176						24.40	11.18	20.48		2.51	32.90	20.56	0.04	0.05							37

PECOS RIVER AT CARLSBAD, N. MEX.

LOCATION.—At gaging station at Green Street bridge in Carlsbad, half a mile upstream from Dark Canyon.
DRAINAGE AREA.—18,100 square miles (contributing area).
RECORDS AVAILABLE.—Chemical analyses: May 1937 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 3,220 parts per million Jan. 11–12, 14–16, 18–20; minimum, 2,220 parts per million Oct. 21–31.
Total hardness: Maximum, 1,790 parts per million Nov. 12–15, 17–20; minimum, 1,260 parts per million Oct. 21–31.
EXTREMES, 1937–45.—Dissolved solids: Maximum, 3,590 parts per million Aug. 11–20, 1938; minimum, 360 parts per million May 22, 1941.
Total hardness: Maximum, 1,970 parts per million May 1, 1941; minimum, 290 parts per million May 22, 1941.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–3, 6, 8–10, 1944	74.7	309			24		332	107	254		188	1,070	390		3.3		2,270	3.09	458	1,270	1,110	30
Oct. 12–20	74.1	309			21		336	107	253		213	1,060	388		3.1		2,270	3.09	454	1,280	1,100	30
Oct. 21–31	76.8	301			20		333	104	244		207	1,040	378		3.5		2,220	3.02	460	1,260	1,090	30
Nov. 1–2, 5, 7, 9	92.1	309			21		338	106	250		203	1,060	390		3.1		2,270	3.09	564	1,280	1,110	30
Nov. 12–15, 17–20	163	413			17		490	137	350		166	1,560	558		1.5		3,200	4.35	1,410	1,790	1,650	30
Nov. 22–23, 25, 27–29	153	398			17		472	128	353		175	1,490	550		1.5		3,100	4.22	1,280	1,700	1,560	31
Dec. 1–10	167	405			17		480	126	359		174	1,500	560		2.5		3,130	4.26	1,410	1,720	1,570	31
Dec. 11–17, 19	117	384			20		456	122	350		180	1,450	525		2.5		3,010	4.09	951	1,640	1,490	32
Dec. 21–24, 26–27, 29–31	142	378			20		444	123	342		186	1,420	515		2.0		2,960	4.03	1,130	1,610	1,460	32
Jan. 1–4, 6–7, 9, 1945	166	412		7.6	19		496	132	345		169	1,540	560		1.0		3,180	4.32	1,430	1,780	1,640	30
Jan. 11–12, 14–16, 18–20	180	414		7.7	17		492	133	365		169	1,560	570		1.0		3,220	4.38	1,560	1,780	1,640	31
Jan. 23–27, 29, 31	169	412		7.7	15		492	134	356		170	1,560	560		1.0		3,200	4.35	1,460	1,780	1,640	30
Feb. 1–2, 4–10	120	398		7.7	16		474	130	332		180	1,470	540		1.2		3,050	4.15	988	1,720	1,570	30
Feb. 11–13, 15–16, 18	88.3	359		7.8	16		410	126	293		199	1,290	475		1.8		2,710	3.69	646	1,540	1,380	29
Feb. 20, 22–26, 28	86.2	354			21		408	119	290		194	1,270	465		2.9		2,670	3.63	621	1,510	1,350	30
Mar. 1–2, 4–5, 7–10	97.0	353			21		406	115	307		202	1,270	470		3.2		2,690	3.66	705	1,490	1,320	31
Mar. 11, 13, 15, 18–20	98.2	374			17		432	121	329		188	1,360	510		2.3		2,860	3.89	758	1,580	1,420	31
Mar. 21–31	89.8	364			16		412	118	310		187	1,300	480		2.6		2,730	3.71	662	1,510	1,360	31

RIO GRANDE BASIN—Continued

PECOS RIVER AT CARLSBAD, N. MEX.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na) / Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1, 3–7, 9–10	84.2	356	------	7.6	27	------	408	123	281	193	1,260	470	------	3.1	------	2,670	3.63	607	1,520	1,370	29
Apr. 12, 15–20	87.9	354	------	7.6	27	------	408	122	283	189	1,270	465	------	2.9	------	2,670	3.63	634	1,520	1,360	29
Apr. 22, 24–25, 27–28, 30	87.8	354	------	7.6	26	------	408	122	285	206	1,260	465	------	2.8	------	2,670	3.63	633	1,520	1,350	29
May 1, 3–7, 9–10	86.6	353	------	7.6	21	------	404	125	277	201	1,250	465	------	3.2	------	2,640	3.59	617	1,520	1,360	28
May 11, 13–20	82.2	350	------	7.6	22	------	400	122	280	195	1,240	465	------	2.8	------	2,630	3.58	584	1,500	1,340	29
May 21, 23, 24, 26–31	80.5	342	------	7.4	24	------	386	115	284	210	1,190	454	------	2.8	------	2,560	3.48	556	1,440	1,260	30
June 2, 4–10	77.1	338	------	7.5	24	------	378	112	289	194	1,180	455	------	2.5	------	2,540	3.45	529	1,400	1,240	31
June 12, 14–17, 19, 20	76.6	336	------	7.5	24	------	376	111	293	212	1,180	445	------	2.0	------	2,540	3.45	525	1,390	1,220	31
June 21, 24, 26, 28–30	71.8	327	------	7.5	22	------	368	115	279	200	1,170	435	------	2.5	------	2,490	3.39	483	1,390	1,230	30
July 1–8, 10	69.0	321	------	7.8	19	------	359	106	264	197	1,110	415	------	2.8	------	2,370	3.22	442	1,330	1,170	30
July 12–20	69.4	319	------	7.8	19	------	346	121	263	190	1,130	425		2.0	------	2,400	3.26	450	1,360	1,210	30
July 21–31	68.7	320	------	7.9	24	------	360	111	257	191	1,110	425	------	3.0	------	2,380	3.24	441	1,350	1,200	29
Aug. 1–10	66.7	324	------	7.9	18	------	362	114	268	197	1,130	435	------	2.6	------	2,430	3.30	438	1,370	1,210	30
Aug. 11–13, 16–19	66.6	322	------	7.9	21	------	359	111	267	204	1,110	430	------	2.8	------	2,400	3.26	432	1,350	1,180	30
Aug. 22–23, 25, 27–31	68.4	312	------	7.8	20	------	351	109	257	207	1,080	415	------	4.0	------	2,340	3.18	432	1,320	1,150	30
Sept. 1–10	67.4	313	------	7.7	19	------	340	107	247	191	1,060	400	------	1.4	------	2,270	3.09	413	1,290	1,130	29
Sept. 11–16, 19–20	69.8	312	------	7.8	19	------	345	106	251	202	1,060	405	------	2.9	------	2,290	3.11	432	1,300	1,130	30
Sept. 21–23, 25, 27–28, 30	70.7	312	------	7.7	20	------	341	105	258	202	1,060	405	------	3.3	------	2,290	3.11	437	1,280	1,120	30
Weighted average	97.4	362	------	------	20	------	417	121	306	189	1,310	484	------	2.3	------	2,750	3.74	724	1,540	1,380	30

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-3, 6, 8-10, 1944	74.7						16.57	8.80	11.04	3.08	22.28	11.00		0.05								30
Oct. 12-20	74.1						16.77	8.80	10.98	3.49	22.07	10.94		.05								30
Oct. 21-31	76.8						16.62	8.55	10.59	3.39	21.65	10.66		.06								30
Nov. 1-2, 5, 7-9	92.1						16.87	8.72	10.86	3.33	22.07	11.00		.05								30
Nov. 12-15, 17-20	163						24.46	11.27	15.23	2.72	32.48	15.74		.02								30
Nov. 22-23, 25, 27-29	153						23.56	10.53	15.33	2.87	31.82	15.52		.02								31
Dec. 1-10	167						23.96	10.36	15.59	2.85	31.23	15.79		.04								31
Dec. 11-17, 19	117						22.76	10.03	15.20	2.95	30.19	14.81		.04								32
Dec. 21-24, 26-27, 29-31	142						22.16	10.12	14.88	3.05	29.56	14.52		.03								32
Jan. 1-4, 6-7, 9, 1945	166						24.76	10.86	15.02	2.77	32.06	15.79		.02								30
Jan. 11-12, 14-16, 18-20	180						24.56	10.94	15.85	2.77	32.48	16.08		.02								31
Jan. 23-27, 29-31	169						24.56	11.02	15.50	2.79	32.48	15.79		.02								30
Feb. 1-2, 4-10	120						23.66	10.69	14.45	2.95	30.60	15.23		.02								30
Feb. 11-13, 15-16, 18	88.3						20.46	10.36	12.73	3.26	26.86	13.40		.03								29
Feb. 20, 22-26, 28	86.2						20.36	9.79	12.63	3.18	26.44	13.11		.05								30
Mar. 1-2, 4-5, 7-10	97.0						20.26	9.46	13.34	3.31	26.44	13.26		.05								31
Mar. 11, 13, 15, 18-20	98.2						21.56	9.95	14.30	3.08	28.31	14.38		.04								31
Mar. 21-31	89.8						20.56	9.70	13.46	3.07	27.07	13.54		.04								31
Apr. 1, 3-7, 9-10	84.2						20.36	10.12	12.22	3.16	26.23	13.26		.05								29
Apr. 12, 15-20	87.9						20.36	10.03	12.31	3.10	26.44	13.11		.05								29
Apr. 22, 24-25, 27-28, 30	87.8						20.36	10.03	12.38	3.38	26.23	13.11		.05								29
May 1, 3-7, 9-10	86.6						20.16	10.28	12.03	3.29	26.02	13.11		.05								28
May 11, 13-20	82.2						19.97	10.03	12.18	3.20	25.82	13.11		.05								29
May 21, 23, 24, 26-31	80.5						19.26	9.46	12.35	3.44	24.78	12.80		.05								30
June 2, 4-10	77.1						18.86	9.21	12.55	3.18	24.57	12.83		.04								31
June 12, 14-17, 19, 20	76.6						18.76	9.13	12.73	3.47	24.57	12.55		.03								31
June 21, 24, 26, 28-30	71.8						18.36	9.46	12.13	3.28	24.36	12.27		.04								30
July 1-8, 10	69.0						17.91	8.72	11.46	3.23	23.11	11.70		.05								30
July 12-20	69.4						17.27	9.95	11.44	3.11	23.53	11.99		.03								30
July 21-31	68.7						17.96	9.13	11.19	3.13	23.11	11.99		.05								29
Aug. 1-10	66.7						18.06	9.37	11.64	3.23	23.53	12.27		.04								30
Aug. 11-13, 16-19	66.6						17.91	9.13	11.59	3.34	23.11	12.13		.05								30
Aug. 22-23, 25, 27-31	68.4						17.51	8.96	11.17	3.39	22.49	11.70		.06								30
Sept. 1-10	67.4						16.97	8.80	10.73	3.13	22.07	11.28		.02								29
Sept. 11-16, 19, 20	69.8						17.22	8.72	10.91	3.31	22.07	11.42		.05								30
Sept. 21-23, 25, 27-28, 30	70.7						17.02	8.63	11.20	3.31	22.07	11.42		.05								30
Weighted average	97.4						20.81	9.95	13.31	3.10	27.27	13.65		0.04								30

RIO GRANDE BASIN—Continued

PECOS RIVER NEAR MALAGA, N. MEX.

LOCATION.—Two and a half miles upstream from gaging station which is located 3 miles southeast of Malaga and 3 miles downstream from Black River.

DRAINAGE AREA.—19,190 square miles (contributing area).

RECORDS AVAILABLE.—Chemical analyses: July 1937 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 4,380 parts per million Aug. 1–10; minimum, 1,320 parts per million Aug. 23–24.

Total hardness: Maximum, 2,050 parts per million Aug. 1–10; minimum, 536 parts per million Aug. 23–24.

EXTREMES, 1937–45.—Dissolved solids: Maximum, 4,830 parts per million Aug. 11–20, 1938; minimum, 384 parts per million Sept. 21–22, 1941.

Total hardness: Maximum, 2,170 parts per million Apr. 21–30, 1939; minimum, 254 parts per million Sept. 21–22, 1941.

REMARKS—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	146	513	------	------	21	------	474	174	562		173	1,670	875	------	6.1	------	3,870	5.26	1,530	1,900	1,760	39
Oct. 11-20	158	513	------	------	22	------	494	172	551		182	1,690	870	------	4.4	------	3,890	5.29	1,660	1,940	1,790	38
Oct. 21-31	165	498	------	------	19	------	488	168	527		181	1,670	825	------	4.3	------	3,790	5.15	1,690	1,910	1,760	37
Nov. 1-10	154	477	------	------	17	------	460	163	499		187	1,580	780	------	4.9	------	3,600	4.90	1,500	1,820	1,660	37
Nov. 11-20	251	440	------	------	20	------	448	153	433		187	1,510	680	------	4.1	------	3,340	4.54	2,260	1,750	1,590	35
Nov. 22-23, 26-27, 29-30	223	465	------	------	17	------	492	152	468		183	1,620	730	------	6.0	------	3,580	4.87	2,160	1,850	1,700	35
Dec. 1-7, 9-10	233	461	------	------	18	------	490	151	462		182	1,620	715	------	6.0	------	3,550	4.83	2,230	1,840	1,700	35
Dec. 11-15, 17-20	219	468	------	------	18	------	514	149	454		180	1,670	705	------	2.5	------	3,600	4.90	2,130	1,900	1,750	34
Dec. 21-31	227	459	------	------	19	------	492	148	452		188	1,610	700	------	3.4	------	3,520	4.79	2,160	1,840	1,680	35
Jan. 2-10, 1945	253	451	------	7.6	16	------	492	148	433		178	1,610	675	------	3.5	------	3,470	4.72	2,370	1,840	1,690	34
Jan. 11-20	264	454	------	7.6	16	------	506	150	420		173	1,630	675	------	3.5	------	3,490	4.75	2,490	1,880	1,740	33
Jan. 21-31	241	453	------	7.6	15	------	502	147	434		170	1,640	675	------	3.5	------	3,500	4.76	2,280	1,860	1,720	34
Feb. 1-10	209	456	------	7.6	14	------	512	147	435		172	1,650	685	------	3.5	------	3,530	4.80	1,990	1,880	1,740	33
Feb. 11-19	204	473	------	7.5	14	------	526	153	456		169	1,700	725	------	3.5	------	3,660	4.98	2,020	1,940	1,800	34
Feb. 20-28	132	492	------	------	12	------	484	158	513		185	1,630	795	------	4.7	------	3,690	5.02	1,320	1,860	1,710	38
Mar. 1-10	125	496	------	------	16	------	478	166	519		187	1,630	815	------	4.8	------	3,720	5.06	1,260	1,880	1,720	38
Mar. 11-20	127	481	------	------	11	------	468	163	490		181	1,580	785	------	4.4	------	3,590	4.88	1,230	1,840	1,690	37
Mar. 21-31	128	506	------	------	14	------	496	168	524		174	1,670	840	------	4.2	------	3,800	5.17	1,310	1,930	1,790	37

Apr. 1-10	110	503		7.6	20		488	171	525	167	1,670	840		3.6		3,800	5.17	1,130	1,920	1,780	37
Apr. 11-20	102	520		7.6	21		508	178	534	163	1,720	875		2.7		3,920	5.33	1,080	2,000	1,870	37
Apr. 21-30	110	525		7.6	22		520	176	536	166	1,750	870		2.8		3,960	5.39	1,180	2,020	1,880	37
May 1-10	94.7	537		7.6	25		506	179	576	170	1,740	920		2.8		4,030	5.48	1,030	2,000	1,860	39
May 11-20	127	521		7.6	22		506	176	543	170	1,720	875		3.2		3,930	5.34	1,350	1,990	1,850	37
May 21-31	117	523		7.7	24		510	172	548	174	1,720	875		3.5		3,940	5.36	1,240	1,980	1,840	38
June 1-10	83.1	547		7.6	24		516	177	584	176	1,740	940		5.8		4,070	5.54	913	2,020	1,870	39
June 11-20	72.7	568		7.5	22		520	179	620	176	1,750	1,000		5.5		4,180	5.68	820	2,030	1,890	40
June 21-30	90.0	552		7.4	21		510	177	611	160	1,740	980		4.9		4,120	5.60	1,000	2,000	1,870	40
July 1-10	114	498		7.4	22		472	163	561	171	1,590	900		5.0		3,800	5.17	1,170	1,850	1,710	40
July 11-20	92.6	503		7.9	11		418	175	549	160	1,540	865		3.9		3,640	4.95	910	1,760	1,630	40
July 21-31	46.2	583		7.9	14		494	187	668	172	1,730	1,070		3.9		4,250	5.78	530	2,000	1,860	42
Aug. 1-10	44.3	609		7.8	12		502	195	699	168	1,740	1,150		4.1		4,380	5.96	524	2,050	1,920	43
Aug. 11-22	[1] 58.0	586		7.9	12		488	194	668	172	1,730	1,080		4.0		4,260	5.79	667	2,020	1,870	42
Aug. 23-24		211					124	55	253	106	476	354		4.1		1,320	1.80	2,080	536	448	51
Aug. 25-31	82.0	319		8.0	17		218	87	382	132	752	595		3.5		2,120	2.88	469	902	794	48
Sept. 2-10	72.6	484		7.6	24		386	144	567	169	1,330	895		3.9		3,430	4.66	672	1,560	1,420	44
Sept. 11-20	92.5	529		7.5	20		440	177	597	178	1,570	950		5.3		3,850	5.24	962	1,830	1,680	42
Sept. 21-30	108	514		7.6	18		458	175	553	183	1,570	905		5.7		3,770	5.13	1,100	1,860	1,710	39
Weighted average	145	478			18		474	157	492	174	1,590	777		4.2		3,600	4.90	1,410	1,830	1,690	37

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	146						23.66	14.31	24.42	2.84	34.77	24.68		0.10							39
Oct. 11-20	158						24.66	14.14	23.97	2.98	35.18	24.54		.07							38
Oct. 21-31	165						24.36	13.82	22.90	2.97	34.77	23.27		.07							37
Nov. 1-10	154						22.96	13.40	21.68	3.07	32.89	22.00		.08							37
Nov. 11-20	251						22.36	12.58	18.82	3.07	31.44	19.18		.07							35
Nov. 22-23, 26-27, 29-30	223						24.56	12.50	20.36	3.00	33.73	20.59		.10							35
Dec. 1-7, 9-10	233						24.46	12.42	20.10	2.98	33.73	20.17		.10							35
Dec. 11-15, 17-20	219						25.66	12.25	19.73	2.95	34.77	19.88		.04							34
Dec. 21-31	227						24.56	12.17	19.66	3.08	33.52	19.74		.05							35
Jan. 2-10, 1945	253						24.56	12.17	18.81	2.92	33.52	19.04		.06							34
Jan. 11-20	264						25.26	12.34	18.28	2.84	33.94	19.04		.06							33
Jan. 21-31	241						25.06	12.09	18.88	2.79	34.14	19.04		.06							34
Feb. 1-10	209						25.56	12.09	18.90	2.82	34.35	19.32		.06							33
Feb. 11-19	204						26.25	12.58	19.84	2.77	35.39	20.45		.06							34
Feb. 20-28	132						24.16	12.99	22.32	3.03	33.94	22.42		.08							38
Mar. 1-10	125						23.86	13.65	22.57	3.07	33.94	22.99		.08							38
Mar. 11-20	127						23.36	13.40	21.31	2.97	32.89	22.14		.07							37
Mar. 21-31	128						24.76	13.82	22.80	2.85	34.77	23.69		.07							37

[1] Discharge for Aug. 22 included in period Aug. 23-24.

RIO GRANDE BASIN—Continued

PECOS RIVER NEAR MALAGA, N. MEX.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
																	Parts per million	Tons per acre-foot	Tons per day	Total	Noncarbonate	
Apr. 1-10	110						24.36	14.06	22.84		2.74	34.77	23.69		0.06							37
Apr. 11-20	102						25.36	14.64	23.20		2.67	35.81	24.68		.04							37
Apr. 21-30	110						25.95	14.47	23.32		2.72	36.43	24.54		.05							37
May 1-10	94.7						25.26	14.72	25.04		2.79	36.23	25.95		.05							39
May 11-20	127						25.26	14.47	23.60		2.79	35.81	24.68		.05							37
May 21-31	117						25.45	14.14	23.81		2.85	35.81	24.68		.06							38
June 1-10	83.1						25.75	14.56	25.40		2.88	36.23	26.51		.09							39
June 11-20	72.7						25.95	14.72	26.94		2.88	36.44	28.20		.09							40
June 21-30	90.0						25.45	14.56	26.56		2.62	36.23	27.64		.08							40
July 1-10	114						23.55	13.40	24.41		2.80	33.10	25.38		.08							40
July 11-20	92.6						20.86	14.39	23.89		2.62	32.06	24.40		.06							40
July 21-31	46.2						24.65	15.38	29.05		2.82	36.02	30.18		.06							42
Aug. 1-10	44.3						25.05	16.04	30.39		2.75	36.23	32.43		.07							43
Aug. 11-22	[1] 58.0						24.35	15.95	29.06		2.82	36.02	30.46		.06							42
Aug. 23-24							6.19	4.52	10.99		1.74	9.91	9.98		.07							51
Aug. 25-31	82.0						10.88	7.15	16.63		2.16	15.66	16.78		.06							48
Sept. 2-10	72.6						19.26	11.84	24.66		2.77	27.69	25.24		.06							44
Sept. 11-20	92.5						21.96	14.56	25.97		2.92	32.69	26.79		.09							42
Sept. 21-30	108						22.85	14.39	24.06		3.00	32.69	25.52		.09							39
Weighted average	145						23.65	12.91	21.39		2.85	33.10	21.91		0.07							37

[1] Discharge for Aug. 22 included in period Aug. 23-24.

PECOS RIVER AT RED BLUFF, N. MEX.

LOCATION.—At pipe-line bridge, 2½ miles downstream from Red Bluff gaging station, which is located just downstream from Red Bluff Creek, and 5½ miles upstream from Delaware River.

DRAINAGE AREA.—19,540 square miles above gaging station (contributing area).

RECORDS AVAILABLE.—Chemical analyses: October 1937 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 8,370 parts per million Aug. 11–21; minimum, 2,840 parts per million Aug. 22–24. Total hardness: Maximum, 2,400 parts per million Aug. 1–10; minimum, 993 parts per million Aug. 25–31.

EXTREMES, 1937–45.—Dissolved solids: Maximum, 8,370 parts per million Aug. 11–21, 1945; minimum, 541 parts per million May 23, 1941. Total hardness: Maximum, 2,400 parts per million Aug. 1–10, 1945; minimum, 302 parts per million May 23, 1941.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	145	691			25		450	181	971		137	1,650	1,520		4.5		4,870	6.62	1,910	1,870	1,750	53
Oct. 11-20	150	687			18		480	181	937		150	1,710	1,470		4.0		4,870	6.62	1,970	1,940	1,820	51
Oct. 21-31	155	648			21		480	178	855		155	1,700	1,340		4.4		4,650	6.32	1,950	1,930	1,800	49
Nov. 1-10	148	639			18		460	176	837		157	1,630	1,320		4.3		4,520	6.15	1,810	1,870	1,740	49
Nov. 11-20	233	543			22		434	157	661		176	1,490	1,040		3.5		3,890	5.29	2,450	1,730	1,580	45
Nov. 21-30	207	590			18		500	164	720		168	1,700	1,120		2.0		4,310	5.86	2,410	1,920	1,780	45
Dec. 1-10	214	575			16		496	158	699		173	1,670	1,080		3.5		4,210	5.73	2,430	1,890	1,750	45
Dec. 11-20	206	571			18		510	156	687		171	1,700	1,060		4.0		4,220	5.74	2,350	1,910	1,770	44
Dec. 21-26, 28-31	209	577			16		504	160	694		171	1,690	1,080		4.4		4,230	5.75	2,390	1,920	1,780	44
Jan. 1-10, 1945	238	540		7.5	16		480	153	638		173	1,600	995		4.0		3,970	5.40	2,550	1,830	1,680	43
Jan. 11-20	247	560		7.5	15		506	153	667		163	1,670	1,040		3.5		4,130	5.62	2,750	1,890	1,760	43
Jan. 21-31	239	553		7.6	14		506	153	654		162	1,670	1,020		3.5		4,100	5.58	2,650	1,890	1,760	43
Feb. 1-4, 6-10	214	565		7.6	14		506	156	670		161	1,690	1,040		3.0		4,160	5.66	2,400	1,900	1,770	43
Feb. 11-19	196	603		7.6	13		530	163	762		156	1,760	1,160		2.5		4,470	6.08	2,370	1,990	1,860	46
Feb. 20-28	136	655		7.6	19		516	176	834		164	1,740	1,330		3.8		4,700	6.39	1,730	2,010	1,880	47
Mar. 1-10	117	722		7.5	22		498	189	988		170	1,740	1,570		4.1		5,090	6.92	1,610	2,020	1,880	52
Mar. 11-18, 20	124	658		7.6	17		486	176	859		164	1,680	1,360		3.6		4,660	6.34	1,560	1,940	1,800	49
Mar. 21, 23-31	121	717		7.6	16		506	189	979		156	1,780	1,550		3.2		5,100	6.94	1,670	2,040	1,910	51

RIO GRANDE BASIN—Continued

PECOS RIVER AT RED BLUFF, N. MEX.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10[5] at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1-10	115	715	------	7.6	18	------	500	181	983		145	1,750	1,550	------	3.0	------	5,060	6.88	1,570	1,990	1,870	52
Apr. 11-20	99.0	761	------	7.6	15	------	516	189	1,060		138	1,820	1,680	------	2.6	------	5,350	7.28	1,430	2,060	1,950	53
Apr. 21-30	98.6	783	------	7.5	16	------	532	198	1,100		137	1,870	1,750	------	2.4	------	5,540	7.53	1,470	2,140	2,030	53
May 1-10	93.8	846	------	7.5	19	------	520	203	1,250		124	1,900	1,960	------	1.8	------	5,910	8.04	1,500	2,130	2,030	56
May 11-18, 20	122	814	------	7.2	25	------	514	198	1,200		143	1,860	1,870	0.9	3.0	------	5,740	7.81	1,890	2,100	1,980	55
May 21, 23-31	120	753	------	7.3	25	------	510	193	1,070		145	1,830	1,670	.8	2.0	------	5,370	7.30	1,740	2,070	1,950	53
June 1-4, 6-10	95.1	849	------	7.1	21	------	528	205	1,260		146	1,910	1,980	------	3.1	------	5,980	8.13	1,540	2,160	2,040	56
June 11-13, 16-20	74.0	893	------	7.4	26	------	530	204	1,340		151	1,910	2,100	------	3.8	------	6,190	8.42	1,240	2,160	2,040	57
June 21-30	83.7	970	------	7.4	25	------	542	214	1,530		142	1,980	2,390	------	2.8	------	6,750	9.18	1,530	2,230	2,120	60
July 1-10	120	691	------	7.6	22	------	462	170	968		141	1,640	1,510	------	4.0	------	4,850	6.60	1,570	1,850	1,740	53
July 11-20	108	755	------	7.8	22	------	454	198	1,060		138	1,680	1,700	------	1.6	------	5,180	7.04	1,510	1,950	1,830	54
July 21-31	56.3	953	------	7.8	27	------	496	211	1,500		139	1,840	2,360	------	2.1	------	6,500	8.84	988	2,100	1,990	61
Aug. 1-10	45.7	1,180	------	7.7	21	------	528	263	2,000		114	2,110	3,160	------	2.6	------	8,140	11.1	1,000	2,400	2,310	64
Aug. 11-21	69.5	1,230	------	7.6	25	------	523	263	2,100		116	2,070	3,330	------	3.1	------	8,370	11.4	1,570	2,390	2,290	66
Aug. 22-24	740	428	------	7.8	------	------	334	119	466		117	1,040	820	------	1.8	------	2,840	3.86	5,670	1,320	1,230	43
Aug. 25-31	109	718	------	7.9	17	------	220	108	1,230		131	780	1,950	------	3.2	------	4,370	5.94	1,290	993	880	73
Sept. 1-10	83.0	882	------	7.6	22	------	528	182	1,180		126	1,230	2,300	------	1.7	------	5,510	7.49	1,230	2,070	1,960	55
Sept. 11-20	86.1	1,040	------	7.6	25	------	530	212	1,650		132	1,720	2,750	------	2.2	------	6,950	9.45	1,620	2,190	2,090	62
Sept. 21-30	103	863	------	7.7	21	------	498	200	1,300		131	1,720	2,120	------	2.4	------	5,930	8.06	1,650	2,060	1,960	58
Weighted average	143	674	------	------	19	------	487	173	908		153	1,670	1,440	------	3.2	------	4,780	6.50	1,850	1,930	1,800	51

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	145						22.46	14.88	42.20	2.25	34.35	42.87		0.07							53
Oct. 11-20	150						23.96	14.88	40.74	2.46	35.60	41.46		.06							51
Oct. 21-31	155						23.96	14.64	37.19	2.54	35.39	37.79		.07							49
Nov. 1-10	148						22.96	14.47	36.38	2.57	33.94	37.23		.07							49
Nov. 11-20	233						21.66	12.91	28.72	2.88	31.02	29.33		.06							45
Nov. 21-30	207						24.96	13.49	31.31	2.75	35.39	31.59		.03							45
Dec. 1-10	214						24.76	12.99	30.38	2.84	34.77	30.46		.06							45
Dec. 11-20	206						25.46	12.83	29.86	2.80	35.39	29.90		.06							44
Dec. 21-26, 28-31	209						25.16	13.16	30.19	2.80	35.18	30.46		.07							44
Jan. 1-10, 1945	238						23.96	12.58	27.73	2.84	33.31	28.06		.06							43
Jan. 11-20	247						25.26	12.58	28.99	2.67	34.77	29.33		.06							43
Jan. 21-31	239						25.26	12.58	28.42	2.66	34.77	28.77		.06							43
Feb. 1-4, 6-10	214						25.26	12.83	29.11	2.64	35.18	29.33		.05							43
Feb. 11-19	196						26.45	13.40	33.11	2.56	36.64	32.72		.04							46
Feb. 20-28	136						25.75	14.47	36.27	2.69	36.23	37.51		.06							47
Mar. 1-10	117						24.86	15.54	42.97	2.79	36.23	44.28		.07							52
Mar. 11-18, 20	124						24.26	14.47	37.36	2.69	34.98	38.36		.06							49
Mar. 21, 23-31	121						25.26	15.54	42.58	2.56	37.06	43.71		.05							51
Apr. 1-10	115						24.96	14.88	42.73	2.38	36.43	43.71		.05							52
Apr. 11-20	99.0						25.75	15.54	46.28	2.26	37.89	47.38		.04							53
Apr. 21-30	98.6						26.55	16.28	47.75	2.25	38.93	49.36		.04							53
May 1-10	93.8						25.95	16.69	54.26	2.03	39.56	55.28		.03							56
May 11-18, 20	122						25.65	16.28	51.98	2.34	38.73	52.74	0.05	.05							55
May 21, 23-31	120						25.45	15.87	46.33	2.38	38.10	47.10	.04	.03							53
June 1-4, 6-10	95.1						26.35	16.86	54.84	2.39	39.77	55.84		.05							56
June 11-13, 16-20	74.0						26.45	16.78	58.30	2.47	39.77	59.23		.06							57
June 21-30	83.7						27.05	17.60	66.36	2.33	41.22	67.41		.05							60
July 1-10	120						23.05	13.98	42.08	2.31	34.15	42.59		.06							53
July 11-20	108						22.65	16.28	46.29	2.26	34.98	47.95		.03							54
July 21-31	56.3						24.75	17.35	65.08	2.28	38.31	66.56		.03							61
Aug. 1-10	45.7						26.35	21.63	86.98	1.87	43.93	89.12		.04							64
Aug. 11-21	69.5						26.10	21.63	91.24	1.90	43.10	93.92		.05							66
Aug. 22-24	740						16.67	9.79	20.27	1.92	21.65	23.13		.03							43
Aug. 25-31	109						10.98	8.88	53.58	2.15	16.24	55.00		.05							73
Sept. 1-10	83.0						26.35	14.97	51.25	2.06	25.61	64.87		.03							55
Sept. 11-20	86.1						26.45	17.43	71.69	2.16	35.81	77.56		.04							62
Sept. 21-30	103						24.85	16.45	56.49	2.15	35.81	59.79		.04							58
Weighted average	143						24.30	14.23	39.48	2.51	34.77	40.61		0.05							51

RIO GRANDE BASIN—Continued

PECOS RIVER NEAR ORLA, TEX.

LOCATION.—At gaging station 600 feet upstream from Pasotex pipe line crossing, 6 miles southeast of Orla, 16 miles downstream from Salt (Screwbean) Draw, and 19 miles downstream from Red Bluff Dam.

DRAINAGE AREA.—21,300 square miles (contributing area).

RECORDS AVAILABLE.—Chemical analyses: July 1937 to September 1945.

EXTREMES 1944–45.—Dissolved solids: Maximum, 7,020 parts per million Jan. 21–31; minimum, 3,280 parts per million July 3–4.
Total hardness: Maximum, 2,750 parts per million Jan. 11–20; minimum, 1,700 parts per million July 3–4.

EXTREMES, JULY 1937–SEPTEMBER 1945.—Dissolved solids: Maximum, 7,980 parts per million Mar. 11–20, 1941; minimum, 1,880 parts per million Oct. 13–15, 1941.
Total hardness: Maximum, 2,970 parts per million Mar. 11–20, 1941; minimum, 930 parts per million Oct. 13–15, 1941.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1038.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	33.3	773			24	0.10	630	218	943	28	104	2,120	1,600	1.4	2.0	0.5	5,620	7.64	505	2,470	2,380	45
Oct. 11-20	29.1	761			22	.10	638	207	934	24	112	2,120	1,560	1.4	2.5	.5	5,560	7.56	437	2,440	2,350	45
Oct. 21-31	23.5	794			20	.10	654	208	1,000	27	111	2,160	1,670	1.4	1.5	.5	5,800	7.89	368	2,490	2,400	46
Nov. 1-10	29.8	746			20	.10	612	197	910	27	109	2,070	1,490	1.0	1.2	1.0	5,380	7.32	433	2,340	2,250	45
Nov. 11-20	58.6	742			22	.05	602	204	927	23	113	2,050	1,530	.8	1.2	1.0	5,420	7.37	858	2,340	2,250	46
Nov. 21-30	26.0	846			13	.10	664	237	1,230	25	129	2,240	2,060	.6	1.0	.5	6,530	8.88	458	2,630	2,530	50
Dec. 1-10	46.5	760			24	.10	608	201	938	34	116	2,070	1,540	1.0	4.0	1.5	5,480	7.45	688	2,340	2,250	46
Dec. 11-20	11.0	768			22	.10	602	205	956	32	113	2,070	1,570	.6	1.5	1.5	5,510	7.49	164	2,390	2,250	47
Dec. 21-31	20.9	750			11	.08	592	202	908	32	117	2,000	1,520	.6	1.5	1.0	5,320	7.24	300	2,310	2,210	46
Jan. 1-10, 1945	11.2	968			19	.07	696	243	1,340	20	125	2,310	2,240	1.2	2.5	.5	6,930	9.42	210	2,740	2,630	51
Jan. 11-20	11.3	995			14	.06	704	242	1,290	26	131	2,300	2,180	1.4	2.5	.5	6,820	9.28	208	2,750	2,640	50
Jan. 21-31	18.9	978			14	.07	676	240	1,400	27	132	2,250	2,340	1.2	2.5	1.0	7,020	9.55	358	2,670	2,570	53
Feb. 1-10	21.5	743			19	.05	604	208	941	23	110	2,100	1,530	1.4	1.8	.5	5,480	7.45	318	2,360	2,270	46
Feb. 11-19	188	689			20	.10	614	190	797	20	118	1,970	1,360	1.4	3.2	1.0	5,030	6.84	2,550	2,310	2,220	43
Feb. 20-28	234	702			18	.10	592	203	886	20	122	2,030	1,450	1.4	2.2	1.0	5,260	7.15	3,320	2,310	2,210	45
Mar. 1-10	157	710			12	.10	594	184	865	20	116	1,990	1,400	1.4	1.5	.8	5,130	6.98	2,170	2,240	2,140	45
Mar. 11-20	279	688			17	.10	588	179	837	18	118	1,960	1,350	1.4	2.0	1.2	5,010	6.81	3,770	2,200	2,110	45
Mar. 21-31	392	682			13	.10	590	181	835	21	126	1,980	1,340	1.4	1.5	1.2	5,030	6.84	5,320	2,220	2,110	45

Apr. 1-10	257	689	------	------	13	.05	588	190	835	29	120	2,010	1,350	1.2	3.2	.8	5,080	6.91	3,530	2,250	2,150	44
Apr. 11-20	431	689	------	------	12	.05	594	189	830	26	125	1,990	1,360	1.2	3.8	.8	5,070	6.90	5,900	2,260	2,160	44
Apr. 21-30	519	689	------	------	21	.05	606	189	840	27	121	2,030	1,370	1.2	2.2	.8	5,150	7.00	7,220	2,290	2,190	44
May 1-10	437	697	------	------	15	.08	592	196	858	24	110	2,000	1,420	1.2	2.8	2.5	5,160	7.02	6,090	2,280	2,190	45
May 11-20	394	702	------	------	22	.05	592	197	863	22	111	2,010	1,420	1.0	3.0	2.5	5,180	7.04	5,510	2,290	2,200	45
May 21-31	380	707	------	------	15	.10	600	195	877	22	117	2,020	1,440	1.2	3.2	3.0	5,230	7.11	5,370	2,300	2,200	45
June 1-10	405	717	------	------	10	.08	586	197	942	18	97	2,060	1,500	1.2	2.7	1.5	5,360	7.29	5,860	2,270	2,190	47
June 11-20	496	733	------	------	32	.08	602	199	925	26	111	2,070	1,500	1.0	3.1	2.0	5,410	7.36	7,250	2,320	2,230	46
June 21-23	505	750	------	------	16	.10	612	201	953	22	111	2,100	1,540	1.4	1.8	2.0	5,500	7.48	7,500	2,350	2,260	46
July 1-2, 5-10	220	776	------	------	21	.10	614	201	1,070	18	110	2,210	1,640	1.2	1.8	.5	5,830	7.93	3,460	2,360	2,270	49
July 3-4	742	428	------	------	24	.15	552	79	408		108	1,490	670	.6	2.8	.2	3,280	4.46	6,570	1,700	1,610	34
July 11-20	200	780	------	------	16	.08	624	218	1,030	21	112	2,130	1,700	1.0	1.5	.5	5,800	7.89	3,130	2,450	2,360	47
July 21-31	524	777	------	------	16	.08	612	223	968	20	122	1,200	1,620	1.0	1.8	.2	5,620	7.64	7,950	2,440	2,340	46
Aug. 1-10	592	795	------	------	30	.15	612	227	1,030	24	96	2,130	1,730	1.0	2.8	1.0	5,830	7.93	9,320	2,460	2,380	47
Aug. 11-20	568	795	------	------	14	.15	618	220	977	25	108	2,070	1,670	1.0	2.0	1.5	5,650	7.68	8,660	2,450	2,360	46
Aug. 21-31	404	822	------	------	18	.10	612	220	1,070	29	113	2,040	1,820	1.4	1.8	1.0	5,870	7.98	6,400	2,430	2,340	48
Sept. 1-10	424	807	------	------	38	.08	596	208	1,040	30	115	2,030	1,720	1.0	3.5	.5	5,730	7.79	6,560	2,340	2,250	49
Sept. 11-20	220	828	------	------	21	.10	576	195	1,090	29	113	1,910	1,810	1.0	3.0	1.0	5,690	7.74	3,380	2,240	2,150	51
Sept. 21-30	101	853	------	------	26	.08	556	187	1,180	24	124	1,870	1,910	1.2	2.5	1.0	5,820	7.92	1,590	2,160	2,050	54
Weighted average	244	739	------	------	19	0.09	601	200	926	24	113	2,040	1,530	1.2	2.5	1.3	5,430	7.38	3,580	2,320	2,230	46

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	33.3	------	------	------	------	------	31.44	17.93	40.98	0.72	1.70	44.14	45.13	0.07	0.03	------	------	------	------	------	------	------
Oct. 11-20	29.1	------	------	------	------	------	31.84	17.02	40.62	.61	1.84	44.14	44.00	.07	.04	------	------	------	------	------	------	------
Oct. 21-31	23.5	------	------	------	------	------	32.64	17.11	43.54	.69	1.82	44.97	47.10	.07	.02	------	------	------	------	------	------	------
Nov. 1-10	29.8	------	------	------	------	------	30.55	16.20	39.55	.69	1.80	43.10	42.02	.05	.02	------	------	------	------	------	------	------
Nov. 11-20	58.6	------	------	------	------	------	30.05	16.78	40.32	.59	1.85	42.68	43.15	.04	.02	------	------	------	------	------	------	------
Nov. 21-30	26.0	------	------	------	------	------	33.14	19.49	53.63	.64	2.11	46.64	58.10	.03	.02	------	------	------	------	------	------	------
Dec. 1-10	46.5	------	------	------	------	------	30.35	16.53	40.79	.87	1.90	43.10	43.43	.05	.06	------	------	------	------	------	------	------
Dec. 11-20	11.0	------	------	------	------	------	30.05	16.86	41.56	.82	1.86	43.10	44.28	.03	.02	------	------	------	------	------	------	------
Dec. 21-31	20.9	------	------	------	------	------	29.55	16.61	39.50	.82	1.92	41.64	42.87	.03	.02	------	------	------	------	------	------	------
Jan. 1-10, 1945	11.2	------	------	------	------	------	34.74	19.98	56.19	.51	2.05	48.09	63.18	.06	.04	------	------	------	------	------	------	------
Jan. 11-20	11.3	------	------	------	------	------	35.14	19.90	55.91	.67	2.15	47.88	61.48	.07	.04	------	------	------	------	------	------	------
Jan. 21-31	18.9	------	------	------	------	------	33.74	19.74	60.93	.69	2.16	46.84	66.00	.06	.04	------	------	------	------	------	------	------
Feb. 1-10	21.5	------	------	------	------	------	30.15	17.11	40.92	.59	1.80	43.72	43.15	.07	.03	------	------	------	------	------	------	------
Feb. 11-19	188	------	------	------	------	------	30.65	15.62	34.64	.51	1.93	41.01	38.36	.07	.05	------	------	------	------	------	------	------
Feb. 20-28	234	------	------	------	------	------	29.55	16.69	38.51	.51	2.00	42.26	40.89	.07	.04	------	------	------	------	------	------	------
Mar. 1-10	157	------	------	------	------	------	29.65	15.13	37.62	.51	1.91	41.43	39.48	.07	.02	------	------	------	------	------	------	------
Mar. 11-20	279	------	------	------	------	------	29.35	14.72	36.39	.46	1.94	40.81	38.07	.07	.03	------	------	------	------	------	------	------
Mar. 21-31	392	------	------	------	------	------	29.45	14.88	36.29	.54	2.06	41.22	37.79	.07	.02	------	------	------	------	------	------	------

RIO GRANDE BASIN—Continued

PECOS RIVER NEAR ORLA, TEX.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1-10	257	------	------	------	------	------	29.35	15.62	36.30	.74	1.98	41.85	38.07	.06	.05	------	------	------	------	------	------	------
Apr. 11-20	431	------	------	------	------	------	29.65	15.54	36.10	.67	2.05	41.43	38.36	.06	.06	------	------	------	------	------	------	------
Apr. 21-30	519	------	------	------	------	------	30.25	15.54	36.50	.69	1.98	42.26	38.64	.06	.04	------	------	------	------	------	------	------
May 1-10	437	------	------	------	------	------	29.55	16.12	37.32	.61	1.80	41.64	40.05	.06	.05	------	------	------	------	------	------	------
May 11-20	394	------	------	------	------	------	29.55	16.20	37.51	.56	1.82	41.85	40.05	.05	.05	------	------	------	------	------	------	------
May 21-31	380	------	------	------	------	------	29.95	16.04	38.15	.56	1.92	42.06	40.61	.06	.05	------	------	------	------	------	------	------
June 1-10	405	------	------	------	------	------	29.25	16.20	40.97	.46	1.59	42.89	42.30	.06	.04	------	------	------	------	------	------	------
June 11-20	496	------	------	------	------	------	30.05	16.37	40.23	.67	1.82	43.10	42.30	.05	.05	------	------	------	------	------	------	------
June 21-30	505	------	------	------	------	------	30.55	16.53	41.43	.56	1.82	43.72	43.43	.07	.03	------	------	------	------	------	------	------
July 1-2, 5-10	220	------	------	------	------	------	30.65	16.53	46.52	.46	1.81	46.01	46.25	.06	.03	------	------	------	------	------	------	------
July 3-4	742	------	------	------	------	------	27.55	6.50	17.72		1.77	31.02	18.90	.03	.05	------	------	------	------	------	------	------
July 11-20	200	------	------	------	------	------	31.15	17.93	44.59	.54	1.84	44.35	47.95	.05	.02	------	------	------	------	------	------	------
July 21-31	524	------	------	------	------	------	30.55	18.34	42.09	.51	2.00	43.72	45.69	.05	.03	------	------	------	------	------	------	------
Aug. 1-10	592	------	------	------	------	------	30.55	18.67	44.98	.61	1.57	44.35	48.79	.05	.05	------	------	------	------	------	------	------
Aug. 11-20	568	------	------	------	------	------	30.85	18.09	42.47	.64	1.77	43.10	47.10	.05	.03	------	------	------	------	------	------	------
Aug. 21-31	404	------	------	------	------	------	30.55	18.09	46.37	.74	1.85	42.47	51.33	.07	.03	------	------	------	------	------	------	------
Sept. 1-10	424	------	------	------	------	------	29.75	17.11	45.14	.77	1.89	42.26	48.51	.05	.06	------	------	------	------	------	------	------
Sept. 11-20	220	------	------	------	------	------	28.75	16.04	47.25	.74	1.86	39.77	51.05	.05	.05	------	------	------	------	------	------	------
Sept. 21-30	101	------	------	------	------	------	27.75	15.38	51.20	.61	2.04	38.93	53.87	.06	.04	------	------	------	------	------	------	------
Weighted average	244	------	------	------	------	------	30.00	16.45	40.27	0.61	1.85	42.47	43.15	0.06	0.04	------	------	------	------	------	------	------

CARLSBAD PROJECT MAIN CANAL NEAR CARLSBAD, N. MEX.

LOCATION.—At head of Carlsbad project main canal at Avalon Dam, 5 miles north of Carlsbad. Samples were collected from the canal whenever there was flow, otherwise from Lake Avalon at the head gates. Those collected from the lake are the ones for which only specific-conductance values are given.

RECORDS AVAILABLE.—Chemical analyses: February 1939 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 5,570 parts per million June 1–10; minimum, 2,890 parts per million Sept. 3–10.
Total hardness: Maximum, 2,810 parts per million June 1–10; minimum, 1,570 parts per million Sept. 3–10.

EXTREMES, 1939–45.—Dissolved solids: Maximum, 5,570 parts per million June 1–10, 1945; minimum, 2,890 parts per million Sept. 3–10, 1945.
Total hardness: Maximum, 2,180 parts per million June 1–10, 1945; minimum, 1,570 parts per million Sept. 3–10, 1945.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (°F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–2, 1944		486																				
Oct. 3–10		501			17		588	152	443		117	1,840	740		0.5		3,840	5.22		2,090	2,000	32
Oct. 11–20		503			19		598	149	473		128	1,900	745		.5		3,950	5.37		2,100	2,000	33
Oct. 21–31		501			18		600	151	457		132	1,890	735		1.0		3,920	5.33		2,120	2,010	32
Nov. 1–10		499																				
Nov. 11–20		494																				
Nov. 21–30		486																				
Dec. 1–11		485																				
Dec. 12–22		484			19		598	149	433		133	1,900	680		.8		3,850	5.24		2,100	2,000	31
Dec. 23–31		480																				
Jan. 1–10, 1945		489																				
Jan. 11–20		488																				
Jan. 21–31		487																				
Feb. 1–3, 18–20		494																				
Feb. 4–10		482		7.6	15		592	148	450		133	1,890	700		.5	0.4	3,860	5.25		2,090	1,980	32
Feb. 11–17		487		7.7	14		596	152	449		132	1,900	710		1.0	.4	3,890	5.29		2,110	2,000	32
Feb. 21–28		495																				
Mar. 1–10		503																				
Mar. 11–20		507																				
Mar. 21–22		518																				
Mar. 28–31		520			15		632	158	489		130	2,000	780		1.0		4,140	5.63		2,230	2,120	32

RIO GRANDE BASIN—Continued

CARLSBAD PROJECT MAIN CANAL NEAR CARLSBAD, N. MEX.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na) Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1-10		533		7.6	18		638	169	492	137	2,010	815		2.1		4,210	5.73		2,290	2,170	32
Apr. 11-20		439		7.6	15		604	139	340	133	1,870	540		2.0		3,580	4.87		2,080	1,970	26
Apr. 21, 23-30		460		7.6	12		638	147	360	120	1,980	590		1.3		3,780	5.14		2,200	2,100	26
May 1-10		505		7.6	17		626	156	449	130	1,930	755		1.1		4,000	5.44		2,200	2,100	31
May 11-20		539		7.6	17		660	172	489	130	2,090	805		1.4		4,300	5.85		2,350	2,250	31
May 21-31		552		7.5	26		664	186	519	132	2,120	875		1.4		4,460	6.07		2,420	2,310	32
June 1-10		702		7.5	28		748	229	762	130	2,480	1,260		1.4		5,570	7.58		2,810	2,700	37
June 11-19		577		7.5	22		664	182	550	128	2,090	935		1.3		4,510	6.13		2,400	2,300	33
June 20-28		579																			
June 29, 30		567		7.8	23		680	182	565	111	2,120	975		1.4		4,600	6.26		2,440	2,350	33
July 1-2, 6-10		426		7.5	19		536	131	416	117	1,650	685		1.9		3,500	4.76		1,880	1,780	33
July 3-6		385																			
July 11-20		426		7.5	20		514	136	698	120	1,550	525		1.9		3,500	4.76		1,840	1,740	25
July 21-31		518		7.5	23		590	166	481	120	1,860	825		2.8		4,010	5.45		2,150	2,060	33
Aug. 1-10		562		7.5	17		636	185	543	120	2,040	925		2.4		4,410	6.00		2,350	2,250	33
Aug. 11-21		523		7.5	18		612	168	484	108	1,930	830		2.5		4,100	5.58		2,220	2,130	32
Aug. 22-31		215																			
Sept. 1-2		217																			
Sept. 3-10		377		7.5	17		446	111	329	100	1,430	505		2.5		2,890	3.93		1,570	1,490	31
Sept. 11-20		398		7.5	16		514	107	339	119	1,570	515		1.9		3,120	4.24		1,720	1,620	30
Sept. 21-30		520		7.4	15		592	160	513	129	1,930	805		2.1		4,080	5.55		2,140	2,030	34

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1–2, 1944																					
Oct. 3–10							29.35	12.50	19.26	1.92	38.31	20.87		0.01							32
Oct. 11–20							29.85	12.25	20.58	2.10	39.56	21.01		.01							33
Oct. 21–31							29.95	12.42	19.89	2.16	39.35	20.73		.02							32
Nov. 1–10																					
Nov. 11–20																					
Nov. 21–30																					
Dec. 1–11																					
Dec. 12–22							29.85	12.25	18.83	2.18	39.56	19.18		.01							31
Dec. 23–31																					
Jan. 1–10, 1945																					
Jan. 11–20																					
Jan. 21–31																					
Feb. 1–3, 18–20																					
Feb. 4–10							29.55	12.17	19.56	2.18	39.35	19.74		.01							32
Feb. 11–17							29.75	12.50	19.51	2.16	39.56	20.02		.02							32
Feb. 21–28																					
Mar. 1–10																					
Mar. 11–20																					
Mar. 21–22																					
Mar. 28–31							31.54	12.99	21.26	2.13	41.64	22.00		.02							32
Apr. 1–10							31.84	13.90	21.38	2.25	41.85	22.99		.03							32
Apr. 11–20							30.15	11.43	14.79	2.18	38.93	15.23		.03							26
Apr. 21, 23–30							31.84	12.09	15.64	1.97	41.22	16.36		.02							26
May 1–10							31.25	12.83	19.54	2.13	40.18	21.29		.02							31
May 11–20							32.94	14.14	21.28	2.13	43.51	22.70		.02							31
May 21–31							33.13	15.30	22.57	2.16	44.14	24.68		.02							32
June 1–10							37.33	18.83	33.14	2.13	51.63	35.54		.02							37
June 11–19							33.13	14.97	23.90	2.10	43.51	26.37		.02							33
June 20–28																					
June 29, 30							33.93	14.97	24.58	1.82	44.14	27.50		.02							33
July 1–2, 6–10							26.75	10.77	18.10	1.92	34.35	19.32		.03							33
July 3–6																					
July 11–20							25.65	11.18	12.25	1.97	32.27	14.81		.03							25
July 21–31							29.44	13.65	20.93	1.97	38.73	23.27		.05							33
Aug. 1–10							31.74	15.21	23.62	1.97	42.47	26.09		.04							33
Aug. 11–21							30.54	13.82	21.04	1.77	40.18	23.41		.04							32
Aug. 22–31																					
Sept. 1–2																					
Sept. 3–10							22.26	9.13	14.30	1.64	29.77	14.24		.04							31
Sept. 11–20							25.65	8.80	14.74	1.95	32.69	14.52		.03							30
Sept. 21–30							29.54	13.16	22.32	2.11	40.18	22.70		.03							34

RIO GRANDE BASIN—Continued

REFINERY INTAKE CANAL NEAR LOVING, N. MEX.

[Weekly samples taken from canal in sec. 13, T. 23 S., R. 28 E., representing water in the Harroun Canal diverted from the Pecos River at the dam in sec. 11, T. 23 S., R. 28 E.]

Date	Specific conductance ($K \times 10^5$ at 25° C.)	Chloride (Cl, p. p. m.)	Date	Specific conductance ($K \times 10^5$ at 25° C.)	Chloride (Cl, p. p. m.)
Oct. 5, 1944	418	645	Apr. 5, 1945	424	635
Oct. 12	419	645	Apr. 12	432	655
Oct. 19	413	620	Apr. 19	439	655
Oct. 26	423	640	Apr. 26	432	645
Nov. 2	412	620	May 3	429	655
Nov. 10	403	620	May 10	433	665
Nov. 16	406	585	May 17	432	655
Nov. 23	460	690	May 24	443	685
Nov. 30	424	635	May 31	424	645
Dec. 7	444	670	June 7	423	635
Dec. 14	438	635	June 14	426	645
Dec. 21	445	675	June 21	437	655
Dec. 28	420	610	June 28	430	670
Jan. 4, 1945	442	635	July 5	408	605
Jan. 11	430	635	July 12	409	620
Jan. 18	430	615	July 19	407	615
Jan. 25	451	645	July 26	419	635
Feb. 1	428	615	Aug. 2	427	640
Feb. 8	442	655	Aug. 9	427	650
Feb. 15	446	665	Aug. 16	424	650
Feb. 22	425	625	Aug. 23	52.2	45
Mar. 1	414	635	Aug. 30	283	415
Mar. 8	419	635	Sept. 6	392	590
Mar. 15	395	595	Sept. 13	401	605
Mar. 22	445	675	Sept. 20	402	625
Mar. 29	426	665	Sept. 27	398	600

RIO GRANDE BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN RIO GRANDE BASIN IN NEW MEXICO

Chemical analyses, in parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Pecos River at Ribera																						
Aug. 2, 1945		25.9					46	4.7	4.8		148	21	1.2		0.3		151	0.21		134	13	7
Pecos River at Santa Rosa																						
Aug. 29, 1945		104					190	24	15		166	430	14		2.5		757	1.03		572	436	5
Pecos River near Lake Arthur																						
Apr. 7, 1945		328											285									
Pecos River at Ford Crossing in Major Johnson Spring area near Lakewood																						
Nov. 20, 1944		461										1,870	625									
Feb. 19, 1945		482									151		687									
Apr. 7		624											1,080									
May 24		496											725									
July 10		500					618	156	452		162	1,890	755		2.0		3,950	5.37		2,180	2,050	31

RIO GRANDE BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN RIO GRANDE BASIN IN NEW MEXICO—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Pecos River at dam site 3 near Lakewood																						
Oct. 1-10, 1944		497										1,870	740									
Oct. 11-15		494										1,880	725									
Oct. 25		486											715									
Nov. 10, 17		476											680									
Apr. 7, 1945		710										2,320	1,320									
Aug. 30		513					620	156	495		125	1,920	825		0.6		4,080	5.55		2,190	2,090	33
South Berrendo Creek, sec. 15, T. 10 S., R. 24 E., near Roswell																						
Aug. 30, 1945		325					282	89	346		228	821	550		5.7		2,210	3.01		1,070	882	41
Hagerman Canal at Dexter																						
Oct. 3, 1944		518											1,000									
Dec. 31		464											915									
Feb. 19, 1945		470					355	128	551		247	1,050	930		4.0		3,140	4.27		1,410	1,210	46
Apr. 4		488											980									
May 24		490											995									
July 10		544					372	126	740		221	1,130	1,200		7.5		3,680	5.00		1,450	1,260	53
Aug. 30		517											1,100									
Rio Bonito, 3 miles above Hondo																						
July 12, 1945		149					225	64	32		172	641	60		2.0		1,110	1.51		824	684	8

Nogal Creek near Capitan																					
July 12, 1945		74.8					110	20	32	284	165	15		0.5		482	0.66		356	124	16
Rio Hondo near Roswell																					
Aug. 30, 1945		381					422	125	328	264	1,210	564		10		2,790	3.79		1,570	1,350	31
Rio Felix near Hagerman																					
Nov. 21, 1944		505										985									
May 24, 1945		547										1,040									
Sept. 1		563					568	231	491	256	1,600	1,100		8.3		4,120	5.60		2,370	2,160	31
Seven Rivers near Lakewood																					
Aug. 30, 1945		438					594	365	174	207	2,900	122		0.6		4,260	5.79		2,980	2,810	11
Black River at Forehand Crossing, sec. 9, T. 24 S., R. 28 E., near Malaga																					
Oct. 4, 1944		202										26									
Nov. 20		203									1,160	29									
Dec. 30		192										21									
Feb. 20, 1945		196					400	73	6.0	195	1,080	18		1.8		1,670	2.27		1,300	1,140	1
Apr. 5		192										18									
May 25		202									1,130	18									
July 11		155					307	47	7.8	153	798	14		1.5		1,250	1.70		960	834	2
Aug. 31		198					405	70	8.3	162	1,110	20		.7		1,690	2.30		1,300	1,170	1
Delaware River near Malaga																					
Oct. 4, 1944		295										116									
Nov. 20		270									1,550	97									
Apr. 5, 1945		297										120									
May 25		326									1,920	138									
July 11		291					618	57	112	108	1,720	100		0.2		2,660	3.62		1,780	1,690	12
Aug. 31		294									1,740	84									

RIO GRANDE BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN RIO GRANDE BASIN IN NEW MEXICO—Continued

Chemical analyses, in equivalents per million

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Pecos River at Ribera																						
Aug. 2, 1945							2.30	0.39	0.21		2.43	0.44	0.03		0.00							7
Pecos River at Santa Rosa																						
Aug. 29, 1945							9.48	1.97	0.66		2.73	8.95	0.39		0.04							5
Pecos River near Lake Arthur																						
Apr. 7, 1945													8.04									
Pecos River at Ford Crossing in Major Johnson Spring area near Lakewood																						
Nov. 20, 1944												38.93	17.63									
Feb. 19											2.47		19.38									
Apr. 7, 1945													30.46									
May 24													20.45									
July 10							30.84	12.83	19.65		2.65	39.35	21.29		0.03							31

Pecos River at dam site 3 near Lakewood																					
Oct. 1-10, 1944											38.93	20.87									
Oct. 11-15											39.14	20.45									
Oct. 25												20.16									
Nov. 10, 17												19.18									
Apr. 7, 1945											48.30	37.23									
Aug. 30							30.94	12.83	21.53	2.05	39.97	23.27		0.01							33
South Berrendo Creek, sec. 15, T. 10 S., R. 24 E., near Roswell																					
Aug. 30, 1945							14.07	7.32	15.04	3.74	17.09	15.51		0.09							41
Hagerman Canal at Dexter																					
Oct. 3, 1944												28.20									
Dec. 31												25.81									
Feb. 19, 1945							17.72	10.53	23.95	4.05	21.86	26.23		0.06							46
Apr. 4												27.64									
May 24												28.06									
July 10							18.56	10.36	32.19	3.62	23.53	33.84		.12							53
Aug. 30												31.02									
Rio Bonito, 3 miles above Hondo																					
July 12, 1945							11.23	5.26	1.40	2.82	13.35	1.69		0.03							8
Nogal Creek near Capitan																					
July 12, 1945							5.49	1.64	1.39	4.65	3.44	0.42		0.01							16
Rio Hondo near Roswell																					
Aug. 30, 1945							21.06	10.28	14.25	4.33	25.19	15.91		0.16							31
Rio Felix near Hagerman																					
Nov. 21, 1944												27.78									
May 24, 1945												29.33									
Sept. 1							28.34	19.00	21.33	4.20	33.31	31.02		0.14							31

RIO GRANDE BASIN—Continued

MISCELLANEOUS ANALYSES OF STREAMS IN RIO GRANDE BASIN IN NEW MEXICO—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
																	Parts per million	Tons per acre-foot	Tons per day	Total	Noncarbonate	
Seven Rivers near Lakewood																						
Aug. 30, 1945							29.64	30.02	7.56		3.39	60.38	3.44		0.01							11
Black River at Forehand Crossing, sec. 9, T. 24 S., R. 28 E., near Malaga																						
Oct. 4, 1944													0.73									
Nov. 20												24.15	.56									
Dec. 30													.59									
Feb. 20, 1945							19.97	6.00	0.26		3.20	22.49	.51		0.03							1
Apr. 5													.51									
May 25												23.53	.51									
July 11							15.32	3.87	.34		2.51	16.61	.39		.02							2
Aug. 31							20.21	5.76	.36		2.65	23.11	.56		.01							1
Delaware River near Malaga																						
Oct. 4, 1944													3.27									
Nov. 20												32.27	2.74									
Apr. 5, 1945													3.38									
May 25												39.97	3.89									
July 11							30.94	4.69	4.87		1.77	35.81	2.82									12
Aug. 31												36.23	2.37									

COLORADO RIVER BASIN

COLORADO RIVER MAIN STEM

COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.

LOCATION.—At Shoshone power plant, 6 miles upstream from gaging station, which is at Glenwood Springs half a mile upstream from Roaring Fork.

DRAINAGE AREA.—Approximately 4,560 square miles.

RECORDS AVAILABLE.—Chemical analyses: October 1941 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 518 parts per million Jan. 1–10; minimum, 120 parts per million June 21–30.
Total hardness: Maximum, 244 parts per million Mar. 1–2; minimum, 74 parts per million June 21–30.

EXTREMES, 1941–45.—Dissolved solids: Maximum, 661 parts per million, Jan. 11–20, 1943; minimum, 105 parts per million June 1–10, 1942.
Total hardness: Maximum, 292 parts per million Dec. 1–10, 1942; minimum, 72 parts per million June 1–20, 1942.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–10, 1944	950	85.3			10	0.07	68	16	83	3.4	135	131	119	0.2	0.5	0.1	498	0.68	1,280	236	125	43
Oct. 11–20	1,073	77.7			10	.03	66	15	70	2.9	135	124	100	.2	.5	.1	455	.62	1,320	226	116	40
Oct. 21–31	924	83.6			9.6	.03	69	16	80	2.7	142	133	112	.1	.5	.2	493	.67	1,230	238	122	42
Nov. 1–10	971	77.0			9.6	.04	67	16	69	2.4	141	129	96	.2	.5	.1	459	.62	1,200	233	118	39
Nov. 11–20	951	82.7			8.0	.08	68	16	76	3.0	144	131	108	.1	.6	.2	482	.66	1,240	236	118	41
Nov. 21–30	930	77.9			8.5	.00	66	16	70	3.0	141	122	100	.1	.8	.1	456	.62	1,150	230	115	39
Dec. 1–10	1,136	64.0			7.5	.01	56	13	54	2.7	125	100	76	.2	.8	.2	372	.51	1,140	194	91	37
Dec. 11–20	813	75.2			7.0	.02	60	14	72	3.4	131	105	105	.2	.8	.2	432	.59	949	207	100	43
Dec. 21–26, 29–31	915	69.7			8.5	.01	57	14	63	3.0	128	101	94	.2	.8	.2	405	.55	1,000	200	95	40
Dec. 27–28	[1] 600	114									161	160	188									
Jan. 1–10, 1945	667	88.8		8.2	13	.02	66	16	89	4.2	146	121	136	.1	.5	.2	518	.70	933	230	111	45
Jan. 11–20	721	85.1		8.3	12	.02	64	16	84	3.8	142	117	129	.2	.5	.2	497	.68	968	226	109	44
Jan. 21–31	637	88.2		8.3	12	.03	66	16	91	3.8	146	119	137	.1	.5	.2	517	.70	889	230	111	46

[1] Discharge for Dec. 27–28 included in discharge reported for Dec. 21–26, 29–31.

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR GLENWOOD SPRINGS, COLO.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Feb. 1-10	670	86.2	------	8.3	13	.03	64	16	88	4.2	142	116	134	.2	.5	.2	506	.69	915	226	109	45
Feb. 11-20	658	84.3	------	8.2	13	.03	62	16	88	3.8	139	113	133	.2	.5	.2	498	.68	885	220	106	46
Feb. 21-28	653	87.1	------	8.2	13	.03	62	16	93	4.0	141	115	141	.2	.4	.2	514	.70	906	220	105	47
Mar. 1-2	683	87.8	------	------	------	------	68	18	88		148	120	133	------	.4	------	500	.68	922	244	122	44
Mar. 3-10	1,115	49.4	------	7.7	11	.04	44	10	40	3.7	112	70	57	.3	.5	.2	292	.40	879	151	59	36
Mar. 11-22	1,185	58.2	------	7.7	9.6	.06	48	11	52	3.4	119	79	75	.3	.5	.2	337	.46	1,080	165	68	40
Mar. 23-31	728	85.4	------	7.7	12	.07	63	16	94	4.2	145	114	138	.2	.3	.1	513	.70	1,010	223	104	47
Apr. 1-10	848	79.2	------	7.8	12	.08	60	15	83	3.8	139	107	123	.2	.5	.1	473	.64	1,080	211	97	46
Apr. 11-21	940	73.1	------	7.8	12	.08	55	14	73	3.8	135	97	106	.2	.4	.1	428	.58	1,090	195	84	44
Apr. 22-30	1,942	50.1	------	7.9	11	.07	44	11	43	3.2	118	73	58	.3	.4	.1	302	.41	1,580	155	58	37
May 1-4	2,562	46.3	------	7.8	12	.05	44	11	36		119	66	46	.3	.8	.0	275	.37	1,900	155	58	33
May 5-10	5,047	30.7	------	8.1	14	.06	35	7.4	16	2.5	104	40	18	.3	1.3	.1	186	.25	2,530	118	33	22
May 11-20	6,178	26.7	------	8.0	13	.09	31	6.5	13	2.2	92	33	16	.3	.8	.1	161	.22	2,690	104	28	21
May 21-31	6,604	24.2	------	8.0	11	.07	26	5.8	14	2.2	83	29	16	.3	.5	.0	146	.20	2,600	89	21	25
June 1-10	7,512	22.9	------	7.9	11	.12	25	5.7	12	1.9	74	30	14	.2	.5	.2	137	.19	2,780	86	26	23
June 11-20	7,570	22.8	------	7.9	9.0	.11	24	5.6	13	1.8	71	29	16	.2	.3	.1	134	.18	2,740	83	25	23
June 21-30	8,178	19.9	------	7.9	7.8	.10	22	4.8	11	1.8	66	26	14	.2	.2	.1	120	.16	2,650	74	20	24
July 1-10	5,285	28.0	------	7.5	6.0	.03	26	6.0	19	2.7	71	43	21	.2	.4	.0	159	.22	2,270	90	32	31
July 11-20	4,045	34.3	------	7.6	9.2	.03	34	6.9	24	2.1	88	51	31	.3	.6	.1	202	.28	2,210	114	42	31
July 21-31	3,786	36.1	------	7.7	10	.05	37	7.0	26	2.3	89	56	32	.3	.5	.2	215	.29	2,200	122	48	31
Aug. 1-10	3,982	35.9	------	8.1	10	.05	40	7.4	21	2.0	91	60	27	.3	.9	.0	213	.29	2,290	130	56	25
Aug. 11-20	2,965	40.1	------	8.0	10	.03	39	8.7	29	2.1	92	63	39	.3	.5	.0	237	.32	1,900	134	58	32
Aug. 21-31	1,956	49.9	------	7.9	10	.04	46	10	40	2.2	102	77	56	.3	.6	.0	292	.40	1,540	156	72	35
Sept. 1-10	1,400	59.5	------	7.8	9.6	.05	50	12	53	4.0	112	91	72	.2	.5	.1	348	.47	1,320	174	82	39
Sept. 11-20	1,116	75.1	------	7.8	10	.04	64	15	69	5.2	130	121	98	.2	.8	.1	447	.61	1,350	221	114	40
Sept. 21, 30	1,181	61.0	------	7.8	8.0	.22	55	13	51		118	100	70	.3	.6	.2	356	.48	1,140	190	94	37
Weighted average	2,372	40.2	------	------	10	0.07	38	8.5	31	2.5	95	58	42	0.2	0.5	0.1	238	0.32	1,520	130	52	34

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	950						3.39	1.32	3.61	0.09	2.21	2.73	3.36	0.01	0.01							43
Oct. 11-20	1,073						3.29	1.23	3.04	.07	2.21	2.58	2.82	.01	.01							40
Oct. 21-31	924						3.44	1.32	3.48	.07	2.33	2.77	3.16	.01	.01							42
Nov. 1-10	971						3.34	1.32	3.00	.06	2.31	2.69	2.71	.01	.01							39
Nov. 11-20	951						3.39	1.32	3.30	.08	2.36	2.73	3.05	.01	.01							41
Nov. 21-30	930						3.29	1.32	3.04	.08	2.31	2.54	2.82	.01	.01							39
Dec. 1-10	1,136						2.80	1.07	2.35	.07	2.05	2.08	2.14	.01	.01							37
Dec. 11-20	813						2.99	1.15	3.13	.09	2.15	2.19	2.96	.01	.01							43
Dec. 21-26, 29-31	915						2.85	1.15	2.74	.08	2.10	2.10	2.65	.01	.01							40
Dec. 27-28	[1] 600										2.64	3.33	5.30									
Jan. 1-10, 1945	667						3.29	1.32	3.87	.11	2.39	2.52	3.84	.01	.01							45
Jan. 11-20	721						3.19	1.32	3.65	.10	2.33	2.44	3.64	.01	.01							44
Jan. 21-31	637						3.29	1.32	3.96	.10	2.39	2.48	3.86	.01	.01							46
Feb. 1-10	670						3.19	1.32	3.83	.11	2.33	2.42	3.78	.01	.01							45
Feb. 11-20	658						3.09	1.32	3.83	.10	2.28	2.35	3.75	.01	.01							46
Feb. 21-28	653						3.09	1.32	4.04	.10	2.31	2.39	3.98	.01	.01							47
Mar. 1-2	683						3.39	1.48	3.82		2.43	2.50	3.75		.01							44
Mar. 3-10	1,115						2.20	.82	1.74	.09	1.84	1.46	1.61	.02	.01							36
Mar. 11-22	1,185						2.40	.90	2.26	.09	1.95	1.64	2.12	.02	.01							40
Mar. 23-31	728						3.14	1.32	4.09	.11	2.38	2.37	3.89	.01	.00							47
Apr. 1-10	848						2.99	1.23	3.61	.10	2.28	2.23	3.47	.01	.01							46
Apr. 11-21	940						2.75	1.15	3.17	.10	2.21	2.02	2.99	.01	.01							44
Apr. 22-30	1,942						2.20	.90	1.87	.08	1.93	1.52	1.64	.02	.01							37
May 1-4	2,562						2.20	.90	1.55		1.95	1.37	1.30	.02	.01							33
May 5-10	5,047						1.75	.61	.70	.06	1.70	.83	.51	.02	.02							22
May 11-20	6,178						1.55	.53	.57	.06	1.51	.69	.45	.02	.01							21
May 21-31	6,604						1.30	.48	.61	.06	1.36	.60	.45	.02	.01							25
June 1-10	7,512						1.25	.47	.52	.05	1.21	.62	.39	.01	.01							23
June 11-20	7,570						1.20	.46	.57	.05	1.16	.60	.45	.01	.00							23
June 21-30	8,178						1.10	.39	.48	.05	1.08	.54	.39	.01	.00							24
July 1-10	5,285						1.30	.49	.83	.07	1.16	.90	.59	.01	.01							31
July 11-20	4,045						1.70	.57	1.04	.05	1.44	1.06	.87	.02	.01							31
July 21-31	3,786						1.85	.58	1.13	.06	1.46	1.17	.90	.02	.01							31
Aug. 1-10	3,982						2.00	.61	.91	.05	1.49	1.25	.76	.02	.01							25
Aug. 11-20	2,965						1.95	.72	1.26	.05	1.51	1.31	1.10	.02	.01							32
Aug. 21-31	1,956						2.30	.82	1.74	.06	1.67	1.60	1.58	.02	.01							35
Sept. 1-10	1,400						2.50	.99	2.30	.10	1.84	1.89	2.03	.01	.01							39
Sept. 11-20	1,116						3.19	1.23	3.00	.13	2.13	2.52	2.76	.01	.01							40
Sept. 21, 30	1,181						2.74	1.07	2.20		1.93	2.08	1.97	.02	.01							37
Weighted average	2,372						1.90	0.70	1.35	0.06	1.56	1.21	1.18	0.01	0.01							34

Discharge for Dec. 27-28 included in discharge reported for Dec. 21-26, 29-31.

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR CAMEO, COLO.

LOCATION.—At diversion dam, about 1½ miles upstream from Cameo and 5 miles downstream from gaging station.
DRAINAGE AREA.—8,055 square miles above gaging station.
RECORDS AVAILABLE.—Chemical analyses: October 1933 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 883 parts per million Feb. 11–19; minimum, 186 parts per million June 11–20.
Total hardness: Maximum, 332 parts per million Feb. 11–19; minimum, 116 parts per million June 11–20.
EXTREMES, 1933–45.—Dissolved solids: Maximum, 1,050 parts per million Dec. 21–31, 1939; minimum, 143 parts per million June 11–20, 1935.
Total hardness (1933–35, 1943–45): Maximum, 399 parts per million July 21–31, 1934; minimum, 98 parts per million June 21–30, 1935.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Per cent sodium
Oct. 1-10, 1944	1,527	135																				
Oct. 11-20	1,642	133			10		87	25	157		193	195	212		2.5		784	1.07	3,480	320	162	52
Oct. 21-31	1,644	127																				
Nov. 1-6, 9-10	1,766	127																				
Nov. 11-15, 17-20	1,728	121			12		82	24	138		192	190	174		3.0		718	.98	3,350	303	146	50
Nov. 21-30	1,568	130																				
Dec. 3-7, 10	1,691	123																				
Dec. 12-20	1,473	133			9.5		83	25	163		202	190	211		3.2		784	1.07	3,120	310	144	53
Dec. 21-31	1,655	124																				
Jan. 1-10, 1945	1,340	140																				
Jan. 11, 13-18, 20	1,280	140			12	0.10	86	24	172		192	204	224		1.5		818	1.11	2,830	313	156	54
Jan. 21-23, 25-31	1,201	148																				
Feb. 1-10	1,388	144																				
Feb. 11-19	1,419	147			11		87	28	190		210	216	245		2.5		883	1.20	3,380	332	160	55
Feb. 20-28	1,054	148																				
Mar. 1-10	1,493	124																				
Mar. 11-20	1,740	111			16		70	23	130		182	170	158		2.5		659	.90	4,000	269	120	51
Mar. 21-31	1,399	133																				

Apr. 1-10	1,444	139																			
Apr. 11-20	1,583	126		7.5	11		76	23	158	197	183	192		4.9		745	1.01	3,180	284	122	55
Apr. 21-30	2,795	91.0																			
May 1-10	7,109	63.1																			
May 11-20	11,060	44.2		7.7	10		48	11	28	164	48	29		1.2		256	.35	7,640	165	30	27
May 21-31	11,030	35.5																			
June 1-10	11,883	41.9																			
June 11-20	12,960	32.8		7.8	7.6		32	8.6	21	98	43	25		.8		186	.25	6,510	116	35	28
June 21-30	15,220	31.1																			
July 1-10	10,270	34.9																			
July 11-20	7,675	45.0			8.8		42	9.8	34	112	58	47		1.4		256	.35	5,300	146	54	34
July 21-28, 30-31	6,543	52.0																			
Aug. 1-10	6,557	59.8																			
Aug. 11-20	4,568	63.9			10		53	13	60	129	95	78		1.0		374	.51	4,610	186	80	41
Aug. 21-31	3,045	80.3																			
Sept. 1-3, 5-10	2,191	100																			
Sept. 11-20	1,798	114		7.8	13		71	25	129	176	162	176		1.3		664	.90	3,220	280	136	50
Sept. 21-30	1,944	106																			

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	1,527																				
Oct. 11-20	1,642						4.34	2.06	6.84	3.16	4.06	5.98		0.04							52
Oct. 21-31	1,644																				
Nov. 1-6, 9-10	1,766																				
Nov. 11-15, 17-20	1,728						4.09	1.97	6.01	3.15	3.96	4.91		.05							50
Nov. 21-30	1,568																				
Dec. 3-7, 10	1,691																				
Dec. 12-20	1,473						4.14	2.06	7.07	3.31	3.96	5.95		.05							58
Dec. 21-31	1,655																				
Jan. 1-10, 1945	1,340																				
Jan. 11, 13-18, 20	1,280						4.29	1.97	7.48	3.15	4.25	6.32		.02							54
Jan. 21-23, 25-31	1,201																				
Feb. 1-10	1,388																				
Feb. 11-19	1,419						4.34	2.30	8.25	3.44	4.50	6.91		.04							55
Feb. 20-28	1,054																				
Mar. 1-10	1,493																				
Mar. 11-20	1,740						3.49	1.89	5.64	2.98	3.54	4.46		.04							51
Mar. 21-31	1,399																				
Apr. 1-10	1,444																				
Apr. 11-20	1,583						3.79	1.89	6.86	3.23	3.81	5.42		.08							55
Apr. 21-30	2,795																				
May 1-10	7,109																				
May 11-20	11,060						2.40	.90	1.23	2.69	1.00	.82		.02							27
May 21-31	11,030																				

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR CAMEO, COLO.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10[5] at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
June 1-10	11,883																					
June 11-20	12,960						1.60	0.71	0.92		1.61	0.90	0.71		0.01							28
June 21-30	15,220																					
July 1-10	10,270																					
July 11-20	7,675						2.10	.81	1.49		1.84	1.21	1.33		.02							34
July 21-28, 30-31	6,543																					
Aug. 1-10	6,557																					
Aug. 11-20	4,568						2.64	1.07	2.60		2.11	1.98	2.20		.02							41
Aug. 21-31	3,045																					
Sept. 1-3, 5-10	2,191																					
Sept. 11-20	1,798						3.54	2.06	5.63		2.88	3.37	4.96		.02							50
Sept. 21-30	1,944																					

COLORADO RIVER NEAR CISCO, UTAH

LOCATION.—At highway bridge below gaging station, 1 mile downstream from Dolores River and 11 miles south of Cisco.
DRAINAGE AREA.—24,100 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1928 to September 1945.
Sediment records: May 1929 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 1,550 parts per million Oct. 11–12, 14–20; minimum, 270 parts per million May 11–20.
Total hardness: Maximum, 724 parts per million Oct. 11–12, 14–20; minimum, 166 parts per million June 11–20.
Sediment loads: Maximum, 576,000 tons per day Aug. 13; minimum, less than 600 tons per day on several days.
EXTREMES, 1928–45.—Dissolved solids: Maximum, 2,670 parts per million Aug. 11–20, 1940; minimum, 202 parts per million June 11–20, 1933.
Total hardness (1928–35, 1943–45): Maximum, 1,090 parts per million Sept. 1–10, 1934; minimum, 132 parts per million June 11–20, 1933.
Sediment loads: Maximum, 2,790,000 tons per day Oct. 14, 1941; minimum, less than 500 tons per day on several days.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–10, 1944	2,351	250																				
Oct. 11–12, 14–20	2,618	219			14		165	76	236		231	760	175		13		1,550	2.11	11,400	724	535	42
Oct. 21–31	2,775	209																				
Nov. 1–10	3,301	206																				
Nov. 11–18	3,480	183			16		135	61	195		234	581	148		8.0		1,260	1.71	11,900	588	396	42
Dec. 5	3,380	183																				
Dec. 15–20	2,122	181			21		130	60	197		236	548	160		12		1,240	1.69	7,100	571	378	43
Dec. 21–31	2,872	183																				
Jan. 1–10, 1945	2,216	202																				
Jan. 11–19	2,650	203			20	0.10	120	76	206		200	491	269		5.6		1,290	1.75	9,230	612	448	42
Jan. 21–22, 24–31	2,405	194																				
Feb. 1–4, 6–10	3,021	187																				
Feb. 11–19	2,579	209			22		125	57	261		224	523	270		6.8		1,380	1.88	9,610	546	363	51
Feb. 21–28	2,493	200																				
Mar. 1–9	2,641	194																				
Mar. 10–20	3,188	176			26		95	45	229		216	410	222		3.6		1,140	1.55	9,810	422	245	54
Mar. 21–31	2,802	170																				

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR CISCO, UTAH—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1-10	3,117	160																				
Apr. 11-20	3,359	142		7.4	15		92	34	170		231	302	164		2.8		894	1.22	8,110	370	180	50
Apr. 21-22	7,300	144																				
Apr. 23-30	10,784	58.5																				
May 1-10	23,670	48.6																				
May 11-20	27,420	45.9		7.7	10		50	12	27		158	74	18		1.4		270	.37	20,000	174	45	25
May 21-31	22,082	41.5																				
June 1, 3-10	20,500	48.6																				
June 11-20	22,090	48.5			10		45	13	35		124	100	25		1.8		291	.40	17,400	166	64	32
June 22-29	24,000	40.8																				
June 30, July 2-7	14,864	54.1																				
July 13-20	10,033	73.0			14		63	21	61		137	195	43		1.1		466	.63	12,600	244	131	35
July 21-31	8,763	93.4																				
Aug. 1-10	10,201	99.7																				
Aug. 11-20	7,943	111		7.8	15		106	36	86		196	340	57		4.2		741	1.01	15,900	412	252	31
Aug. 21-31	3,965	137																				
Sept. 1-10	2,507	174																				
Sept. 11-17, 19-20	2,245	204		7.7	15		163	76	200		204	759	131		16		1,460	1.99	8,850	719	552	38
Sept. 21-30	2,609	194																				

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	2,351																				
Oct. 11-12, 14-20	2,618						8.24	6.25	10.27	3.79	15.82	4.94		0.21							42
Oct. 21-31	2,775																				
Nov. 1-10	3,301																				
Nov. 11-18	3,480						6.74	5.02	8.48	3.84	12.10	4.17		.13							42
Dec. 5	3,380																				
Dec. 15-20	2,122						6.49	4.93	8.56	3.87	11.41	4.51		.19							43
Dec. 21-31	2,872																				
Jan. 1-10, 1945	2,216																				
Jan. 11-19	2,650						5.99	6.25	8.94	3.28	10.22	7.59		.09							42
Jan. 21-22, 24-31	2,405																				
Feb. 1-4, 6-10	3,021																				
Feb. 11-19	2,579						6.24	4.69	11.35	3.67	10.89	7.61		.11							51
Feb. 21-28	2,493																				
Mar. 1-9	2,641																				
Mar. 10-20	3,188						4.74	3.70	9.96	3.54	8.54	6.26		.06							54
Mar. 21-31	2,802																				
Apr. 1-10	3,117																				
Apr. 11-20	3,359						4.59	2.80	7.37	3.79	6.29	4.63		.05							50
Apr. 21-22	7,300																				
Apr. 23-30	10,784																				
May 1-10	23,670																				
May 11-20	27,420						2.50	.99	1.17	2.59	1.54	.51		.02							25
May 21-31	22,082																				
June 1, 3-10	20,500																				
June 11-20	22,090						2.25	1.07	1.53	2.03	2.08	.71		.03							32
June 22-29	24,000																				
June 30, July 2-7	14,864																				
July 13-20	10,033						3.14	1.73	2.67	2.25	4.06	1.21		.02							35
July 21-31	8,763																				
Aug. 1-10	10,201																				
Aug. 11-20	7,943						5.29	2.96	3.72	3.21	7.08	1.61		.07							31
Aug. 21-31	3,965																				
Sept. 1-10	2,507																				
Sept. 11-17, 19-20	2,245						8.13	6.25	8.71	3.34	15.80	3.69		.26							38
Sept. 21-30	2,609																				

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR CISCO, UTAH—Continued

Suspended sediment, water year October 1944 to September 1945

Day	October			November			December		
	Mean discharge (second-feet)	Suspended matter		Mean discharge (second-feet)	Suspended matter		Mean discharge (second-feet)	Suspended matter	
		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day
1									
2	1,990	0.03	1,610	2,490	0.01	672			
3	2,060	.06	3,340						
4	2,280	.04	2,460	2,990	.01	807			
5	2,270	.02	1,230				3,380	0.02	1,830
6				3,160	.02	1,710			
7	2,740	.02	1,480	3,790	.04	4,090			
8				4,210	.08	9,090			
9	2,640	.02	1,430						
10	2,490	.02	1,340	3,890	.14	14,700			
11	2,470	.02	1,330						
12				3,640	.02	1,970			
13	2,450	.02	1,320						
14				3,660	.01	988			
15	2,610	.05	3,520						
16				3,250	.00		2,100	.00	
17	2,960	.03	2,400						
18				3,360	.00				
19	2,690	.02	1,450						
20							2,060	.01	556
21	2,980	.02	1,610						
22							2,500	.01	675
23	2,740	.02	1,480						
24							3,430	.00	
25	2,740	.02	1,480						
26							3,430	.01	926
27	2,710	.02	1,460				3,210	.01	867
28				3,070	.00				
29	2,810	.02	1,520				2,640	.00	
30	2,730	.02	1,470						
31	2,780	.02	1,500				2,300	.01	621

Day	January			February			March		
1				2,200	0.01	594			
2	2,000	0.01	540				2,340	0.01	632
3				2,980	.02	1,610			
4	2,000	.01	540	4,660	.31	39,000	2,620	.01	707
5				4,110	.12	13,300			
6	2,100	.01	567	3,360	.19	17,200	2,710	.01	732
7									
8	2,450	.01	662	2,660	.05	3,590	2,830	.02	1,530
9							2,890	.00	
10	2,730	.01	737	2,450	.02	1,320	2,800	.01	756
11									
12	2,680	.01	724	2,500	.02	1,350	2,870	.03	2,320
13									
14	2,610	.01	705	2,440	.01	659	3,140	.03	2,540
15									
16	2,710	.01	732	2,660	.02	1,440	3,720	.03	3,010
17				2,800	.04	3,020	3,720	.08	8,040
18	2,680	.01	724	2,710	.03	2,200	3,450	.03	2,790
19									
20				2,620	.03	2,120	3,070	.03	2,490
21									
22	2,540	.01	686	2,540	.02	1,370	2,920	.04	3,150
23									
24	2,320	.01	626	2,520	.01	680	3,070	.04	3,320
25									
26	2,400	.01	648	2,440	.01	659	2,810	.02	1,520
27	2,490	.01	672	2,440	.01	659			
28	2,500	.01	675	2,400	.01	648	2,660	.02	1,440
29									
30	2,230	.01	602				2,590	.03	2,100
31									

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR CISCO, UTAH—Continued

Suspended sediment, water year October 1944 to September 1945—Continued

Day	April			May			June		
	Mean discharge (second-feet)	Suspended matter		Mean discharge (second-feet)	Suspended matter		Mean discharge (second-feet)	Suspended matter	
		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day
1	2,590	0.04	2,800	12,400	0.11	36,800			
2							21,700	0.06	35,200
3	3,100	.06	5,020	19,800	.30	160,000	19,200	.02	10,400
4									
5	3,360	.04	3,630	24,800	.33	221,000	17,000	.02	9,180
6									
7	2,800	.06	4,540	27,200	.14	103,000	21,600	.03	17,500
8									
9	3,080	.05	4,160	30,300	.15	123,000	22,100	.04	23,900
10									
11	4,330	.17	19,900	29,100	.16	126,000	20,200	.02	10,900
12									
13	3,970	.08	8,580	32,400	.17	149,000	16,900	.02	9,130
14									
15	3,230	.09	7,850	31,200	.09	75,800	25,900	.04	28,000
16							28,300	.11	84,100
17	2,980	.04	3,220	24,100	.06	39,000	25,700	.02	13,900
18									
19	2,690	.08	5,810	22,300	.11	66,200	21,400	.02	11,600
20									
21	5,120	.35	48,400	21,700	.03	17,600	21,400	.02	11,600
22							21,800	.04	23,500
23	12,500	.29	97,900	18,000	.02	9,720	24,200	.04	26,100
24									
25	12,500	.10	33,800	17,500	.04	18,900	26,900	.03	21,800
26	10,200	.18	49,600	19,900	.07	37,600			
27	9,130	.08	19,700	22,700	.06	36,800	24,700	.02	13,300
28									
29	9,270	.08	20,000	27,700	.05	37,400	21,300	.03	17,300
30									
31				26,300	.03	21,300			

Day	July			August			September		
1	16,700	0.02	9,020	6,740	0.10	18,200			
2									
3	15,900	.01	4,290	9,900	.14	37,400	2,680	0.02	1,450
4									
5	15,400	.01	4,160						
6				11,300	.62	189,000	2,370	.02	1,280
7	13,700	.02	7,400				2,150	.02	1,160
8									
9									
10				11,200	.36	109,000	2,230	.01	602
11	11,600	.09	28,200						
12									
13	11,600	.02	6,260	9,930	2.15	576,000			
14							2,140	.01	578
15									
16									
17				6,760	.08	14,600	2,150	.01	581
18									
19									
20	8,080	.01	2,180	4,890	.03	3,960			
21							2,710	.02	1,460
22									
23	9,780	.41	108,000						
24				4,270	.02	2,310	2,610	.01	705
25									
26	10,400	.16	44,900						
27	10,300	.11	30,600	3,430	.04	3,700			
28							2,520	.01	680
29									
30	7,260	.04	7,840						
31				3,300	.12	10,700			

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER AT LEES FERRY, ARIZ.

LOCATION.—At head of Marble Gorge, at Lees Ferry, just upstream from Paria River, 28 miles downstream from Utah-Arizona State line, 79 miles downstream from San Juan River, and 355 miles upstream from Boulder Dam.

DRAINAGE AREA.—107,900 square miles.

RECORDS AVAILABLE.—Chemical analyses: July 1926, October 1926 to September 1927, October 1928 to September 1930, October 1942 to September 1945.

Sediment records: October 1929 to December 1933, November 1942 to September 1944.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 852 parts per million Apr. 1–3, 5–8, 10; minimum, 277 parts per million May 21–25, 27–31.

Total hardness: Maximum, 386 parts per million Apr. 1–3, 5–8, 10; minimum, 161 parts per million May 21–25, 27–31.

EXTREMES, 1928–30, 1942–45.—Dissolved solids: Maximum, 1,410 parts per million Oct. 11–20, 1929; minimum, 209 parts per million June 11–20, 1929.

Total hardness: Maximum, 720 parts per million Oct. 11–20; 1928; minimum, 132 parts per million June 11–20, 1944.

Sediment loads: Maximum, 9,450,000 tons per day Aug. 7, 1929; minimum, 3,500 tons per day Sept. 27, 1944.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–2, 5, 7, 9, 1944	4,942	180											114									
Oct. 12, 14, 16, 19	5,795	185											142									
Oct. 22, 24, 26, 28, 30	5,982	164											116									
Nov. 1, 3, 4, 7, 9	5,666	165											122									
Nov. 11, 13, 17, 19	7,002	168											125									
Nov. 21, 23, 25, 27, 30	6,608	157											113									
Dec. 2, 4, 6, 10	5,570	156											122									
Dec. 12, 14–15, 17, 18	4,868	163											140									
Dec. 21–24, 26–27, 29–30	5,196	161											136									
Jan. 1–2, 4, 7–8, 10, 1945	4,877	160											128									
Jan. 11–12, 14–20	5,258	161											144									
Jan. 21–22, 24–26, 28–31	5,689	152											129									

Feb. 1, 3–5, 7, 9–10	6,231	152	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	124	-----	-----	-----	-----	-----	-----	-----	-----	-----
Feb. 11–12, 14–16, 18–19	6,026	147	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	118	-----	-----	-----	-----	-----	-----	-----	-----	-----
Feb. 20–24, 26–28	6,741	148	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	112	-----	-----	-----	-----	-----	-----	-----	-----	-----
Mar. 1–3, 5–6, 8–10	5,752	147	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	120	-----	-----	-----	-----	-----	-----	-----	-----	-----
Mar. 11–12, 16–19	6,477	146	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	122	-----	-----	-----	-----	-----	-----	-----	-----	-----
Mar. 20–26, 28–29, 31	8,706	133	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	100	-----	-----	-----	-----	-----	-----	-----	-----	-----
Apr. 1–3, 5–8, 10	8,706	128	-----	7.8	22	0.04	89	40	134	7.6	206	361	93	0.3	3.8	0.2	852	1.16	20,000	386	218	42
Apr. 11–17, 19–20	10,680	117	-----	7.8	24	.08	86	36	113	7.4	206	322	81	.3	3.3	.2	775	1.05	22,300	362	194	40
Apr. 22–30	18,670	96.8	-----	7.8	20	.10	76	30	92	5.8	197	252	60	.3	2.5	.2	636	.86	32,100	313	152	38
May 1–10	36,650	64.9	-----	7.9	19	.02	58	19	51	5.0	175	149	28	.3	2.1	.1	418	.57	41,400	222	79	33
May 11–15, 17–20	56,850	45.4	-----	8.0	19	.03	46	14	30	3.4	151	85	16	.4	2.0	.1	290	.39	44,500	172	49	27
May 21–25, 27–31	43,550	43.9	-----	7.9	21	.02	43	13	28	2.7	135	85	16	.3	1.6	.1	277	.38	32,600	161	50	27
June 1–5, 8–10	49,360	42.6	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	15	-----	-----	-----	-----	-----	-----	-----	-----	-----
June 11, 13–20	48,310	46.1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	18	-----	-----	-----	-----	-----	-----	-----	-----	-----
June 21–23, 25–29	45,510	41.6	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	16	-----	-----	-----	-----	-----	-----	-----	-----	-----
June 30, July 1, 4–7, 9–10	36,760	40.2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	18	-----	-----	-----	-----	-----	-----	-----	-----	-----
July 11–17, 19–20	24,310	54.9	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	28	-----	-----	-----	-----	-----	-----	-----	-----	-----
July 21–31	20,930	72.3	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	88	-----	-----	-----	-----	-----	-----	-----	-----	-----
Aug. 1, 2, 4–10	19,700	95.2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	46	-----	-----	-----	-----	-----	-----	-----	-----	-----
Aug. 11–20	19,380	108	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	44	-----	-----	-----	-----	-----	-----	-----	-----	-----
Aug. 21–31	10,820	109	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	58	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sept. 1–2, 6–10	7,839	131	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	78	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sept. 11, 13–15, 17, 19–20	5,275	143	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	96	-----	-----	-----	-----	-----	-----	-----	-----	-----
Sept. 21, 23–29	5,553	155	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	106	-----	-----	-----	-----	-----	-----	-----	-----	-----

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1–2, 5, 7, 9, 1944	4,942	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.22	-----	-----	-----	-----	-----	-----	-----	-----	-----
Oct. 12, 14, 16, 19	5,795	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	4.00	-----	-----	-----	-----	-----	-----	-----	-----	-----
Oct. 22, 24, 26, 28, 30	5,982	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.27	-----	-----	-----	-----	-----	-----	-----	-----	-----
Nov. 1, 3, 4, 7, 9	5,666	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.44	-----	-----	-----	-----	-----	-----	-----	-----	-----
Nov. 11, 13, 17, 19	7,002	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.53	-----	-----	-----	-----	-----	-----	-----	-----	-----
Nov. 21, 23, 25, 27, 30	6,608	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.19	-----	-----	-----	-----	-----	-----	-----	-----	-----
Dec. 2, 4, 6, 10	5,570	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.44	-----	-----	-----	-----	-----	-----	-----	-----	-----
Dec. 12, 14–15, 17, 18	4,868	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.95	-----	-----	-----	-----	-----	-----	-----	-----	-----
Dec. 21–24, 26–27, 29–30	5,196	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.54	-----	-----	-----	-----	-----	-----	-----	-----	-----
Jan. 1–2, 4, 7–8, 10, 1945	4,877	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.61	-----	-----	-----	-----	-----	-----	-----	-----	-----
Jan. 11–12, 14–20	5,258	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	4.06	-----	-----	-----	-----	-----	-----	-----	-----	-----
Jan. 21–22, 24–26, 28–31	5,689	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.44	-----	-----	-----	-----	-----	-----	-----	-----	-----

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER AT LEES FERRY, ARIZ.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Feb. 1, 3–5, 7, 9–10	6,231	----	----	----	----	----	----	----	----	----	----	----	3.50	----	----	----	----	----	----	----	----	----
Feb. 11–12, 14–16, 18–19	6,026	----	----	----	----	----	----	----	----	----	----	----	3.33	----	----	----	----	----	----	----	----	----
Feb. 20–24, 26–28	6,741	----	----	----	----	----	----	----	----	----	----	----	3.16	----	----	----	----	----	----	----	----	----
Mar. 1–3, 5–6, 8–10	5,752	----	----	----	----	----	----	----	----	----	----	----	3.38	----	----	----	----	----	----	----	----	----
Mar. 11–12, 16–19	6,477	----	----	----	----	----	----	----	----	----	----	----	3.44	----	----	----	----	----	----	----	----	----
Mar. 20–26, 28–29, 31	8,706	----	----	----	----	----	----	----	----	----	----	----	2.82	----	----	----	----	----	----	----	----	----
Apr. 1–3, 5–8, 10	8,706	----	----	----	----	----	4.44	3.29	5.83	0.19	3.38	7.52	2.62	0.02	0.06	----	----	----	----	----	----	42
Apr. 11–17, 19–20	10,680	----	----	----	----	----	4.29	2.96	4.91	.19	3.38	6.70	2.28	.02	.05	----	----	----	----	----	----	40
Apr. 22–30	18,670	----	----	----	----	----	3.79	2.47	4.00	.15	3.23	5.25	1.69	.02	.04	----	----	----	----	----	----	38
May 1–10	36,650	----	----	----	----	----	2.89	1.56	2.22	.13	2.87	3.10	.79	.02	.03	----	----	----	----	----	----	33
May 11–15, 17–20	56,850	----	----	----	----	----	2.50	1.15	1.30	.09	2.47	1.77	.45	.02	.03	----	----	----	----	----	----	27
May 21–25, 27–31	43,550	----	----	----	----	----	2.15	1.07	1.22	.07	2.21	1.77	.45	.02	.03	----	----	----	----	----	----	27
June 1–5, 8–10	49,360	----	----	----	----	----	----	----	----	----	----	----	.42	----	----	----	----	----	----	----	----	----
June 11, 13–20	48,310	----	----	----	----	----	----	----	----	----	----	----	.51	----	----	----	----	----	----	----	----	----
June 21–23, 25–29	45,510	----	----	----	----	----	----	----	----	----	----	----	.45	----	----	----	----	----	----	----	----	----
June 30, July 1, 4–7, 9–10	36,760	----	----	----	----	----	----	----	----	----	----	----	.51	----	----	----	----	----	----	----	----	----
July 11–17, 19–20	24,310	----	----	----	----	----	----	----	----	----	----	----	.79	----	----	----	----	----	----	----	----	----
July 21–31	20,930	----	----	----	----	----	----	----	----	----	----	----	2.48	----	----	----	----	----	----	----	----	----
Aug. 1, 2, 4–10	19,700	----	----	----	----	----	----	----	----	----	----	----	1.30	----	----	----	----	----	----	----	----	----
Aug. 11–20	19,380	----	----	----	----	----	----	----	----	----	----	----	1.24	----	----	----	----	----	----	----	----	----
Aug. 21–31	10,820	----	----	----	----	----	----	----	----	----	----	----	1.64	----	----	----	----	----	----	----	----	----
Sept. 1–2, 6–10	7,839	----	----	----	----	----	----	----	----	----	----	----	2.20	----	----	----	----	----	----	----	----	----
Sept. 11, 13–15, 17, 19–20	5,275	----	----	----	----	----	----	----	----	----	----	----	2.71	----	----	----	----	----	----	----	----	----
Sept. 21, 23–29	5,553	----	----	----	----	----	----	----	----	----	----	----	2.99	----	----	----	----	----	----	----	----	----

COLORADO RIVER NEAR GRAND CANYON, ARIZ.

LOCATION.—At gaging station at Kaibab Bridge, a quarter of a mile upstream from Bright Angel Creek, 11 miles by trail northeast of Grand Canyon Village, and 267 miles upstream from Boulder Dam.

DRAINAGE AREA.—137,800 square miles.

RECORDS AVAILABLE.—Chemical analyses: August 1925 to Nov. 15, 1942; Sept. 18, 1943, to Sept. 30, 1945.
Water temperatures: October 1941 to September 1942; Oct. 1, 1943, to Sept. 30, 1945.
Sediment records: Oct. 1, 1925, to Oct. 31, 1942; Sept. 18, 1943, to Sept. 30, 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 1,410 parts per million Oct. 11–20; minimum, 334 parts per million June 1–10.
Total hardness: Maximum, 627 parts per million Oct. 11–20; minimum, 204 parts per million July 1–10.
Sediment loads: Maximum, 2,360,000 tons per day Aug. 14; minimum, 2,260 tons per day Dec. 20.

EXTREMES, 1925–45.—Dissolved solids: Maximum, 1,890 parts per million Sept. 21–30, 1934; minimum, 225 parts per million June 11–20, 1942.
Total hardness: Maximum, 792 parts per million Sept. 1–10, 1940; minimum, 127 parts per million June 11–17, 1926.
Sediment loads: Maximum, 27,600,000 tons per day Sept. 13, 1927; minimum, 863 tons per day Dec. 27, 1928.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	5,323	191	64	------	15	0.09	150	50	219	12	259	591	160	0.3	6.0	0.7	1,330	1.81	19,100	580	368	44
Oct. 11-20	5,889	201	64	------	15	.08	149	62	225	10	242	638	186	.4	7.0	.7	1,410	1.92	22,400	627	428	43
Oct. 21-31	6,375	175	61	------	14	.07	130	52	194	10	240	526	156	.4	7.4	.7	1,210	1.65	20,800	538	342	43
Nov. 1-10	5,885	180	57	------	14	.08	126	56	202	9.2	229	535	170	.4	7.3	.6	1,230	1.67	19,500	545	358	44
Nov. 11-20	7,368	179	49	------	12	.08	126	57	200	8.0	229	540	165	.3	7.1	.7	1,230	1.67	24,500	549	362	44
Nov. 21-30	6,971	173	45	------	12	.04	128	56	179	11	256	504	147	.4	6.4	.4	1,170	1.59	22,000	550	340	41
Dec. 1-10	6,076	169	41	------	12	.08	120	54	176	8.4	244	478	157	.4	6.2	.4	1,130	1.54	18,500	522	322	42
Dec. 11-20	5,340	180	37	------	13	.06	123	56	192	8.4	252	485	186	.4	5.8	.4	1,190	1.62	17,200	538	331	43
Dec. 21-31	5,420	178	39	------	14	.10	122	54	198	14	275	464	186	------	4.0	------	1,190	1.62	17,400	526	301	44
Jan. 1-10, 1945	5,602	175	37	------	13	.10	126	51	186	12	249	461	181	------	5.5	------	1,160	1.58	17,500	524	320	43
Jan. 11-20	5,559	175	40	------	15	.10	119	52	188	14	250	453	182	------	5.0	------	1,150	1.56	17,300	511	306	44
Jan. 21-31	6,177	171	40	------	14	.10	117	50	181	11	237	436	180	------	5.2	------	1,110	1.51	18,500	498	304	44

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR GRAND CANYON, ARIZ.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (°F.)	pH	Silica (SiO₂)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO₃)	Sulfate (SO₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO₃)	Borate (BO₃)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
																	Parts per million	Tons per acre-foot	Tons per day	Total	Noncarbonate	
Feb. 1-5, 7-10	6,675	165	42	7.7	17	.16	118	49	184	8.4	256	432	170	.4	5.8	.3	1,110	1.51	20,000	496	286	44
Feb. 11-19	6,652	164	46	7.7	16	.17	114	46	184	8.4	248	428	169	.4	6.8	.4	1,090	1.48	19,600	474	270	45
Feb. 20-28	7,252	158	45	7.7	15	.14	112	47	177	8.0	243	434	151	.4	6.7	.3	1,070	1.46	21,000	473	274	44
Mar. 1-10	6,265	162	45	7.8	13	.09	112	48	176	11	258	424	160	.4	4.2	.4	1,080	1.47	18,300	477	266	44
Mar. 11-20	7,189	166	50	7.6	14	.15	117	48	180	12	269	416	174	.4	2.5	.5	1,100	1.50	21,400	490	269	44
Mar. 21-31	9,380	147	49	7.6	12	.05	110	42	155	14	282	366	134	.4	1.3	.4	974	1.32	24,700	447	216	42
Apr. 1-3, 5	8,518	141	52	7.7	12	.09	105	40	152		268	339	129	.4	2.4	.4	912	1.24	21,000	426	207	44
Apr. 25-27	26,300	102	59	7.8	12	.28	86	27	102		223	249	72	.5	2.7	.3	661	.90	46,900	326	142	40
May 6-9	44,830	71.5	65	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
May 13-16	59,280	54.9	64	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
May 30-31	48,400	54.2	64	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
June 1-10	45,090	54.5	64	7.7	14	.27	63	13	32	6.3	204	80	24	.3	.6	.1	334	.45	40,700	210	44	24
June 11-20	48,300	61.2	65	7.7	15	.40	70	15	37	7.3	217	104	26	.2	.7	.1	382	.52	49,800	236	58	25
June 21-30	45,440	55.4	70	7.6	14	.29	64	14	32	5.9	197	91	23	.2	.6	.1	342	.47	42,000	217	56	24
July 1-10	38,230	54.0	72	7.7	13	.16	59	14	36	6.7	196	85	25	.3	.6	.5	336	.46	34,700	204	44	27
July 11-20	25,050	65.8	72	7.5	12	.17	62	16	54	11	197	125	41	.2	.5	.2	419	.57	28,300	220	59	33
July 21-31	21,840	80.6	72	7.6	13	.24	72	19	73	10	198	178	52	.3	.6	.5	516	.70	30,400	258	96	37
Aug. 1-10	20,910	108	74	7.6	19	.07	102	28	95	9.8	252	269	69	.4	.4	.4	717	.98	40,500	370	163	35
Aug. 11-20	20,450	122	77	7.6	19	.06	124	33	99	8.4	250	361	63	.4	.4	.4	831	1.13	45,900	445	240	32
Aug. 21-27, 29-31	11,480	121	77	7.6	16	.07	113	30	109	7.6	237	334	82	.4	2.4	.4	811	1.10	25,100	406	212	36
Sept. 1-10	8,473	143	75	7.5	16	.08	125	37	135	8.4	253	389	115	.5	8.9	.4	954	1.30	21,800	464	256	38
Sept. 11-20	5,778	151	71	7.6	14	.06	120	42	151	7.8	226	419	135	.4	4.4	.4	1,000	1.36	15,600	472	287	41
Sept. 21-30	5,587	169	62	7.5	12	.06	124	51	176	8.0	228	483	162	.5	4.4	.4	1,130	1.54	17,000	519	332	42
Weighted average[1]	16,400	98.8	------	------	14	.19	90	28	93	8.5	224	251	78	0.3	2.2	0.3	676	0.92	29,900	340	156	37

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	5,323						7.49	4.11	9.52	0.31	4.25	12.30	4.51	0.02	0.10							44
Oct. 11-20	5,889						7.44	5.10	9.78	.26	3.97	13.28	5.25	.02	.11							43
Oct. 21-31	6,375						6.49	4.28	8.44	.26	3.93	10.95	4.40	.02	.12							43
Nov. 1-10	5,885						6.29	4.61	8.78	.24	3.75	11.14	4.79	.02	.12							44
Nov. 11-20	7,368						6.29	4.69	8.70	.20	3.75	11.24	4.65	.02	.11							44
Nov. 21-30	6,971						6.39	4.61	7.78	.28	4.20	10.49	4.15	.02	.10							41
Dec. 1-10	6,076						5.99	4.44	7.65	.21	4.00	9.95	4.43	.02	.10							42
Dec. 11-20	5,340						6.14	4.61	8.35	.21	4.13	10.10	5.25	.02	.09							43
Dec. 21-31	5,420						6.09	4.44	8.59	.36	4.51	9.66	5.25		.06							44
Jan. 1-10, 1945	5,602						6.29	4.19	8.08	.31	4.08	9.60	5.10		.09							43
Jan. 11-20	5,559						5.94	4.28	8.16	.36	4.10	9.43	5.13		.08							44
Jan. 21-31	6,177						5.84	4.11	7.89	.28	3.88	9.08	5.08		.08							44
Feb. 1-5, 7-10	6,675						5.89	4.03	8.00	.21	4.20	8.99	4.79	.02	.09							44
Feb. 11-19	6,652						5.69	3.78	8.00	.21	4.07	8.91	4.77	.02	.11							45
Feb. 20-28	7,252						5.59	3.87	7.70	.20	3.98	9.04	4.26	.02	.11							44
Mar. 1-10	6,265						5.59	3.95	7.65	.28	4.23	8.83	4.51	.02	.07							44
Mar. 11-20	7,189						5.84	3.95	7.83	.31	4.41	8.66	4.91	.02	.04							44
Mar. 21-31	9,380						5.49	3.45	6.74	.36	4.62	7.62	3.78	.02	.02							42
Apr. 1-3, 5	8,518						5.24	3.29	6.62		4.39	7.06	3.64	.02	.04							44
Apr. 25-27	26,300						4.29	2.22	4.43		3.66	5.18	2.03	.03	.04							40
May 6-9	44,830																					
May 13-16	59,280																					
May 30-31	48,400																					
June 1-10	45,090						3.14	1.07	1.39	.16	3.34	1.67	.68	.02	.01							24
June 11-20	48,300						3.49	1.23	1.61	.19	3.56	2.17	.73	.01	.01							25
June 21-30	45,440						3.19	1.15	1.39	.15	3.23	1.89	.65	.01	.01							24
July 1-10	38,230						2.94	1.15	1.57	.17	3.21	1.77	.71	.02	.01							27
July 11-20	25,050						3.09	1.32	2.35	.28	3.23	2.60	1.16	.01	.01							33
July 21-31	21,840						3.59	1.56	3.17	.26	3.24	3.71	1.47	.02	.01							37
Aug. 1-10	20,910						5.09	2.30	4.13	.25	4.13	5.60	1.95	.02	.01							35
Aug. 11-20	20,450						6.19	2.71	4.80	.21	4.10	7.52	1.78	.02	.01							32
Aug. 21-27, 29-31	11,480						5.64	2.47	4.74	.19	3.88	6.95	2.31	.02	.04							36
Sept. 1-10	8,473						6.24	3.04	5.87	.21	4.15	8.10	3.24	.03	.06							38
Sept. 11-20	5,778						5.99	3.45	6.57	.20	3.70	8.72	3.81	.02	.07							41
Sept. 21-30	5,587						6.19	4.19	7.65	.20	3.74	10.06	4.57	.03	.07							42
Weighted average[1]	16,400						4.49	2.30	4.04	0.22	3.67	5.23	2.20	0.02	0.04							37

[1] Incomplete analytical records Apr. 28-May 29, 1945.

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR GRAND CANYON, ARIZ.—Continued

Temperature (° F.) of water of Colorado River, water year October 1944 to September 1945

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

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR GRAND CANYON, ARIZ.—Continued

Suspended sediment, water year October 1944 to September 1945

Day	October			November			December		
	Mean discharge (second-feet)	Suspended matter		Mean discharge (second-feet)	Suspended matter		Mean discharge (second-feet)	Suspended matter	
		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day
1	6,370	2.19	377,000	5,740	0.06	9,300	6,550	0.04	7,070
2	5,800	1.04	163,000	5,730	.05	7,740	6,540	.04	7,060
3	6,830	.55	101,000	5,750	.06	9,320	6,230	.04	6,730
4	5,540	.58	86,800	5,800	.04	6,260	6,010	.04	6,490
5	4,650	1.22	153,000	5,820	.04	6,290	5,680	.03	4,600
6	4,460	1.06	128,000	5,820	.04	6,290	5,700	.03	4,620
7	4,470	2.04	246,000	5,800	.04	6,260	5,820	.03	4,710
8	4,870	1.56	205,000	5,670	.04	6,120	5,980	.03	4,840
9	5,120	.91	126,000	5,880	.04	6,350	6,090	.02	3,290
10	5,120	.51	70,500	6,840	.04	7,390	6,160	.03	4,990
11	5,180	.35	49,000	7,240	.06	11,700	5,950	.02	3,210
12	5,630	.24	36,500	6,920	.07	13,100	5,700	.04	6,160
13	6,130	.19	31,400	7,460	.11	22,200	5,780	.03	4,680
14	5,990	.16	25,900	7,960	.11	23,600	5,980	.03	4,840
15	5,880	.14	22,200	7,700	.11	22,900	5,850	.02	3,160
16	5,850	.10	15,800	7,400	.09	18,000	5,520	.02	2,980
17	6,050	.08	13,100	7,160	.08	15,500	5,200	.02	2,810
18	6,100	.07	11,500	7,280	.07	13,800	4,900	.02	2,650
19	5,950	.06	9,640	7,360	.10	19,900	4,340	.02	2,340
20	6,130	.06	9,930	7,200	.09	17,500	4,180	.02	2,260
21	7,070	.05	9,540	7,000	.08	15,100	4,300	.02	2,320
22	7,120	.07	13,500	6,880	.08	14,900	4,430	.02	2,390
23	6,770	.11	20,100	7,070	.06	11,500	4,570	.02	2,470
24	6,330	.22	37,600	7,300	.05	9,860	4,520	.02	2,440
25	6,130	.35	57,900	7,300	.05	9,860	4,630	.02	2,500
26	6,190	.28	46,800	7,280	.06	11,800	4,820	.02	2,600
27	6,260	.24	40,600	7,070	.05	9,540	5,290	.02	2,860
28	6,220	.17	28,500	6,710	.06	10,900	5,920	.02	3,200
29	6,060	.13	21,300	6,510	.05	8,790	6,880	.03	5,570
30	6,050	.09	14,700	6,590	.04	7,120	7,190	.04	7,770
31	5,920	.07	11,200				7,070	.05	9,540
Total load (tons)			2,183,000			358,900			133,200

Day	January			February			March		
1	6,980	0.05	9,420	5,700	0.02	3,080	6,580	0.09	16,000
2	6,740	.05	9,100	5,660	.02	3,060	6,450	.08	13,900
3	6,290	.14	23,800	5,710	.03	4,630	6,340	.07	12,000
4	5,960	.11	17,700	5,640	.03	4,570	6,340	.07	12,000
5	5,640	.07	10,700	5,530	.03	4,480	6,360	.06	10,300
6	5,170	.07	9,770	5,640	[1] .05	7,610	6,200	.06	10,000
7	4,890	.05	6,600	6,830	.09	16,600	6,080	.05	8,210
8	4,780	.05	6,450	8,300	.06	13,400	5,990	.05	8,090
9	4,720	.03	3,820	8,950	.46	111,000	6,120	.04	6,610
10	4,850	.03	3,930	8,790	.57	135,000	6,190	.05	8,360
11	4,980	.03	4,030	7,670	.41	84,900	6,440	.05	8,690
12	4,960	.03	4,020	6,890	.42	78,100	6,580	.05	8,880
13	5,060	.02	2,730	6,470	.38	66,400	6,580	.05	8,880
14	5,310	.02	2,870	6,300	.31	52,700	6,500	.05	8,780
15	5,590	.03	4,530	6,260	.28	47,300	6,430	.05	8,680
16	5,750	.02	3,100	6,500	.25	43,900	6,330	.05	8,550
17	5,870	.03	4,750	6,610	.18	32,100	7,200	.05	9,720
18	5,940	.02	3,210	6,520	.16	28,200	7,960	.36	77,400
19	5,980	.02	3,230	6,650	.13	23,300	8,410	.32	72,700
20	6,150	.03	4,980	6,820	.10	18,400	9,460	.47	120,000
21	6,380	.03	5,170	7,480	.10	20,200	10,100	.41	112,000
22	6,580	.03	5,330	7,660	.12	24,800	9,700	.34	89,000
23	6,650	.04	7,180	7,640	.16	33,000	9,150	.29	71,600
24	6,550	.04	7,070	7,430	.18	36,100	9,600	.23	59,600
25	6,370	.04	6,880	7,240	.19	37,100	9,850	.19	50,500
26	6,230	.04	6,730	7,140	.19	36,600	10,100	.20	54,500
27	6,160	.03	4,990	7,020	.16	30,300	9,880	.25	66,700
28	5,950	.03	4,820	6,840	.13	24,000	9,190	.20	49,600
29	5,750	.03	4,660				8,760	.19	44,900
30	5,670	.05	7,650				8,540	.17	39,200
31	5,660	.04	6,110				8,310	.16	35,900
Total load (tons)			205,300			1,021,000			1,111,000

[1] Estimated.

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR GRAND CANYON, ARIZ.—Continued

Suspended sediment, water year October 1944 to September 1945—Continued

Day	April			May			June		
	Mean discharge (second-feet)	Suspended matter		Mean discharge (second-feet)	Suspended matter		Mean discharge (second-feet)	Suspended matter	
		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day
1	8,440	0.16	36,500	24,300			50,200	0.43	583,000
2	8,170	.18	39,700	23,600			49,600	.45	603,000
3	8,490	.16	36,700	24,400			48,100	.33	429,000
4	8,710	[1].15	35,300	27,600			44,400	.36	432,000
5	8,780	.14	33,200	33,700			40,700	.28	308,000
6	10,300			39,900	1.88	2,030,000	39,100	.24	253,000
7	10,500			43,600	1.63	1,920,000	39,600	.24	257,000
8	10,100			46,700	1.71	2,160,000	42,700	.31	357,000
9	9,360			49,100			46,700	.44	555,000
10	9,100			51,300			49,800	.44	592,000
11	9,800			54,000			52,000	.51	716,000
12	12,100			54,200			53,200	.61	876,000
13	12,200			55,500	.90	1,350,000	49,300	.52	692,000
14	12,000			59,000	.78	1,240,000	44,500	.39	469,000
15	11,600			61,400	.88	1,460,000	40,600	.32	351,000
16	11,000			61,200	.74	1,220,000	40,700	.34	374,000
17	10,500			62,400			47,200	.37	472,000
18	11,600			58,900			52,900	.58	828,000
19	12,000			53,800			53,000	.45	644,000
20	11,100			48,900			49,600	.38	509,000
21	11,700			48,200			46,000	.28	348,000
22	12,100			47,300			43,600	.27	318,000
23	12,200			45,900			42,300	.26	297,000
24	14,500	.50	196,000	44,000			41,100	.24	266,000
25	16,900	.70	319,000	41,600			42,200	.26	296,000
26	25,900	1.14	797,000	39,000			46,000	.27	335,000
27	26,900	.78	567,000	37,300			47,700	.34	438,000
28	26,100			38,500			48,600	.35	459,000
29	27,800			41,000			48,600	.40	525,000
30	25,600			45,800	.42	519,000	48,300	.40	522,000
31				51,000	.43	592,000			
Total load (tons)			[2]4,046,000			[2]30,090,000			14,100,000

Day	July			August			September		
1	48,600	0.29	381,000	25,300	1.80	1,230,000	9,410	0.96	244,000
2	47,400	.32	410,000	24,000	2.93	1,900,000	9,490	.76	195,000
3	44,000	.29	345,000	18,400	2.82	1,410,000	9,540	.59	152,000
4	41,000	.24	266,000	18,500	1.82	904,000	9,230	.60	150,000
5	38,600	.19	198,000	17,900	1.00	483,000	8,350	1.77	399,000
6	36,000	.24	233,000	18,400	1.32	656,000	8,040	.55	119,000
7	34,400	.16	149,000	19,400	1.38	723,000	8,330	.35	78,700
8	32,500	.15	132,000	20,400	1.31	722,000	7,730	.30	62,600
9	30,600	.12	99,100	22,900	1.06	655,000	7,420	.34	68,100
10	29,200	.12	94,600	23,900	1.88	1,210,000	7,190	.89	173,000
11	27,700	.10	74,800	20,700	1.46	816,000	6,940	.58	109,000
12	26,400	.10	71,300	22,400	1.80	1,090,000	6,440	.39	67,800
13	25,100	.10	67,800	22,600	2.08	1,270,000	6,130	.28	46,300
14	25,000	.10	67,500	24,100	3.62	2,360,000	5,990	.23	37,200
15	25,600	.10	69,100	23,700	2.04	1,310,000	5,800	.22	34,500
16	25,100	.09	61,000	23,100	1.74	1,090,000	5,590	.18	27,200
17	24,200	.12	78,400	17,900	1.76	851,000	5,390	.15	21,800
18	24,000	.13	84,200	17,000	1.03	473,000	5,290	.14	20,000
19	23,800	.10	64,300	17,500	1.24	586,000	5,260	.15	21,300
20	23,600	.09	57,300	15,500	1.18	494,000	4,950	.19	25,400
21	22,900	.10	61,800	14,000	1.13	427,000	5,040	.14	19,100
22	21,700	.08	46,900	12,700	.66	226,000	5,390	.12	17,500
23	21,300	.11	63,300	11,800	.55	175,000	5,590	.11	16,600
24	22,000	.88	523,000	11,000	.54	160,000	5,680	.08	12,300
25	22,300	.21	126,000	11,400	.57	175,000	5,730	.08	12,400
26	22,200	.49	294,000	12,700	.76	261,000	5,610	.08	12,100
27	22,400	.30	181,000	11,600	.46	144,000	5,710	.07	10,800
28	21,800	.30	177,000	10,600	.75	215,000	5,780	.07	10,900
29	21,400	.36	208,000	10,300	.96	267,000	5,700	.06	9,230
30	21,300	.72	414,000	9,830	.78	207,000	5,640	.07	10,700
31	20,900	.80	451,000	10,300	.58	161,000			
Total load (tons)			5,549,000			22,650,000			2,184,000
Total load for year (tons)									[3]83,631,000

[1] Estimated. [2] Partially estimated. [3] Includes estimated load for missing days.

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR GRAND CANYON, ARIZ.—Continued

Size analyses of suspended sediment, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Suspended sediment: Mean daily concentration (percent)	Tons per day	Weight of material in tube (grams)	Percent finer than indicated size (in millimeters): 0.00195	0.00276	0.0039	0.0055	0.0078	0.0110	0.0156	0.0312	0.0625	0.125	0.250	0.500	1.000
Oct. 3, 1944	6,830	0.55	101,000	0.5730	20	35	58	86	92	93	95	97	99	99	100	----	----
Oct. 3	6,830	.55	101,000	1.0699	11	17	24	74	94	95	96	97	99	100	----	----	----
Oct. 7	4,470	2.04	246,000	.4918	38	48	55	82	95	97	99	----	----	----	----	----	----
Oct. 7	4,470	2.04	246,000	2.0842	----	7	10	26	61	97	99	----	----	----	----	----	----
Oct. 10	5,120	.51	70,500	.5733	35	53	67	91	97	98	99	----	----	----	----	----	----
Oct. 10	5,120	.51	70,500	1.0390	----	26	35	68	87	93	98	----	----	----	----	----	----
Oct. 14	5,990	.16	25,900	.7910	----	32	43	64	93	98	100	----	----	----	----	----	----
Oct. 17	6,050	.08	13,100	.5246	----	48	68	84	98	99	100	----	----	----	----	----	----
Oct. 21	7,070	.05	9,540	.3908	----	60	76	83	94	98	100	----	----	----	----	----	----
Oct. 24	6,330	.22	37,600	1.0246	----	21	27	35	87	94	100	----	----	----	----	----	----
Oct. 28	6,220	.17	28,600	.8160	----	32	39	76	95	99	----	----	----	----	----	----	----
Oct. 31	5,920	.07	11,200	.4390	----	49	54	67	96	99	100	----	----	----	----	----	----
Nov. 4, 7, 11	6,280	.05	8,480	.6226	----	45	85	90	94	96	98	99	100	----	----	----	----
Nov. 14	7,960	.11	23,600	.6180	----	----	50	75	92	98	100	----	----	----	----	----	----
Nov. 18	7,280	.07	13,800	.3815	----	63	69	80	94	98	----	----	----	----	----	----	----
Nov. 21, 25, 28	7,000	.06	11,300	.7767	----	32	84	89	91	94	97	100	----	----	----	----	----
Dec. 2, 5, 9, 12, 16, 19, 23, 26, 30	5,610	.03	4,540	1.0161	----	22	61	64	80	87	91	98	100	----	----	----	----
Jan. 2, 6, 9, 13, 16, 20, 23, 1945	5,750	.04	6,210	1.2124	----	15	31	51	86	94	99	----	----	----	----	----	----
Jan. 27	6,160	.03	4,990	.2888	----	----	73	75	96	99	----	----	----	----	----	----	----
Jan. 30	5,670	.05	7,650	.3362	----	62	76	82	100	----	----	----	----	----	----	----	----
Feb. 3	5,710	.03	4,630	.2351	----	70	74	84	97	99	100	----	----	----	----	----	----
Feb. 7	6,830	.09	16,600	.4877	----	42	47	64	94	98	----	----	----	----	----	----	----
Feb. 10	8,790	.57	135,000	1.2270	10	14	21	52	80	91	95	99	100	----	----	----	----
Feb. 13	6,470	.38	66,400	.8326	14	21	29	50	81	93	97	99	----	----	----	----	----
Feb. 17	6,610	.18	32,100	.8414	18	31	50	83	91	95	97	99	100	----	----	----	----

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER NEAR GRAND CANYON, ARIZ.—Continued

Size analyses of suspended sediment, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Suspended sediment: Mean daily concentration (percent)	Tons per day	Weight of material in tube (grams)	Percent finer than indicated size (in millimeters): 0.00195	0.00276	0.0039	0.0055	0.0078	0.0110	0.0156	0.0312	0.0625	0.125	0.250	0.500	1.000
Feb. 20	6,820	.10	18,400	.4757		52	72	85	96	100							
Feb. 24	7,430	.18	36,100	.7586	21	31	51	83	91	94	95	98	99	100			
Feb. 27	7,020	.16	30,300	.7885		31	40	74	96	99	100						
Mar. 3	6,340	.07	12,000	.4515			77	86	97	99	100						
Mar. 6	6,200	.06	10,000	.3809			75	85	98	99							
Mar. 10	6,190	.05	8,360	.3343			72	79	97	98							
Mar. 13	6,580	.05	8,880	.3379		69	74	81	92	98	100						
Mar. 17	7,200	.05	9,720	.3419		52	70	77	86	96	99						
Mar. 20	9,460	.47	120,000	.9919		14	19	38	69	88	93	97					
Mar. 24	9,600	.23	59,600	.5050	21	35	48	68	87	92	95	97	98	99	100		
Mar. 27	9,880	.25	66,700	.9621	17	23	36	62	86	90	93	98	99	100			
Mar. 31	8,310	.16	35,900	.6811	20	35	49	78	89	92	94	96	98	99			
Apr. 3	8,490	.16	36,700	.3810	41	56	73	84	91	93	95	98	99	100			
May 30	45,800	.42	519,000	[1] 2.6891				5	7	8	12	14	23	50	85	99	
June 2	49,600	.45	603,000	[1] 2.2389			6	7	9	10	12	14	24	50	86	99	
June 6	39,100	.24	253,000	[1] 1.1164			7	11	12	13	16	22	33	58	87	99	
June 9	46,700	.44	555,000	[1] 1.1120				8	10	11	13	17	20	29	55	91	
June 16, 20	45,200	.36	439,000	[1] 3.0213									37	54	85	99	
June 23, 27	45,000	.30	364,000	[1] 2.8968	5	7	8	9			11	15	22	45	82	98	
July 7	34,400	.16	149,000	[1] .6474			26	27	28	32	37		42	49	70	99	
July 9	30,600	.12	99,100	[1] .4074				31	33	37	41		47	55	78	99	
July 11	27,700	.10	74,800	[1] .4534			27	28	29	34	36	42	49	58	79	100	
July 14	25,000	.10	67,500	[1] .4378			34	35	37	44	48		58	67	85	99	
July 18	24,000	.13	84,200	[1] .5789									47	57	81	96	
July 21	22,900	.10	61,800	[1] .3997									49	64	84	94	
July 26, 28	22,000	.40	238,000	[1] 3.3235									80	90	97	99	
July 30	21,300	.72	414,000	[1] 1.4999					9	12	13	17	23	46	76	98	
July 31	20,900	.80	451,000	[1] 3.3815	5	10	20	40	84	89	90	94	97	99	100		
Aug. 4	18,400	1.82	904,000								82	91	99	100			
Aug. 11	20,700	1.46	816,000	.2340	18	34	40	48	72	78	82	84	92	93	98	100	

Aug. 11	20,700	1.46	816,000	[2] .3188	39	48	57	69	75	81	86	89	95	96	99	100	----
Aug. 11	20,700	1.46	816,000	[2] 1.8531	36	50	56	60	68	72	81	86	91	93	99	100	----
Aug. 13	22,600	2.08	1,270,000	.3161	20	23	36	55	77	81	83	89	96	97	99	100	----
Aug. 13	22,600	2.08	1,270,000	.3929	42	59	64	73	80	83	87	90	96	97	99	100	----
Aug. 13	22,600	2.08	1,270,000	[2] 2.4303	9	23	43	71	79	81	85	90	96	97	99	100	----
Aug. 16	23,100	1.74	1,090,000	.3189	26	33	47	68	76	79	83	90	95	96	99	100	----
Aug. 16	23,100	1.74	1,090,000	[2] 2.0507	25	53	61	67	70	74	83	88	96	97	99	100	----
Aug. 21	14,000	1.13	427,000	7.3109	2	5	15	29	86	88	90	93	97	98	100	----	----
Aug. 25	11,400	.57	175,000	2.1382	5	11	22	44	----	85	89	93	98	99	100	----	----
Aug. 28	10,600	.75	215,000	3.1966	2	5	13	24	90	94	95	97	99	100	----	----	----
Sept. 1	9,410	.96	244,000	4.0913	2	5	11	19	91	92	97	99	----	----	----	----	----
Sept. 4	9,230	.60	150,000	2.1368	6	14	40	61	92	94	----	97	98	99	100	----	----
Sept. 8	7,730	.30	62,600	1.2100	9	23	49	78	90	----	95	98	100	----	----	----	----
Sept. 11	6,940	.58	109,000	2.1760	8	15	36	70	85	97	99	----	----	----	----	----	----
Sept. 15, 18, 22, 25	5,550	.14	21,000	3.2934	----	----	----	----	----	----	----	----	69	70	98	99	----

[1] Sample dispersed with sodium oxalate and settled in distilled water.

[2] Sizes greater than 0.0625 determined by sieve method.

COLORADO RIVER MAIN STEM—Continued

LAKE MEAD NEAR BOULDER CITY, NEV.

Chemical analyses, in parts per million

[The miles given below represent distances measured along the Colorado River downstream from the gaging station at Lees Ferry, Ariz.]

Date of collection	Depth (feet)	Elevation (feet)	Temperature (°F.)	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Mile 273.9													
Feb. 22, 1945	[1] Surface		56	148					236	379	148		
Feb. 22	[2] Surface		56	105					174	286	82		
Emery Falls, Mile 275.8													
Feb. 23, 1945	5	1,152	54.7	97.8		83	29	87	160	264	76	620	326
Feb. 23	50	1,107	54.0	109		86	32	102	170	288	90	684	346
Feb. 23	100	1,057	53.0	114		88	33	111	176	306	94	721	355
Feb. 23	128	1,029	51.8	120		90	36	122	190	320	104	768	372
Feb. 23	131	1,026	51.8	138		113	46	132	336	316	108	882	471
Pierce Ferry Bay, Mile 279													
Oct. 1, 1944	5	1,187	79	107		76	31	110	158	279	96	671	317
Oct. 31	5	1,176	73	97.3		75	32	83	144	255	82	598	318
Dec. 3	5	1,170	62	104		80	30	99	160	273	88	649	323
Jan. 1, 1945	5	1,163	58	104		81	30	104	160	286	86	668	326
Jan. 30	5	1,156	56	101		82	28	94	152	274	80	635	320
Feb. 26	5	1,151	55	99.4		83	29	89	158	268	76	626	326
Apr. 3	5		58	103		81	31	105	162	293	84	675	330
May 1	5		65	108		79	31	112	192	275	86	680	324
June 1	5		68	46.3		40	14	34	123	92	24	267	158
July 2	5		80	45.0		32	21	29	112	99	24	261	166
Aug. 3	5		83	61.7	10	51	19	48	124	140	43	373	205
Aug. 29	5		84	84.4	10	74	23	73	134	242	53	544	279
Oct. 1	5		76	103		85	27	101	150	295	78	662	323
Iceberg Canyon, Mile 287.5													
Feb. 21, 1945	5	1,152	55.8	95.2		80	27	87	158	261	70	604	310
Feb. 21	50	1,107	55.6	96.0					156				
Feb. 21	100	1,057	54.8	99.2					162				
Feb. 21	150	1,007	54.0	115		87	33	116	180	307	96	730	352
Feb. 21	200	957	53.9	116					182				
Feb. 21	220	937	53.7	116					180				
Feb. 21	223	934	53.9	124		91	36	132	200	325	112	795	375
Virgin Canyon, Mile 305.3													
Feb. 20, 1945	5	1,152	56.0	89.8		80	25	78	152	248	62	569	302
Feb. 20	50	1,107	54.7	90.1					152				
Feb. 20	100	1,057	54.6	92.2					156				
Feb. 20	150	1,007	54.5	102					164				
Feb. 20	200	957	54.4	112		88	33	109	176	301	94	714	355
Feb. 20	250	907	53.2	115					180				
Feb. 20	300	857	52.9	116					182				
Feb. 20	325	832	52.9	116					180				
Feb. 20	330	827	52.9	128		114	41	119	372	256	96	815	453

[1] Above line of demarkation between turbid and clear water.
[2] Below line of demarkation between turbid and clear water.

COLORADO RIVER MAIN STEM—Continued

LAKE MEAD NEAR BOULDER CITY, NEV.—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Depth (feet)	Elevation (feet)	Temperature (°F.)	Specific conductance (K×10⁵ at 25° C.)	Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Virgin River, arm of lake, 29.6 miles above mouth of river (upper Virgin Narrows)													
Feb. 24, 1945	Surface		44.0	257					194	806	335		
Virgin River, arm of lake, 22 miles above mouth of river													
Feb. 24, 1945	Surface		53.4	87.5					150	242	58		
Virgin River, arm of lake, 9.3 miles above mouth of river (lower Virgin Narrows)													
Feb. 24, 1945	5	1,152	54.0	88.3		82	26	72	152	249	60	565	312
Feb. 24	50	1,107	53.4	88.6					150				
Feb. 24	100	1,057	53.3	93.5					158				
Feb. 24	150	1,007	53.3	90.6					150				
Feb. 24	200	957	53.3	93.0					154				
Feb. 24	250	907	53.5	107					168				
Feb. 24	258	899	53.5	108		90	32	95	168	291	86	679	356
Feb. 24	260	897		109					174				
Boulder Canyon, Mile 334.9													
Feb. 19, 1945	5	1,153	56.4	91.2		84	27	79	154	266	62	596	320
Feb. 19	50	1,108	55.6	92.7					152				
Feb. 19	100	1,058	55.4	93.0					152				
Feb. 19	150	1,008	55.1	93.7					150				
Feb. 19	200	958	54.7	99.4					160				
Feb. 19	250	908	54.6	111		94	32	100	172	310	84	707	366
Feb. 19	300	858	54.6	118					182				
Feb. 19	350	808	54.2	117					182				
Feb. 19	400	758	54.1	118					182				
Feb. 19	402	756	54.1	125		115	43	110	388	244	90	798	464
Near intake towers, Mile 353.5													
Oct. 31, 1944	5	1,176	72.2	85.9		81	28	65	139	254	56	552	317
Oct. 31	50	1,131	72.2	86.2					136				
Oct. 31	100	1,081	69.5	85.8					140				
Oct. 31	150	1,031	60.9	104					158				
Oct. 31	200	981	55.7	105					154				
Oct. 31	250	931	54.5	107		96	30	90	160	309	75	679	363
Oct. 31	300	881	54.2	107					159				
Oct. 31	350	831	54.0	108					166				
Oct. 31	400	781	53.9	108					164				
Oct. 31	445	736	54.0	111		100	33	96	183	319	79	717	385
Oct. 31	447	734	54.4	128		118	45	108	338	311	81	830	480
Nov. 30	5	1,170	63.4	87.9		78			148	245	56		
Nov. 30	50	1,125	63.4	86.7					148				
Nov. 30	100	1,075	63.3	86.3					146				
Nov. 30	150	1,025	61.0	100					161				
Nov. 30	200	975	55.6	106					166				
Nov. 30	250	925	54.5	107					170	311			
Nov. 30	300	875	54.0	107		95	30	94	172	305	76	685	360
Nov. 30	350	825	54.0	108					176				
Nov. 30	400	775	54.0	108					177				
Nov. 30	439	736	54.0	110					187				
Nov. 30	441	734	54.0	120		110	40	99	290	297	77	766	439

COLORADO RIVER MAIN STEM—Continued

LAKE MEAD NEAR BOULDER CITY, NEV.—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Depth (feet)	Elevation (feet)	Temperature (°F.)	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Near intake towers, Mile 353.5—Continued													
Dec. 30	5	1,163	58.4	89.5		81	24	81	147	263	57	580	300
Dec. 30	50	1,118	58.4	89.5					146				
Dec. 30	100	1,068	58.2	89.6					147				
Dec. 30	150	1,018	57.9	93.0					151				
Dec. 30	200	968	57.0	107					166				
Dec. 30	250	918	54.6	107		96	29	98	166	315	75	697	358
Dec. 30	300	868	53.7	107					166				
Dec. 30	350	818	53.8	108					171				
Dec. 30	400	768	53.6	110					176				
Dec. 30	433	735	53.6	110					181				
Dec. 30	435	733	53.8	131		122	45	113	354	316	80	853	490
Feb. 5	5	1,155	55.3	91.9		85	25	77	136	273	61	590	315
Feb. 5	50	1,110	55.3	91.4					144				
Feb. 5	100	1,060	55.5	91.9					144				
Feb. 5	150	1,010	55.3	92.9					150				
Feb. 5	200	960	55.0	104					160				
Feb. 5	250	910	54.5	108		97	30	96	162	316	78	699	366
Feb. 5	300	860	54.4	108					165				
Feb. 5	350	810	54.4	109					172				
Feb. 5	400	760	53.9	109					168				
Feb. 5	425	735	53.9	110					180				
Feb. 5	427	733	54.0	134		135	51	104	410	314	78	884	546
Feb. 28	5	1,151	54.2	93.9		86	27	75	150	265	62	591	326
Feb. 28	50	1,106	54.2	94.2					152				
Feb. 28	100	1,056	54.2	94.0					152				
Feb. 28	150	1,006	54.2	94.0					152				
Feb. 28	200	956	54.2	109					172				
Feb. 28	250	906	54.0	110		99	31	96	172	314	80	707	374
Feb. 28	300	856	54.0	111					174				
Feb. 28	350	806	54.0	111					174				
Feb. 28	400	756	53.9	110					176				
Feb. 28	420	736	53.9	111					178				
Feb. 28	423	733	54.2	121		108	40	103	280	302	80	773	434
Apr. 3	5		55.2	95.9		87	28	82	156	277	66	619	332
Apr. 3	50		55.2	95.9					158				
Apr. 3	100		54.8	93.6					156				
Apr. 3	150		54.8	97.8					156				
Apr. 3	200		54.8	97.2					156				
Apr. 3	250		54.4	105		92	32	100	172	308	82	701	361
Apr. 3	300		54.6	113					178				
Apr. 3	350		54.4	113					182				
Apr. 3	400		54.6	115		92	33	114	180	317	94	741	365
Apr. 3	414		55.1	115					178				
Apr. 3	417		55.1	123		106	40	116	286	302	92	801	429
Apr. 30	5		66.7	91.9		87	28	87	158	282	68	632	332
Apr. 30	50		57.5	97.2					156				
Apr. 30	100		55.3	98.1		87	28	82	156	277	66	619	332
Apr. 30	150		54.9	97.8					156				
Apr. 30	200		54.4	95.4		88	29	94	162	291	74	658	338
Apr. 30	250		54.2	109		91	32	101	172	305	84	700	358
Apr. 30	300		54.0	113					178				
Apr. 30	350		54.0	113					178				
Apr. 30	400		54.2	114					180				
Apr. 30	413		54.4	114					178				
Apr. 30	415		54.5	123		105	40	115	294	294	90	793	426

COLORADO RIVER MAIN STEM—Continued

LAKE MEAD NEAR BOULDER CITY, NEV.—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Depth (feet)	Elevation (feet)	Temperature (°F.)	Specific conductance ($K \times 10^5$ at 25° C.)	Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium and potassium (Na+K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Dissolved solids	Total hardness as $CaCO_3$
Near intake towers, Mile 353.5—Continued													
May 30	5	1,156	65.7	98.2		77	26	97	147	283	67	624	299
May 30	50	1,111	62.4	98.8		86	28	82	151	281	63	616	329
May 30	100	1,061	56.7	97.9		85	27	85	156	276	65	617	323
May 30	150	1,011	55.5	98.5					152				
May 30	200	961	54.4	99.7					162				
May 30	250	911	54.2	104		88	30	91	167	286	74	653	343
May 30	300	861	54.0	109					170				
May 30	350	811	54.2	113					180				
May 30	400	761	53.9	113		88	32	109	180	302	88	710	351
May 30	425	736	53.8	113					179				
May 30	427	734	53.2	119		101	38	105	232	309	86	757	408
July 3	5		77.6	96.4		83	33	75	146	281	66	611	342
July 3	50		70.7	96.7					148				
July 3	100		63.8	98.5		88	33	73	154	282	66	620	355
July 3	150		56.2	97.9		87	32	75	156	281	64	618	348
July 3	200		55.3	98.2		87	32	75	158	277	66	617	348
July 3	250		54.0	102					158				
July 3	300		54.1	106		90	35	87	168	296	78	671	368
July 3	350		54.3	110					170				
July 3	400		53.5	110					174				
July 3	442		54.8	112		92	38	94	176	307	88	708	386
July 3	443		55.3	136		121	67	77	408	285	80	832	578
July 31	5		80	93.4	7.6	79	28	82	141	272	64	603	312
July 31	50		73.7	90.4	9.0	80	28	73	147	255	61	580	314
July 31	100		68.2	94.7	11	84	27	84	154	274	65	623	320
July 31	150		57.4	98.0	12	88	28	86	157	286	66	645	334
July 31	200		54.4	101					165				
July 31	250		54.1	104	11	90	30	94	164	293	78	679	348
July 31	300		54.4	108					168				
July 31	350		54.4	109					170				
July 31	400		54.4	110	9.8	93	32	103	172	309	86	721	364
July 31	447		54.7	110					174				
Aug. 31	5		80.3	88.9	9.4	76	27	74	136	253	61	569	300
Aug. 31	50		80.3	89.2					138				
Aug. 31	100		68.1	92.2					152				
Aug. 31	150		58.9	98.3					156				
Aug. 31	200		54.3	98.9					156				
Aug. 31	250		54.2	103					162				
Aug. 31	300		54.2	105	10	90	30	91	163	292	76	671	348
Aug. 31	350		53.7	106					165				
Aug. 31	400		53.7	107					170				
Aug. 31	448		53.7	108	10	92	31	97	170	300	81	697	357
Aug. 31	450		54.8	122	21	103	38	110	276	296	83	787	413
Sept. 28	5		74.1	86.6		74	24	76	133	247	58	546	283
Sept. 28	50		73.2	86.8					138				
Sept. 28	100		69.5	82.3					141				
Sept. 28	150		59.4	97.6					150				
Sept. 28	200		54.0	98.9					154				
Sept. 28	250		54.5	101		90	29	88	156	292	72	650	344
Sept. 28	300		54.7	104					160				
Sept. 28	350		54.7	106					168				
Sept. 28	400		54.5	107					162				
Sept. 28	445		55.3	107		84	30	106	163	302	80	685	333
Sept. 28	448		55.3	118		103	36	111	272	294	82	763	405

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER BELOW BOULDER DAM, ARIZ.-NEV.

LOCATION.—Samples collected at Boulder Dam, about a mile upstream from gaging station.

DRAINAGE AREA.—167,800 square miles.

RECORDS AVAILABLE.—Chemical analyses: October 1939 to September 1944.
Specific-conductance determinations: October 1939 to September 1945.
Water temperatures: October 1941 to September 1945.

EXTREMES, 1944–45.—Specific conductance: Maximum, 109 on several days; minimum, 87.0 Nov. 23.
Water temperatures: Maximum, 69° F. Sept. 27; minimum, 53° F. Dec. 22, May 22.

EXTREMES, 1939–45.—Dissolved solids: Maximum, 824 parts per million Mar. 1–10, 1941; minimum, 621 parts per million Dec. 21–31, 1942.
Total hardness: Maximum, 426 parts per million Jan. 21–31, 1941; minimum, 319 parts per million Dec. 11–13, 15–16, 19–20, 1943.
Water temperatures: Maximum, 69° F. Sept. 27, 1945; minimum, 53° F. on several days in 1944 and 1945.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Specific conductance ($K \times 10^5$), water year October 1944 to September 1945

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	99.2	96.5	107	105	104	104	110	106	104	104	97.5	95.8
2	------	96.5	------	105	105	106	103	107	------	106	96.6	------
3	98.4	96.6	------	106	105	105	107	107	107	103	97.4	------
4	99.5	96.3	107	105	------	------	107	106	------	103	98.0	95.8
5	97.7	------	107	105	101	104	106	------	------	103	------	95.1
6	------	------	106	106	102	106	106	------	103	102	98.0	95.8
7	------	94.2	106	------	------	102	106	------	103	102	97.2	96.8
8	------	94.0	------	106	------	104	------	105	------	------	------	94.8
9	98.6	94.2	------	106	102	104	107	104	------	101	96.7	------
10	98.6	94.5	------	110	100	102	104	------	------	103	97.2	95.1
11	97.6	94.0	108	105	------	------	103	------	105	103	96.8	96.6
12	97.8	------	------	------	103	105	108	------	------	103	97.8	94.2
13	97.9	90.9	107	------	103	105	108	------	102	103	97.1	94.4
14	------	------	107	------	108	108	108	------	104	103	98.1	94.2
15	------	------	107	105	101	106	------	------	104	------	------	------
16	97.7	------	107	103	100	------	109	107	105	104	98.6	------
17	97.1	88.4	------	103	------	108	105	107	------	105	96.8	94.2
18	96.8	89.6	107	105	------	107	106	108	105	104	97.1	94.2
19	------	------	107	104	102	101	106	108	104	102	------	94.0
20	96.5	------	106	------	103	104	107	------	103	102	97.1	93.5
21	97.1	88.8	------	------	103	105	105	106	103	102	97.1	94.4
22	94.8	87.6	106	103	104	107	------	104	103	------	96.8	------
23	96.7	87.0	------	103	------	106	106	------	102	102	97.1	------
24	96.1	------	------	102	105	102	------	108	------	102	------	93.9
25	96.0	87.9	108	102	------	------	106	104	102	102	97.1	------
26	96.6	------	------	------	100	109	104	------	102	98.0	------	93.0
27	96.0	88.2	107	------	105	109	109	------	104	98.8	97.3	94.0
28	96.8	88.3	106	------	105	------	106	104	------	97.7	98.7	------
29	------	87.8	------	102	------	105	106	103	105	------	96.1	------
30	97.0	97.4	------	102	------	101	------	102	------	98.0	96.1	------
31	------	------	------	------	------	104	------	------	------	96.7	96.1	------

COLORADO RIVER MAIN STEM—Continued

COLORADO RIVER BELOW BOULDER DAM, ARIZ.-NEV.—Continued

Temperature (°F.) of water of Colorado River, water year October 1944 to September 1945

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	62	65	54	56	55	54	55	56	------	57	61	------
2	------	64	------	55	55	55	55	56	------	55	63	------
3	62	65	------	55	55	55	55	56	------	55	63	------
4	62	65	55	55	------	------	55	56	------	56	64	------
5	62	------	55	55	55	55	56	------	------	56	------	------
6	------	------	54	55	55	54	56	------	------	56	62	------
7	------	65	54	------	------	54	56	------	------	56	62	------
8	------	65	------	55	------	54	------	56	------	------	------	------
9	62	65	------	56	55	55	55	56	------	56	63	------
10	64	65	------	56	55	55	55	------	------	55	63	------
11	64	65	55	------	------	------	55	------	------	------	------	64.5
12	64	------	------	------	55	55	55	------	------	------	------	64
13	63	65	55	------	55	55	55	------	------	------	------	64
14	------	------	55	------	55	55	56	------	------	------	------	64
15	------	------	54	------	55	55	------	------	------	------	------	------
16	64	------	55	------	55	------	56	56	------	------	------	------
17	63	65	------	------	------	55	56	55	------	------	------	65
18	64	65	------	------	------	55	56	55	------	------	------	65
19	------	------	55	------	55	55	56	56	------	------	------	65
20	62	------	55	------	55	54	56	------	------	------	------	64
21	62	64	------	------	55	55	56	------	------	55	------	64
22	64	65	53	55	55	55	------	53	------	------	------	------
23	64	65	------	56	------	55	56	------	------	55	------	------
24	64	------	------	56	55	56	------	------	------	55	------	65
25	64	63	55	56	------	------	56	------	------	55	------	------
26	------	------	------	------	55	55	56	------	------	55	------	65
27	------	63	55	------	55	55	56	------	------	56	------	69
28	65	63	55	------	55	------	56	------	------	62	------	------
29	------	63	------	56	------	55	55	------	57	------	------	------
30	65	------	------	56	------	56	------	------	------	61	------	------
31	------	------	------	------	------	56	------	------	------	65	------	------

DIVERSIONS BELOW IMPERIAL DAM

YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON AT YUMA, ARIZ.

LOCATION.—Oct. 1, 1942, to Jan. 31, 1943: at gaging station, 1,800 feet downstream from highway bridge at Yuma, 5 miles downstream from Gila River, 19 miles downstream from Imperial Dam, and 7 and 29 miles upstream from international boundaries of California and Arizona, respectively, with Mexico. Feb. 1 to Sept. 30, 1945: at gaging station on Yuma main canal below Colorado River siphon, at Yuma, on Arizona side of river, 3 miles downstream from siphon-drop power plant.

DRAINAGE AREA.—242,900 square miles (including all closed basins entirely within the drainage boundary).

RECORDS AVAILABLE.—Chemical analyses: September 1926, October 1926 to September 1928, October 1942 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 736 parts per million May 11–12, 14–19; minimum, 629 parts per million Dec. 11–16, 18–20.

Total hardness: Maximum, 364 parts per million Jan. 1–3, 10 and Jan. 11–13, 15–30; minimum, 318 parts per million Dec. 11–16, 18–20.

EXTREMES, 1926–28, 1942–45.—Dissolved solids: Maximum, 1,300 parts per million Jan. 11–20, 1927; minimum, 285 parts per million June 11–20, 1928.

Total hardness: Maximum, 567 parts per million Oct. 21–31, 1926; minimum, 163 parts per million June 11–20, 1928.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 2–7, 9–10, 1944	628	105	------	------	8.0	0.02	89	29	98	3.4	163	301	76	0.2	1.0	0.4	686	0.93	1,160	341	208	38
Oct. 11–14, 16–20	590	103	------	------	10	.10	89	28	94	3.4	161	295	75	.3	1.2	.5	675	.92	1,080	337	205	37
Oct. 21, 23–31	526	102	------	------	9.0	.05	86	28	93	3.8	162	290	73	.3	1.2	.6	664	.90	943	330	196	38
Nov. 1–4, 6–10	544	100	------	------	9.0	.05	86	28	92	3.8	160	284	72	.4	1.5	.5	656	.89	964	330	198	37
Nov. 11, 13–18, 20	490	98.9	------	------	10	.05	86	28	91	3.6	161	281	71	.4	1.5	.5	652	.89	863	330	198	37
Nov. 21–25, 27–30	405	100	------	------	10	.12	86	29	91	3.4	162	280	72	.4	1.2	.5	653	.89	714	334	200	37
Dec. 1–2, 4–9	431	96.9	------	8.2	12	.02	84	28	84	4.6	158	271	70	.2	1.0	.9	633	.86	737	324	195	36
Dec. 11–16, 18–20	445	95.7	------	8.2	11	.02	83	27	86	4.8	159	270	68	.2	1.0	.8	629	.86	756	318	188	37
Dec. 21–23, 25–31	321	107	------	8.2	11	.02	94	30	96	4.8	169	306	81	.2	1.5	.8	708	.96	614	358	220	36
Jan. 1–3, 10, 1945	171	110	------	8.2	12	.02	95	31	100	4.8	173	317	84	.3	1.5	.8	731	.99	338	364	222	37
Jan. 11–13, 15–20	473	110	------	7.9	12	.07	95	31	99	6.4	170	311	83	.3	2.1	.3	724	.98	925	364	225	37
Jan. 22–27, 29–31	366	109	------	7.9	11	.06	94	30	100	5.8	170	312	83	.3	2.1	.4	722	.98	713	358	218	37

Feb. 1-3, 5-10	410	108		7.9	11	.07	94	30	98	5.2	170	310	81	.3	2.1	.4	715	.97	792	358	218	37
Feb. 12-17, 19	525	108		7.9	11	.07	93	29	101	4.8	170	309	82	.3	2.0	.4	716	.97	1,010	351	212	38
Feb. 20-24, 26-28	565	108		8.0	12	.06	93	29	100	5.0	170	310	82	.3	1.9	.4	717	.98	1,090	351	212	38
Mar. 1-3, 5-10	304	109		7.8	10	.02	92	30	100	7.4	170	309	84	.3	2.0	.4	718	.98	589	353	214	38
Mar. 12-17, 19-20	478	109		7.8	9.0	.03	92	29	98	6.6	171	307	82	.3	1.7	.3	710	.97	916	348	208	37
Mar. 21-24, 26-31	555	107		7.9	10	.04	91	29	99	6.2	170	299	83	.3	1.6	.4	703	.96	1,050	346	206	38
Apr. 2-7, 9-10	544	109		7.9	10	.03	91	30	102	6.0	174	302	85	.3	1.7	.4	714	.97	1,050	350	208	38
Apr. 11-14, 16-20	613	110		7.9	10	.03	92	30	102	5.8	176	307	88	.3	1.6	.4	723	.98	1,200	353	209	38
Apr. 21, 23-28, 30	561	111		7.9	14	.01	91	30	105	7.8	174	308	88	.2	1.7	.3	731	.99	1,110	350	208	39
May 1-5, 7-10	601	112		7.9	11	.02	90	30	106	7.0	170	309	88	.2	2.0	.3	727	.99	1,180	348	208	39
May 11-12, 14-19	515	112		7.9	14	.02	91	30	107	6.4	174	311	89	.2	1.7	.3	736	1.00	1,020	350	208	39
May 21-26, 28-31	579	112		8.0	13	.02	91	30	105	6.2	176	311	89	.2	1.6	.3	734	1.00	1,150	350	206	39
June 1-2, 4-9	495	112		8.0	12	.02	90	30	106	6.0	172	310	89	.2	1.4	.3	729	.99	974	348	207	39
June 11-16, 18-20	580	111		8.0	12	.02	90	30	105	5.6	171	309	89	.2	.9	.3	726	.99	1,140	348	208	39
June 21-23, 25-30	542	109		7.8	13	.04	85	31	109	5.8	147	326	88	.2	2.0	.3	732	1.00	1,070	340	219	41
July 2-7, 9-10	540	107		7.9	13	.03	80	30	104	4.8	133	310	86	.2	1.6	.3	695	.95	1,010	323	214	41
July 11, 13-14, 16-20	547	109		7.9	13	.03	88	30	104	4.6	160	307	86	.2	1.7	.3	713	.97	1,050	343	212	39
July 21, 23-28, 30-31	557	108		7.9	12	.05	86	30	104	4.8	159	302	85	.2	2.2	.3	705	.96	1,060	338	208	40
Aug. 1-4, 6-10	599	108		7.7	14	.05	85	30	100	4.6	159	302	86	.4	1.6	.4	702	.95	1,140	336	205	39
Aug. 11, 13-18, 20	500	106		7.7	11	.05	84	30	98	4.8	154	299	85	.3	1.6	.4	690	.94	932	333	207	39
Aug. 21-25, 27-31	579	104		7.8	13	.05	84	30	96	4.8	156	295	82	.3	1.5	.4	683	.93	1,070	333	205	38
Sept. 1, 3-8, 10	586	104		7.8	12	.04	84	29	97	4.4	151	294	80	.3	1.3	.4	676	.92	1,070	328	205	39
Sept. 11-15, 17-20	658	103		7.6	14	.04	84	29	99	6.2	151	308	78	.2	1.1	.3	694	.94	1,230	328	204	39
Sept. 21-22, 24-29	681	102		7.7	11	.03	84	28	97	5.6	150	291	77	.2	1.0	.3	669	.91	1,230	324	202	39
Weighted average	513	107			11	0.04	91	29	99	5.3	163	300	82	0.3	1.5	0.4	699	0.95	968	346	212	38

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 2-7, 9-10, 1944	628						4.44	2.38	4.26	0.09	2.67	6.27	2.14	0.01	0.02							38
Oct. 11-14, 16-20	590						4.44	2.30	4.09	.09	2.64	6.14	2.12	.02	.02							37
Oct. 21, 23-31	526						4.29	2.30	4.04	.10	2.66	6.04	2.06	.02	.02							38
Nov. 1-4, 6-10	544						4.29	2.30	4.00	.10	2.62	5.91	2.03	.02	.02							37
Nov. 11, 13-18, 20	490						4.29	2.30	3.96	.09	2.64	5.85	2.00	.02	.02							37
Nov. 21-25, 27-30	405						4.29	2.38	3.96	.09	2.66	5.83	2.03	.02	.02							37
Dec. 1-2, 4-9	431						4.19	2.30	3.65	.12	2.59	5.64	1.97	.01	.02							36
Dec. 11-16, 18-20	445						4.14	2.22	3.74	.12	2.61	5.62	1.92	.01	.02							37
Dec. 21-23, 25-31	321						4.69	2.47	4.17	.12	2.77	6.37	2.28	.01	.02							36
Jan. 1-3, 10, 1945	171						4.74	2.55	4.35	.12	2.84	6.60	2.37	.02	.02							37
Jan. 11-13, 15-20	473						4.74	2.55	4.30	.16	2.79	6.47	2.34	.02	.03							37
Jan. 22-27, 29-31	366						4.69	2.47	4.35	.15	2.79	6.50	2.34	.02	.03							37

DIVERSIONS BELOW IMPERIAL DAM—Continued

YUMA MAIN CANAL BELOW COLORADO RIVER SIPHON AT YUMA, ARIZ.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10[5] at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Feb. 1-3, 5-10	410						4.69	2.47	4.26	.13	2.79	6.45	2.28	.02	.03							37
Feb. 12-17, 19	525						4.64	2.38	4.39	.12	2.79	6.43	2.31	.02	.03							38
Feb. 20-24, 26-28	565						4.64	2.38	4.35	.13	2.79	6.45	2.31	.02	.03							38
Mar. 1-3, 5-10	304						4.59	2.47	4.35	.19	2.79	6.43	2.37	.02	.03							38
Mar. 12-17, 19-20	478						4.59	2.38	4.26	.17	2.80	6.39	2.31	.02	.03							37
Mar. 21-24, 26-31	555						4.54	2.38	4.30	.16	2.79	6.23	2.34	.02	.03							38
Apr. 2-7, 9-10	544						4.54	2.47	4.44	.15	2.85	6.29	2.40	.02	.03							38
Apr. 11-14, 16-20	613						4.59	2.47	4.44	.15	2.88	6.39	2.48	.02	.03							38
Apr. 21, 23-28, 30	561						4.54	2.47	4.57	.20	2.85	6.41	2.48	.01	.03							39
May 1-5, 7-10	601						4.49	2.47	4.61	.18	2.79	6.43	2.48	.01	.03							39
May 11-12, 14-19	515						4.54	2.47	4.65	.16	2.85	6.48	2.51	.01	.03							39
May 21-26, 28-31	579						4.54	2.47	4.57	.16	2.88	6.48	2.51	.01	.03							39
June 1-2, 4-9	495						4.49	2.47	4.61	.15	2.82	6.45	2.51	.01	.02							39
June 11-16, 18-20	580						4.49	2.47	4.57	.14	2.80	6.43	2.51	.01	.01							39
June 21-23, 25-30	542						4.24	2.55	4.74	.15	2.41	6.79	2.48	.01	.03							41
July 2-7, 9-10	540						3.99	2.47	4.52	.12	2.18	6.45	2.43	.01	.03							41
July 11, 13-14, 16-20	547						4.39	2.47	4.52	.12	2.62	6.39	2.43	.01	.03							39
July 21, 23-28, 30-31	557						4.29	2.47	4.52	.12	2.61	6.29	2.40	.01	.04							40
Aug. 1-4, 6-10	599						4.24	2.47	4.35	.12	2.61	6.29	2.43	.02	.03							39
Aug. 11, 13-18, 20	500						4.19	2.47	4.26	.12	2.52	6.23	2.40	.02	.03							39
Aug. 21-25, 27-31	579						4.19	2.47	4.17	.12	2.56	6.14	2.31	.02	.02							38
Sept. 1, 3-8, 10	586						4.19	2.38	4.21	.11	2.47	6.12	2.26	.02	.02							39
Sept. 11-15, 17-20	658						4.19	2.38	4.30	.16	2.48	6.41	2.20	.01	.02							39
Sept. 21-22, 24-29	681						4.19	2.30	4.22	.14	2.46	6.06	2.17	.01	.02							39
Weighted average	513						4.54	2.38	4.30	0.14	2.67	6.25	2.31	0.02	0.02							38

GUNNISON RIVER BASIN

GUNNISON RIVER NEAR GRAND JUNCTION, COLO.

LOCATION.—Half a mile upstream from point of diversion of Redlands power canal and 3 miles upstream from mouth and Grand Junction.
DRAINAGE AREA.—Approximately 8,020 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1931 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 1,730 parts per million Oct. 11–15, 17–20; minimum, 239 parts per million May 11–20.
Total hardness: Maximum, 948 parts per million Oct. 11–15, 17–20; minimum, 146 parts per million May 11–20.
EXTREMES, 1931–45.—Dissolved solids: Maximum, 2,980 parts per million July 21–31, 1937; minimum, 203 parts per million May 11–20, 1944.
Total hardness (1931–35, 1943–45): Maximum, 1,370 parts per million Sept. 1–20, 1934; minimum, 143 parts per million June 1–10, 1933.
~~REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.~~

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–10, 1944	915	227																				
Oct. 11–15, 17–20	923	220			22		220	97	183		253	1,050	23		15		1,730	2.35	4,310	948	740	30
Oct. 21–31	999	201																				
Nov. 1–10	1,168	203																				
Nov. 11–20	1,274	165			21		154	71	139		239	719	19		9		1,250	1.70	4,300	676	480	31
Nov. 21–30	1,140	169																				
Dec. 1–10	1,092	161																				
Dec. 11–20	937	180			20		168	77	160		266	792	22		12		1,380	1.88	3,490	736	518	32
Dec. 21–31	1,071	165																				
Jan. 1–10, 1945	992	162																				
Jan. 11–20	942	158			18	0.15	140	67	136		220	679	21		4.2		1,170	1.59	2,980	625	444	32
Jan. 21–31	757	151																				
Feb. 1–6, 8–10	838	163																				
Feb. 11–19	966	159			28		136	67	148		222	689	22		7.5		1,210	1.65	3,160	615	433	34
Feb. 20–28	718	151																				
Mar. 1–10	793	150																				
Mar. 11–20	884	144			37		124	59	129		202	609	20		6.6		1,080	1.47	2,580	552	386	34
Mar. 21–31	865	138																				

GUNNISON RIVER BASIN—Continued

GUNNISON RIVER NEAR GRAND JUNCTION, COLO.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1-10	1,031	124																				
Apr. 11-20	973	147		7.4	15		126	59	129		209	607	21		5.8		1,070	1.46	2,810	557	386	33
Apr. 21-30	2,571	77.4																				
May 1-10	10,568	44.9																				
May 11-20	11,866	38.2		7.6	14		42	10	24		134	73	9.0		.8		239	.33	7,660	146	36	27
May 21-31	8,375	38.0																				
June 1-10	6,295	55.4																				
June 11-20	7,275	50.7		7.6	12		51	17	31		110	157	6.0		2.4		331	.45	6,500	198	108	25
June 21-28	7,448	48.8																				
June 29-30, July 1-10	3,884	62.3																				
July 11-20	2,336	96.0			16		98	34	70		163	371	10		3.2		682	.93	4,300	384	251	28
July 21-31	2,041	124																				
Aug. 1-10	2,939	110																				
Aug. 11-20	2,087	120		7.7	18		130	46	81		211	474	11		8.9		873	1.19	4,920	514	340	25
Aug. 21-31	1,038	155																				
Sept. 1-10	631	232																				
Sept. 11-20	803	217		7.6	18		232	88	173		231	1,040	27		10		1,700	2.31	3,690	941	752	29
Sept. 21-30	894	221																				

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1–10, 1944	915																				
Oct. 11–15, 17–20	923						10.98	7.98	7.94	4.15	21.86	0.65		0.24							30
Oct. 21–31	999																				
Nov. 1–10	1,168																				
Nov. 11–20	1,274						7.69	5.84	6.05	3.92	14.97	.54		.15							31
Nov. 21–30	1,140																				
Dec. 1–10	1,092																				
Dec. 11–20	937						8.39	6.33	6.94	4.36	16.49	.62		.19							32
Dec. 21–31	1,071																				
Jan. 1–10, 1945	992																				
Jan. 11–20	942						6.99	5.51	5.91	3.61	14.14	.59		.07							32
Jan. 21–31	757																				
Feb. 1–10	838																				
Feb. 11–19	966						6.79	5.51	6.42	3.64	14.34	.62		.12							34
Feb. 20–28	718																				
Mar. 1–10	793																				
Mar. 11–20	884						6.19	4.85	5.62	3.31	12.68	.56		.11							34
Mar. 21–31	865																				
Apr. 1–10	1,031																				
Apr. 11–20	973						6.29	4.85	5.61	3.43	12.64	.59		.09							33
Apr. 21–31	2,571																				
May 1–10	10,568																				
May 11–20	11,866						2.10	.82	1.06	2.20	1.52	.25		.01							27
May 21–31	8,375																				
June 1–10	6,295																				
June 11–20	7,275						2.55	1.40	1.33	1.80	3.27	.17		.04							25
June 21–28	7,448																				
June 29, 30–July 1–10	3,884																				
July 11–20	2,336						4.89	2.80	3.03	2.67	7.72	.28		.05							28
July 21–31	2,041																				
Aug. 1–10	2,939																				
Aug. 11–20	2,087						6.49	3.78	3.51	3.46	9.87	.31		.14							25
Aug. 21–31	1,038																				
Sept. 1–10	631																				
Sept. 11–20	803						11.58	7.24	7.54	3.79	21.65	.76		.16							29
Sept. 21–30	894																				

GREEN RIVER BASIN

GREEN RIVER AT GREEN RIVER, UTAH

LOCATION.—At gaging station, 1 mile southeast of town of Green River and 22 miles upstream from San Rafael River.
DRAINAGE AREA.—40,600 square miles.
RECORDS AVAILABLE.—Chemical analyses: October 1928 to September 1945.
Sediment records: May 1939 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 934 parts per million Dec. 11–20; minimum, 279 parts per million July 11–20.
Total hardness: Maximum, 454 parts per million Dec. 11–20; minimum, 174 parts per million July 11–20.
Sediment loads: Maximum, 293,000 tons per day May 14; minimum, less than 100 tons per day on several days.
EXTREMES, 1928–45.—Dissolved solids: Maximum, 2,010 parts per million Sept. 29, 1943; minimum, 194 parts per million June 21–30, 1933.
Total hardness (1928–35, 1943–45): Maximum, 488 parts per million Dec. 21–31, 1932; minimum, 128 parts per million June 21–30, 1933.
Sediment loads: Maximum, 2,230,000 tons per day July 11, 1936; minimum, less than 100 tons per day on several days.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	1,735	132																				
Oct. 11-20	2,003	121			11		77	39	136		229	362	58		2.0		798	1.09	4,320	352	165	46
Oct. 21-31	1,864	122																				
Nov. 1-10	1,968	123																				
Nov. 11-17	2,216	124			11		84	46	133		247	393	53		2.0		844	1.15	5,050	398	196	42
Nov. 27-30	1,533	121																				
Dec. 1-10	1,398	130																				
Dec. 11-20	1,272	136			12		98	51	144		293	418	64		2.2		934	1.27	3,210	454	214	41
Dec. 21-31	1,626	129																				
Jan. 1-10, 1945	1,475	127																				
Jan. 11-20	1,897	113			13	0.15	86	41	101		222	332	52		2.5		737	1.00	3,770	383	201	36
Jan. 21-28, 30-31	1,924	111																				
Feb. 1-6, 8-10	1,971	115																				
Feb. 11-19	2,511	109			10		79	41	107		232	327	46		2.9		727	.99	4,930	366	176	39
Feb. 20-28	2,462	109																				
Mar. 1-10	2,181	117																				
Mar. 11-20	3,101	115			20		84	42	118		254	344	50		3.5		787	1.07	6,590	382	174	40
Mar. 21-23, 25-31	3,691	107																				

Apr. 1-3, 6-10	3,604	106																			
Apr. 11-20	4,528	99.7		7.7	12		79	31	96	256	261	36		1.2		642	.87	7,850	324	114	39
Apr. 21, 23-30	6,534	87.6																			
May 1-10	10,748	65.4																			
May 11-20	19,720	48.5		7.8	11		56	16	28	215	70	11		2.1		300	.41	16,000	206	30	23
May 21-31	13,964	47.4																			
June 1-10	18,060	45.9																			
June 11-20	16,570	47.0			15		51	14	30	176	84	12		1.0		294	.40	13,200	184	40	26
June 21-30	16,590	40.7																			
July 1-8	14,380	40.0																			
July 11-20	11,260	45.0			12		48	13	30	167	79	12		2.3		279	.38	8,480	174	36	27
July 21-31	8,808	60.6																			
Aug. 1, 3, 4, 6, 8-10	6,126	76.5																			
Aug. 11-20	5,975	87.2		7.8	14		76	29	78	239	229	30		.4		574	.78	9,260	308	112	35
Aug. 21-30	4,373	84.7																			
Aug. 31-Sept. 10	3,217	89.3																			
Sept. 11-20	2,611	86.8		7.8	8.9		68	32	74	206	231	36		1.2		553	.75	3,900	301	132	35
Sept. 21-30	2,375	87.8																			

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	1,735																				
Oct. 11-20	2,003						3.84	3.21	5.91	3.75	7.54	1.64		0.03							46
Oct. 21-31	1,864																				
Nov. 1-10	1,968																				
Nov. 11-17	2,216						4.19	3.78	5.78	4.05	8.18	1.49		.03							42
Nov. 27-30	1,533																				
Dec. 1-10	1,398																				
Dec. 11-20	1,272						4.89	4.19	6.27	4.80	8.70	1.81		.04							41
Dec. 21-31	1,626																				
Jan. 1-10, 1945	1,475																				
Jan. 11-20	1,897						4.29	3.37	4.40	3.64	6.91	1.47		.04							36
Jan. 21-28, 30-31	1,924																				
Feb. 1-6, 8-10	1,971																				
Feb. 11-19	2,511						3.94	3.37	4.65	3.80	6.81	1.30		.05							39
Feb. 20-28	2,462																				
Mar. 1-10	2,181																				
Mar. 11-20	3,101						4.19	3.45	5.15	4.16	7.16	1.41		.06							40
Mar. 21-23, 25-31	3,691																				
Apr. 1-3, 6-10	3,604																				
Apr. 11-20	4,528						3.94	2.55	4.18	4.20	5.43	1.02		.02							39
Apr. 21, 23-30	6,534																				
May 1-10	10,748																				
May 11-20	19,720						2.80	1.32	1.20	3.52	1.46	.31		.03							23
May 21-31	13,964																				

GREEN RIVER BASIN—Continued

GREEN RIVER AT GREEN RIVER, UTAH—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10[5] at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
June 1-10	18,060																					
June 11-20	16,570						2.54	1.15	1.30		2.88	1.75	.34		.02							26
June 21-30	16,590																					
July 1-8	14,380																					
July 11-20	11,260						2.40	1.07	1.29		2.74	1.64	.34		.04							27
July 21-31	8,808																					
Aug. 1, 3, 4, 6, 8-10	6,126																					
Aug. 11-20	5,975						3.79	2.38	3.38		3.92	4.77	.85		.01							35
Aug. 21-30	4,373																					
Aug. 31-Sept. 10	3,217																					
Sept. 11-20	2,611						3.39	2.63	3.21		3.38	4.81	1.02		.02							35
Sept. 21-30	2,375																					

GREEN RIVER BASIN—Continued

GREEN RIVER AT GREEN RIVER, UTAH—Continued

Suspended sediment, water year October 1944 to September 1945

Day	October			November			December		
	Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment	
		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day
1	1,210	0.01	327	1,860	0.02	1,000	1,540	0.01	416
2	1,420	.04	1,530	1,860	.02	1,000	1,340	.01	362
3	1,370	.03	1,110	1,860	.02	1,000	1,270	.01	343
4	1,450	.03	1,170	1,900	.02	1,030	1,060	.01	286
5	2,020	.02	1,090	1,940	.02	1,050	1,060	.00	---------
6	1,940	.02	1,050	2,020	.02	1,090	1,340	.00	---------
7	1,810	.04	1,950	2,040	.02	1,100	1,570	.00	---------
8	1,810	.04	1,950	2,040	.03	1,650	1,660	.01	448
9	1,920	.04	2,070	2,060	.02	1,110	1,570	.00	---------
10	2,400	.04	2,590	2,100	.03	1,700	1,570	.01	424
11	2,440	.04	2,640	2,160	.02	1,170	1,570	.01	424
12	2,280	.06	3,690	2,200	.03	1,780	1,380	.01	373
13	2,160	.05	2,920	2,200	.01	594	1,210	.01	327
14	2,060	.24	13,300	2,160	.01	583	1,160	.01	313
15	1,960	.34	18,000	2,180	.01	589	1,100	.00	---------
16	1,880	.23	11,700	2,220	.02	1,200	1,100	.00	---------
17	1,840	.09	4,470	2,230	.02	1,230	1,200	.00	---------
18	1,790	.05	2,420	2,280	[1].02	1,230	1,300	.01	351
19	1,790	.04	1,930	2,260	[1].02	1,220	1,300	.02	702
20	1,830	.04	1,980	2,220	[1].02	1,200	1,400	.02	756
21	1,840	.04	1,990	2,200	[1].02	1,200	1,500	.01	405
22	1,840	.02	994	2,180	[1].02	589	1,540	.02	832
23	1,840	.02	994	2,080	[1].01	562	1,520	.01	410
24	1,830	.02	988	1,960	[1].01	529	1,550	.01	419
25	1,830	.02	988	1,880	[1].01	508	1,680	.01	454
26	1,840	.02	994	1,770	[1].01	478	1,660	.01	448
27	1,880	.02	1,020	1,680	.01	454	1,620	.01	437
28	1,900	.02	1,030	1,590	.01	429	1,710	.01	462
29	1,920	.01	518	1,430	.01	386	1,730	.01	467
30	1,900	.01	513	1,430	.01	386	1,700	.01	459
31	1,880	.02	1,020		----	---	1,680	.01	454

Day	January			February			March		
1	1,500	0.01	405	1,750	0.01	473	2,120	0.03	1,720
2	1,400	.01	378	1,730	.01	467	2,020	.02	1,090
3	1,300	.01	351	1,810	.01	489	2,020	.03	1,640
4	1,300	.00	---------	1,810	.01	489	2,180	.02	1,180
5	1,400	.00	---------	1,830	.01	494	2,400	.03	1,940
6	1,470	.00	---------	1,920	.01	518	2,470	.05	3,330
7	1,450	.00	---------	2,080	[1].01	562	2,360	.05	3,190
8	1,540	.00	---------	2,120	.01	572	2,180	.04	2,350
9	1,660	.00	---------	2,340	.01	632	2,060	.03	1,670
10	1,730	.00	---------	2,320	.02	1,250	2,000	.02	1,080
11	1,810	.01	489	2,180	.02	1,180	2,020	.02	1,090
12	1,810	.01	489	2,280	.02	1,230	2,120	.02	1,140
13	1,860	.01	502	2,320	.01	626	2,260	.05	3,050
14	1,880	.01	508	2,420	.02	1,310	2,510	.09	6,100
15	1,880	.01	508	2,510	.01	678	2,860	.10	7,720
16	1,830	.02	988	2,660	.03	2,150	3,080	.08	6,650
17	1,960	.01	529	2,750	.04	2,970	3,170	.09	7,700
18	1,940	.01	524	2,730	.04	2,950	3,900	.16	16,800
19	1,980	.02	1,070	2,750	.04	2,970	4,500	.19	23,100
20	2,020	.02	1,090	2,680	.04	2,890	4,590	.23	28,500
21	2,040	.02	1,100	2,660	.04	2,870	4,180	.26	29,300
22	2,100	.01	567	2,550	.05	3,440	3,680	.22	21,900
23	2,100	.02	1,130	2,510	.05	3,390	3,440	.15	13,900
24	1,980	.01	535	2,440	.04	2,640	3,340	.13	11,700
25	1,960	.01	529	2,340	.04	2,530	3,320	.11	9,860
26	1,830	.01	494	2,340	.03	1,900	3,270	.10	8,830
27	1,790	.01	483	2,360	.03	1,910	3,290	.10	8,880
28	1,830	.01	494	2,280	.03	1,850	3,930	.13	13,800
29	1,790	[1].01	483	-------	-------	---------	4,350	.14	16,400
30	1,900	.01	513	-------	-------	---------	4,010	.20	21,700
31	1,840	.01	497	-------	-------	---------	3,790	.31	31,700

[1] Estimated.

GREEN RIVER BASIN—Continued

GREEN RIVER AT GREEN RIVER, UTAH—Continued

Suspended sediment, water year October 1944 to September 1945—Continued

Day	April			May			June		
	Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment	
		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day
1	3,840	0.32	33,200	6,380	0.36	62,000	14,000	0.17	64,300
2	3,930	.30	31,800	6,090	.26	42,800	13,900	.18	67,600
3	3,660	.31	30,600	6,320	.21	35,800	14,500	.22	86,100
4	3,580	.23	22,200	7,360	.22	43,700	15,300	.24	99,100
5	3,610	[1].20	19,500	9,730	.32	84,100	17,900	.28	135,000
6	3,680	.16	15,900	11,200	.35	106,000	18,600	.28	141,000
7	3,840	.15	15,600	12,200	.40	132,000	19,400	.43	225,000
8	3,480	.15	14,100	14,000	.53	200,000	21,300	.34	196,000
9	3,220	.11	9,560	16,100	.62	270,000	23,000	.33	205,000
10	3,200	.12	10,400	18,100	.59	288,000	22,700	.34	208,000
11	3,290	.13	11,500	18,600	.50	251,000	20,400	.24	132,000
12	3,760	.15	15,200	18,900	.42	214,000	18,600	.30	151,000
13	5,100	.21	28,900	20,100	.50	271,000	17,500	.32	151,000
14	5,790	.29	45,300	21,300	.51	293,000	16,200	.22	96,200
15	5,540	.54	80,800	22,700	.40	245,000	15,200	.22	90,300
16	5,100	.54	74,400	22,700	.34	208,000	15,800	.21	89,600
17	4,810	.36	46,800	21,400	.30	173,000	16,700	.20	90,200
18	4,350	.28	32,900	19,100	.35	180,000	16,400	.18	79,700
19	3,930	.19	20,200	16,800	.29	132,000	15,000	.16	64,800
20	3,610	.20	19,500	15,600	.27	114,000	13,900	.14	52,500
21	3,560	.16	15,400	15,500	.23	96,300	13,200	.12	42,800
22	3,760	.16	16,200	15,600	.22	92,700	12,900	.12	41,800
23	3,870	.18	18,800	15,700	.24	102,000	13,200	.10	35,600
24	4,440	.22	26,400	14,600	.17	67,000	13,600	.13	47,700
25	6,640	.36	64,500	12,900	.16	55,700	14,500	.16	62,600
26	9,830	.78	207,000	11,600	.16	50,100	16,300	.20	88,000
27	9,340	.69	174,000	11,600	.15	47,000	18,400	.26	129,000
28	9,100	.57	140,000	13,100	.22	77,800	20,700	.23	129,000
29	7,910	.50	107,000	14,200	.21	80,500	21,800	.26	153,000
30	6,890	.39	72,600	14,400	.22	85,600	21,300	.26	150,000
31				14,400	.21	81,600			

Day	July			August			September		
1	20,100	0.28	152,000	6,320	0.13	22,200	3,560	0.30	28,800
2	18,800	.21	107,000	5,980	[1].15	24,200	3,540	.23	22,000
3	16,600	.20	89,600	5,760	.16	24,900	3,560	.47	45,200
4	15,200	.19	78,000	6,010	.19	30,800	3,320	.22	19,700
5	13,900	.15	56,300	5,760	.46	71,500	3,510	.20	19,000
6	13,000	.13	45,600	6,560	.46	81,500	3,270	.24	21,200
7	12,300	.10	33,200	6,520	1.13	199,000	3,080	.54	44,900
8	11,600	.09	28,200	5,790	.78	122,000	2,920	.20	15,800
9	11,300	[1].08	24,400	6,280	1.38	234,000	2,790	.16	12,100
10	11,000	[1].08	23,800	6,280	.40	67,800	2,620	.12	8,490
11	11,000	.08	23,800	6,240	.63	106,000	2,530	.06	4,100
12	11,000	.08	23,800	7,100	.78	150,000	2,490	.10	6,720
13	10,900	.09	26,500	6,860	.51	94,500	2,420	.06	3,920
14	10,900	.09	26,500	5,940	.39	62,500	2,440	.07	4,620
15	11,300	.10	30,500	6,600	.43	76,600	2,680	.04	2,890
16	11,800	.09	28,700	6,280	.96	163,000	2,880	.04	3,110
17	12,100	.14	45,700	5,650	.69	105,000	2,860	.07	5,410
18	11,600	.12	37,600	5,170	.45	62,800	2,730	.06	4,420
19	11,000	.12	35,600	4,970	.36	48,300	2,590	.05	3,500
20	11,000	.13	38,600	4,940	.27	36,000	2,490	.10	6,720
21	11,000	.38	113,000	4,840	.28	36,600	2,420	.04	2,610
22	10,500	.18	51,000	4,900	.22	29,100	2,360	.03	1,910
23	9,730	.35	91,900	4,650	.18	22,600	2,300	.03	1,860
24	9,730	.33	86,700	4,260	.26	30,000	2,260	.03	1,830
25	9,640	.21	54,700	4,350	.49	57,600	2,280	.02	1,230
26	9,150	.34	84,000	4,620	.28	34,900	2,360	.02	1,270
27	8,380	.28	63,400	4,410	.30	35,700	2,420	.02	1,310
28	7,910	.31	66,200	4,230	.21	24,000	2,420	.02	1,310
29	7,320	.29	57,300	4,150	.41	45,900	2,440	.02	1,320
30	6,890	.12	22,300	3,950	.38	40,500	2,490	.02	1,340
31	6,640	.08	14,300	3,740	.29	29,300			

[1] Estimated.

SAN JUAN RIVER BASIN

SAN JUAN RIVER AT SHIP ROCK, N. MEX.

LOCATION.—At highway bridge, approximately 3 miles above gaging station and about 3 miles downstream from Chaco River.
DRAINAGE AREA.—Approximately 12,800 square miles.
RECORDS AVAILABLE.—Chemical analyses: February 1941 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 757 parts per million Jan. 1–10; minimum, 139 parts per million June 11–20.
Total hardness: Maximum, 403 parts per million Dec. 11–20; minimum, 82 parts per million May 21–31, June 21–30.
EXTREMES, 1941–45.—Dissolved solids: Maximum, 1,480 parts per million Aug. 31, 1943; minimum, 115 parts per million June 21–28, 30, 1944.
Total hardness: Maximum, 535 parts per million Aug. 31, 1943; minimum, 70 parts per million June 21–28, 30, 1944.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^6 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-2, 1944	1,159	71.1	------	------	------	------	72	13	65		156	212	17	------	3.3	------	459	0.62	1,440	233	105	38
Oct. 10-18	1,270	70.8	------	------	13	0.03	73	14	63		162	209	16	0.4	3.0	0.2	471	.64	1,620	240	106	36
Oct. 21, 24, 27, 30-31	808	73.2	------	------	13	.03	77	16	61		158	222	19	.4	3.0	.2	489	.67	1,070	258	128	34
Nov. 1-4, 6-10	704	90.1	------	------	14	.06	94	19	80		181	289	24	.3	3.4	.3	613	.83	1,170	312	164	36
Nov. 11-19	756	87.5	------	------	16	.03	93	20	76		183	281	23	.4	3.0	.3	603	.82	1,230	314	164	34
Nov. 21, 23-26, 28-30	654	95.3	------	------	12	.01	100	23	80		190	311	25	.2	3.8	.2	649	.88	1,150	344	188	34
Dec. 1-2, 4-10	604	99.2	------	------	12	.01	105	24	86		197	331	27	.3	4.0	.4	686	.93	1,120	360	199	34
Dec. 11, 13-20	501	108	------	------	12	.01	117	27	89		218	357	30	.3	3.1	.4	743	1.01	1,010	403	224	32
Dec. 23-31	651	99.2	------	------	12	.02	102	23	88		186	335	26	.3	2.5	.4	680	.92	1,200	349	196	35
Jan. 1-6, 8-10, 1945	482	108	------	------	11	.08	115	26	97		208	373	30	.4	2.5	.4	757	1.03	985	394	224	35
Jan. 12-19	601	97.3	------	7.8	14	.03	104	22	86		187	328	27	.4	3.2	.2	677	.92	1,100	350	196	35
Jan. 21-25, 27-31	531	96.7	------	7.9	13	.18	104	22	86		190	327	27	.4	3.2	.2	676	.92	969	350	194	35
Feb. 1-10	916	90.8	------	7.8	13	.07	89	17	93		182	298	22	.4	3.0	.2	625	.85	1,550	292	143	41
Feb. 12-19	934	90.3	------	7.9	14	.03	88	18	89		186	289	22	.3	2.7	.2	615	.84	1,550	294	141	40
Feb. 20, 22-23, 25-28	763	90.8	------	7.9	12	.03	92	22	81		187	296	22	.3	2.9	.3	620	.84	1,280	320	166	35
Mar. 3, 7-10	667	89.8	------	8.0	13	.02	94	23	76		184	295	24	.3	2.5	.3	618	.84	1,110	329	178	34
Mar. 12-20	1,282	78.2	------	8.0	13	.03	78	19	69		170	247	16	.4	3.3	.3	529	.72	1,830	272	133	36
Mar. 21-23, 25-31	1,342	77.8	------	7.8	15	.01	78	21	63		172	241	16	.4	2.8	.3	522	.71	1,890	281	140	33

SAN JUAN RIVER BASIN—Continued

SAN JUAN RIVER AT SHIP ROCK, N. MEX.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na) + Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1-4, 6-10	2,431	59.3		7.9	15	.01	65	17	40	157	169	9.0	.3	2.1	.2	395	.54	2,590	232	104	27
Apr. 12-20	2,130	58.3		7.8	15	.01	65	17	37	151	166	9.0	.3	1.9	.2	386	.52	2,220	232	108	26
Apr. 21, 23-30	5,014	36.4		7.9	16	.07	44	9.6	20	121	80	6.0	.3	1.5	.1	237	.32	3,210	150	50	23
May 1-10	7,158	25.9		7.9	13	.17	34	6.6	15	97	56	3.2	.3	1.1		177	.24	3,420	112	32	22
May 11-14, 16-20	6,532	22.8		7.9	12	.21	28	5.5	12	80	45	4.0	.3	.8		147	.20	2,590	92	27	23
May 21-27, 29-31	6,572	23.0		7.9	14	.24	25	4.8	16	85	41	3.0	.2	.5	.1	147	.20	2,610	82	12	30
June 1, 3-10	5,578	23.6		7.9	15	.05	27	5.1	13	76	46	4.0	.3	.8	.1	149	.20	2,240	88	26	25
June 12-13, 17-20	6,859	22.3		7.8	14	.05	26	4.9	11	70	45	3.0	.2	.7	.1	139	.19	2,570	85	28	22
June 22, 24-30	5,818	23.2		8.0	14	.02	25	4.9	19	79	49	4.5	.3	.8	.1	156	.21	2,450	82	18	33
July 1, 6, 8	2,970	29.8		7.5			33	6.2	19	82	70	6.5		.2	.3	175	.24	1,400	108	41	28
July 14-17, 19-20	1,645	48.0		7.6	11	.02	49	9.7	36	112	124	12	.3	2.2	.1	299	.41	1,330	162	70	33
July 26-30	1,287	60.3		7.8	16	.05	64	12	51	145	170	15	.4	2.6	.1	402	.55	1,400	209	90	35
Aug. 1, 3-4, 6, 10	[1] 1,298	62.7		7.8	17	.05	66	13	53	150	179	14	.4	3.1	.1	419	.57	1,470	218	95	34
Aug. 2	1,280	141									512										
Aug. 11-13, 15, 18-20	[2] 9,340	67.2		7.8	17	.12	67	14	61	155	198	16	.4	2.1	.1	452	.61	11,400	224	98	37
Aug. 17	741	42.5									97										
Aug. 21-22, 24-29	[3] 766	102		7.7	18	.06	82	15	134	193	352	20	.6	2.8	.2	720	.98	1,490	266	108	52
Aug. 23	1,910	59.4									179										
Sept. 1-8, 10	418	92.7		7.8	16	.05	87	18	96	176	307	23	.5	4.0	.2	638	.87	720	291	147	42
Sept. 13-15, 17-20	308	102			17	.23	82	24	113	171	350	28	.4	4.1	.3	703	.96	585	303	163	45
Sept. 21-22, 24-26	350	103			13	.09	95	22	104	178	349	28	.3	3.9	.2	703	.96	664	328	182	41
Weighted average	2,020	43.9			14	0.09	47	10	34	115	120	9.0	0.3	1.5	0.2	293	0.40	1,600	158	64	32

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1–2, 1944	1,159						3.59	1.07	2.84	2.56	4.41	0.48		0.05							38
Oct. 10–18	1,270						3.64	1.15	2.74	2.66	4.35	.45	0.02	.05							36
Oct. 21, 24, 27, 30–31	808						3.84	1.32	2.66	2.59	4.62	.54	.02	.05							34
Nov. 1–4, 6–10	704						4.69	1.56	3.49	2.97	6.02	.68	.02	.05							36
Nov. 11–19	756						4.64	1.64	3.29	3.00	5.85	.65	.02	.05							34
Nov. 21, 23–26, 28–30	654						4.99	1.89	3.48	3.11	6.47	.71	.01	.06							34
Dec. 1–2, 4–10	604						5.24	1.97	3.75	3.23	6.89	.76	.02	.06							34
Dec. 11, 13–20	501						5.84	2.22	3.86	3.57	7.43	.85	.02	.05							32
Dec. 23–31	651						5.09	1.89	3.83	3.05	6.97	.73	.02	.04							35
Jan. 1–6, 8–10, 1945	482						5.74	2.14	4.21	3.41	7.77	.85	.02	.04							35
Jan. 12–19	601						5.19	1.81	3.73	3.07	6.83	.76	.02	.05							35
Jan. 21–25, 27–31	531						5.19	1.81	3.75	3.11	6.81	.76	.02	.05							35
Feb. 1–10	916						4.44	1.40	4.03	2.98	6.20	.62	.02	.05							41
Feb. 12–19	934						4.39	1.48	3.88	3.05	6.02	.62	.02	.04							40
Feb. 20, 22–23, 25–28	763						4.59	1.81	3.52	3.07	6.16	.62	.02	.05							35
Mar. 3, 7–10	667						4.69	1.89	3.32	3.02	6.14	.68	.02	.04							34
Mar. 12–20	1,282						3.89	1.56	3.00	2.79	5.14	.45	.02	.05							36
Mar. 21–23, 25–31	1,342						3.89	1.73	2.74	2.82	5.02	.45	.02	.05							33
Apr. 1–4, 6–10	2,431						3.24	1.40	1.75	2.57	3.52	.25	.02	.03							27
Apr. 12–20	2,130						3.24	1.40	1.60	2.48	3.46	.25	.02	.03							26
Apr. 21, 23–30	5,014						2.20	.79	.87	1.98	1.67	.17	.02	.02							23
May 1–10	7,158						1.70	.54	.65	1.59	1.17	.09	.02	.02							22
May 11–14, 16–20	6,532						1.40	.45	.54	1.31	.94	.11	.02	.01							23
May 21–27, 29–31	6,572						1.25	.39	.70	1.39	.85	.08	.01	.01							30
June 1, 3–10	5,578						1.35	.42	.58	1.25	.96	.11	.02	.01							25
June 12–13, 17–20	6,859						1.30	.40	.49	1.15	.94	.08	.01	.01							22
June 22, 24–30	5,818						1.25	.40	.83	1.30	1.02	.13	.02	.01							33
July 1, 6, 8	2,970						1.65	.51	.82	1.34	1.46	.18		.00							28
July 14–17, 19–20	1,645						2.45	.80	1.57	1.84	2.58	.34	.02	.04							33
July 26–30	1,287						3.19	.99	2.22	2.38	3.54	.42	.02	.04							35
Aug. 1, 3–4, 6, 10	[1] 1,298						3.29	1.07	2.29	2.46	3.73	.39	.02	.05							34
Aug. 2	1,280										10.66										
Aug. 11–13, 15, 18–20	[2] 9,340						3.34	1.15	2.67	2.54	4.12	.45	.02	.03							37
Aug. 17	741										2.02										
Aug. 21–22, 24–29	[3] 766						4.09	1.23	5.81	3.16	7.33	.56	.03	.05							52
Aug. 23	1,910										3.73										
Sept. 1–8, 10	418						4.34	1.48	4.19	2.88	6.39	.65	.03	.06							42
Sept. 13–15, 17–20	308						4.09	1.97	4.91	2.80	7.29	.79	.02	.07							45
Sept. 21–22, 24–26	350						4.74	1.81	4.51	2.92	7.27	.79	.02	.06							41
Weighted average	2,020						2.35	0.82	1.48	1.88	2.50	0.25	0.02	0.02							32

[1] Includes discharge for Aug. 2. [2] Includes discharge for Aug. 17. [3] Includes discharge for Aug. 23.

SAN JUAN RIVER BASIN—Continued

SAN JUAN RIVER NEAR BLUFF, UTAH

LOCATION.—At highway bridge, 2,000 feet downstream from gaging station and 20 miles southwest of Bluff.
DRAINAGE AREA.—23,900 square miles.
RECORDS AVAILABLE.—Chemical analyses: February to June 1927, October 1929 to September 1945.
Sediment records: August to September 1928, July 1929 to September 1945.
Water temperatures: May 1944 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 945 parts per million Sept. 11–20; minimum, 202 parts per million June 21–30.
Total hardness: Maximum, 476 parts per million Jan. 11–20; minimum, 130 parts per million June 21–30.
Water temperatures: Maximum, 85° F. July 21; minimum, freezing point on many days in December, January, and February.
Sediment loads: Maximum, 1,240,000 tons per day, Aug. 8; minimum, 682 tons per day, Dec. 16.
EXTREMES, 1929–45.—Dissolved solids: Maximum, 1,860 parts per million July 21–31, 1934; minimum, 167 parts per million, June 11–20, 1944.
Total hardness: Maximum, 874 parts per million, July 21–31, 1934; minimum, 109 parts per million July 1–10, 1935.
Sediment loads: Maximum, 11,450,000 tons per day, Sept. 23, 1929; minimum, less than 50 tons per day on several days.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	1,360	103	59	------	13	0.06	97	19	114		201	353	22	0.4	3.8	0.4	721	0.98	2,650	320	156	44
Oct. 11-20	1,323	94.1	58	------	13	.05	97	22	87		194	316	21	.4	3.7	.3	656	.89	2,340	332	174	36
Oct. 21-31	1,012	90.8	53	------	10	.04	94	23	79		181	308	20	.4	3.8	.3	627	.85	1,710	329	180	34
Nov. 1-10	910	120	50	------	10	.05	120	37	104		184	459	30	.4	5.8	.4	857	1.17	2,110	452	300	33
Nov. 11-20	886	116	44	------	12	.04	116	37	97		190	434	28	.4	4.9	.4	823	1.12	1,970	442	286	32
Nov. 21-30	803	117	37	------	12	.05	116	37	95		195	423	30	.4	6.2	.4	816	1.11	1,770	442	282	32
Dec. 1-10	711	121	36	------	14	.05	120	38	104		208	444	30	.4	6.2	.4	859	1.17	1,650	456	285	33
Dec. 11-20	531	127	32	------	14	.06	127	38	114		218	465	36	.4	6.8	.4	909	1.24	1,300	473	294	34
Dec. 21-31	830	122	35	------	14	.06	119	37	110		206	451	30	.4	6.8	.4	870	1.18	1,950	449	280	35
Jan. 1-10, 1945	562	128	32	------	14	.06	125	39	115		208	479	34	.4	6.8	.4	916	1.25	1,390	472	302	35
Jan. 11-20	749	126	39	------	11	.08	123	41	110		203	478	32	.4	6.2	.4	902	1.23	1,820	476	309	33
Jan. 21-25, 27-31	682	122	35	7.7	12	.08	122	40	105		205	459	32	.4	5.8	.3	877	1.19	1,610	469	301	

Feb. 1-10	1,331	120	40	7.7	14	.09	116	32	120	216	440	28	.4	6.9	.3	864	1.18	3,100	421	244	38
Feb. 11-19	1,106	114	41	7.7	15	.04	113	31	104	203	406	28	.4	6.2	.4	804	1.09	2,400	410	243	35
Feb. 20-28	931	113	39	7.6	15	.05	112	30	106	207	405	27	.4	4.7	.4	802	1.09	2,020	403	234	36
Mar. 1-10	768	120	40	7.6	10	.15	119	43	86	214	430	25	.4	2.8	.8	822	1.12	1,700	474	298	28
Mar. 11-20	1,321	112	47	7.6	12	.08	113	41	81	228	385	24	.4	4.7	.7	773	1.05	2,760	450	264	28
Mar. 21-31	1,392	103	45	7.6	11	.10	104	31	86	224	342	22	.3	4.3	.6	711	.97	2,670	387	204	33
Apr. 1-10	2,084	89.4	45	7.7	13	.23	93	28	66	202	284	18	.4	3.8	.3	606	.82	3,410	347	182	29
Apr. 11-20	2,314	75.4	49	7.7	12	.11	81	23	50	183	223	14	.3	2.5	.4	496	.67	3,100	296	146	27
Apr. 21-30	5,502	56.8	55	7.8	12	.09	61	15	40	169	142	8	.3	2.9	.5	365	.50	5,420	214	75	29
May 1-6, 8-9	8,348	47.9	60	7.8	13	.09	57	12	29	179	92	7	.4	2.9	.2	302	.41	6,810	192	46	25
May 11-18, 20	7,187	39.1	59	7.9	13	.33	52	8.5	20	158	65	6.5	.4	1.4	.0	245	.33	4,750	165	36	21
May 21, 23-31	[1] 6,786	36.0	59	7.7	13	.18	47	8.0	21	138	62	12	.3	1.2	.2	233	.32	4,270	150	38	23
May 22	6,010	69.0	62									17									
June 1-5, 7, 9-10	6,070	34.0	63	8.1	13	.11	42	7.8	18	125	63	4.2	.3	.5	.2	211	.29	3,460	137	34	22
June 11-15, 17-20	6,933	35.7	68	7.8	11	.40	45	7.9	18	128	67	5.8	.4	1.0	.2	220	.30	4,120	145	40	21
June 21-30	6,001	33.1	71	7.6	10	.16	41	6.7	18	114	63	5.5	.3	1.5	.2	202	.27	3,270	130	36	23
July 1-9	3,114	39.4	74	7.5	10	.10	43	8.7	27	107	97	8.2	.3	1.0	.1	248	.34	2,090	144	56	29
July 11-20	1,725	55.4	74	7.7	12	.06	60	14	39	132	158	12	.3	1.8	.1	362	.49	1,690	207	99	29
July 21-29, 31	1,455	86.6	77	7.6	14	.15	97	20	72	215	268	16	.4	3.0	.2	596	.81	2,340	324	148	33
Aug. 1-10	2,142	125	77	7.7	18	.48	130	33	111	232	456	23	.4	3.6	.6	890	1.21	5,150	460	270	34
Aug. 11-20	1,468	97.3	77	7.4	14	.09	112	25	72	254	291	19	.3	.9	.3	659	.90	2,610	382	174	29
Aug. 21-24, 26-31	1,111	130	73	7.3	15	.12	134	29	132	268	464	26	.5	1.2	.3	934	1.27	2,800	454	234	39
Sept. 1-10	523	113	72	7.4	14	.08	120	26	110	233	397	25	.5	4.1	.3	811	1.10	1,150	406	216	37
Sept. 11-20	275	125	66	7.4	12	.06	127	35	129	199	504	35	.4	4.3	.3	945	1.29	702	461	298	38
Sept. 22-30	286	123	61	7.5	8.0	.06	122	38	126	191	505	34	.4	4.5	.3	932	1.27	720	460	304	37
Weighted average	2,237	64.8			12	0.16	71	17	49	167	187	13	0.4	2.5	0.3	434	0.59	2,620	247	110	30

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	1,360						4.84	1.56	4.94	3.29	7.35	0.62	0.02	0.06							44
Oct. 11-20	1,323						4.84	1.81	3.78	3.18	6.58	.59	.02	.06							36
Oct. 21-31	1,012						4.69	1.89	3.44	2.97	6.41	.56	.02	.06							34
Nov. 1-10	910						5.99	3.04	4.51	3.02	9.56	.85	.02	.09							33
Nov. 11-20	886						5.79	3.04	4.21	3.11	9.04	.79	.02	.08							32
Nov. 21-30	803						5.79	3.04	4.15	3.20	8.81	.85	.02	.10							32
Dec. 1-10	711						5.99	3.12	4.51	3.41	9.24	.85	.02	.10							33
Dec. 11-20	531						6.34	3.12	4.94	3.57	9.68	1.02	.02	.11							34
Dec. 21-31	830						5.94	3.04	4.77	3.38	9.39	.85	.02	.11							35
Jan. 1-10, 1945	562						6.24	3.21	5.02	3.41	9.97	.96	.02	.11							35
Jan. 11-20	749						6.14	3.37	4.79	3.33	9.95	.90	.02	.10							33
Jan. 21-25, 27-31	682						6.09	3.29	4.55	3.36	9.56	.90	.02	.09							33

[1] Discharge for May 22 included in discharge reported for May 21, 23-31.

SAN JUAN RIVER BASIN—Continued

SAN JUAN RIVER NEAR BLUFF, UTAH—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10[5] at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na) / Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Feb. 1-10	1,331	----	----	----	----	----	5.79	2.63	5.20	3.54	9.16	.79	.02	.11	----	----	----	----	----	----	38
Feb. 11-19	1,106	----	----	----	----	----	5.64	2.55	4.50	3.33	8.45	.79	.02	.10	----	----	----	----	----	----	35
Feb. 20-28	931	----	----	----	----	----	5.59	2.47	4.62	3.39	8.43	.76	.02	.08	----	----	----	----	----	----	36
Mar. 1-10	768	----	----	----	----	----	5.94	3.54	3.76	3.51	8.95	.71	.02	.05	----	----	----	----	----	----	28
Mar. 11-20	1,321	----	----	----	----	----	5.64	3.37	3.53	3.74	8.02	.68	.02	.08	----	----	----	----	----	----	28
Mar. 21-31	1,392	----	----	----	----	----	5.19	2.55	3.76	3.67	7.12	.62	.02	.07	----	----	----	----	----	----	33
Apr. 1-10	2,084	----	----	----	----	----	4.64	2.30	2.87	3.31	5.91	.51	.02	.06	----	----	----	----	----	----	29
Apr. 11-20	2,314	----	----	----	----	----	4.04	1.89	2.16	3.00	4.64	.39	.02	.04	----	----	----	----	----	----	27
Apr. 21-30	5,502	----	----	----	----	----	3.04	1.23	1.76	2.77	2.96	.23	.02	.05	----	----	----	----	----	----	29
May 1-6, 8-9	8,348	----	----	----	----	----	2.85	.99	1.28	2.93	1.92	.20	.02	.05	----	----	----	----	----	----	25
May 11-18, 20	7,187	----	----	----	----	----	2.60	.70	.86	2.59	1.35	.18	.02	.02	----	----	----	----	----	----	21
May 21, 23-31	[1] 6,786	----	----	----	----	----	2.35	.66	.92	2.26	1.29	.34	.02	.02	----	----	----	----	----	----	23
May 22	6,010	----	----	----	----	----	----	----	----	----	----	.48	----	----	----	----	----	----	----	----	----
June 1-5, 7, 9-10	6,070	----	----	----	----	----	2.10	.64	.77	2.05	1.31	.12	.02	.01	----	----	----	----	----	----	22
June 11-15, 17-20	6,933	----	----	----	----	----	2.25	.65	.79	2.10	1.39	.16	.02	.02	----	----	----	----	----	----	21
June 21-30	6,001	----	----	----	----	----	2.05	.55	.78	1.87	1.31	.16	.02	.02	----	----	----	----	----	----	23
July 1-9	3,114	----	----	----	----	----	2.15	.72	1.17	1.75	2.02	.23	.02	.02	----	----	----	----	----	----	29
July 11-20	1,725	----	----	----	----	----	2.99	1.15	1.70	2.16	3.29	.34	.02	.03	----	----	----	----	----	----	29
July 21-29, 31	1,455	----	----	----	----	----	4.84	1.64	3.14	3.52	5.58	.45	.02	.05	----	----	----	----	----	----	33
Aug. 1-10	2,142	----	----	----	----	----	6.49	2.71	4.82	3.80	9.49	.65	.02	.06	----	----	----	----	----	----	34
Aug. 11-20	1,468	----	----	----	----	----	5.59	2.06	3.14	4.16	6.06	.54	.02	.01	----	----	----	----	----	----	29
Aug. 21-24, 26-31	1,111	----	----	----	----	----	6.69	2.38	5.76	4.39	9.66	.73	.03	.02	----	----	----	----	----	----	39
Sept. 1-10	523	----	----	----	----	----	5.99	2.14	4.77	3.82	8.27	.71	.03	.07	----	----	----	----	----	----	37
Sept. 11-20	275	----	----	----	----	----	6.34	2.88	5.61	3.26	10.49	.99	.02	.07	----	----	----	----	----	----	38
Sept. 22-30	286	----	----	----	----	----	6.09	3.12	5.48	3.13	10.51	.96	.02	.07	----	----	----	----	----	----	37
Weighted average	2,237	----	----	----	----	----	3.54	1.40	2.13	2.74	3.89	0.37	0.02	0.04	----	----	----	----	----	----	30

[1] Discharge for May 22 included in discharge reported for May 21, 23-31.

Temperature (° F.) of water of San Juan River, water year October 1944 to September 1945

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

SAN JUAN RIVER BASIN—Continued

SAN JUAN RIVER NEAR BLUFF, UTAH—Continued

Suspended sediment, water year October 1944 to September 1945

Day	October			November			December		
	Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment		Mean discharge (second-feet)	Suspended sediment	
		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day		Mean concentration (percent)	Tons per day
1	1,720	4.00	186,000	719	0.10	1,940	668	0.07	1,260
2	1,450	2.67	105,000	680	.10	1,840	662	.07	1,251
3	1,320	1.35	48,100	693	.12	2,250	656	.07	1,240
4	1,310	.78	27,600	706	.10	1,910	752	.08	1,620
5	1,540	.70	29,100	674	.11	2,000	738	.13	2,590
6	1,410	.66	25,100	784	.09	1,910	804	.12	2,600
7	1,300	.53	18,600	1,580	.86	36,700	764	.09	1,860
8	1,200	.43	13,900	1,240	.76	25,400	726	.07	1,370
9	1,160	.34	10,600	943	.41	10,400	662	.08	1,430
10	1,190	.30	9,640	1,080	.27	7,880	680	.11	2,020
11	1,110	.25	7,490	992	.21	5,620	644	.08	1,390
12	1,060	.19	5,440	922	.16	3,980	581	.05	784
13	978	.19	5,020	866	.14	3,270	559	.06	906
14	1,010	.18	4,910	845	.18	5,250	494	.06	800
15	971	.23	6,030	840	.14	3,180	548	.08	1,180
16	1,020	.32	8,810	850	.16	3,670	505	.05	682
17	1,230	.30	9,960	860	.16	3,720	494	.09	1,200
18	2,350	.87	55,200	880	.16	3,800	489	.14	1,850
19	1,920	1.55	80,400	900	.12	2,920	505	.06	818
20	1,580	1.72	73,400	901	.12	2,920	494	.13	1,730
21	1,470	1.03	40,900	901	.11	2,680	463	.12	1,500
22	1,330	.56	20,100	845	.11	2,510	500	.07	945
23	1,200	.37	12,000	784	.10	2,120	592	.05	799
24	1,070	.30	8,670	764	.08	1,650	852	.12	2,760
25	1,010	.26	7,090	790	.09	1,920	1,070	.21	6,070
26	985	.26	6,910	752	.10	2,030	1,130	.23	7,020
27	901	.20	4,870	784	.12	2,540	1,080	.29	8,460
28	873	.18	4,240	845	.11	2,510	957	.26	6,720
29	784	.11	2,330	831	.11	2,470	908	.34	8,340
30	752	.12	2,440	738	.10	1,990	797	.26	5,590
31	752	.12	2,440				778	.17	3,570
Total load (tons)			842,300			153,000			80,360

Day	January			February			March		
1	732	0.16	3,160	564	0.06	914	804	0.13	2,820
2	656	.11	1,950	570	.06	923	771	.10	2,080
3	537	.11	1,590	873	.14	3,300	752	.13	2,640
4	494	.09	1,200	1,940	1.45	76,000	790	.14	2,990
5	500	.09	1,220	2,620	1.65	117,000	859	.13	3,020
6	494	.10	1,330	2,260	1.81	110,000	810	.15	3,280
7	494	.09	1,200	1,510	2.32	94,600	752	.12	2,440
8	526	.13	1,850	1,250	1.56	52,700	752	.14	2,840
9	603	.12	1,950	943	1.40	35,600	719	.12	2,330
10	581	.08	1,250	784	.91	19,300	674	.13	2,370
11	620	.10	1,670	824	.61	13,600	668	.14	2,530
12	644	.11	1,910	873	.49	11,500	686	.40	7,410
13	680	.13	2,390	908	.44	10,800	752	.13	2,640
14	726	.15	2,940	915	.34	8,400	1,030	.22	6,120
15	706	.11	2,100	887	.34	8,140	1,280	1.04	35,900
16	764	.13	2,680	1,210	.89	29,100	1,490	.78	31,400
17	866	.13	3,040	1,290	.50	17,400	1,890	1.05	53,600
18	859	.21	4,870	1,650	1.35	60,100	2,340	.82	51,800
19	797	.23	4,950	1,400	1.27	48,000	1,740	.76	35,700
20	831	.12	2,690	1,190	1.09	35,000	1,330	.50	18,000
21	797	.11	2,370	1,130	.70	21,400	1,230	.46	15,300
22	764	.12	2,480	1,080	.53	15,500	1,120	.36	10,900
23	732	.08	1,580	992	.42	11,200	1,220	.34	11,200
24	706	.07	1,330	873	.45	10,600	1,750	.46	21,700
25	570	.07	1,080	784	.35	7,410	1,680	.46	20,900
26	575	.06	932	764	.25	5,160	1,380	.47	17,500
27	668	.06	1,080	752	.20	4,060	1,450	.46	18,000
28	712	.10	1,920	810	.17	3,720	1,410	.39	14,800
29	668	.09	1,620				1,490	.32	12,900
30	719	.08	1,550				1,410	.42	16,000
31	586	.06	949				1,170	.36	11,400
Total load (tons)			62,830			831,400			442,500

SAN JUAN RIVER BASIN—Continued

SAN JUAN RIVER NEAR BLUFF, UTAH—Continued

Suspended sediment, water year October 1944 to September 1945—Continued

Day	April			May			June		
	Mean discharge (second-feet)	Suspended sediment: Mean concentration (percent)	Suspended sediment: Tons per day	Mean discharge (second-feet)	Suspended sediment: Mean concentration (percent)	Suspended sediment: Tons per day	Mean discharge (second-feet)	Suspended sediment: Mean concentration (percent)	Suspended sediment: Tons per day
1	1,140	0.32	9,850	5,680	1.72	264,000	8,590	0.46	107,000
2	1,310	.31	11,000	7,060	1.91	364,000	6,600	.29	51,700
3	2,180	.51	30,000	8,210	1.62	359,000	5,260	.26	36,900
4	2,910	1.14	89,600	9,550	1.51	389,000	4,900	.45	59,500
5	2,570	1.08	74,900	9,230	1.38	344,000	4,660	.32	40,300
6	1,880	.69	35,000	9,740	1.48	389,000	4,990	.43	57,900
7	1,400	[1].60	22,700	9,630	.98	255,000	6,220	.60	101,000
8	1,430	[1].55	21,200	8,950	.92	222,000	6,640	1.10	196,000
9	2,340	.52	32,900	7,760	.90	189,000	6,310	.84	143,000
10	3,680	1.46	145,000	7,670	.60	124,000	6,530	1.17	206,000
11	4,060	1.44	158,000	7,360	.49	97,400	5,650	1.35	206,000
12	3,900	1.22	128,000	8,030	.46	99,700	5,360	.42	60,800
13	2,720	.98	72,000	8,990	.61	148,000	4,900	.25	33,100
14	2,260	.66	40,300	8,410	.50	114,000	5,320	.24	34,500
15	1,960	.32	16,900	8,350	.43	96,900	6,980	.33	62,200
16	1,710	.24	11,100	7,710	.44	91,600	8,510	.46	106,000
17	1,690	.27	12,300	6,260	.37	62,500	8,890	1.16	278,000
18	1,620	.27	11,800	5,060	.29	39,600	8,630	.54	126,000
19	1,490	.32	12,900	5,260	.26	36,900	7,860	.37	78,500
20	1,730	.32	14,900	6,440	.52	90,400	7,230	1.37	267,000
21	3,760	1.44	146,000	6,280	.38	64,400	6,890	.52	96,700
22	5,820	1.07	168,000	6,010	.36	58,400	6,370	.41	70,500
23	6,850	1.28	237,000	5,270	.21	29,900	6,260	.51	86,200
24	6,760	1.03	188,000	4,850	.28	36,700	6,930	.34	63,600
25	6,890	1.34	249,000	5,100	.30	41,300	7,020	.25	47,400
26	5,940	.83	133,000	6,190	.32	53,500	6,510	.28	49,200
27	5,100	1.01	139,000	7,170	.47	91,000	5,770	.23	35,800
28	4,690	.84	106,000	7,590	.35	71,700	5,010	.28	37,900
29	4,670	1.03	130,000	8,910	.55	132,000	4,750	.24	30,800
30	4,540	1.44	177,000	9,070	.53	130,000	4,500	.25	30,400
31				8,210	.43	95,300			
Total load (tons)			2,623,000			4,580,000			2,800,000
	July			August			September		
1	3,940	0.26	27,700	1,290	3.15	110,000	712	1.39	26,700
2	3,650	.19	18,700	2,470	8.54	570,000	592	.80	12,800
3	3,580	.17	16,400	2,360	15.5	988,000	603	.75	12,200
4	3,450	.20	18,600	2,630	6.52	463,000	706	1.22	23,300
5	3,290	.20	17,800	1,520	7.81	321,000	598	.97	15,700
6	3,120	.21	17,700	1,530	2.59	107,000	526	1.00	14,200
7	2,870	.21	16,300	2,180	2.30	135,000	443	.66	7,890
8	2,640	.13	9,270	3,700	12.4	1,240,000	373	.66	6,650
9	2,340	.08	5,050	1,760	6.93	329,000	347	.46	4,310
10	2,260	.11	6,710	1,980	3.00	160,000	334	.81	7,300
11	2,100	.13	7,370	1,710	1.97	91,000	317	.37	3,170
12	2,080	.12	6,740	2,560	5.43	375,000	300	.37	3,000
13	2,000	.11	5,940	1,830	3.68	182,000	280	.45	3,400
14	1,960	.09	4,760	1,620	2.47	108,000	264	.33	2,350
15	1,780	.09	4,330	1,550	1.10	46,000	256	.20	1,380
16	1,660	.07	3,140	1,480	1.48	59,100	276	.25	1,860
17	1,610	.09	3,910	1,220	1.44	47,400	230	.33	2,050
18	1,420	.10	3,830	985	.70	18,600	280	.29	2,190
19	1,350	.09	3,280	887	.79	18,900	260	.27	1,900
20	1,290	.09	3,130	838	.53	12,000	288	.26	2,020
21	1,260	.18	6,120	693	.56	10,500	248	.28	1,870
22	1,210	.61	19,900	632	.41	7,000	264	.39	2,780
23	1,370	.46	17,000	1,280	.41	14,200	260	.28	1,970
24	1,460	.92	36,300	2,925	6.83	539,000	252	.33	2,250
25	1,810	.33	16,100	1,120	7.78	235,000	280	.30	2,270
26	1,580	1.71	72,900	656	3.52	62,300	280	.28	2,120
27	1,550	1.23	72,400	745	2.44	49,100	276	.30	2,240
28	1,470	.78	31,000	1,330	8.94	321,000	309	.40	3,340
29	1,330	.45	16,200	1,250	3.79	128,000	334	.31	2,800
30	1,600	1.34	57,900	859	3.46	80,200	355	.26	2,490
31	1,370	.26	9,620	726	2.63	51,600			
Total load (tons)			556,100			6,879,000			178,500
Total load for year, tons									[2]20,000,000

[1] Estimated.

[2] Includes estimated loads for missing days.

SAN JUAN RIVER BASIN—Continued

SAN JUAN RIVER NEAR BLUFF, UTAH—Continued

Size analyses of suspended sediment, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Suspended sediment: Mean daily concentration (percent)	Tons per day	Weight of material in tube (grams)	Percent finer than indicated size (in millimeters): 0.00195	0.00276	0.0039	0.0055	0.0078	0.0110	0.0156	0.0312	0.0625	0.125	0.250	0.500	1.000
Oct. 1, 1944	1,720	4.00	186,000	1.1145			37	53	73	81	92						
Oct. 1	1,720	4.00	186,000	1.2725			30	43	57	78	90						
Oct. 1	1,720	4.00	186,000	2.2915			34	70	90	95							
Oct. 1	1,720	4.00	186,000	3.8238			16	32	78	94	98						
Oct. 1	1,720	4.00	186,000	7.4909			6	14	48	65	88						
Oct. 4	1,310	.78	27,600	[1] .8428			18	19	24	27	29	39	56	76	96	100	
Oct. 4	1,310	.78	27,600	[1] 1.0112		9	13	17	20	22	26	34	56	76	95	99	100
Oct. 4	1,310	.78	27,600	1.4981			22	36	62	75	86	91	92	94	98		
Oct. 8	1,200	.43	13,900	.8197			24	34	54	62	66	69	74	81	97	100	
Oct. 11	1,110	.25	7,490	.9846				12	35	49	52	55	61	75	93	99	100
Oct. 15	971	.23	6,030	1.0014		12	13	15	27	30	32	39	43	61	80	90	100
Oct. 18	2,350	.87	55,200	[1] 1.7603			22	38	47				56	68	94	100	
Oct. 22	1,330	.56	20,100	2.1835			20	36									
Oct. 25	1,010	.26	7,090	.8017		7	8	13	41	52	57	60	65	74	89	99	100
Oct. 29	784	.11	2,330	.4780		13	23	32	37	42	45	47	51	68	91	96	100
Nov. 1, 5	696	.10	1,880	[1] .9035									43	61	96	99	
Nov. 22, 26, 29	809	.11	2,400	[1] 1.3505			17	25	30	33	34		36	47	86	100	
Dec. 3, 6, 10, 13	674	.09	1,640	[1] 2.2903			11	13	16	20	23	24	26	36	82	100	
Dec. 17, 20, 24	613	.11	1,820	[1] 1.5617					20	22	23		24	35	78	98	
Dec. 27	1,080	.29	8,460	[1] 1.4899				16	40	48			51	64	93	100	
Dec. 31	778	.17	3,570	[1] 1.1055			29	35	40		45		54	63	95	100	
Jan. 3, 7, 10, 14, 17, 21, 1945	667	.11	1,980	[1] 3.8526				7	15	24			27	35	80	99	
Jan. 24	706	.07	1,330	[1] .2521			51	66					75	81	93	99	
Jan. 28	712	.10	1,920	[1] .7043				33	35	39			41	50	93	100	
Jan. 31	586	.06	949	[1] .3176				35	48	52			53	60	95	100	

Feb. 4	1,940	1.45	76,000	1.5071	--------	14	21	31	42	66	80	82	87	88	98	100	--------
Feb. 4	1,940	1.45	76,000	1.5429	--------	13	25	31	42	49	61	78	86	92	95	100	--------
Feb. 4	1,940	1.45	76,000	[1]2.7151	--------	--------	11	18	57	63	--------	--------	66	76	96	100	--------
Feb. 7	1,510	2.32	94,600	.6328	15	28	34	61	84	85	86	87	88	89	97	100	--------
Feb. 7	1,510	2.32	94,600	2.3884	--------	--------	8	19	48	60	70	97	--------	--------	--------	--------	--------
Feb. 11	824	.61	13,600	[1].7039	11	17	31	46	--------	--------	--------	--------	63	72	94	100	--------
Feb. 14	915	.34	8,400	[1]1.3638	--------	17	19	34	55	--------	--------	--------	62	73	98	100	--------
Feb. 18	1,650	1.35	60,100	.7959	11	20	30	48	62	66	68	77	84	89	93	96	100
Feb. 21	1,130	.70	21,400	[1].7318	13	20	44	70	78	80	81	82	86	88	95	99	100
Feb. 25	784	.35	7,410	1.2567	--------	19	30	46	71	76	77	78	79	80	84	88	--------
Feb. 28	810	.17	3,720	[1].9639	--------	26	32	44	55	--------	--------	--------	60	69	95	100	--------
Mar. 4	790	.14	2,990	[1].9121	--------	24	27	34	41	49	52	53	54	66	95	100	--------
Mar. 7	752	.12	2,440	.8339	--------	28	34	48	66	67	68	69	71	78	87	97	100
Mar. 18	2,340	.82	51,800	[1].8996	12	25	34	42	25	56	62	--------	67	77	94	100	--------
Mar. 21	1,230	.46	15,300	[1].6083	18	28	47	55	62	66	68	69	70	77	95	99	--------
Mar. 21	1,230	.46	15,300	[1]1.1408	10	16	30	41	64	66	--------	--------	67	75	96	100	--------
Mar. 25	1,680	.46	20,900	[1].5735	18	27	36	42	50	52	56	--------	61	71	94	99	--------
Mar. 25	1,680	.46	20,900	1.1374	9	15	20	30	52	55	56	59	61	72	95	100	--------
Mar. 28	1,410	.39	14,900	.4725	18	32	49	--------	--------	--------	--------	--------	56	66	93	99	--------
Mar. 28	1,410	.39	14,900	[1]1.0722	9	15	17	34	55	--------	--------	--------	56	66	93	99	--------
Apr. 1	1,140	.32	9,860	[1]1.6626	--------	22	33	--------	--------	--------	--------	--------	56	65	91	100	--------
Apr. 4	2,910	1.14	89,600	[1].6179	15	27	34	39	46	51	54	61	66	72	87	99	--------
Apr. 4	2,910	1.14	89,600	[1]1.2172	13	21	30	35	41	46	52	60	64	73	91	99	--------
Apr. 11	4,060	1.44	158,000	[1].7468	15	30	38	43	51	55	58	66	70	77	86	97	--------
Apr. 11	4,060	1.44	158,000	[1]1.4989	9	16	25	40	52	55	58	--------	66	74	84	98	--------
Apr. 15	1,960	.32	16,900	[1].7985	20	24	27	31	36	39	41	50	54	65	91	100	--------
Apr. 18	1,620	.27	11,800	[1].5869	11	17	25	29	33	36	39	44	49	61	90	98	--------
Apr. 22	5,820	1.07	168,000	[1].7515	14	17	23	29	34	36	39	48	67	73	84	96	--------
Apr. 25	6,890	1.34	249,000	[1].6349	16	18	19	27	31	35	38	48	59	74	85	98	--------
Apr. 25	6,890	1.34	249,000	[1]1.2910	12	13	17	24	28	33	35	48	52	68	79	97	--------
Apr. 29	4,670	1.03	130,000	[1].6664	12	15	17	22	25	27	29	37	48	64	79	97	--------
Apr. 29	4,670	1.03	130,000	[1]1.1549	7	13	15	23	28	31	33	43	55	68	84	98	--------
May 2	7,060	1.91	365,000	[1]4.1647	3	5	10	15	33	35	38	49	61	82	91	99	--------
May 6	9,740	1.48	389,000	[1]2.9433	4	11	13	21	27	29	34	42	55	72	87	96	--------
May 9	7,760	.90	188,000	3.9556	3	6	8	20	27	30	35	42	57	66	85	93	--------
May 13	8,990	.61	148,000	[1]2.8789	--------	--------	--------	--------	--------	--------	--------	--------	20	24	47	90	--------
May 16	7,710	.44	91,600	[1]2.0152	--------	--------	--------	--------	--------	--------	--------	--------	26	37	65	96	--------
May 24	4,850	.28	36,700	[1]1.6238	--------	--------	--------	8	--------	10	11	13	19	33	69	99	--------
May 27	7,170	.47	91,000	[1]2.3046	--------	--------	--------	6	--------	8	10	14	21	40	83	99	--------
May 30	9,070	.53	130,000	[1]1.9293	--------	5	8	10	11	13	15	20	27	43	73	97	--------
June 3	5,260	.26	37,000	[1]2.0218	--------	--------	--------	5	6	7	8	9	13	26	53	89	--------
June 14	5,320	.24	34,500	[1]1.1429	--------	--------	--------	--------	--------	--------	--------	--------	15	33	72	98	--------

See footnote at end of table.

SAN JUAN RIVER BASIN—Continued

SAN JUAN RIVER NEAR BLUFF, UTAH—Continued

Size analyses of suspended sediment, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Suspended sediment: Mean daily concentration (percent)	Tons per day	Weight of material in tube (grams)	Percent finer than indicated size (in millimeters): 0.00195	0.00276	0.0039	0.0055	0.0078	0.0110	0.0156	0.0312	0.0625	0.125	0.250	0.500	1.000
June 27	5,770	.23	35,800	[1]1.0395	----	----	----	----	----	----	----	----	14	32	71	97	----
July 3	3,580	.17	16,400	[1].7321	----	----	----	----	----	----	----	----	14	29	69	98	----
July 11	2,100	.13	7,370	[1].6662	----	----	----	25	31	34	35	37	38	56	94	100	----
July 15	1,780	.09	4,330	[1].4953	----	----	----	----	----	----	13	15	18	39	95	100	----
July 18	1,420	.10	3,830	[1].4678	----	----	----	----	----	----	----	----	20	36	69	94	----
July 22	1,210	.61	19,900	2.3607	6	11	20	30	71	86	87	89	91	92	99	100	----
July 25	1,810	.33	16,100	1.9559	9	18	21	23	69	75	----	----	82	84	96	99	----
July 29	1,330	.45	16,200	2.0083	11	13	28	51	75	80	83	88	90	----	98	----	----
Aug. 7	2,180	2.30	135,000	[1]2.4993	3	10	15	32	56	----	----	----	62	83	98	100	----
Aug. 12	2,560	5.43	375,000	[1]3.6900	4	10	16	25	31	33	38	44	49	65	95	99	----
Aug. 12	2,560	5.43	375,000	14.5893	1	3	4	6	23	35	39	43	46	68	95	100	----
Aug. 15	1,550	1.10	46,000	[1]2.7148	6	12	20	28	33	35	36	38	42	76	98	100	----
Aug. 19	887	.79	18,900	[1]2.3768	----	----	----	----	----	----	----	----	48	66	95	99	----
Aug. 22	632	.41	7,000	[1]2.4258	----	----	----	----	----	----	----	----	41	66	97	99	----
Aug. 26	656	3.52	62,300	3.1603	4	7	14	19	73	89	90	91	93	94	99	100	----
Aug. 29	1,250	3.79	128,000	1.3515	9	21	34	49	84	90	92	97	99	100	----	----	----
Aug. 29	1,250	3.79	128,000	2.6809	3	11	19	30	88	91	94	98	100	----	----	----	----
Sept. 2	592	.80	12,800	3.1568	3	7	13	25	72	80	81	----	88	90	98	100	----
Sept. 5	598	.97	15,700	4.1578	2	5	8	14	51	66	72	74	81	86	96	99	----
Sept. 16, 19, 23	265	.27	1,930	[1]3.3996	----	----	----	----	----	----	----	----	32	60	96	99	----
Sept. 26	280	.28	2,120	.8794	----	----	----	----	----	----	----	----	36	55	80	97	----

[1] Sizes greater than 0.0625 determined by sieve method.

ANIMAS RIVER AT FARMINGTON, N. MEX.

LOCATION.—At gaging station at bridge on State Highway 17, 0.6 mile southeast of Farmington and 1.1 miles upstream from mouth.
DRAINAGE AREA.—1,360 square miles.
RECORDS AVAILABLE.—Chemical analyses: June 1940 to September 1945.
EXTREMES, 1944–45.—Dissolved solids: Maximum, 590 parts per million Sept. 21–30; minimum, 144 parts per million June 11–20.
Total hardness: Maximum, 385 parts per million Sept. 21–30; minimum, 100 parts per million June 11–20.
EXTREMES, 1940–45.—Dissolved solids: Maximum, 1,500 parts per million Aug. 19, 1944; minimum, 111 parts per million June 11–17, 19–20, 1944.
Total hardness: Maximum, 613 parts per million Aug. 19, 1944; minimum, 82 parts per million June 21–30, 1944.
REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10⁵ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1-10, 1944	313	74.2	------	7.9	10	0.06	96	16	47		180	217	23	0.5	0.5	0.6	499	0.68	422	306	158	25
Oct. 11-20	320	71.6	------	------	11	.02	94	15	42		168	210	21	.5	.9	.2	477	.65	412	296	158	24
Oct. 21-31	286	72.2	------	------	10	.02	95	15	43		166	215	21	.5	.6	.3	482	.66	372	298	162	24
Nov. 1-10	284	76.3	------	------	12	.02	100	16	46		172	232	22	.5	.8	.3	514	.70	394	316	174	24
Nov. 11-20	311	74.4	------	------	9.6	.03	98	17	43		183	216	22	.4	1.0	.4	497	.68	417	314	164	23
Nov. 21-30	269	77.8	------	------	9.6	.04	103	17	47		192	228	23	.4	1.0	.4	524	.71	381	327	170	24
Dec. 1-10	260	80.8	------	------	9.6	.03	107	17	47		192	237	24	.4	1.2	.4	538	.73	378	337	180	23
Dec. 11-20	230	83.3	------	------	12	.04	111	19	48		207	241	26	.4	1.2	.4	561	.76	348	355	186	23
Dec. 21-31	233	81.7	------	------	11	.05	107	18	49		192	243	24	.4	1.2	.4	548	.75	345	341	184	24
Jan. 1-10, 1945	218	84.9	------	------	13	.08	115	19	50		205	257	26	.4	1.2	.4	583	.79	343	365	197	23
Jan. 11-20	252	79.5	------	7.9	10	.04	107	17	47		187	239	24	.5	1.3	.3	538	.73	366	337	184	23
Jan. 21-31	220	84.2	------	7.8	10	.04	114	18	48		193	256	25	.5	1.3	.3	568	.77	337	358	200	22
Feb. 1-10	254	81.2	------	7.8	9.6	.05	107	17	49		186	242	25	.5	1.4	.3	543	.74	372	337	184	24
Feb. 11-19	241	80.5	------	8.0	10	.02	104	18	50		184	243	25	.5	1.3	.3	542	.74	353	334	182	25
Feb. 20-28	242	81.4	------	8.0	9.0	.03	106	18	49		188	244	25	.5	1.0	.3	545	.74	356	338	184	24
Mar. 1-10	241	81.0	------	7.9	9.5	.02	106	18	49		184	247	25	.5	1.1	.3	547	.74	356	338	188	24
Mar. 11-20	345	74.8	------	7.9	10	.03	94	18	46		180	219	21	.5	1.9	.3	499	.68	465	308	161	24
Mar. 21-31	347	74.0	------	7.9	9.5	.03	95	19	41		182	215	21	.5	1.5	.3	492	.67	461	315	166	22

SAN JUAN RIVER BASIN—Continued

ANIMAS RIVER AT FARMINGTON, N. MEX.—Continued

Chemical analyses, in parts per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1-10	474	60.2	------	7.9	9.2	0.03	79	16	28		163	162	14	0.4	1.8	0.2	391	0.53	500	263	130	19
Apr. 11-20	446	58.8	------	7.7	8.4	.01	80	15	27		167	155	13	.3	1.2	.3	382	.52	460	261	124	18
Apr. 21-22, 24-30	1,061	40.1	------	7.9	8.6	.01	57	10	14		133	88	8.0	.2	1.3	.1	253	.34	725	184	74	14
May 1-10	2,380	28.7	------	7.9	8.2	.07	43	6.7	7.6		112	50	3.8	.3	1.3	------	176	.24	1,130	135	43	11
May 11-20	2,353	25.9	------	7.9	7.4	.09	38	6.0	7.6		95	49	3.8	.3	.8	------	160	.22	1,020	120	42	12
May 21-31	2,573	25.5	------	8.0	3.5	.03	36	5.5	8.7		90	49	3.5	.3	.9	.1	152	.21	1,060	112	38	14
June 1-10	2,027	27.6	------	7.9	6.8	.03	38	5.8	10		90	56	5.0	.3	.8	.1	167	.23	914	119	45	16
June 11-20	2,996	24.0	------	7.9	6.0	.09	32	4.8	9.9		80	47	4.0	.2	.8	.1	144	.20	1,160	100	34	18
June 21-30	2,461	24.5	------	7.9	6.0	.03	34	4.7	9.9		78	52	4.5	.3	.6	.1	150	.20	997	104	40	17
July 1-10	1,254	32.1	------	7.8	6.4	.03	40	6.3	13		106	53	7.0	.3	.4	.1	179	.24	606	126	40	18
July 11-20	742	42.5	------	7.8	6.8	.02	55	8.4	19		104	107	10	.3	.6	.1	258	.35	517	172	86	19
July 21-31	635	48.2	------	8.0	12	.02	62	10	27		125	126	13	.3	1.1	.1	313	.43	537	196	93	23
Aug. 1-10	584	51.5	------	7.9	12	.03	67	11	27		132	137	13	.4	.9	.1	333	.45	525	212	104	22
Aug. 11-20	420	54.7	------	7.9	10	.02	72	12	29		132	154	15	.4	.6	.2	358	.49	406	229	121	21
Aug. 21-31	233	68.3	------	7.9	12	.05	88	14	40		152	203	18	.5	.7	.2	451	.61	284	277	152	24
Sept. 1-10	159	75.8	------	7.8	13	.04	96	16	50		160	241	21	.5	.7	.4	517	.70	222	306	174	26
Sept. 11-20	108	84.1	------	------	12	.06	107	19	49		175	265	22	.5	.7	.4	561	.76	164	345	202	24
Sept. 21-30	121	88.2	------	------	12	.04	123	19	42		187	277	24	.4	.7	.2	590	.80	193	385	232	19
Weighted average	720	41.0	------	------	7.7	0.05	55	9.0	19		118	101	9.5	0.3	0.9	0.1	261	0.35	507	174	78	19

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	313	-----	-----	-----	-----	-----	4.79	1.32	2.05	2.95	4.52	0.65	0.03	0.01	-----	-----	-----	-----	-----	-----	25
Oct. 11-20	320	-----	-----	-----	-----	-----	4.69	1.23	1.83	2.75	4.37	.59	.03	.01	-----	-----	-----	-----	-----	-----	24
Oct. 21-31	286	-----	-----	-----	-----	-----	4.74	1.23	1.86	2.72	4.48	.59	.03	.01	-----	-----	-----	-----	-----	-----	24
Nov. 1-10	284	-----	-----	-----	-----	-----	4.99	1.32	2.00	2.82	4.83	.62	.03	.01	-----	-----	-----	-----	-----	-----	24
Nov. 11-20	311	-----	-----	-----	-----	-----	4.89	1.40	1.87	3.00	4.50	.62	.02	.02	-----	-----	-----	-----	-----	-----	23
Nov. 21-30	269	-----	-----	-----	-----	-----	5.14	1.40	2.05	3.15	4.75	.65	.02	.02	-----	-----	-----	-----	-----	-----	24
Dec. 1-10	260	-----	-----	-----	-----	-----	5.34	1.40	2.06	3.15	4.93	.68	.02	.02	-----	-----	-----	-----	-----	-----	23
Dec. 11-20	230	-----	-----	-----	-----	-----	5.54	1.56	2.08	3.39	5.02	.73	.02	.02	-----	-----	-----	-----	-----	-----	23
Dec. 21-31	233	-----	-----	-----	-----	-----	5.34	1.48	2.11	3.15	5.06	.68	.02	.02	-----	-----	-----	-----	-----	-----	24
Jan. 1-10, 1945	218	-----	-----	-----	-----	-----	5.74	1.56	2.18	3.36	5.35	.73	.02	.02	-----	-----	-----	-----	-----	-----	23
Jan. 11-20	252	-----	-----	-----	-----	-----	5.34	1.40	2.04	3.07	4.98	.68	.03	.02	-----	-----	-----	-----	-----	-----	23
Jan. 21-31	220	-----	-----	-----	-----	-----	5.69	1.48	2.08	3.16	5.33	.71	.03	.02	-----	-----	-----	-----	-----	-----	22
Feb. 1-10	254	-----	-----	-----	-----	-----	5.34	1.40	2.11	3.05	5.04	.71	.03	.02	-----	-----	-----	-----	-----	-----	24
Feb. 11-19	241	-----	-----	-----	-----	-----	5.19	1.48	2.17	3.02	5.06	.71	.03	.02	-----	-----	-----	-----	-----	-----	25
Feb. 20-28	242	-----	-----	-----	-----	-----	5.29	1.48	2.15	3.08	5.08	.71	.03	.02	-----	-----	-----	-----	-----	-----	24
Mar. 1-10	241	-----	-----	-----	-----	-----	5.29	1.48	2.15	3.02	5.14	.71	.03	.02	-----	-----	-----	-----	-----	-----	24
Mar. 11-20	345	-----	-----	-----	-----	-----	4.69	1.48	1.99	2.95	4.56	.59	.03	.03	-----	-----	-----	-----	-----	-----	24
Mar. 21-31	347	-----	-----	-----	-----	-----	4.74	1.56	1.80	2.98	4.48	.59	.03	.02	-----	-----	-----	-----	-----	-----	22
Apr. 1-10	474	-----	-----	-----	-----	-----	3.94	1.32	1.22	2.67	3.37	.39	.02	.03	-----	-----	-----	-----	-----	-----	19
Apr. 11-20	446	-----	-----	-----	-----	-----	3.99	1.23	1.16	2.74	3.23	.37	.02	.02	-----	-----	-----	-----	-----	-----	18
Apr. 21-22, 24-30	1,061	-----	-----	-----	-----	-----	2.85	.82	.60	2.18	1.83	.23	.01	.02	-----	-----	-----	-----	-----	-----	14
May 1-10	2,380	-----	-----	-----	-----	-----	2.15	.55	.33	1.84	1.04	.11	.02	.02	-----	-----	-----	-----	-----	-----	11
May 11-20	2,353	-----	-----	-----	-----	-----	1.90	.49	.33	1.56	1.02	.11	.02	.01	-----	-----	-----	-----	-----	-----	12
May 21-31	2,573	-----	-----	-----	-----	-----	1.80	.45	.38	1.48	1.02	.10	.02	.01	-----	-----	-----	-----	-----	-----	14
June 1-10	2,027	-----	-----	-----	-----	-----	1.90	.48	.44	1.48	1.17	.14	.02	.01	-----	-----	-----	-----	-----	-----	16
June 11-20	2,996	-----	-----	-----	-----	-----	1.60	.39	.43	1.31	.98	.11	.01	.01	-----	-----	-----	-----	-----	-----	18
June 21-30	2,461	-----	-----	-----	-----	-----	1.70	.39	.43	1.28	1.08	.13	.02	.01	-----	-----	-----	-----	-----	-----	17
July 1-10	1,254	-----	-----	-----	-----	-----	2.00	.52	.55	1.74	1.10	.20	.02	.01	-----	-----	-----	-----	-----	-----	18
July 11-20	742	-----	-----	-----	-----	-----	2.74	.69	.81	1.70	2.23	.28	.02	.01	-----	-----	-----	-----	-----	-----	19
July 21-31	635	-----	-----	-----	-----	-----	3.09	.82	1.17	2.05	2.62	.37	.02	.02	-----	-----	-----	-----	-----	-----	23
Aug. 1-10	584	-----	-----	-----	-----	-----	3.34	.90	1.17	2.16	2.85	.37	.02	.01	-----	-----	-----	-----	-----	-----	22
Aug. 11-20	420	-----	-----	-----	-----	-----	3.59	.99	1.24	2.16	3.21	.42	.02	.01	-----	-----	-----	-----	-----	-----	21
Aug. 21-31	233	-----	-----	-----	-----	-----	4.39	1.15	1.73	2.49	4.23	.51	.03	.01	-----	-----	-----	-----	-----	-----	24
Sept. 1-10	159	-----	-----	-----	-----	-----	4.79	1.32	2.16	2.62	5.02	.59	.03	.01	-----	-----	-----	-----	-----	-----	26
Sept. 11-20	108	-----	-----	-----	-----	-----	5.34	1.56	2.15	2.87	5.52	.62	.03	.01	-----	-----	-----	-----	-----	-----	24
Sept. 21-30	121	-----	-----	-----	-----	-----	6.14	1.56	1.84	3.06	5.77	.68	.02	.01	-----	-----	-----	-----	-----	-----	19
Weighted average	720	-----	-----	-----	-----	-----	2.74	0.74	0.83	1.93	2.10	0.27	0.02	0.01	-----	-----	-----	-----	-----	-----	19

GILA RIVER BASIN

GILA RIVER NEAR SOLOMONSVILLE, ARIZ.

LOCATION.—Within half a mile of gage, approximately 8 miles northeast of Solomonsville and 13 miles downstream from San Francisco River.

DRAINAGE AREA.—Approximately 7,950 square miles.

RECORDS AVAILABLE.—Chemical analyses: June 1943 to September 1945.

EXTREMES, 1944–45.—Dissolved solids: Maximum, 869 parts per million July 11–20; minimum, 247 parts per million Mar. 21–30.
Total hardness: Maximum, 271 parts per million June 21–30; minimum, 126 parts per million Mar. 21–30.

EXTREMES, 1943–45.—Dissolved solids: Maximum, 869 parts per million July 11–20, 1945; minimum, 217 parts per million Sept. 25, 27–30, 1944.
Total hardness: Maximum, 271 parts per million June 21–30, 1945; minimum, 118 parts per million Sept. 25, 27–30, 1944.

REMARKS.—Records of discharge for water year October 1944 to September 1945 are given in Water-Supply Paper 1039.

Chemical analyses, in parts per million, water year October 1944 to September 1945

Date of collection	Mean discharge (second-feet)	Specific conductance ($K \times 10^5$ at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Oct. 1–10, 1944	182	81.7	------	------	42	0.11	58	14	92	7.0	228	42	126	1.4	0.5	0.2	495	0.67	243	202	15	49
Oct. 11–12, 14–20	145	78.9	------	------	34	.17	56	14	96	7.0	218	43	128	1.4	2.5	.2	489	.67	191	198	19	50
Oct. 21–31	147	78.9	------	------	39	.12	56	14	97	6.2	225	44	126	1.6	1.5	.4	496	.68	197	198	13	51
Nov. 1–10	179	74.0	------	------	35	.14	55	13	89	5.3	229	42	108	1.6	1.0	.4	463	.63	224	191	4	49
Nov. 11–20	206	72.2	------	------	36	.14	54	14	84	5.8	221	41	104	1.4	3.8	1.0	453	.62	252	192	12	48
Nov. 21–23, 25–30	337	61.2	------	------	34	.13	48	13	68	6.2	204	36	82	1.4	1.0	.2	390	.53	355	174	6	45
Dec. 1–10	252	68.2	------	------	33	.15	53	14	80	5.1	228	39	96	1.4	.5	1.2	434	.59	295	190	3	47
Dec. 11–20	212	72.2	------	------	38	.10	54	14	83	6.0	227	41	102	1.4	.5	.2	452	.61	258	192	6	47
Dec. 21–31	269	64.7	------	------	36	.10	49	12	76	6.1	210	38	88	1.4	.8	.2	411	.56	299	172	0	48
Jan. 1–10, 1945	284	64.2	------	------	39	.17	49	12	75	5.3	211	38	86	1.4	.5	.0	410	.56	314	172	0	48
Jan. 11–20	273	67.8	------	7.9	32	.16	50	12	78		212	39	89	1.6	1.0	.1	407	.55	300	174	1	49
Jan. 21–31	314	61.7	------	7.9	28	.06	46	11	70		197	37	77	1.5	.8	.1	368	.50	312	160	0	49
Feb. 1–10	407	57.2	------	7.9	29	.06	44	11	63		188	35	68	1.4	1.0	.1	345	.47	379	155	1	47
Feb. 11–19	450	52.3	------	7.9	27	.07	41	10	57		181	31	58	1.4	.8	.1	315	.43	383	144	0	46
Feb. 20–28	376	54.7	------	7.8	28	.06	44	11	62		193	34	65	1.4	1.2	.1	342	.47	347	155	0	46
Mar. 1–5, 7–10	329	61.5	------	7.8	32	.05	46	12	70		206	37	74	1.4	.9	.1	375	.51	333	164	0	48
Mar. 11–20	606	45.2	------	7.9	32	.09	39	10	45		179	27	41	1.1	.4	.1	284	.39	465	138	0	41
Mar. 21–30	815	38.2	------	7.9	32	.09	35	9.5	35		158	26	30	.8	1.3	.1	247	.34	544	126	0	37

Apr. 1-10	776	41.7	-	7.9	35	.10	35	9.6	42		160	26	40	.8	1.0	.2	268	.36	562	127	0	42
Apr. 11-12, 14-15, 17-20	687	45.5	-	7.8	36	.12	37	9.3	46		157	27	51	.9	.5	.2	285	.39	529	130	2	44
Apr. 21-30	673	43.8	-	7.8	35	.13	36	9.4	41		149	25	48	.8	.8	.3	270	.37	491	128	6	41
May 1-10	508	50.1	-	7.6	41	.09	36	10	52		158	27	60	1.0	.9	.1	306	.42	420	131	2	47
May 11-15, 18-20	289	69.0	-	7.8	54	.09	46	11	83		192	36	100	1.2	.5	.2	426	.58	332	160	2	53
May 21-31	167	90.8	-	8.1	55	.10	56	13	115		217	42	155	1.4	.8	.1	545	.74	246	193	15	57
June 1-10	112	109	-	8.1	58	.08	62	15	145		185	51	208	1.4	1.0	.2	650	.88	197	216	35	59
June 11-20	74.4	131	-	8.0	56	.08	70	16	178		214	53	278	1.6	.5	.3	759	1.03	1,520	240	65	63
June 21-30	49.8	150	-	7.9	56	.10	79	18	204		208	52	344	1.4	1.0	.2	858	1.17	1,150	271	100	62
July 1-5, 7-10	63.5	145	-	7.8	62	.02	80	16	195		216	55	320	1.4	.6	.2	836	1.14	1,430	266	88	62
July 11-20	52.7	149	-	7.8	61	.02	80	16	208		210	54	345	1.2	.5	.1	869	1.18	1,240	266	94	63
July 21-26	48.5	146	-	7.8	61	.02	75	17	207		194	56	345	1.0	.7	.2	858	1.17	1,120	257	98	64
July 27-31	245	64.5	-	7.9	39	.23	45	11	73		190	24	94	1.2	.5	.1	382	.52	253	158	2	50
Aug. 1-10	506	49.9	-	-	42	.08	45	10	46		197	21	49	.6	.4	.2	311	.42	425	154	0	40
Aug. 11-13, 15-21	[1] 618	65.0	-	-	46	.04	53	12	65		206	27	88	1.0	.3	.2	394	.54	657	182	12	44
Aug. 14	278	106	-	-							210	56	196									
Aug. 22-28, 30-31	[2] 331	74.3	-	-	46	.06	55	13	80		206	28	115	1.0	1.3	.1	441	.60	394	190	22	48
Aug. 29	141	106	-	-							221	43	204									
Sept. 1-10	106	113	-	-	52	.04	69	15	145		222	42	226	1.4	.8	.2	661	.90	189	234	52	57
Sept. 11-20	78.9	125	-	8.0	50	.11	71	16	164		221	40	264	1.2	.9	.1	716	.97	153	243	62	59
Sept. 21	184	64.1	-								200		86									
Sept. 22-30	[3] 86.2	129	-	8.0	52	.11	72	16	180		239	41	280	1.4	.6	.1	761	1.03	177	246	50	61
Weighted average	309	60.7	-	-	37	0.10	46	11	69		189	32	82	1.1	0.9	0.2	372	0.51	310	160	5	48

Chemical analyses, in equivalents per million, water year October 1944 to September 1945

Oct. 1-10, 1944	182	-	-	-	-	-	2.89	1.15	4.00	0.18	3.74	0.87	3.55	0.07	0.01	-	-	-	-	-	-	49
Oct. 11-12, 14-20	145	-	-	-	-	-	2.80	1.15	4.17	.18	3.57	.90	3.61	.07	.04	-	-	-	-	-	-	50
Oct. 21-31	147	-	-	-	-	-	2.80	1.15	4.22	.16	3.69	.92	3.55	.08	.02	-	-	-	-	-	-	51
Nov. 1-10	179	-	-	-	-	-	2.75	1.07	3.87	.14	3.75	.87	3.05	.08	.02	-	-	-	-	-	-	49
Nov. 11-20	206	-	-	-	-	-	2.70	1.15	3.65	.15	3.62	.85	2.93	.07	.06	-	-	-	-	-	-	48
Nov. 21-23, 25-30	337	-	-	-	-	-	2.40	1.07	2.96	.16	3.34	.75	2.31	.07	.02	-	-	-	-	-	-	45
Dec. 1-10	252	-	-	-	-	-	2.65	1.15	3.48	.13	3.74	.81	2.71	.07	.01	-	-	-	-	-	-	47
Dec. 11-20	212	-	-	-	-	-	2.70	1.15	3.61	.15	3.72	.85	2.88	.07	.01	-	-	-	-	-	-	47
Dec. 21-31	269	-	-	-	-	-	2.45	.99	3.30	.16	3.44	.79	2.48	.07	.01	-	-	-	-	-	-	48
Jan. 1-10, 1945	284	-	-	-	-	-	2.45	.99	3.26	.14	3.46	.79	2.43	.07	.01	-	-	-	-	-	-	48
Jan. 11-20	273	-	-	-	-	-	2.50	.99	3.40		3.47	.81	2.51	.08	.02	-	-	-	-	-	-	49
Jan. 21-31	314	-	-	-	-	-	2.30	.90	3.06		3.23	.77	2.17	.08	.01	-	-	-	-	-	-	49
Feb. 1-10	407	-	-	-	-	-	2.20	.90	2.72		3.08	.73	1.92	.07	.02	-	-	-	-	-	-	47
Feb. 11-19	450	-	-	-	-	-	2.05	.82	2.47		2.97	.65	1.64	.07	.01	-	-	-	-	-	-	46
Feb. 20-28	376	-	-	-	-	-	2.20	.90	2.69		3.16	.71	1.83	.07	.02	-	-	-	-	-	-	46
Mar. 1-5, 7-10	329	-	-	-	-	-	2.30	.99	3.03		3.38	.77	2.09	.07	.01	-	-	-	-	-	-	48
Mar. 11-20	606	-	-	-	-	-	1.95	.82	1.95		2.93	.56	1.16	.06	.01	-	-	-	-	-	-	41
Mar. 21-30	815	-	-	-	-	-	1.75	.78	1.51		2.59	.54	.85	.04	.02	-	-	-	-	-	-	37

See footnotes at end of table.

GILA RIVER BASIN—Continued

GILA RIVER NEAR SOLOMONSVILLE, ARIZ.—Continued

Chemical analyses, in equivalents per million, water year October 1944 to September 1945—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K×10[5] at 25° C.)	Temperature (° F.)	pH	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Apr. 1-10	776						1.75	0.79	1.81		2.62	0.54	1.13	0.04	0.02							42
Apr. 11-12, 14-15, 17-20	687						1.85	.76	2.02		2.57	.56	1.44	.05	.01							44
Apr. 21-30	673						1.80	.77	1.79		2.44	.52	1.35	.04	.01							41
May 1-10	508						1.80	.82	2.28		2.59	.56	1.69	.05	.01							47
May 11-15, 18-20	289						2.30	.90	3.59		3.15	.75	2.82	.06	.01							53
May 21-31	167						2.79	1.07	5.02		3.56	.87	4.37	.07	.01							57
June 1-10	112						3.09	1.23	6.32		3.62	1.06	5.87	.07	.02							59
June 11-20	74.4						3.49	1.32	7.73		3.51	1.10	7.84	.08	.01							63
June 21-30	49.8						3.94	1.48	8.86		3.41	1.08	9.70	.07	.02							62
July 1-5, 7-10	63.5						3.99	1.32	8.49		3.54	1.15	9.03	.07	.01							62
July 11-20	52.7						3.99	1.32	9.05		3.44	1.12	9.73	.06	.01							63
July 21-26	48.5						3.74	1.40	9.00		3.18	1.17	9.73	.05	.01							64
July 27-31	245						2.25	.90	3.18		3.11	.50	2.65	.06	.01							50
Aug. 1-10	506						2.25	.82	2.02		3.23	.44	1.38	.03	.01							40
Aug. 11-13, 15-21	[1] 618						2.64	.99	2.84		3.38	.56	2.48	.05	.00							44
Aug. 14	278										3.44	1.17	5.53									
Aug. 22-28, 30-31	[2] 331						2.74	1.07	3.46		3.38	.58	3.24	.05	.02							48
Aug. 29	141										3.62	.90	5.75									
Sept. 1-10	106						3.44	1.23	6.29		3.64	.87	6.37	.07	.01							57
Sept. 11-20	78.9						3.54	1.32	7.11		3.62	.83	7.45	.06	.01							59
Sept. 21	184										3.28		2.43									
Sept. 22-30	[3] 86.2						3.59	1.32	7.84		3.92	.85	7.90	.07	.01							61
Weighted average	309						2.30	0.90	3.00		3.10	0.67	2.31	0.06	0.01							48

[1] Includes discharge for Aug. 14. [2] Includes discharge for Aug. 29. [3] Includes discharge for Sept. 21.

MISCELLANEOUS ANALYSES OF STREAMS IN COLORADO RIVER BASIN

Chemical analyses, in parts per million

Date of collection	Mean discharge (second-feet)	Specific conductance (K × 10^5 at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
															Parts per million	Tons per acre-foot	Tons per day	Total	Noncarbonate	
Colorado River below Boulder Dam, Ariz.-Nev.																				
Nov. 30, Dec. 1, 4–7, 1944		106			92	28	101		167	307	76		2.0		688	0.94		344	208	39
Jan. 11, 15–19, 1945		105	14	0.10	94	27	89	7.0	160	301	72		2.5		685	.93		346	214	35
July 11–14, 16–20		104	14	.07	91	30	83	10	164	290	74	0.3	2.2	0.2	675	.92		350	216	33
Colorado River at Willow Beach, Ariz.																				
Feb. 13, 1945		105								279										
Mar. 13		104								288										
Apr. 13		102								288										
May 24		107							170	294	78									
June 13		102							162	287	72									
Aug. 24		98.6							149	282										
San Juan River near Blanco, N. Mex.																				
Oct. 18, 25, 1944		38.3							128	78										
Nov. 2, 11, 15, 21, 28		47.2							146	112										
Dec. 12, 14, 18		57.4							172	141										
Jan. 2, 9, 18, 1945		51.4							153	129										
Mar. 6		51.7			48	13	46		144	136	10		0.2		324	0.44		174	56	37
Sept. 11		44.5							155	101	5									
San Juan River at Bloomfield, N. Mex.																				
Mar. 6, 1945		58.5			54	16	53		156	169	8		0.9		378	0.51		201	73	36
Sept. 11		57.0			55	12	58		164	161	7		1.7		376	.51		186	52	41

MISCELLANEOUS ANALYSES OF STREAMS IN COLORADO RIVER BASIN—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K × 10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
Piedra River near Piedra, Colo.																				
Sept. 11, 1945		44.0			53	8.7	30		114	125	7		0.3		280	0.38		168	74	28
Animas River near Cedar Hill, N. Mex.																				
Sept. 12, 1945		54.9			75	15	20		153	128	23		0.2		337	0.46		248	123	15
La Plata River near Farmington, N. Mex.																				
Oct. 10, 1944		288			263	108	329		226	1,460	79		0.1		2,350	3.20		1,100	916	39
Oct. 26		294							239	1,470										
Nov. 7, 8, 13, 17, 22, 27		278							264	1,370										
Dec. 4, 12		241							292	1,130										
Jan. 1, 5, 8, 11, 15, 1945		244							273	1,170										
Mar. 7		218			224	103	172		266	1,010	60		2.5		1,700	2.31		982	764	28
Apr. 16		164			150	99	146		252	802	40		2.1		1,360	1.85		782	575	29
July 20		399			323	92	561		246	1,770	255		.3		3,120	4.24		1,180	983	51
Sept. 10		502			372	110	777		164	2,250	420		.4		4,010	5.45		1,380	1,250	55
Rio Puerco near Adamana, Ariz.																				
May 2, 1945		59.7			39	10	79		172	112	36		2.0		363	0.49		138	0	55

Bright Angel Creek near Grand Canyon, Ariz.

Oct. 16, 1944		35.0						224											
Nov. 16		35.1						223											
Dec. 16		35.8						229											
Jan. 16, 1945		35.7						221											
Feb. 16		35.6			39	21	8.3	222	9.4	7.0		0.2		194	0.26		184	2	9
Mar. 16		35.8			39	21	6.9	220	9.7	6.0		.1		191	.26		184	4	8
Apr. 27		21.3						128											
June 16		34.3						204	4.7										
July 16		34.3						216											
Aug. 16		38.1						214											
Sept. 16		35.6	8.5		38	22	4.8	222	5.1	5.5		.4		185	.25		186	4	5

Bill Williams River at Planet, Ariz.

Oct. 3, 1944		62.6						237	102										
Oct. 17		63.5						238	102										
Nov. 14		64.7						235	53										
Dec. 13		64.2						232	54										
Jan. 16, 1945		63.8						231	54	55									
Feb. 13		64.6						236	53	58		4.0							
Mar. 7		56.4						244	43										
Mar. 13		40.4						172	30										
Apr. 17		63.3						236	52										
May 15		64.2						235	53	54									
June 11		63.2						230	53	54									
July 17		62.9						226	51	50									
Aug. 14		76.8			58	22	79	357	30	58		1.3		424	0.58		235	0	42
Sept. 11		64.1			40	12	82	231	56	56		1.2		361	.49		150	0	54

Gila River at Safford, Ariz.

Oct. 1, 3-10, 1944		82.9	40	0.08	59	15	96	230	47	124	1.4	0.5	0.2	496	0.67		208	20	50
Oct. 11-20		85.3	36	.14	58	14	109	231	51	136	1.4	2.0	.2	521	.71		202	12	54
Oct. 22-31		90.5	40	.18	57	13	128	236	64	148	1.4	2.5	.4	570	.78		196	2	59
Nov. 1-10		79.4						124											
Nov. 11-16, 19-20		76.1						112											

MISCELLANEOUS ANALYSES OF STREAMS IN COLORADO RIVER BASIN—Continued

Chemical analyses, in parts per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K × 10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
															Parts per million	Tons per acre-foot	Tons per day	Total	Noncarbonate	
Gila River at Bylas, Ariz.																				
Oct. 1–4, 1944		135	32	0.15	83	22	183	6.4	256	119	262	1.2	1.0	1.0	836	1.14		298	88	57
Oct. 5–10		258	41	.14	140	40	394		330	259	585	1.5	2.5	2.5	1,630	2.22		514	244	63
Oct. 11–20		378									950									
Oct. 21–28		409									1,060									
Oct. 29–31		232									520									
Nov. 1–10		278									640									
Nov. 11–20		243									545									
Nov. 21–30		139									255									
Dec. 1–9		162									325									
San Francisco River at Clifton, Ariz.																				
Oct. 1–8, 10, 1944		88.7	48	0.09	64	15	104	8.8	218	21	180	0.7	1.0	0.2	550	0.75		221	42	49
Oct. 11, 13–20		82.6	32	.12	58	13	99	7.6	195	18	168	.7	1.0	.0	494	.67		198	38	51
Oct. 21–27		106	42	.18	67	14	135	9.0	207	21	240	.8	1.0	.2	632	.86		224	55	55
Verde River near Cottonwood, Ariz.																				
Mar. 13, 1945		17.5					18		90	24	4							66		37
Hassayampa River at Wickenburg, Ariz.																				
Mar. 13, 1945		35.8					27		170	34	10		1.2					132		31

Chemical analysis in equivalents per million

Colorado River below Boulder Dam, Ariz.-Nev.

Nov. 30, Dec. 1, 4-7, 1944					4.59	2.30	4.41		2.74	6.39	2.14		0.30							35
Jan. 11, 15-19, 1945					4.69	2.22	3.87	0.18	2.62	6.27	2.03		.04							39
July 11-14, 16-20					4.54	2.47	3.61	.26	2.69	6.04	2.09	0.02	.04							33

Colorado River at Willow Beach, Ariz.

Feb. 13, 1945										5.81										
Mar. 13										6.00										
Apr. 13										6.00										
May 24									2.79	6.12	2.20									
June 13									2.65	5.98	2.03									
Aug. 24									2.44	5.87										

San Juan River near Blanco, N. Mex.

Oct. 18, 25, 1944									2.10	1.62										
Nov. 2, 11, 15, 21, 28									2.39	2.33										
Dec. 12, 14, 18									2.82	2.94										
Jan. 2, 9, 18, 1945									2.51	2.69										
Mar. 6					2.40	1.07	2.00		2.36	2.83	0.28		0.00							37
Sept. 11									2.54	2.10	.14									

San Juan River at Bloomfield, N. Mex.

Mar. 6, 1945					2.70	1.32	2.30		2.56	3.52	0.23		0.01							36
Sept. 11					2.74	.99	2.54		2.69	3.35	.20		.03							41

Piedra River near Piedra, Colo.

Sept. 11, 1945					2.64	0.72	1.31		1.87	2.60	0.20		0.00							28

Animas River near Cedar Hill, N. Mex.

Sept. 12, 1945					3.74	1.23	0.85		2.51	2.66	0.65		0.00							15

MISCELLANEOUS ANALYSES OF STREAMS IN COLORADO RIVER BASIN—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K × 10⁵ at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids: Parts per million	Dissolved solids: Tons per acre-foot	Dissolved solids: Tons per day	Hardness as $CaCO_3$: Total	Hardness as $CaCO_3$: Noncarbonate	Percent sodium
La Plata River near Farmington, N. Mex.																				
Oct. 10, 1944					13.13	8.88	14.32		3.70	30.40	2.23		0.00							39
Oct. 26									3.92	30.61										
Nov. 7, 8, 13, 17, 22, 27									4.33	28.52										
Dec. 4, 12									4.79	23.53										
Jan. 1, 5, 8, 11, 15, 1945									4.47	24.36										
Mar. 7					11.18	8.47	7.47		4.36	21.03	1.69		.04							28
Apr. 16					7.49	8.14	6.36		4.13	16.70	1.13		.03							29
July 20					16.12	7.57	24.38		4.03	36.85	7.19		.00							51
Sept. 10					18.56	9.05	33.79		2.69	46.85	11.85		.01							55
Rio Puerco near Adamana, Ariz.																				
May 2, 1945					1.95	0.82	3.43		2.82	2.33	1.02		0.03							55
Bright Angel Creek near Grand Canyon, Ariz.																				
Oct. 16, 1944									3.67											
Nov. 16									3.65											
Dec. 16									3.75											
Jan. 16, 1945									3.62											
Feb. 16					1.95	1.73	0.36		3.64	0.20	0.20		0.00							9
Mar. 16					1.95	1.73	.30		3.61	.20	.17		.00							8
Apr. 27									2.10											
June 16									3.34	.10										
July 16									3.54											
Aug. 16									3.51											
Sept. 16					1.90	1.81	.21		3.64	.11	.16		.01							5

Bill Williams River at Planet, Ariz.																				
Oct. 3, 1944									3.88	2.12										
Oct. 17									3.90	2.12										
Nov. 14									3.85	1.10										
Dec. 13									3.80	1.12										
Jan. 16, 1945									3.79	1.12	1.55									
Feb. 13									3.87	1.10	1.64		0.06							
Mar. 7									4.00	.90										
Mar. 13									2.82	.62										
Apr. 17									3.87	1.08										
May 15									3.85	1.10	1.52									
June 11									3.77	1.10	1.52									
July 17									3.70	1.06	1.41									
Aug. 14					2.89	1.81	3.43		5.85	.62	1.64		.02							42
Sept. 11					2.00	.99	3.57		3.79	1.17	1.58		.02							54
Gila River at Safford, Ariz.																				
Oct. 1, 3–10, 1944					2.94	1.23	4.16		3.77	0.98	3.50	0.07	0.01							50
Oct. 11–20					2.89	1.15	4.75		3.79	1.06	3.84	.07	.03							54
Oct. 22–31					2.85	1.07	5.56		3.87	1.33	4.17	.07	.04							59
Nov. 1–10											3.50									
Nov. 11–16, 19–20											3.16									
Gila River at Bylas, Ariz.																				
Oct. 1–4, 1944					4.14	1.81	7.96	0.16	4.20	2.48	7.39	0.06	0.02							57
Oct. 5–10					6.99	3.29	17.14		5.41	5.39	16.50	.08	.04							63
Oct. 11–20											26.79									
Oct. 21–28											29.90									
Oct. 29–31											14.67									
Nov. 1–10											18.05									
Nov. 11–20											15.37									
Nov. 21–30											7.19									
Dec. 1–9											9.17									
San Francisco River at Clifton, Ariz.																				
Oct. 1–8, 10, 1944					3.19	1.23	4.52	0.23	3.57	0.44	5.08	0.04	0.02							49
Oct. 11, 13–20					2.89	1.07	4.30	.19	3.20	.37	4.74	.04	.02							51
Oct. 21–27					3.34	1.15	5.87	.23	3.39	.44	6.77	.04	.02							55

MISCELLANEOUS ANALYSES OF STREAMS IN COLORADO RIVER BASIN—Continued

Chemical analyses, in equivalents per million—Continued

Date of collection	Mean discharge (second-feet)	Specific conductance (K× 10^5 at 25° C.)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Borate (BO_3)	Dissolved solids			Hardness as $CaCO_3$		Percent sodium
															Parts per million	Tons per acre-foot	Tons per day	Total	Noncarbonate	
Verde River near Cottonwood, Ariz.																				
Mar. 13, 1945	------	------	------	------	------	------	0.77		1.48	0.50	0.11	------	------	------	------	------	------	------	------	37
Hassayampa River at Wickenburg, Ariz.																				
Mar. 13, 1945	------	------	------	------	------	------	1.16		2.79	0.71	0.28	------	0.02	------	------	------	------	------	------	31

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