# Surface Water Supply of the United States 1955

## Part 3-B. Cumberland and Tennessee River Basins

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1386

*Prepared in cooperation with the States of Alabama, Kentucky, North Carolina, Tennessee, and Virginia, and with other agencies*

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## Part 3-B. Cumberland and Tennessee River Basins

*Prepared under the direction of* J. V. B. WELLS, *Chief, Surface Water Branch*

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## PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Alabama, Kentucky, North Carolina, Tennessee, and Virginia, and with other agencies, by personnel of the Water Resources Division, C. G. Paulsen, chief, under the general direction of J. V. B. Wells, chief, Surface Water Branch, and B. J. Peterson, chief, Annual Reports Section.

The data were collected and computed under supervision of district engineers, Surface Water Branch, as follows:

W. R. Eaton----------Chattanooga, Tenn.
E. B. Rice----------Raleigh, N. C.
F. F. Schrader----------Louisville, Ky.
D. S. Wallace----------Charlottesville, Va.
M. R. Williams----------Montgomery, Ala.

# CALENDAR FOR WATER YEAR 1955

## OCTOBER 1954

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | 1 | 2 |
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| 31 | | | | | | |

## NOVEMBER 1954

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| 28 | 29 | 30 | | | | |

## DECEMBER 1954

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| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

## JANUARY 1955

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| 30 | 31 | | | | | |

## FEBRUARY 1955

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| 27 | 28 | | | | | |

## MARCH 1955

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| 20 | 21 | 22 | 23 | 24 | 25 | 26 |
| 27 | 28 | 29 | 30 | 31 | | |

## APRIL 1955

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| 24 | 25 | 26 | 27 | 28 | 29 | 30 |

## MAY 1955

| S | M | T | W | T | F | S |
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| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

## JUNE 1955

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| 26 | 27 | 28 | 29 | 30 | | |

## JULY 1955

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| 31 | | | | | | |

## AUGUST 1955

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| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
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| 28 | 29 | 30 | 31 | | | |

## SEPTEMBER 1955

| S | M | T | W | T | F | S |
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| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | |

CONTENTS

## ILLUSTRATIONS

# SURFACE WATER SUPPLY OF CUMBERLAND AND TENNESSEE RIVER BASINS, 1955

## SCOPE OF WORK

This volume is one of a series of 18 reports presenting measurements of stage, discharge, and content of streams, lakes, and reservoirs in the United States during the water year ending September 30, 1955. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar measurements have been made at more than 13,250 gaging stations in the 48 States and at many others in the Territories of Alaska and Hawaii. On September 30, 1955, the Geological Survey and cooperating organizations were maintaining 6,860 gaging stations, including those in Alaska and Hawaii. Discharge measurements only were made at many other points in the 1955 water year, most of which are published at the end of each report. The name of each stream measured at points other than gaging stations is not listed in the index to this report. Only the major river basins in which measurements were made are listed under the item "Discharge measurements" in this index.

## COOPERATION

Many State, municipal, and private organizations have cooperated with the Geological Survey in this work by either furnishing or helping to collect data. Organizations that supplied data are acknowledged in station descriptions, and organizations that assisted in the collection of data through cooperative agreements with the Survey are:

Alabama: State Geological Survey, W. B. Jones, State geologist.

Kentucky: Agricultural and Industrial Development Board of Kentucky, J. H. Taylor, director.

North Carolina: State Department of Conservation and Development, B. E. Douglas, director, succeeded by W. P. Saunders; city of Asheville, Weldon Weir, city manager; city of Waynesville, W. H. Way, mayor.

Tennessee: State Department of Conservation, J. N. McCord, commissioner; through Division of Geology, W. D. Hardeman, director; State Department of Public Health, R. H. Hutcheson, commissioner, through Division of Sanitary Engineering, R. P. Farrell, director, succeeded by J. R. Fleming; city of Knoxville, Department of Public Service, B. C. Barker, director, succeeded by R. I. Gentry; city of Murfreesboro, Water Department, J. W. Lovell, superintendent.

Virginia: State Department of Conservation and Development, R. V. Long, director; State Department of Highways, J. A. Anderson, director.

Under a cooperative agreement covering the Tennessee River basin and the Caney Fork basin above Great Falls Dam, the Tennessee Valley Authority furnished financial assistance for the operation of 121 gaging stations, of which 6 were in Alabama, 6 in Georgia, 1 in Kentucky, 36 in North Carolina, 60 in Tennessee, and 12 in Virginia.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 13 gaging stations in Kentucky and 19 in Tennessee.

Assistance was also furnished by the Arnold Engineering Development Center, Department of the Air Force and the Weather Bureau, United States Department of Commerce.

The following organizations aided in collecting records:

North Carolina: Town of Highlands, American Enka Corp., Carolina Power & Light Co., Champion Paper & Fibre Co., Ecusta Paper Corp., and the Mead Corp., Sylva Division.

Tennessee: Aluminum Co. of America and the Tennessee Copper Co.

Virginia: American Cyanamid Co.

## DIVISION OF WORK

The stream-gaging work was done by the Water Resources Division of the Geological Survey, under the direction of personnel shown in the preface. The data for stations in the several States were collected and prepared for publication in the district offices listed below.

| State | District office | Address |
|---|---|---|
| Alabama a/ | Montgomery | 507 New Post Office Building. |
| Kentucky b/ | Louisville | 830 West Broadway. |
| North Carolina c/ | Raleigh | Federal Building. |
| Tennessee d/ | Chattanooga | 823 Edney Building. |
| Virginia | Charlottesville | Natural Resources Building, University of Virginia. |

a/ Stations on Flint Creek near Falkville and West Flint Creek near Oakville only.
b/ Except for the Tennessee River near Paducah.
c/ Including stations in the Tennessee River basin in Georgia except those in the Toccoa River basin.
d/ Including stations in the Tennessee River basin in Alabama (except Flint Creek near Falkville and West Flint Creek near Oakville) and the Toccoa River basin in Georgia and for the Tennessee River near Paducah, Ky.

Information of a more detailed nature than that published for most of the gaging stations given in this report is on file in the district offices listed above. Provisional records of discharge prior to publication, and other unpublished data concerning the gaging-station records may usually be obtained from the district office.

## DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Cubic feet per second per square mile (cfsm) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Runoff in inches is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. The term is used for comparing runoff with rainfall, which is also usually expressed in inches.

Acre-foot is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet. The term is commonly used in relation to storage for irrigation.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, a long reach of the channel, or an artificial structure.

Contents is the volume of water in a reservoir. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

## DOWNSTREAM ORDER OF LISTING GAGING STATIONS

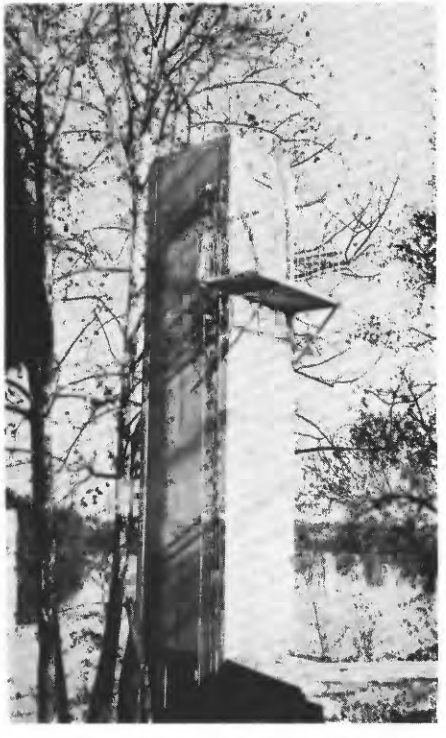
Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging-station records was changed. In this report, in a downstream direction along the main stem all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

## EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Typical structures in use at gaging stations are shown in figure 1.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect determinations of peak discharge (such as slope-area or contracted-opening determinations, computation of flow over dams or weirs, and by other methods), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables



*A.* TENNESSEE RIVER AT KNOXVILLE, TENN.

*B.* NANTAHALA RIVER NEAR RAINBOW SPRINGS, N. C.

FIGURE 1.—GAGING STATION STRUCTURES.

gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is essentially the shifting-control method.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information requisite for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage. If so, the rate of change in stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins. If the stage-discharge relation is affected by ice, this information is given in a note to the table. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

The data herein presented generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge and runoff of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the water year 1955 is shown on page IV for the purpose of finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, general remarks, and notations of revisions of the previously published record. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "Location" for some stations, is that determined and used by the Corps of Engineers unless otherwise noted. Under "Records available" are given the periods for which there are published records generally equivalent to those at the present site. Under "Gage" are given the type of gage currently in use and the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of records available. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is

of no importance). In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. In order to make it easier to find such revised records, a paragraph headed "Revisions (water years)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are concerned in the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables are generally not published for stations on canals.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing, as an essential element, a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage

readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of daily discharge, the figures for the maximum day and the minimum day for each month are underlined. If the figure is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Runoff for the month may be expressed in cubic feet per second per square mile (line headed "Cfsm"), or in inches (line headed "In."), or in acre-feet (line headed "Ac-ft"). Figures for cubic feet per second per square mile and runoff in inches are omitted if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights of most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record and ice effect, or by other effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote unless they were made at frequent regular intervals, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is usually given in the first report in which data for the reservoir are published, but it is omitted from succeeding reports.

## ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Runoff at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and runoff in inches are not published unless storage or diversion records are included to indicate the extent of the regulation or diversion or unless satisfactory adjustments can be made for changes in contents of reservoirs or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not actually show the water supply available at the stations for further development, because water must first be supplied to existing irrigation systems.

## PUBLICATIONS

To facilitate publication of the annual series of reports, the area of the United States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the results of streamflow measurements were published in 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records are published in 18 volumes, there being 2 volumes each for Parts 1, 2, 3, and 6. The boundaries of the various parts are indicated by the following list and the map in figure 2.

Part 1. North Atlantic slope basins, in two volumes:
- A, North Atlantic slope basins, Maine to Connecticut.
- B, North Atlantic slope basins, New York to York River.

2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:
- A, South Atlantic slope basins, James River to Savannah River.
- B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.

3. Ohio River basin, in two volumes:
- A, Ohio River basin except Cumberland and Tennessee River basins.
- B, Cumberland and Tennessee River basins.

4. St. Lawrence River basin.
5. Hudson Bay and upper Mississippi River basins.
6. Missouri River basin, in two volumes:
- A, Missouri River basin above Sioux City, Iowa.
- B, Missouri River basin below Sioux City, Iowa.

7. Lower Mississippi River basin.
8. Western Gulf of Mexico basins.
9. Colorado River basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River basin.
13. Snake River basin.
14. Pacific slope basins in Oregon and lower Columbia River basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be purchased or consulted as follows:

1. Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, on application, furnish lists giving prices. A list of Geological Survey publications may also be obtained by applying to the Director, Geological Survey, Washington, D. C.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Sets are available for consultation in the offices of the Water Resources Division of the Geological Survey. Addresses of the offices in the area covered by this report are given on page 2.

Early records of the flow of streams in the United States are published in the reports listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

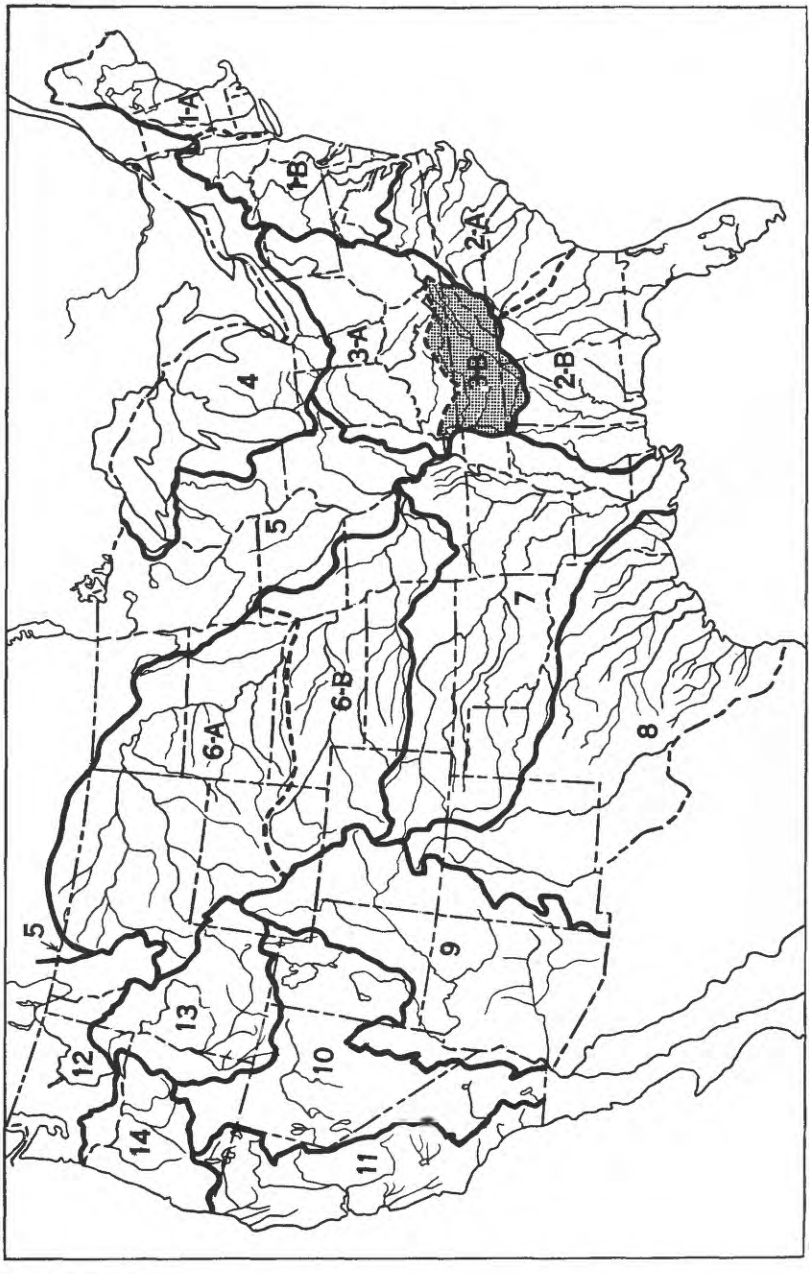



Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

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Streamflow data for the years 1884-1901, in reports of the Geological Survey
(A = Annual Report; B = Bulletin)

| Report | Character of data | Year |
|---|---|---|
| 10th A, pt. 2 | Descriptive information only. | |
| 11th A, pt. 2 | Monthly discharge and descriptive information | 1884 to September 1890. |
| 12th A, pt. 2 | ....do | 1884 to June 30, 1891. |
| 13th A, pt. 3 | ....do | 1884-92. |
| 14th A, pt. 2 | Monthly discharge | 1888-93. |
| B 131 | Descriptions, measurements, gage heights, and ratings | 1893-94. |
| 16th A, pt. 2 | Descriptive information only. | |
| B 140 | Descriptions, measurements, gage heights, ratings, and monthly discharge. | 1895. |
| WSP 11 | Gage heights | 1896. |
| 18th A, pt. 4 | Descriptions, measurements, ratings, and monthly discharge | 1895-96. |
| WSP 15 | Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River. | 1897. |
| WSP 16 | Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River. | 1897. |
| 19th A, pt. 4 | Descriptions, measurements, ratings, and monthly discharge | 1897. |
| WSP 27 | Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries. | 1898. |
| WSP 28 | Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries. | 1898. |
| 20th A, pt. 4 | Monthly discharge | 1898. |
| WSP 35 to 39. | Descriptions, measurements, gage heights, and ratings | 1899. |
| 21st A, pt. 4 | Monthly discharge | 1899. |
| WSP 47 to 52. | Descriptions, measurements, gage heights, and ratings | 1900. |
| 22d A, pt. 4 | Monthly discharge | 1900. |
| WSP 65, 66 | Descriptions, measurements, gage heights, and ratings | 1901. |
| WSP 75 | Monthly discharge | 1901. |

Reports on surface-water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained. Before 1951, records for the Cumberland and Tennessee River basins were included with those of the other rivers of the Ohio River basin.

Numbers of water-supply papers containing results of stream measurements in Cumberland and Tennessee River basins, 1899-1955

| Year | WSP | Year | WSP | Year | WSP | Year | WSP | Year | WSP |
|---|---|---|---|---|---|---|---|---|---|
| 1899 | 36 | 1911 | 303 | 1923 | 563 | 1934 | 758 | 1945 | 1033 |
| 1900 | 48 | 1912 | 323 | 1924 | 583 | 1935 | 783 | 1946 | 1053 |
| 1901 | 65, 75 | 1913 | 353 | 1925 | 603 | 1936 | 803 | 1947 | 1083 |
| 1902 | 83 | 1914 | 383 | 1926 | 623 | 1937 | 823 | 1948 | 1113 |
| 1903 | 98 | 1915 | 403 | 1927 | 643 | 1938 | 853 | 1949 | 1143 |
| 1904 | 128 | 1916 | 433 | 1928 | 663 | 1939 | 873 | 1950 | 1173 |
| 1905 | 169 | 1917 | 453 | 1929 | 683 | 1940 | 893 | 1951 | 1206 |
| 1906 | 205 | 1918 | 473 | 1930 | 698 | 1941 | 923 | 1952 | 1236 |
| 1907-8 | 243 | 1919-20 | 503 | 1931 | 713 | 1942 | 953 | 1953 | 1276 |
| 1909 | 263 | 1921 | 523 | 1932 | 728 | 1943 | 973 | 1954 | 1336 |
| 1910 | 283 | 1922 | 543 | 1933 | 743 | 1944 | 1003 | 1955 | 1386 |

The records at most of the stations discussed in these reports extend over many years. Discharge measurements at many points other than regular gaging stations have been made each year and are published at the end of each report. The streams and points of measurement are listed in the same order as the streams and gaging stations in the body of the report. An index of the records obtained before 1904 has been published in Water-Supply Paper 119.

Each of the reports on the surface water supply for the year 1939 (Water-Supply Paper 873 for the Cumberland and Tennessee River basins) contains, for the area included in that report, a summary of yearly discharge at gaging stations at which 10 or more complete years of record had been collected. These summaries were reprinted separately.

Reports also have been published that are compilations of records for various areas, usually a single State or drainage basin. These reports contain records previously published (some of which may have been revised), as well as some records not contained in the annual series of water-supply papers. The only such report for any part of the area covered by this report is Water-Supply Paper 197, "Water resources of Georgia, 1895-1905."

Records of discharge have been published also in State reports. Some of these are not

contained in the publications of the Geological Survey or are revisions of records previously published in its water-supply papers. The following table contains a list of these reports for the area covered by this report.

State reports containing compilations of records of discharge

| State | Period | Report | Issued by |
|---|---|---|---|
| Alabama..... | 1895-1915 | Bull. 17, Water powers of Alabama..... | Geological Survey of Alabama. |
| Georgia..... | 1895-1906 | Bull. 16, Water powers of Georgia..... | Geological Survey of Georgia. |
| Do..... | 1907-19 | Bull. 38, Water powers of Georgia..... | Do. |
| Kentucky..... | 1910-20 | Surface waters of Kentucky..... | Kentucky Geological Survey. |
| North Carolina | 1889-1923 | Bull. 34, Discharge records of North Carolina streams. | Department of Conservation and Development. |
| Do..... | 1899-1936 | Bull. 39, Discharge records of North Carolina streams.[1] | Do. |
| Do..... | 1857-1945 | Hydraulic Data on the French Broad River basin. | Do. |
| Tennessee..... | 1874-1924 | Bull. 34, Water resources of Tennessee[2]... | Department of Education. |
| Do..... | 1920-30 | Bull. 40, Surface waters of Tennessee..... | Do. |
| Virginia..... | 1895-1927 | Bull. 31, Water resources of Virginia..... | Virginia Geological Survey. |
| Do..... | 1927-42 | Bull. 7, Surface water supply of Virginia (New, Tennessee, and Big Sandy River basins). | Do. |
| Do..... | 1942-50 | Bull. 15, Surface water supply of Virginia (New, Big Sandy, and Tennessee River basins). | Do. |

[1] Contains maximum and minimum daily, weekly, and monthly discharge and yearly mean discharge.
[2] Includes records of discharge for all stations in North Carolina in the Tennessee River basin.

The reports listed in the foregoing tables contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following is a list of these reports:

Report

WSP 334: The Ohio Valley flood of March-April 1913.
WSP 771: Floods in the United States, magnitude and frequency.
WSP 800: The floods of March 1936, Part 3, Potomac, James, and upper Ohio Rivers.
WSP 838: Floods of Ohio and Mississippi Rivers, January-February 1937.
WSP 847: Maximum discharges at stream-measurement stations through September 1938.
WSP 1066: Floods of August 1940 in the southeastern States.
WSP 1137-I: Summary of floods in the United States during 1950.
WSP 1227-A: Floods of March-April 1951 in Alabama and adjacent States.
Cir. 100: Floods in Georgia, frequency and magnitude.
Cir. 342: Floods in Alabama, frequency and magnitude.

## RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table below contains a list of gaging stations for the area covered by this report, at which records of discharge were collected during the water year October 1954 to September 1955 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey, nor have they been published elsewhere.

Records of discharge collected by agencies other than the Geological Survey

| Stream | Location | Period | Collected by |
|---|---|---|---|
| Beech River..... | Near Darden, Tenn..... | 1954-55 | Tennessee Valley Authority. |
| Do..... | Near Lexington, Tenn..... | 1953-55 | Do. |
| Big Creek..... | Near Darden, Tenn..... | 1953-55 | Do. |
| Birdsong Creek..... | Near Holliday, Tenn..... | 1940-55 | Do. |
| Browns Creek..... | Near Chesterfield, Tenn..... | 1953-55 | Do. |
| Cane Creek..... | Near Shady Hill, Tenn..... | 1953-55 | Do. |
| Chambers Creek..... | Opposite Kendrick, Miss..... | 1939-55a/ | Do. |
| Chattanooga Creek..... | At 38th St. in Chattanooga, Tenn. | 1943-55 | Do. |
| Chestuee Creek..... | Above Englewood, Tenn..... | 1944-55 | Do. |
| Do..... | Zion Hill, Tenn..... | 1944-55 | Do. |
| Do..... | Dentville, Tenn..... | 1944-55 | Do. |
| Coweeta Creek basin b/. | Coweeta Experimental Forest near Franklin, N. C. | 1934-55 | U. S. Forest Service. |

a/ Record observed near Kendrick from November 1939 to May 1942 and opposite Kendrick from May 1942 to 1955.
b/ The Southeastern Forest Experiment Station of the U. S. Forest Service operates 31 stations in Coweeta Creek basin in order to obtain records of runoff from small areas.

Records of discharge collected by agencies other than the Geological Survey--Continued

| Stream | Location | Period | Collected by |
|---|---|---|---|
| Cypress Creek (drainage ditch). | Near Gilbertsville, Ky. | 1943-55 | Tennessee Valley Authority. |
| Fall Creek | Near Fort Patrick Henry Dam, Tenn. | 1953-55 | Do. |
| Flat Creek | Near Middlesburg, Tenn. | 1953-55 | Do. |
| Flint Creek c/ | Near Hartselle, Ala. | 1941-55 | Do. |
| Haley Creek | Near Chesterfield, Tenn. | 1953-55 | Do. |
| Harmon Creek | Near Lexington, Tenn. | 1953-55 | Do. |
| Horse Creek | Near Savannah, Tenn. | 1939-55 | Do. |
| Indian Creek | Near Cerro Gordo, Tenn. | 1939-55 | Do. |
| Limestone Creek | U. S. Highway 72, near Athens, Ala. | 1939-55 | Do. |
| Little Chestuee Creek | Below Wilson Station, Tenn. | 1947-55 | Do. |
| Middle Creek | Below Highway 39 near Englewood, Tenn. | 1944-55 | Do. |
| Middleton Creek | Near Milledgeville, Tenn. | 1939-55 | Do. |
| Millican Creek | Near Douglas Dam, Tenn. | 1942-55 | Do. |
| Parker Branch | Near Leicester, N. C. | 1952-55 | Do. |
| Persimmon Creek | At Persimmon Creek Dam, near Letitia, N. C. | 1942-55 | Do. |
| Pigeon River basin d/ | Near Waynesville, N. C. | 1949-55 | Do. |
| Pinetree Branch | Near Lexington, Tenn. | 1941-55 | Do. |
| Piney Creek | At Highway 104 near Lexington, Tenn. | 1953-55 | Do. |
| Pond Creek No. 1 | Near Wilson Dam, Ala. | 1948-55 | Do. |
| Pond Creek No. 2 | Do. | 1948-55 | Do. |
| Rushing Creek | Near Decaturville, Tenn. | 1953-55 | Do. |
| Snake Creek | Near Adamsville, Tenn. | 1939-55 | Do. |
| Turkey Creek (Beech River tributary). | Near Decaturville, Tenn. | 1953-55 | Do. |
| Turkey Creek (Tennessee River tributary). | Near Savannah, Tenn. | 1939-55 | Do. |
| West Flint Creek c/ | Near Hartselle, Ala. | 1941-55 | Do. |
| White Creek | Near Sharps Chapel, Tenn. | 1934-55 | Do. |
| White Oak Creek | Near Milledgeville, Tenn. | 1939-55 | Do. |
| Wolf Creek | At Graper Springs, Tenn. | 1953-55 | Do. |
| Yellow Creek | At Moser Bridge near Doskie, Miss. | 1937-55 | Do. |

c/ Gage heights only when affected by backwater from Wheeler Reservoir.
d/ The Tennessee Valley Authority operates stations on 6 small watersheds ranging in area from 3.5 to 5.6 acres in the Pigeon River basin.

## HYDROLOGIC CONDITIONS

The water year 1955 was characterized by near median runoff for most of area covered by this report except in the upper Tennessee River basin in North Carolina where runoff was mostly deficient. Runoff was well below median over most of the area during October to January except during the last few days in December when moderate floods occurred in northern Alabama and in the central part of the Tennessee River basin in Tennessee. Floods occurred over most of the area during March resulting in maximum discharges for period of record at several gaging stations. At the two key gaging stations, North Fork Holston River near Saltville, Va. and Duck River above Hurricane Mills, Tenn. the monthly mean was record high for March. Runoff was above median over most of the area during April, May, and June except in the extreme eastern portion of the area, which was deficient. During the remainder of the water year runoff ranged from slightly below median to deficient except for some flash floods in the upper Tennessee River basin in North Carolina during July. For three key gaging stations in this area, a comparison of the monthly and yearly mean discharge during the 1955 water year with median for the 25-year period 1921-45 is shown in figure 3 on the opposite page.

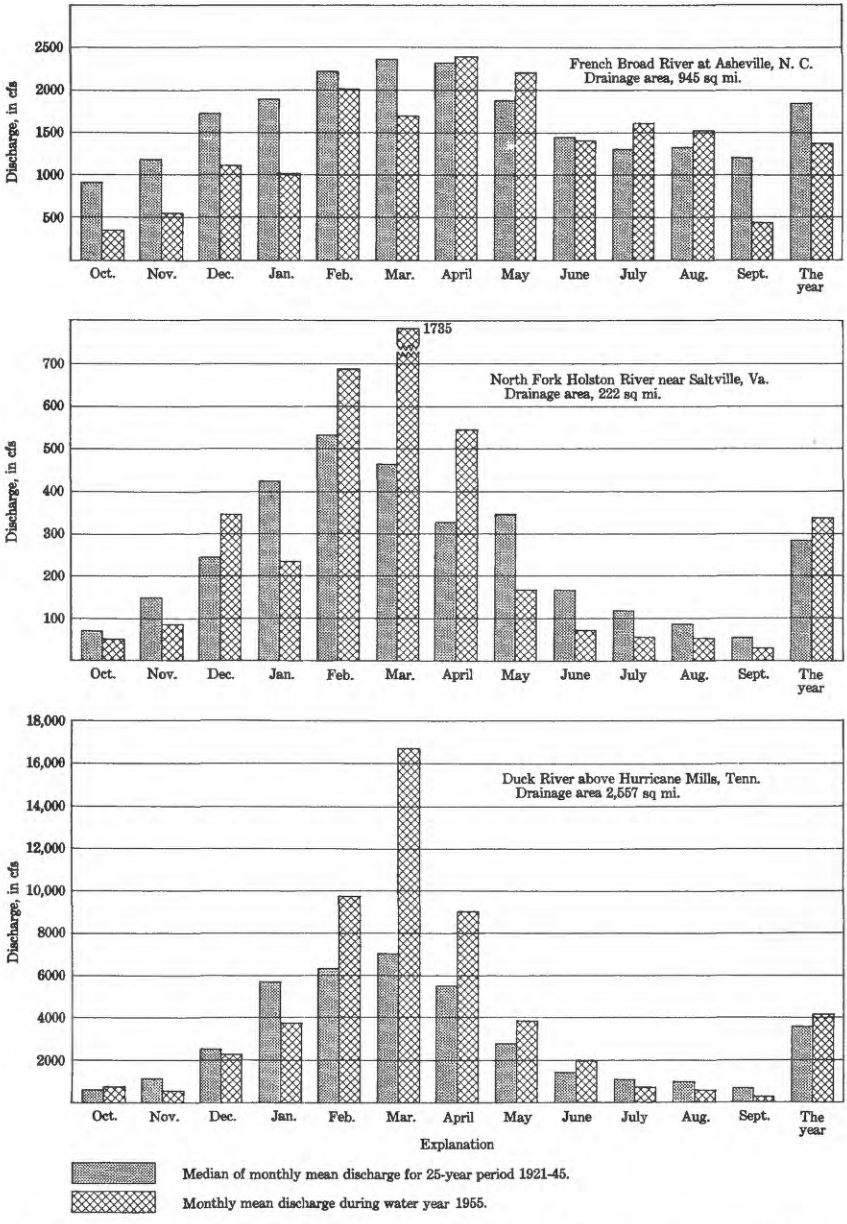


**Figure 3. Comparison of discharge at three key gaging stations during 1955 water year with median discharge for 25-year period.**

## CUMBERLAND RIVER BASIN

### Poor Fork at Cumberland, Ky.

Location.--Lat 36°58'25", long 82°59'35", at left end downstream side of Second Street Bridge at Cumberland, Harlan County, 0.1 mile upstream from Cloverlick Creek and 0.5 mile downstream from Looney Creek.
Drainage area.--82.1 sq mi.
Records available.--March 1940 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 1,415.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.
Average discharge.--15 years, 136 cfs.
Extremes.--Maximum discharge during year, 3,510 cfs Mar. 16 (gage height, 5.85 ft); minimum not determined (occurred during period of indefinite stage-discharge relation).
1940-55: Maximum discharge, 7,500 cfs Jan. 7, 1946 (gage height, 9.65 ft), from rating curve extended above 2,900 cfs by logarithmic plotting; no flow for part of Oct. 28, 1952.
Flood in January 1927 reached a stage about 0.5 ft higher than that of Jan. 7, 1946 (discharge, 12,000 cfs, estimated by Corps of Engineers). Flood in July 1939 reached a stage of 9.3 ft, from floodmarks.
Remarks.--Records good except those for periods of doubtful or no gage-height record and those for periods of indefinite stage-discharge relation, which are poor.
Revisions (water years).--WSP 923: 1940(M). WSP 1336: 1949-51, 1953(P).

Rating tables, water year 1954-55, except periods of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 2 to Aug. 19, Sept. 8-19)

| Oct. 1 to Mar. 22 | | | | Mar. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.1 | 5.5 | 1.5 | 245 | -0.3 | 4 | 1.0 | 140 |
| .2 | 10 | 2.0 | 420 | -.1 | 15 | 1.5 | 270 |
| .4 | 25 | 4.0 | 1,560 | 0.0 | 22 | 2.0 | 460 |
| .6 | 46 | 6.0 | 3,720 | .5 | 67 | 3.0 | 920 |
| 1.0 | 118 | | | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.0 | 9.5 | 36 | 248 | 82 | 1,900 | 130 | 156 | 31 | *a18 | 24 | e12 |
| 2 | 10 | 9.0 | 30 | 174 | 300 | 890 | 120 | 134 | 29 | 19 | 20 | e11 |
| 3 | 11 | *8.0 | 27 | 135 | 412 | 448 | 112 | 116 | 30 | 18 | 35 | e10 |
| 4 | 10 | 8.0 | 23 | 116 | 266 | 322 | 105 | 102 | 28 | 21 | 26 | a9 |
| 5 | 8.5 | 9.0 | 31 | 120 | 215 | 293 | a100 | 93 | 27 | 25 | 20 | e8 |
| 6 | 8.0 | 10 | 110 | 137 | 1,260 | 1,270 | a110 | 84 | 34 | 24 | 16 | a7 |
| 7 | 7.5 | 9.5 | 71 | 137 | 1,230 | 982 | a120 | 78 | 56 | 23 | 17 | e7 |
| 8 | 7.0 | 10 | 48 | 131 | 555 | 444 | a110 | 73 | 52 | 35 | 23 | *7.0 |
| 9 | 6.5 | 8.5 | 80 | 135 | 340 | 302 | a100 | 67 | a47 | 31 | 24 | 8.5 |
| 10 | 8.0 | 8.0 | 80 | 122 | 251 | 233 | 94 | 63 | a44 | 27 | 19 | 8.0 |
| 11 | 8.0 | 8.5 | 58 | 137 | 236 | 201 | 92 | 61 | a42 | 44 | 16 | 9.0 |
| 12 | 7.5 | 8.0 | 49 | 137 | a185 | 207 | 89 | 60 | a40 | 129 | 18 | 8.5 |
| 13 | 7.5 | 8.5 | *187 | 146 | a160 | 198 | 92 | 63 | a38 | 144 | 18 | 9.6 |
| 14 | 7.0 | 8.5 | 201 | 126 | 162 | 182 | a110 | 67 | a35 | 63 | 16 | 8.5 |
| 15 | 8.5 | 8.5 | 126 | 124 | 157 | 470 | a150 | 63 | a33 | 55 | 18 | 8.5 |
| 16 | 8.5 | 9.5 | 86 | 120 | 182 | 2,260 | a120 | 56 | a32 | 46 | 21 | 8.5 |
| 17 | 8.0 | 10 | 66 | *116 | 420 | 982 | 102 | 55 | 31 | 37 | 20 | 7.5 |
| 18 | 8.0 | 10 | 172 | 108 | 384 | 1,480 | 96 | 50 | 29 | 31 | 18 | 8.5 |
| 19 | 8.0 | 15 | 167 | 105 | 287 | 880 | 94 | 47 | a115 | 26 | 15 | 8.0 |
| 20 | 8.0 | 24 | 122 | 95 | 230 | 440 | 92 | 45 | *a93 | 21 | e14 | e7 |
| 21 | 7.5 | 41 | 89 | 89 | 195 | 376 | 93 | 45 | 61 | 20 | e13 | e6 |
| 22 | 8.0 | 33 | 73 | 114 | 236 | *2,400 | 94 | 47 | a45 | 24 | e13 | e6 |
| 23 | 8.0 | 26 | 61 | 135 | *1,420 | 630 | 88 | *52 | a35 | 18 | e12 | e6 |
| 24 | 8.0 | 23 | 63 | 122 | 660 | 360 | 130 | 47 | a30 | 21 | e12 | e10 |
| 25 | 8.0 | 20 | 60 | 108 | 368 | 288 | 267 | 44 | a40 | *31 | e12 | e12 |
| 26 | 8.5 | 19 | 54 | 93 | 281 | 319 | 508 | 42 | a34 | 28 | e11 | e10 |
| 27 | 9.0 | 22 | 49 | 93 | 1,390 | 302 | *520 | 38 | a30 | 21 | e11 | e9 |
| 28 | 9.0 | 30 | 84 | 88 | 1,530 | 258 | *376 | 36 | a25 | 34 | a 11 | e9 |
| 29 | 10 | 71 | 1,190 | 93 | - | 210 | 258 | 33 | a22 | 52 | *e11 | e8 |
| 30 | 10 | 55 | 1,220 | 80 | ------- | 170 | 192 | 32 | a18 | 41 | e11 | e25 |
| 31 | 10 | ------- | 412 | 78 | ------- | 146 | ------- | 32 | ------- | 31 | e13 | ------- |
| Total | 280.5 | 540.0 | 5,125 | 3,762 | 13,434 | 19,843 | 4,664 | 1,981 | 1,206 | 1,158 | 528 | 272.1 |
| Mean | 8.40 | 18.0 | 165 | 121 | 480 | 640 | 155 | 63.9 | 40.2 | 37.4 | 17.0 | 9.07 |
| Cfsm | 0.102 | 0.219 | 2.01 | 1.47 | 5.85 | 7.80 | 1.89 | 0.778 | 0.490 | 0.456 | 0.207 | 0.110 |
| In. | 0.12 | 0.24 | 2.32 | 1.70 | 6.09 | 8.99 | 2.11 | 0.90 | 0.55 | 0.52 | 0.24 | 0.12 |

Calendar year 1954: Max 1,980 Min 6.0 Mean 96.2 Cfsm 1.17 In. 15.90
Water year 1954-55: Max 2,400 Min 6 Mean 145 Cfsm 1.77 In. 23.90

Peak discharge (base, 1,200 cfs).--Dec. 29 (10 p.m.) 2,620 cfs (5.17 ft); Feb. 6 (8 p.m.) 1,990 cfs (4.52 ft); Feb. 23 (11 a.m.) 1,910 cfs (4.43 ft); Feb. 28 (9 p.m.) 2,390 cfs (4.95 ft); Mar. 6 (8 p.m.) 2,410 cfs (4.97 ft); Mar. 16 (6 p.m.) 3,510 cfs (5.85 ft); Mar. 18 (3:30 p.m.) 2,180 cfs (4.73 ft); Mar. 22 (7 a.m.) 3,360 cfs (5.74 ft).
*Discharge measurement made on this day.
a Doubtful or no gage-height record; discharge estimated on basis of 3 discharge measurements, recorded range in stage, weather records, and records for Cumberland River near Harlan.
e Stage-discharge relation indefinite; discharge estimated on basis of weather records and records for Cumberland River near Harlan.

## Cumberland River near Harlan, Ky.

Location.--Lat 36°50'55", long 83°21'20", on left bank 10 ft downstream from bridge on U. S. Highway 119 at Loyall, 1.6 miles upstream from Fourmile Branch, 2.0 miles downstream from confluence of Poor and Clover Forks, and 2 miles west of Harlan, Harlan County.

Drainage area.--374 sq mi.

Records available.--March 1940 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,140.10 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Mar. 4, 1941, staff gage at same site and datum.

Average discharge.--15 years, 634 cfs.

Extremes.--Maximum discharge during year, 19,200 cfs Mar. 22 (gage height, 14.41 ft); minimum, 7.0 cfs Sept. 21 (gage height, 0.20 ft).

1940-55: Maximum discharge, 37,900 cfs Jan. 8, 1946 (gage height, 22.81 ft); minimum, 3.0 cfs Oct. 9, 1953.

Floods in 1918 and 1929 reached stages of about 22 and 20.0 ft respectively, from information by local residents.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 953: 1940(M). WSP 1173: 1947(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 22 | | | | Mar. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.3 | 12 | 2.0 | 550 | 0.2 | 7 | 0.8 | 100 |
| .5 | 35 | 3.0 | 1,280 | .3 | 15 | 1.0 | 150 |
| .7 | 68 | 5.0 | 3,550 | .4 | 26 | 1.5 | 320 |
| 1.0 | 140 | 10.0 | 11,000 | .6 | 58 | 2.0 | 550 |
| 1.5 | 310 | 15.0 | 20,400 | | | | |

Note.--Same as preceding table above 2.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *22 | 30 | 130 | 980 | 274 | 7,420 | 611 | 605 | 85 | *78 | 153 | a30 |
| 2 | 21 | 30 | 95 | 665 | 782 | 4,710 | 561 | 510 | 78 | 68 | 115 | a26 |
| 3 | 22 | *30 | 74 | 490 | 1,780 | 2,330 | 535 | 441 | 72 | 62 | 100 | a23 |
| 4 | 21 | 29 | 63 | 400 | 1,110 | 1,640 | 500 | 392 | 68 | 58 | 102 | a21 |
| 5 | 20 | 34 | 68 | 420 | 786 | 1,540 | 480 | 348 | 64 | 93 | 85 | a18 |
| 6 | 20 | 34 | 204 | 460 | 4,130 | 5,790 | 629 | 316 | 62 | 138 | 76 | 17 |
| 7 | 21 | 34 | 238 | 500 | 7,100 | 5,980 | 898 | 284 | 102 | 115 | 66 | 15 |
| 8 | 18 | 30 | 138 | 490 | 2,580 | 2,400 | 821 | 262 | 148 | 105 | 64 | *15 |
| 9 | 18 | 29 | 270 | 460 | 1,430 | 1,540 | 710 | 245 | 148 | 108 | 102 | 15 |
| 10 | 18 | 30 | 337 | 415 | 996 | 1,140 | 647 | 228 | 130 | 105 | 100 | 15 |
| 11 | 15 | 28 | 246 | 465 | 940 | 948 | 629 | 220 | 138 | 98 | *87 | 13 |
| 12 | 14 | 25 | 191 | 530 | a840 | 933 | 672 | 217 | 132 | 604 | 80 | 13 |
| 13 | 15 | 24 | *444 | 556 | a760 | 870 | 678 | 245 | 122 | 940 | 72 | 12 |
| 14 | 16 | 24 | 744 | 470 | a730 | 842 | 919 | 320 | 112 | 465 | 66 | 12 |
| 15 | 29 | 24 | 490 | 430 | a700 | 1,370 | a1,100 | 270 | 102 | 360 | 60 | 12 |
| 16 | 35 | 27 | 337 | 405 | a740 | 9,900 | 905 | 228 | 91 | 364 | 68 | 11 |
| 17 | 28 | 35 | 260 | *360 | a1,700 | 6,200 | 744 | 210 | 80 | 300 | 78 | 11 |
| 18 | 21 | 36 | 1,020 | 328 | a1,600 | 6,230 | 617 | 195 | 74 | 214 | 68 | 11 |
| 19 | 19 | 44 | 926 | 337 | a1,300 | 5,060 | 530 | 177 | 156 | 165 | 62 | 11 |
| 20 | 16 | 90 | 550 | 302 | a1,000 | 2,630 | 470 | 162 | 566 | 140 | 53 | 10 |
| 21 | 18 | 92 | 373 | 270 | a800 | *2,230 | 450 | 156 | 276 | 138 | 44 | 7.8 |
| 22 | 16 | 95 | 282 | 355 | a900 | 13,500 | 455 | 168 | 174 | 142 | 42 | 8.6 |
| 23 | 16 | 75 | 232 | 435 | *a9,200 | 3,730 | 392 | 174 | 130 | 118 | 42 | 10 |
| 24 | 15 | 64 | 214 | 405 | 3,560 | 2,000 | 520 | 204 | 115 | 98 | 39 | 15 |
| 25 | 14 | 57 | 197 | 355 | 1,700 | 1,450 | 1,070 | 180 | 138 | 125 | 36 | 33 |
| 26 | 13 | 52 | 182 | 306 | 1,190 | 1,940 | 1,870 | 165 | 201 | 112 | 32 | 37 |
| 27 | 18 | 52 | 173 | 310 | 4,030 | 1,780 | 1,870 | 145 | 177 | 89 | 27 | 26 |
| 28 | 24 | 70 | 204 | 298 | 5,770 | 1,370 | 1,380 | 130 | 132 | 82 | 26 | 20 |
| 29 | 31 | 185 | 6,410 | 319 | - | 1,070 | *988 | 118 | 102 | 226 | 23 | 20 |
| 30 | 36 | 197 | 7,360 | 282 | ------- | 842 | 744 | 100 | 91 | 316 | 22 | 58 |
| 31 | 36 | ------- | 1,860 | 207 | ------- | 710 | ------- | *93 | ------- | 217 | a25 | ------- |
| Total | 646 | 1,606 | 24,312 | 13,005 | 58,428 | 100,095 | 23,395 | 7,508 | 4,066 | 6,243 | 2,015 | 546.4 |
| Mean | 20.8 | 53.5 | 784 | 420 | 2,087 | 3,229 | 780 | 242 | 136 | 201 | 65.0 | 18.2 |
| Cfsm | 0.056 | 0.143 | 2.10 | 1.12 | 5.58 | 8.63 | 2.09 | 0.647 | 0.364 | 0.537 | 0.174 | 0.049 |
| In. | 0.06 | 0.16 | 2.42 | 1.29 | 5.81 | 9.95 | 2.33 | 0.75 | 0.40 | 0.62 | 0.20 | 0.05 |

Calendar year 1954: Max 8,370 Min 10 Mean 419 Cfsm 1.12 In. 15.20
Water year 1954-55: Max 13,500 Min 7.8 Mean 663 Cfsm 1.77 In. 24.04

Peak discharge (base, 8,200 cfs).--Dec. 30 (1:30 a.m.) 12,900 cfs (11.09 ft); Feb. 7 (1:30 a.m.) 10,200 cfs (9.50 ft); Feb. 23 (time unknown) 10,300 cfs (9.56 ft); Mar. 1 (6 p.m.) 8,580 cfs (8.52 ft); Mar. 6 (10 p.m.) 10,900 cfs (9.95 ft); Mar. 16 (4 p.m.) 14,800 cfs (12.14 ft); Mar. 18 (7:30 p.m.) 9,320 cfs (8.98 ft); Mar. 22 (6 a.m.) 19,200 cfs (14.41 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, recorded range in stage, weather records, and records for nearby stations.

## Yellow Creek near Middlesboro, Ky.

Location.--Lat 36°39'05", long 83°42'05", on right bank on U. S. Highway 25E, 0.4 mile upstream from Browne Branch, 3 miles north of Middlesboro, Bell County, and 5.2 miles upstream from Clear Fork.

Drainage area.--59.9 sq mi.

Records available.--August 1940 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,104.20 ft above mean sea level, Sandy Hook datum. Prior to Jan. 7, 1941, staff gage at same site and datum.

Average discharge.--15 years, 101 cfs.

Extremes.--Maximum discharge during year, 4,950 cfs Mar. 22 (gage height, 17.44 ft); minimum, 1.4 cfs Sept. 16, 17, 18, 20, 21, 22, 23; minimum gage height, 0.97 ft Oct. 13.
1940-55: Maximum discharge, 6,160 cfs Jan. 7, 1946 (gage height, 20.92 ft); no flow for part of Sept. 26, 1952 (caused by construction work above gage).
Flood in March 1929 reached a stage of about 19.6 ft; flood of Feb. 3, 1939, reached a stage of 18.5 ft, from floodmarks.

Remarks.--Records good except those below 10 cfs, which are fair.

Revisions (water years).--WSP 953: 1941(M). WSP 973: 1942(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.9 | 1.3 | 2.0 | 110 |
| 1.0 | 3.0 | 2.5 | 185 |
| 1.1 | 5.8 | 3.0 | 260 |
| 1.2 | 11 | 6.0 | 675 |
| 1.4 | 30 | 10.0 | 1,500 |
| 1.7 | 68 | 15.0 | 3,490 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 13 | 4.0 | 13 | 170 | 42 | 592 | 90 | 76 | 9.8 | 10 | 4.9 | 3.2 |
| 2 | 9.2 | 4.6 | 10 | 109 | 134 | 481 | 83 | 68 | 9.2 | 8.6 | 14 | 3.0 |
| 3 | 9.8 | 4.3 | 8.0 | 82 | 180 | 299 | 79 | 60 | 8.6 | 8.0 | 24 | 3.0 |
| 4 | 4.9 | 4.6 | 7.0 | 67 | 126 | 202 | 68 | 53 | 8.0 | 7.0 | 8.6 | 2.7 |
| 5 | 3.7 | 6.2 | 23 | 60 | 106 | 208 | 74 | 47 | 8.0 | 6.6 | 6.2 | 2.7 |
| 6 | 3.2 | 5.5 | 57 | 58 | 660 | 1,270 | 167 | 42 | 8.0 | 9.8 | 5.8 | 2.3 |
| 7 | 3.2 | 4.6 | 29 | 50 | 853 | 836 | 182 | 38 | 43 | 44 | 9.8 | 2.3 |
| 8 | 2.5 | *4.3 | *19 | 44 | 348 | 357 | 148 | 35 | 41 | 29 | 14 | 2.1 |
| 9 | 2.5 | 4.3 | 46 | 46 | 202 | 228 | 124 | 31 | 32 | 38 | 27 | 2.1 |
| 10 | 2.5 | 4.3 | 40 | 47 | 137 | 158 | 104 | 29 | 23 | 24 | 16 | 1.9 |
| 11 | *2.3 | 4.0 | 28 | 75 | 170 | 125 | 109 | 30 | 53 | 16 | 12 | 1.9 |
| 12 | 2.3 | 4.0 | 25 | 79 | 132 | 191 | *102 | 28 | 43 | *14 | 16 | 2.5 |
| 13 | 2.1 | 4.0 | 57 | 79 | 125 | 172 | 119 | 50 | 32 | 11 | 8.6 | 1.9 |
| 14 | 2.1 | 4.0 | 68 | 64 | 106 | 155 | 296 | 44 | 27 | 9.2 | 6.6 | 1.7 |
| 15 | 9.9 | 3.7 | 52 | 62 | 100 | 284 | 396 | 37 | 22 | 9.2 | *5.8 | 1.7 |
| 16 | 5.2 | 10 | 38 | 54 | 107 | 2,550 | 257 | 30 | 18 | 9.8 | 5.2 | 1.6 |
| 17 | 4.3 | 10 | 59 | 47 | 148 | 1,070 | 172 | 27 | 14 | 7.5 | 4.9 | 1.6 |
| 18 | 3.4 | 6.6 | 486 | *43 | 155 | 1,720 | 126 | 24 | 13 | 7.5 | 4.6 | 1.5 |
| 19 | 3.2 | 8.9 | 158 | 48 | 136 | 854 | 103 | 21 | 16 | 7.5 | 4.3 | *1.6 |
| 20 | 3.0 | 23 | 78 | 41 | 110 | 446 | 89 | 20 | 24 | 9.8 | 4.0 | 1.6 |
| 21 | 3.0 | 15 | 55 | 41 | *95 | 624 | 83 | 20 | 14 | 7.5 | 4.6 | 1.6 |
| 22 | 3.2 | 10 | 46 | 74 | 200 | 3,050 | 79 | 23 | 11 | 6.6 | 7.4 | 1.6 |
| 23 | 3.0 | 8.0 | 40 | 89 | 1,140 | 558 | 76 | 34 | 11 | 5.8 | 7.5 | 1.5 |
| 24 | 2.7 | 9.2 | 43 | 75 | 469 | 336 | 134 | 27 | 13 | 7.4 | 4.6 | 3.6 |
| 25 | 2.7 | 8.0 | 40 | 64 | 257 | 260 | 160 | 27 | 62 | 8.6 | 3.7 | 5.2 |
| 26 | 3.0 | 7.0 | 36 | 54 | 178 | 317 | 212 | 20 | 62 | 6.6 | 3.4 | 2.7 |
| 27 | 3.2 | 10 | 32 | 53 | *759 | 251 | 190 | 17 | 30 | 5.8 | 3.2 | 2.1 |
| 28 | 3.4 | 22 | 67 | 49 | *645 | 204 | 137 | 14 | 20 | 5.5 | 3.2 | 2.1 |
| 29 | 4.6 | 38 | 1,740 | 48 | - | 156 | 107 | 14 | 15 | 5.8 | 3.2 | 2.3 |
| 30 | 5.5 | 20 | 1,570 | 46 | ------- | 119 | 89 | 12 | 12 | 5.8 | 4.3 | 31 |
| 31 | 4.6 | ------- | 342 | 38 | ------- | *102 | ------- | *11 | ------- | 4.6 | 6.2 | ------- |
| Total | 131.2 | 272.1 | 5,312.0 | 1,956 | 7,820 | 18,175 | 4,155 | 1,009 | 702.6 | 356.5 | 253.6 | 96.6 |
| Mean | 4.23 | 9.07 | 171 | 63.1 | 279 | 586 | 138 | 32.5 | 23.4 | 11.5 | 8.18 | 3.22 |
| Cfsm | 0.071 | 0.151 | 2.85 | 1.05 | 4.66 | 9.78 | 2.30 | 0.542 | 0.391 | 0.192 | 0.137 | 0.054 |
| In. | 0.08 | 0.17 | 3.30 | 1.21 | 4.86 | 11.28 | 2.58 | 0.63 | 0.44 | 0.22 | 0.16 | 0.06 |

Calendar year 1954: Max 1,740 Min 1.6 Mean 78.9 Cfsm 1.32 In. 17.90
Water year 1954-55: Max 3,050 Min 1.5 Mean 110 Cfsm 1.84 In. 24.99

Peak discharge (base, 1,800 cfs).--Dec. 29 (10 to 11 p.m.) 3,110 cfs (14.24 ft); Mar. 6 (5:30 p.m.) 2,060 cfs (11.77 ft); Mar. 16 (2 p.m.) 4,230 cfs (16.23 ft); Mar. 18 (2:30 p.m.) 2,680 cfs (13.30 ft); Mar. 22 (3:30 a.m.) 4,950 cfs (17.44 ft).

* Discharge measurement made on this day.

## Cumberland River near Pineville, Ky.

Location.--Lat 36°48'49", long 83°45'56", on downstream side of center pier of bridge on U. S. Highway 25E, 0.5 mile south of Flat Lick, 2.4 miles downstream from Greasy Creek, 4.7 miles upstream from Stinking Creek, and 5.0 miles northwest of Pineville, Bell County.

Drainage area.--822 sq mi.

Records available.--August 1938 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 955.45 ft above mean sea level, Sandy Hook datum. Prior to June 23, 1939, wire-weight gage at same site and datum. Since May 26, 1943, auxiliary staff gage, 1.9 miles upstream from base gage.

Average discharge.--17 years, 1,274 cfs.

Extremes.--Maximum discharge during year, 30,600 cfs Mar. 22; maximum gage height, 40.25 ft Mar. 22; minimum discharge, 7.0 cfs Sept. 21, 22 (gage height, 4.74 ft).
1938-55: Maximum discharge, 57,900 cfs Jan. 8, 1946 (gage height, 49.31 ft), from rating curve extended above 36,000 cfs on basis of slope-area determinations at gage heights 44.34, 47.3, and 49.31 ft; minimum, 6.0 cfs Oct. 6, 1952, Oct. 18, 1953.
Flood in March 1929 reached a stage of 47.3 ft (discharge, 51,000 cfs).

Remarks.--Records good except those for periods of shifting control or no gage-height record, which are fair. Low flow regulated by powerplant 1.9 miles upstream from station.

Revisions (water years).--WSP 953: Drainage area. WSP 1053: 1939.

Rating tables, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)
(Fall used as a factor Dec. 16, 19, Dec. 29 to Jan. 1, Feb. 3-5, 7-9, 17-19, Feb. 23 to Mar. 10, Mar. 15-22, Apr. 15, 26-28)

| Oct. 1 to Dec. 30 | | | | Dec. 31 to July 13 | | | | July 14 to Sept. 30 | |
|---|---|---|---|---|---|---|---|---|---|
| 4.9 | 16 | 8.0 | 880 | 5.5 | 73 | 7.0 | 440 | 4.7 | 5.0 |
| 5.2 | 39 | 10.0 | 1,950 | 6.0 | 167 | 8.0 | 840 | 5.0 | 22 |
| 5.5 | 78 | 14.0 | 4,500 | 6.5 | 285 | | | 5.4 | 54 |
| 6.0 | 176 | 20.0 | 9,800 | Note.--Same as preceding table above 10 ft. | | | | 5.8 | 108 |
| 6.5 | 295 | 30.0 | 18,800 | | | | | 6.4 | 232 |
| 7.0 | 450 | 40.0 | 32,400 | | | | | 7.0 | 410 |
| | | | | | | | | 9.0 | 1,350 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40 | 56 | 315 | 2,680 | 534 | 12,000 | a1,400 | 1,390 | a140 | 161 | 246 | 42 |
| 2 | 47 | 55 | 258 | 1,850 | 685 | 11,700 | a1,300 | 1,140 | *135 | 137 | 206 | 38 |
| 3 | 62 | 58 | 189 | 1,260 | 2,490 | 5,620 | a1,200 | 955 | 125 | 118 | 190 | 35 |
| 4 | 68 | 50 | 139 | 980 | 2,370 | 3,360 | a1,100 | 808 | 112 | 99 | 160 | 33 |
| 5 | 41 | 54 | 122 | 900 | 1,800 | 2,690 | a1,000 | 701 | 103 | 87 | 124 | 30 |
| 6 | 35 | 56 | 230 | 965 | 3,970 | 6,880 | a1,300 | 625 | 99 | 101 | 117 | 33 |
| 7 | 29 | a52 | 359 | 1,040 | 14,500 | 11,400 | a2,300 | a520 | 118 | 165 | 97 | 19 |
| 8 | 24 | *a64 | 398 | 1,040 | 8,110 | 6,230 | a2,100 | a460 | 265 | 255 | 102 | 28 |
| 9 | 17 | 53 | 326 | 1,000 | 3,510 | 3,170 | a1,900 | a430 | 315 | 343 | 106 | 21 |
| 10 | 19 | 47 | 454 | 905 | 2,490 | 2,520 | a1,500 | a400 | 275 | 405 | 192 | 20 |
| 11 | *17 | 42 | 546 | 935 | 2,260 | 2,070 | a1,300 | a380 | 378 | 250 | 241 | 20 |
| 12 | 17 | 39 | 430 | 1,080 | a2,000 | 1,960 | *a1,200 | a390 | 354 | *220 | 186 | 20 |
| 13 | 18 | 36 | *562 | 1,200 | a1,800 | 1,950 | 1,180 | a410 | 300 | 853 | 150 | 18 |
| 14 | 17 | 33 | 1,460 | 1,100 | a1,700 | 1,740 | 1,900 | a440 | 260 | 900 | 122 | 16 |
| 15 | 30 | 39 | 1,360 | 960 | 1,660 | 2,310 | 3,670 | a470 | 225 | 502 | *103 | 15 |
| 16 | 32 | 36 | 848 | 885 | 1,730 | 15,700 | 2,960 | a420 | 189 | 403 | 97 | 15 |
| 17 | 33 | 46 | 606 | 795 | 2,450 | *20,900 | 2,230 | a370 | 165 | 400 | 91 | 14 |
| 18 | 37 | 58 | 3,040 | *714 | 2,920 | 14,000 | 1,740 | a340 | 145 | 325 | 89 | 13 |
| 19 | 44 | 58 | 2,810 | 710 | 2,750 | 14,400 | 1,420 | a280 | 139 | 250 | 89 | 11 |
| 20 | 39 | 62 | 1,820 | 685 | 2,230 | 8,230 | 1,160 | a250 | 278 | 230 | 78 | 9.0 |
| 21 | 34 | 116 | 1,070 | 609 | *1,780 | 5,300 | 1,020 | a230 | 585 | 217 | 71 | 7.0 |
| 22 | 29 | 169 | 732 | 795 | 1,770 | 26,400 | 960 | a200 | 351 | 192 | 66 | 7.0 |
| 23 | 25 | 150 | 558 | 1,200 | 11,000 | a20,000 | 885 | a210 | 255 | 173 | 56 | *8.0 |
| 24 | 22 | 141 | 494 | 1,180 | 9,830 | a11,000 | 1,110 | a250 | 225 | 210 | 48 | 10 |
| 25 | 26 | 114 | 454 | 990 | 4,120 | a6,000 | 2,030 | a300 | 333 | 195 | 64 | 12 |
| 26 | 22 | 108 | 404 | 808 | 2,780 | a4,500 | 3,250 | a270 | 689 | 152 | 38 | 12 |
| 27 | 22 | 86 | 362 | 728 | 4,840 | a3,500 | 3,570 | a240 | 450 | 150 | 26 | 18 |
| 28 | 26 | 99 | 375 | 701 | 10,200 | a3,000 | 3,090 | a220 | 333 | 122 | 40 | 18 |
| 29 | 34 | 202 | 8,610 | 697 | - | a2,500 | 2,370 | a200 | 245 | 115 | 49 | 34 |
| 30 | 41 | 285 | *17,600 | 673 | ------- | a2,000 | 1,780 | a170 | 194 | 208 | *26 | 55 |
| 31 | 44 | ------- | 7,200 | 561 | ------- | a1,700 | ------- | *a150 | ------- | 316 | 41 | ------- |
| Total | 991 | 2,464 | 54,131 | 30,626 | 108,479 | 234,730 | 53,925 | 13,619 | 7,780 | 8,254 | 3,311 | 631.0 |
| Mean | 32.0 | 82.1 | 1,746 | 988 | 3,874 | 7,572 | 1,797 | 439 | 259 | 266 | 107 | 21.0 |
| Cfsm | 0.039 | 0.100 | 2.12 | 1.20 | 4.71 | 9.21 | 2.19 | 0.534 | 0.315 | 0.324 | 0.130 | 0.026 |
| In. | 0.04 | 0.11 | 2.45 | 1.39 | 4.91 | 10.62 | 2.44 | 0.62 | 0.35 | 0.37 | 0.15 | 0.03 |

Calendar year 1954: Max 17,600 Min 10 Mean 892 Cfsm 1.09 In. 14.73
Water year 1954-55: Max 26,400 Min 7.0 Mean 1,422 Cfsm 1.73 In. 23.48

Peak discharge (base, 16,000 cfs).--Dec. 30 (7 a.m.) 20,200 cfs (33:55 ft at 11 a.m.); Feb. 7 (1 p.m.) 16,000 cfs (28.44 ft at 1:30 p.m.); Mar. 17 (1 a.m.) 27,700 cfs (38.03 ft at 3 a.m.); Mar. 22 (3:30 p.m.) 30,600 cfs (40.25 ft at 6 p.m.).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

Note.--Shifting-control method used Oct. 1 to Dec. 16, Dec. 20-29.

## Cumberland River at Barbourville, Ky.

Location.--Lat 36°51'45", long 83°53'13", near center of span on upstream side of bridge on State Highway 11, at Barbourville, Knox County, 0.4 mile upstream from Richland Creek.

Drainage area.--972 sq mi.

Records available.--October 1922 to September 1931, July 1948 to September 1955.

Gage.--Wire-weight gage and crest-stage indicator; gage read twice daily. Datum of gage is 943.23 ft above mean sea level, Sandy Hook datum. Prior to Oct. 1, 1931, staff or chain gage at same site at datum 1.0 ft higher.

Average discharge.--16 years, 1,711 cfs.

Extremes.--Maximum discharge during year, 29,100 cfs Mar. 22; maximum gage height, 34.64 ft Mar. 23; minimum discharge observed, 6.8 cfs Sept. 23.
1922-31, 1948-55: Maximum discharge, 47,900 cfs May 31, 1927, from rating curve extended above 20,000 cfs on basis of runoff comparisons with nearby stations; maximum gage height, 40.25 ft Feb. 2, 1951; minimum discharge observed, 0.2 cfs Oct. 5, 1930 (gage height, -0.25 ft, datum then in use).
Flood in January 1946 reached a stage of 42.8 ft, present datum.

Remarks.--Records good above 1,000 cfs and fair below.

Revisions (water years).--WSP 603: 1923-24. WSP 1336: 1923(M), 1925(M), 1927, 1929, 1950-51.

Rating tables, water year 1954-55, except periods of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Nov. 9, 10; rate of change in stage used as a factor for most days above 4,800 cfs)

Oct. 1 to Mar. 23

| | | | |
|---|---|---|---|
| 1.3 | 10 | 4.0 | 1,530 |
| 1.4 | 28 | 6.0 | 3,360 |
| 1.6 | 80 | 10.0 | 5,400 |
| 1.8 | 144 | 20.0 | 10,700 |
| 2.0 | 222 | 27.0 | 17,300 |
| 3.0 | 790 | 34.0 | 26,900 |

Mar. 24 to Sept. 30

| | | | |
|---|---|---|---|
| 1.2 | 6 | 1.8 | 123 |
| 1.3 | 16 | 2.0 | 200 |
| 1.4 | 29 | 3.0 | 790 |
| 1.6 | 66 | | |

Note.--Same as preceding table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33 | e50 | 382 | 6,140 | 592 | 15,700 | 1,440 | 1,590 | a160 | 163 | 286 | a60 |
| 2 | 36 | e52 | 321 | 2,250 | 820 | 15,700 | 1,290 | 1,250 | *a140 | a140 | 230 | a50 |
| 3 | a45 | e55 | 249 | 1,290 | 2,620 | 8,660 | 1,140 | 1,040 | a130 | a130 | a210 | a45 |
| 4 | a60 | e58 | 181 | 988 | 2,800 | 5,200 | 1,070 | 886 | a120 | a110 | a180 | a40 |
| 5 | 80 | e54 | 151 | 898 | 2,150 | 3,260 | 956 | 790 | a115 | 98 | 167 | a35 |
| 6 | 56 | e56 | 272 | 1,000 | 2,920 | 7,340 | 1,390 | 706 | a110 | 89 | 130 | *29 |
| 7 | a40 | e60 | 496 | 1,090 | 14,600 | 17,100 | 2,570 | 598 | a140 | 145 | 117 | 26 |
| 8 | a32 | e67 | 478 | 1,020 | 9,940 | 9,500 | 2,280 | 502 | 225 | 280 | 111 | 22 |
| 9 | 28 | *75 | 359 | 1,020 | 5,290 | 5,260 | 2,200 | a480 | 358 | 274 | 117 | 25 |
| 10 | 24 | 64 | 580 | 936 | 2,840 | 2,900 | 1,610 | 454 | 304 | 502 | 346 | a23 |
| 11 | a19 | e50 | 670 | 968 | 2,130 | 1,880 | 1,310 | 400 | 388 | 262 | 370 | a21 |
| 12 | *a16 | e45 | 550 | 994 | 2,000 | 2,090 | 1,380 | 412 | 448 | 215 | 448 | a20 |
| 13 | a16 | e43 | *664 | 1,140 | 1,530 | 2,110 | *1,290 | 442 | 412 | 599 | 286 | 20 |
| 14 | 17 | e38 | 1,260 | 1,100 | 1,820 | 1,860 | 1,860 | 466 | 292 | 994 | a180 | 19 |
| 15 | 26 | e35 | 1,370 | 956 | 1,690 | 2,290 | 3,950 | 514 | 268 | *598 | a140 | a17 |
| 16 | 30 | e40 | 923 | 916 | 1,710 | 14,900 | 3,480 | 454 | 210 | 454 | *a125 | a15 |
| 17 | 36 | e43 | 748 | *844 | 2,550 | *25,100 | 2,550 | 394 | 175 | a430 | a110 | a15 |
| 18 | 38 | e50 | 3,060 | 754 | 3,490 | 20,600 | 1,950 | 322 | 148 | 382 | 98 | 14 |
| 19 | 48 | e60 | 3,940 | 736 | 2,940 | 20,900 | 1,550 | 310 | 148 | 286 | a90 | 14 |
| 20 | e43 | e65 | 1,950 | 724 | 2,270 | 13,400 | 1,250 | 262 | 163 | 235 | 79 | 10 |
| 21 | e38 | e100 | 1,110 | 676 | *1,840 | 9,070 | 1,080 | 230 | 610 | a230 | 74 | 8 |
| 22 | e35 | e180 | 862 | 892 | 1,860 | 25,000 | 1,040 | 215 | 424 | a220 | 69 | a7 |
| 23 | e28 | e160 | 670 | 1,340 | 10,800 | 25,400 | 1,010 | 205 | 292 | a200 | 62 | *a7 |
| 24 | e25 | e150 | 574 | 1,370 | 11,100 | 13,800 | 1,080 | 292 | 268 | 180 | a58 | a7 |
| 25 | e23 | e130 | 520 | 1,080 | 6,600 | 7,120 | 1,250 | 328 | 292 | a350 | 69 | a10 |
| 26 | e20 | e110 | 472 | 982 | 3,450 | 5,040 | 3,250 | 292 | 694 | 230 | 53 | 14 |
| 27 | e20 | 98 | 430 | 826 | 4,950 | 4,370 | 4,240 | 268 | 580 | 167 | 37 | 11 |
| 28 | e22 | 104 | a400 | 790 | 14,000 | 3,650 | 3,480 | 245 | 418 | 145 | 28 | 14 |
| 29 | e30 | 292 | 7,670 | 766 | - | 2,850 | 2,620 | a220 | 292 | a140 | 35 | 19 |
| 30 | e38 | 418 | *20,000 | 760 | ------- | 2,150 | 1,990 | a200 | 210 | a120 | 47 | 37 |
| 31 | e45 | ------- | 12,100 | 580 | ------- | 1,770 | ------- | a180 | ------- | 346 | 66 | ------- |
| Total | 1,047 | 2,802 | 63,412 | 35,826 | 121,302 | 295,970 | 57,556 | 14,947 | 8,534 | 8,714 | 4,418 | 654 |
| Mean | 33.8 | 93.4 | 2,046 | 1,156 | 4,332 | 9,547 | 1,919 | 482 | 284 | 281 | 143 | 21.8 |
| Cfsm | 0.035 | 0.096 | 2.10 | 1.19 | 4.46 | 9.82 | 1.97 | 0.496 | 0.292 | 0.289 | 0.147 | 0.022 |
| In. | 0.04 | 0.11 | 2.43 | 1.37 | 4.64 | 11.32 | 2.20 | 0.57 | 0.33 | 0.33 | 0.17 | 0.03 |

Calendar year 1954: Max 20,000 Min 10 Mean 1,044 Cfsm 1.07 In. 14.61
Water year 1954-55: Max 25,400 Min 7 Mean 1,685 Cfsm 1.73 In. 23.54

Peak discharge (base, 18,000 cfs).--Dec. 30 (3:30 p.m.) 22,000 cfs (29.60 ft at 8 p.m.); Mar. 16 (12:30 p.m.) 27,200 cfs (32.57 ft from 2 to 3 p.m., Mar. 17); Mar 22 (12:30 p.m.) 29,100 cfs (34.64 ft from 6 to 8:30 a.m., Mar. 23).

* Discharge measurement made on this day.

a Doubtful or no gage-height record; discharge estimated on basis of 3 discharge measurements and records for stations near Pineville and at Williamsburg.

e Stage-discharge relation indefinite; discharge estimated on basis of weather records and records for station near Pineville.

## Cumberland River at Williamsburg, Ky.

Location.--Lat 36°44'38", long 84°09'30", on left bank 10 ft downstream from bridge on U. S. Highway 25W and State Highway 92 at Williamsburg, Whitley County, and 2.1 miles downstream from Clear Fork.

Drainage area.--1,673 sq mi.

Records available.--October 1950 to September 1955. Gage-height records collected in this vicinity since 1908 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 891.52 ft above mean sea level, unadjusted. Prior to July 2, 1951, wire-weight gage at same site and datum.

Average discharge.--5 years, 2,556 cfs.

Extremes.--Maximum discharge during year, 29,900 cfs Mar. 19 (gage height, 25.91 ft); minimum, 11 cfs Sept. 23 (gage height, 1.70 ft).
1950-55: Maximum discharge, 37,200 cfs Feb. 2, 1951 (gage height, 29.85 ft); minimum, 6.1 cfs Oct. 23, 25, 26, 27, 1953 (gage height, 1.64 ft).
Maximum stage since at least 1918, 34.2 ft Jan. 10, 1946 (present datum), from graph based on U. S. Weather Bureau gage readings. Flood of Mar. 25, 1929, reached a stage of 32.7 ft, from graph based on U. S. Weather Bureau gage readings.

Remarks.--Records good. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1955 are given in WSP 1400.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 24 | | | | Mar. 25 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.9 | 27 | 4.0 | 810 | 1.7 | 11 | 2.4 | 120 |
| 2.0 | 37 | 6.0 | 2,410 | 1.8 | 21 | 3.0 | 310 |
| 2.3 | 88 | 10.0 | 6,500 | 2.0 | 45 | | |
| 2.7 | 200 | 20.0 | 19,900 | | | | |
| 3.0 | 310 | 30.0 | 37,500 | | | | |

Note.--Same as preceding table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *67 | 57 | 670 | 17,400 | 993 | 14,200 | 2,720 | 2,660 | 228 | 264 | 306 | 84 |
| 2 | 160 | 65 | 595 | 10,100 | 1,160 | 18,700 | 2,360 | 2,150 | 205 | 216 | 314 | 76 |
| 3 | 256 | 71 | *470 | 3,420 | 2,270 | 18,000 | 2,110 | 1,760 | *190 | 184 | 244 | 80 |
| 4 | 155 | 86 | 368 | 2,190 | 4,080 | 14,300 | 1,900 | 1,480 | 175 | 160 | 258 | 73 |
| 5 | 113 | 90 | 334 | 1,740 | 3,520 | 7,820 | 1,670 | 1,240 | 163 | 148 | 236 | 64 |
| 6 | 100 | 93 | 1,000 | 1,620 | 4,410 | 8,900 | 1,940 | 1,070 | 151 | 154 | 190 | 56 |
| 7 | 84 | 98 | 1,250 | 1,650 | 13,300 | 16,200 | 3,750 | 930 | 157 | 142 | 172 | *48 |
| 8 | 65 | 106 | 1,010 | 1,660 | 16,700 | 17,100 | 4,290 | 822 | 175 | 172 | 166 | 42 |
| 9 | 55 | 110 | 912 | 1,630 | *14,300 | 14,600 | 3,560 | 714 | 282 | 338 | 267 | 38 |
| 10 | 49 | 106 | 1,060 | 1,550 | 7,700 | 7,660 | 2,910 | 635 | 500 | 372 | 590 | 35 |
| 11 | 44 | 100 | 1,150 | 1,510 | 4,290 | 4,220 | 2,530 | 590 | 545 | 530 | 565 | 35 |
| 12 | 38 | *90 | 1,120 | 1,720 | 3,930 | 3,830 | 2,410 | 555 | 870 | 382 | 732 | 31 |
| 13 | 33 | 82 | 1,290 | 1,950 | 3,510 | 4,460 | 2,400 | 575 | 750 | 303 | 670 | 37 |
| 14 | 30 | 75 | 1,930 | 2,000 | 2,920 | 3,830 | 3,260 | 655 | 570 | 747 | 475 | 35 |
| 15 | 86 | 69 | 2,600 | 1,810 | 2,940 | 3,740 | *5,520 | 798 | 455 | *1,010 | 300 | 30 |
| 16 | 263 | *69 | *2,260 | 1,630 | 3,000 | 12,000 | 6,290 | 786 | 372 | 630 | 222 | 26 |
| 17 | 185 | 71 | 1,630 | 1,470 | 3,370 | 22,900 | 4,850 | 660 | 303 | 475 | 187 | 21 |
| 18 | 129 | 84 | 3,680 | 1,300 | 4,490 | 25,500 | 3,580 | 590 | 261 | 455 | *160 | 18 |
| 19 | 98 | 106 | 7,410 | 1,210 | 5,100 | *29,500 | 2,840 | 495 | 230 | 426 | 140 | 16 |
| 20 | 80 | 124 | 5,270 | *1,180 | 4,210 | 26,700 | 2,360 | 422 | 205 | 334 | 128 | *17 |
| 21 | 65 | 218 | 2,900 | 1,100 | 3,330 | 22,200 | 2,000 | 377 | 196 | 303 | 120 | 15 |
| 22 | 64 | 252 | 1,920 | 1,350 | 3,430 | 26,600 | 1,810 | 364 | 550 | 292 | 113 | 13 |
| 23 | 60 | 298 | 1,440 | 2,390 | 9,530 | 29,500 | 1,690 | 386 | 460 | 282 | 113 | 13 |
| 24 | 55 | 294 | 1,170 | 2,900 | *16,100 | 25,400 | 1,870 | 395 | 350 | 254 | 128 | 14 |
| 25 | 49 | 263 | 1,010 | 2,520 | 15,100 | 21,200 | 2,950 | 440 | 306 | 303 | 118 | 18 |
| 26 | 45 | 238 | 906 | 2,000 | 9,890 | 15,000 | 4,590 | 470 | 408 | 515 | 94 | 19 |
| 27 | 41 | 210 | 816 | 1,610 | 6,360 | 8,660 | 6,280 | 436 | 870 | 326 | 92 | 35 |
| 28 | 40 | 214 | 828 | 1,430 | 12,900 | 6,790 | 6,120 | 364 | 670 | 254 | 84 | 30 |
| 29 | 40 | 505 | 7,950 | 1,330 | - | 5,340 | 4,720 | 314 | 475 | 212 | 67 | 24 |
| 30 | 42 | 756 | 20,800 | 1,260 | ------- | 4,160 | 3,470 | 282 | 338 | 181 | 50 | 64 |
| 31 | 49 | ------- | 22,600 | 1,130 | ------- | 3,290 | ------- | 250 | ------- | 181 | 71 | ------- |
| Total | 2,640 | 5,000 | 98,349 | 77,760 | 182,633 | 442,300 | 98,750 | 23,665 | 11,408 | 10,545 | 7,372 | 1,107 |
| Mean | 85.2 | 167 | 3,173 | 2,508 | 6,523 | 14,270 | 3,292 | 763 | 380 | 340 | 238 | 36.9 |
| Cfsm | 0.051 | 0.100 | 1.90 | 1.50 | 3.90 | 8.53 | 1.97 | 0.456 | 0.227 | 0.203 | 0.142 | 0.022 |
| In. | 0.06 | 0.11 | 2.19 | 1.73 | 4.06 | 9.83 | 2.20 | 0.53 | 0.25 | 0.23 | 0.16 | 0.02 |

Calendar year 1954: Max 22,600 Min 10 Mean 1,749 Cfsm 1.05 In. 14.20
Water year 1954-55: Max 29,500 Min 13 Mean 2,634 Cfsm 1.57 In. 21.37

Peak discharge (base, 20,000 cfs).--Dec. 31 (4 a.m.) 23,800 cfs (22.46 ft); Mar. 19 (3:30 p.m.) 29,900 cfs (25.91 ft); Mar. 23 (12 m.) 29,800 cfs (25.83 ft).
* Discharge measurement made on this day.

## Cumberland River at Cumberland Falls, Ky.

Location.--Lat 36°50'14", long 84°20'36", on left bank 700 ft downstream from bridge on State Highway 90 and 1,200 ft upstream from Cumberland Falls, Whitley County.
Drainage area.--1,997 sq mi.
Records available.--August 1907 to December 1911, April 1915 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 825.49 ft above mean sea level, Sandy Hook datum. Aug. 15, 1907, to Dec. 10, 1911, staff gage at site 300 ft downstream at different datum. Apr. 3, 1915, to Sept. 1, 1933, staff gage at site 500 ft downstream from present site at present datum.
Average discharge.--43 years (1907-11, 1915-31, 1932-55), 3,119 cfs.
Extremes.--Maximum discharge during year, 41,600 cfs Mar. 22 (gage height, 12.21 ft); minimum, 13 cfs Sept. 22 (gage height, 1.01 ft).
1907-11, 1915-55: Maximum discharge, 59,600 cfs Jan. 28, 1918 (gage height, 15.5 ft, present site and datum); minimum, 4 cfs Sept. 19, 1954.
Remarks.--Records good except those for periods of no gage-height record, which are poor.
Revisions.--Revised figures of discharge, in cubic feet per second, for a low-water period in the water year 1919, superseding those published in WSP 503, are given herewith:

| Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|
| 1919 | | 1919-Con. | | 1919-Con. | |
| Sept. 12 | 62 | Sept. 18 | 31 | Sept. 26 | 28 |
| 13 | 55 | 19 | 28 | 27 | 26 |
| 14 | 49 | 20 | 26 | 28 | 24 |
| 15 | 43 | 21 | 26 | 29 | 22 |
| 16 | 37 | 24 | 55 | 30 | 26 |
| 17 | 34 | 25 | 31 | | |

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| September 1919..... | 199 | 22 | 67.5 | 0.034 | 0.04 |
| Water year 1918-19..... | 37,200 | 22 | 2,700 | 1.35 | 18.31 |
| Calendar year 1919..... | 37,200 | 22 | 3,280 | 1.64 | 22.31 |

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.0 | 11 | 2.5 | 1,520 |
| 1.05 | 21 | 3.0 | 2,430 |
| 1.1 | 32 | 4.5 | 6,120 |
| 1.2 | 70 | 6.0 | 11,000 |
| 1.4 | 200 | 9.0 | 23,400 |
| 1.8 | 580 | 12.0 | 40,200 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 88 | 47 | 832 | 17,600 | 1,280 | 18,300 | 3,290 | 3,380 | 325 | a400 | 224 | 55 |
| 2 | 158 | 65 | 736 | 12,300 | 1,470 | 19,500 | 2,840 | 2,710 | 289 | a300 | 390 | 76 |
| 3 | 216 | 76 | 640 | 5,730 | 2,140 | 18,500 | 2,570 | 2,280 | *264 | a250 | 361 | 76 |
| 4 | 325 | 76 | 503 | 2,970 | 3,810 | 15,800 | 2,340 | 1,940 | 248 | a210 | 289 | 76 |
| 5 | 224 | 100 | 440 | 2,300 | 4,220 | 9,900 | 2,110 | 1,670 | a230 | a190 | 307 | 82 |
| 6 | 165 | 106 | 760 | 1,980 | 6,900 | 12,000 | 2,350 | 1,460 | a210 | a170 | 307 | 70 |
| 7 | 137 | 112 | 1,570 | 1,850 | 15,700 | 17,800 | 4,150 | 1,280 | a200 | a160 | 248 | 60 |
| 8 | 118 | 112 | 1,260 | 1,830 | 17,400 | 17,800 | 5,070 | 1,140 | a200 | a150 | 232 | 55 |
| 9 | 100 | 118 | 1,110 | 1,790 | 15,300 | 15,900 | 4,420 | *1,000 | a240 | a190 | 224 | 47 |
| 10 | 82 | *124 | 1,140 | 1,760 | 9,830 | 9,970 | 3,620 | 904 | a420 | a280 | 602 | 41 |
| 11 | 70 | 124 | 1,260 | 1,730 | 5,450 | 5,340 | 3,130 | 844 | a560 | a470 | 724 | 41 |
| 12 | 60 | 118 | 1,280 | 1,760 | 4,580 | 4,480 | 2,930 | 784 | a940 | a580 | 904 | 38 |
| 13 | *51 | 106 | 1,490 | 1,980 | 4,020 | 5,450 | 2,880 | 796 | a1,020 | a420 | 868 | 38 |
| 14 | 47 | 100 | 1,980 | 2,130 | 3,470 | 4,790 | 3,660 | a900 | a900 | a380 | 712 | 32 |
| 15 | 44 | 94 | 2,510 | 2,090 | 3,360 | 4,760 | 5,130 | a1,000 | a760 | *992 | 481 | 32 |
| 16 | 55 | 88 | *2,690 | 1,870 | 3,500 | 15,400 | 6,670 | a1,070 | a600 | 880 | 334 | 32 |
| 17 | 280 | 88 | 2,050 | 1,750 | 3,950 | 25,700 | 5,760 | a1,140 | a500 | 628 | *264 | 29 |
| 18 | 208 | 82 | 3,860 | 1,540 | 4,730 | 30,000 | 4,400 | 880 | a400 | 525 | 224 | 25 |
| 19 | 151 | 82 | 7,240 | 1,460 | 5,640 | 32,400 | 3,470 | 784 | a320 | 616 | 193 | *23 |
| 20 | 124 | 112 | 6,240 | *1,380 | 5,070 | 29,100 | 2,840 | 676 | a250 | 481 | 165 | 19 |
| 21 | 100 | 124 | 3,830 | 1,340 | 4,080 | 25,200 | 2,450 | 604 | a220 | 380 | 151 | 15 |
| 22 | 88 | 224 | 2,450 | 1,570 | 5,530 | 37,700 | 2,220 | 569 | a300 | 361 | 158 | *15 |
| 23 | 76 | 280 | 1,830 | 2,570 | 10,900 | 31,000 | 2,130 | a520 | a650 | 352 | 151 | 17 |
| 24 | 70 | 343 | 1,500 | 3,310 | *16,600 | 27,300 | 2,410 | a540 | a540 | 352 | 130 | 21 |
| 25 | 70 | 325 | 1,280 | 3,060 | 16,100 | 22,500 | 3,760 | a550 | a450 | 335 | 137 | 21 |
| 26 | 60 | 298 | 1,150 | 2,470 | 11,900 | 16,400 | 5,450 | a580 | a350 | 492 | 137 | 17 |
| 27 | 55 | 280 | 1,040 | 2,050 | 7,800 | 10,800 | 6,880 | a640 | a400 | 547 | 112 | 17 |
| 28 | 51 | 256 | 1,130 | 1,780 | 13,700 | 7,950 | 7,060 | 547 | a1,100 | 410 | 94 | 15 |
| 29 | 51 | 280 | 12,600 | 1,620 | - | 6,380 | 5,810 | 450 | a900 | 361 | 94 | 15 |
| 30 | 47 | 772 | 22,100 | 1,540 | ------- | 5,050 | 4,380 | 400 | a600 | 298 | 82 | 134 |
| 31 | 47 | ------- | 22,600 | 1,420 | ------- | *4,000 | ------- | 352 | ------- | 240 | 65 | ------- |
| Total | 3,418 | 5,112 | 111,101 | 90,510 | 208,430 | 507,170 | 116,180 | 32,390 | 14,386 | 12,400 | 9,364 | 1,234 |
| Mean | 110 | 170 | 3,584 | 2,920 | 7,444 | 16,360 | 3,873 | 1,045 | 480 | 400 | 302 | 41.1 |
| Cfsm | 0.055 | 0.085 | 1.79 | 1.46 | 3.73 | 8.19 | 1.94 | 0.523 | 0.240 | 0.200 | 0.151 | 0.021 |
| In. | 0.06 | 0.10 | 2.07 | 1.69 | 3.88 | 9.44 | 2.16 | 0.60 | 0.27 | 0.23 | 0.17 | 0.02 |

Calendar year 1954: Max 22,600 Min 4.0 Mean 1,981 Cfsm 0.992 In. 13.46
Water year 1954-55: Max 37,700 Min 15 Mean 3,046 Cfsm 1.53 In. 20.69

Peak discharge (base, 24,000 cfs).--Mar. 19 (12:30 a.m.) 40,000 cfs (11.96 ft); Mar. 22 (3:30 a.m.) 41,600 cfs (12.21 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for station at Williamsburg.

## Laurel River at Corbin, Ky.

Location.--Lat 36°58'09", long 84°07'38", on left bank 200 ft downstream from bridge on State Highway 312, three-quarters of a mile northwest of Corbin, Whitley County, and 1.0 mile downstream from Lynn Camp Creek.

Drainage area.--198 sq mi.

Records available.--October 1922 to September 1924, July 1942 to September 1955. Prior to October 1953, published as Laurel River near Otas.

Gage.--Water-stage recorder. Datum of gage 956.05 ft above mean sea level, Sandy Hook datum. Oct. 2, 1922, to Sept. 30, 1924, staff gage at site 200 ft upstream at datum 2.08 ft higher.

Average discharge.--15 years, 344 cfs.

Extremes.--Maximum discharge during year, 7,780 cfs Mar. 22 (gage height, 12.83 ft); minimum, 1.2 cfs Oct. 5; minimum gage height, 0.99 ft Sept. 17.
1922-24, 1942-55: Maximum discharge, 18,600 cfs Jan. 8, 1946 (gage height, 17.94 ft), from rating curve extended above 9,000 cfs by logarithmic plotting; no flow Oct. 5, 6, 1922, Nov. 3, 1923.
Maximum stage known, 19 ft in 1911, 1913, 1922, present datum, from information by Corps of Engineers.

Remarks.--Records good. Some regulation at low flow by city water-supply reservoir.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 7 | | | | Feb. 8 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.07 | 0.9 | 1.5 | 9.5 | 1.0 | 1.5 | 2.5 | 102 |
| 1.1 | 1.1 | 1.7 | 18 | 1.1 | 1.9 | 3.0 | 213 |
| 1.2 | 1.9 | 1.9 | 30 | 1.2 | 2.9 | 4.0 | 540 |
| 1.3 | 3.7 | 2.2 | 60 | 1.3 | 4.7 | 7.0 | 2,100 |
| 1.4 | 6.3 | 2.5 | 102 | 1.4 | 7.2 | 10.0 | 4,130 |
| | | | | 1.5 | 10 | 13.0 | 8,030 |
| | | | | 2.0 | 44 | | |

Note.--Same as following table above 2.5 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.9 | 1.5 | 3.9 | 909 | 162 | 3,900 | 237 | 169 | 9.5 | 4.7 | 5.7 | 1.8 |
| 2 | 3.5 | 3.1 | 3.3 | 434 | 542 | 3,020 | 208 | 134 | 7.2 | *3.3 | 4.3 | 1.7 |
| 3 | 3.9 | 3.7 | 2.7 | 303 | 732 | 1,610 | 191 | 104 | 5.4 | 2.7 | 4.7 | 1.7 |
| 4 | *1.5 | 2.3 | 2.7 | 240 | 490 | 1,020 | 162 | 86 | 4.5 | 2.8 | 2.8 | 1.7 |
| 5 | 1.3 | *3.7 | 6.9 | 282 | 395 | 835 | 144 | 72 | 4.1 | 2.1 | 2.1 | 1.8 |
| 6 | 2.0 | 2.3 | 22 | 357 | 1,830 | 2,510 | 282 | 58 | 8.3 | 2.1 | *2.5 | 1.8 |
| 7 | 1.4 | 1.7 | 33 | 312 | 3,210 | 2,950 | 367 | 49 | 31 | 11 | 15 | 1.6 |
| 8 | 1.3 | 1.5 | 27 | 258 | 1,990 | 1,600 | 255 | 45 | 30 | 44 | 20 | 1.6 |
| 9 | 1.3 | 1.6 | 70 | 235 | 880 | 764 | 194 | 39 | 40 | 44 | 36 | 1.6 |
| 10 | 1.4 | 2.5 | 102 | 226 | 528 | 508 | 172 | 31 | 38 | 30 | 32 | 1.6 |
| 11 | 1.4 | 1.7 | 80 | 252 | 604 | 402 | 191 | 32 | 64 | 33 | 15 | 1.6 |
| 12 | 1.4 | 1.6 | 82 | 264 | 508 | 345 | 240 | 34 | 83 | 24 | 22 | 1.6 |
| 13 | 1.4 | 1.6 | 262 | 249 | 360 | 324 | *232 | 71 | 53 | 18 | 12 | 1.6 |
| 14 | 1.5 | 1.8 | 454 | 213 | 392 | 267 | 412 | 285 | 38 | 14 | 7.2 | 1.6 |
| 15 | 9.7 | 1.6 | *324 | 197 | 357 | 770 | 444 | 258 | 30 | 11 | 4.7 | 1.6 |
| 16 | 4.3 | 1.7 | 237 | 194 | 492 | 2,680 | 351 | 132 | 22 | 10 | 3.7 | *1.5 |
| 17 | 2.3 | 3.7 | 231 | *162 | 728 | 2,630 | 282 | 92 | 15 | 7.5 | 2.8 | 1.5 |
| 18 | 1.9 | 2.0 | 1,330 | 138 | 696 | 3,090 | 226 | 74 | 10 | 5.4 | 2.4 | 1.6 |
| 19 | 1.6 | 2.1 | 1,060 | 140 | 536 | 2,800 | 181 | 53 | 8.8 | 70 | 2.1 | 1.6 |
| 20 | 1.6 | 4.1 | 564 | 130 | 412 | 1,550 | 149 | 40 | 7.0 | 43 | 2.1 | 1.8 |
| 21 | 1.6 | 3.5 | 336 | 134 | *357 | 2,290 | 132 | *34 | 5.4 | 26 | 2.2 | 1.7 |
| 22 | 1.7 | 2.3 | 243 | 388 | 1,690 | *7,160 | 140 | 36 | 4.1 | 15 | 2.4 | 1.6 |
| 23 | 1.7 | 2.0 | 197 | 786 | *2,600 | 3,170 | 153 | 39 | 3.0 | 16 | 3.7 | 1.6 |
| 24 | 1.7 | 2.7 | 164 | 600 | 1,780 | 1,220 | 424 | 36 | 3.0 | 10 | 2.4 | 2.0 |
| 25 | 1.7 | 3.7 | 130 | 423 | 930 | 778 | 750 | 44 | 26 | 13 | 2.1 | 2.8 |
| 26 | 1.5 | 2.7 | 107 | 306 | 638 | 885 | 755 | 48 | 41 | 13 | 2.0 | 1.8 |
| 27 | 1.7 | 2.7 | 78 | 273 | 3,460 | 638 | 600 | 34 | 36 | 22 | 2.0 | 1.8 |
| 28 | 3.5 | 5.4 | 196 | 249 | 4,060 | 504 | 420 | 22 | 19 | 13 | 1.9 | 1.8 |
| 29 | 3.5 | 12 | 2,930 | 174 | - | 416 | 306 | 20 | 11 | 9.8 | 1.8 | 1.8 |
| 30 | 2.9 | 5.7 | 3,220 | 184 | ------- | 327 | 221 | 14 | 7.0 | 8.2 | 1.9 | 44 |
| 31 | 1.8 | ------- | 1,800 | 142 | ------- | 273 | ------- | 11 | ------- | 7.0 | 2.2 | ------- |
| Total | 70.9 | 88.5 | 14,298.5 | 9,154 | 31,359 | 51,236 | 8,821 | 2,196 | 664.3 | 535.6 | 223.7 | 93.8 |
| Mean | 2.29 | 2.95 | 461 | 295 | 1,120 | 1,653 | 294 | 70.8 | 22.1 | 17.3 | 7.22 | 3.13 |
| Cfsm | 0.012 | 0.015 | 2.33 | 1.49 | 5.66 | 8.35 | 1.48 | 0.358 | 0.112 | 0.087 | 0.036 | 0.016 |
| In. | 0.01 | 0.02 | 2.69 | 1.72 | 5.89 | 9.62 | 1.66 | 0.41 | 0.12 | 0.10 | 0.04 | 0.02 |

Calendar year 1954: Max 3,220 Min 0.9 Mean 194 Cfsm 0.980 In. 13.32
Water year 1954-55: Max 7,160 Min 1.3 Mean 325 Cfsm 1.64 In. 22.30

Peak discharge (base, 4,800 cfs).--Mar. 22 (2 a.m.) 7,780 cfs (12.83 ft).
* Discharge measurement made on this day.

## Wood Creek near London, Ky.

Location.--Lat 37°09'40", long 84°06'45", on left bank 50 ft downstream from bridge on U. S. Highway 25, 0.2 mile upstream from Peacock Branch, 2.8 miles northwest of London, Laurel County, and about 12 miles upstream from mouth.

Drainage area.--3.84 sq mi.

Records available.--September 1953 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,123.50 ft above mean sea level, unadjusted.

Extremes.--Maximum discharge during year, 352 cfs Mar. 21 (gage height, 5.28 ft), from rating curve extended above 160 cfs; minimum, 0.2 cfs Oct. 24-26 (gage height, 1.12 ft). 1953-55: Maximum discharge, that of Mar. 21, 1955; minimum, 0.2 cfs for several days each year; minimum gage height, 1.09 ft Aug. 22, 1954.

Remarks.--Records good.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 0.2 | 1.5 | 4.8 |
| 1.15 | .3 | 1.7 | 11 |
| 1.2 | .6 | 2.0 | 27 |
| 1.25 | 1.0 | 3.0 | 92 |
| 1.3 | 1.5 | 4.0 | 185 |
| 1.4 | 2.8 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.5 | 0.3 | 0.5 | 7.9 | 7.1 | 65 | 5.1 | 3.2 | 1.5 | 0.9 | 0.6 | 0.4 |
| 2 | .6 | .3 | .4 | 6.5 | 11 | 33 | 4.8 | 2.8 | 1.4 | *.8 | 1.0 | .3 |
| 3 | .4 | .3 | *.4 | 5.4 | 7.6 | 24 | 4.2 | 2.7 | 1.3 | .8 | .6 | .3 |
| 4 | *.3 | .6 | .3 | 5.4 | 6.5 | 15 | 3.8 | 2.6 | 1.3 | .8 | .5 | .4 |
| 5 | .3 | .5 | 3.5 | 8.2 | 8.9 | 17 | 4.2 | 2.4 | 1.2 | .8 | .7 | .3 |
| 6 | .3 | .3 | 1.9 | 7.0 | *76 | 49 | 4.8 | 2.1 | 1.5 | .8 | *.7 | *.3 |
| 7 | .3 | .3 | 1.0 | 6.2 | 38 | 29 | 3.8 | 2.1 | 2.1 | 1.9 | .6 | .3 |
| 8 | .3 | .3 | .8 | 5.4 | 20 | 17 | 3.4 | 2.0 | 2.7 | 1.2 | .6 | .3 |
| 9 | .3 | .3 | 4.1 | 5.4 | 13 | 12 | 3.2 | 2.0 | 1.7 | 1.4 | 5.1 | .3 |
| 10 | .3 | .3 | 1.7 | 5.4 | 12 | 9.5 | 2.8 | 1.7 | 3.2 | 1.0 | 1.5 | .3 |
| 11 | .3 | .3 | 1.2 | 5.6 | 13 | 8.2 | 3.8 | 1.7 | 2.8 | .7 | 1.0 | .4 |
| 12 | .3 | .3 | 2.2 | 5.1 | 9.8 | 7.6 | 3.0 | 1.9 | 2.1 | .6 | .9 | .3 |
| 13 | .3 | .3 | 7.0 | 4.6 | 9.2 | 6.2 | 4.4 | 9.9 | 1.7 | .6 | .7 | .3 |
| 14 | .3 | .3 | 3.4 | 4.2 | 8.9 | 5.9 | *4.4 | 6.2 | 1.5 | *.6 | .6 | .3 |
| 15 | .3 | .3 | 2.7 | 4.4 | 9.2 | 9.2 | 3.8 | 4.2 | 1.5 | .6 | .6 | .3 |
| 16 | .3 | .3 | 2.1 | 3.8 | 10 | *45 | 3.6 | 3.6 | 1.2 | .6 | .6 | .3 |
| 17 | .3 | .3 | 18 | 3.4 | 9.5 | 23 | 3.4 | 3.0 | 1.1 | .6 | .6 | .3 |
| 18 | .3 | .3 | 13 | *3.2 | 8.9 | 56 | 3.0 | 2.7 | 1.0 | .5 | .5 | .3 |
| 19 | .3 | .3 | 5.1 | 3.2 | 7.9 | 30 | 2.8 | 2.4 | 1.0 | 4.0 | .5 | .3 |
| 20 | .3 | .5 | 3.8 | 3.0 | 7.0 | 18 | 2.8 | 2.4 | 1.0 | 1.5 | .4 | .3 |
| 21 | .3 | .3 | 3.0 | 3.6 | 11 | 98 | 3.0 | *2.4 | .9 | .7 | .4 | .3 |
| 22 | .3 | .3 | 2.7 | 6.8 | *33 | 84 | 2.7 | 3.4 | .9 | .6 | .4 | .3 |
| 23 | .3 | .3 | 2.6 | 5.4 | 24 | 31 | 3.7 | 3.4 | 1.0 | .7 | .4 | .3 |
| 24 | .2 | .4 | 2.1 | 4.8 | 16 | 17 | 5.6 | 4.3 | 1.9 | 4.4 | .4 | .5 |
| 25 | .2 | .3 | 1.9 | 4.2 | 11 | 13 | 5.1 | 3.2 | 6.4 | 1.4 | .4 | .3 |
| 26 | .2 | .3 | 1.7 | 4.2 | 19 | 9.8 | 5.1 | 2.6 | 2.2 | .9 | .4 | .3 |
| 27 | .3 | .6 | 1.7 | 5.4 | *114 | 8.2 | 4.6 | 2.2 | 1.5 | .8 | .4 | .3 |
| 28 | .3 | 1.4 | 9.5 | 4.4 | 66 | 7.3 | 4.2 | 2.0 | 1.2 | 1.1 | .4 | .3 |
| 29 | .3 | .8 | *50 | 4.0 | - | 6.5 | 3.8 | 2.0 | 1.1 | 1.0 | .4 | .4 |
| 30 | .3 | .5 | 18 | 3.8 | ------ | 5.9 | 3.4 | 1.9 | 1.0 | .7 | .4 | 2.4 |
| 31 | .3 | ----- | 9.8 | 3.6 | ------ | 5.4 | ----- | 1.6 | ------ | .6 | .4 | ------ |
| Total | 9.6 | 11.9 | 176.1 | 153.5 | 587.5 | 765.7 | 116.3 | 90.6 | 50.9 | 33.6 | 22.7 | 11.7 |
| Mean | 0.31 | 0.40 | 5.68 | 4.95 | 21.0 | 24.7 | 3.88 | 2.92 | 1.70 | 1.08 | 0.73 | 0.39 |
| Cfsm | 0.081 | 0.104 | 1.48 | 1.29 | 5.47 | 6.43 | 1.01 | 0.760 | 0.443 | 0.281 | 0.190 | 0.102 |
| In. | 0.09 | 0.12 | 1.71 | 1.49 | 5.69 | 7.42 | 1.13 | 0.88 | 0.49 | 0.33 | 0.22 | 0.11 |

Calendar year 1954: Max 50 Min 0.2 Mean 2.74 Cfsm 0.714 In. 9.69
Water year 1954-55: Max 114 Min 0.2 Mean 5.56 Cfsm 1.45 In. 19.68

Peak discharge (base, 100 cfs, revised).--Feb. 6 (2:30 p.m.) 130 cfs (3.45 ft); Feb. 27 (7:30 a.m.) 222 cfs (4.37 ft); Mar. 6 (8 a.m.) 102 cfs (3.12 ft); Mar. 21 (9 p.m.) 352 cfs (5.28 ft).

* Discharge measurement made on this day.

## Rockcastle River at Billows, Ky.

Location.--Lat 37°10'05", long 84°17'25", on left bank 200 ft upstream from bridge on State Highway 80 at Billows, Rockcastle County, 1.0 mile downstream from Hawk Creek, 1.0 mile upstream from Pine Creek, and 13 miles west of London.

Drainage area.--607 sq mi.

Records available.--July 1936 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 802.90 ft above mean sea level, datum of 1929. Prior to Nov. 19, 1940, staff gage at same site and datum.

Average discharge.--19 years, 884 cfs.

Extremes.--Maximum discharge during year, 22,200 cfs Mar. 22 (gage height, 29.80 ft); minimum, 3.2 cfs Sept. 20, 21 (gage height, 0.63 ft).
1936-55: Maximum discharge, 46,800 cfs June 29, 1947 (gage height, 45.48 ft); minimum, 1.0 cfs Sept. 19, 20, 1954.
Flood in January 1913 reached a stage of about 40 ft, from information by Corps of Engineers.

Remarks.--Records good except those below 10 cfs, which are fair.

Revisions.--WSP 953: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 1-3)

| | | | |
|---|---|---|---|
| 0.6 | 3.4 | 3.0 | 340 |
| .7 | 6.0 | 4.0 | 680 |
| .8 | 9.5 | 6.0 | 1,560 |
| 1.0 | 18 | 10.0 | 3,580 |
| 1.2 | 30 | 15.0 | 6,950 |
| 1.6 | 62 | 20.0 | 11,300 |
| 2.0 | 123 | 30.0 | 22,500 |
| 2.5 | 220 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | 9.9 | 136 | 1,180 | 445 | 14,900 | 500 | 604 | 200 | 68 | 56 | 6.0 |
| 2 | 33 | 12 | 104 | 820 | 1,090 | 11,500 | 457 | 494 | *166 | 56 | 64 | 5.1 |
| 3 | 58 | 12 | 83 | 584 | 2,060 | 3,360 | 433 | 424 | 132 | 49 | 60 | *5.4 |
| 4 | *58 | 12 | 66 | 466 | 1,400 | 2,590 | 391 | 361 | 111 | 50 | 65 | 5.4 |
| 5 | 45 | 13 | 71 | 640 | 1,060 | 4,030 | 349 | 310 | 96 | 52 | 59 | 5.4 |
| 6 | 35 | 17 | 290 | 1,190 | 5,210 | 8,980 | *358 | 260 | 83 | 46 | 45 | 5.1 |
| 7 | 28 | 27 | 466 | 988 | *14,100 | 9,150 | 376 | 228 | 85 | 130 | 38 | 4.8 |
| 8 | 22 | 24 | 256 | 784 | 4,790 | 3,300 | 328 | 200 | 136 | 250 | 49 | 4.5 |
| 9 | 18 | *28 | 220 | 680 | 2,130 | 2,080 | 285 | 176 | 406 | 580 | 44 | 4.2 |
| 10 | 16 | 26 | 442 | 612 | 1,450 | 1,460 | 260 | 152 | 328 | 2,090 | 41 | 4.0 |
| 11 | 15 | 25 | 358 | 628 | 1,280 | 1,120 | 265 | 139 | 840 | 640 | 67 | 3.8 |
| 12 | *14 | 22 | 262 | 740 | 1,180 | 956 | 316 | 134 | 892 | 328 | 78 | 3.8 |
| 13 | 13 | 20 | 424 | 748 | 892 | 780 | 340 | 164 | 956 | *226 | 83 | 3.4 |
| 14 | 12 | 19 | 984 | 660 | 956 | 656 | 445 | 1,420 | 596 | 176 | 50 | 3.4 |
| 15 | 11 | 18 | *680 | 580 | 856 | 788 | 744 | 1,280 | 427 | 132 | 41 | 3.6 |
| 16 | 9.9 | 18 | 490 | 564 | 980 | 5,200 | 640 | 1,160 | 364 | 112 | 34 | *3.6 |
| 17 | 9.9 | 18 | 418 | 508 | 1,640 | 8,660 | 560 | 972 | 272 | 97 | *28 | 3.6 |
| 18 | 8.7 | 18 | 3,240 | *448 | 1,780 | 5,550 | 484 | 664 | 220 | 83 | 24 | 3.6 |
| 19 | 7.5 | 18 | 2,380 | 427 | 1,460 | 6,330 | 433 | 469 | 190 | 68 | 20 | 3.4 |
| 20 | 6.9 | 23 | 1,020 | 397 | 1,140 | 3,010 | 385 | 370 | 154 | 65 | 17 | 3.4 |
| 21 | 6.9 | 30 | 648 | 358 | 988 | 4,060 | 358 | 343 | 127 | 78 | 15 | 3.4 |
| 22 | 6.9 | 33 | 472 | 504 | 4,760 | 19,500 | 400 | 346 | 104 | 61 | 14 | 3.6 |
| 23 | 6.9 | 36 | 382 | 1,420 | *7,380 | 10,400 | 415 | 518 | 85 | 59 | 13 | 3.6 |
| 24 | 6.9 | 44 | 316 | 1,260 | 3,340 | 2,800 | 888 | 1,620 | 72 | 102 | 11 | 4.5 |
| 25 | *7.2 | 42 | 262 | 940 | 2,080 | 1,900 | 1,910 | 2,000 | 96 | 178 | 9.9 | 5.4 |
| 26 | 7.2 | 41 | 222 | 720 | 1,580 | 1,510 | 1,660 | 1,210 | 325 | 121 | 8.3 | 6.3 |
| 27 | 7.9 | 44 | 196 | 660 | 9,350 | 1,080 | 1,550 | 712 | 278 | 113 | 6.9 | 7.9 |
| 28 | 8.7 | 52 | 204 | 684 | 16,100 | 972 | 1,250 | 475 | 166 | 88 | 6.3 | 7.5 |
| 29 | 8.7 | 68 | 1,950 | 632 | - | 768 | 976 | 358 | 115 | 86 | 6.0 | 7.9 |
| 30 | 9.1 | 140 | 5,930 | 539 | ------- | 652 | 760 | 280 | 86 | 80 | 6.3 | 15 |
| 31 | 9.1 | ------- | 2,380 | 339 | ------- | 564 | ------- | 238 | ------- | 78 | 6.6 | ------- |
| Total | 528.4 | 909.9 | 25,352 | 21,700 | 91,477 | 138,606 | 18,516 | 18,081 | 8,108 | 6,342 | 1,046.3 | 150.6 |
| Mean | 17.0 | 30.3 | 818 | 700 | 3,267 | 4,471 | 617 | 583 | 270 | 205 | 33.8 | 5.02 |
| Cfsm | 0.028 | 0.050 | 1.35 | 1.15 | 5.38 | 7.37 | 1.02 | 0.960 | 0.445 | 0.338 | 0.056 | 0.0083 |
| In. | 0.03 | 0.06 | 1.55 | 1.33 | 5.60 | 8.49 | 1.13 | 1.11 | 0.50 | 0.39 | 0.06 | 0.009 |

Calendar year 1954: Max 6,360 Min 1.1 Mean 416 Cfsm 0.685 In. 9.30
Water year 1954-55: Max 19,500 Min 3.4 Mean 906 Cfsm 1.49 In. 20.26

Peak discharge (base, 14,000 cfs).--Feb. 7 (10 a.m.) 15,700 cfs (24.30 ft); Mar. 1 (10:30 p.m.) 17,200 cfs (25.61 ft); Mar. 22 (6 p.m.) 22,200 cfs (29.80 ft).
* Discharge measurement made on this day.

## Buck Creek near Shopville, Ky.

Location.--Lat 37°12'38", long 84°27'52", on right bank on downstream side of bridge on State Highway 461, 0.2 mile downstream from Brushy Creek, 3.7 miles north of Shopville, and 11.5 miles northeast of Somerset, Pulaski County.

Drainage area.--163 sq mi.

Records available.--December 1952 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 835.35 ft above mean sea level, unadjusted. Prior to Dec. 1, 1953, wire-weight gage and crest-stage indicator at same site and datum.

Extremes.--Maximum discharge during year, 9,920 cfs Mar. 22 (gage height, 14.93 ft); no flow at times.
1952-55: Maximum discharge, that of Mar. 22, 1955; no flow at times each year.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 22 | | | | Mar. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.48 | 0 | 2.3 | 20 | 1.6 | 0.2 | 2.2 | 11 |
| 1.55 | .1 | 2.5 | 41 | 1.7 | .6 | 2.3 | 17 |
| 1.6 | .2 | 2.7 | 77 | 1.8 | 1.3 | 2.4 | 26 |
| 1.7 | .7 | 3.0 | 150 | 1.9 | 2.7 | 2.5 | 39 |
| 1.8 | 1.7 | 4.0 | 480 | 2.0 | 4.5 | 2.7 | 77 |
| 1.9 | 3.4 | 5.0 | 980 | 2.1 | 7.2 | | |
| 2.0 | 5.5 | 8.0 | 3,380 | | | | |
| 2.1 | 8.0 | 12.0 | 6,900 | | | | |

Note.--Same as preceding table below 1.6 ft and above 2.7 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 0.2 | 0.8 | 246 | 91 | 4,520 | 132 | 67 | 41 | 16 | 6.9 | 0 |
| 2 | 15 | .3 | .6 | 192 | 276 | 1,520 | 122 | 59 | *34 | 14 | 7.5 | 0 |
| 3 | 5.0 | .3 | .5 | 148 | 252 | 660 | 120 | 50 | 26 | 11 | 8.0 | *0 |
| 4 | 2.4 | .4 | 1.6 | 128 | 189 | 738 | 105 | 43 | 23 | 22 | 33 | 0 |
| 5 | 1.2 | .2 | 6.7 | 198 | 195 | 1,220 | 95 | 36 | 20 | 19 | 18 | 0 |
| 6 | .8 | .1 | 38 | 225 | 3,720 | 2,960 | 112 | 31 | 20 | 13 | 9.1 | 0 |
| 7 | .5 | .2 | 55 | 183 | 2,840 | 1,240 | 108 | 27 | 77 | 12 | 6.9 | 0 |
| 8 | .4 | .2 | 35 | 150 | 715 | 574 | 86 | 24 | 362 | 17 | 22 | 0 |
| 9 | .3 | *.1 | 30 | 145 | 436 | 390 | 77 | 22 | 297 | 82 | 15 | 0 |
| 10 | .2 | .1 | 36 | 143 | 324 | 303 | 71 | 19 | 231 | 43 | 14 | 0 |
| 11 | .2 | .1 | 36 | 207 | 327 | 264 | 91 | 18 | 1,110 | 24 | 12 | 0 |
| 12 | *.1 | .1 | 34 | 198 | a290 | 228 | 118 | 19 | 726 | 21 | 7.2 | 0 |
| 13 | .1 | .1 | 98 | 186 | a250 | 192 | 105 | 134 | 529 | *21 | 5.2 | 0 |
| 14 | .1 | .1 | *145 | 150 | a220 | 171 | *112 | 329 | 315 | 15 | 4.1 | 0 |
| 15 | .1 | .1 | 98 | 145 | 216 | 297 | 93 | 168 | 216 | 12 | 2.8 | 0 |
| 16 | .1 | .1 | 77 | 143 | 279 | *2,030 | 79 | 120 | 159 | 11 | 2.2 | 0 |
| 17 | .1 | .1 | 105 | 128 | 372 | 911 | 73 | 115 | 122 | 9.9 | *1.5 | 0 |
| 18 | .1 | .1 | 476 | 112 | 309 | 1,650 | 67 | 82 | 95 | 8.0 | 1.1 | 0 |
| 19 | .1 | .1 | 255 | 108 | 264 | 844 | 61 | 59 | 77 | 6.6 | *.8 | 0 |
| 20 | .1 | .4 | 162 | *100 | 225 | 516 | 53 | 48 | 67 | 5.8 | .6 | 0 |
| 21 | 0 | .3 | 120 | 102 | 446 | 2,460 | 55 | 59 | 52 | 4.5 | .5 | 0 |
| 22 | 0 | .4 | 98 | 219 | *4,520 | 6,270 | 63 | 100 | 43 | 3.7 | .4 | *0 |
| 23 | 0 | .4 | 82 | 297 | 1,750 | 956 | 79 | 142 | 34 | 2.8 | .3 | 0 |
| 24 | 0 | .4 | 71 | 225 | 655 | 529 | 249 | 450 | 29 | 57 | .2 | 0 |
| 25 | 0 | .5 | 59 | 186 | 416 | 396 | 231 | 294 | 66 | 22 | .2 | 0 |
| 26 | 0 | .5 | 52 | 145 | 508 | 327 | 183 | 189 | 108 | 32 | .1 | 0 |
| 27 | 0 | .6 | 47 | 143 | *3,920 | 243 | 148 | 128 | 59 | 24 | .1 | 0 |
| 28 | .1 | .7 | 126 | a120 | 2,920 | 216 | 120 | 93 | 36 | 15 | .1 | 0 |
| 29 | .1 | .9 | *844 | a105 | - | 189 | 98 | 77 | 27 | 18 | .1 | 0 |
| 30 | .2 | .8 | 876 | a105 | ------- | 159 | 79 | 63 | 22 | 14 | .1 | 9.5 |
| 31 | .2 | ------- | 337 | a90 | ------- | 145 | ------- | 53 | ------- | 9.9 | .1 | ------- |
| Total | 45.5 | 8.9 | 4,402.2 | 4,972 | 26,925 | 33,118 | 3,185 | 3,118 | 5,023 | 586.2 | 178.1 | 9.5 |
| Mean | 1.47 | 0.30 | 142 | 160 | 962 | 1,068 | 106 | 101 | 167 | 18.9 | 5.75 | 0.32 |
| Cfsm | 0.0090 | 0.0018 | 0.871 | 0.982 | 5.90 | 6.55 | 0.650 | 0.620 | 1.02 | 0.116 | 0.035 | 0.0020 |
| In. | 0.01 | 0.002 | 1.00 | 1.13 | 6.14 | 7.56 | 0.73 | 0.71 | 1.15 | 0.13 | 0.04 | 0.002 |

Calendar year 1954: Max 2,470 Min 0 Mean 89.9 Cfsm 0.552 In. 7.47
Water year 1954-55: Max 6,270 Min 0 Mean 223 Cfsm 1.37 In. 18.60

Peak discharge (base, 2,600 cfs).--Feb. 6 (8:30 to 9 p.m.) 6,410 cfs (11.51 ft); Feb. 22 (3 p.m.) 6,150 cfs (11.25 ft); Mar. 1 (1 p.m.) 6,420 cfs (11.52 ft); Mar. 6 (2 p.m.) 3,970 cfs (8.74 ft); Mar. 16 (4 p.m.) 3,320 cfs (7.93 ft); Mar. 22 (4 a.m.) 9,920 cfs (14.93 ft).

* Discharge measurement or observation of no flow made on this day.

a No gage-height record; discharge estimated on basis of weather records, estimated graph, and records for nearby stations.

## New River at New River, Tenn.

Location.--Lat 36°23'08", long 84°33'17", on left bank at town of New River, Scott County, 700 ft downstream from Phillips Creek, 1,000 ft downstream from bridge on U. S. Highway 27, 1.7 miles downstream from Brimstone Creek, and at mile 8.6.

Drainage area.--383 sq mi.

Records available.--August 1934 to September 1955. Gage-height records collected in this vicinity 1908-52 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,092.67 ft above mean sea level, datum of 1929.

Average discharge.--21 years, 696 cfs.

Extremes.--Maximum discharge during year, 32,900 cfs Mar. 22 (gage height, 27.83 ft); minimum, 2.0 cfs Sept. 23, 24 (gage height, 1.30 ft).
1934-55: Maximum discharge, 44,300 cfs Feb. 3, 1939 (gage height, 33.58 ft); no flow for part of each day Aug. 12-15, 1944.
Maximum stage known, 41.2 ft Mar. 23, 1929, on old U. S. Weather Bureau gage 1,200 ft upstream and at datum 3.41 ft higher.

Remarks.--Records good except those for period of no gage-height record and those below 10 cfs, which are fair.

Cooperation.--Five discharge measurements furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 139 | 12 | 210 | 1,290 | 295 | 3,220 | 540 | 326 | 80 | 135 | 70 | 14 |
| 2 | 198 | 15 | 153 | 952 | 707 | 3,060 | 495 | 280 | 68 | 110 | 57 | 15 |
| 3 | 181 | 17 | 119 | 721 | 1,230 | 1,710 | 550 | 242 | 57 | 93 | 49 | 20 |
| 4 | 103 | 17 | 97 | 595 | 919 | 1,190 | 453 | 209 | a50 | 450 | *46 | 17 |
| 5 | 66 | 18 | 135 | 515 | 760 | 870 | 430 | 184 | a45 | 314 | 44 | 13 |
| 6 | 50 | 19 | 893 | 481 | 5,200 | 1,830 | 1,250 | 160 | a45 | 184 | 41 | 11 |
| 7 | 39 | 24 | 675 | 467 | 7,380 | 2,940 | 1,840 | 142 | a150 | 176 | 45 | 8.3 |
| 8 | 31 | 31 | 381 | 426 | 2,540 | *1,630 | 1,290 | 124 | a350 | 372 | 50 | 6.4 |
| 9 | 25 | 31 | 463 | 408 | *1,420 | 1,110 | 980 | 108 | a900 | 658 | 202 | 6.0 |
| 10 | 20 | 28 | 990 | 390 | 970 | 855 | 776 | 96 | a700 | 322 | 306 | a7 |
| 11 | 16 | 25 | 530 | 467 | 1,010 | 705 | 690 | 92 | a2,000 | 203 | 256 | a 11 |
| 12 | 13 | 23 | 364 | *610 | 1,010 | 876 | 788 | 88 | a1,400 | 480 | 386 | a20 |
| 13 | 11 | 20 | 364 | 650 | 790 | 936 | 806 | 160 | a900 | 490 | 280 | *27 |
| 14 | 9.3 | 19 | *448 | 565 | 785 | 825 | *2,200 | 740 | a700 | 318 | 160 | 18 |
| 15 | 8.8 | 18 | 467 | 515 | 715 | 810 | 2,210 | 830 | a500 | 225 | 110 | 12 |
| 16 | 61 | 18 | 426 | 491 | 760 | 2,140 | 1,380 | 540 | a350 | 206 | 82 | 7.8 |
| 17 | 72 | *18 | 590 | 422 | 975 | 3,270 | 992 | 382 | a250 | 228 | 68 | 6.0 |
| 18 | 49 | 19 | 5,870 | 376 | 1,050 | 10,900 | 758 | 288 | a200 | 160 | 57 | 5.0 |
| 19 | 33 | 23 | 2,150 | 412 | 931 | 6,320 | 600 | 216 | a150 | *128 | 47 | 4.3 |
| 20 | 27 | 32 | 1,020 | 390 | 775 | 3,580 | 505 | 178 | a120 | 110 | 39 | 3.6 |
| 21 | 23 | 66 | 665 | 376 | 705 | *5,990 | 435 | 166 | *135 | 120 | 36 | 3.0 |
| 22 | 19 | 67 | 500 | 957 | 2,130 | *22,500 | 417 | 176 | 98 | 100 | 38 | 2.6 |
| 23 | 17 | 66 | 412 | 1,270 | 8,280 | 3,550 | 370 | 248 | 78 | 88 | 28 | 2.2 |
| 24 | 13 | 58 | 355 | 990 | 3,360 | 1,920 | 430 | *216 | 74 | 103 | 38 | 2.8 |
| 25 | 11 | 52 | 326 | 770 | 1,650 | 1,900 | 565 | 203 | 290 | 303 | 43 | 4.8 |
| 26 | 9.9 | 47 | 299 | 575 | 1,170 | 3,790 | 580 | 166 | 1,870 | 354 | 34 | 4.8 |
| 27 | *9.9 | 44 | 273 | 500 | 2,690 | 2,200 | 595 | 132 | 707 | 238 | 26 | 4.3 |
| 28 | 10 | 63 | 614 | 444 | 4,280 | 1,480 | 545 | 108 | 390 | 160 | 22 | 5.0 |
| 29 | 10 | 394 | 21,300 | 412 | - | 1,090 | 466 | 110 | 245 | 120 | 17 | 7.8 |
| 30 | 9.3 | 347 | 9,830 | 359 | ------- | 824 | 386 | 110 | 178 | 108 | 17 | 513 |
| 31 | 10 | ------- | 2,320 | 303 | ------- | 658 | ------- | 96 | ------- | 90 | 18 | ------- |
| Total | 1,294.2 | 1,631 | 53,239 | 18,099 | 54,487 | 94,679 | 24,322 | 7,116 | 13,080 | 7,146 | 2,702 | 782.7 |
| Mean | 41.7 | 54.4 | 1,717 | 584 | 1,946 | 3,054 | 811 | 230 | 436 | 231 | 87.2 | 26.1 |
| Cfsm | 0.109 | 0.142 | 4.48 | 1.52 | 5.08 | 7.97 | 2.12 | 0.601 | 1.14 | 0.603 | 0.228 | 0.068 |
| In. | 0.13 | 0.16 | 5.17 | 1.76 | 5.29 | 9.19 | 2.36 | 0.69 | 1.27 | 0.69 | 0.26 | 0.08 |

Calendar year 1954: Max 21,300 Min 0.5 Mean 634 Cfsm 1.66 In. 22.48
Water year 1954-55: Max 22,500 Min 2.2 Mean 763 Cfsm 1.99 In. 27.05

Peak discharge (base, 16,000 cfs).--Dec. 29 (2:30 p.m.) 27,200 cfs (24.98 ft); Mar. 18 (4:30 p.m.) 17,100 cfs (19.31 ft); Mar. 22 (9:30 a.m.) 32,900 cfs (27.83 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for Clear Fork near Robbins.

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## Clear Fork near Robbins, Tenn.
(Formerly published as Clear Fork River near Robbins)

Location.--Lat 36°23'18", long 84°37'49", on right bank 300 ft downstream from Burnt Mill Bridge, 3.3 miles northwest of Robbins, Scott County, and at mile 3.7.

Drainage area.--278 sq mi.

Records available.--October 1930 to September 1955. Published as Clear Fork River near Robbins October 1951 to September 1954.

Gage.--Water-stage recorder. Datum of gage is 1,081.46 ft above mean sea level, Sandy Hook datum. Prior to Aug. 10, 1940, staff gage at site 300 ft upstream at datum 1.00 ft higher.

Average discharge.--25 years, 448 cfs.

Extremes.--Maximum discharge during year, 19,400 cfs Mar. 22 (gage height, 14.34 ft); minimum, 4.5 cfs Sept. 23, 24 (gage height, 0.97 ft).
1930-55: Maximum discharge, 34,000 cfs Feb. 3, 1939 (gage height, 18.5 ft, from floodmarks, site and datum then in use), from rating curve extended above 14,000 cfs on basis of slope-area determination of peak flow; minimum observed, 0.2 cfs Sept. 19-21, 1932; minimum gage height observed, 0.28 ft Oct. 1-3, 1936, site and datum then in use.

Remarks.--Records good except those below 10 cfs, which are fair.

Cooperation.--Five discharge measurements furnished by Corps of Engineers.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.9 | 2.6 | 2.5 | 285 |
| 1.0 | 5.4 | 3.0 | 480 |
| 1.1 | 9.2 | 4.0 | 1,070 |
| 1.3 | 21 | 6.0 | 2,700 |
| 1.6 | 52 | 9.0 | 6,960 |
| 1.8 | 84 | 11.0 | 10,600 |
| 2.0 | 128 | 13.0 | 15,300 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 7.6 | 72 | 1,020 | 288 | 2,020 | 490 | 228 | 76 | 62 | 69 | 8.8 |
| 2 | 97 | 8.4 | 55 | 732 | 607 | 1,965 | 440 | 199 | 60 | 50 | 55 | 8.0 |
| 3 | 145 | 8.4 | 46 | 525 | 690 | 1,310 | 596 | 174 | 50 | 42 | 52 | 7.6 |
| 4 | 82 | 8.0 | 40 | 423 | 530 | 948 | 510 | 150 | 42 | 40 | *74 | 7.2 |
| 5 | 47 | 8.4 | 48 | 371 | 462 | 720 | 520 | 131 | 36 | 86 | 62 | 6.8 |
| 6 | 35 | 8.8 | 473 | 383 | 3,770 | 1,240 | 2,010 | 116 | 35 | 64 | 45 | 6.0 |
| 7 | 26 | 9.7 | 367 | 363 | 4,500 | 2,060 | 1,990 | 102 | 45 | 185 | 44 | 5.7 |
| 8 | 21 | 11 | 215 | 306 | *1,900 | *1,300 | 1,220 | 92 | 99 | 142 | 55 | 5.4 |
| 9 | 18 | 11 | 171 | 288 | 1,170 | 922 | 858 | 82 | 533 | 219 | 69 | 5.4 |
| 10 | 17 | 9.7 | 192 | 285 | 828 | 696 | 662 | 74 | 435 | 171 | 77 | 5.7 |
| 11 | 14 | 9.2 | 174 | *341 | 870 | 575 | 591 | 70 | 1,010 | 114 | 218 | 6.4 |
| 12 | 13 | 8.8 | 139 | 359 | 792 | 780 | 580 | 72 | 714 | 90 | 165 | 14 |
| 13 | 12 | 8.4 | 205 | 352 | 580 | 852 | 545 | 135 | 431 | 208 | 156 | *18 |
| 14 | 11 | 8.0 | *344 | 313 | 624 | 679 | *980 | 327 | 320 | 114 | 88 | 15 |
| 15 | 10 | 7.6 | 316 | 296 | 535 | 640 | 780 | 240 | 247 | 81 | 60 | 12 |
| 16 | 9.2 | 8.0 | 264 | 302 | 618 | 1,030 | 624 | 174 | 180 | 67 | 44 | 10 |
| 17 | 9.2 | *8.4 | 377 | 271 | 792 | 1,610 | 505 | 136 | 136 | 64 | 35 | 8.4 |
| 18 | 8.4 | 8.4 | 2,810 | 244 | 744 | 6,270 | 423 | 109 | 104 | 50 | 30 | 8.0 |
| 19 | 7.6 | 8.8 | 1,410 | 268 | 630 | 5,260 | 367 | 90 | 88 | *40 | 26 | 6.8 |
| 20 | 7.2 | 12 | 732 | 254 | 520 | 2,700 | 320 | 77 | 74 | 40 | 21 | 6.0 |
| 21 | 6.8 | 45 | 490 | 247 | 569 | 5,230 | 288 | 72 | *94 | 55 | 18 | 5.4 |
| 22 | 6.4 | 45 | 379 | 456 | 2,740 | *14,100 | 285 | 90 | 69 | 62 | 15 | 5.1 |
| 23 | 6.0 | 33 | 338 | 768 | 4,330 | 3,480 | 264 | 293 | 54 | 42 | 14 | 4.8 |
| 24 | 6.0 | 26 | 306 | 668 | 2,210 | 1,700 | 439 | *224 | 45 | 42 | 27 | 5.1 |
| 25 | 6.0 | 22 | 260 | 525 | 1,300 | 1,760 | 618 | 183 | 131 | 166 | 32 | 8.0 |
| 26 | 6.0 | 20 | 224 | 427 | 928 | 4,610 | 495 | 150 | 613 | 240 | 21 | 9.7 |
| 27 | *6.0 | 20 | 196 | 415 | 2,020 | 2,140 | 435 | 109 | 285 | 171 | 17 | 14 |
| 28 | 6.4 | 21 | 471 | 403 | 2,630 | 1,400 | 387 | 82 | 159 | 102 | 14 | 13 |
| 29 | 6.4 | 30 | 10,400 | 367 | - | 1,010 | 310 | 81 | 104 | 291 | 12 | 10 |
| 30 | 6.8 | 81 | 5,380 | 327 | ------- | 750 | 264 | 114 | 79 | 162 | 11 | 892 |
| 31 | 7.2 | ------- | 1,780 | 271 | ------- | 591 | ------- | 98 | ------- | 98 | 10 | ------- |
| Total | 678.6 | 521.6 | 28,674 | 12,550 | 38,177 | 70,348 | 18,836 | 4,274 | 6,348 | 3,360 | 1,636 | 1,138.3 |
| Mean | 21.9 | 17.4 | 925 | 405 | 1,363 | 2,269 | 628 | 138 | 212 | 108 | 52.8 | 37.9 |
| Cfsm | 0.079 | 0.063 | 3.33 | 1.46 | 4.90 | 8.16 | 2.26 | 0.496 | 0.763 | 0.388 | 0.190 | 0.136 |
| In. | 0.09 | 0.07 | 3.84 | 1.68 | 5.11 | 9.41 | 2.52 | 0.57 | 0.85 | 0.45 | 0.22 | 0.15 |

Calendar year 1954: Max 11,800 Min 1.0 Mean 407 Cfsm 1.46 In. 19.89
Water year 1954-55: Max 14,100 Min 4.8 Mean 511 Cfsm 1.84 In. 24.96

Peak discharge (base, 6,500 cfs).--Dec. 29 (3:30 p.m.) 12,900 cfs (12.09 ft); Feb. 6 (9:30 p.m.) 7,350 cfs (9.23 ft); Mar. 18 (4 p.m.) 10,200 cfs (10.79 ft); Mar. 22 (4 a.m.) 19,400 cfs (14.34 ft).
* Discharge measurement made on this day.

## South Fork Cumberland River near Stearns, Ky.

Location.--Lat 36°37'37", long 84°32'00", on right bank at mouth of Bear Creek, 1,600 ft upstream from Salt Branch and 5.5 miles southwest of Stearns, McCreary County. Records include flow of Bear Creek.

Drainage area.--942 sq mi, including that of Bear Creek.

Records available.--September 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 764.81 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 1,716 cfs.

Extremes.--Maximum discharge during year, 54,300 cfs Mar. 22 (gage height, 33.90 ft); minimum, 29 cfs Sept. 23, 24 (gage height, 1.76 ft).
1942-55: Maximum discharge, 69,600 cfs Feb. 13, 1948 (gage height, 38.50 ft); minimum, 11 cfs Oct. 4, 1948, Sept. 17, 18, 19, 20, 1954; minimum gage height, 1.53 ft Sept. 17, 18, 19, 20, 1954.
Maximum stage known, 52.9 ft in March 1929, from information by local residents.

Remarks.--Records good except those below 50 cfs, which are fair.

Revisions (water years).--WSP 1113: 1946(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.6 | 16 | 6.0 | 2,000 |
| 1.8 | 33 | 10.0 | 5,500 |
| 2.0 | 56 | 15.0 | 12,000 |
| 2.2 | 86 | 19.0 | 18,500 |
| 2.5 | 165 | 24.0 | 28,500 |
| 4.0 | 800 | 32.0 | 48,700 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 64 | 52 | 476 | 3,630 | 805 | 6,580 | 1,610 | 960 | g268 | 340 | 256 | 55 |
| 2 | 279 | 51 | 360 | 2,540 | 1,320 | 7,040 | 1,430 | 830 | g220 | 284 | 200 | 51 |
| 3 | 444 | 51 | 284 | 1,840 | 2,570 | 4,630 | 1,550 | 720 | g190 | 232 | 186 | 49 |
| 4 | 396 | 51 | 228 | 1,460 | 2,180 | 3,350 | 1,490 | 625 | g159 | 204 | 190 | 44 |
| 5 | 260 | *62 | 272 | 1,250 | 1,750 | 2,580 | 1,330 | 556 | g141 | 600 | 172 | 42 |
| 6 | 182 | 69 | 888 | 1,140 | 9,540 | 4,470 | 2,760 | 500 | g141 | 520 | 162 | 43 |
| 7 | *138 | 68 | 1,700 | 1,100 | 18,500 | *7,540 | 5,300 | *440 | g190 | 408 | 150 | 44 |
| 8 | 108 | 64 | *925 | 990 | 7,100 | 4,770 | 3,750 | 408 | g268 | 650 | 122 | 40 |
| 9 | 88 | 64 | 705 | 920 | *4,110 | 3,350 | 2,740 | 368 | g930 | 1,050 | 135 | 37 |
| 10 | 78 | 69 | 1,160 | 905 | 2,920 | 2,560 | 2,140 | 340 | *g1,640 | 890 | 336 | 37 |
| 11 | 71 | 76 | 1,070 | 975 | 2,680 | 2,040 | 1,870 | 324 | g2,460 | 552 | 292 | 41 |
| 12 | 65 | 72 | 740 | 1,190 | 2,700 | 2,240 | 1,810 | 316 | g3,220 | 468 | 560 | 72 |
| 13 | 60 | 68 | 850 | 1,280 | 2,060 | 2,800 | 1,810 | 472 | g1,760 | 760 | 625 | *76 |
| 14 | 56 | 65 | 1,080 | 1,210 | 2,070 | 2,300 | 3,060 | 1,010 | g1,190 | 680 | 448 | 62 |
| 15 | 52 | 62 | 1,090 | 1,060 | 1,850 | 2,350 | 3,850 | 1,390 | 890 | 496 | 324 | 66 |
| 16 | 49 | 65 | 980 | 1,040 | 1,910 | 6,330 | 2,960 | 1,180 | 665 | 408 | 240 | 61 |
| 17 | 49 | 69 | 1,090 | 960 | 2,460 | 8,050 | 2,220 | 880 | 524 | 380 | 186 | 52 |
| 18 | 66 | 66 | 8,720 | 860 | 2,720 | 16,500 | 1,730 | 675 | 432 | *384 | 147 | 45 |
| 19 | 99 | 64 | 6,040 | 850 | 2,420 | 19,600 | 1,440 | 536 | 372 | 348 | 124 | 41 |
| 20 | 79 | 83 | 2,840 | 865 | 2,000 | 9,740 | 1,220 | 460 | 336 | 284 | 106 | 37 |
| 21 | 69 | 108 | 1,760 | 810 | 1,860 | 11,600 | 1,070 | 412 | 320 | 244 | 97 | 33 |
| 22 | 61 | 124 | 1,290 | 1,310 | 7,080 | 47,000 | 1,000 | 404 | 332 | 264 | 101 | 31 |
| 23 | 56 | 168 | 1,050 | 2,620 | 15,600 | 14,300 | 945 | 512 | 264 | 248 | *79 | 29 |
| 24 | 50 | 150 | 910 | 2,460 | 9,120 | *5,830 | 1,690 | 675 | 220 | 244 | 78 | 36 |
| 25 | 49 | 138 | 800 | 1,880 | 4,680 | 4,280 | 2,540 | 580 | 256 | 240 | 69 | 83 |
| 26 | 46 | 122 | 710 | 1,480 | 3,250 | 9,290 | 2,180 | 508 | 1,850 | 592 | 83 | 78 |
| 27 | 48 | 116 | 635 | 1,280 | 4,820 | 6,390 | 1,920 | 420 | 1,740 | 600 | 86 | 65 |
| 28 | 56 | 135 | 769 | 1,170 | 10,000 | 4,250 | 1,640 | 352 | 870 | 468 | 74 | 51 |
| 29 | 57 | 196 | 27,800 | 1,090 | - | 3,210 | 1,390 | g320 | 560 | 416 | 64 | 49 |
| 30 | 59 | 512 | 27,400 | 980 | ------- | 2,470 | 1,140 | g320 | 428 | 480 | 59 | 1,170 |
| 31 | 56 | ------- | *6,810 | 825 | ------- | 2,720 | ------- | g308 | ------- | 336 | 59 | ------- |
| Total | 3,290 | 3,060 | 101,432 | 41,970 | 130,075 | 230,160 | 61,585 | 17,801 | 22,836 | 14,070 | 5,810 | 2,620 |
| Mean | 106 | 102 | 3,272 | 1,354 | 4,646 | 7,425 | 2,053 | 574 | 761 | 454 | 187 | 87.3 |
| Cfsm | 0.113 | 0.108 | 3.47 | 1.44 | 4.93 | 7.88 | 2.18 | 0.609 | 0.808 | 0.482 | 0.199 | 0.093 |
| In. | 0.13 | 0.12 | 4.00 | 1.66 | 5.14 | 9.09 | 2.43 | 0.70 | 0.90 | 0.56 | 0.23 | 0.10 |

Calendar year 1954: Max 28,000 Min 11 Mean 1,395 Cfsm 1.48 In. 20.10
Water year 1954-55: Max 47,000 Min 29 Mean 1,739 Cfsm 1.85 In. 25.06

Peak discharge (base, 29,000 cfs).--Dec. 29 (8 p.m.) 46,300 cfs (31.14 ft); Mar. 18 (11:30 p.m.) 31,300 cfs (25.21 ft); Mar. 22 (2 p.m.) 54,300 cfs (33.90 ft).
* Discharge measurement made on this day.
g Computed from radio-gage readings.

## Pitman Creek at Somerset, Ky.

Location.--Lat 37°07'05", long 84°35'30", on right bank 0.1 mile downstream from Dry Branch, 0.5 mile upstream from Caney Fork, and 1.9 miles northeast of Somerst, Pulaski County.

Drainage area.--31.1 sq mi.

Records available.--October 1953 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 867.34 ft above mean sea level, datum of 1929 (corrected). Prior to Oct. 28, 1953, staff gage at same site and datum.

Extremes.--Maximum discharge during year, 2,430 cfs Mar. 21 (gage height, 7.58 ft); minimum, 0.1 cfs Sept. 19 (gage height, 0.63 ft).
1953-55: Maximum discharge, that of Mar. 21, 1955; minimum, 0.1 cfs Sept. 2-7, 11-19, 20, 1954, Sept. 19, 1955; minimum gage height, 0.60 ft Sept. 12-19, 20, 1954.

Remarks.--Records good except those below 5 cfs, which are fair, and those for periods of no gage-height record, which are poor.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 0.1 | 1.5 | 25 | 0.66 | 0.2 | 1.3 | 11 |
| .7 | .4 | 1.8 | 56 | .7 | .3 | 1.5 | 22 |
| .8 | 1.1 | 2.1 | 105 | .8 | .8 | 1.7 | 42 |
| .9 | 2.0 | 2.5 | 210 | .9 | 1.7 | 2.0 | 85 |
| 1.0 | 3.3 | 3.0 | 370 | 1.0 | 3.2 | 2.5 | 210 |
| 1.1 | 5.2 | 5.0 | 1,220 | 1.1 | 5.2 | 3.0 | 370 |
| 1.3 | 11 | | | 1.2 | 7.7 | 4.0 | 820 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.0 | 0.4 | 1.6 | 57 | 24 | 870 | 28 | 13 | 15 | 5.7 | a3.5 | 0.4 |
| 2 | 1.7 | .3 | 1.4 | 44 | 93 | 246 | 26 | 12 | *14 | 5.2 | a3 | .3 |
| 3 | 1.0 | .4 | 1.2 | 34 | 57 | 158 | 25 | 11 | 12 | 4.4 | a3 | .3 |
| 4 | .6 | .5 | 1.1 | 30 | 44 | 110 | 21 | 9.7 | 10 | 7.0 | a2.5 | .3 |
| 5 | .5 | .9 | 9.1 | 33 | 78 | 132 | 21 | 9.0 | 9.4 | 5.0 | a2.5 | .3 |
| 6 | .4 | .5 | 15 | 30 | *a1,040 | 385 | *41 | 7.7 | 9.7 | 4.6 | a2.5 | .3 |
| 7 | .3 | .4 | 5.7 | 23 | a200 | 189 | 30 | 7.2 | 60 | 4.6 | a3 | .3 |
| 8 | .3 | .3 | 3.9 | a23 | a120 | 120 | 22 | 6.4 | 118 | 5.4 | a10 | .2 |
| 9 | .2 | .3 | 6.4 | a24 | a80 | 85 | 20 | 5.7 | 51 | 6.4 | a8 | .2 |
| 10 | .3 | *.3 | 7.2 | 25 | a70 | 70 | 18 | 5.4 | 89 | 4.8 | a6 | .2 |
| 11 | .3 | .3 | 5.2 | 42 | a75 | 60 | 27 | 5.7 | 155 | 3.6 | a5 | .3 |
| 12 | *.3 | .3 | 6.6 | 39 | a65 | 51 | 28 | 6.7 | 97 | 3.0 | a3.5 | .3 |
| 13 | .2 | .3 | 32 | 35 | a55 | 42 | 28 | 27 | 66 | *4.4 | a3 | .2 |
| 14 | .2 | .3 | *19 | 29 | a50 | 39 | *28 | 50 | 50 | 2.8 | a2.5 | .2 |
| 15 | .3 | .3 | 14 | 30 | a50 | 59 | 22 | 21 | 36 | 3.6 | a2 | .2 |
| 16 | .4 | .5 | 11 | 25 | a65 | 360 | 20 | 17 | 28 | 4.4 | 1.6 | .2 |
| 17 | .5 | .7 | 47 | 21 | 76 | 162 | 18 | 14 | 21 | 2.8 | *1.2 | .2 |
| 18 | .4 | .6 | 99 | 19 | 63 | 402 | 16 | 11 | 17 | 2.0 | 1.1 | .2 |
| 19 | .4 | .5 | 45 | 19 | 56 | 198 | 15 | 9.0 | 15 | 7.6 | .9 | .2 |
| 20 | .4 | .8 | 31 | *16 | 49 | 140 | 14 | 62 | 14 | 3.6 | .8 | .2 |
| 21 | .4 | .7 | 23 | 24 | 162 | 762 | 16 | 42 | 11 | 2.2 | 1.2 | .2 |
| 22 | .4 | .5 | 19 | 66 | *775 | 732 | 15 | 72 | 10 | 4.4 | 1.3 | *.2 |
| 23 | .4 | .5 | 16 | 62 | 249 | 201 | 25 | 51 | 8.4 | 2.4 | 1.7 | .2 |
| 24 | .4 | .5 | 14 | 48 | 148 | 130 | 49 | 727 | 27 | 66 | 1.3 | .3 |
| 25 | .4 | .5 | 10 | 39 | 95 | 101 | *33 | 183 | 63 | 22 | 1.0 | .3 |
| 26 | .3 | .5 | 9.4 | 31 | 177 | 78 | 29 | 87 | 22 | 36 | .8 | .2 |
| 27 | .2 | .5 | 8.8 | 31 | 918 | 56 | 24 | 56 | 13 | 16 | .7 | .2 |
| 28 | .3 | .9 | 58 | 25 | 519 | 50 | 20 | 42 | 9.7 | 9.0 | .5 | .2 |
| 29 | .5 | 1.5 | *263 | 20 | - | 42 | 17 | 34 | 7.7 | 7.2 | .4 | .2 |
| 30 | .5 | 2.0 | 142 | 19 | ------- | 35 | 14 | 26 | 6.7 | a5.4 | .4 | 18 |
| 31 | .4 | ------- | 78 | 15 | ------- | 31 | ------- | 20 | ------- | a4.5 | .4 | ------- |
| Total | 15.9 | 17.0 | 1,003.6 | 978 | 5,453 | 6,096 | 710 | 1,650.5 | 1,065.6 | 266.0 | 75.3 | 25.0 |
| Mean | 0.51 | 0.57 | 32.4 | 31.5 | 195 | 197 | 23.7 | 53.2 | 35.5 | 8.58 | 2.43 | 0.83 |
| Cfsm | 0.016 | 0.018 | 1.04 | 1.01 | 6.27 | 6.33 | 0.762 | 1.71 | 1.14 | 0.276 | 0.078 | 0.027 |
| In. | 0.02 | 0.02 | 1.20 | 1.17 | 6.52 | 7.29 | 0.85 | 1.97 | 1.27 | 0.32 | 0.09 | 0.03 |

Calendar year 1954: Max 366 Min 0.1 Mean 19.4 Cfsm 0.624 In. 8.46
Water year 1954-55: Max 1,040 Min 0.2 Mean 47.6 Cfsm 1.53 In. 20.75

Peak discharge (base, 850 cfs).--Feb. 6 (2:30 p.m.) 1,630 cfs (6.02 ft); Feb. 22 (8:30 a.m.) 1,300 cfs (5.19 ft); Feb. 27 (8:30 a.m.) 1,650 cfs (6.07 ft); Mar. 1 (9 a.m.) 1,800 cfs (6.40 ft); Mar. 21 (10:30 p.m.) 2,430 cfs (7.58 ft); May 24 (11 a.m.) 2,380 cfs (7.46 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, estimated graph, weather records, and records for nearby stations.

## Cumberland River near Rowena, Ky.

Location.--Lat 36°53'02", long 85°08'22", on right bank 1.5 miles downstream from Wolf Creek Dam, 2.1 miles upstream from Black Fish Creek, 2.9 miles west of Rowena, Russell County, and at mile 459.4.

Drainage area.--5,790 sq mi, approximately.

Records available.--November 1939 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 540.81 ft above mean sea level, Sandy Hook datum. Prior to Oct. 24, 1940, staff gage at same site and datum.

Average discharge.--15 years (1940-55), 8,588 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 34,700 cfs Apr. 8 (gage height, 25.42 ft); minimum daily, 51 cfs Dec. 26.
1939-55: Maximum discharge, 162,000 cfs Jan. 9, 1946; maximum gage height, 64.82 ft Jan. 9, 1946; no flow at times.
Maximum stage known, 69.5 ft in March 1826, from profile of Cumberland River.

Remarks.--Records good except those below 300 cfs, which are poor. Flow regulated by Lake Cumberland (see p. 62).

Revisions (water years).--WSP 953: Drainage area. WSP 1336: 1940.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,180 | 7,760 | 9,700 | 1,330 | 15,500 | 204 | 32,600 | 5,500 | 16,000 | 2,380 | 3,300 | 2,260 |
| 2 | 780 | 9,620 | 14,300 | 820 | 14,500 | 843 | 33,400 | 8,300 | 16,100 | 3,880 | 4,080 | 2,640 |
| 3 | 125 | 8,160 | 13,100 | 3,840 | 17,400 | 5,840 | 33,900 | 7,970 | 16,000 | 2,870 | 3,460 | 1,710 |
| 4 | 1,640 | 9,860 | 13,400 | 7,120 | 20,800 | 249 | 33,800 | 8,560 | 12,500 | 3,200 | 4,470 | 4,160 |
| 5 | 1,390 | 7,510 | 12,100 | 1,980 | 16,600 | 84 | 33,800 | 3,100 | 5,310 | 2,790 | 5,140 | 6,260 |
| 6 | 1,000 | 3,470 | 14,400 | 2,510 | 7,670 | 5,550 | 29,400 | *5,640 | 3,710 | 3,250 | 5,400 | 4,730 |
| 7 | 1,660 | 4,730 | 5,330 | 12,000 | 11,900 | 16,800 | 28,700 | 4,640 | 6,820 | 2,720 | 309 | 2,640 |
| 8 | 855 | 3,420 | 9,120 | 7,050 | 15,000 | 20,600 | *33,500 | 3,700 | 6,220 | 2,280 | *3,400 | 2,760 |
| 9 | 945 | 1,060 | 14,200 | 997 | 9,770 | *17,700 | 31,900 | 4,230 | 6,090 | 2,340 | 2,920 | *3,640 |
| 10 | 174 | 2,200 | 13,300 | 12,800 | 17,600 | 17,700 | 31,500 | 4,240 | 5,540 | 131 | 3,120 | 4,480 |
| 11 | 1,080 | 2,140 | 9,860 | 15,300 | 15,200 | 16,700 | 31,800 | 4,160 | 4,660 | *2,800 | 4,580 | 1,200 |
| 12 | 1,340 | 990 | 794 | 17,600 | 15,100 | 7,320 | 31,700 | 3,940 | 3,900 | 2,480 | 4,420 | 3,960 |
| 13 | 765 | 940 | 9,210 | 19,300 | 14,900 | 3,740 | 31,500 | 4,580 | 8,210 | 2,720 | 950 | 5,980 |
| 14 | 965 | 218 | 13,500 | 19,700 | 14,500 | 15,400 | 31,400 | 4,200 | 10,300 | 2,380 | 118 | 4,260 |
| 15 | 3,240 | 2,120 | 12,900 | 17,900 | 11,700 | 16,000 | 31,200 | 4,140 | 6,920 | 2,860 | 5,720 | 7,650 |
| 16 | 3,280 | 5,310 | 13,000 | 19,500 | 13,200 | 18,400 | 29,600 | 7,680 | 7,320 | 2,020 | 4,500 | 9,040 |
| 17 | 1,520 | 1,220 | 7,960 | 19,600 | 15,100 | 18,900 | 27,200 | 10,700 | 6,240 | 321 | 4,320 | 4,360 |
| 18 | 3,580 | 1,080 | 4,170 | 17,200 | 12,100 | 23,700 | 26,100 | 10,900 | 6,180 | 514 | 5,760 | 1,680 |
| 19 | 6,380 | 995 | 2,640 | 19,800 | 673 | 25,100 | 25,300 | 6,840 | 6,940 | 3,750 | 7,160 | 6,620 |
| 20 | 6,890 | 1,120 | 7,920 | 13,200 | 4,600 | 27,100 | 26,200 | 9,020 | 7,190 | 2,100 | 2,140 | 6,720 |
| 21 | 5,080 | 1,280 | 7,890 | 19,300 | 6,760 | 25,500 | 25,400 | 3,870 | 7,350 | 2,880 | 680 | 8,520 |
| 22 | 7,660 | 6,670 | 8,110 | 19,000 | 14,000 | 25,700 | 25,300 | 1,770 | 6,690 | 1,430 | 5,540 | 11,200 |
| 23 | 2,960 | 4,190 | 5,540 | 15,800 | 12,600 | 23,100 | 23,600 | 10,700 | 6,560 | 1,100 | 6,950 | 11,600 |
| 24 | 3,800 | 10,100 | 292 | 18,800 | 14,800 | 26,800 | 22,800 | 12,200 | 6,940 | 900 | 6,280 | 9,310 |
| 25 | 3,420 | 10,200 | 91 | 17,400 | 8,380 | 30,100 | 9,460 | 16,500 | 3,560 | 374 | 9,170 | 5,600 |
| 26 | 1,760 | 10,300 | 51 | 16,200 | 219 | 30,400 | 17,500 | 19,500 | 2,440 | 1,510 | 6,440 | 1,640 |
| 27 | 2,850 | 8,300 | 2,250 | 17,200 | 227 | 30,400 | 17,500 | 20,500 | 3,610 | 3,080 | 3,130 | 1,770 |
| 28 | 4,120 | 7,810 | 4,460 | 19,000 | 284 | 30,900 | 22,500 | 16,300 | 2,670 | 1,360 | 560 | 1,780 |
| 29 | 8,000 | 11,200 | 4,560 | 21,600 | - | 32,000 | 17,900 | 13,600 | 2,940 | 1,020 | 6,410 | 1,660 |
| 30 | 7,920 | 7,830 | 9,560 | 19,300 | -------- | 31,800 | 8,660 | 16,700 | 2,430 | 1,020 | 7,170 | 353 |
| 31 | 5,930 | -------- | 6,290 | 16,100 | -------- | 32,000 | -------- | 11,500 | -------- | 152 | 2,060 | -------- |
| Total | 88,289 | 151,803 | 249,998 | 429,047 | 321,063 | 576,630 | 805,120 | 265,180 | 207,340 | 62,612 | 129,657 | 140,183 |
| Mean | 2,848 | 5,060 | 8,064 | 13,840 | 11,470 | 18,600 | 26,840 | 8,554 | 6,911 | 2,020 | 4,182 | 4,673 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 16,500 | Min 51 | Mean 4,860 | Mean 5,376 | Cfsm 0.928 | In. 12.60 |
| Water year 1954-55: | Max 33,900 | Min 51 | Mean 9,389 | Mean 9,316 | Cfsm 1.61 | In. 21.84 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland; records furnished by Corps of Engineers.

## East Fork Obey River near Jamestown, Tenn.

Location.--Lat 36°24'58", long 85°01'24", on left bank 200 ft upstream from bridge on State Highway 52, half a mile upstream from Poplar Cove Creek, 5 miles west of Jamestown, Fentress County, and 12½ miles upstream from confluence with West Fork.

Drainage area.--204 sq mi.

Records available.--February 1943 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 680.30 ft above mean sea level, Sandy Hook datum.

Average discharge.--12 years, 383 cfs.

Extremes.--Maximum discharge during year, 26,900 cfs Mar. 21 (gage height, 24.83 ft); minimum, 4.7 cfs Sept. 23, 24; minimum gage height, 0.63 ft Oct. 28.
1943-55: Maximum discharge, 28,300 cfs Feb. 13, 1948 (gage height, 27.20 ft); minimum, 3.6 cfs Sept. 26-28, 1948; minimum gage height, 0.55 ft Sept. 12-17, 1954.

Remarks.--Records good except those above 12,000 cfs, which are fair.

Cooperation.--Four discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 1003: 1943. WSP 1276: 1944, 1946(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 5.6 | 2.5 | 315 | 0.6 | 3.3 | 2.5 | 320 |
| .7 | 9.2 | 3.0 | 480 | .8 | 11 | 3.0 | 485 |
| .9 | 20 | 4.0 | 1,000 | 1.0 | 24 | 4.0 | 940 |
| 1.0 | 27 | 10.0 | 5,800 | 1.3 | 60 | 5.0 | 1,530 |
| 1.2 | 50 | 12.0 | 7,700 | 1.5 | 93 | 11.0 | 6,500 |
| 2.0 | 200 | | | 2.0 | 195 | 14.0 | 9,600 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 7.6 | 60 | 619 | 205 | 1,620 | 380 | 278 | 95 | 60 | 25 | 19 |
| 2 | 39 | 7.9 | 45 | 460 | 686 | 1,320 | 350 | 242 | 76 | 49 | 23 | 17 |
| 3 | 188 | 7.6 | 36 | 353 | 664 | 880 | 422 | 210 | 62 | 42 | 34 | 15 |
| 4 | 96 | 8.3 | 32 | 298 | 489 | 673 | 380 | 182 | 53 | 254 | *25 | 14 |
| 5 | 52 | 8.7 | 67 | 262 | 418 | 533 | 362 | 155 | 45 | 123 | 23 | 13 |
| 6 | 36 | 9.7 | 390 | 272 | 4,780 | 1,540 | 2,200 | 137 | 44 | 73 | 27 | 12 |
| 7 | 29 | 10 | 300 | 302 | 3,440 | 1,710 | 1,560 | 119 | 133 | 68 | 24 | 11 |
| 8 | 26 | 9.7 | 192 | 270 | *1,210 | *940 | 885 | 106 | 907 | 73 | 23 | 9.8 |
| 9 | 22 | 9.7 | 158 | 255 | 781 | 691 | 655 | 93 | 2,340 | 68 | 25 | 9.0 |
| 10 | 19 | 9.7 | 200 | 245 | 592 | 553 | 525 | 84 | 920 | 56 | 81 | 8.1 |
| 11 | 18 | 8.7 | 188 | 298 | 601 | 460 | 493 | 78 | 2,040 | 45 | 154 | 12 |
| 12 | 16 | 8.7 | 148 | *302 | 513 | 529 | 471 | 76 | 940 | 39 | 162 | *12 |
| 13 | 15 | 8.7 | 176 | 290 | 415 | 521 | 646 | 160 | 596 | 33 | 90 | 12 |
| 14 | 13 | 8.7 | 228 | 250 | 422 | 454 | 895 | 182 | 440 | 34 | 60 | 11 |
| 15 | 12 | 8.3 | *222 | 235 | 380 | 509 | 709 | 158 | 332 | 36 | 46 | 9.4 |
| 16 | 12 | 8.3 | 192 | 242 | 398 | 1,450 | 570 | 129 | 260 | 39 | 65 | 8.1 |
| 17 | 9.7 | *8.3 | 242 | 225 | a470 | 1,400 | 474 | 125 | 202 | 40 | 63 | 7.3 |
| 18 | 9.2 | 8.3 | 2,150 | 200 | 485 | *6,060 | 404 | 109 | 153 | 36 | 46 | 6.5 |
| 19 | 8.3 | 8.3 | 838 | 202 | a450 | 3,450 | 347 | 90 | 121 | 31 | 36 | 6.2 |
| 20 | 7.9 | 11 | 484 | 184 | 390 | 1,790 | 302 | 78 | *104 | 28 | 31 | 5.8 |
| 21 | 7.9 | 13 | 346 | 198 | 440 | *6,870 | 288 | 74 | 90 | *28 | 26 | 5.5 |
| 22 | 7.6 | a25 | 290 | 415 | 4,410 | *9,560 | 288 | 102 | 74 | 30 | 25 | 5.5 |
| 23 | 7.6 | a20 | 260 | 525 | 2,820 | 2,030 | 258 | *141 | 60 | 74 | 106 | 4.7 |
| 24 | 7.3 | a17 | 252 | 457 | 1,270 | 1,060 | 708 | 123 | 53 | 60 | 70 | 6.5 |
| 25 | 7.3 | a14 | 230 | 380 | 820 | 1,420 | 825 | 121 | 170 | 95 | 46 | 7.7 |
| 26 | 7.3 | a13 | 208 | 312 | 632 | 2,390 | *678 | 123 | 305 | 71 | 35 | 9.4 |
| 27 | *7.3 | a14 | 190 | 302 | 1,590 | 1,160 | 574 | 102 | 198 | 53 | 29 | 9.4 |
| 28 | 6.9 | 20 | 608 | 292 | 1,720 | 830 | 471 | 84 | 121 | 44 | 25 | 9.4 |
| 29 | 7.3 | 24 | 7,570 | 265 | - | 660 | 394 | 83 | 90 | 41 | 23 | 9.4 |
| 30 | 7.3 | 67 | 2,800 | 238 | ------- | 525 | 323 | 131 | 71 | 35 | 22 | 679 |
| 31 | 7.3 | ------ | 975 | 202 | ------- | 440 | ------- | 121 | -------- | 29 | 20 | -------- |
| Total | 724.2 | 403.2 | 20,077 | 9,350 | 31,491 | 54,028 | 17,837 | 3,996 | 11,095 | 1,787 | 1,490 | 964.7 |
| Mean | 23.4 | 13.4 | 648 | 302 | 1,125 | 1,743 | 595 | 129 | 370 | 57.6 | 48.1 | 32.2 |
| Cfsm | 0.115 | 0.066 | 3.18 | 1.48 | 5.51 | 8.54 | 2.92 | 0.632 | 1.81 | 0.282 | 0.236 | 0.158 |
| In. | 0.13 | 0.07 | 3.66 | 1.70 | 5.74 | 9.85 | 3.25 | 0.73 | 2.02 | 0.33 | 0.27 | 0.18 |

Calendar year 1954: Max 7,570 Min 4.0 Mean 331 Cfsm 1.62 In. 22.02
Water year 1954-55: Max 9,560 Min 4.7 Mean 420 Cfsm 2.06 In. 27.93

Peak discharge (base, 8,000 cfs).--Dec. 29 (4 p.m.) 10,200 cfs (14.48 ft); Feb. 6 (5 p.m.) 9,030 cfs (13.48 ft); Mar. 18 (1 p.m.) 11,500 cfs (15.62 ft); Mar. 21 (11:30 p.m.) 26,900 cfs (24.83 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for West Fork near Alpine and Wolf River near Byrdstown.

West Fork Obey River near Alpine, Tenn.

Location.--Lat 36°23'50", long 85°10'30", on upstream side of left pier of bridge on State Highway 52, a quarter of a mile upstream from Nettlecarrier Creek, 2.5 miles east of Alpine, Overton County, and 8 miles east of Livingston.

Drainage area.--108 sq mi (includes 19 sq mi without surface drainage).

Records available.--December 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 684.81 ft above mean sea level, Sandy Hook datum.

Average discharge.--12 years (1943-55), 166 cfs.

Extremes.--Maximum discharge during year, 15,100 cfs Mar. 21 (gage height, 16.30 ft); minimum, 3.5 cfs Nov. 14, 15; minimum gage height, 0.50 ft Oct. 28.
1942-55: Maximum discharge, that of Mar. 21, 1955; minimum, 2.6 cfs Sept. 13-19, 1954; minimum gage height, 0.41 ft Sept. 9, 10, 19-22, 1951, Sept. 13-19, 1954.
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 973 | 1943 | Dec. 23, 1942 | 5,020 | 9.07 |
| 1003 | 1944 | Feb. 17, 1944 | 7,430 | 11.13 |
| 1033 | 1945 | Feb. 22, 1945 | 5,740 | 9.71 |
| 1053 | 1946 | Jan. 7, 1946 | 14,000 | 15.56 |
| 1113 | 1948 | Feb. 13, 1948 | 11,100 | 13.75 |
| 1236 | 1952 | Dec. 14, 1951 | 7,960 | 11.51 |

Remarks.--Records good except those below 10 cfs and those for periods of no gage-height record, which are fair.

Cooperation.--Four discharge measurements furnished by Corps of Engineers.

Revisions.--Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1943-46, 1948, and 1952, superseding those published in WSP 1003, 1033, 1053, 1113, and 1236, are given herewith:

Jan. 7, 1946..... 6,570
Jan. 8, 1946..... 3,740
Feb. 13, 1948..... 6,440
Feb. 14, 1948..... 2,860

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| January 1946..... | 20,368 | 6,570 | 116 | 657 | 6.08 | 7.01 |
| Water year 1945-46..... | 63,227.2 | 6,570 | 3.2 | 173 | 1.60 | 21.77 |
| Calendar year 1946..... | 52,883.0 | 6,570 | 3.2 | 145 | 1.34 | 18.20 |
| February 1948..... | 20,868 | 6,440 | 87 | 720 | 6.67 | 7.19 |
| Water year 1947-48..... | 42,313.2 | 6,440 | 3.0 | 116 | 1.07 | 14.57 |
| Calendar year 1948..... | 57,008.1 | 6,440 | 3.0 | 156 | 1.44 | 19.63 |

Revised peak discharge.--1942-43: Dec. 28 (6:15 a.m.) 5,020 cfs; Dec. 29 (11:30 a.m.) 4,440 cfs; Dec. 30 (4:30 a.m.) 4,670 cfs; Apr. 23 (5 p.m.) 4,440 cfs.
1943-44: Feb. 17 (6 p.m.) 7,430 cfs; Sept. 29 (10:30 a.m.) 5,140 cfs.
1944-45: Jan. 1 (2:30 a.m.) 5,020 cfs; Feb. 22 (4:30 a.m.) 5,740 cfs.
1951-52: Dec. 8 (3 a.m.) 7,770 cfs (11.36 ft); Dec. 14 (10 p.m.) 7,960 cfs (11.51 ft).

## West Fork Obey River near Alpine, Tenn.--Continued

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.4 | 2.5 | 2.0 | 178 | 0.6 | 2.5 | 2.0 | 205 |
| .5 | 4.0 | 2.5 | 350 | .7 | 6.0 | 2.5 | 370 |
| .6 | 6.5 | 3.0 | 575 | .8 | 11 | 3.0 | 575 |
| .8 | 14 | 4.0 | 1,080 | 1.0 | 26 | 6.0 | 2,250 |
| 1.0 | 26 | 6.0 | 2,250 | 1.3 | 54 | 8.0 | 3,900 |
| 1.3 | 54 | 8.0 | 3,900 | 1.6 | 101 | | |
| 1.6 | 93 | 9.0 | 4,960 | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21 | 4.0 | 16 | 205 | 74 | 805 | 167 | 99 | 26 | 28 | a13 | 8.0 |
| 2 | 141 | 4.2 | 12 | 150 | 418 | 595 | 153 | 88 | 22 | 25 | a10 | 7.5 |
| 3 | 140 | 4.2 | 10 | 116 | 275 | 390 | 159 | 76 | 20 | 22 | a8 | 6.5 |
| 4 | 38 | 4.4 | 9.0 | 98 | 202 | 292 | 140 | 66 | 18 | 28 | *11 | 6.0 |
| 5 | 22 | 4.6 | 175 | 86 | 175 | 224 | 133 | 58 | 17 | 23 | 37 | 6.0 |
| 6 | 16 | 4.6 | 298 | 82 | 2,440 | 1,060 | 1,180 | 52 | 24 | 25 | 19 | 6.0 |
| 7 | 12 | 4.4 | 96 | 86 | 1,330 | *765 | 730 | 46 | 94 | 23 | 13 | 5.5 |
| 8 | 11 | 4.4 | 58 | 77 | *520 | 422 | 402 | 42 | 627 | 20 | 24 | 5.0 |
| 9 | 9.3 | 4.4 | 76 | 74 | 310 | 300 | 300 | 38 | 965 | 19 | 17 | 4.6 |
| 10 | 7.9 | 4.2 | 102 | 74 | 227 | 237 | 238 | 35 | 395 | 17 | 16 | 4.2 |
| 11 | 6.8 | 4.0 | 62 | 126 | 211 | *193 | 214 | 33 | 790 | 15 | 29 | 12 |
| 12 | 6.2 | 3.8 | 48 | *132 | 178 | a210 | 184 | 35 | 335 | 14 | 39 | *12 |
| 13 | 5.6 | 3.6 | 77 | 122 | 150 | a230 | 187 | 68 | 205 | 13 | 24 | 9.0 |
| 14 | 5.0 | 3.6 | 98 | 102 | 148 | a190 | 223 | 58 | 153 | 13 | 15 | 7.0 |
| 15 | 4.6 | 3.6 | *78 | 95 | 141 | a300 | 190 | 45 | 116 | 15 | 59 | 6.0 |
| 16 | 4.6 | *3.8 | 62 | 88 | 143 | a1,500 | 170 | 41 | 92 | 14 | 274 | 5.5 |
| 17 | 4.4 | 4.0 | 189 | 80 | 175 | 700 | 151 | 37 | 73 | 14 | 63 | 5.0 |
| 18 | *4.4 | 4.0 | 800 | 72 | 175 | *2,790 | 136 | 32 | 59 | 12 | 34 | 4.6 |
| 19 | 4.2 | 4.8 | 227 | 73 | 160 | 1,420 | 121 | 30 | 50 | 18 | 26 | 4.2 |
| 20 | 4.2 | 7.9 | 134 | 64 | 141 | 770 | 110 | 29 | *43 | 28 | 20 | 4.2 |
| 21 | 4.2 | 14 | 100 | 80 | 373 | *4,090 | 105 | 29 | 38 | *30 | 17 | 4.2 |
| 22 | 4.2 | 14 | 80 | 358 | 2,580 | 3,880 | 101 | 32 | 34 | 23 | 43 | 3.8 |
| 23 | 4.2 | 10 | 73 | 318 | 1,200 | 1,030 | 93 | *42 | 31 | a45 | 48 | 3.8 |
| 24 | 4.0 | 7.9 | 68 | 218 | 575 | 526 | 274 | 35 | 30 | a30 | 28 | 6.5 |
| 25 | 4.0 | 6.8 | 59 | 165 | 354 | 774 | 286 | 38 | 109 | a60 | 20 | 8.0 |
| 26 | 4.0 | 6.2 | 52 | 130 | 272 | 1,230 | *223 | 34 | 119 | a45 | 17 | 6.5 |
| 27 | *4.0 | 6.2 | 45 | 116 | 910 | 590 | 193 | 30 | 59 | a35 | 14 | 5.0 |
| 28 | 4.0 | 6.8 | 305 | 105 | 810 | 394 | 164 | 28 | 41 | a30 | 13 | 4.6 |
| 29 | 4.2 | 27 | 2,580 | 95 | - | 296 | 138 | 31 | 34 | a25 | 11 | 4.6 |
| 30 | 4.2 | 25 | 865 | 84 | ------- | 226 | 114 | 35 | 30 | a20 | 12 | 378 |
| 31 | 4.0 | ------- | 318 | 73 | ------- | 190 | ------- | 30 | ------- | a17 | 9.6 | ------- |
| Total | 513.2 | 210.4 | 7,172.0 | 3,744 | 14,667 | 26,619 | 6,979 | 1,372 | 4,649 | 746 | 983.6 | 553.8 |
| Mean | 16.6 | 7.01 | 231 | 121 | 524 | 859 | 233 | 44.3 | 155 | 24.1 | 31.7 | 18.5 |
| Cfsm | 0.154 | 0.065 | 2.14 | 1.12 | 4.85 | 7.95 | 2.16 | 0.410 | 1.44 | 0.223 | 0.294 | 0.171 |
| In. | 0.18 | 0.07 | 2.47 | 1.29 | 5.05 | 9.17 | 2.40 | 0.47 | 1.60 | 0.26 | 0.34 | 0.19 |

Calendar year 1954: Max 2,610 Min 2.6 Mean 123 Cfsm 1.14 In. 15.42
Water year 1954-55: Max 4,090 Min 3.6 Mean 187 Cfsm 1.73 In. 23.49

Peak discharge (base, 3,400 cfs).--Dec. 29 (2 p.m.) 3,520 cfs (7.61 ft); Feb. 6 (3 p.m.) 4,020 cfs (8.12 ft); Feb. 22 (11 a.m.) 3,750 cfs (7.85 ft); Mar. 18 (11 a.m.) 5,440 cfs (9.44 ft); Mar. 21 (10:30 p.m.) 15,100 cfs (16.30 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage when available, and records for East Fork near Jamestown and Wolf River near Byrdstown.

## Wolf River near Byrdstown, Tenn.

Location.--Lat 36°33'40", long 85°04'20", on right bank half a mile upstream from Widow Creek, 3 miles east of Byrdstown, Pickett County, and 5 miles upstream from Lick Creek.

Drainage area.--105 sq mi.

Records available.--June 1943 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 707.54 ft above mean sea level, Sandy Hook datum.

Average discharge.--12 years, 171 cfs.

Extremes.--Maximum discharge during year, 14,100 cfs Mar. 22 (gage height, 9.06 ft); minimum, 3.3 cfs Oct. 19 (gage height, 0.63 ft).
1943-55: Maximum discharge, that of Mar. 22, 1955; minimum, 2.0 cfs Sept. 17, 1954 (gage height, 0.50 ft).

Remarks.--Records good except those below 10 cfs and those for periods of no gage-height record, which are fair. Some regulation at low flow caused by small mills above station.

Cooperation.--Four discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 1276: 1943.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 3.0 | 2.5 | 245 | 0.8 | 4.0 | 2.6 | 240 |
| .7 | 4.2 | 3.0 | 435 | .9 | 6.2 | 3.0 | 400 |
| .8 | 6.0 | 3.5 | 680 | 1.0 | 9.0 | 3.8 | 880 |
| 1.0 | 12 | 4.0 | 1,040 | 1.2 | 18 | 5.0 | 2,040 |
| 1.2 | 21 | 5.0 | 2,040 | 1.5 | 42 | 6.0 | 3,460 |
| 1.5 | 44 | 6.0 | 3,420 | 1.8 | 78 | 7.0 | 5,840 |
| 2.0 | 105 | | | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 5.2 | 20 | 252 | 80 | 866 | 166 | 130 | 29 | 19 | 13 | 7.3 |
| 2 | 15 | 5.8 | 16 | 177 | 472 | 698 | 156 | 114 | 26 | 19 | 14 | 7.0 |
| 3 | 25 | 8.6 | 15 | 125 | 355 | 471 | 152 | 99 | 24 | 16 | 16 | 6.5 |
| 4 | 22 | 10 | 14 | 102 | 259 | 363 | 138 | 88 | 24 | 16 | 26 | 7.8 |
| 5 | 15 | 12 | 82 | 92 | 224 | 284 | 138 | 78 | 18 | 24 | 17 | 4.2 |
| 6 | 13 | 12 | 191 | 85 | 2,150 | 1,020 | 480 | 69 | 31 | 33 | 14 | 5.4 |
| 7 | 12 | 16 | 73 | 78 | a1,100 | 817 | 440 | 64 | 51 | 31 | 12 | 5.4 |
| 8 | 11 | 7.2 | 51 | 71 | a600 | 488 | 294 | 55 | 155 | 29 | 12 | 5.2 |
| 9 | 10 | 9.2 | 56 | 76 | *395 | *367 | 232 | 52 | 294 | 30 | 12 | 5.0 |
| 10 | 14 | 8.9 | 71 | 77 | 301 | 294 | 195 | 48 | 201 | 24 | 16 | 5.0 |
| 11 | 5.4 | 8.6 | 54 | *107 | 298 | 242 | 182 | 45 | 445 | 20 | 23 | 7.6 |
| 12 | 6.6 | 8.6 | 48 | 117 | 259 | 273 | 164 | 45 | 249 | 18 | *31 | 8.4 |
| 13 | 7.2 | 8.3 | 104 | 111 | 214 | 276 | 174 | 66 | 184 | 18 | 27 | *7.0 |
| 14 | 7.2 | 12 | *104 | 94 | 204 | 245 | 210 | 125 | 154 | 16 | 17 | 6.7 |
| 15 | 6.9 | 5.6 | 81 | 90 | 192 | 319 | 192 | 158 | 125 | 30 | 16 | 6.2 |
| 16 | 7.4 | 7.2 | 66 | 89 | 220 | 1,880 | 176 | 125 | 98 | 24 | 14 | 6.0 |
| 17 | 15 | *11 | 133 | 86 | 280 | 1,020 | 160 | 101 | 78 | 17 | 13 | 5.4 |
| 18 | 5.6 | 7.2 | 638 | 80 | 270 | *2,510 | 144 | 83 | 65 | 16 | 11 | 5.2 |
| 19 | 3.6 | 9.2 | 274 | 81 | 231 | 1,230 | 130 | 65 | 52 | *14 | 11 | 5.0 |
| 20 | 5.6 | 22 | 145 | 72 | 195 | 698 | 117 | 55 | 48 | 16 | 10 | 5.0 |
| 21 | 6.0 | 23 | 100 | 79 | 341 | *2,890 | 114 | 53 | *40 | 24 | 12 | 5.0 |
| 22 | 6.2 | 11 | 84 | 273 | 2,520 | 4,910 | 110 | 48 | 36 | 18 | 9.2 | 5.0 |
| 23 | 6.2 | 13 | 73 | 252 | 1,140 | 984 | 116 | 50 | 33 | 19 | 14 | 5.0 |
| 24 | 8.7 | 12 | 65 | 204 | 600 | 590 | 227 | *45 | 31 | 27 | 11 | 11 |
| 25 | 5.0 | 12 | 61 | 162 | 419 | 435 | 288 | 53 | 39 | 31 | 9.8 | 12 |
| 26 | *5.0 | 11 | 56 | 121 | 331 | 483 | 284 | 50 | 44 | 30 | 8.4 | 11 |
| 27 | 10 | 11 | 51 | 109 | 740 | 370 | *261 | 42 | 39 | 43 | 7.6 | 9.0 |
| 28 | 12 | 19 | 260 | 98 | 722 | 298 | 215 | 42 | 29 | 29 | 9.5 | 8.1 |
| 29 | 9.8 | 16 | 2,200 | 90 | - | 249 | 180 | 40 | 25 | 22 | 6.2 | 8.1 |
| 30 | 8.6 | 23 | 805 | 80 | ------- | 208 | 152 | 38 | 22 | 18 | 8.4 | 508 |
| 31 | 14 | ------- | 379 | 72 | ------- | 184 | ------- | 33 | -------- | 15 | 8.1 | ------- |
| Total | 310.0 | 345.6 | 6,370 | 3,602 | 15,112 | 25,962 | 5,987 | 2,159 | 2,689 | 706 | 429.2 | 703.5 |
| Mean | 10.0 | 11.5 | 205 | 116 | 540 | 837 | 200 | 69.6 | 89.6 | 22.8 | 13.8 | 23.4 |
| Cfsm | 0.095 | 0.110 | 1.95 | 1.10 | 5.14 | 7.97 | 1.90 | 0.663 | 0.853 | 0.217 | 0.131 | 0.223 |
| In. | 0.11 | 0.12 | 2.26 | 1.28 | 5.35 | 9.20 | 2.12 | 0.76 | 0.95 | 0.25 | 0.15 | 0.25 |

Calendar year 1954: Max 2,200 Min 2.1 Mean 117 Cfsm 1.11 In. 15.10
Water year 1954-55: Max 4,910 Min 3.6 Mean 176 Cfsm 1.68 In. 22.80

Peak discharge (base, 3,600 cfs).--Feb. 6 (6:30 p.m.) 3,740 cfs (6.14 ft); Feb. 22 (1:30 p.m.) 3,820 cfs (6.18 ft); Mar. 16 (3:30 p.m.) 3,600 cfs (6.07 ft); Mar. 18 (1 p.m.) 4,400 cfs (6.44 ft); Mar. 22 (2 a.m.) 14,100 cfs (9.06 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for East Fork Obey River near Jamestown and West Fork Obey River near Alpine.

## Obey River below Dale Hollow Dam, Tenn.

Location.--Lat 36°32'12", long 85°27'22", on right bank 1,200 ft downstream from Dale Hollow Dam, 3 miles east of Celina, Clay County, 7.1 miles upstream from mouth, and 24 miles downstream from Wolf River.
Drainage area.--935 sq mi.
Records available.--January 1939 to September 1942 (published as "near Celina"), September 1943 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 500.00 ft above mean sea level, Sandy Hook datum. Jan. 25, 1939, to Sept. 30, 1942, wire-weight gage at site 5.2 miles upstream at datum 12.46 ft higher. Water-stage recorder for station on Cumberland River at Celina is used as an auxiliary gage for this station.
Average discharge.--15 years, 1,285 cfs (unadjusted).
Extremes.--Maximum discharge during year, 6,820 cfs Mar. 22; maximum gage height, 25.37 ft Mar. 22 (backwater from Cumberland River); minimum discharge not determined; minimum gage height, 4.23 ft Oct. 26, Nov. 30.
1939-42, 1943-55: Maximum discharge, 41,400 cfs Feb. 4, 1939, site and datum then in use, from rating curve extended above 20,000 cfs; maximum gage height, 43.40 ft Jan. 12, 1946 (backwater from Cumberland River); minimum discharge not determined.
Remarks.--Records excellent except those for periods of backwater from Cumberland River and those where computed releases for Dale Hollow Dam were used, which are fair. Flow completely regulated by Dale Hollow Reservoir, beginning Aug. 30, 1943 (see p. 62). Figures of daily discharge shown only when there is flow from Dale Hollow Reservoir; when not shown, discharge is negligible.
Cooperation.--Records of release from Dale Hollow Reservoir and 1 discharge measurement furnished by Corps of Engineers.

Rating tables, water year 1954-55, except periods of backwater from Cumberland River (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 22

| | | | |
|---|---|---|---|
| 4.9 | 96 | 9.0 | 1,470 |
| 5.5 | 200 | 12.0 | 3,090 |
| 6.0 | 300 | 14.0 | 4,520 |
| 7.0 | 600 | | |

Feb. 23 to Sept. 30

| | | | |
|---|---|---|---|
| 5.1 | 92 | 6.0 | 295 |
| 5.5 | 170 | 7.0 | 600 |

Note.--Same as preceding table above 7.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,400 | 1,920 | 429 | e13 | c3,420 | e17 | c5,240 | 3,200 | 1,220 | 1,000 | 897 | 1,060 |
| 2 | - | 2,060 | 2,440 | - | c3,940 | - | c5,270 | 4,260 | 2,140 | 2,420 | 911 | 1,240 |
| 3 | - | 1,600 | 3,100 | - | c3,400 | - | c5,320 | 1,620 | 2,300 | 1,460 | 878 | 184 |
| 4 | 119 | 1,660 | 1,690 | - | c4,470 | - | c5,340 | 149 | 2,180 | 1,690 | 1,070 | 903 |
| 5 | - | 1,310 | 1,700 | - | c2,330 | - | c5,330 | - | 523 | 2,440 | 1,230 | 1,920 |
| 6 | - | 1,020 | c2,850 | - | - | - | c5,420 | 354 | 454 | 1,460 | 960 | 860 |
| 7 | - | 3,140 | 318 | 682 | c303 | 2,220 | c5,450 | e76 | 1,410 | 1,300 | - | 684 |
| 8 | - | 2,440 | 596 | - | c1,300 | - | c5,520 | 222 | 1,590 | 1,290 | 1,110 | 892 |
| 9 | - | - | 2,490 | - | - | e57 | c6,010 | 2,160 | - | 1,460 | 1,120 | 1,380 |
| 10 | - | 1,760 | 2,100 | 897 | 378 | e58 | c5,970 | 2,120 | 1,160 | - | 1,100 | 1,360 |
| 11 | - | 267 | 400 | 154 | c2,870 | 312 | c6,010 | 1,690 | 1,500 | 932 | 1,220 | e73 |
| 12 | e56 | e18 | - | 1,820 | 458 | - | c6,020 | 1,860 | 515 | 1,100 | 1,660 | 339 |
| 13 | e55 | - | 1,340 | c3,900 | 125 | 222 | c6,040 | 1,860 | 800 | 1,120 | - | 788 |
| 14 | 206 | - | 2,080 | c4,370 | 1,540 | 2,860 | c6,040 | 1,940 | 779 | 880 | 106 | 320 |
| 15 | 1,080 | e17 | 1,570 | c4,070 | 1,640 | 2,170 | c5,990 | 1,780 | 2,080 | 1,350 | e1,030 | 420 |
| 16 | e15 | - | *2,390 | c731 | 258 | c3,350 | c6,040 | 1,870 | - | 1,140 | e980 | 912 |
| 17 | 516 | - | 1,980 | c3,450 | 244 | c4,010 | c5,950 | 1,560 | 730 | - | e974 | 649 |
| 18 | 570 | - | 710 | c2,990 | - | c5,480 | c5,940 | 1,530 | 713 | 162 | e1,080 | 229 |
| 19 | 954 | - | 322 | c3,830 | - | c5,380 | c5,870 | 1,500 | 125 | 1,860 | e1,040 | 1,840 |
| 20 | 966 | - | 1,040 | c1,010 | - | c5,270 | c5,870 | 1,500 | 1,380 | 778 | e90 | 2,180 |
| 21 | 1,600 | - | 328 | 4,100 | - | c5,600 | c5,820 | 458 | e2,500 | 841 | - | 2,560 |
| 22 | 1,560 | 1,970 | 283 | c2,330 | - | c6,310 | c5,880 | - | e1,480 | 574 | e1,350 | 2,350 |
| 23 | 558 | 1,060 | - | e62 | - | c6,130 | c5,080 | 3,780 | 2,220 | 151 | e1,460 | 1,980 |
| 24 | 581 | 2,980 | - | c4,090 | 427 | c5,240 | c4,030 | 1,280 | 2,300 | 204 | e2,230 | 2,130 |
| 25 | 763 | 3,200 | - | c2,200 | 154 | c5,180 | c5,140 | 4,230 | 524 | 176 | e938 | 2,480 |
| 26 | 150 | 3,080 | - | c2,810 | - | c5,220 | c5,280 | c5,510 | 1,340 | e55 | e976 | 2,090 |
| 27 | 479 | 2,720 | - | c2,650 | - | c5,220 | *c5,550 | c5,670 | 2,220 | 272 | e78 | - |
| 28 | 1,160 | 890 | - | c3,660 | - | c5,170 | c5,520 | c3,860 | e1,760 | e74 | - | - |
| 29 | 2,360 | 2,140 | - | c4,990 | - | c5,210 | c5,550 | 1,640 | 1,500 | 440 | e1,090 | - |
| 30 | 1,320 | 210 | 582 | c4,170 | ------- | c5,230 | c5,210 | 2,390 | 1,520 | 102 | e1,120 | e5 |
| 31 | 515 | ------- | - | c4,830 | ------- | c5,270 | ------- | 2,500 | ------- | - | e1,050 | ------- |
| Total | 16,983 | 35,462 | 30,738 | 63,809 | 27,257 | 91,186 | 167,700 | 62,569 | 38,963 | 26,731 | 27,748 | 31,828 |
| Mean | 548 | 1,182 | 992 | 2,058 | 973 | 2,941 | 5,590 | 2,018 | 1,299 | 891 | 895 | 1,061 |

| | Observed | | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 3,810 | Min - | Mean 836 | | Mean 1,041 | Cfsm 1.11 | In. 15.11 | |
| Water year 1954-55: | Max 6,310 | Min - | Mean 1,701 | | Mean 1,636 | Cfsm 1.75 | In. 23.76 | |

* Discharge measurement made on this day.
† Adjusted for change in contents in Dale Hollow Reservoir.
c Backwater from Cumberland River; discharge computed by using fall as determined by water-stage recorder on Cumberland River at Celina as a factor (figures of discharge on some days reflect changes in storage and inflow between dam and mouth of river).
e Discharge is computed release from Dale Hollow Dam.
Note.--Discharge negligible on days where no discharge is shown.

## Cumberland River at Celina, Tenn.

Location.--Lat 36°33'20", long 85°30'47", on right pier of bridge on State Highway 52 at Celina, Clay County, 600 ft downstream from Obey River, and at mile 380.8.

Drainage area.--7,320 sq mi, approximately.

Records available.--October 1922 to September 1955. Gage-height records collected at same site since 1903 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 488.97 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Nov. 20, 1930, staff gage at site 400 ft downstream at same datum.

Average discharge.--33 years, 11,120 cfs (unadjusted).

Extremes.--Maximum discharge during year, 63,600 cfs Mar. 22; maximum gage height, 34.13 ft Mar. 22; minimum discharge, 363 cfs Oct. 5 (gage height, 1.73 ft).
1922-55: Maximum discharge, 145,000 cfs Dec. 29, 1926; maximum gage height, 57.25 ft Dec. 29, 1926, from graph based on gage readings; minimum discharge observed, 69 cfs Sept. 2, 11-14, 26, 1925 (gage height, 0.20 ft).
Maximum stage known, 59.2 ft in March 1826, from Cumberland River profile.

Remarks.--Records good except those below 700 cfs, which are fair. Flow regulated by Lake Cumberland and Dale Hollow Reservoir (see p. 62).

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 893: 1923-38. WSP 1276: 1924.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Oct. 20, 21, 29, Oct. 31 to Nov. 2, Nov. 4, 23, 25, 28, 29, Dec. 1-12, 14, 16, 18-21, 24, Dec. 29 to Jan. 1, Jan. 5, 8, 9, 11, 13-15, 18-21, 23, 24, 28, 29, 31, Feb. 4-12, 15, 19, 22, 23, Feb. 25 to Mar. 2, Mar. 6-8, 12-19, 21-24, Apr. 7, 8, 25-28, 30, May 1, 4, 17-19, 21, 23, 25, 26, 28, 29, 31, June 2, 5, 6, 8-12, 14, 16, 21, 24, Aug. 7, 24-27, Sept. 16, 18, 20, 23, 24, 26, 30)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.8 | 440 | 10.0 | 11,700 | 2.0 | 760 | 20.0 | 31,600 |
| 2.0 | 680 | 20.0 | 31,600 | 5.0 | 4,750 | 33.0 | 59,400 |
| 4.0 | 3,380 | 30.0 | 52,800 | 10.0 | 11,700 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,710 | 8,070 | 9,630 | 8,430 | 21,300 | 10,300 | 37,800 | 12,000 | 13,400 | 4,090 | 1,720 | 5,000 |
| 2 | 3,160 | 9,730 | 12,000 | 3,370 | 21,900 | 8,920 | 38,400 | 10,200 | 17,600 | 4,850 | 1,980 | 3,230 |
| 3 | 1,740 | 10,900 | 17,200 | 2,080 | 20,900 | 4,290 | 39,200 | 10,100 | 17,800 | 5,200 | 4,540 | 3,000 |
| 4 | 985 | 10,300 | 16,100 | 3,240 | 24,600 | 5,940 | 39,500 | 7,990 | 18,300 | 5,100 | 4,760 | 2,810 |
| 5 | 488 | 10,800 | 18,100 | 7,090 | 23,200 | 4,650 | 39,600 | 8,340 | 12,700 | 5,610 | 4,760 | 5,120 |
| 6 | 1,300 | 9,290 | 20,300 | 4,360 | 34,000 | 6,610 | 40,900 | 4,910 | 7,050 | 5,110 | 6,420 | 6,400 |
| 7 | 1,450 | 8,310 | 16,400 | 3,630 | 27,300 | 14,500 | 37,400 | 5,480 | 5,520 | 4,480 | 6,110 | 5,790 |
| 8 | 1,390 | 7,360 | 8,980 | 10,500 | 17,700 | 20,200 | 37,400 | 5,020 | 8,180 | 4,960 | 2,740 | 4,290 |
| 9 | 1,300 | 4,760 | 11,200 | 8,180 | 15,300 | 21,700 | 39,400 | 5,980 | 7,730 | 4,820 | 2,840 | 3,910 |
| 10 | 920 | 3,810 | 17,200 | 4,530 | *13,400 | 20,500 | 38,800 | 6,210 | 11,900 | 3,220 | 4,080 | 4,840 |
| 11 | 933 | 2,250 | 14,900 | 12,700 | 20,300 | 18,800 | 38,400 | 6,230 | 17,900 | 2,270 | 4,840 | 4,750 |
| 12 | 512 | 2,970 | 10,700 | 17,500 | 16,700 | 17,700 | 38,800 | 6,250 | 9,040 | 2,620 | 5,780 | 3,040 |
| 13 | 1,100 | 1,800 | 8,280 | 22,200 | 15,700 | 10,200 | 39,700 | 6,210 | 6,080 | 3,840 | 4,680 | 3,580 |
| 14 | 1,320 | 1,180 | 12,200 | 24,800 | 17,400 | 8,990 | 39,600 | 7,330 | 8,930 | 3,320 | 2,800 | 5,910 |
| 15 | 1,600 | 998 | 15,700 | 23,800 | 15,900 | 18,100 | 38,800 | 6,730 | *11,900 | 3,710 | *1,880 | 5,320 |
| 16 | 2,370 | 728 | 16,300 | 20,600 | 13,300 | 28,200 | 38,000 | 6,440 | 8,070 | 4,280 | 3,850 | 7,080 |
| 17 | 4,400 | 4,400 | 16,500 | 23,000 | 14,400 | 29,700 | 36,300 | 8,950 | 8,450 | 2,530 | 5,650 | 9,260 |
| 18 | 3,440 | 3,130 | 12,400 | 22,100 | 16,200 | *37,500 | 34,300 | 11,900 | 7,250 | 1,950 | 5,250 | 6,130 |
| 19 | 3,940 | 1,320 | 7,460 | 22,800 | 12,600 | 36,900 | 32,700 | 11,800 | 6,660 | 2,390 | 6,490 | 4,600 |
| 20 | 7,050 | 1,760 | 5,950 | 19,700 | 4,990 | 35,400 | 31,300 | 9,220 | 8,830 | 2,900 | 6,990 | 7,110 |
| 21 | 8,370 | 2,320 | 7,690 | 19,700 | 6,000 | 51,700 | 30,700 | 9,140 | 9,250 | 4,110 | 3,840 | 9,290 |
| 22 | 7,760 | 3,660 | 8,660 | 24,900 | 31,100 | 58,500 | 31,100 | 5,880 | 9,090 | 3,190 | 3,360 | 10,100 |
| 23 | 8,270 | 6,510 | 8,710 | 20,300 | 24,400 | 42,400 | 31,000 | 6,250 | 8,910 | 2,100 | 4,650 | 12,900 |
| 24 | 5,500 | 7,920 | 7,320 | 20,800 | 18,000 | 34,100 | 30,500 | 10,200 | 8,730 | 1,600 | 8,560 | 13,800 |
| 25 | 4,450 | 12,500 | 2,880 | 21,900 | 15,500 | 34,400 | 26,900 | 16,400 | 7,860 | 1,180 | 8,040 | 11,700 |
| 26 | 4,220 | 13,500 | 836 | 20,900 | 10,400 | 36,600 | 17,900 | 22,900 | 6,180 | 904 | 9,260 | 8,810 |
| 27 | 3,140 | 13,300 | 524 | 19,600 | 8,600 | 36,900 | *23,300 | 25,400 | 4,990 | 785 | 6,970 | 3,370 |
| 28 | *3,900 | 10,400 | 1,760 | 21,600 | 9,160 | 36,700 | 25,400 | 23,500 | 5,990 | 2,010 | 4,210 | 2,130 |
| 29 | 6,500 | 11,000 | 13,300 | 25,200 | - | 37,200 | 27,700 | 18,500 | 4,150 | 2,530 | 3,370 | 1,600 |
| 30 | 8,480 | 11,700 | 13,100 | 26,300 | ------- | 37,700 | 22,000 | 17,000 | 4,420 | 1,470 | 4,880 | 8,620 |
| 31 | 6,300 | ------- | 11,500 | 23,400 | ------- | 37,600 | ------- | 17,600 | ------- | 1,090 | 7,860 | ------- |
| Total | 107,998 | 196,676 | 343,780 | 509,210 | 490,250 | 802,900 | ‡1,022.8 | 329,860 | 282,860 | 98,219 | 153,160 | 183,490 |
| Mean | 3,484 | 6,556 | 11,090 | 16,430 | 17,510 | 25,900 | 34,090 | 10,640 | 9,429 | 3,168 | 4,941 | 6,116 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 23,600 | Min 264 | Mean 6,675 | Mean 7,396 | Cfsm 1.01 | In. 13.72 | |
| Water year 1954-55: | Max 58,500 | Min 488 | Mean 12,390 | Mean 12,250 | Cfsm 1.67 | In. 22.71 | |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland and Dale Hollow Reservoir.
‡ Expressed in thousands.

## Roaring River near Hilham, Tenn.

Location.--Lat 36°20'24", long 85°25'46", on left bank 800 ft downstream from Crawford Mill, a quarter of a mile downstream from bridge on State Highway 136, 1¼ miles upstream from Flat Creek, 4 miles south of Hilham, Overton County, and 15 miles north of Cookeville.

Drainage area.--70.8 sq mi.

Records available.--June 1932 to September 1955.

Gage.--Water-stage recorder. Concrete control since Sept. 21, 1940. Altitude of gage is 770 ft (by barometer). June 23, 1932, to July 24, 1933, staff gage at site 800 ft upstream at different datum. July 25 to Nov. 7, 1933, staff gage 150 ft downstream at different datum. Nov. 8, 1933, to Sept. 23, 1940, staff gage at present site and datum.

Average discharge.--23 years, 106 cfs.

Extremes.--Maximum discharge during year, 5,550 cfs Mar. 22 (gage height, 9.39 ft); minimum, 3.5 cfs Oct. 27 (gage height, 0.72 ft).
1932-55: Maximum discharge, that of Mar. 22, 1955; minimum, 1.9 cfs Oct. 19, 24, 26, 28, Nov. 9, 1940; minimum daily, 2.4 cfs Sept. 12, 13, 15-19, 1954.

Remarks.--Records good except those below 10 cfs, which are fair. Prior to 1951, some diurnal fluctuation at low flows caused by mills above station.

Cooperation.--Four discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 1033: 1939(M). WSP 1143: 1948. WSP 1276: 1942.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 6 | | | | Feb. 7 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 3.2 | 2.0 | 133 | 0.7 | 4.1 | 2.0 | 140 |
| .8 | 6.1 | 3.0 | 490 | .8 | 7.0 | 3.0 | 510 |
| 1.0 | 16 | 4.0 | 890 | 1.0 | 18 | 4.0 | 945 |
| 1.2 | 27 | 5.0 | 1,500 | 1.3 | 39 | 5.0 | 1,500 |
| 1.5 | 56 | 6.0 | 2,270 | 1.6 | 76 | 7.0 | 3,170 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 3.8 | 14 | 216 | 69 | 464 | 142 | 68 | 28 | 38 | 12 | 7.5 |
| 2 | 66 | 4.3 | 13 | 154 | 265 | 385 | 134 | 62 | 26 | 35 | 13 | 6.6 |
| 3 | 42 | 4.3 | 11 | 118 | 154 | 325 | 125 | 57 | 25 | 33 | 12 | 6.2 |
| 4 | 21 | 5.0 | 9.8 | 102 | 121 | 265 | 110 | 54 | 25 | 30 | 11 | 6.2 |
| 5 | 14 | 6.1 | 119 | 89 | 118 | 208 | 106 | 49 | 24 | 29 | 14 | 6.2 |
| 6 | 13 | 6.1 | 188 | 84 | 1,520 | 632 | 472 | 47 | 28 | 28 | 12 | 6.2 |
| 7 | 12 | 5.3 | 69 | 75 | *1,020 | *514 | 349 | 43 | 40 | 28 | 11 | 5.8 |
| 8 | 8.8 | 8.0 | 46 | 65 | 458 | 345 | 225 | 41 | 133 | 31 | 14 | 5.4 |
| 9 | 8.3 | 4.6 | 55 | 62 | 333 | 275 | 179 | 38 | 290 | 28 | 13 | 5.2 |
| 10 | 7.4 | 4.3 | 56 | *61 | 255 | 218 | 153 | 37 | 200 | 25 | 18 | 4.8 |
| 11 | 6.5 | 4.3 | 43 | 75 | 245 | 182 | 140 | 36 | 357 | 23 | *16 | 30 |
| 12 | 6.1 | 4.3 | 39 | 75 | 190 | 200 | 155 | 41 | 214 | 22 | 18 | 14 |
| 13 | 5.3 | 4.3 | *55 | 70 | 155 | 160 | 182 | 82 | 144 | 22 | 13 | 9.0 |
| 14 | 5.0 | 4.3 | 68 | 60 | 151 | 142 | 176 | 66 | 115 | 21 | 12 | 6.6 |
| 15 | 4.6 | 4.3 | 62 | 60 | 142 | 222 | 147 | 62 | 96 | 22 | 10 | *6.2 |
| 16 | 4.3 | *4.3 | 50 | 57 | 147 | 606 | 129 | 55 | 79 | 22 | 22 | 6.2 |
| 17 | 4.3 | 4.6 | 70 | 52 | 147 | 522 | 116 | 48 | 68 | 20 | 18 | 5.8 |
| 18 | 4.6 | 4.6 | 334 | 49 | 136 | 1,400 | 106 | 42 | 60 | 19 | 12 | 5.8 |
| 19 | 4.3 | 6.1 | 148 | 52 | 129 | 1,010 | 97 | 38 | 52 | 18 | 10 | 5.4 |
| 20 | 4.3 | 49 | 102 | 46 | 118 | 582 | 90 | 36 | *48 | 19 | 9.5 | 5.4 |
| 21 | 4.3 | 23 | 80 | 57 | 238 | 1,870 | 90 | 38 | 43 | *27 | 9.0 | 5.2 |
| 22 | 4.3 | 17 | 69 | 148 | 1,900 | *3,120 | 82 | 40 | 39 | 20 | 23 | 4.8 |
| 23 | 4.3 | 13 | 62 | 159 | 929 | 902 | 80 | *38 | 37 | 18 | 22 | 4.8 |
| 24 | 4.0 | 11 | 54 | 130 | 482 | 503 | 172 | 37 | 35 | 17 | 12 | 5.2 |
| 25 | *4.0 | 9.3 | 46 | 108 | 345 | 581 | 138 | 44 | 224 | 19 | 10 | 9.0 |
| 26 | 4.0 | 8.3 | 41 | 87 | 290 | 774 | 114 | 37 | 141 | 17 | 9.0 | 6.6 |
| 27 | 3.8 | 8.8 | 38 | 80 | 514 | 416 | 102 | 33 | 78 | 15 | 8.5 | 5.8 |
| 28 | 4.3 | 12 | 182 | 72 | 478 | 333 | *91 | 34 | 61 | 14 | 8.0 | 5.4 |
| 29 | 5.3 | 18 | 1,560 | 65 | - | 265 | 82 | 41 | 50 | 14 | 7.5 | 5.4 |
| 30 | 5.3 | 16 | 649 | 59 | ------- | 200 | 73 | 34 | 43 | 13 | 7.0 | 219 |
| 31 | 4.0 | -- | 318 | 53 | ------- | 165 | ------- | 31 | ------- | 13 | 8.0 | -- |
| Total | 308.4 | 275.3 | 4,650.8 | 2,640 | 11,049 | 17,786 | 4,357 | 1,409 | 2,803 | 700 | 394.5 | 425.7 |
| Mean | 9.95 | 9.18 | 150 | 85.2 | 395 | 574 | 145 | 45.5 | 93.4 | 22.6 | 12.7 | 14.2 |
| Cfsm | 0.141 | 0.130 | 2.12 | 1.20 | 5.58 | 8.11 | 2.05 | 0.643 | 1.32 | 0.319 | 0.179 | 0.201 |
| In. | 0.16 | 0.14 | 2.44 | 1.39 | 5.80 | 9.34 | 2.29 | 0.74 | 1.47 | 0.37 | 0.21 | 0.22 |

Calendar year 1954: Max 1,560 Min 2.4 Mean 74.8 Cfsm 1.06 In. 14.33
Water year 1954-55: Max 3,120 Min 3.8 Mean 128 Cfsm 1.81 In. 24.57

Peak discharge (base, 1,200 cfs).--Dec. 29 (2:30 p.m.) 2,100 cfs (5.79 ft); Feb. 6 (4 p.m.) 2,250 cfs (5.97 ft); Feb. 22 (12:30 p.m.) 2,240 cfs (5.96 ft); Mar. 18 (2 p.m.) 2,040 cfs (5.71 ft); Mar. 22 (2 a.m.) 5,550 cfs (9.39 ft); Mar. 25 (8:30 p.m.) 1,220 cfs (4.51 ft).
* Discharge measurement made on this day.

## Calfkiller River below Sparta, Tenn.

Location.--Lat 35°54'25", long 85°28'25", on right bank three-quarters of a mile downstream from abandoned hydroelectric powerplant of Tennessee Valley Authority, 1½ miles downstream from Town Creek, 1½ miles southwest of Sparta, White County, and 9 miles upstream from mouth.

Drainage area.--178 sq mi.

Records available.--August 1940 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 820 ft (from topographic map).

Average discharge.--15 years, 363 cfs.

Extremes.--Maximum discharge during year, 11,000 cfs Mar. 22 (gage height, 20.97 ft); minimum, 17 cfs Oct. 24-26.
1940-55: Maximum discharge, 14,600 cfs Jan. 5, 1949 (gage height, 25.80 ft); minimum, 11 cfs Oct. 18, 1953.

Remarks.--Records good.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.1 | 17 | 4.0 | 1,150 | 1.1 | 17 | 4.0 | 1,180 |
| 1.2 | 32 | 7.0 | 2,620 | 1.3 | 51 | 10.0 | 4,180 |
| 1.4 | 79 | 10.5 | 4,420 | 1.5 | 108 | 15.0 | 6,950 |
| 2.0 | 285 | | | 2.0 | 288 | 19.2 | 9,740 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 91 | 23 | 40 | 712 | 205 | 1,220 | 444 | 230 | 156 | 111 | 54 | 32 |
| 2 | 174 | 22 | 32 | 500 | 380 | 1,300 | 414 | 216 | 135 | 102 | 93 | 30 |
| 3 | 133 | 22 | 29 | 372 | 518 | 946 | 461 | 202 | 122 | 96 | 86 | 30 |
| 4 | 113 | 22 | 24 | 305 | 380 | 730 | 440 | 188 | 108 | 86 | 72 | 29 |
| 5 | 82 | 22 | 47 | 272 | 330 | 586 | 461 | 177 | 105 | 83 | 64 | 29 |
| 6 | 66 | 22 | 305 | 253 | 2,820 | 1,630 | 2,080 | 166 | 105 | 86 | 61 | 28 |
| 7 | 51 | 22 | 216 | 284 | 3,680 | 2,340 | 2,300 | 156 | 174 | 163 | 59 | 28 |
| 8 | 42 | 22 | 130 | 257 | 1,580 | 1,240 | 1,300 | 146 | 413 | 191 | 56 | 28 |
| 9 | 34 | 20 | 98 | 238 | 982 | 869 | 905 | 135 | 1,840 | 139 | 54 | 28 |
| 10 | 30 | 20 | 140 | 230 | 720 | 671 | 702 | 128 | 1,100 | 111 | 78 | 26 |
| 11 | 28 | 20 | 130 | 268 | 622 | 545 | 617 | 122 | 2,100 | 99 | 74 | 28 |
| 12 | 26 | 20 | 101 | 292 | 558 | 743 | *576 | 125 | 1,200 | 96 | 61 | 28 |
| 13 | 24 | 20 | 91 | 272 | 461 | 752 | 635 | 146 | 725 | 89 | 56 | 26 |
| 14 | 24 | 18 | 123 | 234 | 418 | 576 | 864 | 184 | 496 | 77 | 51 | 26 |
| 15 | 23 | 18 | 143 | 219 | 389 | 483 | 734 | 174 | *372 | 77 | 64 | *26 |
| 16 | 22 | 18 | 123 | 219 | 380 | 770 | 608 | 191 | 292 | 77 | 108 | 26 |
| 17 | 22 | 18 | 133 | 212 | 554 | 1,340 | 509 | 191 | 242 | 80 | 108 | 24 |
| 18 | 20 | 18 | 1,000 | 202 | 572 | 3,210 | 440 | 160 | 208 | 74 | 99 | 23 |
| 19 | 20 | 20 | 637 | 205 | 483 | 3,960 | 389 | 139 | 184 | 72 | *67 | 23 |
| 20 | 18 | 24 | 345 | 205 | 410 | 2,100 | 347 | 128 | 170 | 69 | 61 | 23 |
| 21 | 18 | 24 | 241 | *234 | 410 | 3,950 | 326 | 128 | 152 | 69 | 56 | 22 |
| 22 | 18 | 23 | 194 | 658 | 2,510 | 9,700 | 317 | 163 | 139 | *96 | 51 | 22 |
| 23 | 18 | 23 | 174 | 730 | *2,840 | *3,610 | 292 | *238 | 125 | 83 | 47 | 22 |
| 24 | 18 | 24 | 163 | 572 | 1,540 | 1,800 | 393 | 202 | 115 | 74 | 42 | 22 |
| 25 | 17 | 24 | 150 | 431 | 1,010 | 1,300 | 572 | 198 | 204 | 74 | 40 | 22 |
| 26 | 17 | 24 | 133 | 343 | 761 | 1,200 | 427 | 188 | 401 | 72 | 38 | 22 |
| 27 | 18 | 24 | *123 | 301 | 797 | 1,010 | 368 | 160 | 253 | 67 | 36 | 22 |
| 28 | *20 | 26 | 294 | 284 | 1,270 | 851 | 322 | 139 | 180 | 64 | 34 | *34 |
| 29 | 22 | 30 | 4,420 | 257 | - | 712 | 284 | 219 | 146 | 61 | 34 | 28 |
| 30 | 22 | *30 | 3,280 | 230 | ------- | 590 | 253 | 234 | 125 | 61 | 36 | 49 |
| 31 | 22 | --- | 1,170 | 208 | ------- | 504 | ------- | 188 | ------- | 61 | 34 | ------- |
| Total | 1,253 | 663 | 14,229 | 9,999 | 27,580 | 51,238 | 18,780 | 5,361 | 12,087 | 2,760 | 1,874 | 806 |
| Mean | 40.4 | 22.1 | 459 | 323 | 985 | 1,653 | 626 | 173 | 403 | 89.0 | 60.5 | 26.9 |
| Cfsm | 0.227 | 0.124 | 2.58 | 1.81 | 5.53 | 9.29 | 3.52 | 0.972 | 2.26 | 0.500 | 0.340 | 0.151 |
| In. | 0.26 | 0.14 | 2.97 | 2.09 | 5.76 | 10.71 | 3.92 | 1.12 | 2.53 | 0.58 | 0.39 | 0.17 |

Calendar year 1954: Max 7,690 Min 17 Mean 325 Cfsm 1.83 In. 24.75
Water year 1954-55: Max 9,700 Min 17 Mean 402 Cfsm 2.26 In. 30.64

Peak discharge (base, 4,400 cfs).--Dec. 29 (8 p.m.) 5,730 cfs (12.87 ft); Feb. 7 (2 a.m.) 4,950 cfs (11.47 ft); Mar. 18 (11:30 p.m.) 5,610 cfs (12.66 ft); Mar. 22 (11:30 a.m.) 11,000 cfs (20.97 ft).

* Discharge measurement made on this day.

## Barren Fork near Trousdale, Tenn.

Location.--Lat 35°39'55", long 85°53'00", on left bank 15 ft downstream from highway bridge on Trousdale-McMinnville pike, 3½ miles east of Trousdale, Warren County, 4.5 miles downstream from Bullpen Creek, 6 miles west of McMinnville, and 6.2 miles upstream from Hickory Creek.

Drainage area.--132 sq mi.

Records available.--June 1932 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 925.61 ft above mean sea level, datum of 1929. Prior to May 27, 1940, staff gage at site 200 ft downstream at same datum.

Average discharge.--23 years, 217 cfs.

Extremes.--Maximum discharge during year, 29,900 cfs Mar. 21 (gage height, 16.55 ft), from rating curve extended above 9,300 cfs on basis of slope-area and contracted-opening determinations at gage height 16.99 ft; minimum, 34 cfs Oct. 23, 24, 25, 26, 27, Nov. 12, 13, 14, 15, 16; minimum gage height, 1.14 ft Sept. 23, 24.
1932-55: Maximum discharge, 32,000 cfs Feb. 13, 1948 (gage height, 16.99 ft), from rating curve extended above 9,300 cfs on basis of slope-area and contracted-opening determinations of peak flow; minimum, 32 cfs Oct. 13, 1941; minimum gage height, 0.98 ft Sept. 22, 23, 1941.

Remarks.--Records good.

Revisions (water years).--WSP 1083: 1937(M), 1944(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 22 | | | | Mar. 23 to Sept. 30 | |
|---|---|---|---|---|---|
| 1.1 | 28 | 5.0 | 1,340 | 1.1 | 46 |
| 1.5 | 89 | 7.0 | 2,620 | 1.4 | 84 |
| 2.1 | 230 | 8.0 | 3,550 | 2.1 | 230 |
| 2.6 | 375 | 9.0 | 4,850 | Note.--Same as preceding table above 2.1 ft. | |
| 3.0 | 510 | 10.8 | 8,110 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 65 | 37 | 42 | 282 | 103 | 334 | 225 | 158 | 151 | 92 | 65 | 54 |
| 2 | 102 | 37 | 41 | 230 | 165 | 307 | 223 | 149 | 130 | 89 | 76 | 53 |
| 3 | 49 | 39 | 39 | 190 | 149 | 248 | 225 | 140 | 116 | 86 | 69 | 53 |
| 4 | 42 | 40 | 41 | 167 | 121 | 225 | 205 | 132 | 109 | 82 | 75 | 52 |
| 5 | 42 | 42 | 168 | 151 | 119 | 207 | 285 | 128 | 101 | 81 | 69 | 52 |
| 6 | 41 | 39 | 176 | 149 | *1,750 | 613 | 2,370 | 122 | 154 | 81 | 65 | 52 |
| 7 | 39 | 37 | 96 | 142 | 1,210 | 559 | 1,000 | 118 | 205 | 81 | 66 | 52 |
| 8 | 37 | 36 | 76 | 124 | 482 | 328 | 461 | 114 | 153 | 81 | 68 | 51 |
| 9 | 40 | 38 | 74 | 119 | 331 | 261 | 344 | 110 | 162 | 94 | 94 | 50 |
| 10 | 37 | 36 | 70 | 142 | 266 | 230 | 293 | 109 | 414 | 81 | 134 | 50 |
| 11 | 36 | 35 | 66 | 179 | 288 | 214 | 310 | 107 | 666 | 78 | 65 | 53 |
| 12 | 36 | 35 | 62 | 144 | 243 | 214 | 290 | 140 | 274 | 76 | 89 | 59 |
| 13 | 36 | 36 | 70 | 130 | 199 | 204 | *528 | 299 | 212 | 75 | 61 | 55 |
| 14 | 39 | 36 | 72 | 117 | 197 | 190 | 444 | 182 | 180 | 75 | 57 | 54 |
| 15 | 42 | 34 | 70 | 121 | 192 | 179 | 302 | 158 | *158 | 76 | 55 | *52 |
| 16 | 40 | 35 | 64 | 133 | 212 | 179 | 259 | 136 | 142 | 81 | 60 | 52 |
| 17 | 37 | 37 | 72 | 119 | 233 | 197 | 225 | 124 | 130 | 84 | 70 | 52 |
| 18 | 36 | 36 | 126 | 112 | 197 | 414 | 209 | 114 | 120 | 76 | 81 | 52 |
| 19 | 37 | 37 | 105 | 135 | 179 | 891 | 193 | 107 | 112 | 74 | 61 | 52 |
| 20 | 37 | 40 | 94 | *135 | 165 | 587 | 182 | 105 | 109 | 75 | 56 | 51 |
| 21 | 36 | 42 | 85 | 216 | 551 | 7,920 | 193 | 122 | 103 | *78 | 55 | 51 |
| 22 | 36 | 39 | 78 | 594 | 3,690 | 7,440 | 207 | 149 | 99 | 78 | 62 | 51 |
| 23 | 35 | 37 | 74 | 337 | 1,280 | *839 | 682 | 136 | 98 | 75 | *74 | 50 |
| 24 | 35 | 37 | 70 | 246 | 566 | 545 | 458 | *120 | 98 | 74 | 61 | 52 |
| 25 | 34 | 36 | 64 | 202 | 396 | 623 | 322 | 122 | 254 | 72 | 59 | 54 |
| 26 | 34 | 36 | 58 | 174 | 313 | 723 | 246 | 114 | 272 | 74 | 59 | 52 |
| 27 | *36 | 39 | 60 | 156 | 337 | 405 | 216 | 105 | 140 | 69 | 56 | 52 |
| 28 | 36 | 45 | *422 | 140 | 347 | 337 | 196 | 98 | 114 | 69 | 56 | 141 |
| 29 | 40 | *60 | 4,850 | 126 | - | 299 | 180 | 785 | 105 | 75 | 55 | 72 |
| 30 | 39 | 48 | 1,220 | 114 | ------- | 264 | 166 | 300 | 98 | 70 | 55 | 68 |
| 31 | 40 | ------- | 405 | 105 | ------- | 243 | ------- | 189 | ------- | 66 | 54 | ------- |
| Total | 1,271 | 1,159 | 9,010 | 5,431 | 14,281 | 26,219 | 11,439 | 4,992 | 5,179 | 2,418 | 2,082 | 1,694 |
| Mean | 41.0 | 38.6 | 291 | 175 | 510 | 846 | 381 | 161 | 173 | 78.0 | 67.2 | 56.5 |
| Cfsm | 0.311 | 0.292 | 2.20 | 1.33 | 3.86 | 6.41 | 2.89 | 1.22 | 1.31 | 0.591 | 0.509 | 0.428 |
| In. | 0.36 | 0.33 | 2.54 | 1.53 | 4.02 | 7.39 | 3.22 | 1.41 | 1.46 | 0.68 | 0.59 | 0.48 |

Calendar year 1954: Max 5,230 Min 34 Mean 214 Cfsm 1.62 In. 22.02
Water year 1954-55: Max 7,920 Min 34 Mean 233 Cfsm 1.77 In. 24.01

Peak discharge (base, 3,200 cfs).--Dec. 29 (3 p.m.) 7,290 cfs (10.43 ft); Feb. 22 (12:30 p.m.) 5,270 cfs (9.28 ft); Mar. 21 (11 p.m.) 29,900 cfs (16.55 ft); Apr. 8 (2 p.m.) 4,030 cfs (8.44 ft).
* Discharge measurement made on this day.

## Collins River near McMinnville, Tenn.

Location.--Lat 35°42'32", long 85°43'46", on left bank 10 ft downstream from bridge on U. S. Highway 70S, 1¾ miles downstream from Barren Fork, and 2½ miles northeast of McMinnville, Warren County.

Drainage area.--624 sq mi.

Records available.--October 1924 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 825.78 ft above mean sea level, Sandy Hook datum. Prior to Oct. 16, 1926, chain gage on upstream side of bridge at same datum.

Average discharge.--31 years, 1,117 cfs.

Extremes.--Maximum discharge during year, 47,500 cfs Mar. 22 (gage height, 31.72 ft); minimum, 71 cfs Nov. 12-16 (gage height, 1.12 ft).
1924-55: Maximum discharge, 75,300 cfs Mar. 23, 1929 (gage height, 39.1 ft), from rating curve extended above 32,000 cfs on basis of slope-area determination of peak flow; minimum, 35 cfs Sept. 21, 1930; minimum gage height, 0.70 ft Oct. 16, 1931. Maximum stage known, that of Mar. 23, 1929.

Remarks.--Records excellent.

Revisions (water years).--WSP 873: 1929, 1932(M), 1934-35, 1936(M), 1937. WSP 1276: 1925-26, 1928(M), 1933, 1936, 1940.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 10-13, 16-19, 23)

| | | | |
|---|---|---|---|
| 1.1 | 67 | 8.0 | 4,060 |
| 1.5 | 149 | 12.0 | 8,510 |
| 2.0 | 274 | 18.0 | 16,500 |
| 3.0 | 650 | 25.0 | 27,900 |
| 5.0 | 1,750 | 28.2 | 35,800 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 380 | 76 | 119 | 2,730 | 590 | 2,200 | 1,310 | 875 | 865 | 466 | 198 | 134 |
| 2 | 706 | 76 | 108 | 2,040 | 802 | 2,270 | 1,200 | 766 | 690 | 382 | 184 | 127 |
| 3 | 315 | 75 | 96 | 1,540 | 890 | 1,920 | 1,510 | 686 | 586 | 331 | 170 | 123 |
| 4 | 194 | 80 | 92 | 1,240 | 775 | 1,630 | 1,650 | 622 | 502 | 294 | 186 | 121 |
| 5 | 149 | 78 | 143 | 1,050 | 722 | 1,400 | 1,860 | 570 | 438 | 282 | 221 | 116 |
| 6 | 131 | 78 | 722 | 942 | 4,100 | 2,390 | 9,090 | 514 | 414 | 285 | 214 | 112 |
| 7 | 116 | 80 | 438 | 900 | 9,140 | 4,150 | 14,600 | 474 | 757 | 302 | 218 | 108 |
| 8 | 112 | 78 | 277 | 825 | 4,960 | 2,920 | 7,240 | 430 | 975 | 318 | 194 | 102 |
| 9 | 110 | 76 | 252 | 757 | 2,940 | 2,200 | 3,500 | 394 | 1,010 | 282 | 189 | 98 |
| 10 | 108 | 76 | 231 | 734 | 2,140 | 1,750 | 2,600 | 366 | 1,300 | 250 | 239 | 92 |
| 11 | 104 | 75 | 237 | 905 | 1,880 | 1,470 | 2,200 | 341 | 3,620 | 229 | 266 | 94 |
| 12 | 102 | 73 | 239 | 920 | 1,720 | 1,320 | 2,000 | 352 | 2,250 | 229 | 250 | 94 |
| 13 | 98 | 71 | 229 | 865 | 1,410 | 1,160 | *2,460 | 845 | 1,560 | 224 | 244 | 94 |
| 14 | 96 | 71 | 226 | 770 | 1,270 | 1,020 | 3,860 | 1,000 | 1,130 | 208 | 218 | 92 |
| 15 | 96 | 71 | 239 | 718 | 1,190 | 920 | 3,300 | 915 | *880 | 198 | 198 | *90 |
| 16 | 94 | 73 | 244 | 788 | 1,130 | 880 | 2,500 | 734 | 730 | 198 | 231 | 88 |
| 17 | 90 | 73 | 250 | 806 | 1,270 | 1,120 | 1,970 | 730 | 626 | 208 | 252 | 84 |
| 18 | 90 | 73 | 775 | 744 | 1,310 | 2,070 | 1,570 | 646 | 542 | 208 | 221 | 84 |
| 19 | 86 | 75 | 1,380 | 860 | 1,190 | 5,200 | 1,300 | 550 | 466 | 208 | 196 | 82 |
| 20 | 86 | 78 | 860 | *1,050 | 1,060 | 5,390 | 1,100 | 530 | 398 | 208 | 172 | 82 |
| 21 | 84 | 78 | 614 | 1,100 | 1,580 | 13,300 | 1,010 | 570 | 352 | *206 | 165 | 80 |
| 22 | 84 | 80 | 502 | 2,660 | 10,100 | 35,700 | 1,070 | 1,020 | 318 | 351 | 174 | 80 |
| 23 | 82 | 78 | 434 | 2,550 | *12,100 | *13,400 | 2,220 | 2,370 | 296 | 324 | *189 | 78 |
| 24 | 80 | 78 | 390 | 2,000 | 6,690 | 5,210 | 3,570 | *2,080 | 414 | 271 | 189 | 80 |
| 25 | 78 | 75 | 345 | 1,520 | 3,750 | 4,020 | 5,590 | 1,380 | 1,260 | 244 | 172 | 78 |
| 26 | 78 | 73 | 308 | 1,200 | 2,630 | 4,680 | 3,260 | 980 | 2,610 | 214 | 160 | 76 |
| 27 | 78 | 73 | 280 | 1,000 | 2,280 | 3,500 | 2,200 | 734 | 1,590 | 206 | 154 | 76 |
| 28 | *76 | 82 | *745 | 865 | 2,420 | 2,720 | 1,630 | 594 | 953 | 198 | 147 | 106 |
| 29 | 75 | *82 | 17,700 | 766 | - | 2,200 | 1,280 | 1,950 | 698 | 224 | 142 | 112 |
| 30 | 76 | 110 | 16,400 | 690 | ------- | 1,780 | 1,050 | 1,810 | 570 | 198 | 145 | 127 |
| 31 | 76 | ------- | 5,330 | 626 | ------- | 1,510 | ------- | 1,180 | ------- | 189 | 138 | ------- |
| Total | 4,130 | 2,315 | 50,205 | 36,161 | 82,039 | 131,400 | 89,700 | 27,008 | 28,800 | 7,935 | 6,036 | 2,910 |
| Mean | 133 | 77.2 | 1,620 | 1,166 | 2,930 | 4,239 | 2,990 | 871 | 960 | 256 | 195 | 97.0 |
| Cfsm | 0.213 | 0.124 | 2.60 | 1.87 | 4.70 | 6.79 | 4.79 | 1.40 | 1.54 | 0.410 | 0.312 | 0.155 |
| In. | 0.25 | 0.14 | 2.99 | 2.16 | 4.89 | 7.83 | 5.35 | 1.61 | 1.72 | 0.47 | 0.36 | 0.17 |

Calendar year 1954: Max 24,600 Min 69 Mean 1,025 Cfsm 1.64 In. 22.29
Water year 1954-55: Max 35,700 Min 71 Mean 1,284 Cfsm 2.06 In. 27.94

Peak discharge (base, 11,000 cfs).--Dec. 29 (11 p.m.) 24,200 cfs (22.99 ft); Feb. 22 (12 p.m.) 15,400 cfs (17.18 ft); Mar. 22 (9 a.m.) 47,500 cfs (31.72 ft); Apr. 7 (2:30 a.m.) 18,900 cfs (19.64 ft).

* Discharge measurement made on this day.

## Caney Fork near Rock Island, Tenn.

Location.--Lat 35°48'26", long 85°37'44", on right bank 180 ft downstream from powerhouse of Tennessee Valley Authority, half a mile downstream from dam at mouth of Collins River, 1 mile northwest of Rock Island, Warren County, 64 miles upstream from Center Hill Dam, and at mile 90.3.

Drainage area.--1,640 sq mi.

Records available.--November 1911 to March 1924, April 1925 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 650.09 ft above mean sea level, datum of 1929. Nov. 14, 1911, to Mar. 30, 1924, at sites from half a mile upstream to 100 ft downstream from powerplant at different datums. Apr. 12, 1925, to Sept. 9, 1930, at present site at datum 2.00 ft higher.

Average discharge.--36 years (1914-20, 1925-55), 3,198 cfs (unadjusted).

Extremes.--Maximum discharge during year, 89,700 cfs Mar. 22 (gage height, 25.30 ft); minimum daily, 43 cfs July 17.
1911-55: Maximum discharge, 210,000 cfs Mar. 23, 1929 (gage height, 40.6 ft, present datum, from floodmark), from rating curve extended above 110,000 cfs; minimum daily, 25 cfs Aug. 25, 26, Sept. 1-3, 8, 9, 15, 23, 29, 30, Oct. 6, 7, 13, 14, 1951. Maximum stage known, that of Mar. 23, 1929.

Remarks.--Records good. Flow regulated by Great Falls Lake beginning Dec. 8, 1916 (see p. 62).

Revisions (water years).--WSP 1276: 1934, 1937.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 22 | | | | Mar. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| -0.6 | 45 | 5.0 | 2,550 | -0.8 | 43 | 2.0 | 654 |
| -.5 | 56 | 7.0 | 4,500 | -.5 | 62 | 3.0 | 1,140 |
| 0.0 | 133 | 10.0 | 9,190 | 0.0 | 133 | 5.0 | 2,590 |
| .5 | 225 | 13.0 | 17,200 | .5 | 225 | 7.0 | 4,500 |
| 1.0 | 338 | 16.0 | 37,000 | 1.0 | 338 | | |
| 2.0 | 654 | 22.0 | 82,000 | Note.--Same as preceding table above 7.0 ft. | | | |
| 3.0 | 1,120 | 23.8 | 76,400 | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 416 | 164 | 262 | 6,440 | 3,330 | 7,210 | 3,800 | 3,490 | 3,310 | 2,590 | 770 | 344 |
| 2 | 48 | 156 | 1,620 | 5,160 | 3,270 | 7,760 | 3,600 | 3,480 | 3,290 | 1,270 | 624 | 456 |
| 3 | 48 | 234 | 1,770 | 4,120 | 3,280 | 5,980 | 3,860 | 3,450 | 3,250 | 778 | 560 | 45 |
| 4 | 498 | 204 | 50 | 3,540 | 3,270 | 4,840 | 4,870 | 3,420 | 1,650 | 632 | 661 | 45 |
| 5 | 992 | 218 | 56 | 3,530 | 3,250 | 4,280 | 5,580 | 3,390 | 1,360 | 672 | 706 | 45 |
| 6 | 1,180 | 48 | 550 | 3,520 | 3,340 | 7,140 | 21,900 | 3,360 | 758 | 768 | 47 | 345 |
| 7 | 1,440 | 48 | 2,210 | 3,510 | 22,500 | 13,300 | 27,700 | 3,120 | 1,660 | 826 | 49 | 409 |
| 8 | 1,390 | 229 | 2,210 | 3,490 | 13,200 | 7,860 | 14,700 | 2,360 | 2,240 | 664 | 552 | 404 |
| 9 | 46 | 220 | 1,050 | 3,480 | 8,800 | 6,380 | 8,780 | 2,800 | 2,650 | 45 | 666 | 302 |
| 10 | 45 | 235 | 1,200 | 3,450 | 5,680 | 4,790 | 6,480 | 2,680 | 3,340 | 45 | 720 | 45 |
| 11 | 315 | 215 | 48 | 3,440 | 4,850 | 4,100 | 4,840 | 1,290 | 3,440 | 848 | 930 | 44 |
| 12 | 252 | 219 | 48 | 3,430 | 4,870 | 3,820 | 5,180 | 1,110 | 4,120 | 1,380 | 1,500 | 280 |
| 13 | 244 | 47 | 835 | 3,420 | 4,140 | 3,970 | 6,360 | 2,480 | 4,640 | 1,370 | 47 | 186 |
| 14 | 236 | 47 | 1,610 | 3,400 | 3,640 | 3,710 | 10,300 | 2,300 | 3,820 | 1,240 | 47 | 200 |
| 15 | 259 | 164 | 1,320 | 3,390 | 3,560 | 3,500 | 8,460 | 1,860 | 3,510 | 1,260 | 647 | 294 |
| 16 | 46 | 164 | 765 | 3,370 | 3,540 | 3,450 | 6,910 | 1,740 | 3,400 | 54 | 737 | *187 |
| 17 | 46 | 214 | 2,100 | 3,340 | 3,540 | 3,690 | 4,300 | 1,740 | 3,380 | 43 | 746 | 44 |
| 18 | 226 | 343 | 1,630 | 3,320 | 3,660 | 9,440 | 4,150 | 1,580 | 3,260 | 810 | 823 | 44 |
| 19 | 226 | 167 | 70 | 3,300 | 3,680 | 19,200 | 3,680 | 1,980 | 3,330 | 610 | 1,310 | 252 |
| 20 | 163 | 48 | 2,120 | 3,280 | 3,570 | 16,100 | 3,500 | 2,010 | 3,290 | 652 | 47 | 203 |
| 21 | 180 | 48 | 3,300 | 3,260 | 3,520 | 33,200 | 3,500 | 2,020 | 3,240 | 668 | 47 | 198 |
| 22 | 186 | 214 | 3,250 | 3,270 | 21,900 | 75,600 | 3,450 | 1,610 | 3,220 | *912 | 586 | 288 |
| 23 | 45 | 228 | 3,200 | 3,340 | 28,000 | *27,000 | 3,490 | *2,630 | 3,160 | 45 | 460 | 274 |
| 24 | 45 | 208 | 2,410 | 3,380 | *15,200 | c11,700 | 4,290 | 3,300 | 2,510 | 45 | 456 | 44 |
| 25 | 284 | 52 | 970 | 3,420 | 9,410 | c9,700 | 9,800 | 3,330 | 2,010 | 754 | 462 | 44 |
| 26 | 170 | 260 | 1,640 | 3,420 | 7,540 | c11,000 | 6,200 | 3,330 | 1,290 | 915 | 473 | 206 |
| 27 | 160 | 151 | *2,490 | 3,400 | 6,560 | c8,400 | 4,820 | 3,310 | 2,110 | 1,000 | 45 | 211 |
| 28 | *161 | 57 | 3,190 | 3,370 | 7,440 | c6,800 | 3,880 | 3,290 | 3,300 | 1,280 | 45 | 234 |
| 29 | 164 | 151 | 33,200 | 3,370 | - | c5,300 | 3,800 | 3,270 | 3,290 | 1,190 | 417 | 457 |
| 30 | 48 | 252 | 32,000 | 3,360 | -------- | c4,500 | 3,500 | 3,310 | 3,260 | 46 | 349 | 392 |
| 31 | 48 | -------- | 13,100 | 3,350 | -------- | c4,100 | -------- | 3,320 | -------- | 45 | 288 | -------- |
| Total | 9,607 | 5,005 | 120,274 | 110,870 | 208,540 | 337,800 | 205,480 | 82,340 | 87,108 | 23,457 | 15,797 | 6,482 |
| Mean | 310 | 167 | 3,880 | 3,576 | 7,448 | 10,900 | 6,849 | 2,656 | 2,904 | 757 | 510 | 216 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 57,100 | Min 37 | Mean 2,869 | Mean 2,914 | Cfsm 1.78 | In. 24.12 |
| Water year 1954-55: | Max 75,800 | Min 43 | Mean 3,323 | Mean 3,321 | Cfsm 2.02 | In. 27.49 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Great Falls Lake.
c Backwater from Center Hill Reservoir; discharge estimated on basis of Great Falls powerplant records.

## Falling Water River near Cookeville, Tenn.

Location.--Lat 36°04'00", long 85°31'30", on left bank at Burgess Mill, 1 mile upstream from Post Oak Creek and 5 miles south of Cookeville, Putnam County.

Drainage area.--73.3 sq mi.

Records available.--June 1932 to September 1955.

Gage.--Staff gage read twice daily. Datum of gage is 893.49 ft above mean sea level, datum of 1929, supplementary adjustment of 1936 (levels by Corps of Engineers).

Average discharge.--23 years, 111 cfs.

Extremes.--Maximum discharge during year, 5,420 cfs Mar. 22 (gage height, 23.65 ft, from high-water mark on gage section); minimum observed, 4.0 cfs Nov. 17, 18; minimum gage height observed, 2.28 ft Oct. 26, 27, 28, 31.
1932-55: Maximum discharge, that of Mar. 22, 1955; minimum observed, 0.9 cfs Oct. 15, 1936 (gage height, 1.13 ft).
Floods of June 28, 1928, and Mar. 23, 1929, reached stages of 24.1 ft (discharge, 5,630 cfs) and 23.5 ft (discharge, 5,330 cfs), from floodmarks, respectively.

Remarks.--Records good except those for periods of doubtful gage-height record, which are fair. Low flow regulated by storage in Cookeville City Lake.

Cooperation.--Three discharge measurements furnished by Corps of Engineers.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 8-25)

| | | | | | |
|---|---|---|---|---|---|
| 2.3 | 3.6 | 3.0 | 48 | 11.0 | 940 |
| 2.4 | 5.9 | 3.5 | 98 | 14.0 | 1,360 |
| 2.5 | 9.1 | 4.0 | 172 | 16.0 | 1,860 |
| 2.6 | 14 | 5.0 | 288 | 19.0 | 3,150 |
| 2.8 | 29 | 7.0 | 464 | 22.0 | 4,600 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32 | 5.4 | 12 | 301 | 58 | 437 | 152 | 62 | 35 | 30 | 12 | 6.7 |
| 2 | 94 | 5.1 | 9.1 | 208 | 170 | 375 | 136 | 58 | 31 | 26 | 15 | 6.4 |
| 3 | 46 | 5.4 | 8.0 | 140 | 152 | 292 | 133 | 55 | 28 | 23 | 14 | 6.4 |
| 4 | 24 | 6.7 | 6.4 | 108 | 100 | 238 | 108 | 52 | 27 | 23 | 18 | 6.7 |
| 5 | 16 | 8.3 | 29 | 96 | 131 | 182 | 158 | 48 | 24 | 23 | 16 | 6.4 |
| 6 | 12 | 6.1 | 219 | 94 | 1,210 | 672 | 1,050 | 45 | 87 | 62 | 15 | 6.4 |
| 7 | 9.5 | 5.4 | 80 | 81 | *1,480 | *743 | 808 | 42 | 108 | 35 | d13 | 6.4 |
| 8 | 9.1 | 5.1 | 44 | 71 | 538 | 387 | 369 | 40 | 256 | 39 | d15 | d6.1 |
| 9 | 8.0 | 4.9 | 54 | 72 | 341 | 286 | 284 | 38 | 718 | 30 | d14 | d6.1 |
| 10 | 7.3 | 4.6 | 72 | 65 | 274 | 220 | 222 | 35 | 389 | 25 | d17 | d5.9 |
| 11 | 6.7 | 4.9 | 48 | 80 | 256 | 180 | 186 | 35 | 665 | 24 | *d15 | 7.0 |
| 12 | 7.0 | 4.9 | 42 | 83 | 196 | 154 | 183 | 40 | 355 | 23 | d17 | *7.0 |
| 13 | 7.0 | 4.9 | 49 | *81 | 143 | 126 | 270 | 78 | 228 | 23 | d12 | 6.4 |
| 14 | 6.7 | 4.4 | 56 | 66 | 134 | 108 | 296 | 58 | 145 | 23 | 12 | 6.4 |
| 15 | 6.7 | 4.2 | 54 | 67 | 120 | 103 | 234 | 117 | 113 | 23 | 11 | 6.4 |
| 16 | 6.7 | *4.4 | *44 | 61 | 119 | 215 | 180 | 147 | 93 | 24 | d10 | 6.4 |
| 17 | 6.7 | 4.2 | 44 | 57 | 138 | 338 | 138 | 108 | 81 | 22 | d10 | 6.4 |
| 18 | *6.4 | 4.2 | 421 | 52 | 140 | 2,010 | 112 | 83 | 72 | 18 | d9.5 | 6.4 |
| 19 | 6.4 | 5.4 | 223 | 57 | 118 | 1,750 | 101 | 66 | 62 | 17 | d8.3 | 6.4 |
| 20 | 6.1 | 10 | 104 | 57 | 103 | 714 | 91 | 56 | *56 | 17 | d7.6 | 6.1 |
| 21 | 6.1 | 11 | 82 | 76 | 199 | 1,900 | 95 | 62 | 50 | 46 | d7.6 | 5.9 |
| 22 | 5.9 | 14 | 70 | 310 | 1,420 | 4,240 | 84 | 58 | 47 | 35 | d7.6 | 5.9 |
| 23 | 5.9 | 10 | 59 | 299 | 1,090 | 1,380 | 73 | *56 | 42 | 24 | d7.6 | 5.9 |
| 24 | 5.9 | 8.3 | 55 | 223 | 517 | 672 | 222 | 55 | 40 | 17 | d7.6 | 5.9 |
| 25 | 5.9 | 6.7 | 44 | 147 | 348 | 514 | 205 | 53 | 94 | 17 | d7.6 | 6.7 |
| 26 | 5.4 | 5.9 | 38 | 110 | 283 | 552 | 115 | 50 | 115 | 17 | d7.6 | 6.4 |
| 27 | 5.1 | 7.3 | 33 | 93 | 414 | 386 | 97 | 41 | 67 | *16 | d7.6 | 6.4 |
| 28 | *5.6 | 9.5 | 141 | 85 | 538 | 311 | *86 | 37 | 48 | 15 | d7.6 | 31 |
| 29 | 6.1 | 13 | 1,700 | 76 | - | 271 | 76 | 60 | 39 | 13 | d7.6 | 8.3 |
| 30 | 5.4 | 13 | 1,300 | 69 | ------- | 223 | 67 | 50 | 31 | 12 | d7.6 | 59 |
| 31 | 5.1 | ------- | 451 | 62 | ------- | 182 | ------- | 42 | ------- | 11 | 7.3 | ------- |
| Total | 386.7 | 207.2 | 5,591.5 | 3,447 | 10,730 | 20,161 | 6,331 | 1,827 | 4,146 | 753 | 344.7 | 269.8 |
| Mean | 12.5 | 6.91 | 180 | 111 | 383 | 650 | 211 | 58.9 | 138 | 24.3 | 11.1 | 8.99 |
| Cfsm | 0.171 | 0.094 | 2.46 | 1.51 | 5.23 | 8.87 | 2.88 | 0.804 | 1.88 | 0.332 | 0.151 | 0.123 |
| In. | 0.20 | 0.11 | 2.84 | 1.75 | 5.44 | 10.23 | 3.21 | 0.93 | 2.10 | 0.38 | 0.17 | 0.14 |

Calendar year 1954: Max 3,130 Min 2.6 Mean 104 Cfsm 1.42 In. 19.28
Water year 1954-55: Max 4,240 Min 4.2 Mean 148 Cfsm 2.02 In. 27.50

* Discharge measurement made on this day.
d Doubtful gage-height record; discharge estimated from actual readings, 1 discharge measurement, weather records, change in water level in Cookeville City Lake upstream, and records for Roaring River near Hilham.

414660 O - 57 - 4

## Caney Fork below Center Hill Dam, near Lancaster, Tenn.

Location.--Lat 36°06'10", long 85°50'40", on left bank 1.1 miles downstream from Center Hill Dam, 2 miles south of Lancaster, Smith County, 4.7 miles upstream from Indian Creek, 10 miles north of Smithville, and at mile 25.5.
Drainage area.--2,200 sq mi, approximately.
Records available.--May 1944 to September 1955. Prior to October 1950, published as "near Lancaster."
Gage.--Water-stage recorder. Datum of gage is 469.00 ft above mean sea level, Sandy Hook datum (levels by Corps of Engineers). Prior to Oct. 1, 1950, at site 7.7 miles downstream at datum 6.62 ft lower.
Average discharge.--11 years, 4,102 cfs (unadjusted).
Extremes.--Maximum discharge during year, 30,900 cfs Mar. 29; maximum gage height, 30.94 ft Mar. 29; minimum discharge, 43 cfs Dec. 25-27.
1944-55: Maximum discharge, 119,000 cfs Feb. 14, 1948; maximum gage height, 53.44 ft Feb. 14, 1948, site and datum then in use; minimum daily discharge, 12 cfs Oct. 1-18, 20-22, 1950.
Remarks.--Records good except those for periods of backwater or no gage-height record, or those between 100 and 1,000 cfs, which are fair. Flow regulated by Great Falls Lake and Center Hill Reservoir (see p. 62).
Cooperation.--Five discharge measurements and record of releases from Center Hill Reservoir furnished by Corps of Engineers.
Revisions (water years).--WSP 1276: 1951.

Rating tables, water year 1954-55, except periods of backwater (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Jan. 12, 15, 17, 21, 24, 27-30, Feb. 25, 28, Mar. 1, 4-6, 9, 17, 20, 25, Apr. 1, 2, 8, 25, June 19, 20)

Oct. 1 to Mar. 29

| | | | |
|---|---|---|---|
| 5.2 | 40 | 8.0 | 1,230 |
| 5.3 | 44 | 10.0 | 2,820 |
| 5.5 | 60 | 15.0 | 8,000 |
| 5.8 | 107 | 20.0 | 14,400 |
| 6.0 | 150 | 25.0 | 21,300 |
| 6.5 | 320 | 31.0 | 30,000 |
| 7.0 | 590 | | |

Mar. 30 to Sept. 30

| | | | |
|---|---|---|---|
| 5.1 | 46 | 6.0 | 180 |
| 5.3 | 61 | 6.5 | 360 |
| 5.6 | 93 | 7.0 | 590 |

Note.--Same as preceding table above 7.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 60 | 1,070 | 4,660 | 4,500 | 7,920 | 8,710 | *24,300 | 1,180 | 1,890 | 2,100 | 170 | 248 |
| 2 | 62 | 2,260 | 6,000 | 1,460 | 7,540 | 9,100 | 18,400 | 3,410 | 5,280 | 3,130 | 63 | 207 |
| 3 | 50 | 3,100 | 4,960 | 1,800 | 8,650 | 7,970 | 15,000 | 2,120 | 5,530 | 2,700 | 194 | 228 |
| 4 | 49 | 2,660 | 4,500 | 1,360 | 10,000 | 9,210 | 13,200 | 3,270 | 1,170 | 3,180 | 61 | 1,380 |
| 5 | 48 | 2,060 | 5,380 | 2,060 | 7,340 | 11,200 | 12,600 | 1,170 | 76 | 2,460 | 186 | 1,340 |
| 6 | 49 | 1,110 | 5,350 | 1,340 | 808 | 9,360 | 13,200 | 2,980 | 193 | 2,580 | 844 | 570 |
| 7 | 55 | 1,920 | 1,600 | 5,120 | 392 | 12,400 | 12,400 | 3,220 | 64 | 2,560 | 204 | 556 |
| 8 | 104 | 2,360 | 1,920 | 2,810 | 2,540 | 12,100 | 16,200 | 2,120 | 344 | 1,040 | 64 | 534 |
| 9 | 48 | 52 | 6,940 | 3,060 | 660 | *9,980 | 21,400 | 3,240 | 68 | 702 | 244 | 1,720 |
| 10 | 48 | 1,560 | 6,560 | 6,700 | 3,630 | 6,280 | 18,200 | 3,850 | 233 | 366 | 72 | 1,000 |
| 11 | 48 | 592 | 888 | 5,680 | 5,380 | 6,780 | 15,500 | 4,420 | 93 | 1,850 | 616 | 150 |
| 12 | 48 | 46 | 50 | 10,600 | 4,270 | 7,340 | 13,700 | 3,320 | 220 | 766 | 941 | 1,060 |
| 13 | 48 | 46 | 4,040 | 10,800 | 1,140 | 7,630 | 12,900 | 3,480 | 693 | 1,580 | 196 | 1,140 |
| 14 | 49 | 46 | 4,660 | 10,400 | 6,640 | 6,640 | 12,600 | 3,480 | 5,000 | 1,160 | 61 | 1,120 |
| 15 | 57 | 60 | 5,840 | 11,100 | 5,790 | 7,940 | 12,600 | 2,900 | 7,380 | 1,720 | 650 | 1,210 |
| 16 | 49 | *48 | 6,150 | 8,120 | 3,150 | 12,400 | 12,600 | 3,000 | 1,760 | 1,880 | 576 | 2,540 |
| 17 | 48 | 47 | *5,120 | 12,300 | 4,420 | 12,000 | 11,600 | 3,130 | 3,200 | 236 | 342 | 1,440 |
| 18 | 53 | 47 | 1,670 | 10,500 | 86 | c11,500 | 11,800 | 2,940 | 5,200 | 515 | 662 | 876 |
| 19 | 474 | 47 | 782 | 11,100 | 51 | c11,000 | 9,560 | 3,000 | 8,930 | 2,500 | 725 | 3,440 |
| 20 | 366 | 47 | 2,280 | 4,830 | 49 | 10,600 | 9,640 | 1,930 | 9,010 | 1,100 | 144 | 4,780 |
| 21 | 938 | 47 | 864 | 11,800 | 1,560 | c6,500 | 7,990 | 572 | 6,780 | 576 | 49 | 4,340 |
| 22 | 1,000 | 2,140 | 935 | 8,820 | c 1,200 | c8,000 | 10,400 | 71 | *3,880 | 964 | 726 | 4,710 |
| 23 | 804 | 1,980 | 78 | 5,300 | c800 | c10,000 | 10,300 | 5,340 | 5,440 | 218 | 562 | 6,200 |
| 24 | 782 | 3,840 | 44 | 10,500 | 7,010 | 9,180 | 7,870 | 2,860 | 4,980 | 61 | 580 | 5,300 |
| 25 | 1,160 | 3,810 | 43 | 9,800 | 9,260 | 18,000 | 10,800 | a8,500 | 1,500 | 278 | 612 | 4,520 |
| 26 | 52 | 4,600 | 43 | 8,200 | 9,620 | 26,400 | 12,500 | a10,000 | 2,100 | 279 | 669 | 3,560 |
| 27 | 420 | 3,160 | 288 | 7,970 | 7,900 | 26,300 | 12,600 | 11,100 | 3,050 | 1,150 | 170 | 3,640 |
| 28 | 1,850 | 1,940 | 134 | 8,640 | 8,570 | 27,300 | 12,600 | 10,500 | 2,170 | 916 | 53 | 99 |
| 29 | 2,720 | 5,810 | 1,060 | 12,300 | - | 28,800 | 12,400 | 7,040 | 1,660 | 237 | 288 | 178 |
| 30 | 2,900 | 979 | 1,840 | 9,910 | -------- | 28,700 | 4,040 | 4,680 | 4,690 | 219 | 340 | 75 |
| 31 | 1,190 | -------- | 2,020 | 10,700 | -------- | *28,600 | -------- | 3,670 | -------- | 61 | 306 | -------- |
| Total | 15,629 | 47,484 | 86,699 | 229,580 | 126,376 | 407,920 | 388,900 | 122,493 | 92,584 | 39,084 | 11,370 | 58,161 |
| Mean | 504 | 1,583 | 2,797 | 7,406 | 4,513 | 13,160 | 12,960 | 3,951 | 3,086 | 1,261 | 367 | 1,939 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 25,300 | Min 43 | Mean 3,335 | Mean 3,710 | Cfsm 1.69 | In. 22.89 |
| Water year 1954-55: | Max 28,800 | Min 43 | Mean 4,456 | Mean 4,405 | Cfsm 2.00 | In. 27.18 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Great Falls Lake and Center Hill Reservoir.
a No gage-height record; discharge estimated on basis of computed release from Center Hill Reservoir.
c Backwater from local inflow downstream; discharge estimated on basis of weather records and computed release from Center Hill Reservoir.

## Cumberland River at Carthage, Tenn.

Location.--Lat 36°14'42", long 85°57'15", on left pier of Cordell Hull Bridge on State Highway 25, half a mile south of Carthage, Smith County, 1 mile downstream from Caney Fork, 8½ miles upstream from lock and dam 7, and at mile 308.2.

Drainage area.--10,700 sq mi, approximately.

Records available.--October 1922 to September 1955. Gage-height records collected in this vicinity since 1885 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 437.67 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 12, 1936, staff and wire-weight gages at site 1,000 ft downstream at same datum. May 12 to July 17, 1936, wire-weight gage at present site and datum.

Average discharge.--33 years, 16,950 cfs (unadjusted).

Extremes.--Maximum discharge during year, 103,000 cfs Mar. 22; maximum gage height, 37.73 ft Mar. 22; minimum discharge, 937 cfs Nov. 17 (gage height, 8.47 ft).
1922-55: Maximum discharge, 210,000 cfs Dec. 30, 1926; maximum gage height, 59.8 ft Dec. 30, 1926; minimum discharge, 304 cfs Oct. 29, 1940.

Remarks.--Records good except those for periods of reconstructed gage-height record, which are fair. Flow regulated by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir (see p. 62).

Cooperation.--Lock 7 staff-gage readings and 1 discharge measurement furnished by Corps of Engineers. Wire-weight-gage readings furnished by U. S. Weather Bureau.

Revisions (water years).--WSP 893: 1923-39. WSP 1276: 1927, 1929(M), 1937(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Feb. 6, 7, 22, 23, Mar. 17, 18, 20-22, 26, Apr. 2, 3, 6, 7, 9; backwater from return of overbank flow Mar. 23, 24)

| | | | |
|---|---|---|---|
| 8.5 | 1,000 | 17.0 | 27,100 |
| 9.0 | 1,940 | 27.0 | 66,700 |
| 11.0 | 6,830 | 38.0 | 99,400 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,860 | 7,330 | 14,500 | 18,100 | 31,500 | 23,200 | 66,400 | 22,700 | 18,900 | 6,750 | 1,520 | 7,700 |
| 2 | 6,330 | 8,600 | 14,300 | 12,400 | 32,800 | 24,700 | 60,000 | 14,800 | 18,500 | 6,690 | 2,070 | 5,110 |
| 3 | 4,590 | 13,400 | 18,200 | 6,490 | 32,800 | 19,300 | 54,300 | 13,800 | 23,100 | 7,590 | 2,120 | 3,600 |
| 4 | 2,950 | 13,200 | 21,400 | 4,740 | 33,000 | 13,600 | 52,800 | 13,000 | 21,300 | 8,480 | 4,310 | 3,560 |
| 5 | 1,890 | 12,700 | 22,700 | 6,490 | 33,300 | 18,200 | 53,900 | 10,100 | 17,700 | 7,840 | 4,660 | 4,120 |
| 6 | *1,390 | 12,300 | 29,500 | 8,900 | 57,000 | 22,800 | 60,700 | 10,500 | 12,400 | 7,890 | 5,780 | 5,940 |
| 7 | 1,410 | 10,800 | 23,800 | 8,330 | 52,900 | 30,800 | 57,700 | 8,120 | 7,450 | 7,890 | 6,550 | 6,720 |
| 8 | 1,850 | 10,200 | 16,700 | 8,930 | 35,000 | 32,000 | 53,200 | 8,390 | 7,050 | 6,550 | 5,730 | 6,020 |
| 9 | 1,830 | 7,950 | 14,700 | 13,800 | 22,200 | 32,900 | 60,000 | 7,610 | 11,100 | 5,730 | *3,400 | 5,420 |
| 10 | 1,850 | 4,900 | 19,900 | 13,400 | 19,300 | 29,100 | 59,300 | 9,560 | 16,400 | 5,760 | 3,350 | 4,870 |
| 11 | 1,480 | 5,550 | 21,000 | 12,200 | 22,000 | 27,100 | 55,800 | 10,500 | 32,700 | 4,560 | 4,690 | 6,240 |
| 12 | 1,330 | 2,950 | 15,300 | 21,800 | 25,800 | 25,100 | 54,700 | 10,300 | 21,400 | 3,900 | 3,040 | 5,340 |
| 13 | 1,180 | 2,910 | 13,300 | 27,800 | 21,000 | 24,700 | 54,700 | 10,000 | 11,700 | 3,600 | 6,410 | 4,330 |
| 14 | 1,080 | 2,340 | 14,800 | 31,800 | 21,300 | 17,900 | 54,700 | 10,100 | 10,700 | 5,080 | 4,950 | 4,610 |
| 15 | 1,750 | 1,680 | 18,900 | 35,800 | 24,800 | 20,000 | 53,600 | 11,700 | *17,200 | 5,130 | 3,490 | 6,770 |
| 16 | 1,760 | 1,440 | *22,100 | 30,200 | 19,800 | 34,200 | 51,600 | 12,700 | 16,900 | 5,030 | 2,860 | 6,770 |
| 17 | 2,400 | 1,100 | 22,200 | 31,900 | 20,000 | 47,500 | 50,800 | 13,000 | 10,800 | 5,940 | 4,170 | 9,270 |
| 18 | 4,120 | 3,350 | 22,700 | 32,900 | 18,400 | 62,800 | 47,000 | 14,300 | 12,700 | 3,540 | 6,050 | 10,100 |
| 19 | 3,720 | 3,470 | 16,100 | 32,200 | 17,500 | *65,800 | 43,500 | 15,500 | 14,900 | 3,720 | 5,960 | 7,390 |
| 20 | 4,190 | 2,180 | 11,100 | 29,600 | 13,100 | 55,400 | 40,900 | 14,300 | 17,200 | 4,380 | 7,000 | 8,210 |
| 21 | 7,190 | 2,030 | 8,840 | 27,500 | 10,500 | 82,800 | 38,200 | 11,700 | 15,200 | 3,840 | 6,890 | 11,600 |
| 22 | 8,870 | 3,020 | 9,300 | 36,600 | 59,200 | 99,500 | 39,500 | 10,700 | 14,500 | 4,590 | 4,240 | 13,100 |
| 23 | 8,840 | 5,420 | 10,600 | 33,900 | 47,100 | 79,300 | 40,900 | 9,200 | 13,600 | 4,190 | 4,000 | 17,000 |
| 24 | 7,980 | 8,840 | 9,590 | 27,800 | 33,100 | 63,800 | 39,500 | 11,000 | 17,700 | 3,260 | 5,440 | 17,900 |
| 25 | 6,100 | 12,200 | 7,530 | 32,400 | 29,600 | 55,700 | 40,400 | 17,700 | 13,400 | 2,270 | 9,240 | 17,500 |
| 26 | 5,130 | 16,200 | 4,000 | *29,900 | 27,100 | 66,800 | 38,100 | 26,900 | 10,200 | 1,940 | 8,510 | 14,400 |
| 27 | 4,260 | 17,200 | 2,270 | 29,500 | 25,900 | 66,300 | 32,000 | 34,100 | 10,200 | 2,270 | 9,140 | 11,900 |
| 28 | 4,070 | 14,800 | 5,100 | 26,900 | 24,700 | 65,300 | 35,900 | 35,200 | 6,940 | 2,180 | 6,940 | 6,550 |
| 29 | 5,570 | 13,900 | 27,800 | 33,700 | - | 65,700 | 38,400 | 31,400 | 8,010 | 2,400 | 4,360 | 2,860 |
| 30 | 8,720 | 15,100 | 32,000 | 36,100 | ------- | 66,700 | 33,400 | 23,700 | 8,120 | 2,840 | 3,670 | 4,820 |
| 31 | 10,600 | ------- | 20,400 | 34,800 | ------- | *66,900 | ------- | 21,900 | ------- | 2,290 | 5,260 | ------- |
| Total | 128,290 | 237,060 | 510,630 | 736,880 | 810,700 | 1,406,900 | 1,461,900 | 474,480 | 437,970 | 148,120 | 155,800 | 239,720 |
| Mean | 4,138 | 7,902 | 16,470 | 23,770 | 28,950 | 45,350 | 48,730 | 15,310 | 14,600 | 4,778 | 5,026 | 7,991 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 59,000 | Min 951 | Mean 11,120 | Mean 12,220 | Cfsm 1.14 | In. 15.50 |
| Water year 1954-55: | Max 99,500 | Min 1,080 | Mean 18,490 | Mean 18,300 | Cfsm 1.71 | In. 23.21 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir.
Note.--Discharge Feb. 28 to Mar. 18, Apr. 2-25, May 14-22 computed from reconstructed gage-height graph based on daily wire-weight-gage readings and twice-daily readings (5 days per week) of upper lock 7 staff gage.

## Spring Creek near Lebanon, Tenn.

Location.--Lat 36°10'50", long 86°14'35", on downstream end of middle pier of bridge on Eastover Road, half a mile downstream from Black Branch, and 3½ miles southeast of Lebanon, Wilson County.

Drainage area.--34 sq mi, approximately.

Records available.--October 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 556.32 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 7,980 cfs Mar. 21 (gage height, 10.13 ft), from rating curve extended above 1,500 cfs on basis of slope-area determination of peak flow; minimum, 0.03 cfs Sept. 2-11; minimum gage height, 0.17 ft Sept. 6-11.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Nov. 9 to Apr. 6 | | | | Apr. 7 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.3 | 0.1 | 1.2 | 62 | 0.1 | 0 | 0.7 | 13 |
| .4 | .8 | 1.4 | 112 | .2 | .04 | .8 | 20 |
| .5 | 2.7 | 2.0 | 338 | .3 | .3 | 1.0 | 40 |
| .6 | 5.3 | 3.0 | 813 | .4 | 1.5 | 1.2 | 70 |
| .7 | 8.5 | 5.0 | 1,840 | .5 | 3.4 | 1.4 | 112 |
| .8 | 13 | 8.0 | 3,950 | .6 | 7.5 | | |
| .9 | 20 | 9.0 | 5,450 | | | | |
| 1.0 | 30 | 10.2 | 8,160 | | | | |

Note.--Same as preceding table above 1.4 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 8.5 | 52 | 296 | 232 | 20 | 10 | 13 | 2.3 | 0.2 | 0.04 |
| 2 | | | 7.1 | 38 | 196 | 98 | 22 | 8.9 | 10 | a2.0 | .2 | .04 |
| 3 | a80 | | 5.6 | 29 | 89 | 64 | 23 | 8.4 | 8.9 | a1.8 | .2 | .03 |
| 4 | | a0.7 | 4.7 | 25 | 47 | 50 | 18 | 7.5 | 7.5 | a1.6 | .1 | .03 |
| 5 | | | 706 | 21 | 318 | 55 | 15 | 7.0 | 7.0 | a1.3 | .1 | .03 |
| 6 | | | 166 | 19 | *1,510 | 934 | *859 | 6.1 | 12 | a1.2 | .1 | .03 |
| 7 | | | 54 | 17 | 240 | 168 | 126 | 5.6 | 8.0 | a1.0 | .1 | .03 |
| 8 | a5 | | 34 | 15 | 101 | 84 | 64 | 5.1 | 9.5 | a.7 | .1 | .03 |
| 9 | | *.6 | 54 | 15 | 62 | 57 | 47 | 4.7 | 10 | a.5 | .1 | .03 |
| 10 | | .6 | *37 | 18 | 50 | a50 | 37 | 4.3 | 290 | 7.6 | .1 | .03 |
| 11 | | .5 | 26 | 29 | 88 | a45 | 40 | 3.9 | 89 | a3.1 | 2.4 | 170 |
| 12 | | .4 | 23 | 26 | 57 | a40 | 33 | 75 | 43 | a1.3 | .9 | 17 |
| 13 | | .3 | 70 | 22 | 48 | a35 | 51 | 52 | 28 | *.5 | .2 | *5.6 |
| 14 | | .3 | 47 | 18 | 43 | a35 | 38 | 21 | 21 | .3 | .1 | 2.5 |
| 15 | a2 | .3 | 33 | 19 | 48 | a40 | 31 | a15 | 15 | .3 | .1 | 1.8 |
| 16 | | .3 | *23 | 18 | 48 | a280 | 26 | a9 | 11 | .3 | .1 | 1.3 |
| 17 | | .3 | 52 | 16 | 48 | a110 | 23 | a7 | 9.5 | .3 | .1 | .9 |
| 18 | | .4 | 60 | 15 | 40 | *768 | 20 | a5 | 8.0 | 7.2 | .1 | .5 |
| 19 | | .4 | 40 | 18 | 33 | 392 | 17 | a4 | 7.0 | 29 | .1 | .3 |
| 20 | | .7 | 29 | 18 | 29 | 223 | 15 | a4 | 5.1 | 3.4 | .1 | .2 |
| 21 | | .7 | 23 | 288 | *1,260 | *3,080 | 17 | a20 | *4.3 | 1.8 | .1 | .2 |
| 22 | | .7 | 19 | 194 | 1,070 | 366 | 15 | a70 | 3.6 | 1.2 | 1.7 | .1 |
| 23 | | .7 | 17 | 82 | 221 | 132 | 26 | *29 | 3.4 | .7 | 2.2 | .09 |
| 24 | | .7 | 13 | 54 | 109 | 73 | 55 | 16 | 2.9 | .4 | *1.6 | .1 |
| 25 | | .6 | 12 | 38 | 69 | 771 | 29 | 13 | 18 | .3 | .6 | .09 |
| 26 | a.8 | .6 | 11 | *29 | 78 | 180 | 21 | 10 | 7.5 | .3 | .3 | .07 |
| 27 | | .8 | 9.6 | 25 | 365 | 77 | 17 | 8.4 | 5.1 | .3 | .2 | .06 |
| 28 | | 5.7 | 793 | 20 | 134 | 54 | 15 | 7.5 | 3.9 | 4.3 | .1 | 70 |
| 29 | | 20 | 899 | 18 | - | 38 | 13 | 315 | 3.1 | 11 | .07 | 14 |
| 30 | | 11 | *164 | 16 | ------ | 29 | 11 | 34 | 2.5 | 2.7 | .05 | 337 |
| 31 | | ------ | 75 | 14 | ------ | 23 | ------ | 21 | ------ | .5 | *.04 | ------ |
| Total | 453.8 | 52.2 | 3,515.5 | 1,226 | 6,677 | 8,585 | 1,744 | 807.4 | 666.8 | 89.2 | 12.46 | 622.13 |
| Mean | 14.6 | 1.74 | 113 | 39.5 | 238 | 277 | 58.1 | 26.0 | 22.2 | 2.88 | 0.402 | 20.7 |
| Cfsm | 0.429 | 0.051 | 3.32 | 1.16 | 7.00 | 8.15 | 1.71 | 0.765 | 0.653 | 0.085 | 0.012 | 0.609 |
| In. | 0.48 | 0.06 | 3.85 | 1.34 | 7.30 | 9.39 | 1.91 | 0.88 | 0.73 | 0.10 | 0.01 | 0.68 |

Calendar year 1954: Max - Min - Mean - Cfsm - In. -
Water year 1954-55: Max 3,080 Min 0.03 Mean 67.0 Cfsm 1.97 In. 26.73

Peak discharge (base, 2,700 cfs).--Dec. 29 (11 a.m.) 2,990 cfs (6.83 ft); Feb. 6 (9 a.m.) 2,710 cfs (6.40 ft); Feb. 21 (10:30 p.m.) 3,080 cfs (6.97 ft); Mar. 18 (8 a.m.) 3,560 cfs (7.60 ft); Mar. 21 (7 p.m.) 7,980 cfs (10.13 ft); Apr. 6 (4 a.m.) 3,070 cfs (6.95 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage when available, and records for Stewart Creek near Smyrna.

## Bradley Creek at Lascassas, Tenn.

Location.--Lat 35°55'40", long 86°17'25", on downstream end of county road bridge pier, near midstream, a quarter of a mile south of Lascassas, Rutherford County, 0.4 mile downstream from Cason Branch, 1¾ miles upstream from mouth, and 8 miles northeast of Murfreesboro.

Drainage area.--38 sq mi, approximately.

Records available.--October 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 548.24 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 12,800 cfs Mar. 21 (gage height, 10.66 ft), from rating curve extended above 4,700 cfs on basis of slope-area determination of peak flow; minimum, 0.03 cfs Sept. 7-10 (gage height, 0.50 ft).

Remarks.--Records fair.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second) (Backwater from East Fork Stones River Mar. 21, 22)

| | | | |
|---|---|---|---|
| 0.5 | 0.03 | 1.4 | 93 |
| .6 | .2 | 1.7 | 172 |
| .7 | 1.2 | 2.0 | 310 |
| .8 | 5.0 | 3.0 | 900 |
| .9 | 12 | 5.0 | 2,300 |
| 1.0 | 23 | 7.0 | 4,000 |
| 1.2 | 55 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 5.6 | 64 | 141 | 109 | 16 | 11 | 16 | 2.3 | 0.1 | 0.1 |
| 2 | | | 3.9 | 42 | 140 | 81 | 18 | 9.8 | 12 | 1.7 | .2 | .1 |
| 3 | a76 | | *3.4 | 31 | 69 | 62 | 18 | 8.9 | 11 | 1.4 | .1 | .09 |
| 4 | | | 2.6 | 25 | 46 | 48 | 14 | 7.5 | 9.8 | 1.2 | 3.3 | a.06 |
| 5 | | a0.8 | 687 | 20 | 262 | 39 | 22 | 6.8 | 8.2 | 1.0 | 3.8 | a.05 |
| 6 | | | 192 | 19 | *1,400 | 560 | *714 | 6.2 | 11 | 1.6 | 1.0 | a.04 |
| 7 | | | 66 | 15 | 280 | 150 | 130 | 6.2 | 15 | 1.4 | 3.4 | *a.03 |
| 8 | a5.2 | (*) | 39 | 14 | 124 | 83 | 69 | 5.6 | 16 | *.8 | .9 | a.03 |
| 9 | | .5 | 60 | 15 | 81 | 59 | 48 | 5.0 | 18 | .7 | .3 | a.03 |
| 10 | | .4 | 42 | 17 | 60 | 42 | *37 | 5.0 | 777 | .6 | .2 | a.03 |
| 11 | | .4 | 30 | 30 | 98 | 33 | 36 | 4.5 | 202 | .4 | .4 | 56 |
| 12 | | .4 | 24 | 25 | 69 | 34 | 28 | 85 | 75 | .3 | 9.8 | 9.0 |
| 13 | | .4 | 81 | 22 | 53 | 25 | 66 | 86 | 44 | .3 | 1.7 | 2.6 |
| 14 | | .3 | 55 | 17 | 51 | 23 | 48 | 31 | 28 | .3 | .7 | 1.0 |
| 15 | | .5 | 37 | 26 | 55 | 20 | 34 | 17 | *18 | .3 | .3 | .6 |
| 16 | a2.2 | .7 | 25 | 31 | 53 | 403 | 27 | 12 | 14 | .3 | .2 | .4 |
| 17 | | .6 | 55 | *25 | 51 | 116 | 23 | 9.8 | 11 | .2 | 2.2 | .3 |
| 18 | | .6 | 75 | 20 | 44 | *1,370 | 18 | 7.5 | 8.9 | .2 | .8 | .2 |
| 19 | | .6 | 51 | 28 | 37 | 491 | 15 | 6.2 | 8.2 | .3 | .8 | .2 |
| 20 | | .7 | 37 | 42 | 31 | 176 | 13 | 5.6 | 6.8 | .2 | .4 | *.1 |
| 21 | | .5 | 30 | 363 | *1,160 | *3,660 | 14 | 18 | 6.2 | .2 | .3 | .1 |
| 22 | | .7 | 23 | 276 | 1,480 | 695 | 13 | 60 | 5.0 | 7.4 | *.3 | .1 |
| 23 | | 1.0 | 18 | 121 | 263 | 169 | 65 | *24 | 5.0 | 2.0 | 20 | .09 |
| 24 | | .8 | 15 | 71 | 126 | 98 | 294 | 110 | 5.6 | 1.0 | 3.4 | .1 |
| 25 | | .8 | 13 | 49 | 85 | 77 | 71 | 64 | 13 | 1.0 | 1.7 | .2 |
| 26 | a.9 | .7 | 12 | 37 | 66 | 60 | 40 | 31 | 11 | .7 | .7 | .2 |
| 27 | | 1.0 | 11 | 30 | 129 | 42 | 30 | 19 | 7.5 | .5 | .4 | .1 |
| 28 | | 2.3 | 1,190 | 24 | 95 | 36 | 22 | 15 | 5.6 | .3 | .3 | 49 |
| 29 | | 9.8 | 1,170 | 19 | - | 30 | 16 | 102 | 3.9 | .3 | .2 | 12 |
| 30 | | 7.5 | 205 | 18 | ------- | 24 | 13 | 37 | 2.6 | .2 | .2 | 170 |
| 31 | | ------- | *93 | 15 | ------- | 19 | ------- | 22 | ------- | .1 | .2 | ------- |
| Total | 437.9 | 37.6 | 4,351.5 | 1,551 | 6,549 | 8,834 | 1,972 | 838.6 | 1,375.3 | 29.2 | 58.3 | 302.85 |
| Mean | 14.1 | 1.25 | 140 | 50.0 | 234 | 285 | 65.7 | 27.1 | 45.8 | 0.94 | 1.88 | 10.1 |
| Cfsm | 0.371 | 0.033 | 3.68 | 1.32 | 6.16 | 7.50 | 1.73 | 0.713 | 1.21 | 0.025 | 0.049 | 0.266 |
| In. | 0.43 | 0.04 | 4.26 | 1.52 | 6.41 | 8.65 | 1.93 | 0.82 | 1.35 | 0.03 | 0.06 | 0.30 |

Calendar year 1954: Max - Min - Mean - Cfsm - In. -
Water year 1954-55: Max 3,660 Min 0.03 Mean 72.2 Cfsm 1.90 In. 25.80

Peak discharge (base, 3,000 cfs).--Dec. 28 (4:30 p.m.) 3,720 cfs (6.76 ft); Feb. 22 (2:30 p.m.) 3,900 cfs (6.92 ft); Mar. 18 (7 a.m.) 5,420 cfs (7.85 ft); Mar. 21 (7:30 p.m.) 12,800 cfs (10.66 ft); June 10 (5:30 p.m.) 4,040 cfs (7.03 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, 2 discharge measurements, and records for Spring Creek near Lebanon.

## East Fork Stones River near Lascassas, Tenn.

Location.--Lat 35°55'10", long 86°20'00", at downstream end of right pier of highway bridge, 2½ miles southwest of Lascassas, Rutherford County, 3¼ miles downstream from Bradley Creek, 6 miles northeast of Murfreesboro, and 15 miles upstream from confluence with West Fork.

Drainage area.--264 sq mi.

Records available.--February 1951 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 507.88 ft above mean sea level (levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 21,300 cfs Mar. 22 (gage height, 34.07 ft); minimum, 2.8 cfs Nov. 1 (gage height, 2.44 ft); minimum daily, 4.0 cfs Nov. 15.
1951-55: Maximum discharge, that of Mar. 22, 1955; minimum, 0.2 cfs Oct. 23, 1953 (gage height, 2.22 ft); minimum daily, 0.4 cfs Aug. 31, 1953.

Remarks.--Records good except those for periods of backwater from storage dam, which are fair. Diurnal fluctuations at low flow caused by small mill above station.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Rating tables, water year 1954-55, except periods of backwater from storage dam (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 19, 20)

| Oct. 1 to Feb. 22 | | | | Feb. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 2.3 | 4.0 | 4.0 | 212 | 2.4 | 5.0 | 5.0 | 430 |
| 2.4 | 7.0 | 5.0 | 447 | 2.5 | 7.0 | 7.0 | 1,070 |
| 2.7 | 28 | 7.0 | 1,070 | 2.8 | 18 | 11.0 | 2,920 |
| 3.0 | 57 | 11.0 | 2,920 | 3.0 | 34 | 23.0 | 11,900 |
| 3.5 | 123 | 23.0 | 11,900 | 3.4 | 80 | 28.0 | 16,000 |
| | | | | 4.0 | 180 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 974 | 6.4 | 29 | 520 | 218 | 632 | 244 | 167 | 202 | 46 | 32 | 14 |
| 2 | 1,860 | 10 | 27 | 381 | 822 | 584 | 235 | 148 | 146 | 43 | 364 | 14 |
| 3 | 369 | 9.4 | *19 | 280 | 433 | 463 | 235 | 129 | 112 | 36 | 82 | 13 |
| 4 | 150 | 6.1 | 17 | 228 | 302 | 386 | 200 | 112 | 94 | 34 | 54 | 13 |
| 5 | 74 | 5.8 | 1,420 | 181 | 415 | 321 | 188 | 100 | 79 | 34 | 41 | 13 |
| 6 | 50 | 4.8 | 1,630 | 153 | 7,990 | 2,070 | 3,940 | 90 | 77 | 50 | 37 | 12 |
| 7 | 31 | 6.1 | 432 | 129 | 2,930 | 1,320 | 1,680 | 80 | 180 | 59 | 28 | *12 |
| 8 | 25 | 12 | 238 | 122 | 1,080 | 776 | 843 | 76 | 142 | *42 | 24 | 11 |
| 9 | 15 | 13 | 269 | 94 | 686 | 533 | 581 | 67 | 178 | 46 | 20 | 9.7 |
| 10 | 15 | *8.3 | 258 | 99 | 500 | *394 | 439 | 63 | 1,640 | 63 | 34 | 8.5 |
| 11 | 16 | 12 | 164 | 144 | 535 | 318 | 394 | 60 | 1,460 | 44 | 45 | 33 |
| 12 | 14 | 10 | 118 | 164 | 467 | 285 | 341 | 125 | 514 | 36 | 50 | 16 |
| 13 | 12 | 9.6 | 322 | 145 | 381 | 244 | 502 | 648 | 313 | 32 | 30 | 18 |
| 14 | 8.3 | 6.4 | 322 | 118 | 365 | 202 | 481 | 318 | 218 | 32 | 26 | 14 |
| 15 | 18 | 4.0 | 232 | 129 | *373 | 178 | 355 | 213 | *162 | 28 | 20 | 11 |
| 16 | 35 | 5.2 | 150 | 230 | 368 | 904 | 292 | 142 | 127 | 28 | 33 | 10 |
| 17 | 21 | 6.3 | 147 | *202 | 387 | 635 | 244 | 108 | 101 | 28 | 32 | 8.5 |
| 18 | 19 | 8.3 | 662 | 157 | 362 | 3,550 | 209 | 84 | 84 | 30 | 29 | 7.6 |
| 19 | *14 | 13 | 373 | 196 | 326 | 2,760 | 180 | 71 | 71 | 33 | 37 | 7.0 |
| 20 | 12 | 14 | 254 | 282 | 292 | 1,500 | 162 | 65 | 65 | 69 | 26 | 6.8 |
| 21 | 9.0 | 9.6 | 181 | 1,140 | 3,100 | 10,800 | 176 | 77 | 59 | 77 | 20 | 6.8 |
| 22 | 11 | 7.0 | 128 | 2,400 | *11,700 | 15,400 | 218 | 323 | 54 | 46 | *18 | 6.6 |
| 23 | 14 | 15 | 96 | 1,010 | 2,920 | 2,060 | 1,290 | *190 | 51 | 47 | 68 | 6.4 |
| 24 | 8.3 | 14 | 73 | 614 | 1,280 | 1,110 | 2,700 | 216 | 46 | 34 | 59 | 6.8 |
| 25 | 5.8 | 12 | 58 | 433 | 824 | 853 | 1,080 | 209 | 61 | 67 | 35 | 6.8 |
| 26 | 7.0 | 14 | 50 | 310 | 603 | 901 | 635 | 134 | 407 | 45 | 26 | 7.0 |
| 27 | 6.7 | 15 | 44 | 260 | 658 | 597 | *433 | 94 | 129 | 77 | 20 | 8.5 |
| 28 | 8.3 | 12 | 2,740 | 218 | 661 | 487 | 331 | 79 | 80 | 79 | 18 | 38 |
| 29 | 6.4 | 19 | 9,650 | 168 | - | 400 | 254 | 2,850 | 65 | 206 | 17 | 74 |
| 30 | 6.4 | 28 | 2,140 | 134 | ------ | 323 | 200 | 632 | 55 | 65 | 16 | 498 |
| 31 | 4.3 | --- | 828 | 110 | ------- | 278 | ------ | 318 | ------- | 38 | 15 | ------- |
| Total | 3,819.5 | 316.1 | 23,271 | 10,751 | 40,978 | 51,264 | 19,062 | 7,988 | 6,972 | 1,594 | 1,354 | 911.0 |
| Mean | 123 | 10.5 | 751 | 347 | 1,464 | 1,654 | 635 | 258 | 232 | 51.4 | 43.7 | 30.4 |
| Cfsm | 0.466 | 0.040 | 2.84 | 1.31 | 5.55 | 6.27 | 2.41 | 0.977 | 0.879 | 0.195 | 0.166 | 0.115 |
| In. | 0.54 | 0.04 | 3.28 | 1.51 | 5.77 | 7.22 | 2.69 | 1.13 | 0.98 | 0.22 | 0.19 | 0.13 |

Calendar year 1954: Max 11,500 Min 2.6 Mean 420 Cfsm 1.59 In. 21.63
Water year 1954-55: Max 15,400 Min 4.0 Mean 461 Cfsm 1.75 In. 23.70

Peak discharge (base, 7,000 cfs).--Dec. 29 (3:30 a.m.) 11,500 cfs (22.56 ft); Feb. 6 (2:30 p.m.) 11,200 cfs (22.08 ft); Feb. 22 (7 a.m.) 13,700 cfs (25.23 ft); Mar. 22 (6 a.m.) 21,300 cfs (34.07 ft).
* Discharge measurement made on this day.
Note.--Backwater from storage dam Oct. 4 to Dec. 5, Dec. 11-13, 16, 17, 21-28, Jan. 5-15, 17-19, Jan. 29 to Feb. 1.

## West Fork Stones River near Murfreesboro, Tenn.

Location.--Lat 35°49'20", long 86°25'03", on downstream end of second pier from right abutment of bridge on State Highway 99, 0.8 mile downstream from Middle Fork and 2.2 miles southwest of Murfreesboro, Rutherford County.

Drainage area.--119 sq mi.

Records available.--June 1932 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 567.02 ft above mean sea level, datum of 1929. Prior to July 1, 1934, staff gage at same site and datum.

Average discharge.--23 years, 214 cfs.

Extremes.--Maximum discharge during year, 34,400 cfs Mar. 21 (gage height, 21.97 ft), from rating curve extended above 13,000 cfs on basis of contracted-opening determinations at gage heights 21.23 and 22.73 ft; minimum, 0.6 cfs Sept. 23, 24, 27, 28 (gage height, 0.88 ft).
1932-55: Maximum discharge, 38,000 cfs Feb. 13, 1948 (gage height, 22.73 ft, from floodmarks), from rating curve extended above 13,000 cfs on basis of contracted-opening determinations at gage heights 21.23 and 22.73 ft; no flow Sept. 18-20, 1954; minimum gage height, 0.56 ft Oct. 9, 1935, Oct. 6, 7, 1940.
Maximum stage known, 25.0 ft in March 1902.

Remarks.--Records fair except those below 5 cfs, which are poor. Some diversion for irrigation.

Cooperation.--Two discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 783: 1932-34.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 4, 5, Mar. 15)

| Oct. 1 to Mar. 20 | | | | Mar. 21 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.0 | 1.5 | 2.3 | 113 | 0.8 | 0.3 | 2.7 | 135 |
| 1.1 | 3.3 | 3.0 | 285 | 1.0 | 1.3 | 3.0 | 195 |
| 1.3 | 9.6 | 3.5 | 470 | 1.1 | 2.5 | 4.0 | 600 |
| 1.5 | 19 | 4.0 | 720 | 1.2 | 4.0 | 9.0 | 3,400 |
| 1.7 | 32 | 8.0 | 3,000 | 1.3 | 6.2 | 12.0 | 5,800 |
| 2.0 | 63 | 12.0 | 6,200 | 1.5 | 13 | 14.0 | 8,600 |
| | | | | 1.8 | 33 | 15.0 | 10,700 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 271 | 3.6 | 8.5 | 337 | 115 | 250 | 98 | 82 | 128 | 11 | 36 | 3.4 |
| 2 | 433 | 3.6 | 10 | 270 | 431 | 220 | 96 | 75 | 107 | 10 | 50 | 3.2 |
| 3 | 138 | 3.6 | *10 | 218 | 230 | 180 | 92 | *68 | 90 | 8.6 | 18 | 2.8 |
| 4 | 79 | 3.9 | 9.2 | 185 | 178 | 160 | 82 | 62 | 76 | 8.0 | 14 | 2.8 |
| 5 | 55 | 3.9 | 499 | 165 | 214 | 135 | 75 | 55 | 64 | 7.7 | 11 | 2.3 |
| 6 | 40 | 3.9 | 672 | 158 | 4,640 | 1,070 | *1,880 | 49 | 56 | 7.7 | 9.2 | 2.0 |
| 7 | 31 | 3.6 | 195 | 133 | 1,280 | 555 | 512 | 42 | 52 | 8.9 | 8.6 | *1.6 |
| 8 | 27 | *3.3 | 117 | 115 | 615 | 305 | 225 | 38 | 44 | 10 | 7.4 | 1.5 |
| 9 | 23 | 2.9 | 160 | 111 | 380 | 235 | 152 | 32 | 38 | 9.2 | 6.2 | 1.2 |
| 10 | 19 | 2.7 | 150 | 103 | 290 | *185 | 127 | 30 | 289 | 11 | 7.1 | 1.0 |
| 11 | 17 | 2.7 | 99 | 117 | 308 | 152 | 125 | 27 | 272 | *10 | 8.3 | 1.0 |
| 12 | 14 | 2.7 | 81 | 109 | 258 | 133 | 109 | 43 | 109 | 9.6 | 10 | 2.0 |
| 13 | 12 | 2.5 | 168 | 101 | 215 | 109 | 129 | 240 | 77 | 9.2 | 8.9 | 1.9 |
| 14 | 11 | 2.7 | 175 | 86 | 215 | 95 | 119 | 113 | 59 | 8.6 | 8.3 | 1.7 |
| 15 | 12 | 2.7 | 124 | 88 | *215 | 84 | 98 | 121 | *46 | 8.9 | 7.1 | 1.5 |
| 16 | 10 | 3.6 | 91 | 95 | 200 | 124 | 86 | 108 | 38 | 8.3 | 6.5 | 1.2 |
| 17 | 10 | 3.1 | 135 | *84 | 212 | 131 | 77 | 77 | 23 | 7.4 | 6.2 | 1.0 |
| 18 | 9.2 | 3.1 | 327 | 79 | 182 | 1,030 | 71 | 59 | 22 | 6.8 | 8.0 | 1.0 |
| 19 | *7.6 | 2.9 | 182 | 103 | 158 | 1,380 | 64 | 44 | 19 | 6.5 | 10 | 1.0 |
| 20 | 7.0 | 3.3 | 124 | 148 | 133 | 700 | 59 | 36 | 17 | 6.5 | 8.6 | .9 |
| 21 | 6.0 | 3.6 | 97 | 1,050 | 2,440 | *10,300 | 77 | 74 | 16 | 23 | 7.7 | *.8 |
| 22 | 5.1 | 3.6 | 79 | 1,310 | 5,580 | 7,280 | 81 | 190 | 14 | 14 | *7.4 | .7 |
| 23 | 4.5 | 6.6 | 70 | 530 | 1,250 | 815 | 1,130 | *140 | 14 | 11 | 8.9 | .6 |
| 24 | 3.9 | 10 | 57 | 325 | 645 | 460 | 1,340 | 103 | 13 | 9.2 | 8.3 | 1.0 |
| 25 | 3.6 | 10 | 50 | 260 | 407 | 392 | 384 | 92 | 18 | 8.0 | 6.5 | .9 |
| 26 | 3.3 | 8.8 | 44 | 202 | 300 | 304 | 201 | 74 | 18 | 6.5 | 5.3 | .7 |
| 27 | 3.3 | 8.2 | 38 | 172 | 313 | 201 | 144 | 60 | 17 | 8.0 | 4.9 | .6 |
| 28 | 3.3 | 7.9 | 2,000 | 140 | 272 | 166 | 120 | 57 | 16 | 25 | 4.4 | 1.4 |
| 29 | 3.9 | 7.6 | 5,530 | 120 | - | 136 | 103 | 1,750 | 14 | 71 | 3.8 | 1.8 |
| 30 | 3.9 | 7.9 | 1,060 | 105 | ------- | 121 | 91 | 308 | 13 | 27 | 3.7 | 9.1 |
| 31 | 3.6 | --- | 515 | 93 | ------- | 109 | ------- | 170 | ------- | 17 | 3.6 | ------- |
| Total | 1,270.2 | 138.5 | 12,876.7 | 7,112 | 21,676 | 27,517 | 7,947 | 4,419 | 1,779 | 393.6 | 313.9 | 53.4 |
| Mean | 41.0 | 4.62 | 415 | 229 | 774 | 888 | 265 | 143 | 59.3 | 12.7 | 10.1 | 1.78 |
| Cfsm | 0.345 | 0.039 | 3.49 | 1.92 | 6.50 | 7.46 | 2.23 | 1.20 | 0.498 | 0.107 | 0.085 | 0.015 |
| In. | 0.40 | 0.04 | 4.02 | 2.22 | 6.77 | 8.60 | 2.48 | 1.38 | 0.56 | 0.12 | 0.10 | 0.02 |

Calendar year 1954: Max 5,530 Min 0 Mean 212 Cfsm 1.78 In. 24.23
Water year 1954-55: Max 10,300 Min 0.6 Mean 234 Cfsm 1.97 In. 26.71

Peak discharge (base, 7,000 cfs).--Dec. 29 (3:30 a.m.) 9,290 cfs (14.18 ft); Feb. 6 (1 p.m.) 7,930 cfs (13.33 ft); Feb. 22 (2:30 a.m.) 8,920 cfs (13.95 ft); Mar. 21 (12 p.m.) 34,400 cfs (21.97 ft).
* Discharge measurement made on this day.

## Stones River near Smyrna, Tenn.

Location.--Lat 35°59'59", long 86°27'35", on right bank 30 ft downstream from highway bridge at Jefferson Springs, 1¼ miles downstream from confluence of East and West Forks, 3½ miles upstream from Falls Creek, and 3½ miles northeast of Smyrna, Rutherford County.

Drainage area.--552 sq mi.

Records available.--July 1925 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 459.76 ft above mean sea level, Sandy Hook datum. Prior to Sept. 22, 1926, tape gage at same site and datum.

Average discharge.--30 years, 949 cfs.

Extremes.--Maximum discharge during year, 46,300 cfs Mar. 22 (gage height, 37.14 ft, from high-water mark in gage house), from rating curve extended above 26,000 cfs on basis of slope-area determination at gage height 36.5 ft, from profile and map prepared by Corps of Engineers; minimum, 15 cfs Sept. 27, 28 (gage height, 0.96 ft).

1925-55: Maximum discharge, 54,100 cfs Feb. 13, 1948 (gage height, 41.03 ft, from floodmark), from rating curve extended above 26,000 cfs on basis of slope-area determination at gage height 36.5 ft, from profile and map prepared by Corps of Engineers; minimum observed, 0.8 cfs Aug. 17, 22, 1925 (gage height, 0.50 ft).

Maximum stage known, 43.4 ft in March 1902.

Remarks.--Records good except those below 25 cfs, those for periods of shifting control, and those computed from once-daily wire-weight-gage readings, which are fair.

Cooperation.--Two discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 853: 1929(M). WSP 953: 1928(M), 1929, 1934-37. WSP 1276: 1942.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,260 | 28 | a95 | 1,780 | 552 | 1,640 | 902 | 491 | 588 | 105 | 130 | 27 |
| 2 | 4,030 | 27 | a90 | 1,340 | 2,550 | 1,530 | 837 | 438 | 446 | 96 | 331 | 27 |
| 3 | 1,140 | a26 | 80 | 1,040 | 1,440 | 1,270 | 804 | 400 | 368 | 86 | 224 | 25 |
| 4 | 600 | a27 | 60 | 856 | 1,010 | 1,110 | 713 | 376 | 311 | 80 | 122 | 24 |
| 5 | 380 | a35 | 1,180 | 737 | 850 | 960 | 635 | 326 | 274 | 77 | 98 | 22 |
| 6 | 274 | a30 | 4,670 | 641 | 14,400 | 3,780 | 6,390 | 296 | 246 | 80 | 77 | 21 |
| 7 | 200 | a27 | 1,400 | 561 | 9,600 | 3,790 | 4,620 | 271 | 315 | 105 | 69 | *20 |
| 8 | 160 | a26 | 767 | 482 | 3,420 | 2,080 | 2,150 | 256 | 289 | *89 | 56 | 20 |
| 9 | 135 | a30 | 583 | 451 | 2,230 | 1,520 | 1,520 | 235 | 285 | 75 | 52 | 19 |
| 10 | 105 | *30 | 737 | 421 | 1,670 | 1,210 | 1,190 | 221 | 744 | 107 | 42 | 19 |
| 11 | 96 | 25 | 500 | 455 | 1,750 | 1,010 | 1,100 | 204 | 3,330 | 89 | 64 | 20 |
| 12 | 91 | 27 | 404 | 486 | 1,570 | 908 | 980 | 224 | 889 | 73 | 86 | 20 |
| 13 | 82 | 28 | 525 | 455 | 1,260 | 804 | 980 | 970 | 540 | 69 | 89 | 19 |
| 14 | 77 | 25 | 818 | 408 | 1,160 | 695 | 1,190 | 749 | 404 | 56 | 60 | 19 |
| 15 | 82 | 24 | *594 | 384 | *1,120 | 617 | 992 | 468 | 315 | 54 | 101 | 19 |
| 16 | 93 | 22 | 451 | 464 | 1,060 | 1,440 | 755 | 588 | *271 | 50 | 255 | 19 |
| 17 | 93 | 22 | 380 | *473 | 1,040 | 1,590 | 653 | 392 | 231 | 46 | 227 | 19 |
| 18 | 75 | 24 | 1,120 | 429 | 980 | 7,160 | 578 | 319 | 197 | 46 | 89 | 19 |
| 19 | *64 | 40 | 882 | 442 | 870 | 6,420 | 510 | 264 | 172 | 44 | 71 | 19 |
| 20 | 52 | 54 | 600 | 550 | 767 | 4,180 | 464 | 228 | 154 | 56 | 60 | 19 |
| 21 | 44 | 56 | 460 | 1,060 | 4,570 | *19,100 | 455 | 264 | 140 | 107 | 54 | 18 |
| 22 | 37 | 44 | 380 | 6,200 | 26,600 | 42,900 | 556 | 659 | 130 | 86 | 56 | 18 |
| 23 | 35 | 35 | 330 | 2,760 | *8,750 | g16,900 | 2,980 | *641 | 122 | 77 | *66 | 18 |
| 24 | 35 | 42 | 289 | 1,710 | 3,720 | g4,140 | 5,260 | 446 | 120 | 66 | 105 | 19 |
| 25 | 28 | 44 | 246 | 1,260 | 2,490 | g2,640 | 2,970 | 617 | 138 | 73 | 77 | 19 |
| 26 | 24 | 39 | 214 | 967 | 1,900 | g2,170 | 1,550 | 429 | 390 | 127 | 56 | 16 |
| 27 | 22 | 54 | 187 | 792 | 1,810 | g1,850 | *1,120 | 338 | 249 | 71 | 48 | 15 |
| 28 | 25 | 60 | 2,540 | 659 | 1,870 | 1,570 | 870 | 285 | 172 | 110 | 40 | 49 |
| 29 | 28 | 60 | 22,100 | 550 | - | 1,340 | 707 | 4,980 | 138 | 438 | 37 | 34 |
| 30 | 28 | a90 | 7,190 | 478 | ------ | 1,160 | 583 | 1,800 | 120 | 260 | 34 | 586 |
| 31 | 28 | -- | 2,680 | 429 | ------- | 1,020 | ------- | 948 | ------- | 172 | 27 | |
| Total | 9,403 | 1,101 | 52,552 | 29,720 | 101,009 | 138,504 | 44,944 | 19,123 | 12,088 | 3,070 | 2,903 | 1,208 |
| Mean | 303 | 36.7 | 1,695 | 959 | 3,607 | 4,468 | 1,498 | 617 | 403 | 99.0 | 93.6 | 40.3 |
| Cfsm | 0.549 | 0.066 | 3.07 | 1.74 | 6.53 | 8.09 | 2.71 | 1.12 | 0.730 | 0.179 | 0.170 | 0.073 |
| In. | 0.63 | 0.07 | 3.54 | 2.00 | 6.81 | 9.33 | 3.03 | 1.29 | 0.81 | 0.21 | 0.20 | 0.08 |

Calendar year 1954: Max 29,100 Min 6.5 Mean 982 Cfsm 1.78 In. 24.15
Water year 1954-55: Max 42,900 Min 15 Mean 1,139 Cfsm 2.06 In. 28.00

Peak discharge (base, 17,000 cfs).--Dec. 29 (2 p.m.) 25,100 cfs (24.86 ft); Feb. 6 (9:30 p.m.) 23,800 cfs (23.97 ft); Feb. 22 (2:30 p.m.) 29,900 cfs (27.90 ft); Mar. 22 (about 1 p.m.) 46,300 cfs (37.14 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for station above Donelson and stations on tributaries.

g Computed from graph based on recorded range in stage, weather records, once-daily wire-weight gage readings, normal recession, and records for station above Donelson.

Note.--Shifting-control method used Mar. 21, 22, Apr. 26 to Sept. 30.

## Stewart Creek near Smyrna, Tenn.

Location.--Lat 35°59'54", long 86°30'18", on upstream end of right abutment of bridge on Fifteenth Avenue, 0.4 mile downstream from Rock Springs Creek, 0.6 mile south of headquarters at Sewart Air Force Base, 1.3 miles northeast of Smyrna, Rutherford County, and 5¼ miles upstream from mouth.

Drainage area.--71 sq mi, approximately.

Records available.--June 1952 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 490.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 8,700 cfs Mar. 21 (gage height, 17.61 ft), from rating curve extended above 3,000 cfs on basis of contracted-opening determination of peak flow; no flow Sept. 13, caused by regulation upstream.
1952-55: Maximum discharge, that of Mar. 21, 1955; no flow Sept. 23 to Dec. 11, 1953, Sept. 15-28, 1954, and Sept. 13, 1955, caused by regulation upstream.
Revisions.--Figures of maximum discharge for the water years 1953 and 1954 have been revised to 2,560 cfs Apr. 30, 1953 (gage height, 9.47 ft) and 4,900 cfs Jan. 21, 1954 (gage height, 12.79 ft), superseding figures published in WSP 1336.

Remarks.--Records fair except those below 10 cfs, which are poor. Occasional regulation at low flow caused by small dams above station.

Cooperation.--Two discharge measurements furnished by Corps of Engineers.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1953 and 1954, superseding those published in WSP 1336, are given herewith:

| Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|
| 1953 | | 1953-Con. | | 1954-Con. | |
| Apr. 30 | 1,560 | May 19 | 1,350 | Jan. 22 | 1,840 |
| May 1 | 341 | 20 | 570 | 23 | 635 |
| 4 | 201 | 21 | 329 | Mar. 24 | 1,800 |
| 5 | 359 | | | 25 | 590 |
| 14 | 203 | 1954 | | 26 | 482 |
| 15 | 316 | Jan. 15 | 848 | Apr. 16 | 1,280 |
| 16 | 308 | 16 | 1,120 | 17 | 795 |
| 17 | 736 | 20 | 1,560 | | |
| 18 | 558 | 21 | 2,530 | | |

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| April 1953 | 4,747 | 1,560 | 32 | 158 | 2.23 | 2.49 |
| May | 7,726 | 1,350 | 42 | 249 | 3.51 | 4.05 |
| Water year 1952-53 | 32,195.99 | 1,560 | 0 | 88.2 | 1.24 | 16.88 |
| Calendar year 1953 | 31,521.00 | 1,560 | 0 | 86.4 | 1.22 | 16.53 |
| January 1954 | 11,977.5 | 2,530 | .4 | 386 | 5.44 | 6.27 |
| March | 5,532 | 1,800 | 20 | 178 | 2.51 | 2.90 |
| April | 5,053 | 1,280 | 46 | 168 | 2.37 | 2.65 |
| Water year 1953-54 | 31,406.65 | 2,530 | 0 | 86.0 | 1.21 | 16.44 |

Revised peak discharge.--1952-53: Apr. 30 (5 a.m.) 2,560 cfs (9.47 ft); May 19 (9:30 a.m.) 1,950 cfs (8.21 ft).
1953-54: Jan. 21 (2:30 a.m.) 4,900 cfs (12.79 ft); Mar. 24 (5 a.m.) 2,830 cfs (9.94 ft); Apr. 16 (11:30 a.m.) 2,040 cfs (8.42 ft).

## Stewart Creek near Smyrna, Tenn.--Continued

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 23, 24)

| Oct. 1 to May 15 | | | | May 16 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.3 | 0.04 | 3.0 | 175 | 1.2 | 0 | 2.2 | 36 |
| 1.4 | 1.3 | 4.0 | 420 | 1.3 | .03 | 2.4 | 58 |
| 1.6 | 6.3 | 6.0 | 1,270 | 1.4 | .5 | 2.7 | 106 |
| 1.8 | 13 | 8.0 | 1,880 | 1.5 | 2.3 | 3.0 | 172 |
| 2.0 | 26 | 10.0 | 2,870 | 1.6 | 4.6 | 4.0 | 420 |
| 2.2 | 47 | 12.0 | 4,320 | 1.8 | 10 | 5.0 | 830 |
| 2.6 | 104 | | | 2.0 | 20 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 184 | 1.3 | 5.8 | 197 | 158 | 245 | 155 | 73 | 64 | 4.8 | 173 | 7.0 |
| 2 | 663 | 1.3 | 5.3 | 151 | 518 | 207 | 146 | 63 | 50 | 4.6 | 98 | 6.2 |
| 3 | 105 | 1.0 | 4.5 | 120 | 199 | 182 | 132 | 55 | 40 | 4.6 | 44 | 5.7 |
| 4 | 56 | 1.3 | 4.5 | 104 | 151 | 163 | 122 | 47 | 34 | 4.1 | 30 | 5.2 |
| 5 | 31 | 1.5 | 749 | 90 | 161 | 144 | 112 | 42 | 28 | 3.3 | 23 | 4.8 |
| 6 | 22 | 1.7 | 422 | *73 | *1,900 | 678 | *589 | 39 | 25 | .3 | 18 | 4.3 |
| 7 | 16 | 1.9 | 130 | 54 | 658 | 348 | 290 | 35 | 22 | .8 | 15 | *3.6 |
| 8 | 12 | 1.7 | 74 | 45 | 375 | 245 | 204 | 31 | 19 | *1.7 | 12 | 3.2 |
| 9 | 9.8 | 1.9 | 70 | 39 | 278 | 193 | 167 | 29 | 17 | 2.3 | 9.5 | 3.4 |
| 10 | 8.4 | .8 | 59 | 34 | 226 | 163 | 148 | 26 | 17 | 2.3 | 8.1 | 14 |
| 11 | 7.0 | .6 | 42 | 36 | 268 | 135 | 153 | 24 | 16 | 2.3 | 7.6 | 3.3 |
| 12 | 6.0 | *.4 | 34 | 34 | 216 | 120 | 134 | 25 | 14 | 2.3 | 7.0 | .02 |
| 13 | 5.3 | .4 | 62 | 31 | 182 | 104 | 139 | 35 | 12 | 1.9 | 6.0 | 0 |
| 14 | 5.0 | .6 | 56 | 27 | 167 | 91 | 132 | 32 | 10 | 1.9 | 5.5 | 2.0 |
| 15 | 6.3 | .6 | *43 | 25 | 157 | 91 | 114 | 61 | 9.2 | 1.9 | 133 | 2.1 |
| 16 | 5.8 | .8 | 32 | 27 | 142 | 233 | 99 | 132 | *8.1 | 1.7 | 694 | 1.7 |
| 17 | 5.0 | .8 | 30 | 25 | 127 | 186 | 88 | 46 | 7.8 | 1.5 | 108 | 1.5 |
| 18 | 4.0 | .8 | 50 | 24 | 115 | 1,640 | 78 | 36 | 7.3 | 1.5 | 52 | 1.3 |
| 19 | *3.4 | 1.3 | 41 | 25 | 102 | 875 | 69 | 29 | 6.8 | 1.9 | 33 | 1.3 |
| 20 | 2.9 | 1.9 | 33 | 25 | 91 | 510 | 61 | 25 | 6.2 | 364 | 24 | *1.3 |
| 21 | 2.6 | 1.9 | 29 | 169 | 1,040 | *4,340 | 60 | 52 | 5.7 | 132 | 19 | 1.1 |
| 22 | 2.4 | 1.9 | 25 | 348 | *2,330 | 3,400 | 58 | 101 | 5.5 | 28 | 200 | 1.1 |
| 23 | 2.1 | 2.1 | 21 | 207 | 682 | 662 | 412 | 82 | 5.2 | 16 | *132 | .9 |
| 24 | 1.9 | 1.9 | 18 | 148 | 390 | 415 | 496 | 76 | 5.2 | 10 | 30 | 1.1 |
| 25 | 1.7 | 1.5 | 15 | 117 | 305 | 378 | 272 | 117 | 5.5 | 8.8 | 19 | 1.3 |
| 26 | 1.3 | 1.5 | 13 | 94 | 255 | 310 | 188 | *65 | 5.5 | 9.2 | 15 | .9 |
| 27 | 1.3 | 2.1 | 12 | 79 | 322 | 260 | *146 | 51 | 5.5 | 12 | 12 | .8 |
| 28 | 1.0 | 4.5 | 668 | 66 | 270 | 235 | 120 | 42 | 5.5 | 42 | 10 | 22 |
| 29 | 1.7 | 6.0 | 1,570 | 56 | - | 209 | 101 | 311 | 5.2 | 111 | 9.5 | 6.5 |
| 30 | 1.7 | 5.8 | *440 | 48 | ------- | 186 | 84 | 134 | 5.0 | 32 | 9.9 | 443 |
| 31 | 1.5 | --- | 262 | 41 | ------- | 169 | ------- | 93 | ------- | 50 | 8.1 | ------- |
| Total | 1,177.1 | 51.8 | 5,020.1 | 2,559 | 11,765 | 17,117 | 5,069 | 2,009 | 467.2 | 860.7 | 1,965.2 | 550.62 |
| Mean | 38.0 | 1.73 | 162 | 82.5 | 420 | 552 | 169 | 64.8 | 15.6 | 27.8 | 63.4 | 18.4 |
| Cfsm | 0.535 | 0.024 | 2.28 | 1.16 | 5.92 | 7.77 | 2.38 | 0.913 | 0.220 | 0.392 | 0.893 | 0.259 |
| In. | 0.62 | 0.03 | 2.63 | 1.34 | 6.16 | 8.97 | 2.66 | 1.05 | 0.24 | 0.45 | 1.03 | 0.29 |

Calendar year 1954: Max 2,530 Min 0 Mean 103 Cfsm 1.45 In. 19.70
Water year 1954-55: Max 4,340 Min 0 Mean 133 Cfsm 1.87 In. 25.47

Peak discharge (base, 1,800 cfs).--Dec. 29 (time unknown) about 2,000 cfs; Feb. 6 (1 p.m.) 2,520 cfs (9.40 ft); Feb. 22 (6 a.m.) 3,240 cfs (10.53 ft); Mar. 18 (8 a.m.) 3,050 cfs (10.26 ft); Mar. 21 (11:30 p.m.) 8,700 cfs (17.61 ft); Aug. 16 (1:30 a.m.) 1,860 cfs (7.95 ft).

* Discharge measurement made on this day.

## Stones River above Donelson, Tenn.

Location.--Lat 36°04'23", long 86°33'30", on left bank half a mile downstream from Hurricane Creek, 3.3 miles upstream from county highway bridge at Couchville, 8¾ miles southeast of Donelson, Davidson County, and at mile 17.7.

Drainage area.--834 sq mi.

Records available.--January 1939 to September 1955. Published as "near Donelson" 1939-40. Records published for both sites April to September 1940.

Gage.--Water-stage recorder at present site and datum since Apr. 16, 1940. Datum of gage is 400.00 ft above mean sea level, Sandy Hook datum. January 1939 to September 1940, wire weight gage at site 10.5 miles downstream at datum 18 ft lower.

Average discharge.--16 years, 1,362 cfs.

Extremes.--Maximum discharge during year, 49,900 cfs Mar. 22 (gage height, 52.98 ft); minimum, 26 cfs Sept. 23, 24, 27, 28 (gage height, 10.85 ft).
1939-55: Maximum discharge, 68,700 cfs Feb. 14, 1948; maximum gage height, 58.46 ft Feb. 14, 1948; minimum discharge, 10 cfs Sept. 21, 22, 24, 1940; minimum gage height, 10.60 ft Sept. 19, 20, 1954, present site and datum.
Maximum stage known, about 59.6 ft in March 1902 (discharge, 73,000 cfs), from high-water profile by Corps of Engineers, present site and datum.

Remarks.--Records good except those for periods of shifting control or backwater from Cumberland River, which are fair.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 1143: 1948.

Rating table, water year 1954-55, except periods of shifting control or backwater from Cumberland River (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Oct. 2, Dec. 6, 28-30, Jan. 22, Feb. 2, 6-8, 21-24, Mar. 6, 7, 18-22, 26, Apr. 6, 7, 23-25, May 29, 30, June 11)

| | | | |
|---|---|---|---|
| 10.8 | 21 | 18.0 | 3,350 |
| 11.0 | 40 | 25.0 | 8,800 |
| 11.4 | 92 | 30.0 | 13,100 |
| 12.0 | 205 | 40.0 | 23,100 |
| 12.5 | 320 | 48.0 | 36,300 |
| 13.0 | 490 | 52.0 | 47,100 |
| 14.0 | 950 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,920 | 40 | 131 | 2,520 | e586 | 2,640 | 1,260 | 668 | 950 | 135 | 257 | 63 |
| 2 | 5,880 | 39 | 125 | 1,890 | e4,350 | 2,490 | 1,150 | 570 | 686 | 120 | 415 | 59 |
| 3 | 2,020 | 37 | 113 | 1,440 | 2,430 | 1,970 | 1,100 | 502 | 542 | 110 | 494 | 53 |
| 4 | 900 | 38 | 105 | 1,170 | 1,590 | 1,630 | 1,010 | 450 | 443 | 100 | 254 | 50 |
| 5 | 526 | 50 | 1,990 | 995 | e1,370 | 1,390 | 900 | 404 | 377 | 92 | 189 | 48 |
| 6 | 356 | 43 | 7,610 | 870 | 15,200 | 5,600 | 6,530 | 365 | 332 | 95 | 151 | 46 |
| 7 | 277 | 40 | 2,450 | 760 | 17,300 | *7,050 | 7,970 | 338 | 329 | 97 | 122 | *41 |
| 8 | 218 | 39 | 1,170 | 632 | 5,310 | 3,200 | 3,130 | 308 | 387 | 123 | 106 | 39 |
| 9 | 183 | *38 | 860 | 570 | 3,230 | 2,280 | 2,140 | 284 | 350 | 102 | 92 | 37 |
| 10 | 157 | 46 | *1,060 | 538 | 2,370 | 1,770 | 1,670 | 265 | 412 | 92 | 80 | 35 |
| 11 | 127 | 51 | 795 | 566 | 2,430 | 1,440 | 1,500 | 252 | 4,110 | 129 | 135 | e82 |
| 12 | 113 | 41 | 606 | 650 | 2,350 | 1,230 | 1,380 | 268 | 1,490 | 105 | 127 | e172 |
| 13 | 111 | 40 | 678 | 624 | 1,880 | 1,100 | 1,230 | 884 | 865 | 103 | 143 | 88 |
| 14 | 122 | 40 | 1,170 | 554 | 1,640 | 950 | 1,560 | 1,130 | 606 | 92 | 125 | 63 |
| 15 | 261 | 39 | 925 | 502 | *1,610 | 940 | 1,240 | 668 | 458 | 82 | e113 | 50 |
| 16 | 181 | 39 | 673 | 546 | 1,540 | 2,140 | 1,020 | 885 | *368 | 77 | e1,820 | 42 |
| 17 | 165 | 35 | 546 | 619 | 1,480 | 3,080 | 865 | 598 | 302 | 66 | e518 | 38 |
| 18 | 129 | 33 | 995 | 554 | 1,390 | 10,600 | 750 | 429 | 265 | 63 | e250 | 36 |
| 19 | *108 | 31 | 1,340 | 542 | 1,230 | 11,200 | 650 | 350 | 229 | 134 | 187 | 33 |
| 20 | 94 | 40 | 880 | 614 | 1,080 | 6,950 | 582 | 298 | 205 | 122 | 151 | 30 |
| 21 | 78 | 55 | 660 | 1,090 | 4,390 | 22,600 | 542 | 323 | 187 | 488 | 127 | 30 |
| 22 | 70 | 62 | 534 | 7,390 | 26,700 | *46,500 | 624 | 765 | 171 | 191 | e272 | 28 |
| 23 | 63 | 55 | 436 | 4,090 | 19,200 | c25,000 | 2,800 | 1,160 | 157 | 145 | *e408 | 26 |
| 24 | 61 | 50 | 377 | 2,480 | 5,880 | *c6,000 | 5,460 | 725 | 151 | 125 | e238 | 29 |
| 25 | 59 | 51 | 326 | 1,780 | 3,640 | c5,700 | 4,880 | 840 | 165 | 108 | e212 | 32 |
| 26 | 51 | 57 | 284 | e1,350 | 2,730 | 4,930 | 2,290 | *682 | 289 | *213 | 151 | 30 |
| 27 | 44 | 50 | 257 | e1,120 | 3,020 | 3,020 | *1,560 | 490 | 404 | 155 | 120 | 27 |
| 28 | 40 | 66 | 1,780 | e975 | 3,190 | 2,380 | 1,220 | 384 | 248 | 125 | 102 | e193 |
| 29 | 42 | 125 | 22,300 | e825 | - | 2,000 | 980 | 4,070 | 187 | 415 | 88 | e338 |
| 30 | 42 | 131 | 15,000 | e696 | ------- | 1,690 | 810 | 3,550 | 159 | 470 | 80 | e2,050 |
| 31 | 41 | ------- | 4,060 | *e606 | ------- | 1,440 | ------- | 1,430 | ------- | 274 | 78 | ------- |
| Total | 14,439 | 1,501 | 70,236 | 39,558 | 139,116 | 190,910 | 58,803 | 24,335 | 15,824 | 4,748 | 7,605 | 3,888 |
| Mean | 466 | 50.0 | 2,266 | 1,276 | 4,968 | 6,158 | 1,960 | 785 | 527 | 153 | 245 | 130 |
| Cfsm | 0.559 | 0.060 | 2.72 | 1.53 | 5.96 | 7.38 | 2.35 | 0.941 | 0.632 | 0.183 | 0.294 | 0.156 |
| In. | 0.64 | 0.07 | 3.13 | 1.76 | 6.20 | 8.51 | 2.62 | 1.09 | 0.71 | 0.21 | 0.34 | 0.17 |

Calendar year 1954: Max 32,400 Min 11 Mean 1,326 Cfsm 1.59 In. 21.58
Water year 1954-55: Max 46,500 Min 26 Mean 1,564 Cfsm 1.88 In. 25.45

Peak discharge (base, 16,000 cfs).--Dec. 29 (9:30 p.m.) 26,300 cfs (42.48 ft); Feb. 7 (2 a.m.) 25,000 cfs (41.54 ft); Feb. 22 (10:30 p.m.) 30,900 cfs (45.43 ft); Mar. 16 (6 p.m.) 16,900 cfs (33.91 ft); Mar. 22 (6 p.m.) 49,900 cfs (52.98 ft).

* Discharge measurement made on this day.
c Backwater from Cumberland River.
e Shifting-control method used.

## Mill Creek near Antioch, Tenn.

Location.--Lat 36°04'54", long 86°40'50", at downstream end of center bridge pier on Franklin-Limestone Road, 900 ft upstream from Nashville, Chattanooga & St. Louis Railway spur track bridge, 1.6 miles north of Antioch, Davidson County, 2.1 miles downstream from Whittemore Branch, and 4.0 miles southeast of Radnor.

Drainage area.--64 sq mi, approximately.

Records available.--October 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 472.93 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 17,000 cfs Mar. 21 (gage height, 19.73 ft); no flow Sept. 18-27.
1953-55: Maximum discharge, that of Mar. 21, 1955; no flow for many days each year.

Remarks.--Records good above 100 cfs and fair below.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 4-9, Nov. 26 to Dec. 4, Feb. 6, 21)

Oct. 1 to Feb. 21

| | | | |
|---|---|---|---|
| 2.7 | 0.05 | 3.4 | 62 |
| 2.8 | .8 | 4.0 | 180 |
| 2.9 | 3.3 | 5.0 | 455 |
| 3.0 | 7.5 | 7.0 | 1,310 |
| 3.1 | 16 | 8.1 | 1,910 |
| 3.2 | 29 | | |

Feb. 22 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 2.6 | 0 | 3.1 | 14 | 5.0 | 455 |
| 2.7 | .04 | 3.2 | 27 | 6.0 | 830 |
| 2.8 | .2 | 3.3 | 43 | 10.0 | 2,980 |
| 2.9 | 2.4 | 3.7 | 118 | 13.0 | 5,150 |
| 3.0 | 6.2 | 4.0 | 180 | 15.0 | 7,500 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 87 | 1.0 | 2.0 | 75 | 79 | 182 | 73 | 34 | 16 | 2.1 | 0.2 | 3.0 |
| 2 | 53 | 1.0 | 1.5 | 57 | 170 | 140 | 71 | 30 | 13 | 1.8 | .5 | 2.7 |
| 3 | 7.0 | 1.0 | 1.0 | 42 | 73 | 116 | 60 | 25 | 10 | 1.8 | .2 | 1.5 |
| 4 | 4.0 | 1.2 | 1.0 | 36 | 55 | 94 | 53 | 21 | 9.7 | 1.5 | 5.5 | 1.0 |
| 5 | 2.8 | 1.5 | 608 | 32 | 130 | 78 | 48 | 18 | 9.7 | 16 | 2.7 | .8 |
| 6 | 2.0 | 1.5 | 169 | 28 | *1,880 | 1,290 | *799 | 15 | 8.3 | 3.0 | 1.0 | .5 |
| 7 | 1.0 | 1.2 | 53 | 24 | 374 | 317 | 230 | 14 | 9.0 | 1.5 | .5 | *.3 |
| 8 | .6 | 1.0 | 32 | 20 | 202 | 200 | 148 | 12 | 9.0 | *3.3 | .3 | .1 |
| 9 | .8 | *1.0 | 36 | 20 | 140 | 142 | 114 | 9.7 | 8.3 | 1.3 | .2 | .09 |
| 10 | 1.0 | 1.0 | *29 | 20 | 108 | 112 | 94 | 9.7 | 12 | 1.0 | 1.5 | .06 |
| 11 | .8 | 1.0 | 21 | 26 | 126 | 90 | 124 | 10 | 13 | .2 | 3.3 | .4 |
| 12 | .6 | 1.0 | 18 | 26 | 94 | 76 | 100 | 77 | 10 | .1 | 4.0 | .3 |
| 13 | 1.5 | .8 | 57 | 24 | 82 | 65 | 104 | 59 | 9.7 | .1 | 2.1 | .09 |
| 14 | 156 | .8 | 44 | 21 | 73 | 58 | 90 | 20 | 8.3 | .09 | 1.5 | .06 |
| 15 | 153 | .8 | 30 | 21 | 73 | 67 | 73 | 16 | 6.2 | .2 | .5 | .04 |
| 16 | 12 | 1.0 | 22 | 22 | 71 | 240 | 62 | 60 | *5.7 | 1.0 | 59 | .02 |
| 17 | 5.6 | 1.0 | 21 | *21 | 67 | 132 | 53 | 28 | 5.2 | 1.5 | 41 | .01 |
| 18 | 2.5 | .8 | 25 | 20 | 58 | 1,830 | 46 | 16 | 4.4 | 1.3 | 3.7 | 0 |
| 19 | 1.0 | .8 | 21 | 24 | 53 | 710 | 39 | 12 | 4.4 | 1.3 | 1.3 | 0 |
| 20 | .6 | 1.0 | 16 | 24 | 46 | 742 | 34 | 9.7 | 3.7 | 76 | .5 | *0 |
| 21 | .4 | 1.0 | 14 | 243 | 1,860 | *7,440 | 43 | 27 | 3.0 | 18 | .5 | 0 |
| 22 | .3 | .8 | 12 | 228 | 1,690 | 1,220 | 112 | 437 | 3.0 | 7.6 | *241 | 0 |
| 23 | .3 | .6 | 11 | 126 | 410 | 425 | 584 | *92 | 2.7 | 5.2 | 60 | 0 |
| 24 | .4 | .5 | 9.1 | 86 | 245 | 270 | 355 | 57 | 3.0 | 4.8 | 13 | 0 |
| 25 | *.6 | .6 | 7.5 | 66 | 170 | 447 | 148 | 43 | 4.8 | 4.4 | 6.9 | 0 |
| 26 | .5 | .5 | 7.0 | 51 | 138 | 250 | 106 | 30 | 4.8 | 3.0 | 4.4 | 0 |
| 27 | .6 | .6 | 6.5 | 46 | 321 | 176 | 80 | 22 | 4.0 | 1.8 | 3.7 | 0 |
| 28 | .6 | .8 | 815 | 38 | 200 | 146 | 65 | 18 | 3.7 | 1.3 | 2.7 | 95 |
| 29 | .6 | .8 | 736 | 35 | - | 122 | 53 | 111 | 2.7 | .5 | 2.7 | 3.0 |
| 30 | .8 | 2.0 | 199 | 29 | ------ | 100 | 43 | 30 | 2.4 | .2 | 3.3 | 238 |
| 31 | 1.0 | ---- | 114 | *24 | ------ | 84 | ------- | 21 | ------- | .3 | 3.3 | ---- |
| Total | 498.9 | 28.6 | 3,138.6 | 1,555 | 8,988 | 17,361 | 4,004 | 1,384.1 | 209.7 | 162.19 | 471.0 | 346.97 |
| Mean | 16.1 | 0.95 | 101 | 60.2 | 321 | 560 | 133 | 44.6 | 6.99 | 5.23 | 15.2 | 11.6 |
| Cfsm | 0.252 | 0.015 | 1.58 | 0.784 | 5.02 | 8.75 | 2.08 | 0.697 | 0.109 | 0.082 | 0.238 | 0.181 |
| In. | 0.29 | 0.02 | 1.82 | 0.90 | 5.22 | 10.09 | 2.33 | 0.80 | 0.12 | 0.09 | 0.27 | 0.20 |

Calendar year 1954: Max 2,670 Min 0 Mean 85.2 Cfsm 1.33 In. 18.08
Water year 1954-55: Max 7,470 Min 0 Mean 105 Cfsm 1.64 In. 22.15

Peak discharge (base, 2,000 cfs).--Dec. 5 (2:30 p.m.) 2,480 cfs (9.05 ft); Dec. 28 (7 p.m.) 3,190 cfs (10.21 ft); Feb. 6 (10 a.m.) 3,390 cfs (10.52 ft); Feb. 21 (10 p.m.) 4,390 cfs (11.98 ft); Mar. 6 (7 a.m.) 3,250 cfs (10.45 ft); Mar. 18 (10 a.m.) 5,990 cfs (13.81 ft); Mar. 21 (7:30 p.m.) 17,000 cfs (19.73 ft).

* Discharge measurement or observation of no flow made on this day.

## West Harpeth River near Leipers Fork, Tenn.

Location.--Lat 35°53'56", long 86°58'01", on downstream end of center pier at bridge on State Highway 96, 0.6 mile downstream from Murfrees Fork, 1.2 miles upstream from Leipers Fork, 1.8 miles east of town of Leipers Fork, Williamson County, and 5.7 miles west of Franklin.

Drainage area.--66.0 sq mi.

Records available.--October 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 634.10 ft above mean sea level, unadjusted (Tennessee Valley Authority benchmark).

Extremes.--Maximum discharge during year, 18,900 cfs Mar. 21 (gage height, 14.8 ft, from floodmarks), from rating curve extended above 2,000 cfs on basis of contracted opening and flow over road determination of peak flow; no flow Sept. 20-23, 26, 27.

Remarks.--Records good except those below 10 cfs or above 2,000 cfs, which are fair, and those for periods of no gage-height record, which are poor.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

**Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)**

| Nov. 10 to Mar. 21 | | | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.4 | 0.2 | 1.2 | 20 | 11.0 | 1,850 | 0.3 | 0 | 1.0 | 10 |
| .5 | .6 | 1.4 | 38 | 11.5 | 2,470 | .4 | .04 | 1.2 | 19 |
| .6 | 1.2 | 1.7 | 72 | 12.0 | 3,700 | .5 | .3 | 1.5 | 40 |
| .7 | 2.7 | 2.0 | 114 | 13.0 | 7,820 | .6 | 1.0 | 2.0 | 94 |
| .8 | 4.8 | 5.0 | 590 | 13.5 | 10,400 | .7 | 2.3 | 5.0 | 590 |
| 1.0 | 11 | 9.0 | 1,360 | | | .8 | 4.2 | | |

Note.--Same as preceding table above 5.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a10 | a1 | 1.5 | 81 | 54 | *171 | a95 | a70 | *96 | 7.7 | 0.5 | 0.7 |
| 2 | | | *1.5 | 62 | 124 | 143 | a110 | a55 | 77 | 7.1 | *.4 | *.4 |
| 3 | | | 1.5 | 50 | 76 | 128 | a90 | a45 | 61 | 6.5 | .2 | .2 |
| 4 | | | 1.4 | 45 | 62 | 112 | a75 | a38 | 51 | 6.2 | .2 | .2 |
| 5 | | | 168 | 39 | 114 | 98 | a65 | a32 | 42 | *4.8 | 2.0 | .09 |
| 6 | | | 56 | 36 | *1,210 | 402 | a900 | a27 | 38 | 4.4 | 15 | .07 |
| 7 | | | 19 | 29 | 414 | 230 | a350 | a23 | 36 | 4.2 | 20 | .05 |
| 8 | | | 14 | 26 | 250 | 175 | a200 | a20 | 34 | 4.0 | 2.0 | .04 |
| 9 | | | 18 | 26 | 188 | 144 | a140 | a17 | 29 | 3.6 | 1.1 | .03 |
| 10 | | *.7 | 15 | 25 | 156 | 138 | a120 | a15 | 37 | 3.0 | 75 | .03 |
| 11 | | .4 | 13 | 25 | 151 | 108 | a150 | *23 | 32 | 2.6 | 14 | .02 |
| 12 | | .2 | 12 | 23 | 120 | 95 | a120 | 62 | 29 | 2.3 | 12 | .02 |
| 13 | | .4 | 15 | 22 | 105 | 82 | a140 | 67 | 26 | 2.8 | 4.6 | .02 |
| 14 | | .7 | 15 | 20 | 100 | 76 | a120 | 32 | *22 | 2.3 | 3.4 | .02 |
| 15 | | .7 | 13 | 21 | 91 | 71 | a105 | 54 | 20. | 2.3 | 3.0 | .01 |
| 16 | | 1.1 | 12 | 21 | 88 | 163 | a90 | 76 | 18 | 3.0 | 38 | .01 |
| 17 | | *2.7 | 12 | 19 | 82 | 118 | a80 | 48 | 16 | 3.6 | 26 | .01 |
| 18 | | 1.5 | 12 | *18 | 76 | 965 | a70 | 32 | 16 | 2.6 | 10 | .01 |
| 19 | | 1.0 | 12 | 23 | 71 | 456 | a60 | 26 | 14 | 2.3 | 5.4 | .01 |
| 20 | | .8 | 11 | 20 | 68 | 566 | a55 | 26 | 13 | 1.9 | 4.8 | 0 |
| 21 | | .6 | 10 | 106 | 1,530 | *10,300 | a70 | 161 | 12 | 1.9 | 4.0 | *0 |
| 22 | | .5 | *9.6 | 174 | *2,140 | a3,000 | a150 | 691 | 11 | 2.5 | 16 | 0 |
| 23 | | .4 | 9.2 | 121 | 468 | a700 | a1,000 | 172 | 14 | 5.8 | 10 | 0 |
| 24 | | .4 | 8.2 | *88 | 298 | a500 | a500 | *134 | 14 | 2.5 | 4.8 | .01 |
| 25 | | .5 | 7.5 | 77 | 218 | a350 | a300 | 104 | 30 | 1.9 | 3.2 | .01 |
| 26 | | .5 | 6.9 | 62 | 180 | a260 | a220 | 77 | 20 | 1.6 | 2.5 | 0 |
| 27 | | .8 | 6.9 | 54 | 238 | a200 | a150 | 58 | 13 | 1.8 | 2.0 | 0 |
| 28 | | 5.0 | 307 | 47 | 186 | 160 | *a120 | 91 | 11 | 1.9 | 1.7 | .01 |
| 29 | | 2.8 | *350 | 42 | - | a140 | a100 | 796 | 10 | 2.2 | 1.3 | .01 |
| 30 | | 1.9 | *154 | 37 | ------- | a120 | a85 | 176 | 8.6 | 1.6 | 1.2 | 151 |
| 31 | | -- | 106 | *32 | ------- | a105 | ------- | 126 | ------- | 1.0 | 1.2 | ----- |
| Total | 310 | 32.6 | 1,398.2 | 1,472 | 8,858 | 20,276 | 5,830 | 3,374 | 850.6 | 101.9 | 285.5 | 152.98 |
| Mean | 10 | 1.09 | 45.1 | 47.5 | 316 | 654 | 194 | 109 | 28.4 | 3.29 | 9.21 | 5.10 |
| Cfsm | 0.152 | 0.017 | 0.683 | 0.720 | 4.79 | 9.91 | 2.94 | 1.65 | 0.430 | 0.050 | 0.140 | 0.077 |
| In. | 0.17 | 0.02 | 0.79 | 0.83 | 4.99 | 11.43 | 3.29 | 1.90 | 0.48 | 0.06 | 0.16 | 0.09 |

Calendar year 1954: Max - Min - Mean - Cfsm - In. -
Water year 1954-55: Max 10,300 Min 0 Mean 118 Cfsm 1.79 In. 24.21

Peak discharge (base, 1,900 cfs).--Feb. 6 (11 a.m.) 1,970 cfs (11.17 ft); Feb. 22 (2 a.m.) 5,080 cfs (12.40 ft); Mar. 21 (about 6 p.m.) 18,900 cfs (14.80 ft) from floodmarks; Apr. 6 (time and discharge unknown); Apr. 23 (time and discharge unknown); May 29 (3 a.m.) 2,010 cfs (11.21 ft).

* Discharge measufement or observation of no flow made on this day.

a No gage-height record; discharge estimated on basis of weather records, 1 discharge measurement, recorded range in stage when available, and records for Mill Creek near Antioch and Rutherford Creek near Carters Creek.

## Harpeth River at Belleview, Tenn.

Location (revised).--Lat 36°03'16", long 86°55'42", on right bank 45 ft upstream from bridge on State Highway 100, 0.1 mile downstream from Little Harpeth River, and 0.9 mile southeast of Belleview, Davidson County.

Drainage area.--404 sq mi.

Records available.--April 1920 to October 1929, January 1932 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 541.04 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1933, staff or chain gage at site 2½ miles downstream at datum 7.85 ft lower.

Average discharge.--32 years, 566 cfs.

Extremes.--Maximum discharge during year, 28,900 cfs Mar. 22 (gage height, 22.18 ft); minimum, 1.2 cfs Sept. 22 (gage height, 0.83 ft).
1920-29, 1932-55: Maximum discharge, 40,000 cfs (revised) Feb. 13, 1948 (gage height, 24.34 ft, from floodmarks); no flow Oct. 5-10, 1922.
Revisions.--The maximum discharge for the water year 1948 has been revised to 40,000 cfs Feb. 13, 1948 (gage height, 24.34 ft), superseding figure published in WSP 1113.

Remarks.--Records good except those for periods of fragmentary gage-height record or those below 50 cfs, which are fair, and those for periods of no gage-height record, which are poor.

Cooperation.--Three discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 953: 1920-30, 1932-35: Revised figures of discharge in cubic feet per second, for high-water period in the water year 1948, superseding those published in WSP 1113, are given herewith:

Feb. 13, 1948..... 23,000
Feb. 14, 1948..... 20,000

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| February 1948..... | 92,280 | 23,000 | 260 | 3,182 | 7.88 | 8.49 |
| Water year 1947-48..... | 192,227.6 | 23,000 | .3 | 525 | 1.30 | 17.69 |
| Calendar year 1948..... | 240,554.9 | 23,000 | .3 | 657 | 1.63 | 22.14 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 309 | 9.0 | 23 | 661 | 184 | 1,200 | 623 | 405 | 360 | 35 | 13 | 6.9 |
| 2 | 623 | 10 | 21 | 504 | 1,250 | 1,040 | 599 | 344 | 276 | 33 | *f11 | 6.1 |
| 3 | 236 | 9.0 | 18 | 390 | 720 | 856 | 569 | 296 | 224 | 30 | f7.8 | 5.4 |
| 4 | 102 | 9.0 | 17 | 328 | 466 | 746 | 476 | 259 | 190 | 25 | 7 | 4.7 |
| 5 | 55 | 12 | 217 | 292 | 432 | 642 | 425 | 231 | 162 | 20 | 6 | 3.5 |
| 6 | 38 | 12 | 1,490 | 266 | 5,020 | 2,950 | 2,780 | 207 | 144 | 18 | 7 | 3.5 |
| 7 | 28 | 12 | 360 | 245 | *5,620 | 2,410 | 2,230 | 187 | 133 | 15 | 5 | *3.5 |
| 8 | 20 | 13 | 203 | 214 | *1,940 | 1,430 | 1,260 | 168 | 127 | 13 | 6 | 4.0 |
| 9 | 16 | 12 | 162 | 203 | 1,320 | 1,110 | 976 | 153 | 116 | 11 | 7 | 3.5 |
| 10 | 14 | 11 | 180 | 197 | 1,040 | 905 | 814 | 139 | 116 | 10 | 9 | 3.0 |
| 11 | 11 | 11 | 147 | 197 | 1,090 | 758 | 983 | 136 | 139 | 9 | 6 | 2.5 |
| 12 | 8.2 | 10 | 114 | 187 | 891 | 668 | 912 | 155 | 119 | 8 | 45 | 2.5 |
| 13 | 10 | 10 | 112 | 168 | 694 | 557 | 1,020 | 443 | 109 | 8 | 25 | 2.5 |
| 14 | 49 | 10 | 153 | 153 | 635 | 482 | 957 | 270 | *99 | *7.8 | 12 | 2.5 |
| 15 | 322 | 8.2 | *147 | 144 | 605 | 450 | 800 | 197 | 87 | *13 | 9 | 2.5 |
| 16 | 111 | 8.2 | 119 | 141 | 539 | 868 | 668 | 241 | 79 | 40 | 25 | 2.0 |
| 17 | 46 | 10 | 102 | 139 | 533 | 1,030 | 569 | 308 | 70 | 35 | 300 | 1.5 |
| 18 | 30 | *11 | 104 | *127 | 471 | f4,910 | 482 | 174 | 62 | 25 | f127 | 1.5 |
| 19 | 22 | 16 | 162 | 130 | 420 | 5,000 | 410 | 144 | 57 | 12 | 57 | 1.5 |
| 20 | *18 | 30 | 130 | 136 | 380 | 2,000 | 356 | 125 | 52 | 60 | 38 | 1.5 |
| 21 | 17 | 21 | 104 | 189 | 2,690 | *f12,000 | 375 | 294 | 48 | 280 | 30 | 1.5 |
| 22 | 15 | 17 | 90 | 1,460 | 9,430 | *24,600 | 456 | 2,600 | 44 | 100 | 43 | 1.5 |
| 23 | 13 | 13 | 81 | 1,020 | *7,030 | 9,780 | 3,720 | 1,070 | 42 | 60 | 44 | 2.5 |
| 24 | 12 | 12 | 72 | 668 | 2,330 | 2,580 | 2,950 | *545 | 44 | 35 | 64 | 3.5 |
| 25 | 11 | 11 | 64 | 504 | 1,640 | 2,170 | 1,900 | 539 | 57 | 25 | 37 | 4.7 |
| 26 | 10 | 10 | 57 | 395 | 1,300 | 1,830 | 1,200 | 360 | 87 | 20 | 25 | 5.4 |
| 27 | 9.0 | 10 | 53 | 324 | 1,450 | 1,360 | 924 | 276 | 94 | 16 | 19 | 5.4 |
| 28 | 8.2 | 9.0 | 432 | 280 | 1,390 | 1,150 | *726 | 228 | 59 | 14 | 16 | 11 |
| 29 | 8.2 | 10 | *4,090 | 242 | - | 983 | 593 | 2,240 | 47 | 10 | 12 | 13 |
| 30 | 8.2 | 23 | 3,030 | 210 | ------- | 821 | 488 | 1,060 | 41 | 9 | 9.9 | 518 |
| 31 | 8.2 | ---- | 1,020 | 187 | ------- | 700 | -------- | 545 | -------- | 10 | *7.8 | ------ |
| Total | 2,188.0 | 369.4 | 13,074 | 10,301 | 51,510 | 87,986 | 31,241 | 14,339 | 3,284 | 1,006.8 | 1,030.5 | 631.1 |
| Mean | 70.6 | 12.3 | 422 | 332 | 1,840 | 2,838 | 1,041 | 463 | 109 | 32.5 | 33.2 | 21.0 |
| Cfsm | 0.175 | 0.030 | 1.04 | 0.822 | 4.55 | 7.02 | 2.58 | 1.15 | 0.270 | 0.080 | 0.082 | 0.052 |
| In. | 0.20 | 0.03 | 1.20 | 0.95 | 4.74 | 8.10 | 2.88 | 1.32 | 0.30 | 0.09 | 0.09 | 0.06 |

Calendar year 1954: Max 12,600 Min 0.2 Mean 509 Cfsm 1.26 In. 17.08
Water year 1954-55: Max 24,600 Min 1.5 Mean 594 Cfsm 1.47 In. 19.96

Peak discharge (base, 7,500 cfs).--Feb. 7 (12:30 a.m.) 7,740 cfs (13.77 ft); Feb. 22 (10:30 p.m.) 10,300 cfs (16.37 ft); Mar. 22 (8 a.m.) 28,900 cfs (22.18 ft).
* Discharge measurement made on this day.
f Fragmentary gage-height record; discharge computed from partly estimated gage heights.
Note.--No gage-height record Mar. 19, 20, July 3-13, July 16 to Aug. 1, Aug. 3-17; discharge estimated on basis of weather records, normal recessions, and records for station near Kingston Springs.

## Harpeth River near Kingston Springs, Tenn.

Location.--Lat 36°07'18", long 87°05'56", on right bank 400 ft upstream from bridge on U. S. Highway 70, 2 miles northeast of Kingston Springs, Cheatham County, 3 miles downstream from Turnbull Creek, and at mile 32.4.

Drainage area.--687 sq mi.

Records available.--July 1925 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 448.04 ft above mean sea level, datum of 1929. Prior to Jan. 23, 1939, staff gage at site 150 ft downstream at same datum.

Average discharge.--30 years, 951 cfs.

Extremes.--Maximum discharge during year, 41,500 cfs Mar. 22 (gage height, 27.99 ft); minimum, 22 cfs Sept. 22, 23 (gage height, 0.55 ft).
1925-55: Maximum discharge, 60,000 cfs Jan. 7, 1946 (gage height, 32.20 ft); minimum, 12 cfs Sept. 18, 1939; minimum gage height observed, 0.26 ft Sept. 24, 1931.

Remarks.--Records good.

Cooperation.--Six discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 953: 1927, 1933, 1935-36. WSP 1033: 1927(M), 1932-33(M), 1935(M), 1937(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge in cubic feet per second)

| Oct. 1 to Feb. 6 | | | | Feb. 7 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.9 | 47 | 2.5 | 415 | 0.5 | 18 | 3.0 | 670 |
| 1.0 | 56 | 3.0 | 670 | .8 | 42 | 6.0 | 2,900 |
| 1.3 | 92 | 5.0 | 2,100 | 1.0 | 62 | 12.0 | 8,250 |
| 1.6 | 146 | 9.0 | 5,350 | 1.3 | 99 | 16.0 | 12,800 |
| 2.0 | 242 | | | 1.7 | 182 | 20.0 | 18,000 |
| | | | | 2.0 | 265 | 26.0 | 34,000 |
| | | | | 2.5 | 435 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 969 | 54 | 70 | 965 | 276 | 1,950 | 1,010 | 736 | 620 | 106 | 79 | 45 |
| 2 | 620 | 54 | 79 | 712 | 834 | 1,720 | 1,020 | 640 | 488 | 102 | *92 | 41 |
| 3 | 665 | 52 | 78 | 570 | 1,240 | 1,430 | 1,170 | 560 | 407 | 94 | 70 | 36 |
| 4 | 262 | 56 | 72 | 480 | 682 | 1,240 | 916 | 493 | 353 | 88 | 60 | 33 |
| 5 | 155 | 61 | 431 | 424 | 616 | 1,090 | 797 | 435 | 313 | 86 | 57 | 33 |
| 6 | 110 | 60 | 1,470 | 383 | 5,350 | 4,260 | 5,570 | 388 | 289 | 83 | 58 | 31 |
| 7 | 94 | 57 | 825 | 343 | 8,710 | 4,800 | 4,710 | 367 | 274 | 79 | 61 | 29 |
| 8 | 74 | 57 | 391 | 310 | 3,560 | 2,500 | 2,470 | 328 | 268 | 82 | 54 | *27 |
| 9 | 63 | 58 | 307 | 294 | 2,000 | 1,800 | 1,760 | 307 | 253 | 76 | 59 | 27 |
| 10 | 58 | 60 | 267 | 288 | 1,510 | 1,450 | 1,420 | 289 | 289 | 72 | 80 | 26 |
| 11 | 54 | 59 | 270 | 288 | 1,310 | 1,220 | 1,690 | 274 | 301 | 68 | 69 | 25 |
| 12 | 53 | 57 | 237 | 279 | 1,300 | 1,080 | 1,790 | 316 | 289 | *64 | 214 | 26 |
| 13 | 50 | 57 | 242 | 267 | 993 | 958 | 2,140 | 853 | *259 | 63 | 114 | 27 |
| 14 | 53 | 57 | 242 | 248 | 888 | 825 | 1,960 | 660 | *233 | 63 | 83 | 27 |
| 15 | 162 | 57 | *264 | 237 | 846 | 811 | 1,550 | 435 | 214 | 96 | 77 | 27 |
| 16 | 343 | 66 | 232 | 229 | 790 | 1,230 | 1,270 | 427 | 198 | 108 | 106 | 25 |
| 17 | 166 | *72 | 202 | 224 | 748 | 1,880 | 1,080 | 600 | 180 | 94 | 446 | 24 |
| 18 | 102 | 67 | 180 | *219 | *700 | 5,460 | 916 | 419 | 165 | 76 | 306 | 23 |
| 19 | *78 | 63 | 192 | 219 | 635 | 7,710 | 778 | 319 | 154 | 67 | 175 | 23 |
| 20 | 67 | 61 | 232 | 219 | 590 | 4,970 | 670 | 289 | 147 | 70 | 114 | 23 |
| 21 | 63 | 77 | 197 | 245 | 3,010 | *20,100 | 718 | 467 | 143 | 155 | 102 | 23 |
| 22 | 60 | 78 | 170 | 1,060 | 13,800 | *33,100 | 748 | 8,970 | 132 | 334 | 84 | *22 |
| 23 | 58 | 73 | 153 | 1,500 | *10,900 | 22,900 | 6,270 | 3,300 | 132 | 293 | 120 | 22 |
| 24 | 55 | 67 | 142 | 923 | 4,140 | 5,180 | 6,250 | 1,430 | 136 | 151 | 111 | 38 |
| 25 | 52 | 65 | 130 | 700 | 2,470 | 3,940 | 3,960 | 1,060 | 303 | 124 | 106 | 53 |
| 26 | 51 | 62 | 122 | 570 | 1,900 | 3,180 | 2,240 | *860 | 211 | 104 | 84 | 42 |
| 27 | 50 | 66 | 112 | 470 | 2,000 | 2,340 | 1,800 | 645 | 195 | 96 | 69 | 41 |
| 28 | 50 | 73 | 337 | 407 | 2,290 | 1,840 | *1,280 | 516 | 180 | 86 | 59 | 53 |
| 29 | 55 | 76 | 3,670 | 343 | - | 1,550 | 1,080 | 1,460 | 140 | 74 | 53 | 58 |
| 30 | 55 | 73 | 4,400 | 310 | ------- | 1,330 | 867 | 2,040 | 120 | 70 | 52 | 387 |
| 31 | 52 | ------- | 1,640 | 279 | ------- | 1,150 | ------- | 867 | ------- | 66 | *49 | ------- |
| Total | 4,799 | 1,895 | 17,356 | 14,005 | 74,088 | 144,994 | 59,680 | 30,750 | 7,386 | 3,190 | 3,263 | 1,317 |
| Mean | 155 | 63.2 | 560 | 452 | 2,646 | 4,677 | 1,989 | 992 | 246 | 103 | 105 | 43.9 |
| Cfsm | 0.226 | 0.092 | 0.815 | 0.658 | 3.85 | 6.81 | 2.90 | 1.44 | 0.358 | 0.150 | 0.153 | 0.064 |
| In. | 0.26 | 0.10 | 0.94 | 0.76 | 4.01 | 7.85 | 3.23 | 1.66 | 0.40 | 0.17 | 0.18 | 0.07 |

Calendar year 1954: Max 17,600 Min 20 Mean 757 Cfsm 1.10 In. 14.96
Water year 1954-55: Max 33,100 Min 22 Mean 994 Cfsm 1.45 In. 19.63

Peak discharge (base, 10,000 cfs).--Feb. 22 (8 a.m.) 15,800 cfs (18.60 ft); Mar. 22 (1 a.m.) 41,500 cfs (27.99 ft); May 22 (12 m.) 13,500 cfs (16.73 ft).
* Discharge measurement made on this day.

## Red River near Adams, Tenn.

Location.--Lat 36°35'25", long 87°05'25", on downstream end of right bank pier of bridge on U. S. highway 41, 0.5 mile downstream from Elk Creek, 1.5 miles northwest of Adams, Robertson County, and at mile 33.0.

Drainage area.--678 sq mi.

Records available.--June 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 398.34 ft above mean sea level, Sandy Hook datum (Corps of Engineers benchmark). Prior to Oct. 8, 1926, chain gage and Oct. 8, 1926, to Nov. 13, 1939, water-stage recorder, at site half a mile downstream at same datum.

Average discharge.--35 years, 983 cfs.

Extremes.--Maximum discharge during year, 17,600 cfs Mar. 22 (gage height, 27.87 ft); minimum, 55 cfs Dec. 1-4, Sept. 22-24; minimum gage height, 1.77 ft Sept. 22-24.
1920-55: Maximum discharge, 42,000 cfs Jan. 23, 1937 (gage height, 37.5 ft, from floodmarks, converted to present site by curve of relation), from rating curve extended above 25,000 cfs; minimum, 30 cfs Sept. 10, 1925 (gage height, 1.30 ft, site then in use).

Remarks.--Records good except those for period of no gage-height record, which are fair.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Revisions (water years).--WSP 953: 1920-27. WSP 1276: 1928, 1932(M), 1935(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1, 3, 15, Nov. 16 to Dec. 7, Dec. 13-16, Jan. 1-6, Feb. 5, 14-21, June 30 to July 20; rate of change in stage used as a factor Feb. 6, 7, 22, 23, Mar. 21-23)

| Oct. 1 to Feb. 21 | | | | Feb. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.7 | 55 | 3.0 | 327 | 1.7 | 47 | 4.0 | 745 |
| 1.8 | 64 | 4.0 | 720 | 2.0 | 91 | 6.0 | 1,890 |
| 2.0 | 88 | 9.0 | 3,600 | 2.5 | 202 | 10.0 | 4,410 |
| 2.5 | 192 | 13.0 | 6,300 | 3.0 | 330 | 28.0 | 17,700 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *1,020 | 67 | *55 | 745 | 204 | 5,000 | *1,720 | 790 | 570 | 244 | *157 | 93 |
| 2 | 1,490 | 67 | 55 | 608 | 220 | 5,300 | 1,630 | 727 | 520 | 230 | 146 | 89 |
| 3 | 626 | 66 | 55 | 496 | 296 | 3,420 | 1,580 | 673 | 471 | 211 | 135 | 84 |
| 4 | a425 | 67 | 56 | 432 | 271 | 2,840 | 1,460 | 624 | 431 | 204 | 142 | 80 |
| 5 | a310 | 70 | 344 | 387 | 523 | 2,680 | 1,350 | 588 | 399 | 197 | 128 | 78 |
| 6 | a250 | 72 | 945 | 352 | 5,020 | 2,940 | 1,380 | 538 | 403 | 211 | 133 | 77 |
| 7 | a200 | 71 | 489 | 324 | 6,120 | 3,280 | 1,520 | 511 | 1,010 | 211 | 189 | 73 |
| 8 | a160 | 70 | 293 | 299 | 3,260 | 2,590 | 1,280 | 511 | 994 | 186 | 153 | 73 |
| 9 | a140 | 67 | 244 | 277 | 2,430 | 2,250 | 1,140 | 488 | 895 | 181 | 133 | 70 |
| 10 | a120 | 66 | 212 | 274 | 1,960 | 2,000 | 1,040 | 439 | 825 | 172 | 169 | 67 |
| 11 | *114 | 64 | 192 | 274 | 1,660 | 1,830 | 1,020 | 411 | 1,240 | 164 | 1,160 | 65 |
| 12 | 102 | 64 | 200 | 263 | 1,410 | 2,210 | 1,220 | 447 | 1,190 | 155 | 668 | 63 |
| 13 | 98 | 63 | 601 | 319 | 1,160 | 2,210 | 1,290 | 1,120 | 1,000 | 146 | 342 | 62 |
| 14 | 142 | 62 | 765 | 305 | 1,030 | 1,730 | 1,580 | 1,450 | 840 | 142 | 262 | 60 |
| 15 | 355 | 61 | 455 | 293 | 1,010 | 1,590 | 1,250 | 905 | 740 | 146 | 223 | 60 |
| 16 | 302 | 62 | 355 | 274 | 1,000 | 2,050 | 1,080 | 994 | 664 | 148 | 200 | 60 |
| 17 | 200 | 61 | 302 | 274 | 1,020 | 2,550 | 989 | 905 | 601 | 202 | 186 | 59 |
| 18 | 161 | 60 | 260 | 252 | 960 | 4,410 | 900 | 696 | 538 | 179 | *186 | 59 |
| 19 | 130 | 62 | 236 | 236 | 865 | 5,560 | 840 | 596 | 484 | 146 | 168 | 58 |
| 20 | 114 | 63 | 212 | 225 | 830 | 4,720 | 780 | 520 | 443 | 226 | 155 | 59 |
| 21 | 100 | 62 | 197 | 222 | 1,860 | 12,900 | 736 | 538 | 427 | 259 | 142 | 59 |
| 22 | 95 | 62 | 185 | 239 | 10,400 | 17,300 | 700 | 2,430 | 392 | 211 | 133 | 60 |
| 23 | 87 | 60 | 175 | 321 | *7,470 | 10,300 | 1,930 | 2,880 | 367 | 188 | 139 | 55 |
| 24 | 83 | 60 | 163 | 310 | 4,050 | 5,480 | 3,760 | 1,720 | 342 | 166 | 126 | 62 |
| 25 | 79 | 60 | 152 | 291 | 3,120 | 4,080 | 2,100 | 1,320 | 411 | 211 | 115 | 63 |
| 26 | 78 | 59 | 141 | 274 | 2,600 | 3,440 | 1,530 | 1,090 | 471 | 186 | 109 | 59 |
| 27 | 85 | 59 | 139 | 252 | 3,080 | 2,830 | 1,280 | 935 | 415 | 172 | 104 | 66 |
| 28 | 83 | 58 | 419 | 230 | *3,860 | 2,480 | 1,110 | 845 | 316 | 223 | 98 | 67 |
| 29 | *76 | 58 | 2,110 | 225 | - | 2,240 | *978 | 870 | 280 | 262 | 93 | 67 |
| 30 | 71 | 58 | 2,050 | 210 | ------ | 2,020 | 870 | 760 | *259 | 211 | 109 | *119 |
| 31 | 70 | ------ | *1,090 | *204 | ------ | 1,860 | ------ | *632 | ------ | 175 | *100 | ------ |
| Total | 7,366 | 1,901 | 13,147 | 9,687 | 67,689 | 126,090 | 40,043 | 27,953 | 17,938 | 5,965 | 6,303 | 2,066 |
| Mean | 238 | 63.4 | 424 | 312 | 2,417 | 4,067 | 1,335 | 902 | 598 | 192 | 203 | 68.9 |
| Cfsm | 0.351 | 0.094 | 0.625 | 0.460 | 3.56 | 6.00 | 1.97 | 1.33 | 0.882 | 0.283 | 0.299 | 0.102 |
| In. | 0.40 | 0.10 | 0.72 | 0.53 | 3.71 | 6.92 | 2.20 | 1.53 | 0.98 | 0.33 | 0.35 | 0.11 |

Calendar year 1954: Max 4,970 Min 47 Mean 500 Cfsm 0.737 In. 9.99
Water year 1954-55: Max 17,300 Min 55 Mean 894 Cfsm 1.32 In. 17.88

Peak discharge (base, 8,000 cfs).--Feb. 22 (11 p.m.) 12,000 cfs (20.85 ft); Mar. 22 (6 p.m.) 17,600 cfs (27.87 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Harpeth River near Kingston Springs.

## Sulphur Fork Red River near Adams, Tenn.

Location.--Lat 36°31'00", long 87°03'40", on left bank 1,000 ft downstream from highway bridge, 2¾ miles downstream from Millers Creek, 4½ miles south of Adams, Robertson County, and 8¾ miles upstream from mouth.

Drainage area.--185 sq mi.

Records available.--January 1939 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 424.36 ft above mean sea level, Sandy Hook datum. Prior to Nov. 26, 1940, wire-weight gage at site 1,000 ft upstream at same datum.

Average discharge.--16 years, 230 cfs.

Extremes.--Maximum discharge during year, 8,900 cfs Mar. 22 (gage height, 18.12 ft); minimum, 7.2 cfs Sept. 21-23 (gage height, 3.15 ft).
1939-55: Maximum discharge, 13,200 cfs Mar. 22, 1952 (gage height 22.75 ft); minimum, 1.8 cfs Sept. 27, 1948; minimum gage height, that of Sept. 21-23, 1955.
Maximum stage known, 25.1 ft in June 1934, from floodmarks.

Remarks.--Records fair except those for January to March, which are poor.

Cooperation.--One discharge measurement furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 100 | 11 | *15 | 80 | 29 | 1,300 | *200 | 74 | 81 | 30 | *16 | 16 |
| 2 | 50 | 11 | 14 | 65 | 38 | 882 | 200 | 70 | 72 | 29 | 14 | 14 |
| 3 | 35 | 10 | 14 | 57 | 40 | 608 | 215 | 66 | 66 | 27 | 13 | 13 |
| 4 | 27 | 13 | 13 | 54 | 33 | 452 | 178 | 63 | 61 | 26 | 21 | 13 |
| 5 | 22 | 15 | 317 | 52 | 182 | 354 | 162 | 58 | 56 | 25 | 17 | 12 |
| 6 | 17 | 16 | 190 | 49 | 2,180 | 931 | 212 | 55 | 55 | 25 | 14 | 11 |
| 7 | 14 | 15 | 43 | 47 | 1,170 | 700 | 212 | 52 | 105 | 24 | 22 | 11 |
| 8 | 12 | 16 | 33 | 45 | 634 | 480 | 178 | 49 | 79 | 23 | 22 | 10 |
| 9 | 11 | 14 | 33 | 43 | 417 | 354 | 160 | 48 | 75 | 22 | 18 | 9.8 |
| 10 | 10 | 13 | 33 | 45 | 294 | 288 | 147 | 46 | 107 | 21 | 431 | 9.0 |
| 11 | *9.1 | 13 | 29 | 45 | 247 | 244 | 170 | 45 | 135 | 20 | 344 | 8.6 |
| 12 | 8.6 | 12 | 31 | 45 | 184 | 320 | 189 | 55 | 107 | 19 | 141 | 9.0 |
| 13 | 9.6 | 12 | 49 | 45 | 148 | 222 | 218 | 123 | 90 | 18 | 74 | 8.6 |
| 14 | 20 | 12 | 45 | 45 | 139 | 202 | 215 | 130 | 79 | 17 | 51 | 8.6 |
| 15 | 29 | 11 | 38 | 43 | 154 | 254 | 189 | 77 | 68 | 20 | 41 | 8.3 |
| 16 | 23 | 13 | 36 | 43 | 166 | 508 | 167 | 147 | 61 | 23 | 39 | 8.3 |
| 17 | 18 | 14 | 33 | 40 | 178 | 408 | 157 | 87 | 55 | 23 | 149 | 8.3 |
| 18 | 14 | 14 | 31 | 38 | 154 | 2,600 | 142 | 68 | 50 | 20 | *49 | 8.0 |
| 19 | 11 | 15 | 31 | 38 | 142 | 1,470 | 128 | 58 | 46 | 18 | 33 | 8.0 |
| 20 | 10 | 15 | 29 | 38 | 133 | 2,050 | 118 | 55 | 72 | 20 | 27 | 8.0 |
| 21 | 9.6 | 15 | 27 | 36 | 1,580 | 6,800 | 116 | 74 | 96 | 83 | 23 | 7.6 |
| 22 | 9.1 | 14 | 27 | 49 | 4,320 | 8,000 | 114 | 2,080 | 50 | 34 | 20 | 7.2 |
| 23 | 9.1 | 13 | 25 | 52 | *1,410 | 3,000 | 116 | 615 | 44 | 25 | 22 | 7.2 |
| 24 | 9.1 | 11 | 25 | 49 | 872 | 1,500 | 147 | 335 | 40 | 21 | 20 | 15 |
| 25 | 8.6 | 11 | 23 | 45 | 608 | 1,000 | 135 | 254 | 90 | 19 | 19 | 40 |
| 26 | 8.6 | 11 | 22 | 40 | 460 | 700 | 116 | 197 | 70 | 18 | 16 | 22 |
| 27 | 9.6 | 13 | 22 | 38 | 580 | 500 | 102 | 160 | 48 | 21 | 15 | 16 |
| 28 | 12 | 13 | 396 | 36 | *472 | 400 | 96 | 137 | 40 | 62 | 14 | 15 |
| 29 | *13 | 14 | 479 | 36 | - | 320 | *87 | 147 | 35 | 39 | 13 | 16 |
| 30 | 12 | 14 | 272 | 36 | ------- | 270 | 79 | 112 | *33 | 23 | 16 | *79 |
| 31 | 12 | ------- | *136 | *33 | ------- | 225 | ------- | *94 | ------- | 17 | *26 | ------- |
| Total | 563.0 | 394 | 2,511 | 1,407 | 16,964 | 37,342 | 4,665 | 5,631 | 2,066 | 812 | 1,740 | 427.5 |
| Mean | 18.2 | 13.1 | 81.0 | 45.4 | 606 | 1,205 | 156 | 182 | 68.9 | 26.2 | 56.1 | 14.2 |
| Cfsm | 0.098 | 0.071 | 0.438 | 0.245 | 3.28 | 6.51 | 0.843 | 0.984 | 0.372 | 0.142 | 0.303 | 0.077 |
| In. | 0.11 | 0.08 | 0.50 | 0.28 | 3.41 | 7.51 | 0.94 | 1.13 | 0.42 | 0.16 | 0.35 | 0.09 |

Calendar year 1954: Max 1,740 Min 3.5 Mean 123 Cfsm 0.665 In. 9.03
Water year 1954-55: Max 8,000 Min 7.2 Mean 204 Cfsm 1.10 In. 14.98

Peak discharge (base, 3,400 cfs).--Feb. 22 (4 a.m.) 6,260 cfs (14.74 ft); Mar. 18 (12 m.) 3,900 cfs (11.33 ft); Mar. 22 (time unknown) 8,900 cfs (18.12 ft); May 22 (11 a.m.) 3,710 cfs (11.03 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-10, Mar. 22-31; discharge estimated on basis of weather records, recorded range in stage, and records for Red River near Adams.

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## Cumberland River at Dover, Tenn.

Location.--Lat 36°29'26", long 87°50'20", on center pier of bridge on U. S. Highway 79 at Dover, Stewart County, 0.1 mile upstream from Dyer Creek, 0.6 mile upstream from Indian Creek, 0.8 mile upstream from lock and dam D, and at mile 88.8.

Drainage area.--16,530 sq mi, approximately.

Records available.--October 1937 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 324.25 ft above mean sea level, Sandy Hook datum (levels by Corps of Engineers). Prior to Feb. 8, 1939, and during periods of crest-wicket manipulation at dam D (Feb. 8, 1939, to Sept. 30, 1951) staff gage at upper lock D, 0.8 mile downstream at same datum. Auxiliary staff gage, 19.7 miles upstream, below spillway at lock and dam C, read four times daily.

Average discharge.--18 years, 24,150 cfs (unadjusted).

Extremes.--Maximum discharge during year, 169,000 cfs Mar. 24; maximum gage height, 44.93 ft Mar. 25; minimum daily discharge, 1,460 cfs Oct. 13; minimum gage height, 10.05 ft Nov. 11.

1937-55: Maximum discharge, 188,000 cfs Feb. 15, 1950; maximum gage height, 48.13 ft Feb. 16, 1950; minimum daily discharge, 414 cfs Oct. 4, 1947; minimum gage height observed, 7.10 ft (upper lock D gage) Sept. 16, 1947.

1916-37: Maximum gage height observed, 56.8 ft Jan. 25, 1937, at lock D; minimum observed, 6.8 ft in September 1925, at lock D. Both extremes from unpublished records of Corps of Engineers.

Remarks.--Records good except those for periods computed using fall as a factor and periods of wicket manipulation, which are fair, or those when crest wickets were overtopped, which are poor. Some regulation by Lake Cumberland, Great Falls Lake, and Dale Hollow, Center Hill, and Old Hickory Reservoirs (see p. 62), and by Cheatham and other navigation dams on Cumberland River.

Cooperation.--Lock gage readings, records of wicket manipulation, and nine discharge measurements furnished by Corps of Engineers.

Revisions (water years).--WSP 1276: 1942.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | e12,000 | e11,200 | 16,000 | c40,200 | 38,600 | c50,100 | c85,100 | 42,900 | c25,200 | e10,200 | e3,650 | e4,490 |
| 2 | 18,500 | e10,100 | 15,700 | 27,500 | 38,600 | c53,700 | c82,400 | c32,200 | 23,900 | e7,480 | e2,760 | e3,560 |
| 3 | 20,200 | e8,590 | 15,300 | 22,200 | 40,400 | c47,900 | c80,900 | c21,700 | 23,000 | e7,350 | e2,270 | e5,950 |
| 4 | e10,400 | e11,500 | 16,600 | e13,200 | 40,900 | c41,400 | c75,600 | c17,100 | 22,700 | e7,370 | e3,560 | e5,970 |
| 5 | e6,730 | e13,600 | 21,000 | e8,420 | 40,100 | c27,200 | c68,900 | 15,700 | 26,000 | e8,060 | e5,030 | e4,840 |
| 6 | e3,040 | e13,800 | 32,600 | e9,060 | 52,300 | 36,800 | c68,100 | e15,200 | c23,200 | e10,400 | e5,340 | e4,380 |
| 7 | e2,040 | e13,300 | 41,400 | e12,200 | 78,900 | 57,200 | c77,600 | e12,700 | e16,700 | e9,740 | e5,480 | e5,870 |
| 8 | e2,260 | e11,300 | 34,400 | e13,100 | 95,200 | c58,800 | c79,600 | e12,800 | e14,100 | e9,440 | e6,310 | e6,600 |
| 9 | e2,340 | e11,200 | 26,200 | e11,900 | c86,900 | c51,700 | c72,800 | e12,300 | e11,800 | e9,050 | e8,320 | e6,510 |
| 10 | e3,340 | e10,700 | 20,500 | e13,700 | c59,400 | *c48,200 | c66,700 | e10,500 | e12,200 | e7,430 | e6,820 | e5,460 |
| 11 | e3,410 | e6,830 | 19,600 | 16,600 | c36,200 | c46,700 | 67,600 | e8,750 | e18,100 | e7,100 | e4,460 | e5,010 |
| 12 | e2,040 | e5,100 | 23,400 | 17,100 | 30,900 | c42,100 | 68,200 | e14,000 | 39,200 | e6,420 | e6,750 | e6,080 |
| 13 | e1,460 | e4,750 | 23,100 | 18,600 | 36,300 | c39,800 | 69,900 | 16,900 | 37,200 | e4,260 | e7,110 | e6,960 |
| 14 | e1,780 | e3,490 | 19,600 | 27,200 | 33,500 | c38,400 | c67,100 | 19,000 | c22,300 | e3,610 | e6,900 | e6,570 |
| 15 | e5,510 | e3,450 | 16,700 | 34,300 | *28,500 | c31,500 | 67,200 | 17,400 | e13,800 | e3,990 | e7,120 | e5,620 |
| 16 | e4,130 | e2,720 | 15,700 | 36,500 | 29,100 | c28,400 | 64,400 | 16,300 | 19,000 | e5,290 | e4,860 | e5,740 |
| 17 | e3,200 | e1,790 | 23,700 | 37,900 | 30,900 | 47,700 | 60,600 | 21,400 | 19,600 | e6,620 | e5,370 | e7,630 |
| 18 | e3,580 | e1,630 | 24,200 | 35,200 | 25,800 | 66,600 | 58,100 | 18,300 | e13,800 | e7,220 | e5,500 | e8,360 |
| 19 | e4,530 | e3,060 | 25,800 | 33,500 | 25,100 | 90,300 | 55,100 | 16,700 | e14,300 | e6,690 | e4,680 | e9,910 |
| 20 | e4,840 | e4,550 | c21,600 | 35,500 | 24,400 | c99,600 | 52,000 | 16,900 | e16,800 | e4,310 | e6,740 | e8,990 |
| 21 | e5,220 | e2,240 | e15,000 | 35,600 | 30,800 | d14,000 | 48,100 | 20,600 | 19,600 | e5,760 | e8,380 | e7,770 |
| 22 | e7,180 | e2,970 | e9,330 | 33,900 | 65,800 | 135,000 | 47,200 | 31,400 | 18,800 | e6,460 | e8,230 | *e10,300 |
| 23 | e10,600 | *e4,510 | e11,700 | 37,800 | 94,000 | 152,000 | 52,200 | 41,500 | 16,900 | e5,540 | e7,070 | e13,500 |
| 24 | e10,000 | e4,820 | e11,000 | 39,500 | 107,000 | *c167,000 | 59,500 | c22,400 | 16,700 | e5,360 | e6,240 | e16,700 |
| 25 | e8,990 | e10,900 | e11,300 | *38,500 | c91,300 | c166,000 | 65,100 | *c19,900 | 18,500 | e4,280 | e5,710 | e19,400 |
| 26 | e7,260 | e11,600 | e10,500 | 36,800 | c66,400 | c153,000 | c58,600 | 20,800 | 18,300 | e3,800 | e7,700 | e22,200 |
| 27 | e5,670 | e15,200 | e6,620 | 37,200 | c52,600 | c136,000 | 53,100 | 28,300 | 14,100 | e2,650 | e9,920 | e17,500 |
| 28 | e4,870 | 17,500 | e4,460 | 33,900 | c50,900 | c119,000 | 44,700 | 37,600 | *e11,400 | e2,800 | e9,960 | e12,700 |
| 29 | e4,670 | 17,600 | 25,300 | 32,200 | - | c104,000 | 40,500 | 40,300 | e7,560 | e5,200 | e9,410 | e8,520 |
| 30 | e5,310 | 16,400 | 53,800 | 32,400 | ------- | c95,800 | 43,100 | 41,700 | e11,300 | e5,670 | e6,260 | e10,500 |
| 31 | e8,010 | ------- | 59,400 | 37,500 | ------- | c89,300 | ------- | 38,300 | ------- | e4,250 | *e4,950 | ------- |
| Total | 193,110 | 256,400 | 671,510 | 859,180 | ‡1,430.8 | ‡2,435.2 | ‡1,900 | 701,550 | 566,060 | 193,800 | 192,860 | 263,590 |
| Mean | 6,229 | 8,547 | 21,660 | 27,720 | 51,100 | 78,550 | 63,330 | 22,630 | 18,870 | 6,252 | 6,221 | 8,786 |

| | Observed | | | | | | Adjusted† | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max | 101,000 | Min | 1,100 | Mean | 16,660 | Mean | 17,840 | Cfsm | 1.08 | In. | 14.65 |
| Water year 1954-55: | Max | 167,000 | Min | 1,460 | Mean | 26,480 | Mean | 26,300 | Cfsm | 1.59 | In. | 21.60 |

* Discharge measurement made on this day.

† Adjusted for change in contents in Lake Cumberland, Great Falls Lake, and Dale Hollow, Center Hill, and Old Hickory Reservoirs.

‡ Expressed in thousands.

c Discharge computed using fall from auxiliary gage as a factor.

e Crest wicket manipulation at dam D; discharge computed by weir formula plus leakage.

Note.--Crest wickets overtopped Oct. 1, 10, 22, 23, 31, Nov. 1, 4, 5, May 12, June 11, 19, July 29, Aug. 8-10, 12-18, 20-31, Sept. 3-5, 7-30.

## South Fork Little River at Hopkinsville, Ky.

Location.--Lat 36°50'22", long 87°28'52", on right bank at downstream side of bridge on U. S. Highway 41A, 1 mile south of city limits of Hopkinsville, Christian County, and 6 miles upstream from North Fork.

Drainage area.--46.2 sq mi.

Records available.--October 1949 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 499.71 ft above mean sea level, datum of 1929. Prior to Dec. 22, 1949, wire-weight gage at same site and datum.

Average discharge --6 years, 80.7 cfs.

Extremes.--Maximum discharge during year, about 2,600 cfs Mar. 21 (gage height, about 14 ft, from graph based on one wire-weight-gage reading and adjacent recorder graph); minimum, 0.6 cfs Sept. 9-11 (gage height, 1.20 ft).
1949-55: Maximum discharge, 5,670 cfs Jan. 14, 1951 (gage height, 19.17 ft); minimum observed, 0.1 cfs Oct. 22, 1949.
Maximum stage known, 20.4 ft in January 1937, from floodmark.

Remarks.--Records good except those for period of fragmentary gage-height record, which are poor. Some regulation at low flow by Western State Hospital, 2 miles above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 0.2 | 2.2 | 79 |
| 1.2 | .9 | 2.5 | 133 |
| 1.3 | 2.6 | 3.0 | 219 |
| 1.4 | 5.2 | 5.0 | 548 |
| 1.6 | 12 | 13.0 | 2,360 |
| 1.8 | 28 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 135 | 4.4 | 2.8 | 110 | 22 | 656 | 63 | 21 | 48 | 17 | 3.1 | 1.8 |
| 2 | 80 | 3.8 | *3.1 | 95 | 74 | 283 | 62 | 19 | 40 | 16 | 2.8 | 1.6 |
| 3 | 30 | 3.6 | 2.8 | 74 | 38 | 209 | 62 | 18 | 36 | 14 | *2.6 | 1.5 |
| 4 | 20 | *3.6 | 2.6 | 63 | 30 | 169 | 53 | 16 | 31 | 12 | 2.2 | 1.3 |
| 5 | 16 | 3.6 | 287 | 56 | 620 | 165 | 48 | 15 | 28 | 12 | 2.0 | 1.0 |
| 6 | 78 | 3.6 | 89 | 56 | 1,070 | 151 | 185 | 14 | 80 | 12 | 2.0 | 1.0 |
| 7 | 20 | 3.3 | 36 | *45 | 347 | 120 | 81 | 13 | 331 | 11 | 3.8 | .9 |
| 8 | 13 | 3.3 | 27 | 40 | 227 | 102 | 59 | 14 | 213 | 10 | 3.6 | .8 |
| 9 | 11 | 3.3 | 24 | 38 | 176 | 88 | 50 | 12 | 110 | 9.6 | 3.6 | *.6 |
| 10 | 10 | 3.3 | 19 | 38 | *142 | 79 | 46 | 12 | 106 | 11 | 46 | .6 |
| 11 | 9.3 | 3.1 | 16 | 50 | 120 | 71 | 137 | 13 | 158 | 9.3 | 97 | .6 |
| 12 | 8.5 | 2.8 | 128 | 68 | 93 | 209 | 156 | 19 | 128 | *7.8 | 10 | .7 |
| 13 | 7.1 | 2.6 | 373 | 60 | 76 | 95 | 376 | 111 | 88 | 7.1 | 7.1 | .8 |
| 14 | 95 | 2.6 | 113 | 49 | 73 | 81 | 171 | 41 | 73 | 6.8 | 5.5 | .8 |
| 15 | 86 | 2.6 | 77 | 53 | 68 | 77 | 120 | 28 | 59 | 7.8 | 4.4 | .8 |
| 16 | 20 | 2.6 | 57 | 55 | 68 | 194 | 97 | 24 | 49 | 8.2 | 154 | .7 |
| 17 | 15 | 2.8 | 48 | 46 | 69 | *108 | 77 | 21 | 44 | 7.5 | 21 | .7 |
| 18 | 12 | 3.1 | 40 | 41 | 57 | 371 | 66 | 17 | 38 | 7.1 | 10 | .7 |
| 19 | 10 | 3.3 | 35 | 37 | 55 | 203 | 57 | 14 | 33 | 6.8 | 8.2 | .7 |
| 20 | 8.9 | 3.1 | 31 | 33 | 70 | 520 | 50 | 23 | 30 | 6.5 | 7.1 | .7 |
| 21 | 8.2 | 3.1 | 27 | 34 | 816 | f2,260 | *47 | 161 | 28 | 6.2 | 5.8 | .7 |
| 22 | 7.8 | 2.8 | 25 | 53 | 756 | 855 | 42 | 508 | 24 | 5.5 | 5.5 | .7 |
| 23 | 7.1 | 3.1 | 23 | 38 | 273 | 291 | 57 | 165 | 23 | 8.2 | 4.9 | .8 |
| 24 | 6.5 | 2.8 | 20 | 33 | 201 | 217 | 55 | 108 | 22 | 6.2 | 4.6 | 1.2 |
| 25 | 5.8 | 2.6 | 18 | 30 | 156 | 178 | 41 | 83 | 251 | 7.8 | 3.8 | .9 |
| 26 | 5.8 | 2.6 | 16 | 26 | 137 | 144 | 36 | 59 | 56 | 6.5 | 3.6 | .8 |
| 27 | 5.2 | 3.1 | 16 | 25 | 423 | 119 | 32 | *50 | 34 | 5.5 | 3.1 | .7 |
| 28 | 5.5 | 3.1 | 486 | 23 | 848 | 104 | 29 | 256 | 27 | 4.9 | 2.8 | .7 |
| 29 | 5.5 | 3.1 | 499 | 21 | - | 90 | 25 | 191 | 24 | 4.4 | 2.6 | .7 |
| 30 | 5.2 | 2.8 | 211 | 19 | ------- | 77 | 23 | 79 | 19 | 3.8 | 2.2 | 205 |
| 31 | 4.9 | ------- | 135 | 18 | ------- | 69 | -------- | 59 | -------- | 3.1 | 2.0 | -------- |
| Total | 752.3 | 93.5 | 2,887.3 | 1,427 | 7,105 | 8,355 | 2,403 | 2,184 | 2,231 | 216.6 | 436.9 | 230.5 |
| Mean | 24.3 | 3.12 | 93.1 | 46.0 | 254 | 270 | 80.1 | 70.5 | 74.4 | 8.44 | 14.1 | 7.68 |
| Cfsm | 0.526 | 0.068 | 2.02 | 0.996 | 5.50 | 5.84 | 1.73 | 1.53 | 1.61 | 0.183 | 0.305 | 0.166 |
| In. | 0.61 | 0.08 | 2.32 | 1.15 | 5.72 | 6.73 | 1.93 | 1.76 | 1.80 | 0.21 | 0.35 | 0.19 |

Calendar year 1954: Max 728 Min 0.6 Mean 42.0 Cfsm 0.909 In. 12.35
Water year 1954-55: Max 2,260 Min 0.6 Mean 77.7 Cfsm 1.68 In. 22.85

Peak discharge (base, 1,600 cfs).--Mar. 21 (time unknown) about 2,600 cfs (about 14 ft).
* Discharge measurement made on this day.
f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

## Little River near Cadiz, Ky.

Location.--Lat 36°46'40", long 87°43'18", on right bank at upstream side of highway bridge, 50 ft downstream from Casey Creek and 8¾ miles southeast of Cadiz, Trigg County.

Drainage area.--249 sq mi.

Records available.--February 1940 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 391.45 ft above mean sea level, unadjusted. Prior to July 31, 1945, wire-weight gage at same site and datum.

Average discharge.--15 years, 341 cfs.

Extremes.--Maximum discharge during year, 6,580 cfs Mar. 21 (gage height, 16.08 ft); minimum, 20 cfs Sept. 17.
1940-55: Maximum discharge, 14,200 cfs Jan. 14, 1951 (gage height, 21.00 ft); minimum observed, 1.0 cfs Oct. 3, 1941.

Remarks.--Records good. Some regulation at low flow by small mill at Pee Dee, 5 miles above station.

Revisions (water years).--WSP 1173: 1942-43, 1946(M), 1949.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 2.5 | 19 | 4.3 | 545 |
| 2.8 | 50 | 4.6 | 670 |
| 3.0 | 79 | 5.0 | 830 |
| 3.3 | 138 | 6.0 | 1,190 |
| 3.5 | 185 | 11.0 | 2,970 |
| 3.7 | 250 | 15.0 | 5,500 |
| 4.0 | 400 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 651 | 32 | 25 | 500 | 103 | 3,470 | 563 | 180 | 295 | 134 | 45 | 26 |
| 2 | 830 | 31 | *25 | 415 | 115 | 1,990 | 527 | 175 | 250 | 125 | 43 | 25 |
| 3 | 335 | 29 | 24 | 335 | 188 | 1,260 | 509 | 165 | 222 | 117 | *42 | 25 |
| 4 | 197 | 29 | 24 | 277 | 149 | 1,030 | 465 | 158 | 200 | 109 | 40 | 24 |
| 5 | 162 | *28 | 220 | 243 | 878 | 956 | 425 | 160 | 185 | 105 | 41 | 24 |
| 6 | 136 | 27 | 1,000 | 218 | 3,560 | 882 | 415 | 158 | 235 | 99 | 56 | 24 |
| 7 | 185 | 26 | 222 | *197 | 2,280 | 778 | 576 | 145 | 1,110 | 97 | 40 | 26 |
| 8 | 132 | 27 | 142 | 175 | 1,190 | 678 | 394 | 138 | 654 | 93 | 43 | 26 |
| 9 | 105 | 27 | 111 | 165 | 924 | 626 | 325 | 136 | 650 | 88 | 40 | *26 |
| 10 | 90 | 26 | 93 | 158 | *746 | 568 | 295 | 128 | 440 | 83 | 45 | 24 |
| 11 | 79 | 25 | 84 | 158 | 646 | 532 | 325 | 123 | 509 | 79 | 198 | 24 |
| 12 | 73 | 25 | 104 | 180 | 545 | 635 | 654 | 130 | 586 | 79 | 360 | 23 |
| 13 | 66 | 24 | 914 | 222 | 450 | 698 | 1,380 | 197 | 480 | *76 | 113 | 22 |
| 14 | 59 | 24 | 586 | 212 | 400 | 485 | 1,150 | 305 | 389 | a70 | 65 | 22 |
| 15 | 133 | 24 | 295 | 197 | 372 | 440 | 722 | 297 | 315 | a66 | 53 | 22 |
| 16 | 149 | 24 | 209 | 197 | 356 | 724 | 606 | 712 | 264 | a100 | 44 | 22 |
| 17 | 86 | 23 | 172 | 200 | 340 | *710 | 527 | 345 | 232 | a90 | 138 | 21 |
| 18 | 65 | 23 | 153 | 178 | 315 | 1,330 | 460 | 259 | 206 | a70 | 100 | 29 |
| 19 | 55 | 22 | 138 | 162 | 272 | 1,250 | 405 | 215 | 188 | 62 | 62 | 42 |
| 20 | 53 | 22 | 123 | 153 | 358 | 2,020 | 356 | 209 | 175 | 60 | 53 | 35 |
| 21 | 49 | 24 | 113 | 147 | 2,330 | *4,960 | 362 | 362 | 162 | 59 | 45 | 29 |
| 22 | 45 | 24 | 105 | 147 | 3,340 | 4,980 | *431 | 963 | 153 | 58 | 42 | 25 |
| 23 | 43 | 23 | 97 | 168 | 1,610 | 1,930 | 515 | 1,180 | 145 | 58 | 39 | 24 |
| 24 | 40 | 24 | 92 | 151 | 1,120 | 1,430 | 440 | 598 | 244 | 75 | 37 | 24 |
| 25 | 38 | 23 | 84 | 138 | 917 | 1,210 | 356 | 504 | 522 | 84 | 37 | 23 |
| 26 | 35 | 23 | 77 | 130 | 770 | 1,040 | 295 | 410 | 678 | 66 | 36 | 22 |
| 27 | 33 | 24 | 73 | 121 | 1,300 | 902 | 264 | *340 | 254 | 59 | 33 | 22 |
| 28 | 32 | 24 | 726 | 115 | 2,020 | 810 | 240 | 585 | 185 | 56 | 31 | 24 |
| 29 | 35 | 23 | 1,760 | 111 | - | 738 | 218 | 1,010 | 162 | 58 | 30 | 31 |
| 30 | 32 | 22 | 1,240 | 109 | ------- | 666 | 197 | 536 | 147 | 53 | 28 | 594 |
| 31 | 32 | -- | 650 | 103 | ------- | 606 | ------- | 378 | ------- | 48 | 28 | ------- |
| Total | 4,055 | 752 | 9,681 | 5,982 | 27,594 | 40,334 | 14,397 | 11,201 | 10,237 | 2,476 | 2,007 | 1,330 |
| Mean | 131 | 25.1 | 312 | 193 | 986 | 1,301 | 480 | 361 | 341 | 79.9 | 64.7 | 44.3 |
| Cfsm | 0.526 | 0.101 | 1.25 | 0.775 | 3.96 | 5.22 | 1.93 | 1.45 | 1.37 | 0.321 | 0.260 | 0.178 |
| In. | 0.61 | 0.11 | 1.45 | 0.89 | 4.12 | 6.02 | 2.15 | 1.67 | 1.53 | 0.37 | 0.30 | 0.20 |

Calendar year 1954: Max 1,990 Min 11 Mean 179 Cfsm 0.719 In. 9.75
Water year 1954-55: Max 4,980 Min 21 Mean 356 Cfsm 1.43 In. 19.42

Peak discharge (base, 3,500 cfs).--Feb. 6 (1 p.m.) 4,130 cfs (13.11 ft); Feb. 21 (10 p.m.) 4,110 cfs (13.08 ft); Mar. 1 (7:30 a.m.) 4,780 cfs (14.15 ft); Mar. 21 (7 p.m.) 6,580 cfs (16.08 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

## Cumberland River at Smithland, Ky.

Location.--Lat 37°08'45", long 88°24'25", on downstream side of left center pier of bridge on U. S. Highway 60 at Smithland, Livingston County, 1 mile downstream from McCormick Creek and 2.8 miles upstream from mouth.

Drainage area.--18,080 sq mi, approximately.

Records available.--February 1939 to September 1955 (fragmentary prior to March 1940).

Gage.--Water-stage recorder. Datum of gage is 300.00 ft above mean sea level, Sandy Hook datum. Prior to Aug. 4, 1945, wire-weight gage at same site and datum. Auxiliary water-stage recorder at Dycusburg, 16.8 miles upstream, since Nov. 20, 1944. Prior to Oct. 1, 1944, auxiliary wire-weight gage at Eureka, 28.7 miles upstream and Oct. 1 to Nov. 19, 1944, auxiliary staff gage at present site. During periods of crest-wicket operation staff gage above spillway at lock and dam F, 40.8 miles upstream, read four times daily.

Average discharge.--15 years (1940-55), 26,990 cfs (unadjusted).

Extremes.--Maximum discharge during year, 159,000 cfs Mar. 27, 28; maximum gage height, 37.23 ft Mar. 28; minimum daily discharge, 1,070 cfs Nov. 18.
1939-55: Maximum discharge, 201,000 cfs Feb. 18, 1950; maximum gage height, 43.10 ft Feb. 13, 1950; minimum daily discharge, 1941-55, 453 cfs June 23, 1944. Maximum stage known, 51.1 ft January to February 1937.

Remarks.--Record good above 15,000 cfs and fair below. Discharge above 15,000 cfs computed using fall as determined by auxiliary gage as a factor; discharge below 15,000 cfs computed using upper gage at lock and dam F with wicket operation at dam as a factor. Some regulation by navigation dams on Cumberland River, and by Great Falls Lake, Lake Cumberland, Dale Hollow, Center Hill, and Old Hickory Reservoirs (see p.62).

Cooperation.--Gage-height record for lock and dam F and record of wicket manipulations furnished by Corps of Engineers.

Revisions (water years).--WSP 1173: 1947(M). WSP 1336: 1940-43.

**Discharge, in cubic feet per second, water year October 1954 to September 1955**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10,900 | 10,900 | 16,900 | 58,400 | 37,800 | 66,100 | 124,000 | 45,500 | 33,800 | 11,300 | 3,940 | 5,560 |
| 2 | 17,800 | 10,800 | 17,200 | 36,900 | 38,000 | 64,900 | 118,000 | 40,000 | 26,200 | 9,180 | 3,060 | 4,530 |
| 3 | 20,500 | 7,570 | 16,400 | 28,800 | 38,400 | 63,400 | 112,000 | 29,300 | 25,300 | 6,980 | 2,320 | 5,560 |
| 4 | 14,400 | 10,800 | 16,800 | 22,300 | 41,300 | 55,600 | 108,000 | 22,400 | 23,900 | 7,620 | 3,640 | 7,780 |
| 5 | 7,910 | 13,900 | 21,200 | 16,800 | 41,200 | 43,500 | 102,000 | 20,400 | 24,700 | 7,690 | 5,160 | 6,450 |
| 6 | 4,160 | 14,300 | 27,700 | a10,000 | 51,500 | 38,600 | 89,700 | 19,800 | 26,700 | 9,920 | 5,460 | 5,270 |
| 7 | 2,040 | 13,800 | 37,200 | a13,000 | 70,300 | 53,700 | 81,500 | 13,900 | 23,900 | 10,300 | 5,840 | 5,560 |
| 8 | 2,040 | 12,700 | 39,100 | a14,000 | 84,700 | 63,700 | 83,600 | 13,900 | *17,900 | 9,920 | 6,040 | 7,420 |
| 9 | 2,060 | 11,300 | 31,400 | a13,000 | 91,900 | *61,100 | 85,900 | 13,400 | 15,000 | 9,520 | 8,520 | 7,780 |
| 10 | 3,050 | 11,700 | 23,000 | *a15,000 | 88,300 | 55,500 | 80,000 | 12,300 | 13,900 | 7,810 | *8,120 | 7,090 |
| 11 | 4,000 | 7,980 | 20,800 | a17,000 | 63,400 | 52,100 | 74,500 | 9,500 | 18,300 | 7,080 | 5,270 | 6,150 |
| 12 | 2,280 | *4,350 | 22,000 | *a18,000 | 40,900 | 50,400 | 73,100 | 13,800 | 30,200 | *6,550 | 6,450 | 6,450 |
| 13 | 1,310 | 4,720 | 28,000 | a20,000 | a32,000 | 46,600 | 75,500 | 19,700 | 39,700 | 4,860 | 8,780 | 7,780 |
| 14 | 1,510 | 3,420 | 24,700 | *27,700 | *a37,000 | 43,800 | 78,100 | 21,000 | 32,200 | 3,330 | 8,100 | 8,100 |
| 15 | 5,220 | 3,030 | 21,400 | 35,500 | a35,000 | 43,500 | 75,300 | 21,400 | 21,500 | 3,840 | 8,100 | 7,090 |
| 16 | 5,140 | 3,090 | *17,900 | 36,100 | a33,000 | 39,300 | 72,200 | 20,000 | 17,900 | 5,590 | 7,090 | *6,450 |
| 17 | 3,210 | 1,330 | 21,000 | a39,000 | a35,000 | 43,900 | 68,400 | 22,800 | 21,400 | 6,540 | 5,860 | 7,780 |
| 18 | 3,520 | 1,070 | 26,100 | a37,000 | a31,000 | 59,300 | 65,900 | 22,600 | 20,100 | 7,740 | 7,090 | 9,170 |
| 19 | 4,750 | 2,710 | 26,500 | a35,000 | a29,000 | 74,200 | 62,100 | 20,500 | 16,100 | 7,740 | 6,150 | 10,300 |
| 20 | 4,790 | 4,830 | 26,600 | a37,000 | 29,600 | 87,200 | 58,400 | 19,100 | 17,900 | 4,720 | 6,150 | 11,100 |
| 21 | 5,560 | 2,350 | 20,800 | a37,000 | 37,900 | 100,000 | 54,400 | 22,000 | 20,400 | 5,450 | 9,540 | 9,540 |
| 22 | 6,910 | 2,310 | 11,200 | 35,300 | 56,700 | 104,000 | 51,300 | 26,900 | 21,200 | 7,240 | 9,930 | 10,700 |
| 23 | 10,300 | 4,660 | 11,200 | 36,800 | 81,900 | 117,000 | 55,700 | 41,200 | 19,900 | 6,700 | 8,780 | 12,300 |
| 24 | 11,200 | 4,660 | 12,600 | a40,000 | 94,800 | 129,000 | 62,400 | 35,400 | 18,800 | 5,950 | 8,100 | 16,200 |
| 25 | 9,850 | 9,620 | 11,700 | a40,000 | 100,000 | 142,000 | *69,400 | a23,000 | 21,700 | 4,820 | 7,090 | 18,800 |
| 26 | 8,170 | 12,600 | 11,300 | 37,300 | 97,000 | 153,000 | 68,000 | a24,000 | 22,400 | 4,220 | 7,420 | 20,500 |
| 27 | 6,290 | 14,400 | 7,890 | 36,600 | 82,900 | 159,000 | 60,200 | a29,000 | 19,100 | 2,960 | 10,700 | 19,900 |
| 28 | 5,560 | 17,500 | 5,850 | 35,600 | 69,900 | *158,000 | 51,200 | 32,900 | 13,800 | 2,600 | 11,100 | 14,900 |
| 29 | 5,230 | 18,300 | 20,200 | 33,300 | - | 152,000 | 43,600 | 41,000 | 9,400 | 4,550 | 11,100 | 11,100 |
| 30 | 4,750 | 17,700 | 42,800 | 31,900 | -------- | 144,000 | 42,700 | 41,700 | 10,300 | 7,440 | 8,780 | 14,400 |
| 31 | 7,180 | -------- | 61,800 | 35,000 | -------- | 134,000 | -------- | 42,700 | -------- | 4,920 | 6,750 | -------- |
| Total | 201,590 | 258,400 | 699,240 | 929,300 | ‡1,570.4 | ‡2,598.4 | ‡2,247.1 | 781,100 | 643,600 | 205,080 | 220,430 | 291,710 |
| Mean | 6,503 | 8,613 | 22,560 | 29,980 | 56,090 | 83,820 | 74,900 | 25,200 | 21,450 | 6,615 | 7,111 | 9,724 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 94,300 | Min 714 | Mean 17,940 | Mean 19,120 | Cfsm 1.06 | In. 14.36 |
| Water year 1954-55: | Max 159,000 | Min 1,070 | Mean 29,170 | Mean 28,990 | Cfsm 1.60 | In. 21.77 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Great Falls Lake, Lake Cumberland, Dale Hollow, Center Hill, and Old Hickory Reservoirs, furnished by Corps of Engineers and Tennessee Valley Authority.
‡ Expressed in thousands.
a Doubtful or no base or auxiliary gage-height record; discharge estimated on basis of 4 discharge measurements and records for station at Dover, Tenn.

Reservoirs in Cumberland River basin

Lake Cumberland.--Lat 36°52'09", long 85°08'45", in pylon of Wolf Creek Dam on Cumberland River, 10 miles southwest of Jamestown, Russell County, Ky. Drainage area, 5,790 sq mi, approximately. Records available, July 1950 to September 1955 in reports of Geological Survey; April to July 1950 in files of Corps of Engineers. Prior to October 1954, published as Wolf Creek Reservoir. Water-stage recorder. Datum of gage is at mean sea level, Sandy Hook datum. Prior to Dec. 6, 1950, staff gage at same site at datum 545.0 ft higher. Maximum contents during year, 2,482,600 cfs-days Mar. 26 (elevation, 740.50 ft); minimum, 1,023,800 cfs-days Feb. 5 (elevation, 677.87 ft). Maximum contents during period 1950-55, 2,505,800 cfs-days Dec. 23, 1951 (elevation, 741.32 ft); minimum (after first filling), 953,800 cfs-days Jan. 14, 1954 (elevation, 674.08 ft).

Reservoir is formed by earth embankment and concrete gravity dam surmounted by 10 taintor gates 37 ft high by 50 ft wide. Final closure of dam made Aug. 7, 1950. Total capacity at elevation 760.00 ft (top of gates) is 3,070,000 cfs-days, of which 1,056,000 cfs-days above elevation 723.00 ft (crest of spillway) are reserved for flood control and 1,080,000 cfs-days between elevations 673.00 ft (minimum power pool) and 723.00 ft will be used for power production. Figures given herein represent total contents, of which 934,000 cfs-days below elevation 673.00 ft are dead storage. Reservoir is used for flood control, power, and navigation. Records furnished by Corps of Engineers.

Dale Hollow Reservoir.--Lat 36°32'19", long 85°27'05", at Dale Hollow Dam on Obey River, 3 miles east of Celina, Clay County, Tenn., and 7.3 miles upstream from mouth. Drainage area, 935 sq mi. Records available, August 1943 to September 1955. Water-stage recorder. Datum of gage is at mean sea level, Sandy Hook datum. Prior to June 25, 1946, staff gage at same site and datum. Maximum contents during year, 762,300 cfs-days Mar. 23 (elevation, 656.57 ft); minimum, 471,300 cfs-days Dec. 17 (elevation, 634.47 ft). Maximum contents observed during period 1943-55, 780,000 cfs-days Feb. 10, 1950 (elevation, 657.8 ft); minimum observed (after first filling), 428,000 cfs-days Sept. 11, 1944 (elevation, 630.63 ft).

Reservoir is formed by concrete gravity dam. Spillway is equipped with 6 taintor gates each 12 ft high by 60 ft wide. Storage began Aug. 30, 1943, and water in reservoir first reached minimum pool elevation May 7, 1944. Total capacity at elevation 663.0 ft (top of gates) is 860,000 cfs-days of which 178,000 cfs-days between elevations 663.0 ft (top of gates) and 651.0 ft (crest of spillway) is reserved for flood control, and 250,000 cfs-days between elevations 651.0 and 631.0 ft (ordinary minimum pool) is used for power production. Reservoir is used for flood control, navigation, and power. Records furnished by Corps of Engineers.

Great Falls Lake.--Lat 35°48'10", long 85°38'00", at penstock inlet on Collins River, 800 ft southwest of powerhouse of Tennessee Valley Authority, 1.9 miles northwest of Rock Island, Warren County, Tenn., 2.3 miles upstream from mouth, and 2.4 miles upstream from Great Falls Dam on Caney Fork. Drainage area, 1,640 sq mi. Records available, January 1917 to September 1955. Remote indicator gage. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 28,900 cfs-days Dec. 29 (elevation, 806.14 ft); minimum, 8,400 cfs-days Dec. 10 (elevation, 780.59 ft). Maximum 12 p.m. elevation during period 1916-55, 817.48 ft Mar. 23, 1929 (contents not determined); minimum 12 p.m. contents, 1,700 cfs-days Aug. 19, 1918 (elevation, 756.3 ft).

Reservoir is formed by concrete gravity dam. Spillway is equipped with 18 taintor gates each 14 ft high by 25 ft wide. Dam completed and storage began in 1916; dam redesigned and crest raised 35 ft in 1925. Total capacity at elevation 804.9 ft (top of gates) is 27,400 cfs-days, of which 24,900 cfs-days is controlled storage above elevation 762.0 ft (minimum pool). Reservoir is used primarily for power. Records furnished by Tennessee Valley Authority.

Center Hill Reservoir.--Lat 36°05'48", long 85°49'38", at Center Hill Dam on Caney Fork, 10 miles north of Smithville, DeKalb County, 14 miles southeast of Carthage, Smith County (corrected), Tenn., and 26.6 miles upstream from mouth. Drainage area, 2,195 sq mi. Records available, November 1948 to September 1955. Water-stage recorder. Datum of gage is at mean sea level, Sandy Hook datum. Prior to Mar. 14, 1949, staff gage a quarter of a mile upstream at same datum. Maximum contents during year, 841,400 cfs-days Mar. 25 (elevation, 665.52 ft); minimum, 463,300 cfs-days Dec. 17, 20 (elevation, 623.45 ft). Maximum contents during period 1948-55, 1,005,000 cfs-days Feb. 10, 1950 (elevation, 680.6 ft); minimum observed (after first filling), 171,000 cfs-days Dec. 1, 2, 1949 (elevation, 576.1 ft).

Reservoir is formed by concrete dam with earth embankment. Spillway equipped with 8 taintor gates, 37 ft high by 50 ft wide. Closure of dam was made Nov. 27, 1948; water in reservoir first reached minimum pool elevation Jan. 11, 1949. Total capacity at elevation 685.0 ft (top of gates) is 1,055,000 cfs-days, of which 385,000 cfs-days between elevations 685.0 ft (top of gates) and 648.0 ft (crest of spillway) is reserved for flood control, and 248,000 cfs-days between elevations 648.0 ft (crest of spillway) and 618.0 ft (ordinary minimum pool) will be used for power production. Reservoir is used for navigation, flood control, and power. Records furnished by Corps of Engineers.

Old Hickory Reservoir.--Lat 36°17'50", long 86°39'20", at Old Hickory Dam on Cumberland River, 10 miles northeast of Nashville, Davidson County, Tenn., and at mile 216.2. Drainage area, 11,700 sq mi. Records available, June 1954 to September 1955. Staff gage read four times daily. Datum of gage is 408.5 ft above mean sea level, datum of 1929. Maximum contents during year, 112,400 cfs-days Mar. 23 (elevation, 433.4 ft); minimum, 47,800 cfs-days Oct. 7 (elevation, 413.5 ft). Maximum contents during period 1954-55, that of Mar. 23, 1955; minimum (after first filling), 47,500 cfs-days Aug. 23, 1954.

Reservoirs in Cumberland River basin--Continued

Old Hickory Reservoir.--Continued

Reservoir is formed by concrete gravity dam with earth embankment. Spillway is equipped with 6 taintor gates, 41 ft high by 45 ft wide. Closure of dam was made in June 1954 and water in reservoir was raised sufficiently to maintain navigation through the lock. Total capacity at elevation 450.0 ft (maximum allowable pool) is 275,000 cfs-days of which 63,000 cfs-days between elevation 450.0 and 445.0 ft (normal pool) is induced surcharge storage provided to compensate for loss of natural valley storage incurred by construction of the project, and 32,000 cfs-days between elevation 445.0 and 442.0 ft (ordinary minimum pool) will be used for power drawdown. Reservoir is used for navigation and power. Records furnished by Corps of Engineers.

Other reservoirs.--The following reservoir in the Cumberland River basin is described below, but records of contents are not published herein:

Cheatham Reservoir on Cumberland River, 20 miles southeast of Clarksville, Montgomery County, Tenn., with total capacity of 52,000 cfs-days, of which 10,000 cfs-days is controlled storage.

Month-end elevation and contents, water year October 1954 to September 1955

| Date | Lake Cumberland† | | | Dale Hollow Reservoir† | | |
|---|---|---|---|---|---|---|
| | Elevation (feet) | Contents (cfs-days) | Change in contents during month (cfs-days) | Elevation (feet) | Contents (cfs-days) | Change in contents during month (cfs-days) |
| Sept.30..... | 696.74 | 1,401,400 | - | 639.41 | 530,200 | - |
| Oct. 31..... | 692.38 | 1,309,700 | -91,700 | 638.02 | 513,300 | -16,900 |
| Nov. 30..... | 685.14 | 1,163,400 | -146,300 | 635.44 | 482,600 | -30,700 |
| Dec. 31..... | 690.11 | 1,263,000 | +99,600 | 638.80 | 522,800 | +40,200 |
| Calendar year 1954 | - | - | +188,400 | - | - | +74,800 |
| Jan. 31..... | 679.62 | 1,056,700 | -206,300 | 635.96 | 488,700 | -34,100 |
| Feb. 28..... | 703.17 | 1,541,900 | +485,200 | 645.71 | 610,500 | +121,800 |
| Mar. 31..... | 737.61 | 2,401,500 | +859,600 | 655.48 | 746,300 | +135,800 |
| Apr. 30..... | 718.72 | 1,906,900 | -494,600 | 647.44 | 633,500 | -122,800 |
| May 31..... | 712.39 | 1,753,900 | -153,000 | 643.71 | 584,400 | -49,100 |
| June 30..... | 706.84 | 1,624,800 | -129,100 | 643.03 | 575,600 | -8,800 |
| July 31..... | 706.08 | 1,607,500 | -17,300 | 641.23 | 552,800 | -22,800 |
| Aug. 31..... | 701.61 | 1,507,300 | -100,200 | 639.18 | 527,400 | -25,400 |
| Sept.30..... | 695.48 | 1,374,600 | -132,700 | 637.46 | 506,500 | -20,900 |
| Water year 1954-55 | - | - | -26,800 | - | - | -23,700 |

| Date | Great Falls Lake† | | | Center Hill Reservoir† | | |
|---|---|---|---|---|---|---|
| Sept.30..... | 786.36 | 11,700 | - | 634.79 | 554,300 | - |
| Oct. 31..... | 785.61 | 11,200 | -500 | 634.46 | 551,600 | -2,700 |
| Nov. 30..... | 785.73 | 11,300 | +100 | 629.59 | 511,600 | -40,000 |
| Dec. 31..... | 804.75 | 27,300 | +16,000 | 638.50 | 585,800 | +74,200 |
| Calendar year 1954 | - | - | +16,600 | - | - | +120,200 |
| Jan. 31..... | 792.72 | 16,000 | -11,300 | 627.49 | 494,900 | -90,900 |
| Feb. 28..... | 805.72 | 28,400 | +12,400 | 645.24 | 645,200 | +150,300 |
| Mar. 31..... | 805.58 | 28,200 | -200 | 653.32 | 720,100 | +74,900 |
| Apr. 30..... | 804.26 | 26,700 | -1,500 | 639.70 | 596,200 | -123,900 |
| May 31..... | 792.50 | 15,800 | -10,900 | 636.62 | 569,800 | -26,400 |
| June 30..... | 788.73 | 13,200 | -2,600 | 638.48 | 585,600 | +15,800 |
| July 31..... | 786.38 | 11,700 | -1,500 | 637.32 | 575,700 | -9,900 |
| Aug. 31..... | 785.45 | 11,100 | -600 | 638.17 | 583,000 | +7,300 |
| Sept.30..... | 785.30 | 11,000 | -100 | 632.67 | 536,700 | -46,300 |
| Water year 1954-55 | - | - | -700 | - | - | -17,600 |

| Date | Old Hickory Reservoir‡ | | |
|---|---|---|---|
| Sept.30..... | 414.9 | 49,900 | - |
| Oct. 31..... | 414.9 | 49,900 | 0 |
| Nov. 30..... | 415.4 | 50,600 | +700 |
| Dec. 31..... | 422.2 | 64,400 | +13,800 |
| Calendar year 1954 | - | - | - |
| Jan. 31..... | 421.4 | 62,400 | -2,000 |
| Feb. 28..... | 421.1 | 61,600 | -800 |
| Mar. 31..... | 426.3 | 77,600 | +16,000 |
| Apr. 30..... | 420.1 | 59,300 | -18,300 |
| May 31..... | 420.4 | 60,000 | +700 |
| June 30..... | 420.2 | 59,500 | -500 |
| July 31..... | 420.7 | 60,700 | +1,200 |
| Aug. 31..... | 420.3 | 59,700 | -1,000 |
| Sept.30..... | 417.8 | 54,700 | -5,000 |
| Water year 1954-55 | - | - | +4,800 |

† Elevation at 12 p.m.
‡ Elevation at 12 p.m. interpolated from 7 p.m. and 1 a.m. staff-gage readings.

## French Broad River at Rosman, N. C.

Location.--Lat 35°08'32", long 82°49'28", on left bank at upstream side of bridge on U. S. Highway 178 at Rosman, Transylvania County, 1.0 mile upstream from East Fork and at mile 216.4.

Drainage area.--67.9 sq mi.

Records available.--May 1907 to June 1909, January 1936 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,173.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to June 30, 1909, staff gage at site 500 ft downstream at different datum. Jan. 1, 1936, to July 6, 1937, wire-weight gage at present site and datum.

Average discharge.--20 years (1907-8, 1936-55), 232 cfs.

Extremes.--Maximum discharge during year, 2,530 cfs May 22 (gage height, 7.47 ft); minimum, 34 cfs Oct. 5 (gage height, 1.55 ft).
1907-9, 1936-55: Maximum discharge, 9,410 cfs Aug. 30 1940 (gage height, 11.86 ft), from rating curve extended above 3,300 cfs on basis of slope-area determination of peak flow; minimum, 23 cfs Jan. 3, 1940 (gage height, 1.51 ft), result of freezeup; minimum daily, 37 cfs Sept. 25-28, Oct. 5, 6, 25, 26, 1954.
Maximum stage known, 13.9 ft in July 1916, from floodmarks.

Remarks.--Records excellent except those for periods of ice effect, which are good.

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1936(M), 1938(M), 1939.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.5 | 25 | 2.8 | 365 |
| 1.7 | 60 | 3.0 | 432 |
| 1.9 | 100 | 4.0 | 792 |
| 2.1 | 150 | 5.0 | 1,250 |
| 2.4 | 238 | 5.4 | 1,460 |

Discharge, in cubic feet per second, water year October 1953 to September 1954

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 44 | 40 | *58 | 217 | *b70 | *167 | *184 | 193 | *278 | 147 | *540 | *142 |
| 2 | 46 | 42 | 55 | 175 | 122 | 153 | 193 | *190 | 260 | 142 | 425 | 137 |
| 3 | 40 | *42 | 53 | 150 | 117 | 147 | 260 | 181 | 247 | 137 | 310 | 134 |
| 4 | *39 | 44 | 53 | 134 | 96 | 145 | 202 | 175 | 232 | 156 | 269 | 129 |
| 5 | 37 | 64 | 84 | *122 | 94 | 140 | 190 | 175 | 226 | 167 | 235 | 127 |
| 6 | 37 | 47 | 134 | 110 | 1,250 | 142 | 371 | 167 | 226 | 199 | 226 | 124 |
| 7 | 39 | 42 | 73 | 100 | 635 | 137 | 459 | 161 | 238 | *184 | 220 | 119 |
| 8 | 40 | 40 | b65 | 94 | 368 | 127 | 316 | 156 | 226 | 164 | 246 | 140 |
| 9 | 40 | 40 | 90 | 92 | 278 | 124 | 275 | 150 | 238 | 170 | 332 | 129 |
| 10 | 40 | 40 | 75 | 105 | 238 | 129 | 254 | 150 | 214 | 156 | 238 | 119 |
| 11 | 39 | 40 | 64 | 124 | 250 | 127 | 595 | 145 | 303 | 240 | 208 | 117 |
| 12 | 39 | 39 | 62 | 100 | 199 | 124 | 442 | 150 | 226 | 435 | 196 | 117 |
| 13 | 39 | 39 | 98 | 94 | b185 | 142 | 648 | 267 | 202 | 481 | 178 | 112 |
| 14 | 44 | 39 | 85 | 87 | b175 | 190 | 743 | 229 | 187 | 329 | 250 | 110 |
| 15 | 93 | 40 | 71 | 90 | 161 | 150 | 522 | 244 | 178 | 272 | 373 | 105 |
| 16 | 47 | 116 | 66 | 87 | 156 | 147 | 432 | 373 | 172 | 238 | 313 | 100 |
| 17 | 44 | 80 | 66 | 83 | 153 | 142 | 378 | 522 | 164 | 181 | 244 | 98 |
| 18 | 42 | 55 | 137 | 81 | 142 | 150 | 345 | 319 | 158 | 205 | 217 | 96 |
| 19 | 40 | 62 | 85 | 107 | 132 | 170 | 322 | 266 | 226 | 190 | 232 | 96 |
| 20 | 40 | 85 | 71 | 83 | 127 | 161 | 297 | 238 | 262 | 187 | 232 | 94 |
| 21 | 40 | 56 | b65 | 83 | 124 | 176 | 284 | 720 | 291 | 260 | 226 | 92 |
| 22 | 40 | 49 | b63 | 90 | 163 | 904 | 272 | 1,410 | 254 | 214 | 202 | 90 |
| 23 | 39 | 62 | b62 | 81 | 380 | 375 | 260 | 978 | 241 | 208 | 214 | 87 |
| 24 | 39 | 62 | 60 | 79 | 263 | 294 | 288 | 621 | 223 | 208 | 190 | 92 |
| 25 | 37 | 53 | 56 | b78 | 232 | 269 | 257 | 504 | 202 | 208 | 170 | 167 |
| 26 | 37 | 49 | 56 | b78 | 202 | 306 | 238 | 520 | 190 | 187 | 161 | 117 |
| 27 | 39 | 51 | 56 | 77 | 187 | 247 | 229 | 480 | 175 | 170 | 158 | 98 |
| 28 | 39 | 74 | 157 | b75 | 175 | 229 | 217 | 401 | 172 | 192 | 150 | 96 |
| 29 | 47 | 140 | *1,430 | b74 | - | 214 | 211 | 358 | 161 | 237 | 147 | 94 |
| 30 | 42 | 68 | 738 | b72 | ------- | 199 | 199 | 326 | 156 | 330 | 142 | 94 |
| 31 | 39 | ---- | 297 | b70 | ------- | 193 | ------- | 300 | ------- | 272 | 158 | ------- |
| Total | 1,307 | 1,700 | 4,585 | 3,092 | 6,674 | 6,320 | 9,883 | 11,069 | 6,528 | 6,866 | 7,402 | 3,372 |
| Mean | 42.2 | 56.7 | 148 | 99.7 | 238 | 204 | 329 | 357 | 218 | 221 | 239 | 112 |
| Cfsm | 0.622 | 0.835 | 2.18 | 1.47 | 3.51 | 3.00 | 4.85 | 5.26 | 3.21 | 3.25 | 3.52 | 1.65 |
| In. | 0.72 | 0.93 | 2.51 | 1.69 | 3.66 | 3.46 | 5.41 | 6.06 | 3.58 | 3.76 | 4.05 | 1.85 |

Calendar year 1954: Max 1,750 Min 37 Mean 161 Cfsm 2.37 In. 32.29
Water year 1954-55: Max 1,430 Min 37 Mean 188 Cfsm 2.77 In. 37.68

Peak discharge (base, 2,000 cfs).--Dec. 29 (10 p.m.) 2,500 cfs (7.41 ft); Feb. 6 (5 p.m.) 2,310 cfs (7.07 ft); Mar. 22 (4:30 a.m.) 2,040 cfs (6.55 ft); May 22 (7 p.m.) 2,530 cfs (7.47 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## French Broad River at Calvert, N. C.

Location.--Lat 35°08'55", long 82°47'59", on right bank at downstream side of highway bridge, 0.8 mile southeast of railroad station at Calvert, Transylvania County, 1.4 miles downstream from East Fork, and at mile 214.0.

Drainage area.--103 sq mi.

Records available.--October 1924 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,154.63 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to July 5, 1932, staff gage and July 5, 1932, to May 17, 1934, chain gage, at same site and datum.

Average discharge.--31 years, 344 cfs.

Extremes.--Maximum discharge during year, 3,580 cfs Feb. 6 (gage height, 6.97 ft); minimum, 54 cfs Oct. 5 (gage height, 0.17 ft).

1924-55: Maximum discharge, 16,100 cfs Aug. 15, 1928 (gage height, 13.0 ft), from rating curve extended above 3,600 cfs on basis of slope-area determination at gage height 11.66 ft; minimum, 54 cfs Sept. 17-23, 1925, Oct. 5, 1954; minimum gage height, that of Oct. 5, 1954.

Maximum stage known, about 13½ ft in July 1916, from French Broad River profile by Tennessee Valley Authority.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Occasional regulation by several small recreational lakes on East and Middle Forks after October 1954.

Revisions (water years).--WSP 643: 1925(m). WSP 803: 1924-26, 1928-29, 1930(M), 1931-35. WSP 823: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.2 | 58 | 1.6 | 490 |
| .4 | 84 | 3.0 | 705 |
| .7 | 144 | 3.0 | 1,280 |
| 1.0 | 228 | 4.0 | 1,820 |
| 1.3 | 345 | 5.0 | 2,380 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 70 | 65 | *100 | a350 | *119 | *263 | *267 | 286 | *386 | 225 | *770 | *212 |
| 2 | 66 | 69 | 94 | a280 | 199 | 246 | 275 | *279 | 368 | 215 | 639 | 209 |
| 3 | 60 | *68 | 87 | a240 | 187 | 235 | 377 | 271 | 350 | 209 | 465 | 202 |
| 4 | *58 | 69 | 84 | a220 | 159 | a230 | 290 | 267 | 336 | 252 | 396 | 196 |
| 5 | 59 | 102 | 153 | *a200 | 157 | a220 | 271 | 263 | 319 | *238 | 363 | 193 |
| 6 | 58 | 76 | 228 | 184 | 1,960 | a230 | 530 | 252 | 324 | 282 | 345 | 190 |
| 7 | 59 | 70 | 128 | 170 | 1,090 | a220 | 661 | 242 | 350 | 256 | 328 | 184 |
| 8 | 60 | 68 | b105 | 162 | 590 | a205 | 455 | 238 | 324 | 256 | 337 | 202 |
| 9 | 60 | 68 | 167 | 159 | 440 | a200 | 396 | 232 | 332 | 260 | 450 | 199 |
| 10 | 59 | 66 | 137 | 176 | 368 | a210 | 363 | 228 | 311 | 271 | 368 | 184 |
| 11 | 58 | 66 | 115 | 215 | 406 | a205 | 939 | 225 | 455 | 439 | 298 | 176 |
| 12 | 58 | 65 | 108 | 176 | b310 | a200 | 678 | 228 | 319 | 676 | 282 | 179 |
| 13 | 58 | 65 | 170 | 162 | b280 | a230 | 980 | 424 | 290 | 759 | 260 | 176 |
| 14 | 62 | 65 | 146 | 149 | b270 | a300 | 1,200 | 354 | 275 | 556 | 417 | 170 |
| 15 | 190 | 66 | 123 | 154 | 263 | a240 | 813 | 396 | 260 | 435 | 570 | 162 |
| 16 | 77 | 214 | 111 | 149 | 249 | a230 | 661 | 584 | 252 | 373 | 460 | 159 |
| 17 | 68 | 134 | 113 | 141 | 252 | a220 | 573 | 801 | 242 | 328 | 363 | 154 |
| 18 | 66 | 92 | 222 | 139 | 235 | a240 | 515 | 485 | 238 | 324 | 332 | 157 |
| 19 | 64 | 106 | 149 | 159 | 225 | a270 | 480 | 416 | 341 | 298 | 341 | 182 |
| 20 | 64 | 151 | 123 | 139 | 215 | a260 | 445 | 377 | 411 | 324 | 341 | 179 |
| 21 | 64 | 97 | b115 | 137 | 212 | a290 | 425 | 928 | 406 | 382 | 328 | 146 |
| 22 | 64 | 86 | b110 | 154 | 261 | a1,500 | 406 | 1,760 | 354 | 328 | 298 | 139 |
| 23 | 64 | 100 | 106 | 141 | 577 | 546 | 382 | 1,430 | 345 | 306 | 298 | 139 |
| 24 | 63 | 104 | 104 | 132 | 401 | 425 | 435 | 915 | 315 | 311 | 275 | 141 |
| 25 | 63 | 87 | 94 | 128 | 359 | 377 | 382 | 747 | 306 | 306 | 252 | 263 |
| 26 | 63 | 81 | a94 | b125 | 319 | 440 | 354 | 706 | 279 | 282 | 242 | 167 |
| 27 | 63 | 84 | a94 | b120 | 298 | 354 | 336 | 672 | 263 | 263 | 235 | 154 |
| 28 | 64 | 121 | a200 | b118 | 279 | 328 | 324 | 546 | 275 | 330 | 222 | 154 |
| 29 | 77 | 219 | a2,300 | b117 | - | 306 | 306 | 495 | 256 | 376 | 222 | 151 |
| 30 | 68 | 115 | a1,200 | b115 | ------- | 286 | 290 | 450 | 249 | 517 | 215 | 151 |
| 31 | 65 | - | a460 | b115 | ------- | 279 | ------- | 416 | ------- | 411 | 228 | ----- |
| Total | 2,092 | 2,839 | 7,540 | 5,126 | 10,680 | 9,785 | 14,809 | 15,913 | 9,531 | 10,788 | 10,940 | 5,270 |
| Mean | 67.5 | 94.6 | 243 | 165 | 381 | 316 | 494 | 513 | 318 | 348 | 353 | 176 |
| Cfsm | 0.655 | 0.918 | 2.36 | 1.60 | 3.70 | 3.07 | 4.80 | 4.98 | 3.09 | 3.38 | 3.43 | 1.71 |
| In. | 0.76 | 1.03 | 2.72 | 1.85 | 3.86 | 3.53 | 5.35 | 5.75 | 3.44 | 3.90 | 3.95 | 1.90 |

Calendar year 1954: Max 2,800 Min 58 Mean 258 Cfsm 2.50 In. 34.04
Water year 1954-55: Max 2,300 Min 58 Mean 289 Cfsm 2.81 In. 38.04

Peak discharge (base, 2,500 cfs).--Dec. 29 (about 11:30 p.m.) 3,420 cfs (6.74 ft); Feb. 6 (5:30 p.m.) 3,580 cfs (6.97 ft); Mar. 22 (about 6 a.m.) 2,560 cfs (5.34 ft); May 22 (8 p.m.) 2,960 cfs (6.03 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for French Broad River at Rosman.

b Stage-discharge relation affected by ice.

## Catheys Creek near Brevard, N. C.

Location.--Lat 35°12'40", long 82°47'00", on right bank 1,200 ft downstream from Kuykendall Creek, 0.9 mile upstream from U. S. Highway 64, 2.1 miles upstream from mouth, and 3.2 miles southwest of Brevard, Transylvania County.

Drainage area.--11.7 sq mi.

Records available.--October 1944 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,230.42 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 2, 1946, at site 0.9 mile downstream at datum 57.79 ft lower. Oct. 2, 1946, to Jan. 9, 1947, at site 0.8 mile downstream from present gage at datum 55.11 ft lower. Jan. 10, 1947, to Oct. 3, 1951, at site 40 ft upstream from present site at present datum.

Average discharge.--11 years, 36.1 cfs.

Extremes.--Maximum discharge during year, 383 cfs Dec. 29 (gage height, 2.22 ft); minimum, 6.3 cfs Oct. 4, 5 (gage height, 0.17 ft).

1944-55: Maximum discharge, 1,260 cfs Mar. 11, 1952, from rating curve extended above 500 cfs by logarithmic plotting; maximum gage height, 4.35 ft July 12, 1949; minimum discharge, 6.3 cfs Sept. 28-30, Oct. 4, 5, 1954 (gage height, 0.17 ft).

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.1 | 3.6 | 0.8 | 54 |
| .2 | 7.4 | 1.0 | 83 |
| .3 | 12 | 1.3 | 136 |
| .4 | 18 | 1.7 | 223 |
| .6 | 32 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.0 | 6.6 | *8.8 | 25 | *12 | *23 | *29 | 30 | *37 | 23 | 75 | *23 |
| 2 | 7.0 | 7.0 | 8.8 | 21 | 18 | 22 | 33 | *30 | 36 | 23 | *74 | 22 |
| 3 | 7.0 | *7.0 | 8.8 | 18 | 16 | 22 | 38 | 30 | 34 | 22 | 50 | 22 |
| 4 | 6.6 | 7.9 | 8.3 | 18 | 15 | 21 | 31 | 30 | 32 | 22 | 42 | 21 |
| 5 | *6.6 | 11 | 15 | *16 | 15 | 21 | 30 | 29 | 32 | 26 | 37 | 21 |
| 6 | 7.0 | 7.9 | 18 | 15 | 153 | 21 | 58 | 27 | 34 | 25 | 34 | 21 |
| 7 | 7.9 | 7.4 | 10 | 14 | 80 | 19 | 57 | 26 | 35 | *25 | 34 | 20 |
| 8 | 7.9 | 7.0 | 9.2 | 14 | 44 | 19 | 43 | 26 | 33 | 24 | 37 | 20 |
| 9 | 7.4 | 7.0 | 13 | 14 | 34 | 19 | 38 | 25 | 33 | 35 | 35 | 21 |
| 10 | 6.6 | 7.0 | 10 | 16 | 30 | 19 | 37 | 25 | 31 | 30 | 31 | 20 |
| 11 | 6.6 | 7.0 | 9.2 | 19 | 30 | 19 | 86 | 24 | 43 | 38 | 30 | 19 |
| 12 | 6.6 | 7.0 | 8.8 | 15 | b25 | 21 | 62 | 26 | 33 | 55 | 29 | 20 |
| 13 | 6.6 | 7.0 | 15 | 14 | b23 | 21 | 85 | 45 | 30 | 80 | 26 | 19 |
| 14 | 6.6 | 7.0 | 12 | 13 | 22 | 27 | 102 | 35 | 29 | 57 | 42 | 19 |
| 15 | 18 | 7.0 | 10 | 13 | 21 | 23 | 72 | 40 | 28 | 44 | 62 | 18 |
| 16 | 7.4 | 14 | b9.2 | 13 | 21 | 23 | 61 | 54 | 27 | 37 | 48 | 18 |
| 17 | 7.4 | 9.2 | b9.7 | 13 | 20 | 22 | 53 | 64 | 26 | 32 | 38 | 17 |
| 18 | 7.0 | 8.3 | 19 | 13 | 19 | 23 | 49 | 43 | 26 | 30 | 34 | 17 |
| 19 | 7.0 | 9.2 | 12 | 14 | 19 | 26 | 46 | 38 | 40 | 29 | 31 | 17 |
| 20 | 6.6 | 12 | 9.7 | 13 | 18 | 24 | 43 | 34 | 35 | 30 | 30 | 16 |
| 21 | 6.6 | 7.9 | 9.2 | 13 | 18 | 26 | 41 | 92 | 35 | 30 | 30 | 16 |
| 22 | 6.6 | 7.4 | 9.0 | 14 | 24 | *142 | 39 | 111 | 39 | 29 | 28 | 16 |
| 23 | 6.6 | 9.2 | 8.8 | 13 | 45 | 57 | 38 | 101 | 38 | 26 | 27 | 16 |
| 24 | 6.6 | 8.8 | 8.8 | 13 | 33 | 43 | 41 | 71 | 33 | 26 | 26 | 16 |
| 25 | 6.6 | 7.9 | 8.3 | 12 | 30 | 38 | 38 | 58 | 30 | 28 | 25 | 28 |
| 26 | 6.6 | 7.4 | 8.3 | b12 | 26 | 44 | 36 | 64 | 29 | 26 | 24 | 19 |
| 27 | 6.6 | 7.9 | 7.9 | 12 | 25 | 37 | 34 | 57 | 28 | 25 | 24 | 18 |
| 28 | 6.6 | 15 | 27 | 12 | 24 | 34 | 33 | 49 | 28 | 50 | 23 | 17 |
| 29 | 8.8 | 16 | *207 | 12 | - | 31 | 32 | 44 | 26 | 40 | 23 | 17 |
| 30 | 7.4 | 9.7 | 84 | b12 | ------- | 30 | 31 | 41 | 25 | 43 | 23 | 18 |
| 31 | 6.6 | ... | 34 | b12 | ------- | 29 | ------- | 39 | ------- | 41 | 25 | ... |
| Total | 226.4 | 260.7 | 636.8 | 448 | 860 | 946 | 1,416 | 1,408 | 965 | 1,051 | 1,097 | 572 |
| Mean | 7.30 | 8.69 | 20.5 | 14.5 | 30.7 | 30.5 | 47.2 | 45.4 | 32.2 | 33.9 | 35.4 | 19.1 |
| Cfsm | 0.624 | 0.743 | 1.75 | 1.24 | 2.62 | 2.61 | 4.03 | 3.88 | 2.75 | 2.90 | 3.03 | 1.63 |
| In. | 0.72 | 0.83 | 2.02 | 1.42 | 2.73 | 3.01 | 4.50 | 4.48 | 3.07 | 3.34 | 3.49 | 1.82 |

Calendar year 1954: Max 242 Min 6.6 Mean 26.9 Cfsm 2.30 In. 31.20
Water year 1954-55: Max 207 Min 6.6 Mean 27.1 Cfsm 2.32 In. 31.43

Peak discharge (base, 250 cfs).--Dec. 29 (9 p.m.) 383 cfs (2.22 ft); Feb. 6 (4:30 p.m.) 283 cfs (1.92 ft); Mar. 22 (4 a.m.) 298 cfs (1.97 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Davidson River near Brevard, N. C.

Location.--Lat 35°16'23", long 82°42'21", on right bank 150 ft upstream from State Highway 280, 2.0 miles upstream from mouth, 2.1 miles downstream from Avery Creek, and 3.3 miles northeast of Brevard, Transylvania County.

Drainage area.--40.4 sq mi.

Records available.--December 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,115.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Apr. 4, 1929, staff gage and Apr. 4, 1929, to May 17, 1934, chain gage, at site 50 ft downstream at same datum.

Average discharge.--34 years (1921-55), 126 cfs.

Extremes.--Maximum discharge during year, 1,760 cfs Dec. 29 (gage height, 4.44 ft); minimum, 13 cfs Oct. 11 (gage height, 0.31 ft).
1920-55: Maximum discharge, 8,400 cfs Aug. 15, 1928 (gage height, 11.8 ft), from rating curve extended above 1,300 cfs; minimum, that of Oct. 11, 1954.

Remarks.--Records excellent except those for periods of ice effect, which are good.

Revisions (water years).--WSP 823: Drainage area. WSP 1336: 1921, 1922(M), 1923, 1924-25(M), 1926, 1927(M), 1929-32(M).

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 29
Mar. 22 to May 21

| | | | |
|---|---|---|---|
| 0.3 | 12 | 1.5 | 249 |
| .4 | 21 | 2.0 | 405 |
| .6 | 45 | 2.5 | 595 |
| .8 | 79 | 3.0 | 825 |
| 1.0 | 120 | 3.5 | 1,100 |

Nov. 30 to Mar. 21

| | | | |
|---|---|---|---|
| 0.4 | 23 | 1.0 | 126 |
| .6 | 48 | 1.5 | 251 |
| .8 | 84 | 2.0 | 405 |

Note.--Same as preceding table above 2.0 ft.

May 22 to Sept. 30

| | | | |
|---|---|---|---|
| 0.5 | 30 | 1.5 | 247 |
| .6 | 43 | 2.0 | 405 |
| .8 | 75 | 2.5 | 595 |
| 1.0 | 115 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 16 | 28 | 117 | b35 | 96 | 95 | 97 | 122 | 73 | 244 | 73 |
| 2 | 17 | 18 | 26 | 94 | 87 | *86 | 103 | 95 | *113 | 70 | *232 | *72 |
| 3 | 15 | 18 | *24 | 78 | *63 | 82 | 156 | *89 | 109 | 72 | 182 | 70 |
| 4 | 14 | 18 | b22 | *71 | 53 | 80 | *112 | 87 | 104 | 90 | 153 | 68 |
| 5 | 14 | *31 | 36 | 63 | 51 | 76 | 105 | 85 | 102 | 86 | 133 | 66 |
| 6 | 16 | 19 | 76 | 60 | 636 | 78 | 222 | 83 | 111 | 122 | 142 | 65 |
| 7 | 15 | 18 | b34 | 53 | 336 | 74 | 243 | 79 | 111 | 124 | 143 | 63 |
| 8 | 16 | 18 | b32 | 51 | 193 | 69 | 176 | 77 | 102 | *138 | 174 | 61 |
| 9 | 15 | 17 | 44 | 50 | 147 | 67 | 148 | 75 | 109 | 126 | 193 | 63 |
| 10 | 15 | 17 | 41 | 56 | 124 | 69 | 136 | 75 | 98 | 111 | 148 | 61 |
| 11 | 14 | 17 | 32 | 73 | 131 | 69 | 303 | 74 | 138 | 176 | 129 | 58 |
| 12 | 14 | 16 | 30 | 55 | b100 | 67 | 235 | 85 | 100 | 307 | 122 | 56 |
| 13 | 14 | 16 | 65 | 51 | b95 | 71 | 322 | 151 | 90 | 299 | 104 | 56 |
| 14 | 14 | 16 | 48 | 45 | b90 | 92 | 398 | 134 | 86 | 241 | 149 | 55 |
| 15 | 76 | 16 | 38 | 48 | b85 | 78 | 278 | 223 | 81 | 187 | 226 | 54 |
| 16 | 21 | 48 | 33 | 47 | 84 | 78 | 229 | 240 | 79 | 156 | 196 | 50 |
| 17 | 18 | 33 | 32 | 44 | 84 | 76 | 199 | 241 | 75 | 146 | 148 | 49 |
| 18 | 18 | 23 | 67 | 44 | 76 | 82 | 178 | 166 | 73 | 150 | 124 | 48 |
| 19 | 18 | 30 | 44 | 51 | 73 | 96 | 166 | 141 | 143 | 148 | 122 | 46 |
| 20 | 17 | 38 | b34 | 44 | 71 | 92 | 153 | 125 | 150 | 163 | 122 | 43 |
| 21 | 17 | 23 | b32 | 42 | 69 | 98 | 146 | 354 | 136 | 163 | 109 | 42 |
| 22 | 17 | 20 | b30 | 48 | 87 | 519 | 138 | 580 | 131 | 140 | 109 | 42 |
| 23 | 17 | 24 | b29 | 44 | 222 | 210 | 129 | 464 | 138 | 122 | 104 | 40 |
| 24 | 17 | 26 | 28 | 41 | 156 | 158 | 134 | 299 | 124 | 109 | 96 | 42 |
| 25 | 16 | 21 | b28 | b40 | 138 | 141 | 125 | 235 | 107 | 111 | 86 | 95 |
| 26 | 16 | 19 | b27 | b38 | 119 | 171 | 116 | 227 | 96 | 104 | 83 | 52 |
| 27 | 16 | 20 | 28 | 41 | 111 | 132 | 114 | 210 | 90 | 98 | 81 | 48 |
| 28 | 16 | 38 | 117 | 40 | 102 | 120 | 107 | 174 | 88 | 134 | 79 | 48 |
| 29 | 20 | 66 | 883 | b36 | - | 114 | 103 | 158 | 83 | 156 | 79 | 46 |
| 30 | 18 | 34 | 411 | b35 | ------- | 105 | 101 | 143 | 79 | 182 | 77 | 46 |
| 31 | 17 | ------- | 163 | b35 | ------- | 101 | ------- | 131 | ------- | 185 | 81 | ------- |
| Total | 563 | 734 | 2,562 | 1,635 | 3,598 | 3,447 | 5,170 | 5,397 | 3,168 | 4,489 | 4,170 | 1,678 |
| Mean | 18.2 | 24.5 | 82.6 | 52.7 | 128 | 111 | 172 | 174 | 106 | 145 | 135 | 55.9 |
| Cfsm | 0.450 | 0.606 | 2.04 | 1.30 | 3.17 | 2.75 | 4.26 | 4.31 | 2.62 | 3.59 | 3.34 | 1.38 |
| In. | 0.52 | 0.68 | 2.36 | 1.51 | 3.31 | 3.17 | 4.76 | 4.97 | 2.92 | 4.13 | 3.84 | 1.54 |

Calendar year 1954: Max 1,000 Min 14 Mean 81.4 Cfsm 2.01 In. 27.37
Water year 1954-55: Max 883 Min 14 Mean 100 Cfsm 2.48 In. 33.71

Peak discharge (base, 1,000 cfs).--Dec. 29 (10 p.m.) 1,760 cfs (4.44 ft); Feb. 6 (3:30 p.m.) 1,310 cfs (3.83 ft); Mar. 22 (4 a.m.) 1,210 cfs (3.69 ft); May 22 (6:30 p.m.) 1,030 cfs (3.38 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Little River near Penrose, N. C.

Location.--Lat 35°13'23", long 82°38'07", on left bank 0.4 mile downstream from Cascade Lake Dam, 1.2 miles upstream from Hart Branch, 2.2 miles upstream from Crab Creek, and 3.3 miles south of Penrose, Transylvania County.

Drainage area.--41.4 sq mi.

Records available.--October 1942 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,099.60 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 146 cfs.

Extremes.--Maximum discharge during year, 1,710 cfs Dec. 30 (gage height, 6.73 ft); minimum, 0.7 cfs Nov. 13-15 (gage height, 0.28 ft); minimum daily, 0.7 cfs Nov. 13, 14.
1942-55: Maximum discharge, 3,280 cfs Mar. 11, 1952 (gage height, 10.72 ft); minimum, 0.3 cfs Oct. 24, 1943, Oct. 5, 1947; minimum gage height, 0.16 ft Oct. 5, 1947; minimum daily discharge, 0.3 cfs Oct. 24, 1943.
Floods of July 1916 and August 1928 reached stages of 14 and 13½ ft, respectively, from flood profiles by Tennessee Valley Authority.

Remarks.--Records excellent. Considerable diurnal fluctuation and regulation at low flow by Cascade Lake (capacity, about 500 cfs-days).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.2 | 0.3 | 1.0 | 35 |
| .3 | .9 | 1.5 | 105 |
| .4 | 2.3 | 2.0 | 215 |
| .5 | 4.6 | 3.0 | 507 |
| .6 | 7.9 | 4.7 | 1,030 |
| .8 | 18 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30 | *26 | 60 | 196 | 60 | 129 | 136 | 70 | 136 | 118 | 113 | 73 |
| 2 | 1.4 | 30 | *60 | 157 | *60 | *131 | 130 | 119 | 133 | 60 | *136 | 42 |
| 3 | 1.4 | 31 | 60 | 138 | 60 | 131 | 90 | 136 | 131 | 63 | 136 | 2.8 |
| 4 | 24 | 31 | 60 | 136 | 60 | 129 | *113 | *106 | 131 | 78 | 136 | 2.8 |
| 5 | 34 | 24 | 59 | 133 | 59 | 96 | 136 | 69 | 129 | 131 | 117 | 52 |
| 6 | 34 | .8 | 57 | *129 | 593 | 64 | 133 | 72 | 129 | 136 | 62 | *73 |
| 7 | 25 | .8 | 57 | 129 | 772 | 64 | 146 | 101 | 129 | 98 | 63 | 72 |
| 8 | 15 | 24 | 57 | 129 | 330 | 64 | 177 | 98 | 125 | 64 | 104 | 84 |
| 9 | 1.0 | 34 | 57 | 92 | 232 | 63 | 155 | 120 | 125 | 63 | 97 | 45 |
| 10 | 1.0 | 35 | 57 | 62 | 191 | 63 | 144 | 126 | 125 | 66 | 63 | 4.6 |
| 11 | 21 | 35 | 57 | 62 | 208 | 63 | 388 | 70 | 125 | *122 | 62 | 4.6 |
| 12 | 29 | 27 | 57 | 62 | 177 | 64 | 416 | 70 | 125 | 136 | 62 | 50 |
| 13 | 28 | .7 | 54 | 62 | 150 | 64 | 449 | 121 | 110 | 136 | 62 | 61 |
| 14 | 27 | .7 | 36 | 62 | 142 | 105 | 696 | 146 | 96 | 136 | 62 | 52 |
| 15 | 19 | 26 | 57 | 62 | 138 | 133 | 408 | 235 | 63 | 136 | 90 | 50 |
| 16 | 1.6 | 38 | 57 | 62 | 138 | 131 | 299 | 210 | 63 | 100 | 96 | 50 |
| 17 | 1.1 | 38 | 57 | 62 | 136 | 101 | 247 | 285 | 63 | 66 | 63 | 28 |
| 18 | 23 | 39 | 57 | 62 | 133 | 63 | 218 | 205 | 32 | 66 | 63 | 3.0 |
| 19 | 33 | 33 | 57 | 95 | 131 | 61 | 201 | 168 | 58 | 107 | 60 | 45 |
| 20 | 29 | 40 | 59 | 131 | 133 | 64 | 184 | 155 | 208 | 129 | 62 | 51 |
| 21 | 27 | .8 | 59 | 128 | 131 | 109 | 173 | 175 | 238 | 136 | 58 | 51 |
| 22 | 20 | 55 | 59 | 63 | 131 | 236 | 161 | 468 | 151 | 100 | 62 | 51 |
| 23 | .9 | 57 | 59 | 63 | 131 | 203 | 155 | 502 | 56 | 66 | 62 | 43 |
| 24 | 4.9 | 57 | 59 | 60 | 131 | 161 | 160 | 306 | 143 | 66 | 62 | 22 |
| 25 | 22 | 57 | 59 | 60 | 131 | 144 | 157 | 257 | 174 | 66 | 62 | 2.3 |
| 26 | 31 | 57 | 54 | 60 | 131 | 155 | 144 | 214 | 168 | 107 | 45 | 28 |
| 27 | 29 | 57 | 56 | 57 | 131 | 140 | 142 | 201 | 140 | 116 | 3.2 | 40 |
| 28 | 29 | 53 | 57 | 60 | 129 | 140 | 142 | 177 | 138 | 66 | 8.2 | 40 |
| 29 | 23 | 57 | 629 | 60 | - | 138 | 140 | 161 | 136 | 66 | 72 | 40 |
| 30 | 1.4 | 61 | 1,010 | 60 | ------- | 136 | 140 | 150 | 136 | 66 | 72 | 40 |
| 31 | 1.1 | -- -- | 298 | 60 | ------- | 136 | ------- | 140 | ------- | 66 | 73 | ------ |
| Total | 567.8 | 1,025.8 | 3,551 | 2,754 | 4,949 | 3,481 | 6,380 | 5,433 | 3,716 | 2,932 | 2,288.4 | 1,203.1 |
| Mean | 18.3 | 34.2 | 115 | 88.8 | 177 | 112 | 213 | 175 | 124 | 94.6 | 73.8 | 40.1 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 1,440 Min 0.7 Mean 106 Cfsm 2.56 In. 34.90
Water year 1954-55: Max 1,010 Min 0.7 Mean 105 Cfsm 2.54 In. 34.39

Peak discharge (base, 800 cfs).--Dec. 30 (1 a.m.) 1,710 cfs (6.73 ft); Feb. 6 (6:30 p.m.) 1,420 cfs (5.89 ft); Apr. 14 (6:30 a.m.) 816 cfs (4.00 ft).
* Discharge measurement made on this day.

## Crab Creek near Penrose, N. C.

Location.--Lat 35°14'02", long 82°36'39", on left bank 0.4 mile downstream from Henderson County line, 1.6 miles upstream from mouth, and 3.0 miles southeast of Penrose, Transylvania County.

Drainage area.--10.9 sq mi.

Records available.--October 1942 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,107.43 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 28.4 cfs.

Extremes.--Maximum discharge during year, 359 cfs Feb. 6 (gage height, 4.18 ft); minimum observed, 4.9 cfs Oct. 5, 13 (gage height, 0.33 ft).
1942-55: Maximum discharge, 1,500 cfs Mar. 11, 1952 (gage height, 7.57 ft), from rating curve extended above 450 cfs on basis of channel conveyance study of peak flow; minimum not recorded, minimum daily, 4.8 cfs Sept. 29, 1954.
Flood of July 1916 reached a stage of about 10½ ft, from flood profile by Tennessee Valley Authority.

Remarks.--Records excellent except those for periods of ice effect or doubtful or no gage-height record, which are good. Small diversion for irrigation above station. Slight regulation by two small recreation ponds after October 1951 (combined capacity, 7.44 cfs-days).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.3 | 4.0 | 1.0 | 41 |
| .4 | 7.0 | 1.5 | 95 |
| .6 | 14 | 1.9 | 145 |
| .8 | 26 | 2.2 | 182 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.5 | *6.1 | 9.1 | 23 | b10 | 18 | 18 | 19 | 21 | 14 | 32 | 9.4 |
| 2 | 5.0 | 6.4 | *8.2 | 19 | *18 | *17 | 20 | 19 | *19 | 13 | 20 | 9.4 |
| 3 | 5.0 | 6.4 | 8.2 | 16 | 15 | 17 | 26 | 18 | 18 | 13 | *16 | 9.4 |
| 4 | 5.0 | 6.7 | 7.9 | *15 | 14 | 16 | *21 | *18 | 18 | 13 | 14 | 9.4 |
| 5 | *5.8 | 7.9 | 16 | 14 | 14 | 16 | 19 | 17 | 17 | 17 | 14 | 9.1 |
| 6 | 6.1 | 6.7 | 20 | 13 | 173 | 16 | 37 | 17 | 16 | 16 | 13 | *8.8 |
| 7 | 5.8 | 6.7 | b12 | 12 | 84 | 14 | 35 | 16 | 20 | 14 | 16 | 8.5 |
| 8 | 5.8 | 6.4 | 10 | 11 | 46 | 14 | 29 | 16 | 18 | 19 | 15 | 8.2 |
| 9 | 5.8 | 6.4 | 12 | 11 | 34 | 14 | 25 | 16 | 17 | 17 | 14 | 8.5 |
| 10 | 5.8 | 6.4 | 10 | 13 | 28 | 14 | 24 | 15 | 17 | 15 | 12 | 8.5 |
| 11 | 5.5 | 6.4 | 9.7 | 15 | 31 | 14 | 55 | 14 | 21 | *18 | 24 | 8.2 |
| 12 | 5.5 | 6.4 | 9.1 | 12 | b24 | 14 | 41 | 16 | 16 | 18 | 15 | 7.9 |
| 13 | 5.5 | 6.4 | 13 | 11 | b23 | 15 | 74 | 39 | 15 | 19 | 12 | 7.9 |
| 14 | 5.5 | 6.4 | 11 | 10 | 22 | 19 | 84 | 22 | 14 | 19 | 26 | 7.9 |
| 15 | 6.4 | 6.7 | 9.7 | 11 | 21 | 16 | 53 | 32 | 14 | 16 | 21 | 7.9 |
| 16 | 6.1 | 18 | 9.4 | 10 | 20 | 16 | 42 | 27 | 14 | 14 | 18 | 7.6 |
| 17 | 6.1 | 9.1 | 9.4 | 10 | 19 | 16 | 36 | 30 | 13 | 15 | 16 | 7.3 |
| 18 | 6.1 | 9.4 | 16 | 10 | 18 | 16 | 32 | 25 | 13 | 17 | 14 | 7.3 |
| 19 | 5.8 | 16 | b10 | b12 | 17 | 18 | 30 | 24 | 21 | 14 | 13 | 7.0 |
| 20 | 5.8 | 16 | b9.0 | b10 | 17 | 16 | 28 | 22 | 22 | 14 | 13 | 7.0 |
| 21 | 5.8 | 9.7 | 9.1 | b10 | 16 | 19 | 27 | 29 | 19 | 14 | 12 | 6.7 |
| 22 | 5.8 | 8.5 | 8.8 | 13 | 18 | 54 | 25 | 60 | 18 | 13 | 11 | 7.3 |
| 23 | 5.8 | 10 | 8.5 | 11 | 29 | 30 | 24 | 48 | 29 | 12 | 11 | 8.5 |
| 24 | 5.8 | 9.1 | 8.5 | 11 | 25 | 25 | 35 | 38 | 29 | 13 | 10 | 8.8 |
| 25 | 5.8 | 8.2 | 8.2 | 11 | 23 | 24 | 26 | 32 | 24 | 13 | 10 | 10 |
| 26 | 5.8 | 7.9 | 8.2 | 11 | 21 | 27 | 24 | 45 | 19 | 12 | 9.7 | 9.4 |
| 27 | 5.8 | 8.2 | 7.9 | 11 | 20 | 22 | 23 | 35 | 18 | 11 | 9.4 | 9.1 |
| 28 | 5.8 | 14 | 15 | b10 | 19 | 21 | 22 | 29 | 17 | 11 | 9.4 | 8.8 |
| 29 | 6.4 | 14 | 126 | 10 | - | 21 | 21 | 26 | 16 | 11 | 9.1 | 8.8 |
| 30 | 6.1 | 10 | 72 | b9.5 | ------ | 19 | 20 | 24 | 14 | 18 | 8.8 | 10 |
| 31 | 6.1 | -- -- | 31 | b9.5 | ------ | 19 | ------ | 22 | ------ | 14 | 10 | ------ |
| Total | 178.9 | 266.5 | 522.9 | 375.0 | 819 | 597 | 976 | 810 | 547 | 457 | 448.4 | 252.6 |
| Mean | 5.77 | 8.88 | 16.9 | 12.1 | 29.2 | 19.3 | 32.5 | 26.1 | 18.2 | 14.7 | 14.5 | 8.42 |
| Cfsm | 0.529 | 0.815 | 1.55 | 1.11 | 2.68 | 1.77 | 2.98 | 2.39 | 1.67 | 1.35 | 1.33 | 0.772 |
| In. | 0.61 | 0.91 | 1.78 | 1.28 | 2.79 | 2.04 | 3.33 | 2.76 | 1.87 | 1.56 | 1.53 | 0.86 |

Calendar year 1954: Max 256 Min 4.8 Mean 20.4 Cfsm 1.87 In. 25.44
Water year 1954-55: Max 173 Min 5.0 Mean 17.1 Cfsm 1.57 In. 21.32

Peak discharge (base, 300 cfs).--Feb. 6 (4 p.m.) 359 cfs (4.18 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Doubtful or no gage-height record Oct. 1-28; discharge estimated on basis of recorder graph, 1 discharge measurement, once-daily staff-gage readings, and records for Boylston Creek near Horseshoe and French Broad River at Calvert.

## French Broad River at Blantyre, N. C.

Location.--Lat 35°17'56", long 82°37'27", on left bank at upstream side of highway bridge, 700 ft east of Blantyre railroad station, Transylvania County, 3.4 miles downstream from Little River, and at mile 183.7.

Drainage area.--296 sq mi.

Records available.--December 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,060.32 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--34 years (1921-55), 931 cfs.

Extremes.--Maximum discharge during year, 4,570 cfs Dec. 30; maximum gage height, 16.30 ft Feb. 7; minimum discharge, 119 cfs Oct. 11 (gage height, 2.36 ft).
1920-55: Maximum discharge, 26,500 cfs Aug. 16, 1928 (gage height, 22.9 ft), from rating curve extended above 11,500 cfs; minimum, that of Oct. 11, 1954.
Maximum stage known, 27.1 ft in July 1916, from floodmarks.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Considerable diurnal fluctuation at low flow caused by powerplant above station.

Revisions (water years).--WSP 923: 1921-23, 1929, 1933, 1935-36(M), 1938, 1940.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Dec. 29 to Jan. 1, Feb. 6-9, Mar. 22, 23, Apr. 6, 7, 11-15, May 13-17, 20-24, 26, 27, July 12-14, July 29 to Aug. 2, Aug. 14-16)

| | | | |
|---|---|---|---|
| 2.4 | 123 | 8.0 | 1,350 |
| 2.6 | 147 | 10.0 | 2,020 |
| 3.0 | 200 | 12.0 | 2,700 |
| 4.0 | 365 | 14.0 | 3,460 |
| 5.0 | 569 | 16.3 | 4,520 |
| 6.0 | 796 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a150 | *150 | 291 | 1,220 | 352 | 731 | 751 | 717 | 945 | 635 | 1,400 | 534 |
| 2 | a140 | 169 | *268 | 919 | 492 | 692 | 738 | 712 | 898 | 541 | 1,640 | *494 |
| 3 | a135 | 174 | 254 | 765 | *558 | *655 | 979 | *762 | *856 | 532 | *1,230 | 435 |
| 4 | *a130 | 172 | 241 | 692 | 476 | 644 | 806 | 696 | 822 | 547 | 1,060 | 423 |
| 5 | 142 | 208 | 263 | 635 | 433 | 613 | *779 | 635 | 798 | 646 | 961 | 435 |
| 6 | 148 | 196 | 644 | *591 | 2,380 | 554 | 1,050 | 620 | 794 | 726 | 825 | 463 |
| 7 | 145 | 160 | 429 | 556 | 4,480 | 565 | 1,750 | 624 | 849 | 696 | 815 | 455 |
| 8 | 137 | 160 | 315 | 524 | 3,100 | 520 | 1,310 | 609 | 858 | 644 | 808 | 443 |
| 9 | 125 | 174 | 339 | 484 | 1,420 | 505 | 1,080 | 606 | 827 | 708 | 1,020 | 474 |
| 10 | 123 | 176 | 425 | 445 | 1,100 | 501 | 971 | 620 | 770 | 703 | 880 | 386 |
| 11 | *127 | 176 | 333 | 595 | 1,090 | 516 | 1,670 | 547 | 978 | 979 | 760 | 389 |
| 12 | 140 | 173 | 302 | 516 | 972 | 511 | 2,250 | 560 | 873 | 1,320 | 721 | 384 |
| 13 | 139 | 147 | 357 | 463 | 782 | 507 | 2,190 | 927 | 749 | 1,790 | 657 | 419 |
| 14 | 139 | 142 | 445 | 431 | 765 | 712 | 3,650 | 1,070 | 685 | 1,490 | 739 | 397 |
| 15 | 349 | 151 | 363 | 417 | 728 | 682 | 2,680 | 1,260 | 628 | *1,220 | 1,200 | 384 |
| 16 | 270 | 240 | 321 | 417 | 694 | 642 | 1,890 | 1,200 | 611 | 987 | 1,360 | 371 |
| 17 | 155 | 451 | 300 | 397 | 692 | 620 | 1,570 | 1,990 | 587 | 837 | 911 | 356 |
| 18 | 152 | 263 | 482 | 384 | 659 | 578 | 1,390 | 1,420 | 556 | 791 | 786 | 308 |
| 19 | 165 | 252 | 484 | 435 | 631 | 604 | 1,270 | 1,100 | 782 | 822 | 742 | 341 |
| 20 | 161 | 376 | 373 | 474 | 609 | 646 | 1,160 | 1,090 | 1,120 | 929 | 777 | 374 |
| 21 | 159 | 263 | 315 | 445 | 593 | 662 | 1,090 | 1,460 | 1,150 | 932 | 733 | 361 |
| 22 | 159 | 235 | 307 | 421 | 602 | 2,570 | 1,050 | 3,010 | 922 | 911 | 698 | 328 |
| 23 | 141 | 252 | 298 | 413 | 1,220 | 2,050 | 979 | 3,540 | 958 | 733 | 664 | 328 |
| 24 | 140 | 286 | 291 | 384 | 1,060 | 1,250 | 1,040 | 2,800 | 890 | 738 | 659 | 312 |
| 25 | 145 | 255 | 274 | 363 | 1,000 | 1,040 | 1,100 | 1,960 | 849 | 721 | 609 | 459 |
| 26 | 161 | 238 | 263 | 350 | 861 | 1,200 | 937 | 1,620 | 834 | 721 | 578 | 417 |
| 27 | 159 | 232 | 268 | 371 | 798 | 1,010 | 883 | 1,650 | 731 | 710 | 503 | 352 |
| 28 | 157 | 262 | 369 | 371 | 763 | 911 | 849 | 1,370 | 747 | 617 | 482 | 341 |
| 29 | 169 | 532 | 2,380 | 363 | - | 858 | 820 | 1,200 | 701 | 1,150 | 518 | 339 |
| 30 | 159 | 378 | *4,430 | 344 | ------- | 808 | 789 | 1,100 | 682 | 1,020 | 530 | 330 |
| 31 | 141 | ------- | 3,100 | 333 | ------- | 774 | ------- | 1,010 | ------- | 1,050 | 534 | ------- |
| Total | 4,862 | 7,043 | 19,524 | 15,518 | 29,310 | 25,131 | 39,471 | 38,485 | 24,450 | 26,846 | 25,800 | 11,812 |
| Mean | 157 | 235 | 630 | 501 | 1,047 | 811 | 1,316 | 1,241 | 815 | 866 | 832 | 394 |
| Cfsm | 0.530 | 0.794 | 2.13 | 1.69 | 3.54 | 2.74 | 4.45 | 4.19 | 2.75 | 2.93 | 2.81 | 1.33 |
| In. | 0.61 | 0.88 | 2.45 | 1.95 | 3.68 | 3.16 | 4.96 | 4.84 | 3.07 | 3.37 | 3.24 | 1.48 |

Calendar year 1954: Max 6,520 Min 123 Mean 667 Cfsm 2.25 In. 30.58
Water year 1954-55: Max 4,480 Min 123 Mean 735 Cfsm 2.48 In. 33.89

Peak discharge (base, 4,300 cfs).--Dec. 30 (11:30 a.m.) 4,570 cfs (16.22 ft); Feb. 7 (6:30 a.m.) 4,550 cfs (16.18 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, and records for stations at Calvert and Bent Creek.

## Boylston Creek near Horseshoe, N. C.

Location.--Lat 35°22'10", long 82°33'50", on right bank 100 ft upstream from county highway bridge, 1.7 miles upstream from mouth, and 2 miles north of Horseshoe, Henderson County.

Drainage area.--14.8 sq mi.

Records available.--October 1942 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,069.39 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 32.8 cfs.

Extremes.--Maximum discharge during year, 390 cfs Feb. 6 (gage height, 3.70 ft); minimum, 5.4 cfs Oct. 1 (gage height, 0.45 ft).
1942-55: Maximum discharge, 805 cfs Dec. 7, 1950 (gage height, 5.67 ft); minimum, 5.4 cfs Sept. 29, 30, Oct. 1, 1954 (gage height, 0.45 ft).

Remarks.--Records excellent except those for periods of ice effect, which are good.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.4 | 4.1 | 1.3 | 68 |
| .5 | 6.8 | 1.6 | 102 |
| .6 | 11 | 1.9 | 138 |
| .8 | 22 | 2.2 | 177 |
| 1.0 | 38 | 2.6 | 232 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.7 | 6.8 | 12 | 26 | 12 | 21 | 20 | 20 | 23 | 18 | 36 | 13 |
| 2 | 7.2 | 7.2 | 10 | 22 | 22 | *19 | 22 | 20 | 23 | 16 | 25 | *13 |
| 3 | 6.3 | 7.2 | 9.9 | 20 | *21 | 18 | 35 | *20 | 22 | 18 | *21 | 13 |
| 4 | 6.3 | 7.2 | 9.1 | 18 | 17 | 18 | 25 | 19 | *21 | 19 | 19 | 13 |
| 5 | *6.5 | 9.5 | 18 | 16 | 16 | 18 | *23 | 18 | 21 | 17 | 18 | 12 |
| 6 | 7.6 | 7.6 | *31 | *15 | 221 | 17 | 40 | 18 | 21 | 18 | 17 | 12 |
| 7 | 6.5 | 7.2 | 16 | 14 | 122 | 16 | 40 | 18 | 23 | 21 | 16 | 11 |
| 8 | 6.5 | *7.2 | 13 | 14 | 47 | 16 | 31 | 17 | 22 | *21 | 16 | 11 |
| 9 | 6.3 | 7.2 | 15 | 14 | 33 | 15 | 27 | 16 | 22 | 23 | 16 | 12 |
| 10 | 6.3 | 7.2 | 14 | 15 | 28 | 15 | 25 | 16 | 21 | 48 | 15 | 11 |
| 11 | 6.3 | 7.2 | 12 | 19 | 29 | 15 | 49 | 16 | 27 | 86 | 17 | 11 |
| 12 | 6.0 | 7.2 | 11 | 16 | b22 | 15 | 38 | 31 | 22 | 80 | 16 | 11 |
| 13 | 6.0 | 7.6 | 16 | 14 | b20 | 16 | 79 | 58 | 21 | 53 | 14 | 12 |
| 14 | 6.0 | 7.6 | 15 | 13 | 20 | 19 | 115 | 45 | 20 | 38 | 13 | 11 |
| 15 | 9.0 | 7.6 | 13 | 13 | 19 | 17 | 57 | 138 | 19 | 33 | 18 | 10 |
| 16 | 7.2 | 14 | 12 | 13 | 18 | 16 | 44 | 62 | 18 | 29 | 18 | 9.9 |
| 17 | 6.8 | 11 | 12 | 13 | 18 | 16 | 38 | 49 | 18 | 26 | 16 | 9.9 |
| 18 | 6.8 | 9.9 | 20 | 12 | 18 | 17 | 33 | 38 | 18 | 26 | 16 | 9.9 |
| 19 | 6.5 | 17 | 15 | 14 | 17 | 21 | 31 | 33 | 28 | 24 | 15 | 9.9 |
| 20 | 6.5 | 22 | 13 | 13 | 16 | 20 | 29 | 30 | 40 | 23 | 15 | 9.1 |
| 21 | 6.5 | 12 | 12 | 13 | 16 | 20 | 28 | 38 | 28 | 24 | 15 | 9.1 |
| 22 | 6.5 | 10 | 11 | 13 | 18 | *145 | 27 | 73 | 23 | 23 | 15 | 9.1 |
| 23 | 6.5 | 12 | 11 | 13 | 43 | 50 | 26 | 57 | 30 | 21 | 15 | 9.1 |
| 24 | 6.5 | 11 | 10 | 13 | 31 | 34 | 29 | 42 | 26 | 21 | 14 | 9.1 |
| 25 | 6.5 | 9.5 | 10 | 12 | 28 | 30 | 27 | 37 | 23 | 26 | 14 | 13 |
| 26 | 6.5 | 9.1 | 10 | b11 | 24 | 36 | 25 | 32 | 21 | 21 | 13 | 11 |
| 27 | 6.5 | 9.5 | 10 | 13 | 23 | 26 | 23 | 29 | 20 | 18 | 13 | 10 |
| 28 | 6.5 | 17 | 17 | 13 | 22 | 25 | 23 | 28 | 19 | 17 | 13 | 10 |
| 29 | 7.6 | 22 | 141 | 12 | - | 24 | 22 | 26 | 18 | 18 | 13 | 10 |
| 30 | 6.8 | 13 | 98 | b11 | ------- | 23 | 21 | 26 | 18 | 21 | 12 | 12 |
| 31 | 6.8 | ---- | 38 | b11 | ------- | 21 | ------- | 24 | ------- | 22 | 13 | ------- |
| Total | 207.5 | 310.5 | 655.0 | 449 | 941 | 779 | 1,052 | 1,094 | 676 | 869 | 513 | 327.1 |
| Mean | 6.69 | 10.4 | 21.1 | 14.5 | 33.6 | 25.1 | 35.1 | 35.3 | 22.5 | 28.0 | 16.5 | 10.9 |
| Cfsm | 0.452 | 0.703 | 1.43 | 0.980 | 2.27 | 1.70 | 2.37 | 2.39 | 1.52 | 1.89 | 1.11 | 0.736 |
| In. | 0.52 | 0.78 | 1.65 | 1.13 | 2.36 | 1.96 | 2.64 | 2.75 | 1.70 | 2.18 | 1.29 | 0.82 |

Calendar year 1954: Max 384 Min 5.7 Mean 22.1 Cfsm 1.49 In. 20.25
Water year 1954-55: Max 221 Min 6.0 Mean 21.6 Cfsm 1.46 In. 19.78

Peak discharge (base, 250 cfs).--Feb. 6 (7 p.m.) 390 cfs (3.70 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Mills River near Mills River, N. C.

Location.--Lat 35°23'45", long 82°35'25", on right bank 1.4 miles downstream from confluence of North and South Forks, 2.2 miles upstream from village of Mills River, Henderson County, and 4.2 miles northwest of Horseshoe.

Drainage area.--66.7 sq mi.

Records available.--September 1924 to September 1926, May 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,088.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Sept. 9, 1924, to Sept. 30, 1926, staff gage at site 500 ft upstream at datum 2.97 ft higher.

Average discharge.--23 years, 157 cfs.

Extremes.--Maximum discharge during year, 1,520 cfs Dec. 30 (gage height, 4.77 ft); minimum, 18 cfs Oct. 1 (gage height, 1.35 ft).
1924-26, 1934-55: Maximum discharge, 13,400 cfs Aug. 30, 1940 (gage height, 13.62 ft), from rating curve extended above 5,500 cfs on basis of slope-area determination of peak flow; minimum, 16 cfs Dec. 24, 1943 (gage height, 1.33 ft), result of freezeup; minimum daily, 18 cfs Sept. 30, 1954.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. City of Hendersonville diverted from North Fork and Bradley Creek about 4 cfs for water supply.

Revisions (water years).--WSP 823: Drainage area. WSP 923: 1935, 1937, 1939. WSP 1003: 1938, 1940-42. WSP 1143: 1940(P). WSP 1276: 1926.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.3 | 15 | 2.0 | 102 |
| 1.4 | 21 | 2.5 | 243 |
| 1.6 | 38 | 3.0 | 447 |
| 1.8 | 65 | 3.5 | 705 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | 22 | 39 | 176 | b55 | 123 | 130 | 123 | 162 | 94 | a300 | 82 |
| 2 | 30 | 24 | 36 | 141 | *86 | 111 | 130 | 120 | 154 | 88 | a260 | 79 |
| 3 | 24 | 25 | 32 | 116 | 92 | *109 | 191 | 118 | *146 | 92 | 220 | 80 |
| 4 | *21 | 25 | 28 | *104 | 75 | 107 | 148 | *114 | 138 | 90 | 194 | 79 |
| 5 | 22 | 33 | 45 | 94 | a65 | 100 | *135 | 111 | 135 | 109 | *171 | 77 |
| 6 | 27 | 29 | *114 | 88 | a700 | 98 | 207 | 109 | 130 | 123 | 154 | *75 |
| 7 | 23 | 26 | 59 | 79 | a450 | 96 | 236 | 107 | 141 | 144 | 143 | 72 |
| 8 | 22 | *24 | 43 | 75 | a320 | 90 | 194 | 104 | 135 | 178 | 146 | 67 |
| 9 | 21 | 24 | 62 | 74 | a250 | 88 | 176 | 102 | 135 | 173 | 171 | 67 |
| 10 | 21 | 24 | 60 | 75 | a190 | 86 | 165 | 98 | 125 | 154 | 143 | 67 |
| 11 | 21 | 24 | 45 | 90 | a200 | 86 | 306 | 96 | 171 | 201 | 135 | 65 |
| 12 | 20 | 23 | 43 | 75 | a170 | 86 | 291 | 111 | 130 | *368 | 138 | 64 |
| 13 | 20 | 23 | 62 | 70 | a150 | 86 | 346 | 173 | 118 | 306 | 118 | 62 |
| 14 | 20 | 22 | 65 | 64 | a140 | 107 | 502 | 241 | 114 | 247 | 123 | 62 |
| 15 | 74 | 23 | 52 | 68 | a130 | 92 | 366 | 452 | 109 | 210 | 151 | 59 |
| 16 | 37 | 42 | 45 | 65 | a120 | 90 | 298 | 291 | 107 | 204 | 151 | 56 |
| 17 | 27 | 52 | 44 | 60 | a115 | 90 | 257 | 275 | 102 | 236 | 125 | 54 |
| 18 | 25 | 37 | 72 | 59 | 111 | 98 | 233 | 220 | 98 | 220 | 116 | 53 |
| 19 | 23 | 49 | 59 | 70 | 104 | 109 | 213 | 191 | 159 | 194 | 107 | 53 |
| 20 | 22 | 72 | 48 | 59 | 100 | 109 | 194 | 173 | 168 | 210 | 107 | 49 |
| 21 | 22 | 40 | b40 | 62 | 98 | 111 | 185 | 293 | 154 | 179 | 102 | 49 |
| 22 | 22 | 34 | b38 | 68 | 104 | *560 | 176 | 565 | 133 | 165 | 107 | 48 |
| 23 | 22 | 36 | b37 | 60 | 218 | *295 | 168 | 565 | 173 | a150 | 100 | 48 |
| 24 | 22 | 36 | b40 | 56 | 171 | 220 | 168 | 389 | 168 | a140 | 96 | 46 |
| 25 | 22 | 32 | b33 | 52 | 157 | 194 | 159 | 314 | 148 | a150 | 92 | 86 |
| 26 | 22 | 30 | b35 | b50 | 143 | 204 | 151 | 268 | 123 | a140 | 88 | 65 |
| 27 | 22 | 30 | 40 | b55 | 135 | 171 | 143 | 254 | 111 | a130 | 84 | 56 |
| 28 | 22 | 43 | 68 | b52 | 128 | 162 | 141 | 220 | 109 | a150 | 82 | 54 |
| 29 | 25 | 100 | 698 | b50 | - | 151 | 133 | 201 | 104 | a180 | 82 | 54 |
| 30 | 24 | 52 | 687 | b47 | ------ | 143 | 128 | 185 | 100 | a210 | 80 | 54 |
| 31 | 23 | - - - | 250 | b46 | ------ | 135 | ------- | 173 | ------- | a220 | 88 | - - - |
| Total | 770 | 1,056 | 3,019 | 2,300 | 4,777 | 4,307 | 6,272 | 6,756 | 4,000 | 5,455 | 4,174 | 1,882 |
| Mean | 24.8 | 35.2 | 97.4 | 74.2 | 171 | 139 | 209 | 218 | 133 | 176 | 135 | 62.7 |
| Cfsm | 0.372 | 0.528 | 1.46 | 1.11 | 2.56 | 2.08 | 3.13 | 3.27 | 1.99 | 2.64 | 2.02 | 0.940 |
| In. | 0.43 | 0.59 | 1.68 | 1.28 | 2.66 | 2.40 | 3.50 | 3.77 | 2.23 | 3.04 | 2.33 | 1.05 |

Calendar year 1954: Max 1,420 Min 18 Mean 106 Cfsm 1.59 In. 21.58
Water year 1954-55: Max 700 Min 20 Mean 123 Cfsm 1.84 In. 24.96

Peak discharge (base, 1,000 cfs).--Dec. 30 (12:30 a.m.) 1,520 cfs (4.77 ft); Feb. 6 (time unknown) 1,490 cfs (4.72 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Boylston Creek near Horseshoe and Davidson River near Brevard.

b Stage-discharge relation affected by ice.

## Clear Creek near Hendersonville, N. C.

Location.--Lat 35°21'14", long 82°26'40", on right bank at upstream side of highway bridge, 0.6 mile upstream from Allen Branch, 1.0 mile downstream from Wolfpen Creek, 1.2 miles upstream from mouth, and 2.7 miles northeast of Hendersonville, Henderson County.

Drainage area.--42.2 sq mi.

Records available.--June 1945 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,071.98 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--10 years, 70.0 cfs.

Extremes.--Maximum discharge during year, 627 cfs Feb. 6 (gage height, 6.18 ft); minimum, 9.2 cfs Oct. 1, 5 (gage height, 0.81 ft).

1945-55: Maximum discharge, 4,020 cfs Aug. 28, 1949 (gage height, 10.50 ft), from rating curve extended above 2,500 cfs on basis of velocity-area studies; minimum, 8.8 cfs Sept. 19, 1954 (gage height, 0.80 ft).

Floods in July 1916 and Aug. 13, 1940, reached stages of 16 and 12 ft, respectively, from flood profiles by Tennessee Valley Authority.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Occasional slight diurnal fluctuation at low flow caused by gristmill and three small stock ponds on tributaries above gage.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.8 | 8.8 | 2.0 | 118 |
| .9 | 13 | 2.5 | 187 |
| 1.0 | 18 | 3.0 | 262 |
| 1.2 | 32 | 3.3 | 303 |
| 1.6 | 71 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 15 | 20 | 57 | 25 | a35 | 38 | 32 | 36 | 28 | 69 | 21 |
| 2 | 12 | 16 | 19 | 47 | 32 | 33 | 37 | 31 | 35 | 26 | 52 | 88 |
| 3 | 10 | 15 | 18 | 40 | 40 | 32 | 50 | 30 | 32 | 27 | 43 | 31 |
| 4 | 10 | 16 | 16 | 36 | 36 | 32 | 40 | 29 | 31 | 26 | 38 | 27 |
| 5 | 10 | 20 | a24 | 32 | 32 | 30 | 37 | 28 | 31 | 26 | 35 | 24 |
| 6 | 10 | 16 | a35 | *32 | *292 | 31 | 52 | a26 | 30 | 88 | 33 | 22 |
| 7 | 10 | 16 | a24 | 31 | *207 | 30 | 57 | a25 | *54 | 46 | 33 | 21 |
| 8 | 10 | 15 | a24 | 29 | *94 | 28 | 47 | a24 | 45 | 38 | 32 | 19 |
| 9 | 11 | *15 | a23 | 28 | 69 | 27 | 45 | a26 | 37 | 33 | 43 | 19 |
| 10 | 11 | 15 | a21 | 28 | 56 | 27 | 40 | a25 | 32 | 39 | 32 | 20 |
| 11 | 10 | 15 | a19 | 36 | 57 | a27 | 82 | a24 | 48 | 77 | 35 | 19 |
| 12 | *10 | 15 | a19 | 33 | b45 | a28 | *74 | *76 | 34 | 66 | 38 | 18 |
| 13 | 10 | 15 | *25 | 30 | b40 | a28 | 121 | 158 | 31 | 192 | 29 | 18 |
| 14 | 10 | 15 | 24 | 27 | 37 | *42 | 249 | 84 | 30 | 79 | 53 | 18 |
| 15 | 14 | 15 | 22 | 26 | 35 | 32 | 117 | 160 | 29 | 56 | 40 | *17 |
| 16 | 12 | 34 | 20 | 25 | 37 | 32 | 84 | 100 | 28 | 63 | *34 | 16 |
| 17 | 13 | 24 | 20 | 24 | 36 | 31 | 70 | 100 | 26 | 55 | 30 | 16 |
| 18 | 13 | 27 | 30 | 24 | 33 | 38 | 60 | 76 | 26 | *56 | 28 | 16 |
| 19 | 13 | 26 | 25 | 26 | 32 | 44 | 53 | 62 | 75 | 47 | 29 | 16 |
| 20 | 13 | 30 | 22 | 26 | 31 | 45 | 49 | 54 | 125 | 126 | 30 | 15 |
| 21 | 13 | 20 | 20 | 25 | 30 | 44 | 47 | 61 | 84 | 51 | 32 | 15 |
| 22 | 13 | 18 | 20 | 26 | 32 | 188 | 46 | 138 | 61 | 42 | 27 | 14 |
| 23 | 13 | 22 | 19 | 26 | 58 | a100 | 42 | 128 | 53 | 38 | 26 | 14 |
| 24 | 13 | 21 | 19 | 26 | 50 | 66 | 57 | 87 | 46 | 80 | 24 | 15 |
| 25 | 13 | 18 | 18 | 25 | 48 | 55 | 47 | 70 | 43 | 52 | 22 | 18 |
| 26 | 13 | 18 | 18 | 25 | 43 | 67 | 42 | 58 | 40 | 74 | 22 | 17 |
| 27 | 14 | 17 | 18 | 25 | 40 | 51 | 40 | 51 | 34 | 42 | 22 | 16 |
| 28 | 14 | 24 | 22 | 25 | 38 | 47 | 37 | 46 | 32 | 36 | 21 | 17 |
| 29 | 15 | 33 | 234 | 25 | - | 44 | 35 | 44 | 32 | 37 | 22 | 16 |
| 30 | 15 | 22 | *233 | 24 | ------- | 41 | 33 | 40 | 30 | 43 | 21 | 19 |
| 31 | 14 | ------- | *76 | b24 | ------- | 38 | ------- | 38 | ------- | 68 | 22 | - - - |
| Total | 372 | 588 | 1,149 | 913 | 1,605 | 1,393 | 1,828 | 1,931 | 1,270 | 1,757 | 1,017 | 622 |
| Mean | 12.0 | 19.6 | 37.1 | 29.5 | 57.3 | 44.9 | 60.9 | 62.3 | 42.3 | 56.7 | 32.8 | 20.7 |
| Cfsm | 0.284 | 0.464 | 0.879 | 0.699 | 1.36 | 1.06 | 1.44 | 1.48 | 1.00 | 1.34 | 0.777 | 0.491 |
| In. | 0.33 | 0.52 | 1.01 | 0.80 | 1.41 | 1.23 | 1.61 | 1.70 | 1.12 | 1.55 | 0.90 | 0.55 |

Calendar year 1954: Max 827 Min 9.6 Mean 46.6 Cfsm 1.10 In. 14.99
Water year 1954-55: Max 292 Min 10 Mean 39.6 Cfsm 0.938 In. 12.73

Peak discharge (base, 700 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Mud Creek at Naples.

b Stage-discharge relation affected by ice.

## Mud Creek at Naples, N. C.

Location.--Lat 35°22'52", long 82°29'54", on left bank at downstream side of bridge on old Asheville-Hendersonville highway, 100 ft downstream from Byers Creek, 0.8 mile south of Naples, Henderson County, and 2.2 miles upstream from mouth.

Drainage area.--109 sq mi.

Records available.--May to December 1907, September 1938 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,047.48 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. May 10 to Dec. 31, 1907, staff gage at same site and datum. Since Jan. 20, 1954, auxiliary water-stage recorder at U. S. Highway 25, 0.5 mile downstream at same datum.

Average discharge.--17 years (1938-55), 196 cfs.

Extremes.--Maximum discharge during year, 1,890 cfs Feb. 7 (gage height, 9.10 ft); minimum, 23 cfs Oct. 1 (gage height, -0.23 ft).
1907, 1938-55: Maximum discharge, 10,800 cfs Aug. 13, 1940 (gage height, 13.07 ft); minimum, 22 cfs Sept. 30, 1954 (gage height, -0.24 ft).
Floods in July 1916 and August 1928 reached stages of 21 and 15 ft, respectively, from information by Tennessee Valley Authority.

Remarks.--Records excellent except those for periods of backwater, which are good. Occasional regulation by many small reservoirs and recreational ponds. Mud Creek receives sewage from city of Hendersonville, which diverts its water supply from tributaries of Mills River. See records for Mills River near Mills River.

Revisions (water years).--WSP 923: 1940.

Rating tables, water year 1954-55, except periods of backwater from return of overbank flow (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Apr. 24 | | | | Apr. 25 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| -0.2 | 26 | 3.0 | 410 | 0.0 | 35 | 1.0 | 138 |
| -.1 | 34 | 5.0 | 720 | .1 | 44 | 2.0 | 262 |
| 0.0 | 42 | 7.0 | 1,060 | .3 | 64 | 3.0 | 405 |
| .5 | 93 | 8.0 | 1,280 | .5 | 84 | 4.0 | 560 |
| 1.0 | 150 | 8.5 | 1,470 | | | | |
| 2.0 | 274 | | | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33 | 39 | 72 | 232 | 84 | 126 | 117 | 105 | 114 | 87 | 232 | 63 |
| 2 | 36 | 43 | 67 | 180 | 123 | 119 | 116 | 102 | 110 | 82 | 174 | 133 |
| 3 | 34 | 42 | 64 | 151 | 127 | 115 | 182 | 100 | 105 | 81 | 120 | 79 |
| 4 | 29 | 43 | 61 | 134 | 108 | 117 | 136 | 97 | 100 | 82 | 103 | 73 |
| 5 | 26 | 56 | 81 | *124 | 102 | 115 | 127 | 95 | 96 | 86 | 94 | 70 |
| 6 | 27 | 46 | 173 | 116 | *680 | 114 | 182 | 91 | 93 | 145 | 100 | 67 |
| 7 | 27 | 44 | 106 | 106 | *c1,370 | 107 | 234 | 90 | *116 | 119 | 89 | 64 |
| 8 | 26 | 43 | 88 | 101 | *c423 | 103 | 175 | 89 | 140 | 114 | 87 | 59 |
| 9 | 28 | *43 | 89 | 98 | *279 | 101 | 158 | 95 | 108 | 107 | 100 | 58 |
| 10 | 31 | 43 | 84 | 103 | 206 | 101 | 146 | 94 | 94 | 93 | 84 | 59 |
| 11 | 28 | 43 | 77 | 138 | 220 | 102 | 300 | 93 | 146 | 168 | 94 | 57 |
| 12 | *28 | 43 | 74 | 113 | 179 | 102 | 317 | *157 | 106 | 184 | 124 | 54 |
| 13 | 27 | 43 | *94 | 104 | 156 | 102 | 448 | 420 | 92 | 412 | 81 | 53 |
| 14 | 28 | 44 | 94 | 95 | 149 | *133 | 973 | 293 | 86 | 207 | 181 | 53 |
| 15 | 49 | 43 | 84 | 95 | 140 | 115 | 515 | 352 | 82 | 153 | 210 | *51 |
| 16 | 34 | 105 | 78 | 92 | 134 | 112 | 301 | 245 | 81 | 165 | *130 | 49 |
| 17 | 33 | 96 | 78 | 88 | 134 | 108 | 239 | 257 | 77 | 198 | 107 | 45 |
| 18 | 34 | 85 | 123 | 85 | 128 | 122 | *223 | 201 | 75 | *124 | 93 | 44 |
| 19 | 34 | 93 | 103 | 103 | 124 | 134 | 220 | *172 | 157 | 127 | 92 | 43 |
| 20 | 34 | 125 | 91 | 92 | 120 | 133 | 186 | 156 | 275 | 201 | 88 | 40 |
| 21 | 34 | 76 | 84 | 90 | 115 | 134 | 172 | 180 | 233 | 119 | 89 | 40 |
| 22 | 34 | 65 | 81 | 100 | 116 | 437 | 168 | 406 | 168 | 103 | 81 | 40 |
| 23 | 34 | 73 | 78 | 97 | 197 | 249 | 154 | 534 | 216 | 95 | 77 | 40 |
| 24 | 34 | 75 | 76 | 91 | 172 | 178 | 193 | 318 | 186 | 163 | 75 | 40 |
| 25 | 35 | 63 | 72 | 89 | 167 | 158 | 161 | 235 | 144 | 206 | 70 | 55 |
| 26 | 35 | 60 | 70 | 86 | 146 | 193 | 137 | 190 | 127 | 153 | 66 | 53 |
| 27 | 37 | 60 | 71 | 93 | 138 | 151 | 129 | 173 | 109 | 107 | 66 | 49 |
| 28 | 39 | 71 | 83 | 91 | 132 | 140 | 123 | 149 | 103 | 92 | 62 | 49 |
| 29 | 39 | 120 | 541 | 90 | - | 134 | 117 | 141 | 97 | 90 | 62 | 48 |
| 30 | 39 | 82 | *c1,090 | 86 | ------- | 125 | 110 | 128 | 93 | 108 | 61 | 55 |
| 31 | 38 | ---- | *c401 | 83 | ------- | 120 | ------- | 120 | ------- | 127 | 62 | ------ |
| Total | 1,024 | 1,907 | 4,428 | 3,346 | 6,169 | 4,300 | 6,759 | 5,878 | 3,729 | 4,298 | 3,154 | 1,683 |
| Mean | 33.0 | 63.6 | 143 | 108 | 220 | 139 | 225 | 190 | 124 | 139 | 102 | 56.1 |
| Cfsm | 0.303 | 0.583 | 1.31 | 0.991 | 2.02 | 1.28 | 2.06 | 1.74 | 1.14 | 1.28 | 0.936 | 0.515 |
| In. | 0.35 | 0.65 | 1.51 | 1.14 | 2.10 | 1.47 | 2.31 | 2.01 | 1.27 | 1.47 | 1.08 | 0.57 |

Calendar year 1954: Max 3,200 Min 25 Mean 147 Cfsm 1.35 In. 18.26
Water year 1954-55: Max 1,370 Min 26 Mean 128 Cfsm 1.17 In. 15.93

Peak discharge (base, 1,500 cfs).--Feb. 7 (7:30 a.m.) 1,890 cfs (9.10 ft).
* Discharge measurement made on this day.
c Backwater from return of overbank flow.

## Cane Creek at Fletcher, N. C.

Location.--Lat 35°26'08", long 82°29'23", on right bank at downstream side of highway bridge, 0.5 mile upstream from Hooper Creek, 0.5 mile northeast of Fletcher, Henderson County, and 0.8 mile downstream from county line.

Drainage area.--63.1 sq mi.

Records available.--October 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,072.22 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 74.9 cfs.

Extremes.--Maximum discharge during year, 925 cfs Mar. 22 (gage height, 4.21 ft); minimum, 9.6 cfs Oct. 7, 8.
1942-55: Maximum discharge, 2,900 cfs Jan. 22, 1954 (gage height, 8.52 ft); minimum, 9.6 cfs Sept. 30, Oct. 7, 8, 1954.
Floods of July 1916 and Aug. 30, 1940, reached stages of 14.8 and 9.4 ft, respectively, from high-water marks and flood profiles by Tennessee Valley Authority.

Remarks.--Records good except those for periods of ice effect, which are fair.

Revisions (water years).--WSP 1276: 1943(M), 1946(M), 1949(P), 1951-52(M).

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 22 | | | | Mar. 23 to Sept. 30 | |
|---|---|---|---|---|---|
| 0.2 | 6.5 | 1.0 | 124 | 0.4 | 14 |
| .3 | 11 | 1.5 | 240 | .6 | 38 |
| .4 | 18 | 2.0 | 360 | 1.0 | 119 |
| .6 | 44 | 2.3 | 435 | 1.5 | 236 |
| | | | | 2.0 | 360 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 17 | 24 | 48 | b27 | 38 | 42 | 32 | 37 | 27 | 62 | 31 |
| 2 | 14 | 21 | 22 | 40 | 40 | 35 | 40 | 31 | 34 | 24 | 58 | 43 |
| 3 | 11 | 19 | 21 | 35 | 44 | 34 | 43 | 30 | 32 | 24 | 75 | 34 |
| 4 | 11 | 19 | 20 | 32 | 35 | 32 | 37 | 30 | 32 | 55 | 56 | 31 |
| 5 | 10 | 29 | 32 | 32 | 32 | 30 | 35 | 28 | 30 | 32 | 43 | 30 |
| 6 | 10 | 19 | 55 | *29 | 353 | 32 | 58 | 27 | 30 | 27 | 42 | 30 |
| 7 | 10 | 17 | 29 | 28 | 191 | 29 | 62 | 27 | 37 | 25 | 52 | 27 |
| 8 | 10 | 17 | 28 | 27 | *92 | 28 | 45 | 25 | *37 | 24 | 56 | 24 |
| 9 | 11 | *17 | 28 | 27 | 66 | 27 | 42 | 24 | 42 | 25 | 62 | 24 |
| 10 | 11 | 17 | 25 | 28 | 55 | 27 | 40 | 24 | 34 | 32 | 45 | 24 |
| 11 | 11 | 17 | 22 | 32 | 57 | 27 | 81 | 24 | 45 | 46 | 68 | 23 |
| 12 | *10 | 16 | 22 | 28 | b41 | 41 | 74 | *36 | 34 | 54 | 58 | 22 |
| 13 | 10 | 16 | *30 | 28 | b41 | 35 | 149 | 68 | 31 | 86 | 42 | 22 |
| 14 | 11 | 17 | 26 | 27 | b40 | 60 | 280 | 98 | 28 | 54 | 45 | 22 |
| 15 | 28 | 17 | 25 | 26 | 38 | *44 | 128 | 200 | 28 | 45 | 49 | *21 |
| 16 | 14 | 36 | 21 | 26 | 36 | 44 | 93 | 97 | 28 | 38 | *43 | 20 |
| 17 | 14 | 30 | 22 | 25 | 36 | 46 | 78 | 89 | 27 | 35 | 37 | 19 |
| 18 | 14 | 28 | 35 | 25 | 32 | 70 | 68 | 70 | 24 | 31 | 35 | 19 |
| 19 | 14 | 40 | 27 | 29 | 29 | 104 | *62 | 60 | 134 | *34 | 34 | 18 |
| 20 | 14 | 52 | 25 | 29 | 29 | 88 | 56 | 52 | 70 | 48 | 167 | 17 |
| 21 | 14 | 25 | b23 | 27 | 29 | 74 | 52 | 56 | 54 | 35 | 58 | 17 |
| 22 | 15 | 21 | b23 | 29 | 32 | 412 | 51 | 95 | 51 | 30 | 47 | 17 |
| 23 | 15 | 26 | b22 | 30 | 60 | 140 | 45 | 89 | 45 | 32 | 54 | 16 |
| 24 | 15 | 25 | 21 | 28 | 51 | 95 | 49 | 76 | 43 | 37 | 42 | 18 |
| 25 | 15 | 21 | 20 | b27 | 48 | 78 | 49 | 74 | 38 | 34 | 37 | 27 |
| 26 | 15 | 20 | 20 | b27 | 42 | 78 | 43 | 60 | 37 | 34 | 35 | 22 |
| 27 | 16 | 20 | 20 | 28 | 40 | 58 | 40 | 54 | 32 | 30 | 34 | 19 |
| 28 | 17 | 29 | 25 | 27 | 40 | 54 | 37 | 47 | 31 | 147 | 32 | 20 |
| 29 | 18 | 44 | 174 | b26 | - | 51 | 35 | 45 | 30 | 69 | 31 | 20 |
| 30 | 17 | 27 | 124 | b25 | ------ | 45 | 34 | 42 | 28 | 60 | 30 | 22 |
| 31 | 17 | ---- | 62 | b25 | ------ | 43 | ------ | 38 | ------ | 52 | 38 | ---- |
| Total | 423 | 719 | 1,073 | 900 | 1,656 | 1,999 | 1,948 | 1,748 | 1,183 | 1,326 | 1,567 | 699 |
| Mean | 13.6 | 24.0 | 34.6 | 29.0 | 59.1 | 64.5 | 64.9 | 56.4 | 39.4 | 42.8 | 50.5 | 23.3 |
| Cfsm | 0.216 | 0.380 | 0.548 | 0.460 | 0.937 | 1.02 | 1.03 | 0.894 | 0.624 | 0.678 | 0.800 | 0.369 |
| In. | 0.25 | 0.42 | 0.63 | 0.53 | 0.98 | 1.18 | 1.15 | 1.03 | 0.70 | 0.78 | 0.92 | 0.41 |

Calendar year 1954 : Max 1,610 Min 10 Mean 58.1 Cfsm 0.921 In. 12.48
Water year 1954-55 : Max 412 Min 10 Mean 41.8 Cfsm 0.662 In. 8.98

Peak discharge (base, 800 cfs).--Feb. 6 (4 p.m.) 836 cfs (3.87 ft); Mar. 22 (6 a.m.) 925 cfs (4.21 ft); July 28 (6:30 p.m.) 901 cfs (4.12 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## French Broad River at Bent Creek, N. C.

Location.--Lat 35°30'07", long 82°35'35", on left bank 50 ft downstream from Bent Creek, 6.2 miles upstream from Hominy Creek, 6.7 miles south of Asheville, Buncombe County, and at mile 157.7.

Drainage area.--676 sq mi.

Records available.--May 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,995.91 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 1,611 cfs.

Extremes.--Maximum discharge during year, 6,790 cfs Feb. 6 (gage height, 6.54 ft); minimum, 230 cfs Oct. 4, 5, 10, 11, 12 (gage height, 2.05 ft)
1943-55: Maximum discharge, 23,600 cfs Aug. 14, 1940 (gage height, 12.6 ft); minimum, that of Oct. 4, 5, 10, 11, 12, 1954.
Maximum stage known, about 27.3 ft July 15, 1916, from floodmarks. Flood of August 1928 reached a stage of about 16.1 ft, from floodmarks.

Remarks.--Records good. Some diurnal fluctuation at low flow caused by powerplant above station.

Revisions.--WSP 823: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 7-16, 22-28, Dec. 2-5, Jan. 8-10, Jan 13 to Feb. 6, Mar. 8-13, Sept. 12, 16-25, 27-30)

| | | | |
|---|---|---|---|
| 2.0 | 210 | 3.5 | 1,650 |
| 2.1 | 250 | 4.0 | 2,370 |
| 2.3 | 350 | 5.0 | 3,970 |
| 2.5 | 495 | 6.0 | 5,760 |
| 2.7 | 680 | 7.0 | 7,710 |
| 3.0 | 990 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *272 | 300 | 614 | 2,920 | 614 | 1,180 | 1,230 | 1,180 | 1,380 | 957 | .030 | 790 |
| 2 | 334 | 312 | 540 | 1,620 | 780 | 1,110 | 1,180 | 1,100 | 1,320 | 880 | 2,550 | 840 |
| 3 | 259 | 334 | 495 | 1,320 | 979 | 1,060 | 1,540 | 1,120 | 1,250 | 810 | 2,120 | 740 |
| 4 | 238 | 328 | 463 | 1,150 | 891 | 1,030 | 1,410 | 1,110 | 1,190 | 850 | 1,710 | 700 |
| 5 | 234 | 370 | 479 | 1,060 | 790 | 1,000 | 1,270 | 1,050 | 1,160 | 924 | 1,520 | 670 |
| 6 | 250 | 396 | 1,030 | 979 | 3,230 | 935 | 1,430 | 1,000 | 1,120 | 1,040 | 1,320 | 700 |
| 7 | 254 | 370 | 957 | 902 | 6,600 | 913 | 2,420 | 979 | 1,180 | 1,190 | 1,270 | 700 |
| 8 | 246 | 339 | 642 | 860 | 5,740 | 880 | 2,160 | 979 | 1,340 | 1,140 | 1,320 | 670 |
| 9 | 242 | 339 | 585 | 830 | 3,350 | 850 | 1,780 | 946 | 1,230 | 1,160 | 1,450 | 670 |
| 10 | 234 | 344 | 680 | 780 | 2,000 | 830 | 1,580 | 979 | 1,160 | 1,150 | 1,430 | 670 |
| 11 | 234 | 350 | 632 | 913 | 1,800 | 840 | 1,950 | 946 | 1,320 | 1,510 | 1,250 | 604 |
| 12 | 234 | 350 | 567 | 935 | 1,730 | 850 | 3,440 | 968 | 1,430 | 2,070 | 1,370 | 567 |
| 13 | 242 | 344 | 585 | 820 | 1,340 | 850 | 3,090 | 1,670 | 1,120 | 2,850 | 1,060 | 623 |
| 14 | 242 | 322 | 740 | 750 | 1,290 | 1,000 | 5,550 | 2,280 | 1,030 | 2,520 | 1,090 | 614 |
| 15 | 322 | 317 | 690 | 730 | 1,230 | 1,100 | 5,030 | 3,170 | *957 | 2,030 | 1,850 | 594 |
| 16 | 549 | 396 | 604 | 720 | *1,150 | 1,000 | 3,380 | 2,370 | 902 | 1,680 | 1,960 | 567 |
| 17 | 370 | 730 | *558 | 700 | 1,110 | 979 | 2,620 | 2,670 | 870 | 1,640 | 1,510 | 549 |
| 18 | 306 | 670 | 680 | 680 | 1,100 | 1,000 | 2,310 | 2,580 | 850 | 1,370 | 1,210 | 513 |
| 19 | 300 | 594 | 850 | 690 | 1,030 | 1,060 | 2,100 | 1,930 | 1,090 | 1,320 | 1,070 | 479 |
| 20 | 306 | 860 | 690 | 740 | 990 | 1,150 | 1,900 | 1,750 | 1,730 | 1,590 | 1,210 | 531 |
| 21 | *300 | 690 | 585 | 750 | 957 | 1,100 | 1,760 | 1,800 | 1,940 | *1,500 | 1,110 | 531 |
| 22 | 295 | *487 | 549 | 750 | 957 | 3,740 | 1,710 | 3,750 | 1,570 | 1,430 | 1,030 | 513 |
| 23 | 295 | 487 | 540 | 750 | 1,590 | *3,720 | 1,580 | 4,780 | 1,590 | 1,210 | 1,010 | 487 |
| 24 | 277 | 531 | 531 | *710 | 1,850 | 2,310 | 1,570 | *4,450 | 1,580 | 1,120 | 946 | 471 |
| 25 | 277 | 522 | 495 | 661 | 1,650 | 1,850 | *1,790 | 3,270 | 1,330 | 1,430 | *902 | 549 |
| 26 | 290 | 471 | 471 | 642 | 1,440 | 1,920 | 1,520 | 2,490 | 1,290 | 1,200 | 850 | 730 |
| 27 | 306 | 447 | 479 | 680 | 1,320 | 1,790 | 1,410 | 2,400 | 1,140 | 1,120 | 790 | *567 |
| 28 | 306 | 479 | 513 | 670 | 1,250 | 1,550 | 1,330 | 2,080 | 1,070 | 1,120 | 730 | 531 |
| 29 | 317 | 830 | 2,690 | 661 | -- | 1,430 | 1,290 | 1,820 | 1,060 | 1,570 | 730 | 531 |
| 30 | 328 | 820 | 5,730 | 623 | ------ | 1,330 | 1,240 | 1,650 | 1,010 | 1,480 | 760 | 522 |
| 31 | 312 | ------ | 5,230 | 594 | ------ | 1,320 | ------ | 1,510 | ------ | 1,800 | 780 | ------ |
| Total | 8,971 | 14,129 | 30,894 | 27,590 | 48,758 | 41,677 | 62,570 | 60,777 | 37,209 | 43,661 | 39,938 | 18,223 |
| Mean | 289 | 471 | 997 | 890 | 1,741 | 1,344 | 2,086 | 1,961 | 1,240 | 1,408 | 1,288 | 607 |
| Cfsm | 0.428 | 0.697 | 1.47 | 1.32 | 2.58 | 1.99 | 3.09 | 2.90 | 1.83 | 2.08 | 1.91 | 0.898 |
| In. | 0.49 | 0.78 | 1.70 | 1.52 | 2.68 | 2.29 | 3.44 | 3.34 | 2.05 | 2.40 | 2.20 | 1.00 |

Calendar year 1954: Max 11,500 Min 234 Mean 1,154 Cfsm 1.71 In. 23.17
Water year 1954-55: Max 6,600 Min 234 Mean 1,190 Cfsm 1.76 In. 23.89

Peak discharge (base, 6,000 cfs).--Feb. 6 (10 p.m.) 6,790 cfs (6.54 ft).
* Discharge measurement made on this day.

## Hominy Creek at Candler, N. C.

Location.--Lat 35°32'28", long 82°40'35", on left bank 0.1 mile downstream from Pole Creek and 1.0 mile east of Candler, Buncombe County.

Drainage area.--79.8 sq mi.

Records available.--October 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,065.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 86.9 cfs.

Extremes.--Maximum discharge during year, 918 cfs July 28 (gage height, 3.47 ft); minimum, 14 cfs Oct. 14 (gage height, 0.83 ft).
1942-55: Maximum discharge, 6,800 cfs June 16, 1949 (gage height, 13.25 ft); minimum, 13 cfs Sept. 2, 1953 (gage height, 0.80 ft).
Flood of Aug. 30, 1940, reached a stage of 18.0 ft, from floodmarks (discharge, 13,100 cfs, by conveyance method).

Remarks.--Records excellent except those for periods of ice effect, which are good. Numerous small diversions for irrigation above station.

Revisions.--WSP 1113: Drainage area.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 22

| | | | |
|---|---|---|---|
| 0.8 | 13 | 1.8 | 178 |
| 1.0 | 27 | 2.0 | 234 |
| 1.2 | 51 | 2.3 | 336 |
| 1.4 | 86 | 2.6 | 463 |
| 1.6 | 129 | | |

Mar. 23 to Sept. 30

| | | | |
|---|---|---|---|
| 0.9 | 18 | 1.4 | 83 |
| 1.0 | 26 | 1.6 | 127 |
| 1.2 | 48 | 1.8 | 178 |

Note.--Same as preceding table above 1.8 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 28 | 21 | *29 | 50 | b31 | 56 | 62 | 53 | 75 | 47 | 111 | 36 |
| 2 | 23 | 24 | 27 | 43 | 56 | 51 | 61 | 51 | 72 | 44 | 89 | 34 |
| 3 | 17 | 24 | 26 | 39 | 54 | 48 | 74 | 50 | 68 | 43 | 70 | 34 |
| 4 | 16 | 24 | b24 | 36 | 44 | 47 | 61 | 48 | 64 | 42 | 61 | 33 |
| 5 | 15 | 29 | 42 | 36 | 42 | 44 | 58 | 47 | 62 | 105 | 56 | 33 |
| 6 | 15 | 24 | 78 | 35 | 411 | 53 | 111 | 46 | *59 | 66 | 50 | 34 |
| 7 | 15 | 22 | b40 | *32 | 228 | 48 | 118 | 44 | 61 | 110 | 50 | 31 |
| 8 | 15 | 22 | b35 | 32 | *127 | 43 | *94 | 44 | 64 | 89 | 56 | 29 |
| 9 | 15 | 22 | 39 | 31 | 94 | *42 | 85 | 42 | 70 | 134 | 72 | 29 |
| 10 | 15 | 21 | 36 | 32 | 76 | 42 | 77 | 41 | 59 | 101 | 54 | 28 |
| 11 | 15 | 21 | 30 | 39 | 78 | 42 | 102 | 41 | 61 | 140 | *50 | 28 |
| 12 | 15 | 21 | 30 | 34 | b61 | 56 | 94 | 90 | 54 | 125 | 64 | *28 |
| 13 | *15 | 21 | 35 | 32 | b58 | 47 | 125 | *83 | 53 | 104 | 46 | 27 |
| 14 | 14 | 21 | 35 | b29 | b55 | 64 | 194 | 144 | 51 | 83 | 47 | 26 |
| 15 | 86 | *21 | 32 | 31 | 51 | 51 | 144 | 272 | 50 | 70 | 64 | 25 |
| 16 | 24 | 26 | 30 | 30 | 48 | 54 | 120 | 157 | 48 | 80 | 59 | 24 |
| 17 | 21 | 27 | 30 | 28 | 48 | 57 | 104 | 137 | 46 | 155 | 48 | 24 |
| 18 | 20 | 27 | 37 | b28 | 44 | 84 | 96 | 109 | 46 | 85 | 46 | 24 |
| 19 | 19 | 36 | 34 | b34 | 43 | 138 | 87 | 91 | 93 | 79 | 43 | 23 |
| 20 | 19 | 51 | b29 | b31 | 41 | 111 | 81 | 83 | 81 | 68 | 41 | 21 |
| 21 | 19 | 28 | b27 | b28 | 41 | 92 | 77 | 143 | 64 | 59 | 40 | 20 |
| 22 | 19 | 25 | b26 | 36 | 43 | 353 | 75 | 303 | 68 | 54 | 50 | 21 |
| 23 | 19 | 31 | b26 | 35 | 86 | 173 | 70 | 253 | 90 | 54 | 47 | 22 |
| 24 | 19 | 29 | 28 | b31 | 67 | 127 | 77 | 183 | 87 | 58 | 41 | 21 |
| 25 | 19 | 26 | b25 | b30 | 62 | 106 | 74 | 150 | 70 | 56 | 38 | 34 |
| 26 | 18 | 24 | b25 | b30 | 56 | 118 | 66 | 137 | 66 | 48 | 35 | 28 |
| 27 | 18 | 24 | 26 | 32 | 59 | 89 | 62 | 132 | 56 | 46 | 35 | 24 |
| 28 | 19 | 35 | 27 | b31 | 57 | 81 | 59 | 111 | 54 | 174 | 34 | 27 |
| 29 | 24 | 56 | 94 | b28 | - | 75 | 56 | 98 | 53 | 98 | 33 | 27 |
| 30 | 21 | 32 | 108 | b27 | ------ | 70 | 54 | 91 | 50 | 68 | 33 | 26 |
| 31 | 21 | ---- | 61 | b25 | ------ | 66 | ------ | 83 | ------ | 70 | 43 | ------ |
| Total | 638 | 815 | 1,171 | 1,015 | 2,161 | 2,528 | 2,618 | 3,357 | 1,895 | 2,555 | 1,606 | 821 |
| Mean | 20.6 | 27.2 | 37.8 | 32.7 | 77.2 | 81.5 | 87.3 | 108 | 63.2 | 82.4 | 51.8 | 27.4 |
| Cfsm | 0.258 | 0.341 | 0.474 | 0.410 | 0.967 | 1.02 | 1.09 | 1.35 | 0.792 | 1.03 | 0.649 | 0.343 |
| In. | 0.30 | 0.38 | 0.55 | 0.47 | 1.01 | 1.18 | 1.22 | 1.56 | 0.88 | 1.19 | 0.75 | 0.38 |

Calendar year 1954: Max 786 Min 14 Mean 55.3 Cfsm 0.693 In. 9.42
Water year 1954-55: Max 411 Min 14 Mean 58.0 Cfsm 0.727 In. 9.87

Peak discharge (base, 900 cfs).--July 28 (8 p.m.) 918 cfs (3.47 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## North Fork Swannanoa River near Black Mountain, N. C.

Location.--Lat 35°39'11", long 82°21'04", on left bank 0.1 mile downstream from Walker Branch, 0.8 mile downstream from Burnett Dam, 1.9 miles downstream from Sugar Fork, 3.0 miles northwest of town of Black Mountain, Buncombe County, and 3.4 miles downstream from Right Fork.

Drainage area.--23.8 sq mi.

Records available.--January 1926 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,428.03 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--29 years, 47.9 cfs (unadjusted).

Extremes.--Maximum discharge during year, 398 cfs Mar. 22 (gage height, 2.96 ft); minimum, 1.1 cfs Oct. 3, 4, 5 (gage height, 0.90 ft).
1926-55: Maximum discharge, 16,500 cfs June 16, 1949 (gage height, 9.10 ft), from rating curve extended above 2,600 cfs on basis of slope-area determinations at gage heights 8.55 and 9.10 ft; minimum, 0.6 cfs Sept. 17, 1953 (gage height, 0.83 ft).

Remarks.--Records good except those for period of ice effect, which are fair. City of Asheville diverted part of its water supply by gravity from four main tributaries with a combined drainage area of 16.4 sq mi, at points 1.9 to 4.0 miles upstream, and by pumping from Burnett Lake (see p. 247).

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1926. WSP 1143: 1927-28, 1929(M), 1930, 1931-32(M), 1933-34, 1935(M), 1940(P), 1941-45(M), 1946-47(P). WSP 1336: 1927.

Rating table, water year 1954-55, except period of ice effect (gage height, in feet, and discharge in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.9 | 1.1 | 1.7 | 22 |
| 1.0 | 2.0 | 1.9 | 37 |
| 1.1 | 3.3 | 2.1 | 67 |
| 1.2 | 5.1 | 2.3 | 118 |
| 1.3 | 7.3 | 2.6 | 231 |
| 1.4 | 10 | 2.9 | 369 |
| 1.5 | 14 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.3 | 1.6 | 1.9 | 2.8 | 2.0 | 67 | 41 | 42 | 20 | 16 | 78 | 12 |
| 2 | 1.3 | 1.7 | 1.8 | 2.5 | 2.5 | 58 | 37 | 37 | 18 | 13 | 78 | 12 |
| 3 | 1.3 | 1.6 | 1.8 | 2.4 | 2.5 | 48 | 35 | 34 | 16 | 12 | 101 | 11 |
| 4 | 1.3 | 1.8 | 1.8 | 2.4 | 2.3 | 43 | 32 | 33 | 14 | 11 | 101 | 11 |
| 5 | 1.3 | 2.0 | 2.1 | 2.1 | 2.3 | 38 | 28 | 29 | 12 | 11 | 74 | 9.8 |
| 6 | 1.3 | 1.8 | 2.4 | 2.0 | 32 | 38 | 36 | 26 | 11 | 18 | 62 | 9.3 |
| 7 | 1.3 | 1.7 | 2.0 | 2.6 | *185 | 39 | 62 | 22 | 13 | 29 | 60 | 8.4 |
| 8 | 1.3 | *1.7 | 1.9 | 1.8 | 134 | 34 | 56 | 21 | 13 | 29 | 138 | 7.1 |
| 9 | 1.3 | 1.7 | 2.0 | 1.8 | 85 | 30 | 47 | 19 | 14 | 22 | 166 | 6.4 |
| 10 | 1.3 | 1.7 | 1.9 | 2.0 | 63 | 27 | 42 | 17 | *12 | 27 | 131 | 5.8 |
| 11 | 1.3 | 1.6 | 1.8 | 1.8 | 63 | 26 | 60 | 16 | 15 | 81 | 96 | 5.3 |
| 12 | 1.3 | 1.6 | 1.8 | 1.9 | b55 | 39 | 88 | 16 | 15 | 85 | 96 | 4.7 |
| 13 | *1.3 | 1.6 | 2.3 | 1.9 | b41 | 56 | 93 | 24 | 12 | 112 | 76 | 4.4 |
| 14 | 1.3 | 1.6 | *2.0 | *1.8 | 38 | 63 | 197 | 33 | 11 | 98 | 63 | 4.0 |
| 15 | 2.4 | 1.6 | 1.9 | 1.9 | 34 | 62 | 159 | 49 | 9.5 | 74 | 65 | 3.8 |
| 16 | 1.7 | 2.0 | 1.8 | 1.8 | 30 | *65 | 115 | 60 | 9.0 | 56 | 67 | *3.2 |
| 17 | 1.6 | 1.8 | 1.8 | 1.8 | 28 | 96 | 90 | 58 | 7.9 | 43 | *58 | 2.8 |
| 18 | 1.6 | 1.8 | 2.3 | 1.8 | 26 | 110 | 74 | *48 | 7.3 | 38 | 51 | 2.8 |
| 19 | 1.6 | 1.9 | 2.0 | 2.1 | 22 | 159 | 65 | 42 | 31 | 34 | 54 | 3.5 |
| 20 | 1.6 | 2.4 | 1.9 | 2.0 | 21 | 166 | 56 | 35 | 88 | *28 | 56 | 2.9 |
| 21 | 1.6 | 1.9 | 1.8 | 2.0 | 20 | 134 | *49 | 34 | 78 | 24 | 44 | 1.8 |
| 22 | 1.6 | 1.7 | 1.8 | 2.1 | 25 | *322 | 45 | 58 | 58 | 22 | 39 | 1.8 |
| 23 | 1.6 | 1.9 | 1.8 | 2.1 | *160 | 240 | 41 | 128 | 42 | 21 | 39 | 1.8 |
| 24 | 1.5 | 1.7 | 1.7 | 2.0 | 125 | 151 | 47 | 101 | 36 | 17 | 33 | 1.8 |
| 25 | 1.5 | 1.7 | 1.7 | 2.0 | 88 | 115 | 62 | 78 | 32 | 16 | 27 | 5.8 |
| 26 | 1.5 | 1.7 | 1.7 | 2.0 | 67 | 101 | 74 | 62 | 30 | 15 | 24 | 5.3 |
| 27 | 1.5 | 1.8 | 1.7 | 2.0 | 62 | 81 | 76 | 49 | 27 | 14 | 21 | 4.4 |
| 28 | 1.6 | 2.3 | 2.0 | 2.0 | 72 | 67 | 65 | 41 | 22 | 25 | 18 | 4.9 |
| 29 | 1.6 | 2.3 | 5.6 | 2.0 | - | 60 | 56 | 35 | 20 | 62 | 17 | 4.7 |
| 30 | 1.6 | 2.0 | 4.7 | 1.9 | ------- | 51 | 47 | 28 | 18 | 53 | 15 | 4.4 |
| 31 | 1.6 | ------- | 3.3 | 1.9 | ------- | 45 | ------- | 24 | ------- | 63 | 14 | ------- |
| Total | 45.9 | 54.2 | 67.0 | 63.2 | 1,487.6 | 2,631 | 1,975 | 1,299 | 711.7 | 1,169 | 1,962 | 166.9 |
| Mean | 1.48 | 1.81 | 2.16 | 2.04 | 53.1 | 84.9 | 65.8 | 41.9 | 23.7 | 37.7 | 63.3 | 5.56 |
| (†) | 92.0 | 229 | 1,102 | 609 | 541 | 338 | 353 | 367 | 359 | 399 | 331 | 306 |

Adjusted for diversion, evaporation, and change in reservoir contents

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 4.45 | 9.43 | 37.7 | 21.7 | 72.4 | 95.8 | 77.6 | 53.7 | 35.7 | 50.6 | 74.0 | 15.8 |
| Cfsm | 0.187 | 0.396 | 1.58 | 0.912 | 3.04 | 4.03 | 3.26 | 2.26 | 1.50 | 2.13 | 3.11 | 0.664 |
| In. | 0.22 | 0.44 | 1.83 | 1.05 | 3.17 | 4.64 | 3.64 | 2.60 | 1.67 | 2.45 | 3.58 | 0.74 |

| | Observed | | | Adjusted | | |
|---|---|---|---|---|---|---|
| Calendar year 1954 : | Max 185 | Min 1.2 | Mean 18.8 | Mean 43.8 | Cfsm 1.84 | In. 24.98 |
| Water year 1954-55 : | Max 322 | Min 1.3 | Mean 31.9 | Mean 45.6 | Cfsm 1.92 | In. 26.03 |

* Discharge measurement made on this day.
† Diversion by city of Asheville, evaporation and change in contents in Burnett Lake, equivalent in cfs-days. Records of diversion and change in contents of Burnett Lake furnished by city of Asheville, Division of Watersheds. Records of evaporation by Tennessee Valley Authority.
b Stage-discharge relation affected by ice.

## Beetree Creek near Swannanoa, N. C.

Location.--Lat 35°39'11", long 82°24'20", on left bank 1,000 ft upstream from Beetree Reservoir and 3.8 miles north of Swannanoa, Buncombe County.

Drainage area.--5.46 sq mi.

Records available.--February 1926 to September 1955.

Gage.--Water-stage recorder and modified Parshall flume set in masonry control. Datum of gage is 2,728.39 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--29 years, 10.4 cfs.

Extremes.--Maximum discharge during year, 83 cfs Mar. 22 (gage height, 2.99 ft); minimum, 0.3 cfs Oct. 1 (gage height, 0.26 ft).
1926-55: Maximum discharge, 1,370 cfs Aug. 13, 1940 (gage height, 6.20 ft), from rating curve extended above 240 cfs on basis of computation of peak flow over weir; minimum, 0.3 cfs Sept. 29, 30, Oct. 1, 1954 (gage height, 0.26 ft).

Remarks.--Records good except those for periods of ice effect, which are fair.

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1928, 1936-37(M). WSP 953: 1929(M). WSP 1276: 1932.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.2 | 0.1 | 1.0 | 7.0 |
| .3 | .5 | 1.3 | 12 |
| .4 | 1.0 | 1.6 | 18 |
| .5 | 1.6 | 2.0 | 28 |
| .6 | 2.4 | 2.5 | 43 |
| .8 | 4.3 | 3.0 | 84 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.5 | 0.6 | 1.7 | 12 | 2.6 | 13 | 11 | 14 | 7.3 | 4.6 | 18 | 3.5 |
| 2 | .6 | .7 | 1.5 | 9.2 | 4.2 | 11 | 10 | 13 | 6.5 | 4.1 | 16 | 3.5 |
| 3 | .5 | .7 | 1.3 | 7.6 | 4.4 | 11 | 9.5 | 12 | 6.1 | 4.0 | 17 | 3.4 |
| 4 | .4 | .8 | 1.2 | 6.7 | 3.7 | 10 | 8.8 | 11 | 5.6 | 4.4 | 14 | 3.3 |
| 5 | .4 | 1.4 | 2.3 | 6.1 | 3.5 | 9.2 | 8.7 | 10 | 5.2 | 4.1 | 11 | 3.1 |
| 6 | .4 | .9 | 3.9 | 5.6 | 30 | 10 | 12 | 9.2 | 4.8 | 4.6 | 11 | 2.9 |
| 7 | .4 | .8 | 2.0 | 4.8 | *33 | 9.5 | 17 | 8.5 | 5.3 | 4.3 | 11 | 2.7 |
| 8 | .4 | *.8 | 1.7 | 4.4 | 20 | 8.5 | 14 | 8.0 | 5.8 | 4.6 | 14 | 2.4 |
| 9 | .4 | .8 | 1.6 | 4.2 | 15 | 8.0 | 13 | 7.4 | 5.7 | 4.1 | 14 | 2.2 |
| 10 | .4 | .8 | 1.5 | 4.0 | 12 | 7.9 | 12 | 7.0 | 4.9 | 7.2 | 12 | 2.2 |
| 11 | .4 | .7 | 1.4 | 4.2 | 13 | 7.6 | 17 | 6.7 | 6.2 | 11 | 12 | 2.0 |
| 12 | .4 | .6 | 1.3 | 3.8 | b9.5 | 10 | 18 | 6.8 | 4.9 | 11 | 13 | 1.9 |
| 13 | *.4 | .6 | 1.9 | 3.7 | b9.0 | 11 | 22 | 9.5 | 4.4 | 12 | 10 | 1.9 |
| 14 | .4 | .6 | *2.1 | *3.3 | 8.8 | 14 | 40 | 9.2 | *4.4 | 11 | 9.0 | 1.8 |
| 15 | 4.7 | .6 | 2.0 | 3.5 | 8.3 | 14 | 30 | 16 | 4.2 | 9.0 | 10 | 1.7 |
| 16 | .9 | 1.4 | 1.8 | 3.3 | 7.9 | *17 | 23 | 14 | 3.9 | 7.6 | 9.7 | *1.5 |
| 17 | .6 | 1.5 | 1.8 | 3.2 | 7.7 | 20 | 20 | 13 | 3.6 | 6.4 | *8.3 | 1.4 |
| 18 | .6 | 1.0 | 2.9 | 3.1 | 7.0 | 28 | 17 | *12 | 3.4 | 5.4 | 7.9 | 1.3 |
| 19 | .6 | 1.5 | 2.4 | 3.4 | 6.5 | 39 | *16 | 11 | 13 | 4.9 | 7.6 | 1.3 |
| 20 | .5 | 3.5 | 2.0 | 3.0 | 6.1 | 35 | 14 | 9.7 | 18 | *4.4 | 7.6 | *1.2 |
| 21 | .5 | 1.7 | 1.8 | 3.1 | 5.8 | 27 | 14 | 9.9 | 18 | 4.2 | 6.8 | 1.1 |
| 22 | .5 | 1.3 | 1.8 | 3.3 | 8.4 | 62 | 13 | 16 | 12 | 4.1 | 7.6 | 1.1 |
| 23 | .5 | 1.3 | 1.8 | 3.1 | 22 | 40 | 12 | 27 | 9.7 | 3.9 | 8.0 | 1.1 |
| 24 | .5 | 1.2 | 2.0 | b2.5 | 17 | 30 | 17 | 20 | 8.7 | 3.9 | 6.7 | 1.1 |
| 25 | .5 | 1.1 | 1.8 | b2.1 | 15 | 24 | 18 | 17 | 7.4 | 4.2 | 6.0 | 4.0 |
| 26 | .5 | 1.0 | 1.8 | b2.5 | 13 | 22 | 21 | 14 | 7.3 | 4.1 | 5.4 | 2.2 |
| 27 | .5 | .8 | 2.0 | 2.9 | 14 | 18 | 20 | 13 | 6.2 | 3.8 | 4.9 | 1.8 |
| 28 | .6 | 1.8 | 4.3 | b2.2 | 14 | 16 | 18 | 11 | 5.8 | 15 | 4.3 | 2.2 |
| 29 | .8 | 4.5 | 36 | b1.8 | - | 14 | 16 | 9.9 | 5.3 | 16 | 4.1 | 2.0 |
| 30 | .8 | 2.0 | 30 | b1.6 | ------- | 13 | 15 | 9.2 | 5.2 | 12 | 3.8 | 1.8 |
| 31 | .6 | ------- | 16 | b2.0 | ------- | 12 | ------- | 8.2 | --------- | 14 | 4.0 | ------- |
| Total | 20.2 | 37.0 | 137.6 | 126.2 | 321.4 | 571.7 | 497.0 | 363.2 | 208.8 | 213.9 | 294.7 | 63.6 |
| Mean | 0.65 | 1.23 | 4.44 | 4.07 | 11.5 | 18.4 | 16.6 | 11.7 | 6.96 | 6.90 | 9.51 | 2.12 |
| Cfsm | 0.119 | 0.225 | 0.813 | 0.745 | 2.11 | 3.37 | 3.04 | 2.14 | 1.27 | 1.26 | 1.74 | 0.388 |
| In. | 0.14 | 0.25 | 0.94 | 0.86 | 2.19 | 3.89 | 3.39 | 2.47 | 1.42 | 1.46 | 2.01 | 0.43 |

Calendar year 1954: Max 156 Min 0.3 Mean 8.23 Cfsm 1.51 In. 20.45
Water year 1954-55: Max 62 Min 0.4 Mean 7.82 Cfsm 1.43 In. 19.45

Peak discharge (base, 150 cfs).--No peak above base.
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Swannanoa River at Biltmore, N. C.

Location.--Lat 35°34'06", long 82°32'42", on left bank at Biltmore, Buncombe County, 100 ft downstream from Biltmore Avenue Bridge, 200 ft upstream from Southern Railway bridge, and 1.6 miles upstream from mouth.

Drainage area.--130 sq mi.

Records available.--December 1920 to September 1926, May 1934 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,976.58 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Dec. 1, 1920, to Sept. 30, 1926, staff gage at site 100 ft upstream at same datum.

Average discharge.--26 years (1921-26, 1934-55), 153 cfs (unadjusted).

Extremes.--Maximum discharge during year, 805 cfs Mar. 22 (gage height, 3.60 ft); minimum, 3.6 cfs Oct. 11 (gage height, 1.09 ft); minimum daily, 6.8 cfs Oct. 8, 13, 14.
1920-26, 1934-55: Maximum discharge, 18,400 cfs Aug. 13, 1940 (gage height, 19.00 ft), from rating curve extended above 8,400 cfs on basis of computation of peak flow over dam 3.6 miles above station; minimum, 1.1 cfs Oct. 9, 14, 15, 1941; minimum daily, 1.2 cfs Oct. 14, 1941; minimum gage height, 0.65 ft July 17, 1936.
Maximum stage known, 21.5 ft in July 1916, from floodmarks. Flood of Aug. 16, 1928, reached a stage of 18.74 ft, from floodmarks. Extremely high stages subject to backwater from French Broad River.

Remarks.--Records excellent except those for periods of ice effect, which are good. No regulation from Lake Craig 3.6 miles above station after 1950 (reservoir silted). City of Asheville diverts its water supply above station from Beetree Reservoir (capacity, 843 cfs-days), North Fork Swannanoa River, and from Burnett Lake on North Fork (see p. 247). Textile mills 2.0 miles above gage divert for industrial use about 5.0 mgd, of which about 3 mgd, equivalent to a mean discharge of 4½ cfs, is discharged into French Broad River.

Revisions (water years).--WSP 803: 1921(M), 1923-26(M). WSP 823: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 4.0 | 1.9 | 128 |
| 1.2 | 9.7 | 2.2 | 212 |
| 1.3 | 18 | 2.6 | 352 |
| 1.5 | 45 | 3.0 | 520 |
| 1.7 | 82 | 3.5 | 755 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 18 | 25 | 62 | b30 | 138 | 118 | 121 | 68 | 57 | 228 | 66 |
| 2 | 10 | 19 | 23 | 57 | 47 | 126 | 114 | 106 | 60 | 50 | 191 | 76 |
| 3 | 14 | 22 | 22 | 44 | 48 | 111 | 114 | 97 | 54 | 47 | 253 | 70 |
| 4 | 8.6 | 19 | 24 | 39 | 38 | 104 | 100 | 95 | 54 | 48 | 203 | 68 |
| 5 | 8.0 | 36 | 38 | *38 | 39 | 97 | 93 | 84 | 52 | 50 | 157 | 66 |
| 6 | 7.4 | 33 | 76 | 34 | 266 | 97 | 121 | 76 | 42 | 44 | 153 | 59 |
| 7 | 8.0 | 30 | 39 | 34 | *388 | 100 | 176 | 68 | 62 | 60 | 168 | 54 |
| 8 | 6.8 | *25 | 26 | 38 | 278 | 84 | 149 | 70 | *70 | 72 | 251 | 45 |
| 9 | 8.6 | 20 | 29 | 36 | *197 | 74 | 136 | 62 | 70 | 68 | 307 | 42 |
| 10 | 11 | 18 | 25 | 33 | 151 | 70 | 126 | 57 | 50 | 62 | 271 | 47 |
| 11 | 8.0 | 17 | 25 | 38 | 144 | 70 | 187 | 54 | 64 | 168 | 242 | 45 |
| 12 | 7.4 | 18 | 29 | 33 | b120 | 89 | 228 | 62 | 57 | 182 | 278 | 42 |
| 13 | *6.8 | 22 | 32 | 32 | b110 | 128 | 300 | 116 | 47 | 244 | 194 | 39 |
| 14 | 6.8 | 26 | *33 | 25 | b95 | 171 | 592 | 165 | 39 | 212 | 168 | 33 |
| 15 | 58 | 23 | 26 | 34 | 93 | *154 | 433 | 280 | 36 | 165 | 203 | 32 |
| 16 | 23 | 28 | 25 | 34 | 82 | 154 | 322 | 200 | 33 | 133 | 206 | 30 |
| 17 | 17 | 45 | 25 | 28 | 82 | 194 | 258 | 182 | 30 | 114 | 165 | 29 |
| 18 | 15 | 32 | 40 | 26 | 76 | 251 | 215 | *151 | 26 | 93 | *138 | 32 |
| 19 | 12 | 59 | 39 | 32 | 74 | 388 | *185 | 131 | 239 | 93 | 159 | *28 |
| 20 | 10 | 70 | 26 | 33 | 72 | 392 | 162 | 114 | 241 | *105 | 291 | 24 |
| 21 | 11 | 40 | b20 | 32 | 68 | 314 | 151 | 114 | 212 | 80 | 149 | 22 |
| 22 | 11 | 28 | b20 | 38 | 68 | *700 | 141 | 162 | 154 | 70 | 146 | 20 |
| 23 | 14 | 29 | 23 | 34 | 203 | 524 | 131 | 294 | 116 | 70 | 141 | 22 |
| 24 | 16 | 32 | 29 | 32 | 228 | 356 | 157 | 264 | 102 | 64 | 114 | 25 |
| 25 | 12 | 28 | b22 | 29 | 179 | 282 | 185 | 197 | 93 | 64 | 95 | 55 |
| 26 | 11 | 24 | b22 | 28 | 151 | 268 | 171 | 157 | 95 | 60 | 86 | 42 |
| 27 | 13 | 24 | 25 | 33 | 138 | 215 | 174 | 128 | 74 | 55 | 86 | 29 |
| 28 | 15 | 33 | 26 | 30 | 146 | 185 | 160 | 114 | 64 | 161 | 80 | 30 |
| 29 | 19 | 60 | 129 | b26 | - | 162 | 144 | 102 | 62 | 206 | 72 | 33 |
| 30 | 23 | 32 | 174 | b24 | ------ | 144 | 131 | 91 | 60 | 141 | 68 | 29 |
| 31 | 23 | ------ | 82 | b21 | ------ | 131 | ------ | 80 | ------ | 140 | 74 | ------ |
| Total | 425.4 | 910 | 1,199 | 1,057 | 3,611 | 6,273 | 5,674 | 3,994 | 2,426 | 3,178 | 5,337 | 1,234 |
| Mean | 13.7 | 30.3 | 38.7 | 34.1 | 129 | 202 | 189 | 129 | 80.9 | 103 | 172 | 41.1 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 1,970 Min 6.8 Mean 102 Cfsm - In. -
Water year 1954-55: Max 700 Min 6.8 Mean 96.8 Cfsm - In. -

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## French Broad River at Asheville, N. C.

Location.--Lat 35°36'32", long 82°34'41", on right bank at downstream side of Pearson Bridge at Asheville, Buncombe County, 2.3 miles downstream from Southern Railway station, 3.1 miles downstream from Swannanoa River, and at mile 145.8.

Drainage area.--945 sq mi.

Records available.--September 1895 to December 1901 and January 1905 to September 1955 in reports of Geological Survey. September 1895 to December 1901 and March 1903 to December 1923 in North Carolina Department of Conservation and Development Bulletin 34 and Tennessee Division of Geology Bulletin 34. Records prior to January 1909 have been revised in these two bulletins.

Gage.--Water-stage recorder. Datum of gage is 1,950.28 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Sept. 17, 1895, to Dec. 31, 1901, wire-weight gage at present site at different datum. Mar. 19, 1903, to July 15, 1916, and Jan. 1, 1917, to Sept. 30, 1922, staff gage at Smith Bridge 1.5 miles upstream at datum 11.52 ft higher. Oct. 1, 1922, to Aug. 9, 1930, chain gage at present site and datum.

Average discharge.--58 years (1895-1901, 1903-55), 2,088 cfs.

Extremes.--Maximum discharge during year, 8,220 cfs Feb. 6 (gage height, 5.14 ft); minimum, 252 cfs Oct. 12 (gage height, 0.33 ft).
1895-1901, 1903-55: Maximum discharge, 110,000 cfs July 16, 1916 (gage height, 23.1 ft, present site and datum, from floodmarks), from rating curve extended above 43,000 cfs; minimum, 239 cfs at times in August and September 1925 (gage height, 0.16 ft).

Remarks.--Records excellent except those for period of no gage-height record, which are good. Small diversions from tributaries for water supply. Slight diurnal fluctuation and occasional slight regulation at low flow caused by powerplants and small reservoirs above station.

Revisions.--WSP 823: Drainage area. See also Records available.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to May 23 | | | | May 24 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.3 | 230 | 2.0 | 2,200 | 0.7 | 545 | 2.5 | 2,940 |
| .5 | 385 | 2.5 | 2,970 | 1.0 | 840 | 3.0 | 3,770 |
| .7 | 560 | 3.0 | 3,790 | 1.5 | 1,440 | 4.0 | 5,640 |
| 1.0 | 880 | 4.0 | 5,640 | 2.0 | 2,160 | | |
| 1.5 | 1,500 | 5.0 | 7,880 | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 421 | 337 | 858 | 3,600 | 660 | 1,460 | 1,460 | 1,380 | 1,610 | 1,100 | 2,190 | 928 |
| 2 | 479 | 329 | 640 | 1,910 | 836 | 1,370 | 1,400 | 1,280 | 1,510 | 1,000 | 2,720 | 950 |
| 3 | 345 | 394 | 600 | 1,530 | 1,100 | 1,280 | 1,640 | 1,290 | 1,440 | 917 | 2,490 | 895 |
| 4 | 290 | 385 | 551 | 1,330 | 1,050 | 1,230 | 1,660 | 1,270 | 1,360 | 939 | 2,020 | 808 |
| 5 | 260 | 436 | 580 | 1,220 | 916 | 1,190 | 1,460 | 1,200 | 1,320 | 1,020 | 1,780 | 777 |
| 6 | 290 | 488 | 1,200 | 1,120 | 3,260 | 1,160 | 1,600 | 1,140 | 1,260 | 1,220 | 1,570 | 788 |
| 7 | 321 | 444 | 1,200 | 1,050 | 7,590 | 1,110 | 2,680 | 1,100 | 1,300 | 1,340 | 1,500 | 798 |
| 8 | 305 | 385 | 792 | 988 | 6,400 | 1,050 | 2,580 | 1,080 | 1,510 | 1,320 | 1,690 | 766 |
| 9 | 282 | 377 | 704 | a950 | 4,110 | 1,010 | 2,080 | 1,060 | 1,450 | 1,380 | 1,750 | 746 |
| 10 | 268 | 394 | 781 | a880 | 2,380 | 976 | 1,840 | 1,060 | 1,340 | 1,310 | 1,780 | 766 |
| 11 | 260 | 402 | 770 | a1,080 | 2,100 | 976 | 2,060 | 1,040 | 1,400 | 1,850 | 1,570 | 685 |
| 12 | 260 | 394 | 660 | a1,040 | 2,040 | 1,050 | 3,740 | 1,050 | 1,590 | 2,310 | 1,820 | 655 |
| 13 | 275 | 394 | 671 | a930 | 1,600 | 1,010 | 3,450 | 1,730 | 1,300 | 3,120 | 1,320 | 665 |
| 14 | 290 | 377 | 858 | a850 | 1,530 | 1,270 | 6,310 | 2,620 | 1,170 | 2,910 | 1,230 | 675 |
| 15 | 642 | 361 | 836 | a825 | 1,450 | 1,400 | 5,720 | 3,980 | *1,070 | 2,360 | 2,000 | 655 |
| 16 | 671 | 419 | 726 | a815 | *1,370 | 1,280 | 3,990 | 2,910 | 1,020 | 1,940 | 2,130 | 645 |
| 17 | 488 | 781 | *660 | a790 | 1,320 | 1,300 | 3,080 | 2,890 | 994 | 1,940 | 1,800 | 626 |
| 18 | 337 | 825 | 748 | a770 | 1,290 | 1,440 | 2,650 | 2,920 | 961 | 1,660 | 1,440 | 599 |
| 19 | 321 | 770 | 1,010 | a800 | 1,200 | 1,700 | 2,440 | 2,220 | 1,300 | 1,520 | 1,300 | 563 |
| 20 | *329 | 1,120 | 869 | a850 | 1,160 | 1,800 | 2,200 | 1,940 | 2,020 | *1,730 | 1,590 | 572 |
| 21 | 329 | 847 | 715 | a860 | 1,130 | 1,600 | 2,050 | 1,920 | 2,280 | 1,660 | 1,340 | 599 |
| 22 | 337 | *600 | 660 | a850 | 1,120 | 4,690 | 1,970 | 3,890 | 1,820 | 1,550 | 1,260 | 581 |
| 23 | 337 | 560 | 640 | a835 | 1,760 | *4,750 | 1,840 | 5,320 | 1,800 | 1,400 | 1,270 | 545 |
| 24 | 329 | 640 | 640 | *803 | 2,290 | 3,050 | 1,810 | *4,960 | 1,900 | 1,260 | 1,170 | 545 |
| 25 | 321 | 610 | 600 | 726 | 1,990 | 2,360 | *2,110 | 3,770 | 1,540 | 1,550 | *1,070 | 626 |
| 26 | *321 | 560 | 580 | 693 | 1,770 | 2,350 | 1,850 | 2,880 | 1,500 | 1,360 | 994 | 840 |
| 27 | 345 | 524 | 560 | 737 | 1,580 | 2,220 | 1,710 | 2,670 | 1,310 | 1,270 | 950 | *695 |
| 28 | 361 | 560 | *600 | 737 | 1,530 | 1,880 | 1,620 | 2,420 | 1,190 | 1,330 | 862 | 635 |
| 29 | 377 | 964 | 2,240 | 737 | - | 1,730 | 1,550 | 2,080 | 1,180 | 2,010 | 840 | 635 |
| 30 | 377 | 1,040 | 6,200 | 704 | ------ | 1,600 | 1,460 | 1,900 | 1,160 | 1,750 | 873 | 626 |
| 31 | 369 | -- --- | 5,640 | 650 | ------ | 1,510 | ------- | 1,750 | ------- | 1,940 | 917 | ------- |
| Total | 10,937 | 16,717 | 34,789 | 31,660 | 56,532 | 52,802 | 72,010 | 68,720 | 42,605 | 49,966 | 47,236 | 20,889 |
| Mean | 353 | 557 | 1,122 | 1,021 | 2,019 | 1,703 | 2,400 | 2,217 | 1,420 | 1,612 | 1,524 | 696 |
| Cfsm | 0.374 | 0.589 | 1.19 | 1.08 | 2.14 | 1.80 | 2.54 | 2.35 | 1.50 | 1.71 | 1.61 | 0.737 |
| In. | 0.43 | 0.66 | 1.37 | 1.25 | 2.22 | 2.08 | 2.83 | 2.70 | 1.68 | 1.97 | 1.86 | 0.82 |

Calendar year 1954: Max 14,100 Min 252 Mean 1,372 Cfsm 1.45 In. 19.72
Water year 1954-55: Max 7,590 Min 260 Mean 1,383 Cfsm 1.46 In. 19.87

Peak discharge (base, 9,000 cfs).--No peak above base.
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for stations at Bent Creek and near Marshall.

## Sandymush Creek near Alexander, N. C.

Location.--Lat 35°43'49", long 82°40'11", on left bank 0.7 mile downstream from Turkey Creek, 1.3 miles upstream from mouth, and 3.5 miles northwest of Alexander, Buncombe County.

Drainage area.--79.5 sq mi.

Records available.--December 1942 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,732.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--12 years (1943-55), 57.2 cfs.

Extremes.--Maximum discharge during year, 1,410 cfs Mar. 22 (gage height, 5.70 ft); minimum, 7.3 cfs Oct. 1 (gage height, 2.07 ft).
1942-55: Maximum discharge, 5,490 cfs Feb. 10, 1946 (gage height, 9.65 ft), from rating curve extended above 2,200 cfs by logarithmic plotting; minimum not recorded; minimum daily, 4.7 cfs Sept. 2, 1953.
Flood of Aug. 30, 1940, reached a stage of 16.7 ft, from floodmarks.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Revisions (water years).--WSP 1306: 1943-45(M).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 2.0 | 5.1 | 2.8 | 78 |
| 2.1 | 8.8 | 3.0 | 113 |
| 2.2 | 14 | 3.5 | 247 |
| 2.4 | 27 | 4.0 | 435 |
| 2.6 | 49 | 4.5 | 660 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 83 | 12 | 21 | 34 | b20 | 81 | 62 | 37 | 32 | 18 | 22 | 15 |
| 2 | 26 | 14 | 19 | 29 | 62 | 70 | 57 | 35 | 30 | 17 | 20 | 14 |
| 3 | 13 | 14 | 18 | 26 | 59 | 60 | 59 | 34 | 28 | 16 | 18 | 14 |
| 4 | 11 | 14 | b16 | 24 | 42 | 53 | 50 | 33 | 26 | 76 | 17 | 14 |
| 5 | 9.7 | 20 | b25 | 23 | 35 | 49 | 47 | 32 | 26 | 61 | 16 | a14 |
| 6 | 10 | 16 | 60 | 22 | 365 | 63 | 92 | 30 | 26 | 68 | 16 | a14 |
| 7 | 11 | 14 | b29 | 21 | 221 | 64 | 186 | 29 | 29 | 89 | 48 | a13 |
| 8 | 9.7 | 14 | b26 | 20 | *106 | 55 | 108 | 29 | 36 | 51 | 66 | a12 |
| 9 | 9.3 | 14 | 34 | 19 | 74 | 49 | 85 | 27 | 48 | 76 | 27 | a12 |
| 10 | 9.3 | 14 | 29 | 20 | 57 | 45 | 72 | 26 | 30 | 47 | 22 | a12 |
| 11 | 9.7 | 13 | b20 | 27 | 57 | 43 | 75 | 26 | 33 | 35 | 20 | a 11 |
| 12 | 9.3 | 13 | 21 | 23 | b30 | 64 | 68 | 72 | 27 | 35 | 40 | a 11 |
| 13 | 9.3 | 13 | 23 | 22 | b25 | 59 | 96 | 65 | 28 | 35 | 20 | a 11 |
| 14 | 8.8 | 13 | 24 | b18 | b40 | 68 | 169 | 107 | 26 | 30 | 18 | a10 |
| 15 | 52 | 13 | 22 | 22 | b37 | 64 | 117 | 174 | 24 | 31 | 42 | a10 |
| 16 | 12 | 14 | 21 | 22 | b35 | 90 | 95 | 78 | 22 | 30 | 38 | a10 |
| 17 | 11 | 17 | 20 | 20 | 34 | 102 | 78 | 70 | *21 | 37 | 24 | a9.3 |
| 18 | 11 | 15 | 31 | *b20 | 31 | 156 | 70 | 56 | 20 | 29 | 23 | a8.8 |
| 19 | 11 | 29 | b25 | b25 | 29 | 364 | 63 | 47 | 34 | 31 | 20 | a8.8 |
| 20 | *10 | 49 | b20 | b23 | 27 | 228 | *56 | 41 | 30 | 44 | 18 | a8.4 |
| 21 | 10 | 20 | b18 | b20 | 26 | 146 | 53 | 48 | 25 | 31 | 18 | a8.1 |
| 22 | 10 | 17 | b16 | b25 | 36 | 616 | 53 | 169 | 20 | 31 | 27 | a8.1 |
| 23 | 10 | 18 | *b15 | 28 | 158 | *209 | 48 | 148 | 41 | 30 | *20 | *8.1 |
| 24 | 10 | *18 | b23 | b25 | 109 | 139 | 59 | *100 | 30 | 44 | 16 | 8.1 |
| 25 | 10 | 17 | b20 | b18 | 86 | 121 | 59 | 80 | 23 | 46 | 15 | 30 |
| 26 | 10 | 16 | b18 | b18 | 70 | 166 | 52 | 62 | 36 | *27 | 14 | 15 |
| 27 | 10 | 15 | 20 | b25 | 80 | 121 | 48 | 52 | 22 | 23 | 14 | 13 |
| 28 | 12 | 28 | 20 | b23 | 92 | 100 | 43 | 44 | 21 | 20 | 13 | 15 |
| 29 | 21 | 56 | 64 | b20 | - | 86 | 41 | 39 | 20 | 32 | 13 | 16 |
| 30 | 13 | 25 | 64 | b17 | ------ | 74 | 38 | 37 | 19 | 22 | 13 | 23 |
| 31 | 12 | ... | 42 | b16 | ------ | 68 | ------ | 35 | ------ | 20 | 21 | ... |
| Total | 464.1 | 565 | 824 | 695 | 2,043 | 3,673 | 2,199 | 1,862 | 831 | 1,184 | 719 | 376.7 |
| Mean | 15.0 | 18.8 | 26.6 | 22.4 | 73.0 | 118 | 73.3 | 60.1 | 27.7 | 38.2 | 23.2 | 12.6 |
| Cfsm | 0.189 | 0.236 | 0.335 | 0.282 | 0.918 | 1.48 | 0.922 | 0.756 | 0.348 | 0.481 | 0.292 | 0.158 |
| In. | 0.22 | 0.26 | 0.39 | 0.33 | 0.96 | 1.72 | 1.03 | 0.87 | 0.39 | 0.55 | 0.34 | 0.18 |

Calendar year 1954: Max 1,610 Min 5.5 Mean 45.6 Cfsm 0.574 In. 7.79
Water year 1954-55: Max 616 Min 8.1 Mean 42.3 Cfsm 0.532 In. 7.24

Peak discharge (base, 1,200 cfs).--Mar. 22 (5 a.m.) 1,410 cfs (5.70 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for Hominy Creek at Candler and Ivy River near Marshall.
b Stage-discharge relation affected by ice.

## Ivy River near Marshall, N. C.

Location.--Lat 35°46'10", long 82°37'16", on right bank 0.2 mile downstream from highway bridge, 1.9 miles upstream from mouth, and 4.0 miles southeast of Marshall, Madison County.

Drainage area.--158 sq mi.

Records available.--May 1934 to September 1955.

Gage.--Water-stage recorder Datum of gage is 1,700.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 147 cfs.

Extremes.--Maximum discharge during year, 2,340 cfs Mar. 19 (gage height, 6.90 ft); minimum, 14 cfs Sept. 21-24; minimum gage height, 1.59 ft Sept. 22-24.
1934-55: Maximum discharge, 8,880 cfs Aug. 30, 1940 (gage height, 12.67 ft), from rating curve extended above 5,400 cfs on basis of slope-area determination of peak flow; minimum, 3 cfs Jan. 20, 1940, result of freezeup; minimum gage height, 1.51 ft Aug. 30, Sept. 2, 1953; minimum daily discharge, 8.5 cfs Sept. 2, 18, 1953.

Remarks.--Records fair except those for periods of ice effect or doubtful or no gage-height record, which are poor.

Revisions (water years).--WSP 803: 1934(M), 1935.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 21, Nov. 21-30, Dec. 1-5, 8-18, 24, 27-29, Feb. 7 to May 15)

| | | | |
|---|---|---|---|
| 1.6 | 12 | 3.5 | 345 |
| 1.8 | 27 | 4.0 | 505 |
| 2.0 | 47 | 4.5 | 720 |
| 2.3 | 87 | 5.0 | 990 |
| 2.6 | 135 | 5.8 | 1,490 |
| 3.0 | 216 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 104 | 25 | 45 | 133 | b50 | 241 | 115 | 107 | 53 | 44 | 46 | 36 |
| 2 | 60 | 30 | 39 | 104 | 70 | 196 | 105 | 98 | 49 | 39 | 77 | 31 |
| 3 | 35 | 28 | 35 | 86 | 81 | 155 | 100 | 90 | 47 | 47 | 160 | 30 |
| 4 | 30 | 30 | 32 | 77 | 67 | 135 | 88 | 84 | 43 | 129 | 100 | 28 |
| 5 | 27 | 60 | 38 | 74 | 62 | 116 | 83 | 80 | 42 | 99 | 91 | 28 |
| 6 | 25 | 35 | 118 | 74 | 599 | 126 | 163 | 74 | 40 | 62 | 117 | 28 |
| 7 | 30 | 28 | 62 | 73 | *619 | 128 | 536 | 67 | 43 | 62 | 102 | 26 |
| 8 | 25 | 26 | 46 | 62 | 297 | 102 | 289 | 63 | 54 | 51 | 276 | 24 |
| 9 | 23 | 25 | 48 | 60 | 190 | 94 | 209 | 59 | 72 | 51 | 206 | 23 |
| 10 | 22 | 24 | 48 | 59 | 137 | 88 | 165 | 54 | 49 | 47 | 126 | 21 |
| 11 | 20 | 24 | 37 | 70 | 144 | 86 | 169 | 53 | 58 | 91 | 87 | 21 |
| 12 | 19 | 23 | 38 | 62 | b100 | 572 | 157 | 58 | 55 | 76 | 76 | 20 |
| 13 | 19 | 23 | 40 | 59 | b80 | 345 | 193 | 112 | 46 | 74 | 65 | 20 |
| 14 | 19 | 22 | 45 | 48 | b95 | 289 | 525 | 151 | 46 | 65 | 55 | 19 |
| 15 | 60 | 21 | 43 | 59 | 93 | 244 | 363 | 313 | 46 | 59 | 62 | 19 |
| 16 | 40 | 22 | 43 | 58 | 77 | 509 | 286 | 146 | 42 | 54 | 50 | 19 |
| 17 | 28 | 25 | 40 | *51 | 80 | 565 | 232 | 116 | 38 | 45 | 45 | 18 |
| 18 | 22 | 23 | 68 | 48 | 72 | 876 | 194 | 98 | 37 | 39 | 40 | 17 |
| 19 | 20 | 23 | 67 | 59 | 65 | 1,450 | 167 | 86 | 61 | 54 | 37 | 16 |
| 20 | *19 | 130 | b50 | 49 | 60 | 799 | *146 | 76 | *125 | 46 | 35 | 15 |
| 21 | *19 | 62 | b45 | b50 | 58 | 466 | 139 | 74 | 98 | 77 | 34 | 14 |
| 22 | 19 | 45 | b42 | 60 | 74 | *1,060 | 140 | 114 | 81 | 66 | 113 | 14 |
| 23 | 19 | *39 | *b40 | 70 | 501 | 565 | 118 | *171 | 65 | 40 | *62 | *14 |
| 24 | 21 | 35 | 43 | b55 | 336 | 375 | 140 | 116 | 76 | 40 | 36 | 14 |
| 25 | 20 | 28 | b35 | b50 | 261 | 302 | 153 | 113 | 62 | *81 | 32 | 39 |
| 26 | 19 | 23 | b35 | 49 | 196 | 316 | 179 | 93 | 88 | 45 | 30 | 33 |
| 27 | 21 | 20 | 38 | 55 | 219 | 241 | 173 | 80 | 63 | 35 | 28 | 25 |
| 28 | 23 | 26 | 50 | 45 | 281 | 207 | 149 | 72 | 59 | 31 | 26 | 28 |
| 29 | 37 | 106 | 324 | b40 | - | 179 | 133 | 63 | 53 | 77 | 25 | 37 |
| 30 | 30 | 60 | 415 | b35 | ------ | 148 | 116 | 63 | 48 | 46 | 25 | 52 |
| 31 | 27 | ---- | 198 | b30 | ------ | 128 | ------ | 58 | ------ | 42 | 74 | ------ |
| Total | 902 | 1,091 | 2,251 | 1,904 | 4,964 | 11,103 | 5,725 | 3,002 | 1,739 | 1,814 | 2,338 | 729 |
| Mean | 29.1 | 36.4 | 72.6 | 61.4 | 177 | 358 | 191 | 96.8 | 58.0 | 58.5 | 75.4 | 24.3 |
| Cfsm | 0.184 | 0.230 | 0.459 | 0.389 | 1.12 | 2.27 | 1.21 | 0.613 | 0.367 | 0.370 | 0.477 | 0.154 |
| In. | 0.21 | 0.26 | 0.53 | 0.45 | 1.17 | 2.61 | 1.35 | 0.71 | 0.41 | 0.43 | 0.55 | 0.17 |

Calendar year 1954: Max 3,500 Min 14 Mean 132 Cfsm 0.835 In. 11.34
Water year 1954-55: Max 1,450 Min 14 Mean 103 Cfsm 0.652 In. 8.85

Peak discharge (base, 2,700 cfs).--No peak above base.
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Doubtful or no gage-height record Oct. 2-20, Oct. 22 to Nov. 20, Aug. 14-21; discharge estimated on basis of weather records and records for Sandymush Creek near Alexander and Big Laurel Creek near Stackhouse.

## French Broad River at Marshall, N. C.

Location (revised).--Lat 35°47'16", long 82°39'47", on right bank 0.4 mile upstream from Hayes Creek, 1.0 mile downstream from Ivy River, 1.5 miles southeast of Marshall, Madison County, and at mile 126.5.

Drainage area.--1,332 sq mi.

Records available.--October 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,646.79 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 2,256 cfs.

Extremes.--Maximum discharge during year, 9,760 cfs Feb. 7 (gage height, 5.21 ft); minimum, 298 cfs Oct. 12 (gage height, 0.55 ft); minimum daily, 310 cfs Oct. 12, 13.
1942-55: Maximum discharge, 29,600 cfs Jan. 7, 1946 (gage height, 9.18 ft); minimum, 193 cfs Sept. 13, 14, 1954 (gage height, 0.36 ft); minimum daily, 292 cfs Sept. 27, 28, 1954.
Floods of July 1916 and Aug. 30, 1940, reached stages of 18½ and 13½ ft, respectively, from high-water marks and flood profiles by Tennessee Valley Authority.

Remarks.--Records excellent. Diurnal fluctuation at low flow caused by powerplants above station.

**Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)**

| | | | |
|---|---|---|---|
| 0.5 | 268 | 2.0 | 1,180 |
| .7 | 393 | 3.0 | 3,600 |
| 1.0 | 635 | 4.0 | 6,000 |
| 1.5 | 1,190 | 5.0 | 9,030 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 824 | 415 | 944 | 4,200 | 790 | 2,030 | 1,790 | 1,690 | 1,860 | 1,310 | 2,240 | 1,090 |
| 2 | 695 | 407 | 768 | 2,210 | 976 | 1,860 | 1,720 | 1,590 | 1,780 | 1,220 | 2,810 | 1,060 |
| 3 | 458 | 436 | 705 | 1,780 | 1,320 | 1,690 | 1,840 | 1,560 | 1,690 | 1,140 | 2,790 | 1,090 |
| 4 | 360 | 465 | 655 | 1,550 | 1,320 | 1,630 | 2,020 | 1,530 | 1,590 | 1,510 | 2,260 | 955 |
| 5 | 328 | 521 | 685 | 1,420 | 1,140 | 1,560 | 1,740 | 1,490 | 1,550 | 1,350 | 2,020 | 922 |
| 6 | 322 | 572 | 1,230 | 1,330 | 3,120 | 1,580 | 1,910 | 1,400 | 1,510 | 1,520 | 1,860 | 900 |
| 7 | 348 | 545 | 1,480 | 1,260 | 8,870 | 1,520 | 3,320 | 1,330 | 1,490 | 1,590 | 1,950 | 933 |
| 8 | 354 | 481 | 1,070 | 1,170 | *7,220 | 1,400 | 3,170 | 1,310 | 1,730 | 1,650 | 2,430 | 900 |
| 9 | 334 | 451 | 911 | 1,110 | 5,040 | 1,330 | 2,550 | 1,290 | 1,740 | 1,550 | 2,020 | 867 |
| 10 | 328 | 451 | 911 | 1,080 | 2,860 | 1,310 | 2,260 | 1,290 | 1,580 | 1,590 | 2,080 | 900 |
| 11 | 316 | 458 | 944 | 1,140 | 2,450 | 1,290 | 2,290 | 1,280 | 1,550 | 1,980 | 1,760 | 790 |
| 12 | 310 | 451 | 856 | 1,280 | 2,360 | 1,910 | 3,890 | 1,330 | 1,820 | 2,370 | 2,150 | 768 |
| 13 | 310 | 451 | 823 | 1,140 | 1,940 | 1,690 | 3,770 | 1,900 | 1,580 | 3,080 | 1,630 | 746 |
| 14 | 322 | 443 | 955 | 1,040 | 1,820 | 1,780 | 7,130 | 2,750 | 1,440 | 3,150 | 1,440 | 779 |
| 15 | 1,140 | 438 | 1,020 | 990 | 1,740 | 1,910 | 6,670 | 4,710 | 1,310 | 2,570 | 2,020 | 768 |
| 16 | 735 | 436 | *911 | 978 | 1,650 | 2,140 | 4,810 | 3,400 | 1,240 | 2,180 | 2,280 | 746 |
| 17 | 715 | 735 | 845 | 944 | 1,600 | 2,230 | 3,580 | 3,020 | 1,190 | 2,090 | 2,140 | 715 |
| 18 | 451 | 944 | 878 | *911 | 1,560 | 2,720 | 3,020 | 3,290 | 1,170 | 1,920 | 1,700 | 685 |
| 19 | 393 | 845 | 1,140 | 990 | 1,480 | 3,940 | *2,760 | 2,570 | 1,370 | 1,700 | 1,510 | 645 |
| 20 | 393 | 1,360 | 1,120 | 1,010 | 1,410 | 3,360 | 2,480 | 2,200 | *2,260 | 1,850 | 1,730 | 626 |
| 21 | 400 | 1,060 | 922 | 1,040 | 1,380 | 2,640 | 2,310 | 2,150 | 2,440 | 1,910 | 1,530 | 675 |
| 22 | *400 | 801 | 856 | 1,040 | 1,400 | 6,460 | 2,210 | 3,760 | 2,060 | 1,800 | 1,620 | *665 |
| 23 | 400 | 665 | 801 | 1,070 | 2,440 | *6,220 | 2,100 | *5,780 | 2,000 | 1,670 | *1,590 | 645 |
| 24 | 393 | *735 | 801 | 1,000 | 2,930 | 4,020 | 2,140 | 5,500 | 2,120 | 1,550 | 1,350 | 617 |
| 25 | 380 | 725 | 757 | 911 | 2,520 | 3,060 | 2,370 | 4,310 | 1,760 | 1,880 | 1,280 | 790 |
| 26 | 374 | 675 | 725 | 867 | 2,260 | 3,000 | 2,210 | 3,210 | 1,790 | 1,580 | 1,180 | 922 |
| 27 | 386 | 617 | 735 | 911 | 2,120 | 2,770 | 2,040 | 2,880 | 1,590 | 1,480 | 1,120 | 878 |
| 28 | 407 | 655 | 746 | 911 | 2,140 | 2,390 | 1,940 | 2,700 | 1,420 | 1,400 | 1,040 | 779 |
| 29 | 481 | 1,090 | 1,990 | 900 | - | 2,180 | 1,850 | 2,360 | 1,400 | 2,260 | 1,000 | 768 |
| 30 | 443 | 1,200 | 6,550 | 867 | ------ | 2,000 | 1,760 | 2,160 | 1,360 | 2,030 | 1,000 | 801 |
| 31 | 443 | ---- | 5,970 | 834 | ------ | 1,880 | ------ | 2,020 | ------ | 2,000 | 1,170 | ---- |
| Total | 13,943 | 19,526 | 39,704 | 37,884 | 67,858 | 75,500 | 83,650 | 77,760 | 49,390 | 56,880 | 54,710 | 24,425 |
| Mean | 450 | 651 | 1,281 | 1,222 | 2,424 | 2,435 | 2,788 | 2,508 | 1,646 | 1,835 | 1,765 | 814 |
| Cfsm | 0.338 | 0.489 | 0.962 | 0.917 | 1.82 | 1.83 | 2.09 | 1.88 | 1.24 | 1.38 | 1.33 | 0.611 |
| In. | 0.39 | 0.55 | 1.11 | 1.06 | 1.89 | 2.11 | 2.34 | 2.17 | 1.38 | 1.59 | 1.53 | 0.68 |

Calendar year 1954: Max 18,200 Min 292 Mean 1,667 Cfsm 1.25 In. 16.99
Water year 1954-55: Max 8,870 Min 310 Mean 1,647 Cfsm 1.24 In. 16.80

Peak discharge (base, 10,000 cfs).--No peak above base.
* Discharge measurement made on this day.

## Big Laurel Creek near Stackhouse, N. C.

Location.--Lat 35°55'11", long 82°45'42", on left bank 50 ft west of State Highway 208, 0.2 mile downstream from Big Hurricane Creek, 0.6 mile upstream from Little Hurricane Creek, 2.8 miles north of Stackhouse, Madison County, and 4.2 miles upstream from mouth.

Drainage area.--126 sq mi.

Records available.--May 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,595.68 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 177 cfs.

Extremes.--Maximum discharge during year, 2,090 cfs Mar. 18 (gage height, 4.75 ft); minimum, 20 cfs Sept. 24 (gage height, 1.09 ft); minimum daily, 22 cfs Sept. 21-24.
1934-55: Maximum discharge, 7,260 cfs Mar. 25, 1935 (gage height, 7.94 ft); minimum, 11 cfs Jan. 6, 1942 (gage height, 0.92 ft), result of freezeup; minimum daily, 19 cfs Sept. 2, 16-18, 1953.

Remarks.--Records good except those for periods of ice effect, which are fair.

Revisions.--WSP 823: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 21 | 2.2 | 215 |
| 1.2 | 28 | 2.5 | 326 |
| 1.4 | 47 | 3.0 | 575 |
| 1.6 | 73 | 3.5 | 900 |
| 1.8 | 109 | 4.0 | 1,310 |
| 2.0 | 156 | 4.5 | 1,810 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 88 | 37 | 85 | 141 | b85 | 435 | 212 | 218 | 88 | 54 | 57 | 53 |
| 2 | 80 | 51 | 73 | 116 | 113 | 374 | 196 | 200 | 82 | 49 | 48 | 45 |
| 3 | 44 | 47 | 62 | 98 | 144 | 298 | 184 | 178 | 78 | 47 | 94 | 42 |
| 4 | 38 | 48 | 57 | 88 | 122 | 249 | 164 | 167 | 72 | 88 | 97 | 42 |
| 5 | 35 | 95 | 69 | 98 | 105 | 209 | 162 | 156 | 70 | 112 | 96 | 41 |
| 6 | 34 | 65 | 245 | 118 | 376 | 263 | 294 | 148 | 78 | 95 | 101 | 39 |
| 7 | 49 | 53 | 136 | 154 | *671 | 356 | 520 | 138 | 109 | 105 | 101 | 37 |
| 8 | 37 | 49 | b100 | 129 | 378 | 279 | 356 | 134 | 124 | 312 | 367 | 33 |
| 9 | 33 | 48 | 109 | 116 | 256 | 229 | 282 | 127 | 127 | 156 | 181 | 32 |
| 10 | 32 | 46 | 105 | 109 | 193 | 196 | 235 | 120 | 94 | 107 | 167 | 34 |
| 11 | 31 | 44 | 85 | 113 | 184 | 176 | 273 | 120 | 128 | 144 | 113 | 32 |
| 12 | 29 | 40 | 82 | 101 | b125 | 427 | 294 | 166 | 107 | 124 | 189 | 31 |
| 13 | 29 | 39 | 78 | 100 | b105 | 420 | 306 | 215 | 96 | 107 | 127 | 30 |
| 14 | 28 | 38 | 76 | 87 | 167 | 314 | 689 | 209 | 90 | 94 | 100 | 29 |
| 15 | 61 | 36 | 75 | 103 | 141 | 271 | 487 | 206 | 83 | 88 | 100 | 28 |
| 16 | 49 | 37 | *73 | 101 | 127 | 867 | 369 | 178 | 75 | 82 | 90 | 27 |
| 17 | 38 | 39 | 70 | *92 | 178 | 922 | 298 | 159 | *65 | 72 | 73 | 25 |
| 18 | 34 | 36 | 135 | 87 | 212 | 1,410 | *256 | 138 | 62 | 63 | 73 | 24 |
| 19 | 32 | 38 | 127 | 100 | 184 | 1,670 | 232 | 127 | 72 | 59 | 66 | 24 |
| 20 | 31 | 125 | b95 | 85 | 159 | 1,100 | 209 | 118 | 85 | 59 | 58 | 23 |
| 21 | *31 | 92 | b80 | 85 | 141 | 623 | 218 | 118 | 67 | 59 | 52 | 22 |
| 22 | 30 | *78 | b75 | 92 | 219 | *1,240 | 235 | 127 | *86 | 67 | *53 | *22 |
| 23 | 30 | 63 | b70 | 96 | 1,110 | 774 | 203 | 146 | 85 | 58 | 72 | 22 |
| 24 | 31 | 69 | 92 | b85 | 671 | 492 | 235 | 113 | 80 | 136 | 54 | 22 |
| 25 | 29 | 65 | b80 | b70 | 435 | 430 | 242 | 120 | 78 | *131 | 47 | 119 |
| 26 | 29 | 55 | b75 | b70 | 326 | 702 | 401 | *105 | 94 | 100 | 46 | 54 |
| 27 | 30 | 49 | 94 | 76 | 374 | 581 | 425 | 96 | 67 | 78 | 44 | 38 |
| 28 | 48 | 68 | 124 | 69 | 504 | 415 | 352 | 90 | 62 | 69 | 42 | 79 |
| 29 | 66 | 196 | 225 | b65 | - | 330 | 290 | 127 | 58 | 69 | 40 | 69 |
| 30 | 55 | 111 | 256 | b55 | ------ | 271 | 246 | 138 | 57 | 63 | 40 | 56 |
| 31 | 42 | ---- | 184 | b50 | ------ | 235 | ------ | 101 | ------ | 54 | 83 | ---- |
| Total | 1,251 | 1,857 | 3,292 | 2,949 | 7,805 | 16,558 | 8,865 | 4,503 | 2,499 | 2,901 | 2,871 | 1,174 |
| Mean | 40.4 | 61.9 | 106 | 95.1 | 279 | 534 | 296 | 145 | 83.3 | 93.6 | 92.6 | 39.1 |
| Cfsm | 0.321 | 0.491 | 0.841 | 0.755 | 2.21 | 4.24 | 2.35 | 1.15 | 0.661 | 0.743 | 0.735 | 0.310 |
| In. | 0.37 | 0.55 | 0.97 | 0.87 | 2.30 | 4.89 | 2.62 | 1.33 | 0.74 | 0.86 | 0.85 | 0.35 |

Calendar year 1954: Max 3,310 Min 28 Mean 163 Cfsm 1.29 In. 17.53
Water year 1954-55: Max 1,670 Min 22 Mean 155 Cfsm 1.23 In. 16.70

Peak discharge (base, 1,500 cfs).--Mar. 18 (3:30 p.m.) 2,090 cfs (4.75 ft); Mar. 22 (9:30 a.m.) 1,530 cfs (4.23 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## French Broad River near Newport, Tenn.

Location.--Lat 35°58'54", long 83°09'40", on left bank 15 ft downstream from bridge on State Highway 35 at Oldtown, 1 mile northeast of Newport city limits, Cocke County, 3.7 miles upstream from Pigeon River, and at mile 77.5.

Drainage area.--1,858 sq mi.

Records available.--September 1900 to November 1901, November 1902 to December 1905, August to December 1907, and November 1920 to September 1955 in reports of Geological Survey. Records prior to October 1924 (prior to 1908, revised) in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 1,011.61 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. September 1900 to November 1901 wire-weight gage at bridge at datum 1.3 ft higher. November 1902 to December 1905 wire-weight gage and August to December 1907 chain gage, at datum approximately 0.9 ft higher. November 1920 to Sept. 13, 1926, chain gage and Sept. 14, 1926, to Mar. 30, 1934, water-stage recorder, at left pier at present datum.

Average discharge.--36 years (1903-5, 1921-55), 2,780 cfs.

Extremes.--Maximum discharge during year, 13,700 cfs Mar. 22 (gage height, 6.87 ft); minimum, 340 cfs Oct. 14 (gage height, 0.94 ft).

1900-1901, 1902-5, 1907, 1920-55: Maximum discharge, 76,300 cfs Aug. 30, 1940 (gage height, 19.25 ft); minimum, 208 cfs Oct. 23, 1952 (gage height, 0.97 ft).

Floods of Feb. 28, 1902, and July 17, 1916, reached stages of about 23 ft (discharge, 101,000 cfs) and 22.5 ft (discharge, 97,000 cfs), respectively, present datum, from floodmarks.

Remarks.--Records good. Diurnal fluctuation during low flow caused by powerplants above station.

Revisions (water years).--WSP 783: 1933-45. WSP 823: Drainage area. WSP 893: 1928(M). WSP 1336: 1903(M), 1921-22(M), 1923, 1925(M), 1927(M), 1928, 1932. See also Records available.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 13-22, Mar. 4-11, May 1-13)

| | | | |
|---|---|---|---|
| 1.0 | 370 | 3.0 | 3,430 |
| 1.2 | 500 | 4.0 | 6,000 |
| 1.5 | 770 | 5.0 | 8,600 |
| 2.0 | 1,420 | 5.9 | 11,000 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 508 | 508 | 1,270 | 6,000 | 858 | 3,480 | 2,420 | 2,010 | 2,120 | 1,390 | 2,180 | 1,210 |
| 2 | 956 | 532 | *976 | 3,260 | 1,000 | 3,210 | 2,240 | 1,840 | 1,970 | 1,270 | 2,570 | 1,090 |
| 3 | 720 | 508 | 847 | 2,140 | *1,390 | *2,660 | 2,120 | 1,700 | 1,860 | 1,160 | 3,100 | 1,050 |
| 4 | 524 | 508 | 770 | 1,720 | 1,600 | 2,240 | 2,400 | 1,660 | 1,750 | 1,120 | *2,830 | 1,040 |
| 5 | 444 | *634 | 740 | 1,530 | 1,440 | 2,010 | 2,220 | *1,600 | 1,650 | 1,910 | 2,320 | 940 |
| 6 | 418 | 690 | 1,190 | *1,440 | 1,680 | 2,060 | *2,260 | 1,500 | *1,610 | 1,390 | 2,080 | 904 |
| 7 | 400 | 652 | 1,730 | 1,380 | 10,500 | 2,830 | 5,010 | 1,400 | 1,680 | *1,610 | 2,050 | 892 |
| 8 | *430 | 625 | 1,470 | 1,280 | *9,250 | 2,260 | 5,220 | 1,360 | 1,790 | 2,060 | 3,660 | *916 |
| 9 | 430 | 564 | 1,170 | 1,200 | 7,250 | 1,910 | 4,080 | 1,320 | 2,450 | 1,840 | 2,420 | 860 |
| 10 | 412 | 532 | 1,100 | 1,140 | 4,260 | 1,720 | 3,290 | 1,270 | 1,910 | 1,820 | 2,420 | 814 |
| 11 | 406 | 532 | 1,050 | 1,140 | 3,120 | 1,600 | 3,010 | 1,260 | 1,770 | 1,680 | 2,160 | 858 |
| 12 | 400 | 532 | 1,050 | 1,240 | 2,810 | 4,110 | 4,230 | 1,340 | 1,910 | 2,610 | 2,610 | 770 |
| 13 | 382 | 540 | 940 | 1,300 | 2,280 | 4,130 | 5,060 | 1,930 | 1,950 | 3,120 | 2,260 | 775 |
| 14 | 376 | 524 | 940 | 1,100 | 2,010 | 2,920 | 7,980 | 2,920 | 1,630 | 3,780 | 1,630 | 828 |
| 15 | 394 | 524 | 1,060 | 1,090 | 1,930 | 2,660 | 8,900 | 4,910 | 1,500 | 3,140 | 1,630 | 770 |
| 16 | 1,090 | 500 | 1,080 | 1,090 | 1,840 | 4,220 | 6,990 | 4,960 | 1,360 | 2,610 | 2,550 | 740 |
| 17 | 720 | 516 | 964 | 1,030 | 1,890 | 6,160 | 5,140 | 3,630 | 1,280 | 2,260 | 2,490 | 720 |
| 18 | 690 | 770 | 952 | 1,000 | 2,040 | 7,950 | 4,260 | 3,930 | 1,240 | 2,180 | 1,990 | 700 |
| 19 | 483 | 928 | 1,160 | 1,050 | 1,860 | 10,700 | 3,760 | 3,430 | 1,210 | 1,860 | 1,650 | 670 |
| 20 | 430 | 1,190 | 1,360 | 1,080 | 1,680 | 8,760 | 3,360 | 2,570 | 1,890 | 1,720 | 1,530 | 634 |
| 21 | 437 | 1,420 | 1,170 | 1,090 | 1,550 | 5,480 | 3,050 | 2,300 | 2,510 | 2,060 | 1,750 | 616 |
| 22 | 437 | 1,090 | 1,030 | 1,140 | 1,580 | 10,100 | 3,100 | 2,610 | 2,550 | 1,970 | 1,470 | 652 |
| 23 | 451 | 858 | 928 | 1,200 | 5,040 | 10,400 | 2,780 | 5,870 | 2,120 | 1,840 | 1,820 | 550 |
| 24 | 437 | 770 | 940 | 1,160 | 5,450 | 7,040 | 2,700 | 6,470 | 2,280 | 1,730 | 1,450 | 570 |
| 25 | 444 | 825 | 916 | 1,080 | 4,390 | 5,170 | 3,080 | 5,690 | 2,220 | 1,880 | 1,300 | 814 |
| 26 | 430 | 781 | 858 | 940 | 3,560 | 5,840 | 3,290 | 4,260 | 2,020 | 1,910 | 1,210 | 814 |
| 27 | 430 | 740 | 847 | 976 | 3,080 | 5,350 | 3,170 | 3,410 | 1,820 | 1,600 | 1,130 | 904 |
| 28 | 444 | 710 | 869 | 952 | 3,860 | 4,340 | 2,810 | 3,260 | 1,580 | 1,480 | 1,080 | 858 |
| 29 | 508 | 1,050 | 1,060 | 976 | - | 3,660 | 2,490 | 2,870 | 1,450 | 1,890 | 976 | 940 |
| 30 | 598 | 1,380 | 5,720 | 916 | ------- | 3,050 | 2,220 | 2,680 | 1,420 | 2,220 | 976 | 750 |
| 31 | 516 | ------- | 7,090 | 880 | ------- | 2,680 | ------- | 2,360 | ------- | 1,910 | 1,270 | ------- |
| Total | 15,755 | 21,933 | 43,247 | 43,520 | 89,198 | 140,700 | 112,640 | 88,320 | 54,500 | 61,020 | 60,562 | 24,649 |
| Mean | 508 | 731 | 1,395 | 1,404 | 3,186 | 4,539 | 3,755 | 2,849 | 1,817 | 1,968 | 1,954 | 822 |
| Cfsm | 0.273 | 0.393 | 0.751 | 0.756 | 1.71 | 2.44 | 2.02 | 1.53 | 0.978 | 1.06 | 1.05 | 0.442 |
| In. | 0.32 | 0.44 | 0.87 | 0.87 | 1.79 | 2.82 | 2.25 | 1.77 | 1.09 | 1.22 | 1.21 | 0.49 |

Calendar year 1954: Max 30,300 Min 376 Mean 2,233 Cfsm 1.20 In. 16.33
Water year 1954-55: Max 10,700 Min 376 Mean 2,071 Cfsm 1.11 In. 15.14

Peak discharge (base, 16,000 cfs).--No peak above base.
* Discharge measurement made on this day.

## West Fork Pigeon River above Lake Logan, near Hazelwood, N. C.

Location.--Lat 35°23'46", long 82°56'17", on right bank at upstream side of county bridge, 600 ft upstream from Big Creek, 1.1 miles upstream from Lake Logan, and 6.7 miles southeast of Hazelwood, Haywood County.

Drainage area.--27.6 sq mi.

Records available.--February 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,976.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 2,250 cfs Mar. 22 (gage height, 4.88 ft), from rating curve extended above 800 cfs by logarithmic plotting; minimum, 11 cfs Oct. 11-14 (gage height, 1.08 ft).
1954-55: Maximum discharge, that of Mar. 22, 1955; minimum, 9.4 cfs Sept. 29, 30, 1954 (gage height, 1.06 ft).

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 28 | | Dec. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 1.0 | 8.0 | 1.1 | 13 | 2.0 | 217 |
| 1.1 | 15 | 1.2 | 23 | 2.5 | 424 |
| 1.2 | 25 | 1.4 | 53 | 3.0 | 690 |
| 1.4 | 55 | 1.6 | 97 | 3.5 | 1,030 |
| 1.6 | 100 | 1.8 | 153 | | |
| 1.9 | 184 | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 13 | 25 | 102 | 35 | 116 | 108 | 73 | 100 | 50 | 141 | 39 |
| 2 | 15 | 17 | 24 | 85 | 85 | 102 | 110 | 69 | 92 | 46 | 97 | 38 |
| 3 | 12 | 14 | 20 | 73 | 50 | 92 | 162 | 67 | 85 | 48 | 92 | 36 |
| 4 | 12 | 17 | b19 | 65 | b40 | 90 | 108 | 65 | 80 | 50 | 85 | 36 |
| 5 | 12 | 33 | 32 | 61 | b40 | 85 | 102 | 61 | 75 | 59 | 80 | 35 |
| 6 | 12 | 16 | 46 | *61 | 792 | 105 | 366 | 59 | 73 | 69 | 69 | 33 |
| 7 | 13 | 14 | b27 | 53 | *292 | 90 | *272 | 57 | 80 | 86 | 67 | 32 |
| 8 | 12 | 15 | 25 | 50 | 156 | *78 | 172 | 55 | *96 | 94 | 130 | 40 |
| 9 | 12 | 16 | 59 | 48 | 119 | 73 | 153 | 53 | 100 | 78 | 110 | 36 |
| 10 | 12 | 17 | 37 | 57 | 105 | 78 | 138 | 50 | 78 | 87 | 75 | 31 |
| 11 | *11 | 16 | b28 | 71 | 162 | 73 | 283 | 50 | 110 | 94 | 65 | 30 |
| 12 | 11 | 14 | 25 | 51 | b100 | 75 | 165 | *71 | 75 | 190 | *69 | 30 |
| 13 | 11 | 14 | 74 | 48 | b95 | 91 | 510 | 124 | 67 | *174 | 59 | *30 |
| 14 | 14 | 14 | *46 | b50 | b85 | 116 | 355 | 105 | 63 | 105 | 65 | 27 |
| 15 | 40 | 14 | 34 | 50 | 75 | 90 | 228 | 116 | 61 | 90 | 198 | 24 |
| 16 | 14 | 110 | b30 | 46 | 75 | 95 | 197 | 217 | 57 | 80 | 105 | 24 |
| 17 | 13 | *40 | 29 | b40 | 87 | 95 | 178 | 159 | 55 | 67 | 78 | 23 |
| 18 | 12 | 23 | 52 | b40 | 71 | 110 | 162 | 108 | 53 | 63 | 69 | 22 |
| 19 | 12 | 34 | 32 | b45 | 65 | 142 | 147 | 95 | 130 | 61 | 65 | 21 |
| 20 | 12 | 52 | b28 | b40 | 65 | 116 | 136 | 83 | 90 | 83 | 69 | 21 |
| 21 | 12 | 23 | b30 | b40 | 73 | 119 | 127 | 410 | 80 | 80 | 65 | 20 |
| 22 | 12 | 19 | 29 | 41 | 211 | 629 | 124 | 858 | 101 | 65 | 55 | 20 |
| 23 | 12 | 20 | 28 | 38 | 376 | 200 | 110 | 347 | 105 | 65 | 61 | 20 |
| 24 | 12 | 19 | b28 | b37 | 184 | 168 | 113 | 224 | 85 | 67 | 53 | 20 |
| 25 | 12 | 17 | b27 | b36 | 147 | 175 | 105 | 187 | 69 | 63 | 46 | 41 |
| 26 | 12 | 15 | b27 | b35 | 121 | 239 | 97 | 239 | 65 | 55 | 46 | 24 |
| 27 | 12 | 18 | 32 | 33 | 130 | 162 | 92 | 184 | 63 | 48 | 43 | 23 |
| 28 | 12 | 129 | 172 | b31 | 119 | 147 | 85 | 144 | 65 | 175 | 41 | 24 |
| 29 | 17 | 92 | *863 | b30 | - | 136 | 80 | 130 | 57 | 107 | 41 | 23 |
| 30 | 14 | 30 | *249 | b28 | ------- | 124 | 75 | 119 | 53 | 114 | 39 | 26 |
| 31 | 14 | -- -- | 124 | b34 | ------- | 116 | ------- | 108 | ------- | 110 | 63 | --- --- |
| Total | 418 | 885 | 2,301 | 1,519 | 3,935 | 4,127 | 5,060 | 4,667 | 2,363 | 2,643 | 2,341 | 851 |
| Mean | 13.5 | 29.5 | 74.2 | 49.0 | 141 | 133 | 169 | 151 | 78.8 | 85.3 | 75.5 | 28.4 |
| Cfsm | 0.489 | 1.07 | 2.69 | 1.78 | 5.11 | 4.82 | 6.12 | 5.47 | 2.86 | 3.09 | 2.74 | 1.03 |
| In. | 0.56 | 1.19 | 3.10 | 2.05 | 5.30 | 5.56 | 6.82 | 6.29 | 3.18 | 3.56 | 3.15 | 1.15 |

Calendar year 1954: Max - Min - Mean - Cfsm - In. -
Water year 1954-55: Max 863 Min 11 Mean 85.2 Cfsm 3.09 In. 41.91

Peak discharge (base, 1,500 cfs).--Dec. 29 (9:30 a.m.) 1,610 cfs (4.22 ft); Feb. 6 (4 p.m.) 1,870 cfs (4.51 ft); Mar. 22 (3 a.m.) 2,250 cfs (4.88 ft); May 22 (6:30 a.m.) 1,640 cfs (4.25 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## West Fork Pigeon River below Lake Logan, near Waynesville, N. C.

Location.--Lat 35°26'38", long 82°54'46", on right bank at downstream side of county bridge at Riverside Church, 2.6 miles downstream from Little East Fork Pigeon River, 3.4 miles downstream from Lake Logan, 3.8 miles upstream from confluence with East Fork Pigeon River, and 5.3 miles southeast of Waynesville, Haywood County.

Drainage area.--55.3 sq mi.

Records available.--March 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,725.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 1,810 cfs Dec. 29 (gage height, 5.40 ft); minimum, 8.7 cfs Oct. 16 (gage height, 0.20 ft).
1954-55: Maximum discharge, that of Dec. 29, 1954; minimum, 7.6 cfs Sept. 7, 1954 (gage height, 0.16 ft).

Remarks.--Records excellent. Considerable regulation and diurnal fluctuation at low flow caused by Lake Logan (capacity, about 1,000 cfs-days).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.4 | 16 | 2.5 | 311 |
| .7 | 34 | 3.0 | 455 |
| 1.0 | 58 | 3.5 | 640 |
| 1.5 | 115 | 4.0 | 870 |
| 2.0 | 200 | 4.4 | 1,100 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 35 | 22 | 18 | 343 | 39 | 203 | 198 | 144 | 158 | 81 | 220 | 67 |
| 2 | 28 | 22 | 20 | 142 | 87 | 168 | 189 | 144 | 148 | 77 | 161 | 62 |
| 3 | 31 | 24 | 32 | 97 | 133 | 165 | 259 | 118 | 136 | 76 | 139 | 61 |
| 4 | 31 | 23 | 32 | 101 | 91 | 154 | 187 | 116 | 128 | 81 | 133 | 59 |
| 5 | 32 | 22 | 49 | 111 | 47 | 146 | 181 | 115 | 124 | 101 | 120 | 58 |
| 6 | 32 | 22 | 94 | *110 | 666 | 151 | 380 | 88 | 121 | 120 | 112 | 56 |
| 7 | 32 | 24 | 40 | 98 | *704 | 151 | *518 | 37 | 128 | 63 | 106 | 53 |
| 8 | 32 | 24 | 42 | 88 | 584 | *144 | 413 | 36 | *140 | 143 | 161 | 54 |
| 9 | 33 | 25 | 106 | 68 | 357 | 138 | 243 | 34 | 158 | 126 | 184 | 64 |
| 10 | 32 | 25 | 68 | *77 | 249 | 132 | 250 | 34 | 120 | 102 | 116 | 51 |
| 11 | *31 | 27 | 49 | 97 | 254 | 127 | 371 | 32 | 171 | 132 | 103 | 49 |
| 12 | 31 | 30 | 47 | 92 | 188 | 127 | 348 | *41 | 110 | 244 | *115 | 48 |
| 13 | 32 | 32 | 106 | 82 | 127 | 130 | 394 | 55 | 105 | *240 | 95 | *49 |
| 14 | 32 | 32 | *80 | 60 | 128 | 172 | *536 | 48 | 100 | 161 | 98 | 47 |
| 15 | 26 | 30 | 60 | 54 | 154 | 177 | 522 | 49 | 96 | 136 | 247 | 43 |
| 16 | 21 | 38 | 47 | 54 | 153 | 149 | 476 | 105 | 92 | 126 | 174 | 41 |
| 17 | 29 | *27 | 56 | 64 | 146 | 149 | 376 | 252 | 88 | 107 | 124 | 40 |
| 18 | 25 | 18 | 90 | 64 | 127 | 189 | 284 | 176 | 86 | 100 | 111 | 39 |
| 19 | 25 | 20 | 60 | 66 | 121 | 179 | 259 | 160 | 203 | 98 | 105 | 37 |
| 20 | 30 | 24 | 49 | 64 | 107 | 214 | 230 | 138 | 149 | 113 | 100 | 36 |
| 21 | 27 | 19 | 47 | 65 | 106 | 212 | 224 | 460 | 126 | 116 | 106 | 35 |
| 22 | 25 | 18 | 47 | 69 | 158 | 607 | 237 | 1,090 | 141 | 100 | 87 | 38 |
| 23 | 24 | 23 | 45 | 65 | 480 | 556 | 212 | 546 | 164 | 91 | 91 | 36 |
| 24 | 23 | 17 | 43 | 63 | 458 | 462 | 185 | 365 | 132 | 102 | 84 | 35 |
| 25 | 24 | 23 | 38 | 64 | 269 | 301 | 240 | 306 | 112 | 89 | 76 | 60 |
| 26 | 23 | 23 | 39 | 62 | 192 | 398 | 179 | 329 | 106 | 84 | 72 | 43 |
| 27 | 24 | 23 | 47 | 55 | 205 | 260 | 167 | 279 | 97 | 76 | 69 | 39 |
| 28 | 26 | 44 | 197 | 49 | 226 | 254 | 143 | 224 | 102 | 216 | 67 | 41 |
| 29 | 24 | 51 | *1,010 | 43 | - | 265 | 127 | 204 | 91 | 181 | 66 | 40 |
| 30 | 24 | 20 | *623 | 35 | ------ | 212 | 127 | 185 | 87 | 153 | 63 | 44 |
| 31 | 20 | --- | 508 | 39 | ------ | 194 | ------ | 170 | --- | 163 | 98 | --- |
| Total | 864 | 772 | 3,789 | 2,541 | 6,556 | 6,886 | 8,455 | 6,080 | 3,719 | 3,798 | 3,603 | 1,425 |
| Mean | 27.9 | 25.7 | 122 | 82.0 | 234 | 222 | 282 | 196 | 124 | 123 | 116 | 47.5 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max - Min - Mean - Cfsm - In. -
Water year 1954-55: Max 1,090 Min 17 Mean 133 Cfsm 2.41 In. 32.61

* Discharge measurement made on this day.

## East Fork Pigeon River near Canton, N. C.

Location.--Lat 35°27'42", long 82°52'12", on right bank 800 ft upstream from U. S. Highway 276, 0.4 mile downstream from Dix Creek, 1.7 miles upstream from confluence with West Fork Pigeon River, and 5.2 miles southwest of Canton, Haywood County.

Drainage area.--51.5 sq mi.

Records available.--March 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,674.34 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year 1,970 cfs Feb. 6 (gage height, 4.90 ft), from rating curve extended above 800 cfs by logarithmic plotting; minimum, 14 cfs Oct. 4, 12-14; minimum gage height, 0.87 ft Oct. 13, 14.
1954-55: Maximum discharge, that of Feb. 6, 1955; minimum, 13 cfs Sept. 30, 1954 (gage height, 0.86 ft).

Remarks.--Records excellent except those for periods of ice effect, which are fair.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.8 | 10 | 2.0 | 199 | 1.1 | 34 | 2.5 | 375 |
| .9 | 16 | 2.5 | 375 | 1.3 | 58 | 3.0 | 600 |
| 1.0 | 22 | 3.0 | 600 | 1.5 | 90 | 3.6 | 930 |
| 1.2 | 42 | 3.3 | 750 | 2.0 | 201 | | |
| 1.5 | 85 | | | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 16 | 31 | 163 | 50 | 131 | 136 | 105 | 147 | 68 | 379 | 72 |
| 2 | 20 | 19 | 28 | 133 | 80 | 121 | 131 | 103 | 136 | 66 | 292 | 68 |
| 3 | 16 | 18 | 26 | 113 | 73 | 115 | 180 | 98 | 125 | 64 | 250 | 68 |
| 4 | 14 | 18 | 24 | 103 | 58 | 111 | 138 | 94 | 117 | 73 | 212 | 66 |
| 5 | 15 | 28 | 37 | 94 | 58 | 105 | 131 | 92 | 113 | 72 | 178 | 64 |
| 6 | 16 | 22 | 68 | *87 | 873 | 109 | 262 | 87 | 107 | 75 | 158 | 62 |
| 7 | 16 | 18 | 36 | 78 | 550 | 105 | *281 | 83 | 105 | 83 | 136 | 58 |
| 8 | 15 | 18 | 34 | 73 | *307 | *96 | 223 | 82 | *103 | 92 | 203 | 55 |
| 9 | 15 | 18 | 56 | 70 | 226 | 92 | 198 | 78 | 109 | 94 | 219 | 58 |
| 10 | 16 | 17 | 52 | *72 | 188 | 90 | 183 | 75 | 98 | 83 | 163 | 54 |
| 11 | *15 | 17 | 41 | 80 | 209 | 88 | 325 | 73 | 113 | 119 | 147 | 53 |
| 12 | 14 | 17 | 38 | 67 | b150 | 87 | 254 | *82 | 94 | *163 | *151 | 52 |
| 13 | 14 | 16 | 56 | 62 | b135 | 88 | 417 | 111 | 85 | 185 | 129 | *52 |
| 14 | 14 | 16 | *58 | 58 | b130 | 113 | *562 | 107 | 82 | 156 | 136 | 50 |
| 15 | 48 | *17 | 46 | 61 | 127 | 96 | 395 | 142 | 76 | 131 | 222 | 46 |
| 16 | 22 | 50 | 39 | 58 | 119 | 96 | 319 | 184 | 75 | 115 | 201 | 45 |
| 17 | 17 | 47 | 39 | 54 | 117 | 96 | 274 | 180 | 72 | 105 | 161 | 44 |
| 18 | 16 | 28 | 65 | 54 | 107 | 109 | 241 | 138 | 68 | 128 | 142 | 43 |
| 19 | 16 | 36 | 51 | 58 | 101 | 129 | 215 | 121 | 139 | 123 | 129 | 42 |
| 20 | 16 | 48 | 43 | 54 | 98 | 121 | 196 | 111 | 127 | 111 | 125 | 41 |
| 21 | 16 | 28 | b42 | 57 | 94 | 123 | 185 | 283 | 109 | 113 | 115 | 40 |
| 22 | 15 | 23 | b40 | 64 | 116 | 635 | 173 | 834 | 104 | 98 | 105 | 40 |
| 23 | 15 | 24 | b38 | 54 | 299 | 311 | 161 | 550 | 136 | 90 | 103 | 40 |
| 24 | 15 | 24 | 36 | b49 | 183 | 238 | 158 | 367 | 111 | 87 | 98 | 38 |
| 25 | 16 | 22 | 33 | b48 | 163 | 218 | 149 | 288 | 98 | 80 | 90 | 61 |
| 26 | 15 | 20 | 33 | b47 | 149 | 248 | 138 | 283 | 92 | 78 | 85 | 45 |
| 27 | 16 | 22 | 35 | 50 | 144 | 198 | 131 | 260 | 83 | 72 | 82 | 42 |
| 28 | 16 | 36 | 65 | b45 | 138 | 180 | 123 | 215 | 82 | 215 | 78 | 42 |
| 29 | 18 | 115 | *729 | b41 | - | 168 | 115 | 191 | 76 | 210 | 76 | 42 |
| 30 | 18 | 39 | *482 | b40 | ------ | 153 | 109 | 173 | 73 | 210 | 75 | 43 |
| 31 | 16 | - | 218 | b35 | ------ | 144 | ------ | 158 | ----- - | 232 | 85 | - - - |
| Total | 529 | 837 | 2,619 | 2,122 | 5,042 | 4,714 | 6,503 | 5,748 | 3,055 | 3,591 | 4,725 | 1,526 |
| Mean | 17.1 | 27.9 | 84.5 | 68.5 | 180 | 152 | 217 | 185 | 102 | 116 | 152 | 50.9 |
| Cfsm | 0.332 | 0.542 | 1.64 | 1.33 | 3.50 | 2.95 | 4.21 | 3.59 | 1.98 | 2.25 | 2.95 | 0.988 |
| In. | 0.38 | 0.60 | 1.89 | 1.53 | 3.64 | 3.40 | 4.70 | 4.15 | 2.21 | 2.59 | 3.41 | 1.10 |

Calendar year 1954: Max - Min - Mean - Cfsm - In. -
Water year 1954-55: Max 873 Min 14 Mean 112 Cfsm 2.17 In. 29.60

Peak discharge (base, 1,200 cfs).--Dec. 29 (9 p.m.) 1,250 cfs (4.07 ft); Feb. 6 (5 p.m.) 1,970 cfs (4.90 ft); Mar. 22 (5 a.m.) 1,410 cfs (4.27 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

414660 O - 57 - 7

## Pigeon River at Canton, N. C.

Location.--Lat 35°31'30", long 82°50'28", on left bank 100 ft upstream from small tributary, 0.5 mile upstream from U. S. Highways 19 and 23 at Canton, Haywood County, and at mile 63.9. Records include flow of small tributary.

Drainage area.--133 sq mi, includes that of small tributary below gage.

Records available.--May 1907 to June 1909 (fragmentary) and December 1928 to September 1955 in reports of Geological Survey. May 1907 to June 1909 (complete) in North Carolina Department of Conservation and Development Bulletin 34 and Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 2,572.22 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to June 1909, staff gage at bridge 0.4 mile downstream at different datum.

Average discharge.--27 years (1907-8, 1929-55), 305 cfs.

Extremes.--Maximum discharge during year, 3,900 cfs Feb. 6 (gage height, 6.07 ft); minimum, 40 cfs Oct. 31, Nov. 27 (gage height, 0.45 ft); minimum daily, 41 cfs Oct. 27, Nov. 1. 1907-9, 1928-55: Maximum discharge, 31,600 cfs Aug. 30, 1940 (gage height, 20.75 ft, from floodmark in gage well); minimum, 25 cfs Dec. 24, 1943 (gage height, 0.30 ft), result of freezeup; minimum daily, 27 cfs Sept. 7, 1954.

Remarks.--Records excellent except those for periods of ice effect, which are good. Occasional diurnal fluctuation and considerable regulation at low flow caused by gristmill and Lake Logan on West Fork (capacity, about 1,000 cfs-days). City of Canton diverted a total of about 71,000,000 gal just above station for supplementary water supply, equivalent to a mean discharge of 0.3 cfs at station.

Revisions (water years).--WSP 823: Drainage area. WSP 853: 1929-37(M).

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.4 | 35 | 1.2 | 184 | 0.7 | 68 | 2.2 | 580 |
| .6 | 55 | 1.5 | 285 | .9 | 104 | 2.5 | 745 |
| .8 | 84 | 1.8 | 399 | 1.1 | 153 | 3.0 | 1,070 |
| 1.0 | 127 | 2.2 | 580 | 1.3 | 212 | 3.5 | 1,420 |
| | | | | 1.5 | 280 | 4.3 | 2,080 |
| Note.--Same as following table above 2.2 ft. | | | | 1.8 | 397 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 65 | 41 | *56 | 549 | 94 | 364 | 352 | 266 | 321 | 156 | 595 | 143 |
| 2 | 56 | 47 | 52 | 310 | 187 | 313 | 340 | 273 | 298 | 148 | 494 | 127 |
| 3 | 48 | 45 | 59 | 228 | 215 | 295 | 449 | 238 | 276 | 145 | 397 | 125 |
| 4 | 46 | 45 | 56 | 209 | 175 | 284 | 364 | 232 | 259 | 159 | 376 | 122 |
| 5 | 47 | 55 | 70 | 209 | 111 | 270 | 325 | 225 | 248 | 167 | 317 | 120 |
| 6 | 48 | 52 | 182 | *203 | 1,660 | 276 | *661 | 212 | 238 | 203 | 298 | 116 |
| 7 | 51 | 48 | 82 | 187 | 1,540 | 273 | 870 | 143 | *242 | 222 | 270 | 109 |
| 8 | 48 | 45 | 76 | 170 | *987 | 256 | 685 | 137 | 248 | 235 | 316 | 102 |
| 9 | 50 | 44 | 154 | 145 | 646 | 245 | 480 | 132 | 295 | 256 | 469 | 122 |
| 10 | 50 | 45 | 145 | 148 | 462 | *235 | 444 | 127 | 232 | 203 | 302 | 100 |
| 11 | 47 | 47 | 94 | 190 | 480 | 228 | 698 | 125 | 291 | 256 | *266 | 98 |
| 12 | *47 | 50 | 88 | 164 | b380 | 225 | 641 | 140 | 222 | *396 | 291 | *96 |
| 13 | 48 | 52 | 144 | 153 | b285 | 225 | 802 | *193 | 203 | 444 | 242 | *96 |
| 14 | 48 | 53 | 157 | 122 | b280 | 291 | 1,220 | 193 | 190 | 344 | 242 | 94 |
| 15 | 81 | *52 | 111 | 120 | 302 | 291 | 980 | 215 | 181 | 291 | 422 | 88 |
| 16 | 47 | 71 | 90 | 116 | 287 | 259 | 850 | 259 | 173 | 262 | 440 | 84 |
| 17 | 51 | 102 | 96 | 120 | 284 | 256 | 697 | 472 | 164 | 228 | 310 | 79 |
| 18 | 45 | 52 | 159 | 120 | 248 | 329 | 556 | 329 | 161 | 235 | 273 | 79 |
| 19 | 44 | 56 | 122 | 132 | 238 | 340 | 504 | 302 | 325 | 245 | 248 | 78 |
| 20 | 46 | 76 | 98 | 118 | 219 | 368 | 454 | 270 | 313 | 222 | 235 | 73 |
| 21 | 47 | 56 | 82 | 122 | 212 | 352 | 431 | 680 | 252 | 252 | 235 | 71 |
| 22 | 46 | 46 | b90 | 145 | 256 | 1,440 | 431 | 2,080 | 235 | 222 | 200 | *73 |
| 23 | 43 | 52 | b90 | 130 | 808 | 961 | 401 | 1,280 | 321 | 187 | 193 | 79 |
| 24 | 42 | 47 | 84 | 118 | 680 | 769 | 364 | 787 | 270 | 200 | 190 | 71 |
| 25 | 42 | 44 | 73 | 116 | 472 | 561 | 418 | 630 | 222 | 173 | 167 | 113 |
| 26 | 42 | 51 | 74 | 111 | 372 | 691 | 344 | 597 | 206 | 170 | 159 | 98 |
| 27 | 41 | 47 | 79 | 113 | 356 | 508 | 321 | 610 | 187 | 153 | 153 | 81 |
| 28 | 44 | 79 | 244 | 98 | 385 | 462 | 291 | 467 | 190 | 285 | 145 | 81 |
| 29 | 47 | 204 | 1,720 | 96 | - | 458 | 270 | 414 | 175 | 594 | 140 | 84 |
| 30 | 46 | 71 | 1,280 | 81 | ------ | 397 | 259 | 376 | 167 | 356 | 135 | 79 |
| 31 | 42 | ---- | 769 | 78 | ------ | 360 | ------ | 348 | ------ | 410 | 181 | ---- |
| Total | 1,495 | 1,775 | 6,676 | 4,921 | 12,601 | 12,582 | 15,902 | 12,752 | 7,105 | 7,819 | 8,701 | 2,881 |
| Mean | 48.2 | 59.2 | 215 | 159 | 450 | 406 | 530 | 411 | 237 | 252 | 281 | 96.0 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 2,810 Min 27 Mean 214 Cfsm 1.61 In. 21.84
Water year 1954-55: Max 2,080 Min 41 Mean 261 Cfsm 1.96 In. 26.62

Peak discharge (base, 4,000 cfs).--No peak above base.
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Allen Creek near Hazelwood, N. C.

Location.--Lat 35°25'49", long 83°00'33", on left bank 180 ft downstream from Rocky Branch, 3.0 miles upstream from mouth, and 3.3 miles south of Hazelwood, Haywood County.

Drainage area.--14.4 sq mi.

Records available.--August 1949 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 3,047.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--6 years, 32.9 cfs (unadjusted).

Extremes.--Maximum discharge during year, 576 cfs Mar. 22 (gage height, 2.86 ft); minimum, 4.3 cfs Oct. 11, 12 (gage height, 0.87 ft); minimum daily, 5.0 cfs Oct. 11-14, 18, 22, 23, 25-27.

1949-55: Maximum discharge, 951 cfs Feb. 21, 1953 (gage height, 3.43 ft); minimum, 1.0 cfs Sept. 9, 1954 (gage height, 0.75 ft); minimum daily, that of Oct. 11-14, 18, 22, 23, 25-27, 1954.

Maximum stage known, 7.0 ft Aug. 30, 1940, from information by local residents.

Remarks.--Records good except those for periods of ice effect, which are fair. Considerable diurnal fluctuation at low flow caused by intermittent operation of filter plant 0.3 mile upstream since Aug. 29, 1954. Town of Waynesville diverts from Rocky Branch about 3 cfs for water supply at diversion dam 0.4 mile upstream.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.8 | 2.1 | 1.6 | 89 |
| .9 | 5.4 | 1.8 | 129 |
| 1.0 | 11 | 2.0 | 179 |
| 1.2 | 29 | 2.2 | 245 |
| 1.4 | 55 | 2.3 | 285 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.9 | 5.4 | 9.1 | 29 | 11 | 55 | 51 | 39 | 36 | 20 | 25 | 12 |
| 2 | 5.9 | 6.4 | 8.5 | 24 | 28 | 48 | 52 | 36 | 34 | 20 | 21 | 11 |
| 3 | 5.9 | 5.9 | 7.3 | 21 | 18 | 44 | 57 | 35 | 33 | 20 | 20 | 11 |
| 4 | 5.9 | 7.4 | 6.8 | 18 | 14 | 42 | 48 | 34 | 30 | 20 | 20 | 11 |
| 5 | 5.9 | 11 | 15 | *17 | 17 | 40 | 45 | 33 | 30 | 23 | 19 | 11 |
| 6 | 5.9 | 6.4 | 17 | 20 | 254 | 49 | *123 | 31 | 29 | 22 | 18 | 10 |
| 7 | 6.4 | 6.4 | 9.7 | 17 | *125 | 41 | 110 | 31 | *37 | 26 | 19 | 9.7 |
| 8 | 5.9 | 5.9 | b9.0 | 17 | 75 | 37 | 80 | 29 | 40 | 26 | 32 | 9.1 |
| 9 | 5.4 | 6.4 | 34 | 16 | 54 | 35 | 73 | 28 | 37 | 26 | 24 | 9.1 |
| 10 | 5.4 | 6.4 | 16 | 20 | 47 | *36 | 68 | 26 | 33 | 22 | 19 | 9.1 |
| 11 | 5.0 | 6.4 | 12 | 25 | 55 | 35 | 76 | *27 | 45 | 22 | *18 | 9.7 |
| 12 | *5.0 | 5.9 | 12 | 17 | b40 | 37 | 66 | 35 | 33 | 36 | 18 | *9.7 |
| 13 | 5.0 | 5.9 | *26 | 16 | b36 | 40 | 107 | 61 | 30 | *36 | 17 | 9.7 |
| 14 | 5.0 | 5.9 | 17 | 16 | 34 | 48 | 112 | 49 | 28 | 29 | 17 | 9.7 |
| 15 | 5.4 | 5.9 | 14 | 16 | 31 | 41 | 85 | 41 | 27 | 27 | 26 | 9.1 |
| 16 | 5.4 | 10 | 12 | 15 | 31 | 44 | 75 | 64 | 26 | 24 | 22 | 9.1 |
| 17 | 5.4 | *7.3 | 13 | 14 | 33 | 45 | 68 | 60 | 25 | 23 | 19 | 8.5 |
| 18 | 5.0 | 6.4 | 30 | 14 | 30 | 54 | 63 | 52 | 25 | 24 | 17 | 8.5 |
| 19 | 5.4 | 8.1 | 16 | 14 | 28 | 65 | 60 | 47 | 44 | 24 | 17 | 7.9 |
| 20 | 5.4 | 14 | b13 | 14 | 27 | 55 | 57 | 41 | 34 | 29 | 16 | 7.9 |
| 21 | 5.4 | 7.3 | b13 | 14 | 28 | 55 | 55 | 60 | 30 | 31 | 16 | 7.3 |
| 22 | 5.0 | 6.4 | 12 | 13 | 87 | 206 | 55 | 118 | 31 | 25 | 16 | 7.3 |
| 23 | 5.0 | 6.8 | 11 | 13 | 136 | 97 | 51 | 91 | 29 | 23 | 16 | 6.8 |
| 24 | 5.4 | 6.8 | 11 | 11 | 82 | 80 | 60 | 71 | 26 | 22 | 14 | 7.3 |
| 25 | 5.0 | 5.9 | 10 | 10 | 63 | 80 | 54 | 61 | 26 | 25 | 13 | 13 |
| 26 | 5.0 | 5.9 | 10 | b10 | 54 | 102 | 49 | 54 | 25 | 22 | 13 | 9.1 |
| 27 | 5.0 | 6.4 | 12 | 11 | 60 | 75 | 48 | 49 | 24 | 20 | 13 | 8.5 |
| 28 | 5.4 | 33 | 24 | b10 | 57 | 66 | 44 | 45 | 23 | 21 | 12 | 9.1 |
| 29 | 7.9 | 24 | 190 | b10 | - | 61 | 42 | 44 | 23 | 21 | 12 | 8.5 |
| 30 | 6.4 | 10 | 75 | b9.5 | ------ | 57 | 40 | 40 | 22 | 20 | 12 | 12 |
| 31 | 5.4 | ------ | 40 | b9.0 | ------ | 54 | ------ | 39 | ------ | 22 | 20 | ------ |
| Total | 171.4 | 255.9 | 705.4 | 480.5 | 1,555 | 1,824 | 1,974 | 1,471 | 915 | 751 | 561 | 281.7 |
| Mean | 5.53 | 8.53 | 22.8 | 15.5 | 55.5 | 58.8 | 65.8 | 47.5 | 30.5 | 24.2 | 18.1 | 9.39 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 340 Min 5.0 Mean 29.5 Cfsm - In. -
Water year 1954-55: Max 254 Min 5.0 Mean 30.0 Cfsm - In. -

Peak discharge (base, 400 cfs).--Feb. 6 (4 p.m.) 507 cfs (2.74 ft); Mar. 22 (2:30 a.m.) 576 cfs (2.86 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Jonathan Creek near Cove Creek, N. C.

Location.--Lat 35°37'22", long 83°00'26", on left bank 1,500 ft downstream from ford, 0.7 mile upstream from mouth, and 2 miles downstream from Cove Creek and village of Cove Creek, Haywood County.

Drainage area.--65.3 sq mi.

Records available.--May 1930 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,383.89 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--25 years, 123 cfs.

Extremes.--Maximum discharge during year, 1,760 cfs Mar. 22 (gage height, 5.48 ft); minimum, 25 cfs Oct. 12, 13, 26 (gage height, 0.70 ft).
1930-55: Maximum discharge, 3,200 cfs Aug. 30, 1940 (gage height, 7.51 ft); minimum, 18 cfs Jan. 2, 1940 (gage height, 0.54 ft), result of freezeup; minimum daily, 23 cfs Sept. 17, 18, 23, 1953.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Slight diurnal fluctuation at low flow caused by small gristmill above station.

Revisions.--WSP 823: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.7 | 25 | 2.5 | 305 |
| .9 | 37 | 3.0 | 452 |
| 1.1 | 51 | 3.5 | 640 |
| 1.4 | 83 | 4.0 | 880 |
| 1.7 | 125 | 4.2 | 985 |
| 2.0 | 182 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 43 | 29 | 40 | 135 | a40 | 274 | 203 | 124 | 103 | 57 | 67 | 41 |
| 2 | 36 | 36 | 38 | 118 | a120 | 244 | 198 | 120 | 97 | 56 | 60 | 40 |
| 3 | 30 | 32 | 35 | 102 | a80 | 217 | 200 | 116 | 93 | 69 | 85 | 39 |
| 4 | 28 | 33 | 34 | 93 | a65 | 200 | 176 | 114 | 91 | 67 | 66 | 38 |
| 5 | 28 | 46 | 56 | *87 | a50 | 184 | *163 | 110 | 87 | 84 | 57 | 38 |
| 6 | 29 | 34 | 103 | 86 | a900 | 262 | 375 | *106 | *88 | 93 | 62 | 38 |
| 7 | 32 | 32 | 50 | 78 | a500 | 219 | 369 | 106 | 95 | 83 | 58 | 36 |
| 8 | 29 | 33 | 46 | 72 | a300 | 189 | 272 | 103 | 109 | 78 | 80 | *35 |
| 9 | 29 | 33 | 119 | 69 | *a220 | *174 | 239 | 99 | 114 | 236 | *89 | 35 |
| 10 | 29 | 33 | 71 | 75 | 182 | 165 | 219 | 96 | 93 | 96 | 57 | 35 |
| 11 | 27 | 32 | 53 | 96 | 212 | 157 | 254 | 95 | 128 | *111 | 53 | 34 |
| 12 | 27 | 30 | 50 | 75 | b145 | 178 | 219 | 97 | 100 | 140 | 55 | 35 |
| 13 | *27 | 30 | *74 | 69 | b130 | 167 | 242 | 130 | 90 | 118 | 51 | 35 |
| 14 | 27 | 30 | 62 | b63 | 128 | 176 | 292 | 112 | 84 | 102 | 50 | 34 |
| 15 | 27 | 30 | 55 | 68 | 127 | 169 | 242 | 130 | 79 | 91 | 58 | 32 |
| 16 | 27 | 35 | 50 | 63 | 120 | 196 | 219 | 159 | 77 | 90 | 58 | 31 |
| 17 | 27 | 37 | 52 | 60 | 127 | 196 | 203 | 152 | 72 | 83 | 50 | 30 |
| 18 | 27 | *32 | 157 | 57 | 112 | 284 | 191 | 130 | 71 | 79 | 48 | 30 |
| 19 | 26 | 34 | 84 | a62 | 107 | 366 | 180 | 124 | 88 | 76 | 47 | 30 |
| 20 | 27 | 51 | 68 | a55 | 103 | 316 | 169 | 112 | 83 | 106 | 45 | 29 |
| 21 | 27 | 36 | b57 | a58 | 102 | 276 | 165 | 122 | 76 | 83 | 45 | 28 |
| 22 | 27 | 33 | b55 | a65 | 230 | 978 | 169 | 265 | 79 | 84 | 45 | 28 |
| 23 | 26 | 34 | 54 | a60 | 565 | 484 | 153 | 239 | 78 | 75 | 45 | 28 |
| 24 | 26 | 35 | 52 | a55 | 318 | 375 | 180 | 182 | 77 | 81 | 43 | 29 |
| 25 | 26 | 32 | 48 | a52 | 262 | 354 | 178 | 159 | 76 | 77 | 41 | 60 |
| 26 | 26 | 31 | 47 | a50 | 224 | 411 | 161 | 148 | 76 | 69 | 41 | 38 |
| 27 | 26 | 38 | 49 | a53 | 264 | 310 | 150 | 139 | 68 | 61 | 40 | 35 |
| 28 | 29 | 84 | 69 | a45 | 254 | 282 | 139 | 122 | 67 | 59 | 38 | 40 |
| 29 | 40 | 116 | 593 | a43 | - | 256 | 134 | 120 | 62 | 66 | 38 | 38 |
| 30 | 31 | 49 | 334 | a37 | ------- | 234 | 127 | 114 | 60 | 59 | 38 | 40 |
| 31 | 29 | ------- | 174 | a35 | ------- | 219 | ------- | 109 | ------- | 63 | 50 | ------- |
| Total | 895 | 1,170 | 2,829 | 2,136 | 5,987 | 8,512 | 6,181 | 4,054 | 2,561 | 2,692 | 1,640 | 1,059 |
| Mean | 28.9 | 39.0 | 91.3 | 68.9 | 214 | 275 | 206 | 131 | 85.4 | 86.8 | 52.9 | 35.3 |
| Cfsm | 0.443 | 0.597 | 1.40 | 1.06 | 3.28 | 4.21 | 3.15 | 2.01 | 1.31 | 1.33 | 0.810 | 0.541 |
| In. | 0.51 | 0.67 | 1.61 | 1.22 | 3.41 | 4.85 | 3.52 | 2.31 | 1.46 | 1.53 | 0.93 | 0.60 |

Calendar year 1954: Max 1,510 Min 26 Mean 108 Cfsm 1.65 In. 22.50
Water year 1954-55: Max 978 Min 26 Mean 109 Cfsm 1.67 In. 22.62

Peak discharge (base, 1,100 cfs).--Feb. 6 (time unknown) 1,640 cfs (5.29 ft); Mar. 22 (5 a.m.) 1,760 cfs (5.48 ft); July 9 (12 m.) 1,120 cfs (4.44 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Allen Creek near Hazelwood.

b Stage-discharge relation affected by ice.

## Pigeon River near Hepco, N. C.

Location.--Lat 35°38'07", long 82°59'22", on left bank 0.8 mile downstream from Jonathan Creek, 2.4 miles upstream from Fines Creek and from Hepco, Haywood County, and at mile 45.0.

Drainage area.--350 sq mi.

Records available.--July 1927 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,335.95 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--28 years, 647 cfs.

Extremes.--Maximum discharge during year, 6,660 cfs Feb. 6 (gage height, 7.25 ft); minimum, 107 cfs Oct. 26 (gage height, 0.88 ft).

1927-55: Maximum discharge, 32,700 cfs Aug. 30, 1940 (gage height, 15.82 ft, from floodmark in gage house), from rating curve extended above 12,000 cfs on basis of slope-area determinations at gage heights 14.94 and 15.82 ft; minimum, 81 cfs Sept. 30, 1941; minimum gage height, 0.81 ft Sept. 8, 1954.

Maximum stage known, about 18 ft June 1876 and February 1902, from flood profiles by Tennessee Valley Authority.

Remarks.--Records excellent. Considerable regulation by Lake Junaluska on Richland Creek and Lake Logan on West Fork Pigeon River for periods of low flow (combined capacity of reservoirs, about 2,200 cfs-days).

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1928-31, 1932(M), 1933-36, 1937-39(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 29

| | | | |
|---|---|---|---|
| 0.9 | 110 | 2.5 | 715 |
| 1.0 | 128 | 3.0 | 1,020 |
| 1.4 | 230 | 4.0 | 1,890 |
| 1.8 | 370 | 5.0 | 3,000 |
| 2.0 | 455 | 6.0 | 4,440 |

Dec. 30 to Sept. 30

| | | | |
|---|---|---|---|
| 1.0 | 128 | 2.0 | 465 |
| 1.4 | 230 | 2.5 | 725 |
| 1.8 | 377 | 3.0 | 1,020 |

Note.--Same as preceding table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 141 | 115 | 168 | 931 | 227 | 859 | 725 | 575 | 580 | 313 | 730 | 280 |
| 2 | 163 | 132 | 149 | 615 | 429 | 764 | 877 | 565 | 550 | 291 | 714 | 237 |
| 3 | 130 | 126 | 143 | 460 | 420 | 720 | 925 | 424 | 520 | 343 | 612 | 224 |
| 4 | 123 | 128 | 143 | 420 | 381 | 958 | 830 | 411 | 505 | 348 | 575 | 221 |
| 5 | 121 | 156 | 192 | *403 | 291 | 1,030 | *681 | 403 | 475 | 344 | 475 | 221 |
| 6 | 121 | 147 | 414 | 394 | 3,180 | 1,100 | 1,360 | *390 | *460 | 453 | 480 | 215 |
| 7 | 124 | 130 | 251 | 373 | 3,090 | 931 | 1,920 | 325 | 475 | 424 | 452 | 206 |
| 8 | 123 | 126 | 184 | 338 | 1,710 | 676 | 1,480 | 294 | 495 | 465 | 470 | *195 |
| 9 | 123 | 124 | 372 | 313 | *1,210 | *752 | 1,020 | 284 | 605 | 1,070 | *658 | 203 |
| 10 | 123 | 124 | 374 | 328 | 877 | 600 | 925 | 274 | 465 | 475 | 475 | 200 |
| 11 | 119 | 124 | 244 | 424 | 907 | 570 | 1,220 | *274 | 575 | *542 | 407 | 186 |
| 12 | 119 | 124 | 215 | 356 | 758 | 615 | 1,200 | 280 | 490 | 640 | 442 | 186 |
| 13 | *119 | 124 | *276 | 328 | 580 | 585 | 1,030 | 386 | 420 | 786 | 381 | 184 |
| 14 | 117 | 124 | 342 | 280 | 580 | 681 | 2,010 | 480 | 403 | 637 | 356 | 186 |
| 15 | 124 | 124 | 262 | 294 | 570 | 676 | 1,630 | 525 | 381 | 550 | 456 | 181 |
| 16 | 147 | 134 | 224 | 280 | 555 | 664 | 1,440 | 570 | 369 | 505 | 751 | 166 |
| 17 | 114 | 206 | 209 | 266 | 575 | 654 | 1,260 | 847 | 352 | 460 | 460 | 159 |
| 18 | 115 | *151 | 441 | 266 | 515 | 847 | 1,070 | 670 | 336 | 434 | 411 | 154 |
| 19 | 114 | 136 | 342 | 302 | 485 | 1,140 | 974 | 626 | 480 | 514 | 377 | 156 |
| 20 | 112 | 197 | 268 | 277 | 460 | 1,100 | 907 | 550 | 580 | 515 | 352 | 149 |
| 21 | 112 | 173 | 221 | 277 | 442 | 968 | 847 | 835 | 460 | 465 | 348 | 143 |
| 22 | 112 | 136 | 224 | 336 | 627 | 3,310 | 698 | 2,490 | 429 | 452 | 317 | 145 |
| 23 | 112 | 136 | 221 | 321 | 2,020 | 2,390 | 670 | 2,150 | 535 | 407 | 309 | 145 |
| 24 | 110 | 143 | 221 | 284 | 1,600 | 1,820 | 720 | 1,280 | 485 | 407 | 309 | 143 |
| 25 | 112 | 130 | 197 | 270 | 1,260 | 1,280 | 877 | 1,060 | 416 | 369 | 298 | 223 |
| 26 | 110 | 124 | 189 | 256 | 889 | 1,500 | 835 | 895 | 416 | 356 | 280 | 221 |
| 27 | 114 | 141 | 195 | 280 | 824 | 1,390 | 692 | 1,000 | 365 | 321 | 256 | 168 |
| 28 | 115 | 226 | 251 | 250 | 853 | 1,210 | 654 | 786 | 361 | 302 | 246 | 171 |
| 29 | 141 | 512 | 2,330 | 240 | - | 1,010 | 605 | 708 | 344 | 848 | 240 | 178 |
| 30 | 128 | 227 | 2,360 | 215 | ------ | 865 | 590 | 670 | 328 | 460 | 237 | 173 |
| 31 | 119 | -- -- | 1,210 | 195 | ------- | 670 | ------- | 615 | -------- | 565 | 280 | ----- -- |
| Total | 3,777 | 4,700 | 12,832 | 10,570 | 26,315 | 32,335 | 30,672 | 21,642 | 13,655 | 15,061 | 13,154 | 5,619 |
| Mean | 122 | 157 | 414 | 341 | 940 | 1,043 | 1,022 | 698 | 455 | 486 | 424 | 187 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 6,300 Min 102 Mean 474 Cfsm 1.35 In. 18.37
Water year 1954-55: Max 3,310 Min 110 Mean 521 Cfsm 1.49 In. 20.22

Peak discharge (base, 6,000 cfs).--Feb. 6 (8 p.m.) 6,660 cfs (7.25 ft).
* Discharge measurement made on this day.

## Pigeon River at Newport, Tenn.

Location.--Lat 35°57'36", long 83°10'26", on left bank 100 ft upstream from bridge on U. S. Highway 70 at Newport, Cocke County, 0.6 mile downstream from Morell Branch, and at mile 6.8.

Drainage area.--666 sq mi.

Records available.--January 1903 to December 1905, December 1906 to December 1909, November 1918 to September 1929, May 1945 to July 1946, and August 1948 to September 1955 in reports of Geological Survey. Published as "near Newport" 1945-46. September 1900 to October 1901, December 1902 to December 1905, December 1906 to September 1924 (prior to October 1910 and October 1920 to September 1921, revised), in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 1,040.76 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to September 1929, staff or chain gage at same site and datum. May 1945 to July 1946 water-stage recorder at site 4.8 miles downstream at datum 37.85 ft lower.

Average discharge.--28 years (1903-5, 1908-12, 1914-29, 1948-55), 1,194 cfs.

Extremes.--Maximum discharge during year, 6,300 cfs July 9 (gage height, 5.19 ft); minimum daily, 57 cfs Sept. 18.
1900-1901, 1902-5, 1906-29, 1945-46, 1948-55: Maximum discharge, 34,900 cfs Apr. 2, 1920 (gage height, 17.0 ft); minimum daily, 48 cfs Sept. 21, 28, 1953.
Flood of Feb. 28, 1902, reached a stage of 21.4 ft.

Remarks.--Records good. Considerable regulation by Lake Junaluska, Lake Logan, and Lake Walters for periods of low flow (combined usable capacity of reservoirs, about 12,500 cfs-days).

Revisions (water years).--WSP 1143: Drainage area; Average discharge. WSP 1336: 1903, 1917(M), 1919-20(M), 1921, 1924(M), 1927-29(M). See also Records available.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| -0.2 | 52 | 1.5 | 860 |
| -.1 | 65 | 2.0 | 1,330 |
| .1 | 102 | 2.5 | 1,910 |
| .4 | 180 | 3.0 | 2,580 |
| .7 | 304 | 4.0 | 4,130 |
| 1.0 | 480 | 4.6 | 5,190 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 202 | 190 | 382 | 1,730 | 561 | 2,410 | 2,170 | 528 | 934 | 578 | 724 | 444 |
| 2 | 116 | 308 | *362 | 1,230 | 641 | 2,410 | 2,070 | 936 | 876 | 402 | 968 | 430 |
| 3 | 115 | 266 | 333 | 1,190 | *589 | *2,180 | 1,180 | 905 | 843 | 286 | 985 | 352 |
| 4 | 82 | 266 | 226 | 773 | 506 | 1,680 | 1,500 | 938 | 548 | 216 | *1,330 | 258 |
| 5 | 168 | *377 | 198 | 828 | 598 | 1,860 | 1,770 | *741 | 314 | 504 | 1,220 | 206 |
| 6 | 162 | 211 | 552 | *830 | 2,460 | 1,770 | 1,810 | 700 | *681 | 558 | 878 | 328 |
| 7 | 196 | 169 | 498 | 825 | 3,740 | 2,650 | *3,760 | 504 | 870 | *756 | 611 | 408 |
| 8 | *177 | 222 | 506 | 733 | 2,960 | 1,790 | 2,820 | 380 | 988 | 844 | 2,050 | *410 |
| 9 | 130 | 292 | 658 | 486 | 2,620 | 1,650 | 2,100 | 532 | 1,030 | 1,870 | 1,510 | 404 |
| 10 | 122 | 300 | 994 | 694 | 2,480 | 1,580 | 1,690 | 688 | 651 | 1,630 | 1,190 | 301 |
| 11 | *107 | 265 | 642 | 981 | 2,500 | 1,480 | 1,940 | 680 | 501 | 816 | 1,100 | 212 |
| 12 | 157 | 292 | 420 | 784 | 2,380 | 1,760 | 2,050 | 694 | 466 | 1,100 | 1,390 | 268 |
| 13 | 188 | 158 | 878 | 721 | 1,360 | 949 | 2,010 | 774 | 722 | 1,370 | 830 | 338 |
| 14 | 194 | 170 | 1,030 | 734 | 1,630 | 1,220 | 2,580 | 604 | 670 | 1,100 | 547 | 286 |
| 15 | 357 | 239 | 1,040 | 462 | 1,400 | 1,590 | 2,510 | 524 | 618 | 756 | 693 | 216 |
| 16 | 352 | 335 | 970 | 331 | 1,390 | 1,780 | 2,330 | 656 | 612 | 732 | 1,040 | 160 |
| 17 | 214 | 338 | 759 | 425 | 1,440 | 2,350 | 1,470 | 871 | 596 | 702 | 1,120 | 133 |
| 18 | 155 | 306 | 700 | 586 | 1,460 | 3,830 | 1,450 | 1,150 | 434 | 827 | 814 | 57 |
| 19 | 204 | 284 | 512 | 553 | 1,260 | 4,230 | 1,640 | 1,090 | 306 | 774 | 772 | 61 |
| 20 | 187 | 153 | 678 | 670 | 590 | 3,220 | 1,640 | 1,150 | 772 | 778 | 569 | 130 |
| 21 | 187 | 166 | 812 | 578 | 1,170 | 2,760 | 1,650 | 1,170 | 724 | 844 | 366 | 140 |
| 22 | 176 | 244 | 754 | 431 | 1,100 | 5,030 | 1,620 | 2,000 | 599 | 792 | 555 | 158 |
| 23 | 119 | 350 | 827 | 304 | 3,330 | 3,820 | 945 | 3,140 | 642 | 604 | 568 | 243 |
| 24 | 137 | 348 | 450 | 380 | 2,720 | 3,250 | 720 | 2,510 | 665 | 681 | 458 | 239 |
| 25 | 149 | 238 | 319 | 556 | 2,570 | 3,120 | 1,560 | 1,920 | 508 | 1,040 | 438 | 202 |
| 26 | 176 | 317 | 192 | 534 | 2,300 | 3,530 | 1,840 | 1,650 | 572 | 954 | 444 | 248 |
| 27 | 222 | 256 | 315 | 533 | 1,900 | 3,180 | 1,760 | 1,280 | 730 | 868 | 462 | 343 |
| 28 | 261 | 190 | 482 | 514 | 2,470 | 2,900 | 1,660 | 826 | 640 | 706 | 354 | 346 |
| 29 | 270 | 521 | 2,140 | 378 | - | 2,780 | 1,050 | 608 | 596 | 1,380 | 493 | 329 |
| 30 | 190 | 474 | 2,760 | 265 | ------- | 2,570 | 680 | 668 | 580 | 1,050 | 530 | 424 |
| 31 | 159 | ------- | 2,440 | 331 | ------- | 2,300 | ------- | 961 | ------- | 425 | 528 | ------- |
| Total | 5,631 | 8,245 | 23,629 | 20,370 | 50,125 | 77,629 | 53,975 | 31,978 | 19,688 | 25,943 | 25,537 | 8,074 |
| Mean | 182 | 275 | 762 | 657 | 1,790 | 2,504 | 1,799 | 1,032 | 656 | 837 | 824 | 269 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 14,800 Min 52 Mean 927 Cfsm 1.39 In. 18.89
Water year 1954-55: Max 5,030 Min 57 Mean 961 Cfsm 1.44 In. 19.59

Peak discharge (base, 7,500 cfs).--No peak above base.
* Discharge measurement made on this day.

## North Toe River at Altapass, N. C.

Location.--Lat 35°53'59", long 82°01'50", on left bank 0.1 mile upstream from Rose Creek, 1.0 mile northwest of Altapass, Mitchell County, and at mile 36.0.

Drainage area.--104 sq mi.

Records available.--May 1934 to September 1955. Prior to October 1938, published as "above Spruce Pine" (flow of Rose Creek included).

Gage.--Water-stage recorder Datum of gage is 2,542.91 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1938, water-stage recorder at site 1.2 miles downstream at datum 13.90 ft lower.

Average discharge.--21 years, 199 cfs.

Extremes.--Maximum discharge during year, 5,710 cfs Apr. 14 (gage height, 11.60 ft); minimum, 28 cfs Oct. 27 (gage height, 1.06 ft); minimum daily, 37 cfs Oct. 9.
1934-55: Maximum discharge, 22,200 cfs Aug. 13, 1940 (gage height, 19.5 ft, from floodmark in gage well), from rating curve extended above 5,000 cfs on basis of slope-area determination of peak flow; minimum, 23 cfs Sept. 9, 1954 (gage height, 0.99 ft); minimum daily, 32 cfs Sept. 8, 9, 1954.
Maximum stage known, about 24 ft in July 1916.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Slight diurnal fluctuation at low flow caused by gristmills and primary mineral processing mills.

Revisions.--WSP 973: Drainage area.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Nov. 16 | | Nov. 17 to Aug. 9 | | | Aug. 10 to Sept. 30 | |
|---|---|---|---|---|---|---|
| 1.1 | 34 | 1.2 | 42 | 4.0 | 960 | 1.3 | 52 |
| 1.2 | 47 | 1.4 | 75 | 5.0 | 1,380 | 1.5 | 90 |
| 1.4 | 84 | 1.6 | 119 | 6.0 | 1,870 | 1.7 | 135 |
| 1.5 | 106 | 2.0 | 225 | 7.0 | 2,410 | 2.0 | 215 |
| | | 2.5 | 390 | 8.0 | 2,970 | 2.5 | 380 |
| | | 3.0 | 565 | 8.7 | 3,390 | 2.7 | 450 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 58 | 44 | 75 | 217 | b80 | 271 | 211 | 222 | 132 | 83 | 167 | 135 |
| 2 | 94 | 50 | 70 | 175 | b105 | 231 | 200 | 214 | 124 | 75 | 132 | 126 |
| 3 | 49 | 52 | 64 | 149 | b120 | 203 | 197 | 200 | 119 | 73 | 191 | 119 |
| 4 | 42 | 52 | 56 | 132 | b85 | 192 | 178 | 192 | 112 | 83 | 129 | 117 |
| 5 | 39 | 72 | 71 | 129 | b75 | 175 | 186 | 186 | 108 | 108 | 114 | 112 |
| 6 | 38 | 59 | 126 | 126 | 655 | 192 | 268 | 178 | 105 | 161 | 152 | 108 |
| 7 | 39 | 50 | b90 | 132 | 830 | 203 | 290 | 167 | 124 | 119 | 138 | 103 |
| 8 | 39 | 50 | b75 | 108 | 394 | 162 | 211 | 165 | 149 | 162 | 222 | 94 |
| 9 | 37 | 50 | b100 | 105 | 258 | 152 | 189 | 162 | 136 | 112 | 1,550 | 94 |
| 10 | 38 | 50 | b110 | 101 | 211 | 144 | 181 | 152 | 117 | 98 | 390 | 92 |
| 11 | 40 | 47 | b100 | 112 | b200 | 142 | 307 | 149 | 139 | 110 | 255 | 86 |
| 12 | 40 | 46 | b95 | 101 | b190 | 297 | 498 | 160 | 129 | 186 | 230 | 84 |
| 13 | 39 | 42 | 92 | 101 | b175 | 246 | *1,300 | 234 | 114 | 249 | 176 | *82 |
| 14 | *40 | 43 | 114 | b95 | b165 | 214 | 3,360 | 242 | 112 | 167 | 155 | 80 |
| 15 | 49 | 43 | 98 | b90 | b155 | 222 | 1,160 | 243 | *108 | 134 | 430 | 78 |
| 16 | 54 | 67 | 81 | 90 | b145 | *402 | 788 | 192 | 98 | 149 | 380 | 74 |
| 17 | 47 | *98 | 81 | 79 | b160 | 520 | 596 | 175 | 94 | 114 | *242 | 70 |
| 18 | 46 | 70 | 101 | b80 | 147 | 691 | 492 | *160 | 88 | 287 | 209 | 68 |
| 19 | 43 | 143 | 101 | *b90 | 129 | 904 | 425 | 152 | 122 | 396 | 187 | 68 |
| 20 | 42 | 212 | b100 | b95 | 124 | 772 | 376 | 142 | 266 | *173 | 182 | 65 |
| 21 | 42 | 119 | b95 | b85 | 119 | 579 | 348 | 157 | 149 | 139 | 261 | 63 |
| 22 | 42 | 83 | b90 | b95 | 139 | 978 | 390 | 348 | 112 | 122 | 204 | 65 |
| 23 | 40 | 73 | b85 | b85 | 593 | 668 | 307 | 317 | 114 | 110 | 295 | 65 |
| 24 | 40 | 75 | b80 | b80 | 369 | 530 | 352 | 225 | 105 | 140 | 171 | 65 |
| 25 | 42 | 70 | b75 | b75 | 313 | 467 | 352 | 219 | 92 | 132 | 152 | 128 |
| 26 | 40 | 61 | b70 | b75 | 240 | 474 | 338 | 186 | 108 | 108 | 140 | 105 |
| 27 | 42 | 56 | b80 | b70 | 281 | 341 | 310 | 167 | 90 | 101 | 130 | 78 |
| 28 | 54 | 62 | 134 | b75 | 327 | 304 | 277 | 157 | 88 | 145 | 124 | 76 |
| 29 | 66 | 150 | 493 | b70 | - | 277 | 258 | 160 | 92 | 193 | 119 | 80 |
| 30 | 56 | 94 | 759 | b65 | ------ | 249 | 237 | 160 | 88 | 126 | 124 | 78 |
| 31 | 46 | --- | 313 | b60 | ------ | 228 | ------ | 142 | ------ | 126 | 168 | ------ |
| Total | 1,423 | 2,183 | 4,074 | 3,142 | 6,784 | 11,430 | 14,582 | 5,925 | 3,534 | 4,481 | 7,519 | 2,658 |
| Mean | 45.9 | 72.8 | 131 | 101 | 242 | 369 | 486 | 191 | 118 | 145 | 243 | 88.6 |
| Cfsm | 0.441 | 0.700 | 1.26 | 0.971 | 2.33 | 3.55 | 4.67 | 1.84 | 1.13 | 1.39 | 2.34 | 0.852 |
| In. | 0.51 | 0.78 | 1.46 | 1.12 | 2.43 | 4.09 | 5.21 | 2.12 | 1.26 | 1.60 | 2.69 | 0.95 |

Calendar year 1954: Max 2,160 Min 32 Mean 155 Cfsm 1.49 In. 20.23
Water year 1954-55: Max 3,360 Min 37 Mean 186 Cfsm 1.79 In. 24.22

Peak discharge (base, 1,500 cfs).--Feb. 6 (10 p.m.) 1,560 cfs (5.39 ft); Apr. 14 (2 a.m.) 5,710 cfs (11.60 ft); Aug. 9 (7 a.m.) 3,400 cfs (8.72 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Cane River near Sioux, N. C.

Location.--Lat 36°00'52", long 82°19'40", on right bank on State Highway 26, 1.3 miles upstream from confluence with North Toe River, 1.5 miles east of Sioux, Yancey County, and at mile 1.3.

Drainage area.--157 sq mi.

Records available.--May 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,045.24 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 240 cfs.

Extremes.--Maximum discharge during year, 2,610 cfs Feb. 6 (gage height, 6.59 ft); minimum, 34 cfs Oct. 11, 12 (gage height, 1.77 ft); minimum daily, 34 cfs Oct. 11.
1934-55: Maximum discharge, 31,800 cfs Aug. 13, 1940 (gage height, 17.8 ft), from rating curve extended above 8,000 cfs on basis of slope-area determination at 15.65 ft; minimum, 18 cfs Jan. 6, 1940 (gage height, 1.14 ft), result of freezeup; minimum daily, 27 cfs Sept. 14, 1953.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Considerable diurnal fluctuation and slight regulation at low flow caused by small mills and Burnsville powerplant.

Revisions (water years).--WSP 893: 1934(M). WSP 1143: 1940(M).

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 6 | | | | Feb. 7 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.7 | 28 | 3.0 | 296 | 1.8 | 39 | 3.5 | 485 |
| 1.8 | 36 | 3.5 | 485 | 2.0 | 62 | 4.0 | 720 |
| 2.0 | 58 | 4.0 | 720 | 2.2 | 93 | 5.0 | 1,320 |
| 2.2 | 88 | 4.8 | 1,180 | 2.5 | 155 | 6.0 | 2,080 |
| 2.5 | 149 | | | 3.0 | 298 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 124 | 40 | 110 | 266 | b100 | 450 | 276 | 188 | 117 | 100 | 214 | 152 |
| 2 | 81 | 69 | 98 | 204 | 137 | 393 | 260 | 214 | 120 | 89 | 182 | 106 |
| 3 | 71 | 66 | 81 | 190 | 147 | 326 | 229 | 189 | 111 | 88 | 227 | 48 |
| 4 | 37 | 63 | 79 | 163 | 122 | 289 | 239 | 161 | 113 | 129 | 165 | 47 |
| 5 | 45 | 96 | 91 | 157 | 110 | 262 | 223 | 177 | 100 | 157 | 112 | 47 |
| 6 | 45 | a80 | 207 | 168 | 1,090 | 260 | 323 | 157 | 103 | 158 | 121 | 46 |
| 7 | 50 | a65 | 136 | 161 | 1,130 | 298 | 637 | 162 | 115 | 143 | 132 | 50 |
| 8 | 44 | a60 | *109 | 145 | 528 | 238 | 454 | 152 | 116 | 167 | 456 | 60 |
| 9 | 43 | a55 | 133 | 130 | 367 | 213 | 367 | 153 | 128 | 123 | 568 | 58 |
| 10 | 44 | a55 | 136 | 131 | 293 | 203 | 314 | 148 | 122 | 104 | 339 | 56 |
| 11 | 34 | a52 | 110 | 145 | 276 | 195 | 370 | 136 | 121 | 150 | 223 | 54 |
| 12 | 40 | a50 | 98 | 133 | b230 | 371 | 453 | 154 | 111 | 170 | 240 | 52 |
| 13 | 40 | a50 | 109 | 121 | b210 | 386 | *586 | 224 | 113 | 220 | 203 | 51 |
| 14 | *41 | a40 | 117 | 114 | b200 | 346 | 752 | 224 | 106 | 222 | 144 | 50 |
| 15 | 180 | a50 | 116 | 112 | 193 | 331 | 521 | 250 | *92 | 161 | 182 | 49 |
| 16 | 76 | a80 | 107 | 128 | *172 | *569 | 427 | 279 | 97 | 147 | 192 | 47 |
| 17 | 58 | a110 | 99 | 97 | 191 | 796 | 365 | 234 | 88 | 113 | *161 | 44 |
| 18 | 52 | a95 | 200 | 103 | 170 | 1,090 | 331 | *202 | 90 | 155 | 152 | 43 |
| 19 | 50 | *a130 | 183 | *106 | 145 | 1,460 | 300 | 180 | 174 | 185 | 137 | 42 |
| 20 | 48 | 187 | 146 | 109 | 143 | 1,090 | 276 | 190 | 297 | *108 | 119 | 40 |
| 21 | 46 | 141 | b120 | 93 | 160 | *736 | 268 | 231 | 171 | 100 | 117 | 39 |
| 22 | 47 | 109 | b110 | 108 | 205 | 1,390 | 269 | 245 | 152 | 108 | 114 | 39 |
| 23 | 47 | 89 | 109 | 107 | 948 | 874 | 238 | 338 | 128 | 103 | 154 | 39 |
| 24 | 47 | 88 | 105 | 93 | 564 | 630 | 231 | 258 | 125 | 135 | 95 | 42 |
| 25 | 35 | 79 | 98 | 95 | 470 | 556 | 300 | 225 | 130 | 124 | 96 | 104 |
| 26 | 46 | 77 | 88 | b95 | 362 | 625 | 293 | 198 | 119 | 99 | 85 | 76 |
| 27 | 47 | 68 | 93 | 87 | 390 | 493 | 294 | 169 | 130 | 90 | 81 | 57 |
| 28 | 56 | 82 | 115 | 90 | 536 | 427 | 268 | 159 | 110 | 129 | 78 | *93 |
| 29 | 71 | 211 | 648 | 85 | - | 377 | 238 | 142 | 102 | 91 | 66 | 102 |
| 30 | 64 | 149 | 926 | 79 | ------ | 331 | 228 | 153 | 98 | 90 | 78 | 78 |
| 31 | 62 | -- - | 367 | b75 | ------ | 298 | ------ | 134 | ------ | 127 | 175 | -- - - |
| Total | 1,771 | 2,586 | 5,244 | 3,890 | 9,589 | 16,303 | 10,130 | 6,046 | 3,699 | 4,085 | 5,408 | 1,811 |
| Mean | 57.1 | 86.2 | 169 | 125 | 342 | 526 | 338 | 195 | 123 | 132 | 174 | 60.4 |
| Cfsm | 0.364 | 0.549 | 1.08 | 0.796 | 2.18 | 3.35 | 2.15 | 1.24 | 0.783 | 0.841 | 1.11 | 0.385 |
| In. | 0.42 | 0.61 | 1.24 | 0.92 | 2.27 | 3.86 | 2.40 | 1.43 | 0.88 | 0.97 | 1.28 | 0.43 |

Calendar year 1954: Max 4,040 Min 31 Mean 221 Cfsm 1.41 In. 19.14
Water year 1954-55: Max 1,460 Min 34 Mean 193 Cfsm 1.23 In. 16.71

Peak discharge (base, 2,600 cfs).--Feb. 6 (7 p.m.) 2,610 cfs (6.59 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, records of powerplant operations, and records for stations on North Toe River at Altapass and Nolichucky River at Poplar.
b Stage-discharge relation affected by ice.

## Nolichucky River at Poplar, N. C.

Location.--Lat 36°04'29", long 82°20'41", on right bank at Poplar, Mitchell County, 3.9 miles downstream from confluence of North Toe and Cane Rivers, 6.1 miles upstream from North Carolina-Tennessee State line, and at mile 106.8.

Drainage area.--608 sq mi.

Records available.--July 1925 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,971.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Feb. 15, 1926, staff gages at site a quarter of a mile upstream at different datums. Feb. 15, 1926, to Sept. 30, 1927, staff gage at present site at datum 1.00 ft higher. Oct. 1, 1927, to May 17, 1934, staff gage at present site and datum.

Average discharge.--30 years, 1,015 cfs.

Extremes.--Maximum discharge during year, 13,000 cfs Apr. 14 (gage height, 8.23 ft); minimum, 160 cfs Oct. 11 (gage height, 1.10 ft).
1925-55: Maximum discharge, 74,500 cfs Aug. 13, 1940 (gage height, 19.7 ft), from rating curve extended above 9,000 cfs on basis of slope-area determination of peak flow; minimum, 89 cfs Sept. 7, 1925.
Floods of 1901 and 1916 reached a stage slightly over 21 ft, from floodmarks.

Remarks.--Records good except those for periods of ice effect, which are fair. Considerable diurnal fluctuation caused by many small mills and powerplants above station.

Revisions (water years).--WSP 823: Drainage area. WSP 923: 1928(M), 1937(M).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 160 | 2.5 | 1,330 |
| 1.2 | 205 | 3.0 | 1,960 |
| 1.3 | 255 | 4.0 | 3,430 |
| 1.5 | 370 | 5.0 | 5,120 |
| 1.7 | 520 | 6.0 | 7,110 |
| 2.0 | 790 | 7.0 | 9,490 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 328 | 215 | 426 | 1,020 | b310 | 1,650 | 1,020 | 920 | 592 | 377 | 1,100 | 628 |
| 2 | 299 | 260 | 364 | 810 | 556 | 1,430 | 960 | 900 | 556 | 348 | 990 | 488 |
| 3 | 294 | 277 | 328 | 700 | 700 | 1,140 | 930 | 850 | 520 | 322 | 1,000 | 412 |
| 4 | 192 | 272 | b305 | 601 | 574 | 1,010 | 880 | 810 | 496 | 382 | 840 | 405 |
| 5 | 182 | 334 | b305 | 619 | 480 | 930 | 840 | 781 | 472 | 496 | 637 | 384 |
| 6 | 178 | 328 | 854 | 637 | 2,970 | 900 | 1,070 | 745 | 440 | 583 | 637 | 370 |
| 7 | 196 | 294 | b640 | 637 | 4,990 | 1,080 | 1,860 | 718 | 504 | 628 | 637 | 346 |
| 8 | 178 | 266 | *b400 | 556 | 2,250 | 900 | 1,390 | 691 | 610 | 619 | 1,470 | 352 |
| 9 | 178 | 250 | 440 | 504 | 1,460 | 800 | 1,130 | 646 | 646 | 538 | 3,590 | 334 |
| 10 | 182 | 250 | 538 | 472 | 1,130 | 754 | 1,000 | 628 | 556 | 412 | 2,090 | 328 |
| 11 | 164 | 245 | b430 | 520 | 1,010 | 736 | 1,100 | 592 | 565 | 608 | 1,220 | 328 |
| 12 | 182 | 240 | b370 | 488 | b900 | 1,380 | 2,030 | 619 | 610 | 890 | 1,330 | 310 |
| 13 | 187 | 235 | 391 | 448 | b720 | 1,840 | *1,760 | 830 | 520 | 1,580 | 1,010 | *304 |
| 14 | *182 | 235 | 480 | b430 | b700 | 1,350 | 9,030 | 960 | 496 | 1,510 | 800 | 294 |
| 15 | 356 | 225 | 480 | 412 | b720 | 1,270 | 3,780 | 1,340 | *456 | 920 | 840 | 294 |
| 16 | 277 | 220 | 426 | 456 | *700 | *2,150 | 2,520 | 1,400 | 433 | 754 | 1,620 | 277 |
| 17 | 225 | 390 | 391 | 377 | 763 | 3,120 | 1,970 | 1,090 | 405 | 655 | *1,020 | 255 |
| 18 | 192 | 456 | 619 | b380 | 718 | 3,720 | 1,660 | *910 | 391 | 538 | 880 | 245 |
| 19 | 196 | *532 | 673 | *384 | 628 | 5,120 | 1,490 | 810 | 504 | 931 | 790 | 240 |
| 20 | 187 | 1,000 | 504 | b400 | 583 | 4,110 | 1,330 | 754 | 1,220 | *610 | 810 | 240 |
| 21 | 182 | 798 | b440 | b360 | 583 | *2,700 | 1,250 | 820 | 890 | 538 | 850 | 225 |
| 22 | 182 | 480 | b380 | b390 | 670 | 4,600 | 1,340 | 1,580 | 619 | 488 | 763 | 220 |
| 23 | 192 | 384 | b360 | b430 | 3,000 | 3,370 | 1,160 | 2,020 | 520 | 488 | 1,030 | 220 |
| 24 | 187 | 370 | b370 | b400 | 2,250 | 2,390 | 1,140 | 1,450 | 547 | 583 | 700 | 230 |
| 25 | 169 | 340 | b330 | b360 | 1,760 | 2,070 | 1,370 | 1,190 | 488 | 592 | 592 | 440 |
| 26 | 196 | 316 | b310 | b350 | 1,340 | 2,210 | 1,400 | 1,020 | 472 | 480 | 520 | 496 |
| 27 | 200 | 299 | 322 | b350 | 1,380 | 1,800 | 1,350 | 840 | 440 | 440 | 488 | 346 |
| 28 | 240 | 310 | 419 | b360 | 2,000 | 1,520 | 1,210 | 860 | 398 | 464 | 456 | 334 |
| 29 | 294 | 685 | 1,990 | b340 | - | 1,370 | 1,090 | 772 | 370 | 939 | 405 | 426 |
| 30 | 304 | 664 | 3,730 | b320 | ------ | 1,220 | 1,000 | 754 | 384 | 592 | 426 | 358 |
| 31 | 272 | -- -- | 1,530 | b280 | ------- | 1,100 | ------- | 664 | --- ---- | 810 | 628 | - - - |
| Total | 6,773 | 11,170 | 19,545 | 14,791 | 35,845 | 59,740 | 50,060 | 28,964 | 16,120 | 20,113 | 30,169 | 10,129 |
| Mean | 218 | 372 | 630 | 477 | 1,280 | 1,927 | 1,669 | 934 | 537 | 649 | 973 | 338 |
| Cfsm | 0.359 | 0.612 | 1.04 | 0.785 | 2.11 | 3.17 | 2.75 | 1.54 | 0.883 | 1.07 | 1.60 | 0.556 |
| In. | 0.41 | 0.68 | 1.20 | 0.90 | 2.19 | 3.65 | 3.06 | 1.77 | 0.99 | 1.23 | 1.85 | 0.62 |

Calendar year 1954: Max 12,500 Min 137 Mean 807 Cfsm 1.33 In. 18.01
Water year 1954-55: Max 9,030 Min 164 Mean 831 Cfsm 1.37 In. 18.56

Peak discharge (base, 9,000 cfs).--Apr. 14 (6:30 a.m.) 13,000 cfs (8.23 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## North Indian Creek near Unicoi, Tenn.

Location.--Lat 36°10'35", long 82°17'36", on right bank 100 ft upstream from unnamed tributary, 900 ft upstream from Rocky Branch, and 3.4 miles southeast of Unicoi, Unicoi County.

Drainage area.--15.9 sq mi.

Records available.--May 1944 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,209.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--11 years, 20.9 cfs.

Extremes.--Maximum discharge during year, 266 cfs Mar. 19 (gage height, 3.13 ft); minimum, 2.4 cfs Oct. 12 (gage height, 0.99 ft).
1944-55: Maximum discharge, 486 cfs July 22, 1954 (gage height, 4.08 ft), from rating curve extended above 280 cfs; minimum, 1.9 cfs Nov. 29, 1953; minimum gage height, 0.79 ft Sept. 22-28, 1944.

Remarks.--Records good except those for period of no gage-height record, which are fair. Some diversion from Davis Spring 1 mile upstream for part of water supply of Johnson City.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 23 to Sept. 6)

| Oct. 1 to Dec. 29 | | Dec. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 1.0 | 2.5 | 1.0 | 2.5 | 1.6 | 26 |
| 1.1 | 3.8 | 1.1 | 3.8 | 2.0 | 67 |
| 1.2 | 5.8 | 1.2 | 6.2 | 2.5 | 143 |
| 1.3 | 9.0 | 1.3 | 9.8 | 2.9 | 219 |
| 1.4 | 14 | 1.4 | 14 | | |
| 1.6 | 18 | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.5 | *3.3 | 6.8 | 18 | 6.9 | 60 | 32 | 29 | 16 | 6.0 | *5.2 | 5.0 |
| 2 | 3.7 | 3.8 | 5.8 | 15 | 14 | 47 | 30 | 26 | 14 | 5.5 | 4.8 | 4.5 |
| 3 | 3.3 | 3.5 | 5.4 | *13 | 14 | 37 | 28 | *24 | 14 | 5.5 | 5.5 | 4.0 |
| 4 | 3.0 | 3.7 | 4.8 | 12 | 11 | 31 | *24 | 22 | 12 | 15 | 5.7 | 4.0 |
| 5 | *2.8 | 5.8 | 16 | 24 | 12 | 26 | 26 | 21 | 11 | *9.1 | 5.0 | 3.8 |
| 6 | 2.9 | 4.2 | *26 | 28 | 140 | 39 | 43 | 19 | *9.8 | 6.9 | 4.8 | *3.8 |
| 7 | 2.9 | 3.7 | 10 | 26 | 103 | 35 | 40 | 18 | 14 | 8.6 | 22 | 3.7 |
| 8 | 2.8 | 3.8 | 8.0 | 21 | 57 | 31 | 33 | 18 | 14 | 15 | 24 | 3.5 |
| 9 | 2.8 | 3.8 | 15 | 19 | 37 | 27 | 30 | 17 | 14 | 18 | 8.7 | 3.4 |
| 10 | 2.8 | 4.0 | 11 | 16 | 28 | 25 | 28 | 16 | 12 | 12 | 6.6 | 3.4 |
| 11 | 2.8 | 3.7 | 8.4 | 15 | 26 | 22 | 36 | 16 | 15 | 12 | 10 | 3.4 |
| 12 | 2.6 | 3.5 | 7.7 | 13 | 22 | 116 | 32 | 21 | 12 | 13 | 13 | 3.4 |
| 13 | 2.6 | 3.5 | 8.0 | 12 | 21 | 72 | 29 | 23 | 11 | 11 | 7.6 | 3.3 |
| 14 | 2.6 | 3.4 | 7.7 | 10 | 22 | 52 | 48 | 41 | 13 | 9.1 | 7.6 | 3.2 |
| 15 | 3.6 | 3.4 | 7.7 | 11 | 21 | 46 | 39 | 52 | 10 | 8.4 | 9.6 | 3.2 |
| 16 | 3.2 | 3.5 | 7.1 | 10 | 21 | 93 | 34 | 32 | 9.1 | 7.6 | 8.0 | 3.2 |
| 17 | 3.0 | 3.4 | 7.4 | 9.1 | 25 | 91 | 30 | 26 | 8.4 | 6.6 | 8.0 | 3.0 |
| 18 | 3.0 | 3.4 | 23 | 8.7 | 25 | 152 | 27 | 22 | 8.0 | 6.2 | 7.6 | 3.0 |
| 19 | 3.0 | 3.7 | 15 | 9.8 | 23 | 209 | 25 | 20 | 11 | 6.0 | 6.6 | 3.0 |
| 20 | 2.9 | 16 | 12 | 8.7 | 21 | 136 | 24 | 19 | 9.8 | 6.2 | 5.7 | 2.9 |
| 21 | 2.9 | 15 | 9.9 | 8.4 | 20 | 91 | 28 | 18 | 8.0 | 6.2 | 5.2 | 2.9 |
| 22 | 2.9 | 8.0 | 9.0 | 9.8 | 25 | 130 | 29 | 18 | 8.0 | 5.7 | 5.0 | 2.9 |
| 23 | 2.9 | 6.1 | 8.4 | 9.4 | 75 | 91 | 25 | 17 | 8.0 | 6.0 | 6.4 | 2.9 |
| 24 | 2.9 | 6.1 | 9.9 | 8.4 | 60 | 70 | 27 | 16 | 8.0 | 12 | 5.7 | 3.4 |
| 25 | 2.9 | 5.6 | 8.4 | 7.3 | 50 | 75 | 42 | 18 | 8.0 | 8.0 | 5.5 | 7.5 |
| 26 | 2.9 | 5.0 | 8.4 | 7.3 | 40 | 90 | 72 | 16 | 8.0 | 6.2 | 5.2 | 3.7 |
| 27 | 3.3 | 4.8 | 12 | 7.6 | 50 | 71 | 63 | 14 | 6.9 | 5.7 | 5.0 | 3.4 |
| 28 | 3.6 | 8.3 | 19 | 6.2 | *58 | 59 | 52 | 17 | 6.9 | 5.5 | 4.8 | 4.5 |
| 29 | 6.1 | 16 | 41 | 6.6 | - | 51 | 41 | 30 | 6.2 | 6.0 | 4.5 | 3.8 |
| 30 | 4.8 | 8.0 | 32 | 6.0 | ------- | 42 | 33 | 21 | 6.2 | 5.5 | 4.3 | 4.0 |
| 31 | 3.4 | ------- | 22 | *5.7 | ------- | 36 | ------- | 17 | ------- | 5.2 | 10 | ------- |
| Total | 102.4 | 170.0 | 392.8 | 382.0 | 1,027.9 | 2,153 | 1,050 | 684 | 312.3 | 259.7 | 237.6 | 109.7 |
| Mean | 3.30 | 5.67 | 12.7 | 12.3 | 36.7 | 69.5 | 35.0 | 22.1 | 10.4 | 8.38 | 7.66 | 3.66 |
| Cfsm | 0.208 | 0.357 | 0.799 | 0.774 | 2.31 | 4.37 | 2.20 | 1.39 | 0.654 | 0.527 | 0.482 | 0.230 |
| In. | 0.24 | 0.40 | 0.92 | 0.89 | 2.40 | 5.04 | 2.46 | 1.60 | 0.73 | 0.61 | 0.56 | 0.26 |

Calendar year 1954: Max 290 Min 2.6 Mean 19.1 Cfsm 1.20 In. 16.32
Water year 1954-55: Max 209 Min 2.6 Mean 18.9 Cfsm 1.18 In. 16.11

Peak discharge (base, 220 cfs).--Mar. 19 (9 a.m.) 266 cfs (3.13 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Feb. 13-28; discharge estimated on basis of weather records and records for nearby stations.

## Nolichucky River at Embreeville, Tenn.

Location.--Lat 36°10'35", long 82°27'27", on left bank 2,000 ft upstream from bridge on State Highway 81 at Embreeville, Washington County, 3 miles northwest of Erwin, 5.2 miles downstream from North Indian Creek, and at mile 89.0.

Drainage area.--805 sq mi.

Records available.--September 1900 to May 1901 (published as "near Chucky Valley"), July 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,519.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. September 1900 to May 1901 chain gage at site 3 miles downstream at different datum. July 1920 to October 1931 chain gage at bridge 2,000 ft downstream at datum 6.33 ft lower.

Average discharge.--36 years (1919-55), 1,298 cfs.

Extremes.--Maximum discharge during year, 14,500 cfs Apr. 14 (gage height, 6.32 ft); minimum, 192 cfs Oct. 11-12 (gage height, 0.74 ft).
1900-1901, 1919-55: Maximum discharge, 82,500 cfs Aug. 13, 1940 (gage height, 18.57 ft), from rating curve extended above 48,000 cfs on basis of slope-area determination of peak flow; minimum, 85 cfs Sept. 8, 9, 1925 (gage height, 1.60 ft, site and datum then in use).

Remarks.--Records good. Slight diurnal fluctuation at low flow caused by small mill above station.

Revisions (water years).--WSP 803: 1935(M). WSP 823: Drainage area. WSP 1336: 1921-24, 1931(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 30 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 180 | 2.0 | 1,310 | 0.9 | 250 | 3.0 | 3,200 |
| .8 | 210 | 2.5 | 2,160 | 1.2 | 420 | 4.0 | 5,580 |
| 1.3 | 520 | 3.0 | 3,200 | 1.6 | 765 | 5.2 | 9,620 |
| 1.6 | 810 | 3.4 | 4,100 | 2.0 | 1,265 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 400 | *275 | 686 | 1,470 | 400 | 2,640 | 1,420 | 1,260 | 765 | 480 | 887 | 715 |
| 2 | 393 | 290 | 556 | 1,150 | 629 | 2,250 | 1,330 | *1,120 | 695 | 442 | 983 | 629 |
| 3 | *365 | 326 | 486 | *959 | 853 | 1,830 | 1,250 | 1,070 | 629 | 416 | 911 | 535 |
| 4 | 270 | 306 | 435 | 831 | 787 | 1,560 | *1,170 | 1,010 | 593 | 420 | 935 | 503 |
| 5 | 222 | 386 | 444 | 864 | 647 | 1,390 | 1,110 | 959 | 567 | *611 | 665 | 472 |
| 6 | 226 | 435 | *1,180 | 899 | 3,900 | 1,440 | 1,330 | 899 | *575 | 638 | 675 | *442 |
| 7 | 230 | 365 | 968 | 1,010 | 6,970 | 1,750 | 2,190 | 853 | 620 | 675 | 826 | 390 |
| 8 | 222 | 313 | 610 | 887 | 3,350 | 1,470 | 1,920 | 831 | 715 | 787 | 1,920 | 394 |
| 9 | 210 | 295 | 716 | 787 | 2,170 | 1,250 | 1,560 | 776 | 765 | 665 | 3,300 | 388 |
| 10 | 210 | 306 | 920 | 705 | 1,640 | 1,150 | 1,360 | 755 | 685 | 593 | 2,500 | 381 |
| 11 | 214 | 295 | 667 | 745 | 1,420 | 1,090 | 1,360 | 725 | 685 | 586 | *1,390 | 368 |
| 12 | 198 | 285 | 520 | 705 | 1,340 | 2,500 | 2,390 | 609 | 735 | 971 | 1,390 | 350 |
| 13 | 210 | 280 | 565 | 656 | 1,030 | 2,980 | 2,020 | 1,010 | 656 | 1,340 | 1,170 | 344 |
| 14 | 204 | 270 | 658 | 593 | 971 | 2,150 | 9,390 | 1,210 | 620 | 1,610 | 959 | 333 |
| 15 | 341 | 275 | 705 | 584 | 1,010 | 1,880 | 4,650 | 1,470 | 575 | 1,080 | 842 | 328 |
| 16 | 365 | 265 | 620 | 647 | 971 | 3,140 | 3,200 | 1,750 | 543 | 820 | 1,590 | 322 |
| 17 | 270 | 326 | 538 | 543 | 1,030 | 4,940 | 2,500 | 1,300 | 519 | 745 | 1,200 | 306 |
| 18 | 238 | 556 | 736 | 543 | 1,100 | 5,660 | 2,110 | 1,110 | 488 | 593 | 983 | 290 |
| 19 | 230 | 407 | 920 | 543 | 995 | *8,520 | 1,830 | 959 | 495 | 873 | 923 | 285 |
| 20 | 226 | 1,030 | 768 | 519 | 899 | 6,470 | 1,630 | 901 | 1,170 | 787 | 820 | 280 |
| 21 | 218 | 1,000 | 629 | 535 | 831 | 4,050 | 1,540 | 947 | 1,010 | 602 | 911 | 265 |
| 22 | 214 | 686 | 538 | 543 | 923 | 6,160 | 1,660 | 1,360 | 755 | 602 | 820 | 255 |
| 23 | 210 | 547 | 565 | 602 | 4,070 | 4,990 | 1,450 | 2,150 | 665 | 559 | 1,070 | 255 |
| 24 | 218 | 512 | 610 | 511 | 3,600 | 4,080 | 1,420 | 1,640 | 638 | 675 | 853 | 270 |
| 25 | 210 | 469 | 529 | 488 | 2,730 | 2,960 | 1,700 | 1,360 | 602 | 675 | 685 | 452 |
| 26 | 201 | 428 | 444 | 458 | 2,110 | 3,530 | 2,100 | 1,180 | 611 | 611 | 642 | 543 |
| 27 | 222 | 400 | 478 | 488 | 2,170 | 3,090 | 2,100 | 1,010 | 559 | 519 | 611 | 435 |
| 28 | 255 | 400 | 629 | 495 | *3,240 | 2,430 | 1,810 | 983 | 519 | 559 | 584 | 374 |
| 29 | 313 | 747 | 1,360 | 450 | - | 2,070 | 1,570 | 971 | 480 | 848 | 535 | 480 |
| 30 | 372 | 956 | 4,090 | 428 | ------ | 1,770 | 1,390 | 971 | 472 | 685 | 519 | 435 |
| 31 | 320 | ---- | 2,230 | *362 | ------- | 1,560 | -------- | 864 | -------- | 745 | 629 | -------- |
| Total | 7,997 | 13,431 | 25,800 | 21,000 | 51,786 | 92,750 | 62,460 | 34,213 | 19,406 | 22,192 | 32,728 | 11,819 |
| Mean | 258 | 448 | 832 | 677 | 1,850 | 2,992 | 2,082 | 1,104 | 647 | 716 | 1,056 | 394 |
| Cfsm | 0.320 | 0.557 | 1.03 | 0.841 | 2.30 | 3.72 | 2.58 | 1.37 | 0.804 | 0.889 | 1.31 | 0.489 |
| In. | 0.37 | 0.62 | 1.19 | 0.97 | 2.39 | 4.28 | 2.89 | 1.58 | 0.90 | 1.03 | 1.51 | 0.55 |

Calendar year 1954: Max 18,000 Min 183 Mean 1,060 Cfsm 1.32 In. 17.87
Water year 1954-55: Max 9,390 Min 198 Mean 1,084 Cfsm 1.35 In. 18.28

Peak discharge (base, 9,500 cfs).--Feb. 6 (11:30 p.m.) 11,400 cfs (5.62 ft); Mar. 19 (4 p.m.) 10,600 cfs (5.45 ft); Apr. 14 (9 a.m.) 14,500 cfs (6.32 ft).
* Discharge measurement made on this day.
Note.--Discharge Dec. 8-29 computed from twice-daily radio-gage readings furnished by Tennessee Valley Authority.

## Nolichucky River below Nolichucky Dam, Tenn.

Location.--Lat 36°03'59", long 82°52'18", on right bank 0.30 mile downstream from Nolichucky Dam, Greene County, 2.2 miles upstream from Cove Creek, 7.0 miles south of Greeneville, and at mile 45.7.

Drainage area.--1,184 sq mi.

Records available.--May 1903 to December 1908, April 1919 to October 1925, and October 1945 to September 1955 in reports of Geological Survey. Published as "near Greeneville" 1903-8, 1919-25. May 1903 to December 1908 (revised records) and April 1919 to September 1924 in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder. Datum of gage is 1,173.46 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. May 1903 to December 1908 and April 1919 to October 1925, at bridge 8.4 miles upstream at different datums.

Average discharge.--21 years (1903-8, 1919-25, 1945-55), 1,757 cfs.

Extremes.--Maximum discharge during year, 13,400 cfs Mar. 20 (gage height, 9.63 ft); minimum daily, 22 cfs Oct. 20.

1903-8, 1919-25, 1945-55: Maximum discharge observed, 73,500 cfs Jan. 23, 1906 (gage height, 19.3 ft), site and datum then in use, from rating curve extended above 9,200 cfs; minimum daily, that of Oct. 20, 1954.

Flood of Aug. 14, 1940, reached a discharge of 73,500 cfs, by computation of flow over dam.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Low flow regulated by Lake Davy Crockett since 1913 (controlled storage, 4,060 cfs-days).

Revisions.--See Records available.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.8 | 18 | 2.8 | 280 |
| 1.0 | 28 | 3.1 | 460 |
| 1.2 | 40 | 3.5 | 840 |
| 1.4 | 54 | 4.0 | 1,540 |
| 1.6 | 70 | 5.0 | 3,290 |
| 1.9 | 98 | 7.0 | 7,200 |
| 2.2 | 134 | 9.0 | 11,800 |
| 2.5 | 188 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 310 | *414 | 647 | 2,620 | 592 | 3,900 | 2,620 | 2,520 | 896 | 875 | *1,450 | 510 |
| 2 | 294 | 408 | 1,020 | 2,530 | 608 | 3,380 | 2,550 | *1,700 | 956 | 497 | 802 | 900 |
| 3 | 201 | 434 | 1,140 | *1,320 | 523 | 2,840 | 2,530 | 1,440 | 948 | 499 | 926 | 700 |
| 4 | *290 | 404 | 506 | 938 | 908 | 2,590 | 2,200 | 1,440 | 934 | 500 | 982 | 620 |
| 5 | 502 | 403 | 402 | 810 | 1,600 | 2,570 | 1,970 | 1,270 | 910 | *375 | 1,660 | 600 |
| 6 | 500 | 406 | *556 | 686 | 1,600 | 2,520 | 2,080 | 1,380 | *870 | 752 | 582 | *500 |
| 7 | 506 | 405 | 1,470 | 863 | 6,320 | 2,530 | 2,500 | 1,270 | 676 | 956 | 634 | 590 |
| 8 | 500 | 380 | 931 | 1,540 | 5,230 | 2,550 | 2,550 | 1,320 | 614 | 1,260 | 2,360 | 610 |
| 9 | 300 | 410 | 711 | 1,280 | 3,250 | 2,550 | 2,550 | 944 | 873 | 1,050 | 2,040 | 544 |
| 10 | *27 | 487 | 685 | 956 | 2,610 | 2,480 | 2,230 | 1,310 | 1,220 | 628 | 3,450 | 355 |
| 11 | 208 | 511 | 1,100 | 689 | 2,550 | 2,040 | 1,670 | 1,360 | 702 | 640 | 2,620 | 391 |
| 12 | 304 | 515 | 966 | 764 | 2,070 | 1,580 | 2,400 | 1,070 | 989 | 622 | 2,520 | 396 |
| 13 | 313 | 310 | 1,050 | 922 | 1,360 | 3,090 | 2,570 | 1,280 | 923 | 1,460 | 1,600 | 387 |
| 14 | 314 | 306 | 520 | 872 | 1,360 | 3,290 | *6,710 | 1,860 | 782 | 1,130 | 950 | 387 |
| 15 | 1,190 | 319 | 522 | 700 | 1,260 | 2,770 | 7,330 | 2,290 | 770 | 2,010 | 900 | 488 |
| 16 | 328 | 314 | 727 | 704 | 1,240 | 2,910 | 4,580 | 1,640 | 1,060 | 1,680 | 1,500 | 500 |
| 17 | 338 | 315 | 730 | 698 | 2,060 | 6,720 | 3,630 | 1,640 | 926 | 728 | 2,100 | 401 |
| 18 | 272 | 420 | 660 | 592 | 1,340 | 7,290 | 3,000 | 1,730 | 619 | 684 | 1,700 | 400 |
| 19 | 30 | 510 | 689 | 594 | 1,270 | 11,800 | 2,730 | 1,430 | 625 | 714 | 750 | 409 |
| 20 | 22 | 427 | 599 | 578 | 1,770 | 11,100 | 2,590 | 1,400 | 1,340 | 823 | 630 | 402 |
| 21 | 210 | 566 | 870 | 766 | 1,540 | 6,590 | 2,550 | 1,430 | 1,880 | 944 | 500 | 297 |
| 22 | 310 | 567 | 918 | 773 | 1,380 | 7,600 | 2,550 | 1,780 | 1,040 | 962 | 850 | 307 |
| 23 | 293 | 756 | 857 | 770 | 2,090 | 8,390 | 2,520 | 2,230 | 642 | 620 | 900 | 298 |
| 24 | 307 | 746 | 793 | 784 | 4,200 | 5,510 | 1,890 | 2,190 | 630 | 1,040 | 1,000 | 309 |
| 25 | 209 | 760 | 617 | 685 | 3,740 | 4,470 | 1,940 | 2,220 | 520 | 1,060 | 1,200 | 303 |
| 26 | 210 | 760 | 602 | 768 | 3,040 | 5,170 | 2,550 | 1,540 | 538 | 1,050 | 1,200 | 298 |
| 27 | 209 | 593 | 592 | 728 | 2,680 | 5,060 | 2,750 | 967 | 527 | 979 | 630 | 573 |
| 28 | 308 | 604 | 506 | 602 | *3,810 | 3,970 | 2,750 | 815 | 534 | 632 | 610 | 785 |
| 29 | 298 | 410 | 678 | 598 | - | 3,400 | 2,590 | 1,570 | 668 | 702 | 650 | 335 |
| 30 | 414 | 690 | 2,740 | 613 | ------ | 2,950 | 2,570 | 1,670 | 752 | 585 | 520 | 675 |
| 31 | 396 | -- -- | 3,450 | *491 | ------- | 2,710 | ------- | 975 | --- ---- | 726 | 600 | - - |
| Total | 9,913 | 14,550 | 28,254 | 28,234 | 62,001 | 136,320 | 85,650 | 47,681 | 25,364 | 27,183 | 38,816 | 14,270 |
| Mean | 320 | 485 | 911 | 911 | 2,214 | 4,397 | 2,855 | 1,538 | 845 | 877 | 1,252 | 476 |
| Cfsm | 0.270 | 0.410 | 0.769 | 0.769 | 1.87 | 3.71 | 2.41 | 1.30 | 0.714 | 0.741 | 1.06 | 0.402 |
| In. | 0.31 | 0.46 | 0.89 | 0.89 | 1.95 | 4.28 | 2.69 | 1.50 | 0.80 | 0.85 | 1.22 | 0.45 |

Calendar year 1954: Max 22,800 Min 22 Mean 1,414 Cfsm 1.19 In. 16.22
Water year 1954-55: Max 11,800 Min 22 Mean 1,420 Cfsm 1.20 In. 16.29

Peak discharge (base, 11,500 cfs).--Mar. 20 (1 a.m.) 13,400 cfs (9.63 ft); Apr. 14 (8 p.m.) 12,400 cfs (9.22 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 8-9, Aug. 13 to Sept. 6; discharge estimated on basis of weather records, recorded range in stage, and records for station at Morristown and releases from Nolichucky Dam.

## Lick Creek at Mohawk, Tenn.

Location.--Lat 36°12'09", long 83°02'53", on right bank 0.25 mile east of Mohawk, Greene County, 0.6 mile upstream from Riley Creek, and 17.5 miles upstream from mouth.

Drainage area.--220 sq mi.

Records available.--July 1946 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,060.59 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--9 years, 229 cfs.

Extremes.--Maximum discharge during year, 4,860 cfs Mar. 19 (gage height, 14.32 ft); minimum, 10 cfs Sept. 23 (gage height, 1.57 ft).
1946-55: Maximum discharge, 10,700 cfs Jan. 31, 1950 (gage height, 16.24 ft), from rating curve extended above 5,000 cfs; minimum, 8.4 cfs Sept. 12, 1954 (gage height, 1.56 ft).

Remarks.--Records good.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 21, Dec. 1, 2, 8, 12-28, Jan. 2-10, 15-19, Jan. 29 to Feb. 1, Feb. 5, Apr. 7-14)

| | | | |
|---|---|---|---|
| 1.6 | 10 | 10.0 | 815 |
| 1.9 | 25 | 11.0 | 1,000 |
| 2.4 | 55 | 12.0 | 1,420 |
| 3.0 | 97 | 12.8 | 2,180 |
| 6.0 | 395 | 13.9 | 4,000 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 63 | *14 | 28 | 87 | 44 | 919 | 296 | 107 | 45 | 27 | *41 | 17 |
| 2 | 35 | 12 | 23 | 61 | 71 | 584 | 277 | *100 | 45 | 26 | 37 | 18 |
| 3 | 22 | 14 | 16 | *48 | *91 | *324 | 258 | 96 | 43 | 25 | 32 | 16 |
| 4 | 16 | 17 | 15 | 42 | 66 | 250 | 235 | 92 | 41 | 24 | 29 | 16 |
| 5 | 14 | 18 | 43 | 38 | 53 | 213 | 213 | 89 | 41 | *25 | 27 | 15 |
| 6 | *12 | 18 | *276 | 39 | 292 | 484 | 391 | 85 | 39 | 34 | 26 | *16 |
| 7 | 12 | 17 | 138 | 42 | *891 | 901 | 654 | 81 | 41 | 60 | 26 | 15 |
| 8 | 11 | 16 | 41 | 41 | *1,190 | 734 | 344 | 77 | 47 | 37 | 58 | 14 |
| 9 | 12 | 14 | 114 | 36 | 292 | 287 | 251 | 75 | 48 | 44 | 51 | 14 |
| 10 | 12 | 14 | 193 | 33 | 158 | 228 | 226 | 72 | 48 | 37 | 33 | 14 |
| 11 | 12 | 15 | 70 | 217 | 167 | 209 | 253 | 70 | 44 | 40 | 35 | 14 |
| 12 | 12 | 14 | 41 | 300 | 191 | 837 | *364 | 72 | 42 | 66 | 24 | 14 |
| 13 | 12 | 14 | 35 | 105 | 103 | 1,490 | 250 | 91 | *41 | 176 | 22 | 14 |
| 14 | 12 | 14 | 38 | 66 | 103 | 537 | 496 | 431 | 40 | 91 | 20 | 14 |
| 15 | 12 | 16 | 39 | 52 | 103 | 450 | 468 | 310 | 39 | 91 | 82 | 13 |
| 16 | 12 | 16 | 33 | 54 | 131 | 769 | 298 | 116 | 36 | 69 | 59 | 12 |
| 17 | 13 | 14 | 31 | 50 | 527 | 1,040 | 235 | 99 | 36 | 39 | 33 | 12 |
| 18 | 12 | 16 | 38 | 44 | 475 | 1,940 | 205 | 87 | 35 | 31 | 22 | 11 |
| 19 | 13 | 16 | 58 | 61 | 203 | *3,880 | 182 | 74 | 33 | 27 | 20 | 11 |
| 20 | 12 | 17 | 56 | 103 | 147 | 2,300 | 165 | 69 | 37 | 26 | 19 | 11 |
| 21 | 12 | 24 | 42 | 125 | 119 | 1,360 | 154 | 66 | 38 | 32 | 18 | 11 |
| 22 | 12 | 20 | 35 | 351 | 298 | 2,250 | 172 | 70 | 32 | 50 | 18 | 10 |
| 23 | 12 | 17 | 30 | 477 | 1,320 | 2,080 | 154 | 82 | 33 | 29 | 20 | 10 |
| 24 | 16 | 17 | 28 | 215 | 1,520 | 980 | 163 | 70 | 45 | 84 | 21 | 11 |
| 25 | 14 | 18 | 24 | 113 | 580 | 622 | 260 | 63 | 41 | 286 | 18 | 20 |
| 26 | 12 | 20 | 23 | 81 | 254 | 1,170 | 220 | 61 | 42 | 93 | 14 | 32 |
| 27 | 14 | 16 | 22 | 69 | 548 | 1,320 | 178 | 58 | 42 | 46 | 14 | 22 |
| 28 | 14 | 24 | 22 | 63 | 947 | 625 | 150 | 65 | 35 | 72 | 14 | 34 |
| 29 | 13 | 91 | 330 | 56 | - | 409 | 133 | 53 | 30 | 54 | 14 | 33 |
| 30 | 14 | 63 | 630 | 51 | ------ | 352 | 119 | 50 | 29 | 84 | 14 | 97 |
| 31 | 16 | ------ | 273 | 44 | ------ | 320 | ------ | 48 | ------ | 72 | 16 | ------ |
| Total | 480 | 616 | 2,784 | 3,164 | 10,884 | 29,864 | 7,764 | 2,979 | 1,188 | 1,897 | 877 | 561 |
| Mean | 15.5 | 20.5 | 89.8 | 102 | 389 | 963 | 259 | 96.1 | 39.6 | 61.2 | 28.3 | 18.7 |
| Cfsm | 0.070 | 0.093 | 0.408 | 0.464 | 1.77 | 4.38 | 1.18 | 0.437 | 0.180 | 0.278 | 0.129 | 0.085 |
| In. | 0.08 | 0.10 | 0.47 | 0.53 | 1.84 | 5.05 | 1.31 | 0.50 | 0.20 | 0.32 | 0.15 | 0.09 |

Calendar year 1954: Max 4,160 Min 8.8 Mean 148 Cfsm 0.673 In. 9.14
Water year 1954-55: Max 3,880 Min 10 Mean 173 Cfsm 0.786 In. 10.64

Peak discharge (base, 3,000 cfs).--Mar. 19 (11 a.m.) 4,860 cfs (14.32 ft).
* Discharge measurement made on this day.

## Nolichucky River near Morristown, Tenn.

Location.--Lat 36°10'49", long 83°10'32", on right bank 0.25 mile downstream from Bent Creek, 0.6 mile upstream from Susong Bridge, 1.1 miles upstream from Forgey Island, 7 miles southeast of Morristown, Hamblen County, and at mile 14.5.

Drainage area.--1,679 sq mi.

Records available.--November 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,015.78 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Nov. 6, 1925, chain gage at bridge 3¾ miles downstream at datum 10.34 ft lower. Nov. 6, 1925, to Sept. 30, 1942, water-stage recorder at site 150 ft upstream from chain gage at same datum as chain gage.

Average discharge.--34 years (1921-55), 2,172 cfs.

Extremes.--Maximum discharge during year, 18,300 cfs Mar. 20 (gage height, 13.18 ft); minimum daily, 76 cfs Oct. 21.
1920-55: Maximum discharge, 61,900 cfs Aug. 14, 1940 (gage height, 22.68 ft, site and datum then in use), from rating curve extended above 39,000 cfs on basis of records for station at Embreeville and peak flow over Nolichucky Dam; minimum daily, 60 cfs Sept. 7, 28, 1925.

Remarks.--Records good. Low flow partly regulated by Lake Davy Crockett (controlled storage, 4,060 cfs-days), 18 miles upstream.

Revisions (water years).--WSP 563: 1921(M). WSP 823: Drainage area. WSP 873: 1935(M). WSP 893: 1927(M), 1928, 1935, 1936-37(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.5 | 60 | 5.0 | 3,470 |
| 1.8 | 173 | 6.0 | 4,920 |
| 2.2 | 390 | 8.0 | 8,120 |
| 3.0 | 1,070 | 10.0 | 11,700 |
| 4.0 | 2,170 | 12.5 | 16,800 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 661 | *468 | 775 | 2,970 | 624 | 5,880 | 3,400 | 2,880 | 1,170 | 1,000 | *640 | 687 |
| 2 | 449 | 481 | 1,070 | 2,740 | 829 | 4,920 | 3,290 | 2,240 | 1,130 | 908 | 1,600 | 618 |
| 3 | 362 | 472 | 1,130 | *1,810 | 933 | *3,830 | 3,220 | 1,750 | 1,110 | 577 | 1,080 | 964 |
| 4 | 260 | 474 | 837 | 1,200 | 739 | 3,230 | 2,810 | 1,830 | 1,070 | 573 | 1,080 | 760 |
| 5 | 345 | 490 | 626 | 1,030 | 1,400 | 3,120 | 2,680 | 1,620 | 1,350 | 571 | 1,160 | 662 |
| 6 | *543 | 515 | *1,270 | 822 | 2,160 | 4,060 | 2,900 | 1,690 | 870 | 480 | 1,370 | *639 |
| 7 | 539 | 434 | 1,120 | 839 | *6,220 | 4,260 | 4,070 | 1,440 | 1,030 | 1,070 | 977 | 574 |
| 8 | 577 | 434 | 1,570 | 1,660 | *7,390 | 4,020 | 3,470 | 1,920 | 820 | 1,420 | 2,040 | 642 |
| 9 | 488 | 473 | 1,200 | 1,140 | 4,650 | 3,370 | 3,200 | *1,160 | 798 | 1,500 | 2,570 | 636 |
| 10 | 337 | 555 | 733 | 1,330 | 3,110 | 3,110 | 3,100 | 1,320 | 1,450 | 1,020 | 3,430 | 643 |
| 11 | *112 | 559 | 1,130 | 1,140 | 2,970 | 2,750 | 2,310 | 1,600 | 1,200 | *778 | 3,110 | 369 |
| 12 | 201 | 570 | 1,240 | 1,260 | 2,960 | 3,530 | 2,740 | 1,470 | 1,310 | 740 | 2,880 | 424 |
| 13 | 339 | 460 | 1,200 | 1,090 | 1,680 | 4,410 | 3,190 | 1,680 | *1,100 | 898 | 2,740 | 514 |
| 14 | 340 | 360 | 936 | 1,170 | 1,680 | 5,380 | 4,740 | 2,500 | 650 | 1,720 | 928 | 354 |
| 15 | 409 | 422 | 676 | 790 | 1,650 | 3,960 | 9,440 | 3,090 | 946 | 1,630 | 1,100 | 418 |
| 16 | 1,160 | 310 | 612 | 833 | 1,510 | 4,780 | 5,640 | 1,890 | 1,250 | 2,230 | 1,340 | 522 |
| 17 | 370 | 356 | 786 | 875 | 2,790 | 7,660 | 4,340 | 2,180 | 1,180 | 1,320 | 2,170 | 538 |
| 18 | 341 | 378 | 647 | 759 | 2,330 | 11,000 | 3,650 | 2,090 | 720 | 661 | 2,600 | 458 |
| 19 | 290 | 511 | 734 | 806 | 1,830 | 16,100 | 3,250 | 1,870 | 1,020 | 1,120 | 1,190 | 514 |
| 20 | 104 | 549 | 814 | 834 | 1,580 | 16,700 | 3,030 | 1,690 | 799 | 776 | 790 | 444 |
| 21 | *76 | 553 | 822 | 970 | 2,030 | 10,300 | 3,030 | 1,720 | 2,060 | 857 | 536 | 390 |
| 22 | 206 | 571 | 988 | 1,600 | 2,520 | 11,900 | 3,050 | 1,930 | 1,520 | 1,070 | 487 | 340 |
| 23 | 311 | 683 | 951 | 1,570 | 5,310 | 12,000 | 2,980 | 2,410 | 1,060 | 1,010 | 926 | 340 |
| 24 | 337 | 817 | 836 | 1,350 | 5,640 | 8,700 | 2,390 | 2,500 | 788 | 743 | 1,070 | 358 |
| 25 | 333 | 817 | 823 | 1,010 | 5,800 | 6,420 | 2,500 | 2,710 | 784 | 1,650 | 1,360 | 378 |
| 26 | 235 | 799 | 653 | 902 | 3,860 | 7,410 | 3,030 | 2,050 | 835 | 1,250 | 1,360 | 370 |
| 27 | 250 | 835 | 647 | 972 | 4,240 | 7,320 | 3,150 | 1,100 | 645 | 1,150 | 1,020 | 348 |
| 28 | 245 | 710 | 655 | 808 | 5,190 | 6,200 | 3,270 | 1,310 | 433 | 1,110 | 653 | 756 |
| 29 | 351 | 864 | 1,420 | 758 | -- | 4,680 | 3,010 | 1,270 | 649 | 886 | 670 | 862 |
| 30 | 355 | 589 | 2,480 | 730 | ------- | 4,020 | 2,930 | 2,640 | 782 | 781 | 702 | 586 |
| 31 | 440 | ------- | 4,620 | 720 | ------- | 3,600 | ------- | 969 | ------- | 1,050 | 616 | ------- |
| Total | 11,366 | 16,509 | 33,981 | 36,468 | 83,625 | 198,620 | 103,810 | 58,519 | 30,529 | 32,549 | 44,195 | 16,108 |
| Mean | 367 | 550 | 1,096 | 1,176 | 2,987 | 6,407 | 3,460 | 1,888 | 1,018 | 1,050 | 1,426 | 537 |
| Cfsm | 0.219 | 0.328 | 0.653 | 0.700 | 1.78 | 3.82 | 2.06 | 1.12 | 0.606 | 0.625 | 0.849 | 0.320 |
| In. | 0.25 | 0.37 | 0.75 | 0.81 | 1.85 | 4.40 | 2.30 | 1.30 | 0.68 | 0.72 | 0.98 | 0.36 |

Calendar year 1954: Max 32,200 Min 70 Mean 1,761 Cfsm 1.05 In. 14.23
Water year 1954-55: Max 16,700 Min 76 Mean 1,825 Cfsm 1.09 In. 14.77

Peak discharge (base, 13,000 cfs).--Mar. 20 (9 a.m.) 18,300 cfs (13.18 ft); Mar. 22 (11 a.m.) 14,000 cfs (11.18 ft).
* Discharge measurement made on this day.

## French Broad River below Douglas Dam, Tenn.

Location.--Lat 35°57'06", long 83°33'05", on right bank 1.0 mile downstream from Douglas Dam, 1.7 miles upstream from Millican Creek, 5.8 miles north of Sevierville, Sevier County, and at mile 31.3.

Drainage area.--4,543 sq mi.

Records available.--October 1918 to September 1955. Published as "at Dandridge" 1918-42. Gage-height records collected at Dandridge 1904-42 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 865.70 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Oct. 1, 1918, to Oct. 7, 1923, staff gage at Dandridge 13 miles upstream at datum 37.67 ft higher. Oct. 8, 1923, to June 18, 1931, staff gage and June 19, 1931, to Sept. 30, 1942, water-stage recorder, at Dandridge at datum 37.63 ft higher.

Average discharge.--37 years, 6,488 cfs (unadjusted).

Extremes.--Maximum discharge during year, 19,000 cfs Mar. 27 (gage height, 9.23 ft); minimum daily, 14 cfs Sept. 28.

1918-55: Maximum discharge, 95,600 cfs Aug. 31, 1940 (gage height, 20.93 ft), site and datum then in use; minimum, 4.7 cfs Mar. 10, 1943 (gage height, 1.16 ft); minimum daily, 5.5 cfs Mar. 9, 10, 1943.

Flood of May 21, 1901, reached a stage of 28.0 ft at Dandridge. Stages of 40 ft in March 1867 and 32 ft in May 1875 or 1876 are said to have occurred.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow completely regulated by Douglas Lake (see p. 242).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.4 | 13 | 2.7 | 605 |
| 1.5 | 21 | 3.0 | 890 |
| 1.6 | 31 | 3.5 | 1,420 |
| 1.7 | 46 | 4.0 | 2,090 |
| 1.8 | 68 | 4.5 | 2,990 |
| 1.9 | 96 | 5.0 | 4,130 |
| 2.0 | 132 | 6.0 | 6,920 |
| 2.2 | 230 | 7.0 | 10,200 |
| 2.4 | 365 | 9.0 | 18,000 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,470 | 1,820 | 2,060 | 2,360 | 3,680 | 3,020 | 12,700 | 4,320 | *2,360 | 8,180 | 7,640 | *8,940 |
| 2 | 1,390 | 1,810 | *1,830 | 1,980 | 3,790 | *5,570 | 8,240 | 7,370 | 2,280 | 5,660 | 7,640 | 8,400 |
| 3 | 1,370 | 1,970 | 2,000 | 4,190 | *3,790 | 5,960 | 5,320 | *8,900 | 2,230 | 5,130 | 7,670 | 8,470 |
| 4 | 2,400 | *2,020 | 3,520 | 4,010 | 3,410 | 6,680 | 10,200 | 8,050 | 2,400 | 5,070 | *7,700 | 8,530 |
| 5 | *2,380 | 1,770 | 2,910 | 5,160 | 3,680 | 5,920 | 9,100 | 7,250 | 2,440 | 8,400 | 7,760 | 9,350 |
| 6 | 2,550 | 1,750 | 4,420 | 5,080 | 513 | 5,860 | 1,620 | 7,220 | 10,500 | *8,540 | 7,670 | 8,870 |
| 7 | 2,670 | 1,660 | 3,590 | *5,360 | 31 | 8,640 | 37 | 7,860 | 10,600 | 7,280 | 7,920 | 8,310 |
| 8 | 2,640 | 1,770 | 3,600 | 4,960 | 23 | 7,380 | 1,140 | 7,160 | 7,890 | 10,200 | 9,010 | 8,400 |
| 9 | 1,540 | 1,880 | 4,500 | 5,200 | 2,420 | 7,480 | 2,240 | 8,270 | 8,340 | 9,180 | 9,420 | 8,530 |
| 10 | 1,480 | 1,740 | 4,300 | 4,750 | 3,680 | 7,440 | 5,580 | 9,640 | 5,850 | 4,940 | 9,250 | 8,600 |
| 11 | 2,510 | 1,920 | 3,500 | 5,890 | 4,100 | 7,480 | 6,800 | 10,700 | 3,870 | 12,700 | 9,180 | 8,500 |
| 12 | 2,510 | 1,860 | 900 | 5,100 | 2,000 | 6,600 | 4,090 | 11,600 | 3,840 | 4,280 | 8,740 | 8,340 |
| 13 | 2,600 | 1,790 | 3,000 | 5,430 | 2,300 | 6,960 | 3,940 | 12,000 | 3,840 | 3,340 | 7,890 | 7,280 |
| 14 | 2,620 | 2,120 | 4,000 | 5,360 | 5,200 | 7,010 | 3,260 | 2,910 | 3,770 | 2,690 | 7,130 | 6,620 |
| 15 | 2,620 | 1,910 | 5,500 | 6,440 | 5,300 | 8,180 | *2,670 | 3,110 | 3,730 | 2,920 | 5,570 | 6,230 |
| 16 | 1,460 | 1,900 | 5,500 | 5,060 | 5,200 | 8,120 | 2,060 | 5,600 | 4,100 | 1,320 | 7,860 | 6,290 |
| 17 | 1,430 | 1,960 | 6,200 | 6,230 | 5,090 | 8,120 | 884 | 7,160 | 3,820 | 6,560 | 7,860 | 6,410 |
| 18 | 2,060 | 1,820 | 4,000 | 5,420 | 3,140 | 10,700 | 6,790 | 8,210 | 2,620 | 7,250 | 7,890 | 3,960 |
| 19 | 2,560 | 1,890 | 2,500 | 5,710 | 2,620 | 13,400 | 6,400 | 8,470 | 2,500 | 7,220 | 7,890 | 3,630 |
| 20 | 1,940 | 1,840 | 5,000 | 5,980 | 2,650 | 17,500 | 7,580 | 8,570 | 7,440 | 7,830 | 7,990 | 342 |
| 21 | 2,000 | 1,920 | 4,000 | 5,840 | 5,470 | 17,100 | 9,300 | 6,620 | 12,600 | 8,840 | 8,020 | 3,100 |
| 22 | 2,110 | 1,830 | 4,000 | 5,640 | 4,660 | 14,500 | 7,320 | 2,460 | 8,640 | 8,840 | 8,050 | 2,400 |
| 23 | 1,520 | 1,960 | 4,300 | 5,470 | 1,030 | *16,400 | 6,790 | 2,190 | 8,180 | 3,710 | 9,280 | 2,170 |
| 24 | 1,240 | 1,850 | 4,500 | 6,060 | 1,050 | 17,800 | 1,960 | 2,280 | 8,120 | 3,540 | 9,350 | 2,200 |
| 25 | 1,980 | 4,690 | 4,300 | 4,540 | 42 | 17,700 | 46 | 2,680 | 8,150 | 6,020 | 9,380 | 2,190 |
| 26 | 2,100 | 2,330 | 4,200 | 3,260 | 2,370 | 15,500 | 4,520 | 7,300 | 8,150 | 7,540 | 9,350 | 1,160 |
| 27 | 2,100 | 5,050 | 3,000 | 3,140 | 1,720 | 12,900 | 1,710 | 7,890 | 8,210 | 7,800 | 9,490 | 32 |
| 28 | 2,270 | 4,650 | 2,200 | 3,930 | 3,500 | 13,700 | 2,950 | 2,570 | 8,240 | 7,920 | 9,660 | *14 |
| 29 | 2,190 | 2,040 | 3,600 | 4,620 | - | 10,500 | 1,590 | 2,110 | 8,370 | 7,570 | 10,000 | 2,010 |
| 30 | 1,610 | 2,140 | 3,350 | 3,660 | -------- | 10,600 | 4,180 | 2,140 | 5,770 | 7,540 | 9,760 | 2,130 |
| 31 | 1,630 | -------- | 2,990 | 3,330 | -------- | 10,000 | -------- | 2,080 | -------- | 7,600 | 10,200 | -------- |
| Total | 62,950 | 65,660 | 113,270 | 149,160 | 82,459 | 314,720 | 141,017 | 194,690 | 178,850 | 205,910 | 262,220 | 161,408 |
| Mean | 2,031 | 2,189 | 3,654 | 4,812 | 2,945 | 10,150 | 4,701 | 6,280 | 5,962 | 6,642 | 8,459 | 5,380 |

| | Observed | | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 27,400 | Min 22 | Mean 5,319 | | Mean 5,319 | Cfsm 1.17 | In. 15.89 | |
| Water year 1954-55: | Max 17,800 | Min 14 | Mean 5,294 | | Mean 5,257 | Cfsm 1.16 | In. 15.71 | |

* Discharge measurement made on this day.

† Adjusted for change in contents in Douglas Lake.

Note.--No gage-height record Dec. 8-29; discharge estimated on basis of records for French Broad River near Knoxville, Little Pigeon at Sevierville, and Douglas Dam releases.

## Little Pigeon River at Sevierville, Tenn.

Location.--Lat 35°52'34", long 83°34'36", on left bank at Eckel farmhouse, 0.5 mile downstream from city limits of Sevierville, Sevier County, and 0.5 mile downstream from West Fork Little Pigeon River.

Drainage area.--353 sq mi.

Records available.--November 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 881.44 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to June 14, 1928, staff gage at same site and datum.

Average discharge.--34 years (1921-55), 538 cfs.

Extremes.--Maximum discharge during year, 9,290 cfs Feb. 23 (gage height, 9.80 ft); minimum, 34 cfs Oct. 26; minimum gage height, 0.48 ft Sept. 24; minimum daily discharge, 35 cfs Oct. 24.
1920-55: Maximum discharge, 32,000 cfs June 29, 1928 (gage height, 15.4 ft), from rating curve extended above 20,000 cfs; minimum, 2.8 cfs Sept. 21, 1925 (gage height, 0.33 ft); minimum daily, 8.4 cfs Sept. 9, 1925.

Remarks.--Records good. Some regulation at low flow caused by powerplants on forks. Discharge measurements generally made twice a month.

Revisions (water years).--WSP 783: 1921-34. WSP 1336: 1921(M), 1922, 1923(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 19-28, July 9 to Aug. 18)

| | | | |
|---|---|---|---|
| 0.4 | 30 | 2.0 | 660 |
| .6 | 53 | 3.0 | 1,430 |
| .8 | 88 | 5.0 | 3,340 |
| 1.0 | 141 | 7.9 | 6,560 |
| 1.4 | 310 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 101 | 64 | 242 | 556 | 132 | 1,300 | 562 | 345 | 179 | 129 | 183 | 126 |
| 2 | 88 | 76 | 191 | 437 | 270 | 1,270 | 512 | 320 | 161 | 118 | 165 | 93 |
| 3 | 70 | 98 | 155 | 345 | 280 | 928 | 488 | 295 | 161 | 110 | 330 | 82 |
| 4 | 62 | 78 | 132 | 295 | 224 | 744 | 415 | 280 | 141 | 118 | 285 | 80 |
| 5 | 50 | 177 | 203 | 275 | 207 | 608 | 393 | 265 | 135 | 148 | 376 | 78 |
| 6 | 48 | 126 | 1,140 | 285 | 2,990 | 2,010 | 1,060 | 246 | 129 | 138 | 305 | 78 |
| 7 | 50 | 84 | 506 | 295 | 2,880 | 2,500 | 2,470 | 233 | 148 | 135 | 251 | 78 |
| 8 | 78 | 74 | 325 | 224 | 1,250 | 1,230 | 1,240 | 224 | 187 | 115 | 963 | 65 |
| 9 | 65 | 68 | 522 | 203 | 779 | 852 | 852 | 215 | 894 | 973 | 647 | 64 |
| 10 | 56 | 80 | 556 | 199 | 569 | 688 | 667 | 199 | 410 | 764 | 494 | 60 |
| 11 | 53 | 107 | 360 | 295 | 634 | 588 | 674 | 199 | 360 | 420 | 330 | 60 |
| 12 | 56 | 105 | 275 | 270 | 524 | 882 | 660 | 203 | 360 | 459 | 415 | 64 |
| 13 | 46 | 95 | 270 | 233 | 432 | 751 | 582 | 382 | 260 | 376 | 432 | 62 |
| 14 | 46 | 88 | 335 | 187 | 398 | 628 | 852 | 426 | 207 | 325 | 325 | 53 |
| 15 | 46 | 88 | 330 | 187 | 366 | 556 | 647 | 464 | 199 | 246 | 305 | 50 |
| 16 | 48 | 84 | 270 | 207 | 350 | 1,160 | 550 | 410 | 172 | 175 | 594 | 49 |
| 17 | 52 | 102 | 224 | 172 | 576 | 1,750 | 482 | 543 | 151 | 203 | 360 | 46 |
| 18 | 52 | 98 | 582 | 165 | 654 | 5,020 | 426 | 404 | 138 | 151 | 270 | 41 |
| 19 | 44 | 84 | 482 | 442 | 524 | 5,670 | 382 | 310 | 132 | 155 | 224 | 48 |
| 20 | 41 | 95 | 366 | 340 | 448 | 3,350 | 366 | 265 | 158 | 562 | 183 | 44 |
| 21 | 41 | 250 | 290 | 280 | 398 | 1,810 | 393 | 285 | 138 | 393 | 172 | 43 |
| 22 | 39 | 215 | 246 | 459 | 1,320 | 4,940 | 512 | 300 | 141 | 600 | 148 | 40 |
| 23 | 40 | 144 | 215 | 448 | 6,520 | 2,480 | 476 | 681 | 176 | 442 | 148 | 39 |
| 24 | 35 | 124 | 199 | 345 | 2,240 | 1,480 | 494 | 442 | 388 | 371 | 129 | 38 |
| 25 | 43 | 110 | 175 | 270 | 1,250 | 1,410 | 582 | 335 | 251 | 270 | 118 | 161 |
| 26 | 39 | 98 | 158 | 211 | 875 | 2,990 | 654 | 275 | 459 | 350 | 107 | 158 |
| 27 | 39 | 88 | 151 | 195 | 1,120 | 1,890 | 660 | 251 | 275 | 224 | 95 | 80 |
| 28 | 43 | 133 | 351 | 168 | 1,430 | 1,290 | 524 | 310 | 199 | 172 | 90 | 76 |
| 29 | 59 | 907 | 3,410 | 158 | - | 974 | 437 | 251 | 165 | 314 | 80 | 124 |
| 30 | 98 | 376 | 2,010 | 138 | ------- | 772 | 382 | 224 | 148 | 366 | 76 | 351 |
| 31 | 80 | ---- | 822 | 121 | ------- | 654 | ------- | 187 | ------- | 238 | 253 | ------- |
| Total | 1,708 | 4,316 | 15,493 | 8,405 | 29,640 | 53,175 | 19,394 | 9,769 | 7,022 | 9,560 | 8,853 | 2,431 |
| Mean | 55.1 | 144 | 500 | 271 | 1,059 | 1,715 | 646 | 315 | 234 | 308 | 286 | 81.0 |
| Cfsm | 0.156 | 0.408 | 1.42 | 0.768 | 3.00 | 4.86 | 1.83 | 0.892 | 0.663 | 0.873 | 0.810 | 0.229 |
| In. | 0.18 | 0.45 | 1.63 | 0.89 | 3.12 | 5.60 | 2.04 | 1.03 | 0.74 | 1.01 | 0.93 | 0.26 |

Calendar year 1954: Max 10,700 Min 34 Mean 490 Cfsm 1.39 In. 18.85
Water year 1954-55: Max 6,520 Min 35 Mean 465 Cfsm 1.32 In. 17.88

Peak discharge (base, 7,000 cfs).--Feb. 23 (8:30 a.m.) 9,290 cfs (9.80 ft); Mar. 18 (7 p.m.) 8,240 cfs (9.15 ft); Mar. 22 (8 a.m.) 8,280 cfs (9.17 ft).

## French Broad River near Knoxville, Tenn.

Location.--Lat 35°57'33", long 83°46'28", on right bank 245 ft upstream from Riverdale Ferry, 0.65 mile downstream from Johnson Hollow, 7.6 miles upstream from confluence with Holston River, and 8 miles east of Knoxville, Knox County.
Drainage area.--5,101 sq mi.
Records available.--December 1945 to September 1955.
Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936.
Average discharge.--9 years, 7,138 cfs (unadjusted).
Extremes.--Maximum discharge recorded during year, 26,400 cfs Mar. 22 (elevation, 824.31 ft); minimum, 140 cfs Sept. 29 (elevation, 813.76 ft).
1945-55: Maximum discharge, 38,600 cfs Feb. 7, 1950 (elevation, 826.42 ft), from rating curve extended above 27,000 cfs; minimum, 67 cfs Oct. 25, 1953.
Remarks.--Records good. Flow regulated by Douglas Lake (see p. 242), 24.6 miles upstream.

Rating table, water year 1954-55 (elevation, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 814.0 | 205 | 817.0 | 3,240 |
| 814.2 | 275 | 818.0 | 5,500 |
| 814.6 | 455 | 819.0 | 8,060 |
| 815.0 | 695 | 820.0 | 11,000 |
| 815.5 | 1,070 | 822.0 | 17,400 |
| 816.0 | 1,600 | 823.0 | 21,100 |
| 816.5 | 2,280 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,420 | 1,870 | 2,390 | 3,250 | 3,300 | 4,660 | 12,600 | 4,320 | 1,630 | 7,150 | 7,670 | 9,580 |
| 2 | 1,560 | 1,920 | 2,170 | 2,560 | 4,130 | 6,630 | 9,490 | 7,400 | 2,190 | 6,710 | 7,670 | 8,260 |
| 3 | 1,460 | 1,920 | 2,030 | 3,890 | 3,780 | 7,310 | 6,240 | 8,600 | 2,500 | 5,330 | 7,770 | 8,280 |
| 4 | 1,590 | 1,930 | 3,180 | 4,800 | 3,770 | 7,490 | 9,460 | 8,280 | 2,600 | 5,260 | *7,900 | 8,370 |
| 5 | 2,420 | 2,220 | 3,460 | 4,870 | 3,950 | 6,890 | 9,790 | 7,670 | 2,610 | 7,410 | 7,980 | 8,560 |
| 6 | 2,510 | 1,730 | 4,780 | 5,390 | 3,820 | 7,700 | 4,850 | 7,440 | 8,350 | 8,700 | 7,830 | 9,240 |
| 7 | 2,510 | 1,690 | 4,810 | 5,440 | 4,980 | 11,900 | 3,000 | 7,770 | 10,500 | *7,670 | 7,980 | 8,340 |
| 8 | 2,680 | *1,810 | 3,910 | 5,180 | 1,950 | 9,260 | 2,920 | 7,510 | 8,590 | 9,180 | 9,400 | *8,480 |
| 9 | 2,370 | 1,780 | 4,810 | 5 590 | 2,160 | *8,510 | 2,880 | 7,750 | 8,820 | 9,380 | 9,820 | 8,480 |
| 10 | 1,420 | 1,880 | 5,480 | 4,770 | *4,470 | 8,280 | 5,630 | *9,260 | 7,360 | 7,140 | 9,640 | 8,420 |
| 11 | 1,890 | 1,780 | 4,750 | *5,750 | 4,650 | 8,090 | 6,880 | 10,700 | 4,350 | 10,600 | 9,210 | 8,340 |
| 12 | *2,520 | 1,970 | 1,960 | 5,450 | 3,260 | 9,290 | 6,730 | 11,400 | 4,280 | 7,290 | 9,150 | 8,200 |
| 13 | 2,400 | 1,720 | 3,040 | 5,470 | 2,640 | 7,790 | 4,100 | 12,100 | 4,190 | 3,750 | 8,010 | 7,310 |
| 14 | 2,560 | 2,070 | 4,200 | 5,810 | 4,470 | 7,180 | *4,890 | 5,710 | *4,170 | 3,140 | 7,410 | 6,760 |
| 15 | 2,540 | 1,950 | 5,790 | 5,930 | 5,550 | 8,870 | 4,150 | 3,970 | 4,060 | 3,200 | 5,790 | 6,320 |
| 16 | 2,310 | 1,930 | *6,270 | 5,480 | 5,530 | 9,640 | 2,870 | 4,960 | 4,140 | 2,410 | 8,200 | 6,110 |
| 17 | 1,210 | 2,040 | 7,120 | 6,340 | 5,850 | 10,400 | 1,830 | 7,750 | 4,040 | 4,860 | 8,090 | 6,340 |
| 18 | 1,760 | 1,870 | 5,960 | 5,150 | 5,500 | 14,600 | 5,290 | 8,170 | 3,100 | 7,250 | 8,030 | 4,850 |
| 19 | 2,480 | 1,920 | 3,870 | 6,170 | 3,440 | a19,500 | 6,370 | 8,700 | 2,420 | 7,230 | 7,980 | 3,710 |
| 20 | 2,000 | 1,870 | 4,210 | 6,420 | 2,620 | a21,000 | 7,850 | 8,760 | 5,820 | 7,750 | 8,010 | 1,940 |
| 21 | 1,980 | 2,030 | 4,110 | 6,130 | 4,710 | a19,000 | 8,500 | 7,510 | 11,600 | 8,900 | 8,030 | 1,620 |
| 22 | 2,150 | 1,930 | 4,130 | 6,140 | 6,300 | *a19,500 | 8,200 | 3,620 | 9,490 | 8,900 | 8,060 | 2,670 |
| 23 | 1,740 | 2,000 | 4,010 | 5,890 | 11,400 | 19,000 | 7,500 | 3,120 | 8,170 | 5,620 | 9,260 | 2,200 |
| 24 | 1,310 | 2,070 | 4,270 | 6,340 | 4,800 | 19,200 | 4,840 | 2,990 | 8,230 | 4,120 | 9,150 | 2,230 |
| 25 | 1,600 | 3,520 | 4,650 | 5,960 | 2,040 | 18,700 | 1,230 | 2,670 | 8,260 | 5,430 | 8,760 | 2,110 |
| 26 | 2,050 | 3,470 | 4,140 | 3,590 | 2,840 | 18,500 | 4,470 | 6,320 | 8,420 | 7,700 | 9,260 | 2,140 |
| 27 | 1,970 | 4,460 | 4,020 | 3,250 | 3,440 | 16,500 | 3,050 | 8,090 | 8,260 | 7,720 | 9,350 | 844 |
| 28 | 2,200 | 4,470 | 2,610 | 4,050 | 4,830 | 14,500 | 3,180 | 4,520 | 8,310 | 7,880 | 9,700 | *216 |
| 29 | 2,180 | 3,660 | 6,630 | 4,130 | - | 12,100 | 2,440 | 2,220 | 8,280 | 7,850 | 9,670 | 720 |
| 30 | 2,250 | 2,700 | 6,250 | 4,100 | -------- | 11,400 | 3,820 | 2,390 | 6,940 | 7,750 | 9,210 | 2,400 |
| 31 | 1,490 | -------- | 4,230 | 3,420 | -------- | 10,600 | -------- | 2,480 | -------- | 7,670 | 10,100 | -------- |
| Total | 63,530 | 68,180 | 133,240 | 156,710 | 120,180 | 373,990 | 164,850 | 204,150 | 181,680 | 210,950 | 264,090 | 163,040 |
| Mean | 2,049 | 2,273 | 4,298 | 5,055 | 4,292 | 12,060 | 5,495 | 6,585 | 6,056 | 6,805 | 8,519 | 5,435 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 28,200 | Min 1,160 | Mean 5,855 | Mean 5,855 | Cfsm 1.15 | In. 15.58 | |
| Water year 1954-55: | Max 21,000 | Min 216 | Mean 5,766 | Mean 5,729 | Cfsm 1.12 | In. 15.25 | |

* Discharge measurement made on this day.
† Adjusted for change in contents in Douglas Lake.
a No gage-height record; discharge estimated on basis of records for station below Douglas Dam and Little Pigeon River at Sevierville, Tenn.

## Steve Keesling Spring at Sugar Grove, Va.

Location.--Lat 36°46'27", long 81°25'05", at Sugar Grove, Smyth County.
Records available.--July 1928, November 1947 to September 1955 (discharge measurements only).
Extremes.--Maximum discharge measured during year, 3.01 cfs May 10; minimum measured, 1.86 cfs Nov. 5.
1928, 1947-55: Maximum discharge measured, 3.79 cfs July 30, 1928; minimum measured, 1.74 cfs Sept. 2, 1952.
Remarks.--Discharge measurements made once a month 200 ft below spring.

Discharge measurements, in cubic feet per second, water year October 1954 to September 1955

| | | |
|---|---|---|
| Oct. 13..... 1.96 | Feb. 1..... 2.23 | June 14..... 2.38 |
| Nov. 5..... 1.86 | Mar. 14..... 2.94 | July 11..... 2.19 |
| Dec. 13..... 2.70 | Apr. 13..... 2.86 | Aug. 2..... 2.18 |
| Jan. 10..... 2.82 | May 10..... 3.01 | Sept. 9..... 2.14 |

## South Fork Holston River at Riverside, near Chilhowie, Va.

Location.--Lat 36°45'37", long 81°37'53", on right bank 400 ft upstream from highway bridge at Riverside, Smyth County, 900 ft upstream from Spring Branch, 3.2 miles downstream from Redstone Branch, and 4 miles southeast of Chilhowie.

Drainage area.--76.1 sq mi (revised).

Records available.--November 1920 to November 1931, July 1942 to September 1955. Prior to October 1924, published as "near Chilhowie." June 1907 to December 1909 at site 4½ miles downstream published as "near Chilhowie", records not equivalent.

Gage.--Water-stage recorder. Datum of gage is 2,106.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Nov. 1, 1920, to Nov. 14, 1931, chain gage at site 400 ft downstream at same datum.

Average discharge.--23 years (1921-31, 1942-55), 106 cfs.

Extremes.--Maximum discharge during year, 2,580 cfs Mar. 18 (gage height, 6.88 ft, from high-water mark in gage well); minimum, 18 cfs Nov. 12 (gage height, 1.12 ft).
1920-31, 1942-55: Maximum discharge, 6,000 cfs June 12, 1923 (gage height, 9.0 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 1,100 cfs by logarithmic plotting; minimum recorded, 2 cfs Aug. 26, Oct. 15, 1943, Aug. 9, 11, 1944, Oct. 19, 1945; minimum daily, 8 cfs July 19, 1926.

Remarks.--Records good except those for period of no gage-height record, which are fair. Diurnal fluctuation at low flow caused by mill 500 ft above station prior to August 1951.

Revisions (water years).--WSP 1033: 1943-44(m). WSP 1276: 1923(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 16 | 2.0 | 176 |
| 1.2 | 26 | 4.0 | 810 |
| 1.4 | 50 | 5.0 | 1,300 |
| 1.7 | 102 | 6.0 | 1,930 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 23 | 25 | *49 | 168 | 40 | 993 | 155 | 117 | *50 | 33 | *32 | 30 |
| 2 | 23 | *26 | 43 | 124 | *47 | 751 | 142 | *106 | 47 | 32 | 30 | 28 |
| 3 | 21 | 26 | 40 | 102 | 63 | 446 | 132 | 96 | 46 | 32 | 30 | 27 |
| 4 | *21 | 26 | 36 | 88 | 64 | 329 | 120 | 90 | 46 | 32 | 29 | 27 |
| 5 | 21 | 27 | 37 | 90 | 66 | 278 | 111 | 86 | 46 | 32 | 28 | 27 |
| 6 | 21 | 25 | 50 | 90 | 586 | *491 | 109 | 84 | 43 | 39 | 28 | *26 |
| 7 | 21 | 26 | 39 | 86 | 1,000 | a800 | 102 | 79 | 46 | 37 | 29 | 25 |
| 8 | 20 | 25 | 36 | 80 | 521 | a450 | 96 | 76 | 49 | 36 | 33 | 24 |
| 9 | 19 | 26 | 46 | 77 | 326 | a350 | 90 | 72 | 49 | 36 | 32 | 24 |
| 10 | 20 | 25 | 71 | *74 | 233 | a250 | 86 | 69 | 46 | 44 | 30 | 23 |
| 11 | 20 | 26 | 61 | 77 | 203 | a200 | 94 | 68 | 52 | 56 | 29 | 23 |
| 12 | 20 | 24 | 55 | 71 | 153 | a210 | *100 | 69 | 52 | 75 | 29 | 23 |
| 13 | 21 | 24 | 63 | 69 | 130 | a190 | 94 | 71 | 49 | 134 | 29 | 23 |
| 14 | 20 | 24 | 66 | 63 | 120 | a170 | 1,040 | 84 | 44 | *84 | 28 | 22 |
| 15 | 62 | 24 | 71 | 64 | 115 | a190 | 506 | 80 | 43 | 66 | 32 | 22 |
| 16 | 55 | 26 | 69 | 63 | 109 | a800 | 317 | 79 | 42 | 58 | 33 | 22 |
| 17 | 34 | 26 | 63 | 55 | 127 | a1,100 | 236 | 74 | 40 | 55 | 31 | 21 |
| 18 | 29 | 29 | 84 | 55 | 134 | a1,700 | 188 | 71 | 37 | 49 | 46 | 21 |
| 19 | 28 | 29 | 106 | 56 | 132 | a1,200 | 158 | 68 | 42 | 46 | 44 | 21 |
| 20 | 25 | 43 | 90 | 53 | 117 | a800 | 140 | 64 | 50 | 43 | 35 | 21 |
| 21 | 24 | 46 | 77 | 50 | 109 | 506 | 147 | 61 | 42 | 40 | 33 | 21 |
| 22 | 24 | 39 | 71 | 52 | 111 | 810 | 245 | 64 | 40 | 37 | 32 | 22 |
| 23 | 23 | 36 | 63 | 50 | 308 | 596 | 203 | 63 | 37 | 40 | 33 | 20 |
| 24 | 22 | 36 | 63 | 49 | 371 | 431 | 179 | 66 | 37 | 39 | 31 | 21 |
| 25 | 22 | 35 | 60 | 44 | 266 | 344 | 171 | 64 | 36 | 39 | 29 | 23 |
| 26 | 22 | 34 | 56 | 43 | 197 | 326 | 168 | 61 | 36 | 36 | 29 | 23 |
| 27 | 22 | 33 | 55 | 41 | 254 | 287 | 168 | 58 | 35 | 34 | 28 | 22 |
| 28 | 23 | 34 | 71 | 40 | *491 | 272 | 163 | 60 | 34 | 34 | 27 | 23 |
| 29 | 26 | 55 | 278 | 38 | - | 227 | 145 | 61 | 33 | 42 | 26 | 24 |
| 30 | 28 | 56 | 401 | 37 | ------- | 194 | 129 | 56 | 33 | 31 | 26 | 24 |
| 31 | 26 | ------ | 251 | 36 | ------- | 171 | ------- | 53 | ------- | 31 | 36 | ------ |
| Total | 786 | 936 | 2,621 | 2,085 | 6,393 | 15,862 | 5,734 | 2,270 | 1,282 | 1,422 | 967 | 703 |
| Mean | 25.4 | 31.2 | 84.5 | 67.3 | 228 | 512 | 191 | 73.2 | 42.7 | 45.9 | 31.2 | 23.4 |
| Cfsm | 0.334 | 0.410 | 1.11 | 0.884 | 3.00 | 6.73 | 2.51 | 0.962 | 0.561 | 0.603 | 0.410 | 0.307 |
| In. | 0.39 | 0.46 | 1.28 | 1.02 | 3.12 | 7.76 | 2.80 | 1.11 | 0.63 | 0.70 | 0.47 | 0.34 |

Calendar year 1954: Max 1,220 Min 19 Mean 83.8 Cfsm 1.10 In. 14.93
Water year 1954-55: Max 1,700 Min 19 Mean 112 Cfsm 1.47 In. 20.08

Peak discharge (base, 500 cfs).--Feb. 6 (10 p.m.) 1,540 cfs (5.38 ft); Mar. 1 (4 to 5 p.m.) 1,300 cfs (5.02 ft); Mar. 8 (10:30 p.m.) 830 cfs (4.04 ft); Mar. 16 (time unknown) 2,070 cfs (6.15 ft); Mar. 18 (time unknown) 2,580 cfs (6.88 ft); Mar. 22 (11 a.m.) 980 cfs (4.39 ft); Apr. 14 (7 a.m.) 1,800 cfs (5.76 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for South Fork Holston River at Vestal and Beaverdam Creek at Damascus.

## Beaverdam Creek at Damascus, Va.

Location.--Lat 36°37'40", long 81°47'28", on right bank in pumphouse of American Cyanamid Co., at Damascus, Washington County, 0.65 mile upstream from mouth.

Drainage area.--56.0 sq mi.

Records available.--August 1947 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,946.66 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--8 years, 96.0 cfs.

Extremes.--Maximum discharge during year, 5,280 cfs Mar. 18 (gage height, 5.75 ft); minimum, 4.6 cfs Sept. 21 (gage height, 0.22 ft).
1947-55: Maximum discharge, that of Mar. 18, 1955; minimum, 2.0 cfs Sept. 8, 1954 (gage height, 0.15 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. Plant diverts about 0.5 cfs 800 ft above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.2 | 3.0 | 2.0 | 415 |
| .4 | 9.0 | 3.0 | 895 |
| .6 | 42 | 3.5 | 1,280 |
| .8 | 72 | 4.0 | 1,870 |
| 1.0 | 112 | 5.0 | 3,680 |
| 1.5 | 240 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.0 | *15 | *42 | 121 | 45 | *567 | 121 | 133 | 38 | 35 | *18 | 29 |
| 2 | 12 | 18 | 35 | 91 | *67 | 495 | 110 | *114 | 36 | 30 | 14 | 18 |
| 3 | 11 | 19 | 29 | 72 | 117 | 308 | 102 | 99 | 34 | 28 | 14 | 16 |
| 4 | *7.0 | 15 | 25 | 62 | 93 | 216 | 87 | 89 | 34 | 30 | 49 | 15 |
| 5 | 6.4 | 17 | 40 | 85 | 87 | 175 | 80 | 83 | 32 | 32 | 23 | 14 |
| 6 | 7.0 | 19 | 135 | 112 | 844 | 569 | 110 | 74 | 31 | 35 | 19 | *13 |
| 7 | 12 | 17 | 66 | 119 | 995 | 642 | 178 | 69 | 52 | 32 | 17 | 13 |
| 8 | 9.0 | 17 | 55 | 102 | 479 | 350 | 155 | 64 | 61 | 32 | 72 | 11 |
| 9 | 7.6 | 17 | 66 | 85 | 274 | 228 | 128 | 55 | 70 | 37 | 59 | 12 |
| 10 | 8.3 | 17 | 97 | *74 | 180 | 175 | 110 | 52 | 46 | 43 | 36 | 12 |
| 11 | 7.6 | 16 | 66 | 83 | 155 | 145 | 145 | 50 | 78 | 41 | 28 | 11 |
| 12 | 8.3 | 14 | 53 | 72 | 114 | 148 | *326 | 66 | 87 | 53 | 26 | 9.8 |
| 13 | 9.0 | 12 | 72 | 74 | 94 | 124 | 291 | 93 | *69 | 45 | 26 | 9.8 |
| 14 | 7.6 | 13 | 80 | 66 | 90 | 119 | 830 | 216 | 59 | *34 | 25 | 9.8 |
| 15 | 19 | 11 | 70 | 64 | 86 | 158 | 503 | 264 | 53 | 37 | 28 | 8.3 |
| 16 | 23 | 12 | 58 | 61 | 82 | *1,400 | 298 | 178 | 46 | 41 | 31 | 7.6 |
| 17 | 13 | 14 | 59 | 53 | 158 | 1,180 | 205 | 135 | 41 | 31 | 25 | 6.4 |
| 18 | 8.3 | 13 | 121 | 50 | 170 | 2,820 | 168 | 106 | 38 | 26 | 31 | 7.6 |
| 19 | 6.4 | 12 | 110 | 53 | 145 | 1,420 | 130 | 91 | 56 | 24 | 30 | 6.4 |
| 20 | 5.8 | 40 | 80 | 50 | 117 | 725 | 112 | 78 | 58 | 23 | 24 | 7.0 |
| 21 | 5.8 | 31 | 62 | 55 | 102 | 471 | 151 | 67 | 50 | 22 | 20 | 6.4 |
| 22 | 6.4 | 23 | 53 | 50 | 114 | 895 | 368 | 66 | 45 | 23 | 15 | 7.0 |
| 23 | 7.0 | 18 | 52 | 48 | 410 | 598 | 258 | 58 | 62 | 26 | 18 | 7.6 |
| 24 | 7.0 | 22 | 53 | 43 | 429 | 364 | 222 | 62 | a50 | 32 | 16 | 8.3 |
| 25 | 5.8 | 28 | 48 | 41 | 270 | 284 | 264 | 67 | a45 | 31 | 13 | 15 |
| 26 | 6.4 | 25 | 45 | 42 | 190 | 340 | 495 | 59 | a48 | 26 | 12 | 15 |
| 27 | 8.3 | 22 | 43 | 41 | 240 | 333 | 423 | 48 | a43 | 20 | 9.8 | 11 |
| 28 | 14 | 31 | 53 | 42 | 411 | 261 | 288 | 43 | a38 | 19 | 11 | 14 |
| 29 | 20 | 108 | 196 | 40 | - | 200 | 208 | 46 | 37 | 37 | 9.0 | 16 |
| 30 | 28 | 56 | 274 | 38 | ------- | 162 | 165 | 59 | 36 | 23 | 9.0 | 16 |
| 31 | 20 | --- | 172 | 35 | ------- | 138 | -------- | 43 | -------- | 19 | 66 | ------- |
| Total | 326.0 | 692 | 2,410 | 2,024 | 6,558 | 16,010 | 7,031 | 2,729 | 1,473 | 967 | 793.8 | 353.0 |
| Mean | 10.5 | 23.1 | 77.7 | 65.3 | 234 | 516 | 234 | 88.0 | 49.1 | 31.2 | 25.6 | 11.8 |
| Cfsm | 0.188 | 0.412 | 1.39 | 1.17 | 4.18 | 9.21 | 4.18 | 1.57 | 0.877 | 0.557 | 0.457 | 0.211 |
| In. | 0.22 | 0.46 | 1.60 | 1.35 | 4.35 | 10.62 | 4.66 | 1.81 | 0.98 | 0.64 | 0.53 | 0.24 |

Calendar year 1954: Max 1,770 Min 2.6 Mean 83.0 Cfsm 1.48 In. 20.11
Water year 1954-55: Max 2,820 Min 5.8 Mean 113 Cfsm 2.02 In. 27.46

Peak discharge (base, 600 cfs).--Feb. 6 (7 p.m.) 1,470 cfs (3.73 ft); Mar. 1 (8 p.m.) 642 cfs (2.55 ft); Mar. 6 (6 p.m.) 1,070 cfs (3.27 ft); Mar. 16 (6 p.m.) 2,680 cfs (4.53 ft); Mar. 18 (12 m.) 5,280 cfs (5.75 ft); Mar. 22 (1 p.m.) 1,030 cfs (3.20 ft); Apr. 14 (10 a.m.) 995 cfs (3.17 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for South Fork Holston River at Riverside near Chilhowie and South Fork Holston River at Vestal.

## South Fork Holston River at Vestal, Va.

Location.--Lat 36°39'06", long 81°50'39", on right bank 500 ft upstream from bridge on U. S. Highway 58 at Vestal, Washington County, 0.7 mile downstream from Laurel Creek, 3.2 miles northwest of Damascus, and 4.9 miles upstream from Middle Fork Holston River.

Drainage area.--301 sq mi.

Records available.--November 1931 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,792.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years (1932-55), 449 cfs.

Extremes.--Maximum discharge during year, 11,400 cfs Mar. 18 (gage height, 13.73 ft); minimum, 52 cfs Oct. 13 (gage height, 2.36 ft); minimum daily, 66 cfs Oct. 12.
1931-55: Maximum discharge, that of Mar. 18, 1955; minimum, 30 cfs Oct. 14, 1941, Dec. 24, 1943 (gage height, 2.16 ft); minimum daily, 60 cfs Sept. 18, 1954.

Remarks.--Records good. Some diurnal fluctuation caused by powerplant above station.

Revisions.--WSP 823: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Nov. 28 | | Nov. 29 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 2.4 | 56 | 2.4 | 61 | 5.0 | 1,040 |
| 2.5 | 68 | 2.7 | 115 | 6.0 | 1,780 |
| 2.7 | 103 | 3.0 | 178 | 8.0 | 3,630 |
| 3.0 | 177 | 3.5 | 313 | 10.0 | 5,980 |
| 3.5 | 330 | 4.0 | 500 | 11.0 | 7,320 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 102 | *103 | *239 | 625 | 170 | *3,430 | 650 | 575 | 212 | 163 | *121 | 146 |
| 2 | 130 | 122 | 209 | 468 | *214 | 2,850 | 585 | *510 | 205 | 146 | 121 | 119 |
| 3 | 89 | 120 | 187 | 373 | 355 | 1,700 | 545 | 460 | 193 | 137 | 115 | 111 |
| 4 | *78 | 113 | 171 | 334 | 324 | 1,220 | 492 | 426 | 189 | 165 | 146 | 107 |
| 5 | 71 | 120 | 176 | 392 | 310 | 1,000 | 452 | 399 | 185 | 182 | 121 | 103 |
| 6 | 75 | 120 | 449 | 437 | 2,450 | 2,130 | 488 | 373 | 182 | 293 | 117 | *103 |
| 7 | 76 | 117 | 271 | 437 | 3,950 | 3,030 | 575 | 348 | 216 | 221 | 109 | 95 |
| 8 | 73 | 117 | 231 | 395 | 2,130 | 1,740 | 505 | 338 | 253 | 191 | 176 | 91 |
| 9 | 70 | 110 | 280 | 362 | 1,280 | 1,220 | 456 | 313 | 262 | 180 | 189 | 90 |
| 10 | 68 | 117 | 355 | 327 | 880 | 940 | 430 | 290 | 212 | 200 | 139 | 88 |
| 11 | 71 | 110 | 287 | 366 | 800 | 775 | 468 | 283 | 265 | 205 | 123 | 97 |
| 12 | 66 | 103 | 250 | 324 | 625 | 850 | *800 | 310 | 268 | 277 | 125 | 75 |
| 13 | 67 | 99 | 324 | *316 | 530 | 750 | 700 | 366 | *245 | 341 | 123 | 84 |
| 14 | 68 | 98 | 370 | 283 | 488 | 675 | 3,230 | 625 | 221 | *256 | 121 | 84 |
| 15 | 180 | 96 | 366 | 280 | 464 | 750 | 2,040 | 675 | 209 | 218 | 141 | 81 |
| 16 | 238 | 98 | 320 | 268 | 437 | 4,390 | 1,320 | 520 | 191 | 214 | 171 | 77 |
| 17 | 132 | 110 | 280 | 245 | 650 | 4,380 | 940 | 460 | 180 | 187 | 131 | 75 |
| 18 | 105 | 108 | 452 | 234 | 700 | 7,000 | 775 | 399 | 171 | 169 | 191 | 74 |
| 19 | 90 | 115 | 505 | 245 | 625 | 4,870 | 650 | 355 | 223 | 158 | 200 | 75 |
| 20 | 85 | 250 | 407 | 228 | 545 | 3,030 | 570 | 324 | 253 | 150 | 160 | 74 |
| 21 | 78 | 226 | 330 | 218 | 480 | 2,130 | 671 | 293 | 202 | 139 | 135 | 72 |
| 22 | 82 | 183 | 296 | 231 | 505 | 3,130 | 1,740 | 296 | 191 | 143 | 125 | 74 |
| 23 | 76 | 157 | 265 | 218 | 1,580 | 2,670 | 1,220 | 277 | 202 | 154 | 131 | 72 |
| 24 | 75 | 157 | 271 | 212 | 1,700 | 1,780 | 970 | 300 | 207 | 150 | 125 | 77 |
| 25 | 71 | 167 | 242 | 198 | 1,140 | 1,420 | 940 | 313 | 189 | 150 | 103 | 95 |
| 26 | 70 | 154 | 228 | 193 | 825 | 1,460 | 1,280 | 274 | 214 | 137 | 109 | 95 |
| 27 | 73 | 137 | 223 | 190 | 1,000 | 1,360 | 1,220 | 245 | 189 | 123 | 101 | 88 |
| 28 | 99 | 160 | 265 | 187 | 1,950 | 1,140 | 970 | 234 | 165 | 135 | 95 | 93 |
| 29 | 130 | 399 | 1,010 | 180 | - | 970 | 800 | 256 | 158 | 167 | 93 | 97 |
| 30 | 147 | 300 | 1,460 | 170 | ------- | 800 | 675 | 274 | 156 | 129 | 90 | 97 |
| 31 | 120 | -- -- | 880 | 160 | ------- | 725 | ------- | 234 | ------- | 115 | 230 | - - - - |
| Total | 2,955 | 4,386 | 11,599 | 9,096 | 27,107 | 64,315 | 27,157 | 11,345 | 6,208 | 5,595 | 4,177 | 2,709 |
| Mean | 95.3 | 146 | 374 | 293 | 968 | 2,075 | 905 | 366 | 207 | 180 | 135 | 90.3 |
| Cfsm | 0.317 | 0.485 | 1.24 | 0.973 | 3.22 | 6.89 | 3.01 | 1.22 | 0.688 | 0.598 | 0.448 | 0.300 |
| In. | 0.37 | 0.54 | 1.43 | 1.12 | 3.35 | 7.94 | 3.36 | 1.41 | 0.77 | 0.69 | 0.52 | 0.33 |

Calendar year 1954: Max 5,850 Min 60 Mean 378 Cfsm 1.26 In. 17.05
Water year 1954-55: Max 7,000 Min 66 Mean 484 Cfsm 1.61 In. 21.83

Peak discharge (base, 3,000 cfs).--Feb. 6 (11 p.m.) 4,990 cfs (9.19 ft); Mar. 1 (7:30 p.m.) 4,060 cfs (8.44 ft); Mar. 6 (9:30 p.m.) 3,950 cfs (8.28 ft); Mar. 16 (7:30 p.m.) 8,160 cfs (11.56 ft); Mar. 18 (2:30 p.m.) 11,400 cfs (13.73 ft); Apr. 14 (11:30 a.m.) 4,170 cfs (8.52 ft).
* Discharge measurement made on this day.

## Middle Fork Holston River at Groseclose, Va.

Location.--Lat 36°53'19", long 81°20'51", on left bank at downstream side of highway bridge in village of Groseclose, Smyth County, 0.2 miles upstream from Rocky Spring Branch and 10 miles northeast of Marion.

Drainage area.--7.39 sq mi.

Records available.--November 1947 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,442.86 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--7 years (1948-55), 8.99 cfs.

Extremes.--Maximum discharge during year, 234 cfs Mar. 18 (gage height, 4.50 ft); minimum, 2.7 cfs Nov. 12-16; minimum gage height, 1.63 ft Oct. 7, 10-12, 14.
1947-55: Maximum discharge, 813 cfs July 6, 1953 (gage height, 7.42 ft); minimum, 1.8 cfs Jan. 24, 1948, result of freezeup; minimum gage height, 1.48 ft Nov. 25, 1950, result of freezeup; minimum daily discharge, 2.7 cfs Nov. 13-15, 1954.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 1236: 1948(M), 1949-51.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 27 | | Feb. 28 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 1.6 | 2.1 | 1.6 | 3.0 | 2.0 | 11 |
| 1.7 | 3.5 | 1.7 | 3.8 | 2.5 | 33 |
| 1.8 | 5.7 | 1.8 | 4.8 | 3.0 | 67 |
| 2.0 | 12 | 1.9 | 7.4 | 4.0 | 167 |
| 2.6 | 38 | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.5 | a3.5 | 5.0 | 8.1 | *5.0 | 78 | 15 | 8.6 | 5.7 | 4.8 | 4.1 | 3.8 |
| 2 | 3.4 | *a3.4 | 4.5 | 6.9 | 10 | 40 | 14 | 8.6 | *5.5 | 4.8 | *4.5 | 3.8 |
| 3 | 3.4 | 3.2 | 4.1 | 6.0 | 8.4 | 28 | 14 | *8.3 | 5.5 | 4.8 | 4.0 | 3.8 |
| 4 | 3.4 | 3.2 | 3.9 | 6.2 | 6.9 | 22 | 12 | 8.0 | 5.5 | 5.2 | 3.8 | 3.8 |
| 5 | 3.4 | 3.5 | 4.1 | 7.1 | 6.5 | 24 | 12 | 8.0 | 5.5 | 5.0 | 3.8 | 3.8 |
| 6 | *3.4 | 3.4 | 4.5 | 6.9 | 32 | *73 | 14 | 8.0 | 5.5 | 6.7 | 3.8 | 3.7 |
| 7 | 3.4 | 3.2 | a4.1 | 5.7 | 38 | 50 | 12 | 7.7 | 7.4 | 5.5 | 6.4 | 3.7 |
| 8 | 3.5 | 3.0 | a3.7 | 5.5 | 23 | 30 | 11 | 7.7 | 6.6 | 4.2 | 4.4 | *3.6 |
| 9 | 3.4 | 2.9 | a6.0 | 5.7 | 16 | 23 | 10 | 7.4 | 6.0 | 4.2 | 6.1 | 3.7 |
| 10 | 3.4 | 2.9 | a12 | 5.7 | 13 | 19 | 9.6 | 7.1 | 5.7 | 13 | 4.2 | 3.6 |
| 11 | 3.4 | 2.9 | a7.6 | 6.9 | 14 | 19 | 12 | 7.1 | 6.6 | *8.9 | 4.3 | 3.7 |
| 12 | 3.4 | 2.9 | a6.0 | *6.5 | 9.8 | 19 | 10 | 7.4 | 6.0 | 8.6 | 4.2 | 3.7 |
| 13 | 3.4 | 2.7 | a9.0 | 6.2 | 8.7 | 16 | *14 | 7.7 | 5.7 | 6.0 | 3.9 | 3.6 |
| 14 | 3.4 | 2.7 | a12 | 5.7 | 8.4 | 16 | 43 | 10 | 5.5 | 5.0 | 3.9 | 3.7 |
| 15 | 25 | 2.7 | a10 | 6.0 | 9.5 | 20 | 23 | 8.3 | 5.2 | 4.7 | 4.2 | 3.6 |
| 16 | 5.7 | 2.9 | a9.0 | 5.7 | 9.5 | 92 | 18 | 7.4 | 5.2 | 4.4 | 4.0 | 3.6 |
| 17 | 3.9 | 3.9 | a7.0 | 5.5 | 10 | 54 | 15 | 7.1 | 5.2 | 4.3 | 4.7 | 3.6 |
| 18 | 3.5 | 3.4 | a15 | 5.5 | 8.4 | 114 | 14 | 6.8 | 5.2 | 4.2 | 5.0 | 3.6 |
| 19 | 3.2 | 3.5 | a22 | 5.7 | 7.7 | 70 | 13 | 6.8 | 5.5 | 4.2 | 4.1 | 3.6 |
| 20 | 3.2 | 6.9 | a12 | 5.5 | 7.5 | 46 | 12 | 6.6 | 5.5 | 4.1 | 4.0 | 3.5 |
| 21 | 3.4 | 4.5 | a9.0 | 5.5 | 7.1 | 36 | 14 | 7.1 | 5.0 | 4.1 | 4.0 | 3.5 |
| 22 | 3.0 | 3.9 | a7.0 | 5.5 | 8.7 | 50 | 13 | 7.4 | 5.0 | 4.1 | 4.0 | 3.5 |
| 23 | 2.9 | 3.7 | a6.2 | 5.2 | 24 | 34 | 12 | 6.6 | 5.5 | 4.0 | 4.0 | 3.5 |
| 24 | 2.9 | 4.3 | a5.8 | 5.2 | 18 | 28 | 13 | 6.6 | 5.5 | 5.1 | 3.9 | 3.6 |
| 25 | 2.9 | 4.1 | a5.6 | 5.0 | 14 | 27 | 14 | 6.6 | 5.7 | 4.2 | 3.9 | 3.7 |
| 26 | 2.9 | 3.7 | a5.4 | 5.0 | 14 | 28 | 13 | 6.0 | 5.2 | 4.1 | 3.8 | 3.6 |
| 27 | 3.0 | 3.9 | a5.2 | 5.0 | 35 | 21 | 11 | 6.0 | 5.0 | 4.0 | 3.8 | 3.6 |
| 28 | a3.1 | 5.5 | *a7.0 | 4.7 | 93 | 20 | 10 | 6.3 | 5.0 | 4.0 | 3.8 | 3.6 |
| 29 | a3.5 | 8.1 | 18 | 4.7 | - | 19 | 9.6 | 6.3 | 4.8 | 4.1 | 3.8 | 3.6 |
| 30 | a4.0 | 5.2 | 16 | 5.0 | ------- | 17 | 9.2 | 6.0 | 4.8 | 4.0 | 3.8 | 3.8 |
| 31 | a3.0 | ---- | 10 | 4.7 | ------- | 18 | ------- | 5.7 | ------- | 4.1 | 4.0 | ------ |
| Total | 126.9 | 113.6 | 256.7 | 178.5 | 466.1 | 1,151 | 416.4 | 225.2 | 166.0 | 158.4 | 130.2 | 109.5 |
| Mean | 4.09 | 3.79 | 8.28 | 5.76 | 16.6 | 37.1 | 13.9 | 7.26 | 5.53 | 5.11 | 4.20 | 3.65 |
| Cfsm | 0.553 | 0.513 | 1.12 | 0.779 | 2.25 | 5.02 | 1.88 | 0.982 | 0.748 | 0.691 | 0.568 | 0.494 |
| In. | 0.64 | 0.57 | 1.29 | 0.90 | 2.34 | 5.79 | 2.10 | 1.13 | 0.83 | 0.80 | 0.65 | 0.55 |

Calendar year 1954: Max 102 Min 2.7 Mean 6.79 Cfsm 0.919 In. 12.47
Water year 1954-55: Max 114 Min 2.7 Mean 9.58 Cfsm 1.30 In. 17.59

Peak discharge (base, 90 cfs).--Feb. 28 (4 p.m.) 186 cfs (4.15 ft); Mar. 6 (12 m.) 167 cfs (4.02 ft); Mar. 18 (1:30 p.m.) 145 cfs (3.80 ft); Mar. 18 (10:30 a.m.) 234 cfs (4.50 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Middle Fork Holston River at Sevenmile Ford and South Fork Holston River at Riverside near Chilhowie.

## Middle Fork Holston River at Sevenmile Ford, Va.

Location.--Lat 36°48'26", long 81°37'20", on right bank at downstream side of bridge on U. S. Highway 11 at Sevenmile Ford, Smyth County, 0.3 mile upstream from Meade Creek and 3.3 miles downstream from Walker Creek.

Drainage area.--132 sq mi.

Records available.--July 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,960.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 157 cfs.

Extremes.--Maximum discharge during year, 4,600 cfs Mar. 18 (gage height, 8.28 ft); minimum, 12 cfs Sept. 20 (gage height, 2.02 ft); minimum daily, 21 cfs Sept. 20.
1942-55: Maximum discharge, 5,880 cfs Aug. 4, 1947 (gage height, 9.86 ft), from rating curve extended above 2,800 cfs on basis of slope-area determinations at gage heights 8.98 and 9.86 ft; minimum, 9 cfs Sept. 26, 1944 (gage height, 1.32 ft); minimum daily, 20 cfs Sept. 26, 1944.

Remarks.--Records good. Some diurnal fluctuation at low flow caused by mill 9 miles above station.

Revisions (water years).--WSP 973: 1942(m).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 2.1 | 19 | 3.2 | 370 |
| 2.2 | 31 | 4.0 | 790 |
| 2.5 | 90 | 6.0 | 2,050 |
| 2.8 | 180 | 7.0 | 2,900 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31 | 31 | *68 | 202 | 64 | 1,980 | 225 | 127 | *70 | 50 | *42 | 39 |
| 2 | 31 | *35 | 60 | 145 | *76 | 1,070 | 220 | *118 | 68 | 44 | 50 | 35 |
| 3 | 30 | 33 | 54 | 118 | 133 | 598 | 189 | 108 | 58 | 42 | 33 | 37 |
| 4 | *33 | 37 | 46 | 108 | 115 | 430 | 162 | 100 | 58 | 46 | 37 | 35 |
| 5 | 95 | 37 | 54 | 124 | 102 | 510 | 156 | 95 | 60 | 48 | 35 | 35 |
| 6 | 95 | 35 | 100 | 156 | 764 | 1,870 | 159 | 92 | 54 | 60 | 39 | *37 |
| 7 | 92 | 35 | 72 | 159 | 1,250 | 1,310 | 156 | 88 | 74 | 50 | 42 | 31 |
| 8 | 92 | 37 | 58 | 139 | 603 | 658 | 139 | 84 | 60 | 52 | 66 | 33 |
| 9 | 88 | 35 | 87 | 130 | 365 | 460 | 127 | 82 | 68 | 48 | 50 | 33 |
| 10 | 88 | 35 | 170 | *118 | 252 | 360 | 110 | 80 | 64 | 52 | 48 | 31 |
| 11 | 78 | 31 | 108 | 152 | 225 | 370 | 130 | 82 | 80 | 68 | 42 | 30 |
| 12 | 30 | 31 | 86 | 136 | 166 | 490 | *152 | 82 | 80 | 76 | 48 | 35 |
| 13 | 30 | 30 | *156 | 133 | 142 | 400 | 162 | 88 | 72 | 72 | 44 | 31 |
| 14 | 30 | 30 | 162 | 115 | 130 | 340 | 1,660 | 142 | 66 | *62 | 39 | 31 |
| 15 | 155 | 37 | 156 | 110 | 130 | 440 | 642 | 385 | 62 | 52 | 46 | 33 |
| 16 | 100 | 31 | 124 | 102 | 127 | 2,490 | 385 | 180 | 58 | 46 | 44 | 31 |
| 17 | 46 | 37 | 100 | 92 | 162 | 1,430 | 270 | 136 | 56 | 44 | 42 | 33 |
| 18 | 37 | 42 | 286 | 88 | 170 | *2,550 | 207 | 112 | 54 | 40 | 58 | 40 |
| 19 | 30 | 37 | 295 | 92 | 159 | 1,460 | 180 | 98 | 64 | 40 | 56 | 30 |
| 20 | 30 | 64 | 173 | 86 | 139 | 955 | 159 | 90 | 66 | 44 | 46 | 21 |
| 21 | 29 | 64 | 127 | 82 | 127 | 735 | 178 | 80 | 58 | 39 | 40 | 29 |
| 22 | 27 | 48 | 105 | 86 | 139 | 1,040 | 480 | 86 | 58 | 40 | 40 | 31 |
| 23 | 27 | 42 | 90 | 80 | 708 | 790 | 315 | 80 | 50 | 40 | 42 | 31 |
| 24 | 24 | 35 | 88 | 76 | 510 | 560 | 252 | 86 | 52 | 39 | 33 | 30 |
| 25 | 30 | 56 | 80 | 72 | 335 | 460 | 266 | 92 | 52 | 48 | 39 | 39 |
| 26 | 26 | 44 | 76 | 70 | 238 | 586 | 335 | 78 | 60 | 40 | 35 | 54 |
| 27 | 26 | 40 | 76 | 72 | 790 | 510 | 295 | 74 | 50 | 39 | 40 | 115 |
| 28 | 26 | 46 | 80 | 70 | *1,460 | 420 | 270 | 68 | 48 | 39 | 39 | 115 |
| 29 | 35 | 139 | 412 | 72 | - | 350 | 252 | 110 | 48 | 40 | 39 | 112 |
| 30 | 39 | 90 | 576 | 68 | ------- | 290 | 142 | 78 | 46 | 37 | 33 | 115 |
| 31 | 29 | ------- | 310 | 62 | ------- | 248 | ------- | 70 | ------- | 40 | 40 | ------- |
| Total | 1,559 | 1,324 | 4,435 | 3,315 | 9,581 | 26,160 | 8,375 | 3,271 | 1,814 | 1,477 | 1,327 | 1,332 |
| Mean | 50.3 | 44.1 | 143 | 107 | 342 | 844 | 279 | 106 | 60.5 | 47.6 | 42.8 | 44.4 |
| Cfsm | 0.381 | 0.334 | 1.08 | 0.811 | 2.59 | 6.39 | 2.11 | 0.803 | 0.458 | 0.361 | 0.324 | 0.336 |
| In. | 0.44 | 0.37 | 1.24 | 0.94 | 2.70 | 7.37 | 2.35 | 0.93 | 0.51 | 0.42 | 0.37 | 0.37 |

Calendar year 1954: Max 2,150 Min 24 Mean 113 Cfsm 0.856 In. 11.63
Water year 1954-55: Max 2,550 Min 21 Mean 175 Cfsm 1.33 In. 18.01

Peak discharge (base, 2,000 cfs).--Feb. 28 (11:30 p.m.) 3,110 cfs (7.18 ft); Mar. 6 (6 to 7 p.m.) 3,360 cfs (7.38 ft); Mar. 16 (6 p.m.) 4,040 cfs (7.93 ft); Mar. 18 (3:30 p.m.) 4,600 cfs (8.28 ft); Apr. 14 (7 a.m.) 2,810 cfs (6.93 ft).
* Discharge measurement made on this day.

South Fork Holston River below South Holston Dam, Tenn.

Location.--Lat 36°31'25", long 82°05'50", on right bank 1,900 ft downstream from South Holston Dam powerhouse, 1.0 mile upstream from bridge at Bristol waterworks, 1.0 mile upstream from Thomas Creek, 6.7 miles southeast of Bristol, Sullivan County, and at river mile 49.4.

Drainage area.--703 sq mi.

Records available.--July 1951 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,450.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 3,290 cfs Sept. 6 (gage height, 37.65 ft); minimum daily, 0.5 cfs Oct. 26.
1951-55: Maximum discharge, 3,360 cfs Sept. 13, 1953; minimum daily, that of Oct. 26, 1954.

Remarks.--Records good except those below 50 cfs, which are fair. Flow completely regulated by South Holston Lake (see p. 242).

Correction.--The adjusted mean discharge for the water year 1951-52 has been corrected to 711 cfs, superseding figure erroneously published in WSP 1236.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 6-16)

| | | | |
|---|---|---|---|
| 32.2 | 0 | 33.6 | 135 |
| 32.3 | .6 | 34.0 | 243 |
| 32.4 | 2.0 | 34.5 | 425 |
| 32.5 | 3.8 | 35.0 | 660 |
| 32.6 | 6.6 | 35.5 | 960 |
| 32.8 | 16 | 36.0 | 1,370 |
| 33.0 | 33 | 37.0 | 2,430 |
| 33.3 | 75 | 37.6 | 3,220 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,390 | 17 | 4.4 | 641 | *321 | *10 | 9.3 | 120 | 4.6 | 1,690 | 1,730 | 3,150 |
| 2 | 8.9 | *1,320 | 418 | 7.0 | 617 | 9.6 | 1,120 | 1,450 | 4.6 | 1,750 | 1,800 | 3,220 |
| 3 | 6.3 | 1,970 | 4.4 | 1,230 | 728 | 8.9 | 11 | 682 | 15 | 12 | *1,800 | 3,090 |
| 4 | 1,520 | 1,700 | 83 | *1,210 | 699 | 8.9 | 743 | 1,640 | 7.5 | 9.6 | 1,830 | 50 |
| 5 | *1,380 | 1,580 | 5.2 | 500 | 227 | 8.5 | 510 | *1,640 | 3.6 | 720 | 1,840 | 10 |
| 6 | 1,520 | 1,860 | 772 | 375 | 23 | 15 | 1,590 | 1,800 | 3.5 | 1,960 | 1,820 | 2,320 |
| 7 | 1,560 | 16 | 729 | 81 | 458 | 1,010 | 1,670 | 294 | *3.8 | *1,730 | 1,840 | *2,210 |
| 8 | 1,220 | 1,570 | 762 | 17 | 1,230 | 9.6 | 1,680 | 502 | 3.6 | 1,900 | 1,810 | 2,260 |
| 9 | 59 | 1,620 | 867 | 6.6 | 1,180 | 151 | 10 | 897 | 3.4 | 21 | 1,780 | 1,930 |
| 10 | 211 | 1,440 | 782 | 111 | 1,360 | 9.3 | 8.1 | 924 | 3.2 | 13 | 1,780 | 11 |
| 11 | 1,930 | 1,780 | 943 | 792 | 1,390 | 8.9 | 1,770 | 1,710 | 4.1 | 1,680 | 1,750 | 9.6 |
| 12 | 2,010 | 1,630 | 750 | 606 | 14 | 8.9 | 1,860 | 746 | 3.6 | 1,960 | 1,370 | 2,060 |
| 13 | 1,980 | 6.8 | 1,250 | 1,290 | 18 | 8.9 | 1,940 | 1,350 | 3.6 | 1,790 | 1,930 | 2,250 |
| 14 | 2,060 | 4.9 | 1,080 | 1,070 | 12 | 8.9 | 1,910 | 848 | 3.6 | 1,640 | 10 | 2,230 |
| 15 | 2,040 | 1,750 | 775 | 7.4 | 7.0 | 10 | 1,960 | 647 | 3.4 | 1,860 | 2,140 | 2,280 |
| 16 | 1,250 | 1,580 | 643 | 6.6 | 7.0 | 24 | 148 | 1,370 | 4.1 | 390 | 1,530 | 2,250 |
| 17 | 7.4 | 1,210 | 1,020 | 1,030 | 128 | 13 | 8.5 | 680 | 16 | 12 | 1,720 | 1,110 |
| 18 | 1,810 | 1,480 | 337 | 692 | 612 | 40 | 1,790 | 294 | 13 | 1,040 | 1,930 | 1,860 |
| 19 | 2,060 | 1,370 | 718 | 724 | 7.0 | 16 | 818 | 655 | 13 | 1,710 | 2,730 | 1,870 |
| 20 | 2,120 | 6.6 | 660 | 793 | 6.6 | 12 | 8.1 | 648 | 13 | 1,750 | 1,860 | 2,020 |
| 21 | 2,030 | 5.2 | 1,330 | 918 | 1,220 | 10 | 8.5 | 8.5 | 1,220 | 1,690 | 13 | 1,920 |
| 22 | 2,140 | 982 | 1,260 | 111 | 1,040 | 17 | 8.9 | 83 | 1,640 | 1,630 | 1,790 | 1,960 |
| 23 | 200 | 864 | 1,490 | 7.4 | 1,060 | 11 | 8.9 | 1,750 | 1,210 | 12 | 2,230 | 2,020 |
| 24 | 31 | 868 | 586 | 915 | 8.5 | 10 | 8.9 | 1,720 | 1,130 | 11 | 2,320 | 2,000 |
| 25 | 21 | 5.8 | 121 | 945 | 1,540 | 10 | 1,080 | 1,780 | 1,150 | 1,720 | 2,300 | 11 |
| 26 | .5 | 1,030 | 120 | 634 | 10 | 82 | 2,180 | 1,740 | 11 | 1,730 | 2,310 | 1,940 |
| 27 | 12 | 5.5 | 588 | 581 | 9.3 | 11 | 2,350 | 1,790 | 1,740 | 1,710 | 1,920 | 2,070 |
| 28 | 2.5 | 5.5 | 338 | 1,050 | 9.6 | 10 | 2,350 | 9.8 | 1,710 | 1,740 | 1,510 | 1,800 |
| 29 | 8.2 | 5.8 | 756 | 500 | - | 10 | 2,360 | 917 | 1,750 | 1,240 | 2,430 | 1,810 |
| 30 | 1.6 | 4.6 | 810 | 471 | ------- | 9.6 | 2,430 | 1,710 | 1,710 | 11 | 2,940 | 1,790 |
| 31 | 8.9 | ------- | 1,210 | 1,260 | ------- | 9.3 | ------- | 59 | ------- | 11 | 2,980 | ------- |
| Total | 30 598.3 | 27,687.7 | 21,212.0 | 18,582.0 | 13,942.0 | 1,581.3 | 32,349.2 | 30,464.3 | 13,401.2 | 35,142.6 | 57,743 | 53,511.6 |
| Mean | 987 | 923 | 684 | 599 | 498 | 51.0 | 1,078 | 983 | 447 | 1,134 | 1,863 | 1,784 |

Observed

Calendar year 1954: Max 2,840 Min 0.5 Mean 777
Water year 1954-55: Max 3,220 Min 0.5 Mean 921

Adjusted†

Calendar year 1954: Mean 675 Cfsm 0.960 In. 13.03
Water year 1954-55: Mean 952 Cfsm 1.35 In. 18.38

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston Lake.

## Beaver Creek near Wallace, Va.

Location.--Lat 36°38'25", long 82°06'42", on left bank 0.4 mile upstream from Clear Creek, 1.3 miles southeast of Wallace, Washington County, and 3.8 miles northeast of Bristol.
Drainage area.--13.7 sq mi.
Records available.--October 1945 to September 1955.
Gage.--Water-stage recorder and concrete control. Datum of gage is 1,808.93 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.
Average discharge.--10 years, 14.2 cfs.
Extremes.--Maximum discharge during year, 220 cfs Mar. 18 (gage height, 4.58 ft); minimum, 3.0 cfs Nov. 9-11; minimum gage height, 1.38 ft Sept. 23.
1945-55: Maximum discharge, 383 cfs July 15, 1948 (gage height, 5.94 ft), from rating curve extended above 230 cfs on basis of velocity-area studies; minimum, 3.0 cfs Oct. 7, 1953, Nov. 9-11, 1954; minimum gage height, 1.05 ft Dec. 1-12, 1946.
Remarks.--Records good except those for periods of no gage-height record, which are fair.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.4 | 3.0 | 2.0 | 32 |
| 1.5 | 5.8 | 3.0 | 94 |
| 1.6 | 9.2 | 4.0 | 166 |
| 1.7 | 13 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.8 | *3.6 | *a4.7 | 12 | a9.0 | *85 | 38 | 16 | 9.2 | 6.5 | 4.7 | 5.2 |
| 2 | 5.2 | 4.4 | 4.4 | 11 | 10 | 56 | 37 | *17 | 8.9 | 6.1 | 4.7 | 5.5 |
| 3 | 5.0 | 4.1 | 4.1 | 10 | 12 | 45 | 37 | 15 | 8.9 | 8.4 | 5.2 | 5.2 |
| 4 | *5.0 | 4.1 | 4.1 | 10 | *11 | 40 | 38 | 14 | 8.9 | 7.2 | *5.2 | 5.0 |
| 5 | 5.0 | 3.8 | 5.0 | a10 | 11 | 39 | 37 | 14 | 8.9 | 6.5 | 4.7 | 5.2 |
| 6 | 5.8 | 3.8 | 8.9 | a 11 | 32 | 78 | 36 | 14 | 8.9 | 6.8 | 5.0 | 5.2 |
| 7 | 5.2 | 3.6 | 5.8 | a10 | 39 | 57 | *27 | 14 | 9.2 | 6.1 | 5.0 | 5.0 |
| 8 | 5.2 | 3.6 | a5.0 | a10 | 30 | 47 | 26 | 14 | 9.6 | 6.1 | 6.1 | *4.7 |
| 9 | 5.0 | 3.3 | a6.4 | a9.4 | 25 | 42 | 24 | 14 | 9.6 | 6.1 | 5.5 | 4.7 |
| 10 | 5.0 | 3.3 | a9.3 | *a8.8 | 22 | 38 | 23 | 13 | 9.6 | 5.8 | 5.0 | 5.0 |
| 11 | 5.2 | 3.3 | a6.1 | 11 | 22 | 36 | 27 | 13 | 10 | 6.1 | 5.0 | 5.0 |
| 12 | 5.2 | 3.3 | a5.3 | 11 | a19 | 35 | 24 | 14 | 10 | 6.5 | 5.5 | 5.0 |
| 13 | 5.2 | 3.6 | a8.2 | 10 | a18 | 31 | 25 | 14 | *8.9 | *6.1 | 5.0 | 5.0 |
| 14 | 5.0 | 3.6 | a9.1 | 10 | a17 | 30 | 27 | 16 | 8.5 | 6.1 | 5.0 | 5.0 |
| 15 | 5.0 | 3.6 | a7.8 | 10 | a16 | 30 | 23 | 14 | 8.2 | 6.1 | 5.0 | 5.0 |
| 16 | 5.0 | 3.6 | a6.5 | 10 | a16 | 94 | 23 | 13 | 7.8 | 5.8 | 5.0 | 5.0 |
| 17 | 5.0 | 4.4 | a7.0 | 9.2 | a18 | 57 | 22 | 13 | 7.8 | 5.5 | 5.0 | 5.0 |
| 18 | 4.7 | 3.8 | a7.6 | 9.2 | a20 | 134 | 22 | 13 | 7.8 | 5.2 | 5.2 | 5.0 |
| 19 | 4.4 | 3.8 | a10 | 9.6 | a18 | 103 | 20 | 12 | 8.5 | 5.2 | 5.2 | 5.0 |
| 20 | 4.4 | 3.8 | a9.2 | 9.2 | a17 | 75 | 20 | 12 | 8.2 | 5.2 | 5.0 | 5.0 |
| 21 | 4.1 | 3.8 | a8.8 | 8.9 | 16 | 63 | 20 | 11 | 7.8 | 5.2 | 5.0 | 5.0 |
| 22 | 4.1 | a3.8 | a8.6 | 9.2 | 18 | 124 | 20 | 11 | 7.8 | 5.0 | 6.1 | 4.7 |
| 23 | 4.1 | a3.8 | a8.4 | 9.2 | 40 | 73 | 19 | 11 | 7.5 | 5.0 | 5.8 | 4.4 |
| 24 | 4.1 | a6.0 | 8.2 | 9.2 | 32 | 60 | 20 | 11 | 7.2 | 5.0 | 5.2 | 5.8 |
| 25 | 4.1 | a5.0 | 7.5 | 9.2 | 27 | 62 | 20 | 11 | 7.5 | 5.2 | 5.0 | 5.5 |
| 26 | 3.8 | a4.1 | 7.2 | a8.8 | 24 | 75 | 20 | 11 | 7.2 | 4.1 | 5.0 | 5.2 |
| 27 | 3.6 | a3.9 | 7.2 | a8.6 | 35 | 56 | 20 | 10 | 6.8 | 4.7 | 5.0 | 5.0 |
| 28 | 3.6 | a4.5 | 7.2 | a8.2 | 46 | 51 | 18 | 10 | 6.5 | 4.4 | 4.7 | 5.2 |
| 29 | 3.6 | a8.0 | 11 | a8.2 | - | 48 | 18 | 10 | 6.1 | 4.7 | 4.7 | 5.2 |
| 30 | 3.8 | a8.0 | 17 | a8.8 | ------ | 43 | 16 | 10 | 6.5 | 4.4 | 4.4 | 6.1 |
| 31 | 3.6 | -- --- | 14 | a8.4 | ------- | 40 | -------- | 9.6 | ------- | 4.4 | 5.2 | - - |
| Total | 144.8 | 123.3 | 239.6 | 298.1 | 620.0 | 1,847 | 747 | 394.6 | 248.3 | 175.5 | 158.1 | 152.8 |
| Mean | 4.67 | 4.11 | 7.73 | 9.62 | 22.1 | 59.6 | 24.9 | 12.7 | 8.28 | 5.66 | 5.10 | 5.09 |
| Cfsm | 0.341 | 0.300 | 0.564 | 0.702 | 1.61 | 4.35 | 1.82 | 0.927 | 0.604 | 0.413 | 0.372 | 0.372 |
| In. | 0.39 | 0.33 | 0.65 | 0.81 | 1.68 | 5.02 | 2.03 | 1.07 | 0.67 | 0.48 | 0.43 | 0.42 |

Calendar year 1954: Max 71 Min 3.3 Mean 8.93 Cfsm 0.652 In. 8.84
Water year 1954-55: Max 134 Min 3.3 Mean 14.1 Cfsm 1.03 In. 13.98

Peak discharge (base, 100 cfs).--Mar. 1 ( 12 m.) 205 cfs (4.44 ft); Mar. 6 (12:30 p.m.) 158 cfs (3.89 ft); Mar. 16 (9 a.m.) 174 cfs (4.11 ft); Mar. 18 (11:30 a.m.) 220 cfs (4.58 ft); Mar. 22 (8:30 a.m.) 191 cfs (4.31 ft); Mar. 26 (5:30 a.m.) 106 cfs (3.18 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Beaverdam Creek at Damascus and Middle Fork River at Groseclose.

## Percy Preston Spring near Wallace, Va.

Location.--Lat 36°38'25", long 82°06'06", 1¼ miles south of Wallace, Washington County, and 3¾ miles northeast of Bristol.
Records available.--August 1928, November 1947 to September 1955 (discharge measurements only).
Extremes.--Maximum discharge measured during year, 5.60 cfs Mar. 1, Apr. 7; minimum measured, 0.462 cfs Nov. 1.
1928, 1947-55: Maximum discharge measured, 6.21 cfs Feb. 16, 1950; minimum measured, 0.299 cfs Dec. 3, 1953.
Remarks.--Discharge measurements made monthly 100 ft below spring.

Discharge measurements, in cubic feet per second, water year October 1954 to September 1955

| | | | | | | |
|---|---|---|---|---|---|---|
| Oct. 4..... | 0.630 | Feb. 4..... | 0.960 | June 13..... | 1.14 |
| Nov. 1..... | .462 | Mar. 1..... | 5.60 | July 13..... | 1.30 |
| Dec. 1..... | .524 | Apr. 7..... | 5.60 | Aug. 4..... | .669 |
| Jan. 10..... | .950 | May 2..... | 3.91 | Sept. 8..... | .466 |

## Watauga River near Sugar Grove, N. C.

Location.--Lat 36°14'18", long 81°49'22", on right bank 300 ft downstream from Cove Creek and 2.3 miles southwest of Sugar Grove, Watauga County.

Drainage area.--90.8 sq mi.

Records available.--May 1940 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,607.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 156 cfs.

Extremes.--Maximum discharge during year, 7,820 cfs Apr. 14 (gage height, 11.72 ft), from rating curve extended above 2,100 cfs as explained below; minimum, 12 cfs Oct. 1 (gage height, 1.20 ft); minimum daily, 14 cfs Oct. 14.

1940-55: Maximum discharge, 50,800 cfs Aug. 13, 1940 (gage height, 29.6 ft, from profile based on floodmarks), from rating curve extended above 2,100 cfs on basis of slope-area determination of peak flow; minimum, 6.5 cfs Jan. 1, 1954 (gage height, 1.13 ft), result of freezeup; minimum daily, 13 cfs Sept. 19, 30, 1954.

Flood in July 1916 reached a stage of 22.1 ft, from floodmarks on barn a quarter of a mile above station as witnessed by local resident (discharge, 28,000 cfs, from rating curve extended above 2,100 cfs as explained above).

Remarks.--Records good except those for periods of ice effect, which are fair. Slight diurnal fluctuation at low flow caused by small mills and powerplants above station.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 6

| | | | | | |
|---|---|---|---|---|---|
| 1.2 | 12 | 2.2 | 154 | 4.5 | 990 |
| 1.3 | 18 | 2.5 | 240 | 5.0 | 1,260 |
| 1.4 | 24 | 3.0 | 390 | 5.5 | 1,550 |
| 1.6 | 44 | 3.5 | 550 | 6.5 | 2,240 |
| 1.9 | 89 | 4.0 | 755 | 7.8 | 3,390 |

Feb. 6 to Sept. 30

| | | | |
|---|---|---|---|
| 1.5 | 30 | 2.5 | 223 |
| 1.6 | 40 | 3.0 | 378 |
| 1.9 | 86 | 3.5 | 550 |
| 2.2 | 147 | | |

Note.--Same as preceding table above 3.5 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 22 | 53 | 187 | b50 | 264 | 161 | 136 | 86 | 49 | 94 | 75 |
| 2 | 24 | 24 | 45 | 144 | 86 | 229 | 152 | 127 | 81 | 46 | 96 | 65 |
| 3 | 20 | 25 | 40 | 117 | 110 | 194 | 147 | 121 | 73 | 44 | 96 | 65 |
| 4 | 17 | 24 | b40 | 102 | b70 | 169 | 134 | 113 | 70 | 91 | 73 | 62 |
| 5 | 16 | 32 | b43 | 104 | b75 | 152 | 132 | 109 | 66 | 260 | 75 | 59 |
| 6 | 16 | 30 | 125 | 104 | 1,110 | 184 | 174 | 103 | 62 | 225 | 84 | 56 |
| 7 | 17 | 26 | *b70 | 93 | 852 | 186 | 188 | 101 | 77 | 201 | 152 | 53 |
| 8 | 15 | 26 | b62 | 84 | 395 | 157 | 154 | 97 | 113 | 308 | 219 | 49 |
| 9 | 16 | 24 | 80 | 79 | 261 | 140 | 140 | 92 | 88 | 181 | 136 | 46 |
| 10 | 16 | 24 | 84 | 74 | 199 | 129 | 132 | 88 | 75 | 164 | 113 | 46 |
| 11 | 16 | 22 | b65 | 75 | 191 | 123 | 249 | 90 | 109 | 210 | 96 | 44 |
| 12 | 16 | 22 | b55 | 68 | b170 | 240 | *292 | 99 | 119 | 307 | 94 | *43 |
| 13 | *15 | 22 | 64 | 70 | b150 | 349 | 921 | 121 | 86 | 346 | 81 | 40 |
| 14 | 14 | 22 | 72 | 64 | b130 | 264 | 3,370 | 117 | *79 | 240 | 75 | 39 |
| 15 | 27 | 22 | 68 | 65 | *121 | *252 | 827 | 138 | *72 | 188 | 337 | 38 |
| 16 | 31 | 25 | 60 | b55 | 113 | 1,030 | 504 | 107 | 65 | 169 | *232 | 37 |
| 17 | 22 | 89 | 56 | b50 | 115 | 794 | 378 | *96 | 62 | 134 | 152 | 35 |
| 18 | 19 | *47 | 86 | *b50 | 101 | 881 | 314 | 84 | 59 | 117 | 129 | 34 |
| 19 | 18 | 155 | b70 | b50 | 94 | 1,120 | 268 | 77 | 68 | *107 | 113 | 34 |
| 20 | 18 | 299 | b60 | b55 | 90 | 796 | 229 | 75 | 96 | 97 | 97 | 32 |
| 21 | 17 | 93 | b60 | b55 | 84 | 504 | 226 | 79 | 96 | 90 | 88 | 30 |
| 22 | 18 | 60 | b60 | b40 | 101 | 848 | 223 | 296 | 72 | 82 | 81 | 31 |
| 23 | 17 | 49 | b70 | b45 | 404 | 540 | 186 | 210 | 72 | 94 | 133 | 44 |
| 24 | 17 | 47 | b55 | b45 | 283 | 402 | 204 | 152 | 99 | 152 | 86 | 35 |
| 25 | 17 | 44 | b50 | b50 | 243 | 362 | 201 | 136 | 66 | 101 | 77 | 65 |
| 26 | 17 | 40 | b50 | b55 | 204 | 340 | 212 | 115 | 75 | 86 | 70 | 56 |
| 27 | 17 | 36 | 54 | b45 | 226 | 274 | 196 | 105 | 58 | 79 | 65 | 41 |
| 28 | 24 | 42 | 90 | b40 | 271 | b230 | 178 | 99 | 56 | 95 | 60 | 38 |
| 29 | 30 | 102 | 587 | b35 | - | 220 | 161 | 120 | 53 | 107 | 59 | 38 |
| 30 | 29 | 63 | 846 | b35 | ------ | 191 | 145 | 129 | 52 | 94 | 58 | 39 |
| 31 | 24 | -- -- | 288 | b35 | ------ | 174 | ------ | 97 | ------ | 90 | 140 | - - - |
| Total | 596 | 1,558 | 3,508 | 2,170 | 6,299 | 11,738 | 10,798 | 3,629 | 2,305 | 4,554 | 3,461 | 1,369 |
| Mean | 19.2 | 51.9 | 113 | 70.0 | 225 | 379 | 360 | 117 | 76.8 | 147 | 112 | 45.6 |
| Cfsm | 0.211 | 0.572 | 1.24 | 0.771 | 2.48 | 4.17 | 3.96 | 1.29 | 0.846 | 1.62 | 1.23 | 0.502 |
| In. | 0.24 | 0.64 | 1.44 | 0.89 | 2.58 | 4.81 | 4.42 | 1.49 | 0.94 | 1.87 | 1.42 | 0.56 |

Calendar year 1954: Max 2,150 Min 13 Mean 117 Cfsm 1.29 In. 17.51
Water year 1954-55: Max 3,370 Min 14 Mean 142 Cfsm 1.56 In. 21.30

Peak discharge (base, 2,000 cfs).--Dec. 30 (1:30 a.m.) 2,180 cfs (6.42 ft); Feb. 6 (7 p.m.) 2,220 cfs (6.47 ft); Apr. 14 (2 a.m.) 7,820 cfs (11.72 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Watauga River at North Carolina-Tennessee State line

Location.--Lat 36°17'25", long 81°55'33", on left bank in Tennessee, 0.6 mile downstream from North Carolina-Tennessee State line, 1.9 miles downstream from Stone Mountain Branch, and 7½ miles southeast of Butler (formerly Carderview), Johnson County, Tenn.

Drainage area.--152 sq mi.

Records available.--October 1942 to July 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,060.57 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--12 years (1942-54), 256 cfs.

Extremes.--Maximum discharge during period October 1954 to July 1955, 8,280 cfs Apr. 14 (gage height, 5.61 ft), from rating curve extended above 3,500 cfs; minimum, 9.8 cfs Oct. 22-24 (gage height, 1.14 ft); minimum daily, 15 cfs Oct. 25.
1942-55: Maximum discharge, 14,700 cfs Dec. 7, 1950 (gage height, 7.15 ft), from rating curve extended above 3,500 cfs; minimum, 6.4 cfs Aug. 14, 1954 (gage height, 1.05 ft); minimum daily, 12 cfs Aug. 14, 1954.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Some diurnal fluctuation at low flow caused by a small powerplant near Sugar Grove, N. C.

Rating table, Oct. 1, 1954, to July 5, 1955, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.2 | 14 | 2.2 | 460 |
| 1.3 | 27 | 2.8 | 1,110 |
| 1.5 | 73 | 3.5 | 2,300 |
| 1.7 | 140 | 4.0 | 3,410 |
| 2.0 | 310 | 4.5 | 4,700 |

Discharge, in cubic feet per second, October 1954 to July 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 29 | 27 | 76 | 324 | a110 | 532 | 252 | 245 | 149 | 68 | | |
| 2 | 48 | *31 | 65 | 239 | *159 | *444 | 233 | 222 | 133 | 68 | | |
| 3 | 35 | 33 | 57 | 182 | 222 | 366 | 228 | 204 | 118 | 63 | | |
| 4 | 28 | 33 | 47 | *164 | 154 | 310 | 204 | *193 | 114 | 86 | | |
| 5 | *20 | 45 | 57 | 199 | 128 | 264 | 199 | 178 | 107 | 236 | | |
| 6 | 32 | 43 | 164 | 199 | 1,380 | 339 | *302 | 168 | 103 | †290 | | |
| 7 | 24 | 35 | *97 | 178 | *1,640 | 366 | 373 | 159 | 103 | - | | |
| 8 | 22 | 33 | 107 | 154 | 772 | 297 | 290 | 154 | 168 | - | | |
| 9 | 26 | 33 | 103 | 140 | 496 | 258 | 245 | 140 | 149 | - | | |
| 10 | 22 | 27 | 130 | 133 | 359 | 228 | 222 | 133 | 118 | - | | |
| 11 | 18 | 26 | 87 | 133 | 331 | 210 | 302 | 140 | 140 | - | | |
| 12 | 22 | 24 | 85 | 118 | 224 | 514 | 444 | 173 | 178 | - | | |
| 13 | 21 | 26 | 88 | 118 | a190 | 761 | 848 | 210 | 129 | - | | |
| 14 | 23 | 26 | 100 | 95 | a190 | 541 | 4,440 | 222 | 118 | - | | |
| 15 | 17 | 23 | 97 | 114 | a190 | 505 | 1,430 | 228 | 110 | - | | |
| 16 | 43 | 23 | 85 | 103 | 182 | 1,910 | 860 | 187 | 100 | - | | |
| 17 | 29 | 80 | 79 | 97 | 204 | 1,650 | 630 | 168 | 91 | - | | |
| 18 | 22 | 57 | 122 | 94 | 182 | *1,640 | 487 | 149 | 85 | - | | |
| 19 | 19 | 123 | 125 | 100 | 168 | 2,160 | 404 | 133 | 91 | - | | |
| 20 | 20 | 405 | 103 | a95 | 154 | 1,560 | 352 | 125 | 133 | - | | |
| 21 | 18 | 136 | 118 | a90 | 145 | 944 | 348 | 125 | 133 | - | | |
| 22 | 19 | 85 | 110 | a105 | 164 | 1,240 | 404 | 354 | 107 | - | | |
| 23 | 17 | 68 | 130 | a100 | 682 | 896 | 317 | 324 | 103 | - | | |
| 24 | 17 | 60 | 97 | a95 | 590 | 670 | 346 | 233 | 126 | - | | |
| 25 | 15 | 60 | 91 | 79 | 496 | 620 | 366 | 228 | 97 | - | | |
| 26 | 18 | 50 | 91 | 101 | 396 | 630 | 469 | 187 | 114 | - | | |
| 27 | 16 | 45 | 88 | 88 | 443 | 505 | 436 | 164 | 88 | - | | |
| 28 | 31 | 50 | 140 | b70 | 550 | 428 | 380 | 168 | 82 | - | | |
| 29 | 43 | 145 | 618 | b85 | - | 380 | 317 | 225 | 79 | - | | |
| 30 | 45 | 100 | 1,330 | b75 | ------ | 324 | 271 | 271 | 70 | - | | |
| 31 | 33 | --- | 505 | a65 | ------- | 284 | -------- | 182 | --- ---- | - | | - - - - |
| Total | 792 | 1,952 | 5,192 | 3,932 | 10,901 | 21,776 | 16,399 | 5,992 | 3,436 | - | | |
| Mean | 25.5 | 65.1 | 167 | 127 | 389 | 702 | 547 | 193 | 115 | - | | |
| Cfsm | 0.168 | 0.428 | 1.10 | 0.836 | 2.56 | 4.62 | 3.60 | 1.27 | 0.757 | - | | |
| In. | 0.19 | 0.48 | 1.27 | 0.96 | 2.67 | 5.33 | 4.01 | 1.47 | 0.84 | - | | |

Calendar year 1954: Max 3,340 Min 12 Mean 189 Cfsm 1.24 In. 16.91
Water year 1954-55: Max - Min - Mean - Cfsm - In. -

Peak discharge (base, 2,800 cfs).--Feb. 6 (9:30 p.m.) 3,090 cfs (3.86 ft); Mar. 16 (6:30 p.m.) 3,360 cfs (3.98 ft); Apr. 14 (3 p.m.) 8,280 cfs (5.61 ft).

* Discharge measurement made on this day.
† Result of discharge measurement.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

## Elk River near Elk Park, N. C.

Location.--Lat 36°11'01", long 81°57'45", on right bank 1.4 miles downstream from Little Elk Creek, 2.0 miles northeast of Elk Park, Avery County, and 3.1 miles upstream from North Carolina-Tennessee State line.

Drainage area.--42.0 sq mi.

Records available.--October 1934 to September 1955 (discontinued). Prior to October 1949, published as Elk Creek near Elk Park.

Gage.--Water-stage recorder. Altitude of gage is 2,810 ft (from topographic map). Prior to Aug. 18, 1940, water-stage recorder and Aug. 18, 1940, to Feb. 25, 1941, staff gage, at same site and datum.

Average discharge.--21 years, 81.5 cfs.

Extremes.--Maximum discharge during year, 4,260 cfs Apr. 13 (gage height, 7.55 ft), from rating curve extended above 900 cfs on basis of slope-area determination at gage height 17.8 ft; minimum, 7.5 cfs Oct. 14, 15 (gage height, 1.39 ft); minimum daily, 7.5 cfs Oct. 14.

1934-55: Maximum discharge, 27,500 cfs Aug. 13, 1940 (gage height, 17.8 ft, from floodmarks), from rating curve extended above 900 cfs on basis of slope-area determination of peak flow; minimum, 4 cfs Dec. 15, 1939 (gage height, 0.78 ft), result of freezeup; minimum daily, 6.1 cfs Sept. 8, 9, 1954.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Slight diurnal fluctuation caused by small powerplant above station.

Revisions.--WSP 823: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.4 | 7.5 | 3.0 | 271 |
| 1.5 | 13 | 3.5 | 415 |
| 1.6 | 21 | 4.0 | 600 |
| 1.8 | 40 | 4.5 | 840 |
| 2.1 | 82 | 5.0 | 1,180 |
| 2.4 | 136 | 5.2 | 1,350 |
| 2.7 | 199 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 11 | 24 | 107 | b30 | 158 | 96 | 85 | 38 | 25 | 36 | 34 |
| 2 | 13 | 13 | 23 | 85 | 70 | 132 | 92 | 79 | 38 | 24 | 37 | 30 |
| 3 | 10 | 12 | 19 | 70 | 67 | 116 | 85 | 76 | 35 | 22 | 36 | 29 |
| 4 | 8.6 | 13 | b20 | 64 | b45 | 105 | 78 | 72 | 34 | 25 | 30 | 27 |
| 5 | 8.6 | 20 | b30 | 72 | b50 | 95 | 84 | 68 | 34 | 26 | 32 | 26 |
| 6 | 8.1 | 16 | 53 | 73 | 1,040 | 124 | 100 | 63 | 31 | 30 | 35 | 25 |
| 7 | 8.6 | 15 | *b30 | 66 | 542 | 107 | 90 | 60 | 40 | 34 | 49 | 24 |
| 8 | 8.1 | 15 | b25 | 56 | 276 | 92 | 76 | 59 | 49 | 46 | 85 | 22 |
| 9 | 8.1 | 15 | 75 | 53 | 188 | 85 | 70 | 54 | 50 | 31 | 156 | 25 |
| 10 | 8.6 | 15 | 52 | 50 | 144 | 80 | 67 | 52 | 38 | 26 | 72 | 23 |
| 11 | 8.6 | 13 | b40 | 50 | 144 | 78 | *112 | 52 | 49 | 36 | 57 | 20 |
| 12 | 8.1 | 12 | b30 | 46 | b95 | 171 | 126 | 64 | 43 | 82 | 56 | *19 |
| 13 | *8.1 | 11 | 39 | b45 | a90 | 134 | 542 | 72 | 40 | 61 | 48 | 19 |
| 14 | 7.5 | 11 | 40 | b40 | a85 | 120 | 1,280 | 64 | *36 | 39 | 43 | 18 |
| 15 | 9.8 | 11 | 35 | 43 | *85 | *116 | 412 | 61 | 35 | 31 | 106 | 16 |
| 16 | 13 | 12 | b30 | 39 | 80 | 373 | 268 | 53 | 32 | 34 | *74 | 15 |
| 17 | 10 | 21 | 30 | b37 | 87 | 353 | 201 | *50 | 29 | 27 | 59 | 15 |
| 18 | 9.8 | *16 | 64 | *b35 | 74 | 431 | 164 | 49 | 27 | 25 | 54 | 14 |
| 19 | 9.8 | 37 | 46 | b35 | 67 | 572 | 138 | 47 | 38 | *27 | 49 | 13 |
| 20 | 9.8 | 95 | 37 | b37 | 64 | 418 | 120 | 46 | 53 | 24 | 46 | 13 |
| 21 | 9.2 | 34 | b35 | b40 | 63 | 302 | 124 | 47 | 39 | 23 | 44 | 13 |
| 22 | 9.2 | 23 | b35 | b35 | 91 | 493 | 122 | 83 | 32 | 21 | 47 | 12 |
| 23 | 9.8 | 21 | 40 | b33 | 284 | 321 | 100 | 63 | 42 | 67 | 56 | 13 |
| 24 | 9.8 | 21 | 31 | b37 | 204 | 244 | 116 | 52 | 53 | 68 | 40 | 14 |
| 25 | 9.8 | 21 | b30 | b38 | 162 | 232 | 118 | 66 | 37 | 49 | 37 | 33 |
| 26 | 9.2 | 19 | b28 | b35 | 136 | 220 | 152 | 53 | 36 | 37 | 36 | 21 |
| 27 | 9.8 | 18 | 48 | b28 | 165 | 169 | 132 | 48 | 30 | 36 | 33 | 17 |
| 28 | 16 | 32 | 84 | b25 | 164 | 150 | 114 | 48 | 28 | 57 | 32 | 17 |
| 29 | 19 | 63 | 320 | b28 | - | 132 | 102 | 54 | 27 | 65 | 32 | 17 |
| 30 | 15 | 29 | 367 | b25 | ------- | 114 | 90 | 53 | 26 | 42 | 30 | 19 |
| 31 | 12 | ------- | 160 | b27 | ------- | 105 | ------- | 46 | ------- | 37 | 64 | ------- |
| Total | 316.0 | 665 | 1,920 | 1,454 | 4,592 | 6,342 | 5,371 | 1,839 | 1,119 | 1,157 | 1,611 | 603 |
| Mean | 10.2 | 22.2 | 61.9 | 46.9 | 164 | 205 | 179 | 59.3 | 37.3 | 37.3 | 52.0 | 20.1 |
| Cfsm | 0.243 | 0.529 | 1.47 | 1.12 | 3.90 | 4.88 | 4.26 | 1.41 | 0.888 | 0.888 | 1.24 | 0.479 |
| In. | 0.28 | 0.59 | 1.70 | 1.29 | 4.07 | 5.62 | 4.76 | 1.63 | 0.99 | 1.02 | 1.43 | 0.53 |

Calendar year 1954: Max 1,360 Min 6.1 Mean 66.4 Cfsm 1.58 In. 21.47
Water year 1954-55: Max 1,280 Min 7.5 Mean 73.9 Cfsm 1.76 In. 23.91

Peak discharge (base, 1,100 cfs).--Feb. 6 (4:30 p.m.) 2,080 cfs (5.88 ft); Apr. 13 (12 p.m.) 4,260 cfs (7.55 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Watauga River near Sugar Grove.

b Stage-discharge relation affected by ice.

## Roan Creek near Neva, Tenn.

Location.--Lat 36°22'37", long 81°53'14", 1.1 miles downstream from Avery Branch, 1.7 miles southwest of Neva, Johnson County, and 2.2 miles upstream from Hopper Creek.

Drainage area.--102 sq mi.

Records available.--June 1942 to July 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 2,103.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--12 years (1942-54), 102 cfs.

Extremes.--Maximum discharge during period October 1954 to July 1955, 3,590 cfs Mar. 18 (gage height, 6.26 ft); minimum, 8.6 cfs Oct. 26; minimum gage height, 1.00 ft Oct. 13, 14.
1942-55: Maximum discharge, that of Mar. 18, 1955; maximum gage height, 6.35 ft Jan. 22, 1954; minimum discharge, 5.0 cfs Sept. 17, 1954; minimum gage height, 0.88 ft Sept. 7, 8, 17, 1954.

Remarks.--Records good.

Revisions (water years).--WSP 1206: Drainage area. WSP 1336: 1942-47, 1948(M), 1951, 1952(M), 1953.

Rating tables, Oct. 1, 1954, to July 5, 1955 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 6 | | | | Feb. 7 to July 5 | | | |
|---|---|---|---|---|---|---|---|
| 1.0 | 9 | 2.0 | 157 | 1.1 | 21 | 2.5 | 300 |
| 1.1 | 15 | 2.5 | 295 | 1.2 | 29 | 3.0 | 475 |
| 1.3 | 33 | 3.0 | 470 | 1.4 | 52 | 4.0 | 960 |
| 1.5 | 59 | 3.7 | 770 | 1.7 | 99 | 5.0 | 1,860 |
| 1.7 | 94 | | | 2.0 | 161 | 5.2 | 2,100 |

Discharge, in cubic feet per second, October 1954 to July 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 28 | 15 | 39 | 115 | 37 | 424 | 135 | 128 | 42 | 25 | | |
| 2 | 27 | *20 | 32 | 89 | *63 | *334 | 124 | 112 | 39 | 23 | | |
| 3 | 15 | 21 | 27 | 68 | 92 | 252 | 120 | 101 | 37 | 22 | | |
| 4 | 13 | 19 | 23 | *62 | 76 | 194 | 103 | *94 | 37 | 21 | | |
| 5 | *11 | 27 | 25 | 87 | 87 | 163 | 95 | 86 | 34 | 27 | | |
| 6 | 13 | 24 | 73 | 109 | 754 | 258 | *135 | 78 | 33 | †27 | | |
| 7 | 24 | 21 | *38 | 111 | *876 | 379 | 179 | 75 | 41 | - | | |
| 8 | 14 | 19 | 36 | 96 | 386 | 279 | 157 | 72 | *50 | - | | |
| 9 | 13 | 18 | 56 | 85 | 237 | 202 | 135 | 66 | 51 | - | | |
| 10 | 12 | 17 | 66 | 74 | 170 | 166 | 120 | 62 | 40 | - | | |
| 11 | 12 | 16 | 48 | 83 | 148 | 141 | 154 | 63 | 50 | - | | |
| 12 | 11 | 15 | 40 | 68 | 114 | 178 | 205 | 70 | 45 | - | | |
| 13 | 11 | 14 | 51 | 64 | 85 | 231 | 297 | 85 | 39 | - | | |
| 14 | 11 | 14 | 53 | 54 | 85 | 205 | 1,560 | 131 | 38 | - | | |
| 15 | 36 | 14 | 52 | 56 | 85 | 231 | 576 | 120 | 34 | - | | |
| 16 | 26 | 13 | 45 | 52 | 80 | 1,600 | 344 | 95 | 31 | - | | |
| 17 | 16 | 17 | 40 | 46 | 110 | 1,130 | 249 | 85 | 29 | - | | |
| 18 | 13 | 15 | 65 | 44 | 105 | *2,080 | 194 | 75 | 27 | - | | |
| 19 | 11 | 16 | 69 | 48 | 99 | *1,460 | 161 | 68 | 30 | - | | |
| 20 | 10 | 56 | 56 | 43 | 90 | 872 | 139 | 62 | 45 | - | | |
| 21 | 10 | 35 | 46 | 40 | 81 | 507 | 176 | 59 | 42 | - | | |
| 22 | 10 | 26 | 45 | 45 | 97 | 676 | 252 | 66 | 32 | - | | |
| 23 | 9.6 | 22 | 47 | 41 | 487 | 487 | 205 | 58 | 32 | - | | |
| 24 | 9.6 | 25 | 45 | 38 | 407 | 337 | 202 | 56 | 30 | - | | |
| 25 | 9.0 | 28 | 39 | 34 | 264 | 309 | 210 | 62 | 28 | - | | |
| 26 | 9.0 | 23 | 37 | 38 | 192 | 376 | 294 | 56 | 39 | - | | |
| 27 | 9.6 | 21 | 38 | 38 | 222 | 340 | 279 | 52 | 27 | - | | |
| 28 | 14 | 26 | 52 | 31 | 340 | 282 | 222 | 53 | 26 | - | | |
| 29 | 22 | 82 | 215 | 34 | - | 225 | 177 | 50 | 25 | - | | |
| 30 | 20 | 51 | 277 | 30 | ------- | 182 | 148 | 60 | 27 | - | | |
| 31 | 17 | ------- | 170 | 32 | ------- | 154 | ------- | 48 | ------- | - | | ------- |
| Total | 466.8 | 730 | 1,945 | 1,855 | 5,869 | 14,654 | 7,347 | 2,348 | 1,080 | - | | |
| Mean | 15.1 | 24.3 | 62.7 | 59.8 | 210 | 473 | 245 | 75.7 | 36.0 | - | | |
| Cfsm | 0.148 | 0.238 | 0.615 | 0.586 | 2.06 | 4.64 | 2.40 | 0.742 | 0.353 | - | | |
| In. | 0.17 | 0.27 | 0.71 | 0.68 | 2.14 | 5.34 | 2.68 | 0.86 | 0.39 | - | | |

Calendar year 1954: Max 1,820 Min 6.2 Mean 79.9 Cfsm 0.783 In. 10.65
Water year 1954-55: Max - Min - Mean - Cfsm - In. -

Peak discharge (base, 1,400 cfs).--Feb. 6 (10 p.m.) 1,710 cfs (4.95 ft); Mar. 16 (6 p.m.) 2,880 cfs (5.78 ft); Mar. 18 (2:30 p.m.) 3,590 cfs (6.26 ft); Apr. 14 (4 a.m.) 2,310 cfs (5.36 ft).
* Discharge measurement made on this day.
† Result of discharge measurement.

## Watauga River below Wilbur Dam, Tenn.

Location.--Lat 36°20'39", long 82°07'46", 1,800 ft downstream from Wilbur Dam, 0.7 mile downstream from Big Laurel Branch, 2.7 miles downstream from Watauga Dam, and 5 miles east of Elizabethton, Carter County.
Drainage area.--471 sq mi.
Records available.--May 1903 to December 1908 and January 1948 to September 1955 in reports of Geological Survey. Published as "near Elizabethton" 1903-8. May 1903 to December 1908 (revised records) in Tennessee Division of Geology Bulletin 34.
Gage.--Water-stage recorder. Datum of gage is 1,550.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. May 11, 1903, to Dec. 31, 1908, chain gage at railroad bridge 2 miles downstream at different datum.
Average discharge.--12 years, 705 cfs (unadjusted).
Extremes.--Maximum discharge during year, 4,340 cfs May 31 (gage height, 36.46 ft); minimum daily, 10 cfs May 25, 26.
1903-8, 1948-55: Maximum discharge observed, 21,500 cfs Jan. 22, 1906 (gage height, 13.6 ft, site and datum then in use), from rating curve extended above 2,500 cfs; minimum daily, 2.4 cfs Aug. 14, 1949.
Revisions.--The maximum discharge for the water year 1950 has been revised to 3,570 cfs June 9, 1950 (gage height, 35.90 ft), superseding figure published in WSP 1173.
Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow completely regulated by Watauga Lake (see p. 242).
Revisions (water years).--WSP 1276: 1906(M). See also Records available. Revised figures of discharge, in cubic feet per second, for the water year 1950, superseding those published in WSP 1173, are given herewith:

Oct. 11, 1949..... 1,110
Oct. 12, 1949..... 1,120

| Month | Observed | | | | Adjusted† | | |
|---|---|---|---|---|---|---|---|
| | Cfs-days | Maximum | Minimum | Mean | Mean | Per square mile | Runoff in inches |
| October 1949..... | 32,557 | 1,190 | 526 | 1,050 | - | - | - |
| Calendar year 1949..... | 121,392.7 | 1,190 | 2.4 | 333 | 827 | 1.76 | 23.82 |
| Water year 1949-50..... | 256,409 | 1,190 | 41 | 702 | 795 | 1.69 | 22.90 |

† Adjusted for change in contents in Watauga Lake.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 31 | | | | Jan. 1 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 31.5 | 49 | 32.5 | 270 | 31.0 | 9.0 | 32.7 | 340 |
| 31.7 | 79 | 32.7 | 340 | 31.1 | 13 | 33.0 | 475 |
| 32.0 | 136 | | | 31.3 | 26 | 33.5 | 820 |
| Note.--Same as following table above 32.7 ft. | | | | 31.6 | 58 | 34.0 | 1,280 |
| | | | | 31.9 | 110 | 35.2 | 2,660 |
| | | | | 32.2 | 180 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,600 | 2,280 | 1,620 | 730 | 332 | *57 | 60 | 144 | 874 | 44 | 928 | 488 |
| 2 | 77 | *2,200 | 1,590 | 68 | *585 | 54 | 58 | 854 | 1,110 | 43 | 1,060 | 438 |
| 3 | 73 | 2,260 | 1,510 | 1,540 | 690 | 54 | 58 | 66 | 864 | 43 | *1,010 | 466 |
| 4 | 698 | 2,220 | 182 | *1,540 | 755 | 54 | 58 | *64 | 45 | 42 | 1,010 | 66 |
| 5 | *705 | 2,280 | 74 | 672 | 750 | 57 | *57 | 62 | 44 | 42 | 1,020 | 64 |
| 6 | 668 | 2,110 | 711 | 434 | 52 | 57 | 57 | 61 | 54 | 42 | 1,030 | 1,000 |
| 7 | 719 | 677 | *695 | 150 | 382 | 56 | 58 | 58 | *45 | *42 | 1,040 | *1,050 |
| 8 | 687 | 2,070 | 768 | 70 | 1,060 | 54 | 60 | 57 | 286 | 758 | 786 | 1,090 |
| 9 | 66 | 2,000 | 754 | 60 | 1,180 | 54 | 58 | 56 | 58 | 80 | 1,060 | 1,070 |
| 10 | 832 | 1,960 | 734 | 60 | 1,200 | 52 | 58 | 54 | 58 | 47 | 1,130 | 68 |
| 11 | 1,700 | 1,920 | 954 | 900 | 1,130 | 51 | 57 | 810 | 58 | 1,550 | 858 | 66 |
| 12 | 1,990 | 1,880 | 740 | 300 | 268 | 51 | 54 | 58 | 57 | 61 | 1,050 | 1,060 |
| 13 | 1,900 | 1,160 | 1,230 | 900 | 220 | 50 | 54 | 1,080 | 76 | 278 | 1,050 | 1,140 |
| 14 | 2,050 | 81 | 1,110 | 1,000 | 250 | 47 | 53 | 534 | 1,180 | 47 | 225 | 1,100 |
| 15 | 1,990 | 830 | 686 | 80 | 166 | 46 | 52 | 431 | 1,600 | 40 | 670 | 1,120 |
| 16 | 989 | 869 | 841 | 60 | 61 | 47 | 52 | 888 | 66 | 45 | 264 | 1,150 |
| 17 | 110 | 859 | 790 | 60 | 60 | 57 | 52 | 600 | 66 | 45 | 1,040 | 1,750 |
| 18 | 1,480 | 834 | 160 | 60 | 327 | 89 | 52 | 634 | 64 | 39 | 1,490 | 1,570 |
| 19 | 1,870 | 828 | 422 | 60 | 56 | 53 | 52 | 88 | 64 | 30 | 1,500 | 1,510 |
| 20 | 1,830 | 892 | 1,240 | 60 | 53 | 52 | 50 | 82 | 64 | 30 | 1,070 | 1,560 |
| 21 | 1,810 | 59 | 1,100 | 170 | 643 | 51 | 50 | 57 | 62 | 30 | 73 | 1,540 |
| 22 | 1,940 | 2,080 | 352 | 100 | 904 | 50 | 48 | 53 | 61 | 76 | 1,080 | 1,400 |
| 23 | 579 | 2,100 | 289 | 80 | 1,000 | 48 | 48 | 52 | 170 | 58 | 1,130 | 1,570 |
| 24 | 69 | 2,000 | 258 | 100 | 58 | 48 | 47 | 46 | 153 | 58 | 1,120 | 1,600 |
| 25 | 1,930 | 72 | 73 | 200 | 896 | 58 | 446 | 10 | 66 | 702 | 1,140 | 82 |
| 26 | 1,940 | 2,010 | 71 | 150 | 60 | 107 | 1,410 | 10 | 66 | 912 | 1,150 | 1,170 |
| 27 | 1,850 | 72 | 186 | 140 | 60 | 87 | 2,540 | 14 | 64 | 877 | 891 | 1,500 |
| 28 | 1,880 | 68 | 221 | 1,100 | 58 | 66 | 2,420 | 18 | 52 | 873 | 595 | 1,600 |
| 29 | 1,910 | 1,470 | 550 | 900 | - | 66 | 2,510 | 20 | 44 | 519 | 469 | 1,740 |
| 30 | 1,060 | 1,510 | 1,150 | 550 | ------- | 64 | 2,330 | 743 | 44 | 75 | 384 | 1,700 |
| 31 | 83 | ------- | 1,580 | 1,250 | ------- | 62 | ------- | 964 | ------- | 73 | 435 | ------- |
| Total | 37,085 | 41,631 | 22,641 | 13,444 | 13,256 | 1,779 | 12,959 | 8,668 | 7,515 | 7,601 | 27,758 | 31,728 |
| Mean | 1,196 | 1,388 | 730 | 434 | 473 | 57.4 | 432 | 280 | 250 | 245 | 895 | 1,058 |

| | Observed | | | | | | Adjusted† | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max | 2,490 | Min | 42 | Mean | 731 | Mean | 531 | Cfsm | 1.13 | In. | 15.32 |
| Water year 1954-55: | Max | 2,540 | Min | 10 | Mean | 619 | Mean | 648 | Cfsm | 1.38 | In. | 18.68 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Watauga Lake.
Note.--No gage-height record Jan. 7-31; discharge estimated on basis of weather records, records for station at Elizabethton, and releases at Wilbur Dam.

## Doe River at Elizabethton, Tenn.

Location.--Lat 36°20'40", long 82°12'37", on left bank 1,500 ft upstream from bridge on State Highway 91 at Elizabethton, Carter County, and 1 mile upstream from mouth.

Drainage area.--137 sq mi.

Records available.--June 1907 to June 1908 and September to December 1912 (gage heights only); December 1911 to September 1916 and November 1920 to September 1931 (published as "at Valley Forge"); June 1932 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,524.73 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. June 1907 to June 1908 and September to December 1912, staff gage a quarter of a mile upstream at different datum. December 1911 to September 1916 and November 1920 to September 1931, chain gage 3 miles upstream at altitude 1,610 ft (from topographic map). June to September 1932 staff gage at present site at datum 0.50 ft higher. September 1932 to January 1934 staff gage at present site and datum.

Average discharge.--36 years (1912-16, 1921-31, 1933-55), 212 cfs.

Extremes.--Maximum discharge during year, 2,910 cfs Mar. 16 (gage height, 4.59 ft); minimum, 34 cfs Jan. 31 (gage height, 0.47 ft).
1911-16, 1920-31, 1932-55: Maximum discharge, 7,300 cfs July 30, 1940 (gage height, 6.75 ft), from rating curve extended above 4,000 cfs; minimum, 17 cfs Aug. 31, Sept. 7, 1925 (gage height, 0.60 ft, site and datum then in use).

Remarks.--Records good.

Revisions (water years).--WSP 823: Drainage area. WSP 1336: 1933(M), 1938.

Rating table, water year 1954-55, (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.4 | 32 | 1.7 | 355 |
| .5 | 41 | 2.0 | 485 |
| .7 | 71 | 2.5 | 740 |
| .9 | 113 | 3.0 | 1,050 |
| 1.1 | 162 | 3.5 | 1,490 |
| 1.3 | 219 | 3.9 | 1,930 |
| 1.5 | 280 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 95 | 57 | 109 | 222 | *104 | *635 | 323 | 277 | 187 | 71 | 91 | 98 |
| 2 | 79 | *69 | 98 | 190 | 159 | 550 | 304 | 255 | 162 | 68 | *77 | 73 |
| 3 | 57 | 69 | 87 | *157 | 202 | 431 | 290 | *237 | 146 | 66 | 98 | 69 |
| 4 | *50 | 64 | 75 | 144 | 157 | 355 | 264 | 222 | 136 | 64 | 89 | 66 |
| 5 | 48 | 98 | 89 | 246 | 144 | 304 | 274 | 213 | 127 | 71 | 73 | 64 |
| 6 | 50 | 87 | 285 | 268 | 1,400 | 398 | *395 | 199 | 122 | 77 | 77 | 64 |
| 7 | 75 | 73 | *149 | 256 | *1,160 | 462 | 418 | 187 | *152 | *98 | 122 | *61 |
| 8 | 50 | 69 | 118 | 213 | 625 | 375 | 355 | 184 | 157 | 129 | 409 | 56 |
| 9 | 45 | 68 | 199 | 190 | 422 | 319 | 315 | 173 | 184 | 102 | 199 | 56 |
| 10 | 44 | 68 | 207 | 170 | 323 | 284 | 290 | 165 | 141 | 89 | 139 | 62 |
| 11 | 42 | 66 | 146 | 165 | 301 | 261 | 323 | 170 | 157 | 104 | 113 | 54 |
| 12 | 41 | 62 | 131 | 144 | 231 | 691 | 359 | 222 | 149 | 115 | 122 | 53 |
| 13 | 40 | 61 | 139 | 139 | 207 | 660 | 354 | 258 | 139 | 115 | 104 | 50 |
| 14 | 39 | 59 | 139 | 120 | 213 | 495 | 1,230 | 304 | 141 | 98 | 91 | 49 |
| 15 | 44 | 57 | 131 | 131 | 210 | 454 | 665 | 312 | 131 | 85 | 98 | 48 |
| 16 | 51 | 57 | 122 | 127 | 202 | 1,330 | 480 | 243 | 115 | 77 | 139 | 46 |
| 17 | 45 | 79 | 113 | 111 | 274 | 1,200 | 383 | 213 | 104 | 69 | 100 | 45 |
| 18 | 42 | 69 | 233 | 109 | 274 | 1,470 | 327 | 190 | 98 | 64 | 104 | 44 |
| 19 | 40 | 66 | 210 | 120 | 246 | *1,850 | 290 | 176 | 109 | 59 | 111 | 44 |
| 20 | 40 | 162 | 165 | 111 | 225 | 1,260 | 271 | 170 | 129 | 56 | 91 | 42 |
| 21 | 39 | 146 | 141 | 104 | 207 | 795 | 284 | 179 | 111 | 59 | 79 | 41 |
| 22 | 40 | 113 | 136 | 124 | 251 | 1,100 | 387 | 176 | 100 | 81 | 71 | 40 |
| 23 | 40 | 98 | 122 | 120 | 795 | 834 | 308 | 170 | 102 | 68 | 81 | 39 |
| 24 | 40 | 93 | 136 | 109 | 650 | 645 | 298 | 162 | 100 | 181 | 73 | 41 |
| 25 | 39 | 91 | 120 | 100 | 490 | 635 | 343 | 190 | 91 | 144 | 66 | 93 |
| 26 | 39 | 79 | 113 | 95 | 395 | 729 | 575 | 168 | 102 | 102 | 61 | 77 |
| 27 | 41 | 73 | 118 | 106 | 503 | 635 | 530 | 141 | 87 | 81 | 59 | 51 |
| 28 | 73 | 85 | 157 | 83 | 665 | 530 | 431 | 139 | 81 | 84 | 57 | 51 |
| 29 | 95 | 199 | 410 | 98 | - | 458 | 359 | 354 | 77 | 269 | 54 | 57 |
| 30 | 93 | 134 | 476 | 87 | ------ | 391 | 308 | 323 | 75 | 131 | 53 | 51 |
| 31 | 68 | ---- | 287 | 68 | ------ | 355 | ------ | 231 | ------ | 102 | 134 | ------ |
| Total | 1,624 | 2,571 | 5,161 | 4,429 | 11,035 | 20,891 | 11,733 | 6,603 | 3,712 | 2,979 | 3,235 | 1,685 |
| Mean | 52.4 | 85.7 | 166 | 143 | 394 | 674 | 391 | 213 | 124 | 96.1 | 104 | 56.2 |
| Cfsm | 0.382 | 0.626 | 1.21 | 1.04 | 2.88 | 4.92 | 2.85 | 1.55 | 0.905 | 0.701 | 0.759 | 0.410 |
| In. | 0.44 | 0.70 | 1.40 | 1.20 | 3.00 | 5.67 | 3.19 | 1.79 | 1.01 | 0.81 | 0.88 | 0.46 |

Calendar year 1954: Max 2,900 Min 32 Mean 187 Cfsm 1.36 In. 18.51
Water year 1954-55: Max 1,850 Min 39 Mean 207 Cfsm 1.51 In. 20.55

Peak discharge (base, 1,700 cfs).--Feb. 6 (6:30 p.m.) 2,740 cfs (4.49 ft); Mar. 16 (6:30 p.m.) 2,910 cfs (4.59 ft); Mar. 19 (2 p.m.) 2,270 cfs (4.17 ft); Apr. 14 (5 a.m.) 1,910 cfs (3.88 ft).
* Discharge measurement made on this day.

## Watauga River at Elizabethton, Tenn.

Location.--Lat 36°21'21", long 82°13'26", on left bank 25 ft upstream from bridge on U. S. Highway 19E at Elizabethton, Carter County, 0.6 mile downstream from Doe River, and at mile 25.9.

Drainage area.--692 sq mi.

Records available.--February 1926 to July 1949, July 1953 to September 1955. Gage-height records collected in this vicinity December 1909 to July 1949 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,486.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Dec. 1, 1909, to Feb. 20, 1926, U. S. Weather Bureau tape gage and Feb. 21 to Oct. 4, 1926, staff gage, on Southern Railway bridge 10 ft upstream at same datum.

Average discharge.-- 24 years (1926-48, 1953-55), 1,056 cfs (unadjusted).

Extremes.--Maximum discharge during year, 6,910 cfs Mar. 18 (gage height, 8.14 ft); minimum, 112 cfs Oct. 10 (gage height, 1.92 ft); minimum daily, 122 cfs Oct. 9.
1926-49, 1953-55: Maximum discharge, 75,100 cfs Aug. 14, 1940 (gage height, 20.87 ft), from rating curve extended above 29,000 cfs on basis of contracted-opening determination of peak flow; minimum, 42 cfs Sept. 20, 1932; minimum daily, 85 cfs Dec. 3, 1953; minimum gage height, 1.54 ft Sept. 20, 1932.
Maximum stage known, about 21 ft in May 1901 ( discharge, 75,900 cfs), from high-water profile by Tennessee Valley Authority.

Remarks.--Records excellent. Flow partly regulated by Watauga Lake, 10 miles upstream (see p. 242).

Revisions (water years).--WSP 758: 1932(M). WSP 823: Drainage area. WSP 923: 1928(M). WSP 1336: 1927-28(M), 1930, 1931(m), 1932(m).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.9 | 108 | 4.0 | 1,260 |
| 2.1 | 150 | 4.5 | 1,720 |
| 2.3 | 203 | 5.0 | 2,220 |
| 2.6 | 310 | 6.0 | 3,310 |
| 3.0 | 520 | 6.4 | 3,830 |
| 3.5 | 835 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,610 | 2,040 | 1,700 | 1,120 | *441 | *1,150 | 544 | 809 | 1,290 | 162 | 974 | 550 |
| 2 | 170 | 2,250 | 1,670 | 372 | 734 | 1,030 | 502 | 1,350 | 1,360 | 155 | *1,140 | 511 |
| 3 | 124 | *2,290 | 1,520 | 1,590 | 1,000 | 779 | 478 | *466 | 1,160 | 148 | 1,120 | 502 |
| 4 | 720 | 2,300 | 289 | *1,740 | 986 | 640 | 427 | 395 | 287 | 148 | 1,110 | 139 |
| 5 | *716 | 2,330 | 170 | 1,080 | 970 | 550 | *432 | 365 | 209 | 170 | 1,120 | 135 |
| 6 | 696 | 2,150 | 943 | 813 | 1,900 | 855 | 640 | 342 | 212 | 160 | 1,120 | 1,010 |
| 7 | 770 | 797 | *852 | 488 | 2,420 | 1,150 | 800 | 324 | *241 | *183 | 1,180 | *1,160 |
| 8 | 730 | 2,010 | 873 | 395 | 2,130 | 793 | 670 | 310 | 413 | 766 | 1,180 | 1,090 |
| 9 | 122 | 2,140 | 972 | 337 | 1,760 | 622 | 574 | 294 | 358 | 336 | 1,340 | 1,120 |
| 10 | 795 | 1,990 | 971 | 302 | 1,750 | 532 | 514 | 278 | 263 | 192 | 1,320 | 246 |
| 11 | 1,580 | 1,920 | 1,080 | 1,100 | 1,710 | 466 | 538 | 1,070 | 319 | 1,700 | 1,110 | 130 |
| 12 | 1,940 | 1,950 | 804 | 474 | 631 | 1,130 | 646 | 465 | 332 | 252 | 1,170 | 998 |
| 13 | 1,920 | 1,140 | 1,330 | 1,080 | 544 | 1,160 | 598 | 1,540 | 306 | 422 | 1,240 | 1,230 |
| 14 | 2,090 | 294 | 1,240 | 1,180 | 556 | 850 | 1,920 | 1,270 | 1,300 | 206 | 324 | 1,160 |
| 15 | 2,030 | 886 | 847 | 263 | 496 | 779 | 1,190 | 1,140 | 2,030 | 165 | 743 | 1,200 |
| 16 | 1,150 | 949 | 866 | 238 | 324 | 2,960 | 835 | 1,400 | 313 | 162 | 380 | 1,220 |
| 17 | 154 | 941 | 896 | 212 | 490 | 2,630 | 676 | 1,050 | 222 | 155 | 982 | 1,800 |
| 18 | 1,360 | 904 | 383 | 206 | 776 | 3,820 | 574 | 1,120 | 209 | 146 | 1,800 | 1,700 |
| 19 | 1,850 | 904 | 626 | 222 | 444 | 3,530 | 508 | 375 | 212 | 126 | 1,560 | 1,650 |
| 20 | 1,800 | 1,040 | 1,340 | 212 | 385 | 2,450 | 454 | 346 | 241 | *122 | 1,290 | 1,690 |
| 21 | 1,880 | 210 | 1,340 | 297 | 954 | 1,590 | 508 | 314 | 218 | 124 | 216 | 1,690 |
| 22 | 1,890 | 1,900 | 499 | 253 | 1,250 | 2,470 | 821 | 298 | 197 | 180 | 1,090 | 1,470 |
| 23 | 656 | 2,180 | 384 | 234 | 2,540 | 1,750 | 658 | 286 | 321 | 160 | 1,250 | 1,710 |
| 24 | 126 | 2,170 | 378 | 233 | 1,250 | 1,230 | 622 | 270 | 295 | 248 | 1,250 | 1,740 |
| 25 | 1,820 | 342 | 203 | 316 | 1,650 | 1,140 | 1,060 | 270 | 197 | 853 | 1,220 | 303 |
| 26 | 1,900 | 908 | 195 | 260 | 720 | 1,400 | 2,600 | 234 | 259 | 1,050 | 1,200 | 1,220 |
| 27 | 1,900 | 355 | 282 | 258 | 835 | 1,210 | 3,600 | 206 | 222 | 1,030 | 912 | 1,470 |
| 28 | 1,970 | 158 | 349 | 1,220 | 1,180 | 958 | 3,430 | 203 | 197 | 1,020 | 588 | 1,750 |
| 29 | 1,940 | 1,630 | 922 | 888 | - | 800 | 3,270 | 447 | 172 | 763 | 604 | 1,900 |
| 30 | 1,120 | 1,660 | 1,750 | 652 | ------- | 682 | 3,060 | 1,040 | 168 | 242 | 433 | 1,860 |
| 31 | 170 | ------- | 1,830 | 1,310 | ------- | 598 | ------- | 1,450 | ------- | 183 | 576 | ------- |
| Total | 37,699 | 42,738 | 27,504 | 19,345 | 30,826 | 41,704 | 33,149 | 19,727 | 13,523 | 11,729 | 31,542 | 34,354 |
| Mean | 1,216 | 1,425 | 887 | 624 | 1,101 | 1,345 | 1,105 | 636 | 451 | 378 | 1,017 | 1,145 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 6,920 | Min 108 | Mean 998 | Mean 798 | Cfsm 1.15 | In. 15.65 |
| Water year 1954-55: | Max 3,820 | Min 122 | Mean 942 | Mean 971 | Cfsm 1.40 | In. 19.04 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Watauga Lake.

## South Fork Holston River at Kingsport, Tenn.

Location.--Lat 36°31'51", long 82°33'29", on left bank 1,000 ft downstream from new bridge on State Highway 81, 1¼ miles upstream from Reedy Creek, and 3¾ miles upstream from confluence with North Fork Holston River.

Drainage area.--1,935 sq mi.

Records available.--September 1925 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,175.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Dec. 2, 1953, at site 2 miles upstream at datum 8.47 ft higher. Since May 1, 1954, supplementary water-stage recorder on overflow channel on downstream side of new bridge on State Highway 81.

Average discharge.--30 years, 2,500 cfs (unadjusted).

Extremes.--Maximum discharge during year, 18,300 cfs Mar. 18 (gage height, 7.18 ft); minimum daily, 346 cfs June 5, 13.
1925-55: Maximum discharge, 68,800 cfs Aug. 14, 1940 (gage height, 18.80 ft, site and datum then in use); minimum daily, 301 cfs June 13, 1954.

Remarks.--Records good except those for periods of no gage-height record or backwater in overflow channel, which are fair. Discharge computed by adding discharges of main channel and overflow channel as determined from separate stage-discharge relations. Flow regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes (see p. 242). Some diversion upstream by the city of Kingsport, Tennessee, Eastman Corp., and Holston Ordnance Works.

Revisions (water years).--WSP 823: Drainage area. WSP 1033: 1930(M).

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,960 | 4,110 | 4,720 | 1,120 | 1,570 | c1,050 | 1,500 | 1,650 | 1,080 | 1,790 | 1,860 | 3,730 |
| 2 | 403 | 4,850 | 2,710 | 398 | 2,890 | 918 | 2,450 | 3,620 | 1,130 | 1,780 | 3,010 | 3,780 |
| 3 | 390 | 5,190 | 2,800 | 3,460 | 1,700 | 818 | 1,110 | 1,310 | 1,120 | 430 | 2,980 | 3,750 |
| 4 | 2,300 | 5,040 | a494 | 3,330 | 2,050 | 714 | 2,310 | 2,080 | 392 | 456 | 2,980 | 732 |
| 5 | 2,340 | 4,350 | a397 | 1,400 | 1,520 | 440 | 2,140 | 2,910 | 346 | 1,230 | 3,000 | 477 |
| 6 | 2,330 | 1,570 | a2,770 | 1,630 | c485 | c570 | 3,270 | 2,480 | 373 | 1,860 | 3,000 | 3,490 |
| 7 | 2,320 | 478 | a3,140 | 476 | c1,140 | c2,190 | 3,940 | 1,620 | 382 | 2,560 | 3,040 | 3,330 |
| 8 | 2,360 | 4,220 | a3,030 | 395 | 3,310 | 3,060 | 3,640 | 1,450 | 1,180 | 2,480 | 3,060 | 3,720 |
| 9 | 383 | 5,080 | 3,320 | 396 | 2,340 | 2,150 | 1,610 | 1,510 | 371 | 512 | 3,060 | 3,610 |
| 10 | 2,140 | 5,120 | 2,950 | 402 | 2,460 | 2,060 | 454 | 1,780 | 369 | 481 | 3,020 | 829 |
| 11 | 4,240 | 5,110 | 4,360 | 1,720 | 2,530 | 1,930 | 2,340 | 3,590 | 901 | 3,940 | 5,550 | 509 |
| 12 | 4,260 | 5,170 | 541 | 444 | 1,650 | a500 | 2,160 | 856 | 693 | 2,540 | 2,960 | 3,200 |
| 13 | 4,170 | 449 | 4,870 | 2,720 | 698 | a415 | 2,270 | 5,150 | 346 | 2,590 | 3,000 | 3,630 |
| 14 | 3,990 | 385 | 4,230 | 465 | 1,940 | a1,380 | 2,340 | 3,180 | 354 | 2,600 | 751 | 3,640 |
| 15 | 4,050 | 3,800 | 4,270 | 406 | 514 | a810 | 2,710 | 1,910 | 1,880 | 2,590 | 3,100 | 3,580 |
| 16 | 414 | 3,610 | 4,010 | 408 | 446 | a3,860 | 2,410 | 1,960 | 364 | 498 | 5,150 | 3,600 |
| 17 | 382 | 1,630 | 4,020 | 2,080 | c1,380 | a6,830 | 2,990 | 1,960 | 409 | 496 | 3,320 | 3,580 |
| 18 | 3,540 | 1,570 | 1,700 | 1,640 | 1,380 | a9,600 | 2,010 | 1,580 | 546 | 2,370 | 1,230 | 3,580 |
| 19 | 4,660 | 3,760 | 975 | 2,240 | 448 | c10,600 | 1,170 | 1,620 | 559 | 2,170 | 2,960 | 3,580 |
| 20 | 4,790 | 997 | 4,150 | 3,550 | 404 | c9,300 | 1,460 | 1,570 | 572 | 2,170 | 2,950 | 3,620 |
| 21 | 4,450 | 387 | 4,620 | 3,540 | 2,180 | 8,130 | 412 | 1,550 | 1,550 | 2,170 | 729 | 3,260 |
| 22 | 4,050 | 4,870 | 4,320 | 413 | 1,780 | c6,400 | 849 | 474 | 2,730 | 2,090 | 2,740 | 3,470 |
| 23 | 419 | 4,880 | 3,710 | 440 | c2,060 | 5,190 | 396 | 2,630 | 1,970 | 509 | 3,650 | 3,690 |
| 24 | 409 | 4,930 | 2,710 | 1,600 | 707 | 5,240 | 416 | 2,690 | 1,510 | 514 | 3,680 | 3,780 |
| 25 | 4,650 | 1,410 | 364 | 1,810 | 1,790 | 4,140 | 1,380 | 2,480 | 1,360 | 2,740 | 3,600 | 3,780 |
| 26 | 4,170 | 4,850 | 373 | 1,810 | 797 | c4,300 | 5,090 | 3,530 | 472 | 3,070 | 3,610 | 3,780 |
| 27 | 4,340 | 441 | 976 | 2,090 | c1,000 | 2,920 | 6,280 | 4,910 | 2,430 | 2,990 | 3,540 | 3,700 |
| 28 | 1,940 | 423 | 1,760 | 3,760 | c1,120 | 3,290 | 5,740 | 1,840 | 1,890 | 2,990 | 1,970 | 3,360 |
| 29 | 5,040 | 4,910 | 2,350 | 869 | - | 3,340 | 5,980 | 376 | 2,030 | 2,610 | 3,640 | 5,020 |
| 30 | 427 | 4,970 | 4,540 | 827 | ------- | 1,650 | 5,680 | 1,230 | 1,830 | 801 | 3,690 | 3,910 |
| 31 | 400 | ------- | 3,380 | 2,830 | ------- | 1,900 | ------- | 1,060 | ------- | 488 | 3,750 | ------- |
| Total | 82,717 | 98,560 | 88,580 | 48,669 | 42,289 | 105,695 | 76,507 | 66,556 | 31,139 | 56,515 | 94,580 | 97,717 |
| Mean | 2,668 | 3,285 | 2,857 | 1,570 | 1,510 | 3,410 | 2,550 | 2,147 | 1,038 | 1,823 | 3,051 | 3,257 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 5,190 | Min 301 | Mean 2,321 | Mean 1,954 | Cfsm 1.01 | In. 13.71 |
| Water year 1954-55: | Max 10,600 | Min 346 | Mean 2,437 | Mean 2,508 | Cfsm 1.30 | In. 17.60 |

† Adjusted for change in contents in South Holston, Watauga, Boone, and Fort Patrick Henry Lakes.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and releases from Fort Patrick Henry Lake.
c Backwater in overflow channel, from Horse Creek.

## North Fork Holston River near Saltville, Va.

Location.--Lat 36°53'48", long 81°44'47", on right bank 0.5 mile upstream from Cedar Branch bridge, 1.5 miles northeast of Saltville, Smyth County, and 7.8 miles downstream from Laurel Creek.

Drainage area.--222 sq mi.

Records available.--June 1907 to November 1908, November 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,703.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. June 11, 1907, to Nov. 12, 1908, chain gage on highway bridge 2.1 miles downstream at different datum. Nov. 2, 1920, to May 23, 1934, chain gage on highway bridge 0.5 mile downstream at datum 7.74 ft lower.

Average discharge.--34 years (1921-55), 286 cfs.

Extremes.--Maximum discharge during year, 10,300 cfs Mar. 16 (gage height, 9.42 ft); minimum, 25 cfs Sept. 20, 23, 24; minimum gage height, 0.55 ft Sept. 20.
1907-8, 1920-55: Maximum discharge recorded, 13,100 cfs Feb. 18, 1944 (gage height, 10.75 ft), from rating curve extended above 6,500 cfs by logarithmic plotting; minimum, 1 cfs Oct. 15, 16, 1947 (gage height, 0.13 ft), flow retarded by mine cave-in; minimum daily, 2 cfs Oct. 15, 1947.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Prior to September 1947, small diurnal fluctuation at low flow caused by mills above station. Records of chemical analyses for the water year 1955 are given in WSP 1400.

Revisions (water years).--WSP 758: Drainage area. WSP 1113: 1944-47.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 15-30)

| Oct. 1 to Mar. 16 | | | | Mar. 17 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 27 | 2.6 | 840 | 0.5 | 24 | 0.8 | 56 |
| .7 | 39 | 3.4 | 1,540 | .6 | 32 | 1.0 | 96 |
| 1.0 | 96 | 5.0 | 3,340 | .7 | 43 | | |
| 1.4 | 210 | 7.0 | 6,160 | | | | |
| 2.0 | 457 | | | | | | |

Note.--Same as preceding table above 1.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33 | 55 | 197 | 487 | 131 | a3,500 | *352 | 340 | 78 | 48 | 35 | 38 |
| 2 | 34 | 61 | 159 | 360 | 144 | a2,500 | 316 | 304 | 72 | 47 | 36 | 39 |
| 3 | 35 | 66 | 131 | 280 | 288 | a1,300 | 292 | 272 | 70 | 46 | 39 | 36 |
| 4 | 33 | 66 | 110 | 244 | 268 | a900 | 260 | 240 | 65 | 46 | 36 | 35 |
| 5 | 32 | 64 | 110 | 280 | 248 | a780 | 229 | 221 | 65 | 44 | 41 | 34 |
| 6 | 31 | 68 | 392 | 360 | 1,090 | a2,500 | 233 | 200 | 63 | 72 | 58 | 34 |
| 7 | 28 | 70 | 276 | 372 | 3,420 | a3,500 | 237 | 180 | 85 | 65 | 42 | 32 |
| 8 | 27 | 68 | a180 | 332 | 1,500 | a2,000 | 200 | 171 | 118 | 72 | 80 | 30 |
| 9 | 27 | 66 | a200 | 304 | 832 | a800 | 180 | 159 | 113 | 85 | 74 | 30 |
| 10 | 27 | 68 | a370 | 268 | 551 | a600 | 171 | 144 | 89 | 106 | 51 | 30 |
| 11 | 27 | 66 | a300 | 320 | 477 | a520 | 187 | 139 | 92 | 67 | 44 | 30 |
| 12 | 27 | 64 | a250 | 324 | 398 | a560 | 260 | 144 | 103 | 94 | 61 | 31 |
| 13 | 27 | 61 | a320 | 308 | 350 | a580 | 260 | 153 | 92 | 115 | 61 | 31 |
| 14 | 27 | 57 | a450 | 268 | 310 | aa620 | 3,520 | 187 | 83 | 92 | 50 | 30 |
| 15 | 44 | 53 | 364 | 244 | 284 | a900 | 1,790 | 308 | 74 | 69 | 50 | 29 |
| 16 | 312 | 52 | 316 | 225 | 268 | 5,500 | 984 | 233 | 70 | 60 | 46 | 27 |
| 17 | 131 | 52 | 252 | 194 | 332 | 4,050 | 658 | 194 | 63 | 51 | 44 | 27 |
| 18 | 81 | 53 | 372 | 177 | 368 | 4,640 | 502 | 168 | 58 | 46 | 81 | 26 |
| 19 | 63 | a60 | 776 | 187 | 348 | 3,340 | 425 | 147 | 67 | 46 | 162 | 26 |
| 20 | 52 | a90 | 507 | 174 | 312 | 1,740 | 372 | 131 | 74 | 44 | 101 | 26 |
| 21 | 47 | a120 | a350 | 150 | 280 | 1,220 | 340 | 123 | 67 | 42 | 67 | 26 |
| 22 | 42 | a140 | a270 | 177 | a300 | 2,840 | 394 | 120 | 60 | 41 | 53 | 26 |
| 23 | 39 | a100 | a230 | 165 | a900 | 2,120 | 360 | 120 | 58 | 39 | 60 | 25 |
| 24 | 38 | a95 | a200 | 150 | a1,100 | 1,180 | 364 | 110 | 60 | 39 | 58 | 26 |
| 25 | 37 | a90 | a180 | 150 | a700 | 856 | 487 | 128 | 60 | 42 | 48 | 30 |
| 26 | 35 | a85 | a170 | 142 | a520 | 1,270 | 776 | 120 | 65 | 44 | 42 | 30 |
| 27 | 35 | a80 | a160 | 134 | a1,000 | 1,180 | 746 | 103 | 63 | 41 | 39 | 30 |
| 28 | 37 | a100 | a220 | *123 | *a2,500 | 816 | *600 | 94 | 56 | 39 | 38 | 29 |
| 29 | *49 | a200 | a700 | 120 | - | 612 | 482 | 87 | 52 | *36 | 36 | 29 |
| 30 | 68 | *a320 | *a1,500 | 115 | ------- | 472 | 402 | *92 | *50 | 35 | 35 | *29 |
| 31 | 64 | ------- | 760 | 110 | ------- | 402 | ------- | 85 | ------- | 35 | *36 | ------- |
| Total | 1,589 | 2,590 | 10,772 | 7,244 | 19,219 | 53,798 | 16,379 | 5,217 | 2,185 | 1,748 | 1,704 | 901 |
| Mean | 51.3 | 86.3 | 347 | 234 | 686 | 1,735 | 546 | 168 | 72.8 | 56.4 | 55.0 | 30.0 |
| Cfsm | 0.231 | 0.389 | 1.56 | 1.05 | 3.09 | 7.82 | 2.46 | 0.757 | 0.328 | 0.254 | 0.248 | 0.135 |
| In. | 0.27 | 0.43 | 1.80 | 1.21 | 3.22 | 9.02 | 2.74 | 0.87 | 0.37 | 0.29 | 0.29 | 0.15 |

Calendar year 1954: Max 3,080 Min 24 Mean 207 Cfsm 0.932 In. 12.64
Water year 1954-55: Max 5,500 Min 25 Mean 338 Cfsm 1.52 In. 20.66

Peak discharge (base, 3,000 cfs).--Feb. 7 (3 a.m.) 4,250 cfs (5.72 ft); Mar. 1 (time unknown) 7,010 cfs (7.52 ft); Mar. 7 (time unknown) 8,880 cfs (8.64 ft); Mar. 16 (9 p.m.) 10,300 cfs (9.42 ft); Mar. 18 (7 p.m.) 7,350 cfs (7.71 ft); Mar. 22 (5 p.m.) 4,120 cfs (5.59 ft); Apr. 14 (11 a.m.) 5,520 cfs (6.60 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records and records for stations at Holston and near Gate City.

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## North Fork Holston River at Holston, Va.

Location.--Lat 36°46'29", long 82°04'22", on left bank at downstream side of bridge on U. S. Highway 19, 100 ft downstream from Greendale Creek, 0.4 mile upstream from Garrett Creek, 0.5 mile east of Holston, Washington County, and 0.6 mile upstream from Little Moccasin Creek.

Drainage area.--402 sq mi.

Records available.--June 1951 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,437.10 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 11,400 cfs Mar. 17 (gage height, 12.15 ft); minimum, 42 cfs Sept. 21 (gage height, 2.01 ft).
1951-55: Maximum discharge, that of Mar. 17, 1955; minimum, 41 cfs Sept. 8, 1954; minimum gage height, 1.98 ft Oct. 8, 9, 1953.

Remarks.--Records good. Records of chemical analyses and water temperatures for the water year 1955 are given in WSP 1400.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.9 | 34 | 3.0 | 450 |
| 2.0 | 45 | 4.0 | 1,000 |
| 2.1 | 65 | 6.0 | 2,570 |
| 2.2 | 95 | 8.0 | 4,800 |
| 2.5 | 214 | 10.0 | 7,750 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 180 | *95 | *360 | 910 | *218 | 7,300 | 715 | 566 | *146 | 77 | *71 | 47 |
| 2 | 120 | 98 | 272 | 688 | 327 | 5,300 | 632 | 500 | 130 | 77 | 71 | 49 |
| 3 | 71 | 95 | 214 | 525 | 627 | 2,260 | 583 | *450 | 126 | 74 | 71 | 47 |
| 4 | 61 | 98 | 183 | 445 | 572 | 1,560 | 520 | 410 | 120 | 71 | 71 | 49 |
| 5 | *59 | 102 | 188 | 470 | 495 | 1,420 | 465 | 390 | 116 | 71 | 86 | 49 |
| 6 | 57 | 98 | 566 | 550 | 2,060 | *5,770 | *480 | 365 | 123 | 223 | 120 | *47 |
| 7 | 51 | 98 | 500 | 588 | 5,650 | 6,700 | 470 | 336 | 142 | 196 | 98 | 47 |
| 8 | 51 | 98 | 295 | 525 | 2,670 | 3,510 | 410 | 309 | 254 | 142 | 83 | 47 |
| 9 | 51 | 102 | 336 | 480 | 1,520 | 1,560 | 365 | 290 | 276 | 196 | 146 | 47 |
| 10 | 51 | 106 | 632 | 435 | 1,060 | 1,170 | 341 | 267 | 196 | 201 | 116 | 47 |
| 11 | 49 | 109 | 550 | 545 | 910 | 1,000 | 390 | 267 | 192 | *383 | 83 | 47 |
| 12 | 49 | 106 | 415 | 610 | 797 | 1,100 | 505 | 286 | 214 | 600 | 95 | 53 |
| 13 | 51 | 102 | 550 | *566 | 594 | 1,100 | 512 | 327 | 210 | 385 | 112 | 47 |
| 14 | 51 | 95 | 770 | 495 | 520 | 1,170 | 3,350 | 485 | 170 | 313 | 98 | 47 |
| 15 | 55 | 89 | 654 | 435 | 500 | 1,630 | 2,480 | 715 | 150 | 290 | 83 | 49 |
| 16 | 260 | 86 | 540 | 400 | 515 | 7,040 | 1,420 | 561 | 138 | 210 | 83 | 47 |
| 17 | 263 | 86 | 435 | 355 | 770 | 7,160 | 1,000 | 445 | 123 | 162 | 74 | 45 |
| 18 | 138 | 83 | 674 | 318 | 852 | 6,540 | 797 | 370 | 112 | 146 | 77 | 45 |
| 19 | 106 | 95 | 1,100 | 332 | 770 | 5,950 | 688 | 322 | 123 | 130 | 196 | 45 |
| 20 | 86 | 154 | 770 | 309 | 660 | 3,070 | 594 | 276 | 146 | 112 | 183 | 44 |
| 21 | 77 | 205 | 561 | 286 | 583 | 2,160 | 535 | 249 | 130 | 92 | 126 | 43 |
| 22 | 71 | 218 | 440 | 295 | 583 | 5,220 | 583 | 232 | 138 | 92 | 92 | 45 |
| 23 | 65 | 170 | 370 | 304 | 1,990 | 3,620 | 561 | 240 | 120 | 83 | 77 | 47 |
| 24 | 65 | 162 | 332 | 281 | 2,120 | 2,030 | 572 | 245 | 116 | 80 | 74 | 55 |
| 25 | 65 | 158 | 304 | 258 | 1,380 | 1,560 | 770 | 232 | 120 | 95 | 65 | 61 |
| 26 | 61 | 150 | 267 | 236 | 1,000 | 2,160 | 1,140 | 254 | 126 | 95 | 47 | 57 |
| 27 | 59 | 134 | 249 | 230 | 2,120 | 2,030 | 1,200 | 205 | 123 | 92 | 41 | 59 |
| 28 | 59 | 146 | 327 | 230 | 4,560 | 1,480 | 1,000 | 183 | 109 | 80 | 42 | 61 |
| 29 | 71 | 450 | 1,640 | 220 | - | 1,170 | 825 | 166 | 95 | 77 | 43 | 61 |
| 30 | 95 | 545 | 2,480 | 210 | ------- | 940 | 688 | 166 | 80 | 71 | 43 | 68 |
| 31 | 109 | ------- | 1,380 | 188 | ------- | 797 | ------- | 166 | ------- | 65 | 44 | ------- |
| Total | 2,657 | 4,333 | 18,354 | 12,719 | 36,423 | 95,477 | 24,591 | 10,275 | 4,364 | 4,981 | 2,711 | 1,502 |
| Mean | 85.7 | 144 | 592 | 410 | 1,301 | 3,080 | 820 | 331 | 145 | 161 | 87.5 | 50.1 |
| Cfsm | 0.213 | 0.358 | 1.47 | 1.02 | 3.24 | 7.66 | 2.04 | 0.823 | 0.361 | 0.400 | 0.218 | 0.125 |
| In. | 0.25 | 0.40 | 1.70 | 1.18 | 3.37 | 8.83 | 2.28 | 0.95 | 0.40 | 0.46 | 0.25 | 0.14 |

Calendar year 1954: Max 5,160 Min 42 Mean 365 Cfsm 0.908 In. 12.33
Water year 1954-55: Max 7,300 Min 41 Mean 598 Cfsm 1.49 In. 20.21

Peak discharge (base, 4,000 cfs).--Feb. 7 (7 a.m.) 6,850 cfs (9.39 ft); Mar. 1 (11:30 p.m.) 8,200 cfs (10.26 ft); Mar. 7 (1 to 2 a.m.) 10,100 cfs (11.48 ft); Mar. 17 (1.30 a.m.) 11,400 cfs (12.15 ft); Mar. 18 (11 p.m.) 9,160 cfs (10.89 ft); Mar. 22 (12 m.) 6,400 cfs (9.13 ft); Apr. 14 (5 p.m.) 5,950 cfs (8.79 ft).

* Discharge measurement made on this day.

## North Fork Holston River near Gate City, Va.

Location.--Lat 36°36'31", long 82°34'05", on left bank 100 ft upstream from bridge on U. S. Highway 23, 1.6 miles downstream from Big Moccasin Creek, and 2.1 miles southeast of Gate City, Scott County.

Drainage area.--672 sq mi.

Records available.--November 1931 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,197.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years (1932-55), 824 cfs.

Extremes.--Maximum discharge during year, 16,100 cfs Mar. 17 (gage height, 11.66 ft); minimum, 49 cfs Sept. 23, 24; minimum gage height 1.23 ft Oct. 14.
1931-55: Maximum discharge, 23,700 cfs Aug. 14, 1940 (gage height, 14.75 ft); minimum, 37 cfs Dec. 24, 1943, result of freezeup; minimum gage height, 1.00 ft Jan. 6, 1940.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Diurnal fluctuation at low flow caused by small dam above station.

Revisions (water years).--WSP 783: 1932(M). WSP 823: Drainage area. WSP 1276: 1932-34.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 17

| | | | |
|---|---|---|---|
| 1.2 | 53 | 4.0 | 1,760 |
| 1.5 | 119 | 6.0 | 4,240 |
| 2.0 | 300 | 8.0 | 8,110 |
| 2.5 | 540 | 12.0 | 16,800 |
| 3.0 | 860 | | |

Mar. 18 to Sept. 30

| | | | |
|---|---|---|---|
| 1.2 | 40 | 2.0 | 310 |
| 1.4 | 75 | 3.0 | 910 |
| 1.7 | 170 | 4.0 | 1,760 |

Note.--Same as preceding table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 102 | 119 | 588 | 1,520 | a310 | 9,790 | 1,170 | 875 | 210 | 113 | 98 | 85 |
| 2 | 261 | 147 | 405 | 1,030 | a450 | *11,000 | 1,050 | 757 | 190 | 100 | 85 | 92 |
| 3 | 240 | 150 | 316 | 758 | *a900 | 5,480 | 980 | 672 | 174 | 100 | 82 | 92 |
| 4 | 147 | 150 | a250 | 600 | a800 | 2,700 | 875 | 610 | 162 | 116 | *92 | 88 |
| 5 | 103 | 150 | a275 | 534 | a720 | 2,240 | 798 | 550 | 155 | 122 | 88 | 85 |
| 6 | 86 | 147 | a800 | 576 | a3,500 | 5,500 | 833 | 509 | 151 | 245 | 90 | 88 |
| 7 | *77 | 147 | a600 | 642 | a8,000 | 13,800 | *910 | 465 | 170 | 270 | 132 | 80 |
| 8 | 71 | 141 | a400 | 648 | a4,000 | 5,860 | 791 | 432 | 202 | 280 | 170 | *75 |
| 9 | 66 | *138 | a450 | 582 | 2,820 | 3,000 | 692 | 400 | 315 | 194 | 208 | 73 |
| 10 | 64 | 131 | a850 | 546 | 1,810 | 2,080 | 634 | 375 | *335 | 230 | 220 | 85 |
| 11 | 62 | 138 | a700 | 866 | 1,420 | 1,610 | 634 | *360 | 265 | 285 | 215 | 80 |
| 12 | 62 | 141 | a560 | 1,070 | 1,240 | 1,560 | 812 | 350 | 260 | 644 | 166 | 82 |
| 13 | 62 | 138 | a700 | *892 | 932 | 1,560 | 910 | 432 | 285 | *738 | 136 | 67 |
| 14 | 60 | 131 | a1,100 | a720 | 839 | 1,520 | 1,430 | 679 | 265 | 470 | 155 | 67 |
| 15 | 64 | 125 | *a900 | a640 | 758 | 1,760 | 5,400 | 1,090 | 215 | 365 | 178 | 71 |
| 16 | 97 | 122 | 758 | a580 | 777 | 7,160 | 2,410 | 980 | 190 | 350 | 166 | 65 |
| 17 | 190 | 119 | 612 | a520 | 1,420 | 14,900 | 1,660 | 731 | 170 | 260 | 143 | 63 |
| 18 | 304 | 114 | 600 | a450 | 1,610 | 11,500 | 1,250 | 580 | 155 | 202 | 136 | 63 |
| 19 | 192 | 108 | 1,240 | a480 | 1,340 | 13,800 | 1,050 | 492 | 143 | 174 | 122 | 61 |
| 20 | 141 | 116 | 1,240 | a450 | 1,060 | 7,270 | 910 | 448 | 143 | 155 | 198 | 57 |
| 21 | 116 | 164 | 825 | a400 | 884 | 4,080 | 826 | 380 | 174 | 132 | 315 | 55 |
| 22 | 100 | 232 | 624 | a430 | 846 | 3,160 | 791 | 355 | 166 | 150 | 240 | 55 |
| 23 | 92 | 256 | 502 | a450 | 3,420 | 3,160 | 812 | 335 | 170 | 147 | 198 | 52 |
| 24 | 86 | 228 | 430 | a400 | 4,080 | 4,190 | 819 | 345 | 190 | 255 | 155 | 59 |
| 25 | 82 | 202 | 390 | a370 | 2,580 | 2,820 | 1,090 | 355 | 159 | 210 | 132 | 95 |
| 26 | 79 | 199 | 358 | a350 | 1,710 | 3,930 | 1,380 | 330 | 159 | 129 | 129 | 95 |
| 27 | 82 | 185 | 320 | a330 | 2,140 | 3,780 | 1,660 | 330 | 159 | 136 | 126 | 90 |
| 28 | 84 | 213 | 312 | a330 | 6,860 | 2,880 | 1,560 | 280 | 155 | 132 | 100 | 82 |
| 29 | 84 | 367 | 876 | a320 | - | 2,240 | 1,250 | 245 | 140 | 116 | 90 | 78 |
| 30 | 92 | 680 | 3,780 | a310 | ------- | 1,710 | 1,020 | 220 | 126 | 103 | 88 | 110 |
| 31 | 106 | ------- | 2,580 | a300 | ------- | 1,420 | ------- | 210 | ------- | 100 | 82 | ------- |
| Total | 3,454 | 5,398 | 24,341 | 18,094 | 57,226 | 169,460 | 36,407 | 15,172 | 5,753 | 7,023 | 4,535 | 2,290 |
| Mean | 111 | 180 | 785 | 584 | 2,044 | 5,466 | 1,214 | 489 | 192 | 227 | 146 | 76.3 |
| Cfsm | 0.165 | 0.268 | 1.17 | 0.869 | 3.04 | 8.13 | 1.81 | 0.728 | 0.286 | 0.338 | 0.217 | 0.114 |
| In. | 0.19 | 0.30 | 1.35 | 1.00 | 3.17 | 9.37 | 2.02 | 0.84 | 0.32 | 0.39 | 0.25 | 0.13 |

Calendar year 1954: Max 11,000 Min 50 Mean 552 Cfsm 0.821 In. 11.15
Water year 1954-55: Max 14,900 Min 52 Mean 957 Cfsm 1.42 In. 19.33

Peak discharge (base, 6,000 cfs).--Feb. 7 (time unknown) 10,400 cfs (9.07 ft); Mar. 1 (9:30 p.m.) 12,700 cfs (10.25 ft); Mar. 7 (12 m.) 14,700 cfs (11.06 ft); Mar. 17 (1 p.m.) 16,100 cfs (11.66 ft); Mar. 19 (4 a.m.) 14,900 cfs (11.22 ft); Mar. 22 (11 p.m.) 11,900 cfs (9.85 ft); Apr. 15 (5:30 a.m.) 7,270 cfs (7.65 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for North Fork Holston River at Holston and North Fork Holston River near Saltville.

## Holston River at Surgoinsville, Tenn.

Location.--Lat 36°28'19", long 82°50'50", on right bank 1,500 ft upstream from Surgoinsville Creek and county bridge at Surgoinsville, Hawkins County, 9.8 miles upstream from Big Creek, and at mile 118.4. Records include flow of Surgoinsville Creek.

Drainage area.--2,874 sq mi, includes that of Surgoinsville Creek.

Records available.--April 1941 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,088.46 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--14 years, 3,468 cfs (unadjusted).

Extremes.--Maximum discharge during year, 33,500 cfs Mar. 19 (gage height, 12.12 ft); minimum, 503 cfs Nov. 1 (gage height, 1.27 ft).
1941-55: Maximum discharge, 59,600 cfs Feb. 18, 1944 (gage height, 17.48 ft); minimum, 470 cfs Oct. 21, 1941 (gage height, 1.16 ft).

Remarks.--Records good. Flow partly regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes (see p. 242).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 13-Sept. 30)

| Oct. 1 to Mar. 16 | | | | Mar. 16 to Sept. 30 | |
|---|---|---|---|---|---|
| 1.3 | 530 | 4.0 | 5,840 | 5.0 | 8,550 |
| 1.5 | 730 | 5.0 | 8,550 | 7.0 | 14,500 |
| 2.0 | 1,400 | 7.0 | 14,700 | 9.0 | 21,100 |
| 3.0 | 3,350 | | | 11.1 | 29,100 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,490 | 2,210 | 5,560 | 4,400 | 2,700 | 10,300 | 4,010 | 4,970 | 1,450 | 1,960 | 948 | 3,920 |
| 2 | 2,540 | 4,550 | 4,000 | 1,960 | 2,500 | 13,300 | 3,280 | 3,000 | 1,530 | 1,800 | 2,940 | 3,940 |
| 3 | 720 | *5,570 | 3,130 | 2,930 | 3,730 | *8,050 | 3,440 | 3,520 | 1,460 | 1,560 | *3,020 | 3,920 |
| 4 | *1,700 | 5,340 | 2,370 | 4,330 | 2,940 | 4,680 | 2,770 | 2,900 | 1,160 | 818 | 3,020 | 2,940 |
| 5 | 2,610 | 5,370 | 670 | *2,740 | 3,230 | 3,260 | 3,630 | *3,400 | 763 | 953 | 3,050 | 1,070 |
| 6 | 2,570 | 2,680 | 1,550 | 1,910 | 2,940 | 5,430 | 4,410 | 3,120 | 741 | 1,580 | 3,070 | 1,960 |
| 7 | 2,560 | 1,600 | 3,920 | 1,820 | 9,220 | 14,500 | *5,240 | 2,120 | 774 | 1,970 | 3,170 | 3,820 |
| 8 | 2,640 | 2,670 | *3,820 | 1,120 | 10,400 | 12,300 | 5,370 | 2,440 | 840 | *2,630 | 3,260 | *3,840 |
| 9 | 1,450 | 4,610 | 3,530 | 1,020 | *6,980 | 6,660 | 3,600 | 1,780 | 1,760 | 2,040 | 3,200 | 3,820 |
| 10 | 1,320 | 4,980 | 3,720 | 960 | 4,460 | 5,160 | 1,940 | 2,130 | 900 | 924 | 3,440 | 2,850 |
| 11 | 3,220 | 5,280 | 4,740 | 2,030 | 4,440 | 4,540 | 2,230 | 3,300 | 936 | 2,050 | 3,890 | 1,020 |
| 12 | 4,850 | 5,390 | 3,190 | 2,340 | 4,010 | 3,460 | 3,110 | 2,480 | 1,880 | 2,810 | 4,310 | 1,780 |
| 13 | 4,390 | 3,000 | 3,500 | 2,140 | 2,010 | 2,960 | 3,420 | 3,890 | 876 | 2,940 | 3,220 | 3,920 |
| 14 | 4,210 | 560 | 5,700 | 3,140 | 2,670 | 3,400 | 4,010 | 5,530 | 852 | 2,690 | 2,580 | 3,890 |
| 15 | 4,330 | 2,260 | 5,060 | 1,190 | 2,080 | 3,130 | 7,390 | 4,440 | 2,020 | 2,600 | 1,750 | 3,840 |
| 16 | 2,380 | 3,900 | 5,220 | 1,070 | 1,450 | 8,830 | 6,020 | 3,370 | 1,170 | 2,120 | 4,240 | 3,820 |
| 17 | 550 | 2,470 | 5,110 | 1,690 | 2,280 | *21,600 | 5,400 | 3,170 | 807 | 1,020 | 4,180 | 3,800 |
| 18 | 1,730 | 1,670 | 3,410 | 2,580 | 4,140 | 23,400 | 4,440 | 2,540 | 807 | 1,300 | 2,600 | 3,800 |
| 19 | 4,860 | 2,430 | 2,310 | 2,600 | 2,320 | *29,000 | 2,840 | 2,710 | 912 | 2,100 | 2,350 | 3,770 |
| 20 | 4,740 | 2,840 | 4,010 | 3,470 | 1,810 | 19,600 | 2,320 | 2,150 | 936 | 2,300 | 3,200 | 3,800 |
| 21 | 5,130 | 858 | 5,470 | 4,180 | 2,650 | 14,100 | 2,080 | 2,110 | 1,090 | 2,180 | 2,690 | 3,530 |
| 22 | 4,090 | 2,530 | 5,520 | 2,120 | 3,020 | 17,500 | 1,610 | 1,370 | 2,200 | 2,120 | 1,810 | 3,630 |
| 23 | 2,890 | 5,100 | 4,910 | 1,100 | 6,070 | 16,100 | 1,530 | 1,940 | 2,970 | 1,920 | 3,580 | 3,800 |
| 24 | 540 | 5,040 | 3,650 | 1,540 | 6,330 | 11,800 | 1,430 | 3,110 | 1,980 | 1,030 | 3,840 | 3,840 |
| 25 | 2,470 | 3,860 | 1,720 | 2,300 | 5,090 | 9,310 | 2,490 | 3,150 | 2,130 | *1,770 | 3,770 | 3,890 |
| 26 | 4,470 | 2,700 | 796 | 2,260 | 3,650 | 10,200 | 4,790 | 3,810 | 1,280 | 3,050 | 3,800 | 3,840 |
| 27 | 4,620 | 3,330 | 876 | 2,410 | 3,460 | 9,390 | 8,610 | 5,320 | 1,860 | 2,960 | 3,750 | 3,800 |
| 28 | 3,300 | 650 | 1,790 | 3,610 | 7,170 | 7,360 | 7,600 | 3,420 | 2,050 | 2,980 | 3,070 | 3,510 |
| 29 | 3,390 | 2,810 | 2,580 | 2,890 | - | 6,470 | 7,770 | 1,600 | 2,090 | 3,050 | 3,200 | 3,750 |
| 30 | 3,040 | 5,430 | 6,930 | 1,200 | ------- | 5,450 | 7,120 | 1,330 | 2,130 | 2,120 | 3,890 | 4,960 |
| 31 | 550 | ------- | 7,440 | 1,960 | ------- | 3,700 | ------- | 1,460 | ------- | 988 | 3,920 | ------- |
| Total | 91,350 | 101,688 | 116,202 | 71,010 | 113,750 | 314,940 | 123,900 | 91,580 | 42,354 | 62,333 | 98,758 | 104,070 |
| Mean | 2,947 | 3,390 | 3,748 | 2,291 | 4,062 | 10,160 | 4,130 | 2,954 | 1,412 | 2,011 | 3,186 | 3,469 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 16,100 | Min 530 | Mean 3,046 | Mean 2,679 | Cfsm 0.932 | In. 12.65 |
| Water year 1954-55: | Max 29,000 | Min 540 | Mean 3,649 | Mean 3,720 | Cfsm 1.29 | In. 17.57 |

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston, Watauga, Boone, and Fort Patrick Henry Lakes.

## Mossy Spring near Jefferson City, Tenn.

Location.--Lat 36°07'17", long 83°28'22", in spring pool, 15 ft upstream from water plant intake, 300 ft south of city water plant, tributary to unnamed branch at point 500 ft upstream from confluence of Buffalo Wallows Branch and unnamed branch, 1.1 miles east of Jefferson City Post Office.

Records available.--September 1950 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,092.3 ft above mean sea level (Tennessee Valley Authority construction plans for waterworks).

Extremes.--Maximum discharge during year, 170 cfs Mar. 21 (gage height, 2.11 ft); minimum daily, 7.5 cfs Nov. 13, 27.
1950-55: Maximum discharge, that of Mar. 21, 1955; minimum daily, 7.4 cfs Jan. 8, 9, 1954.

Remarks --Records good except those for periods of no gage-height record, which are fair. Records do not include diversion averaging about 0.75 cfs for the water supply of Jefferson City.

Rating tables, water year 1954-55 (gage height, in feet, and discharge in cubic feet per second)

| Oct. 1 to Feb. 22 | | | | Feb. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 7.5 | 1.0 | 35 | 0.6 | 8.5 | 1.2 | 54 |
| .7 | 13 | 1.2 | 53 | .7 | 14 | 1.5 | 89 |
| .8 | 20 | | | .8 | 20 | 2.0 | 155 |
| | | | | 1.0 | 35 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | a10 | *11 | 27 | a22 | 85 | 95 | 49 | 25 | 18 | 14 | 13 |
| 2 | 11 | a10 | 10 | 24 | a23 | 89 | 93 | 47 | 25 | 17 | 14 | *12 |
| 3 | 12 | a10 | 9.7 | 21 | 24 | *81 | 91 | 47 | 25 | 17 | 14 | 12 |
| 4 | 10 | a10 | 9.2 | 19 | *23 | 77 | 89 | 46 | 24 | 22 | *14 | 12 |
| 5 | 11 | a9.5 | 14 | 17 | 21 | 73 | *88 | 45 | 24 | 21 | 15 | 12 |
| 6 | 11 | a9.5 | 37 | 17 | 38 | 82 | 87 | 44 | 24 | 19 | 14 | 12 |
| 7 | *10 | a9.5 | 20 | *16 | 70 | 90 | 89 | 43 | 23 | a18 | 15 | 12 |
| 8 | 10 | *9.2 | 15 | 15 | 58 | 83 | 87 | 43 | 24 | a18 | 15 | 12 |
| 9 | 10 | 9.2 | 25 | 14 | 50 | 79 | 84 | 41 | *25 | a25 | 15 | 12 |
| 10 | 10 | 9.2 | 24 | 14 | 44 | 75 | 83 | 40 | 24 | a22 | 16 | 12 |
| 11 | 10 | 9.2 | 16 | 18 | 45 | 72 | 82 | 39 | 23 | *18 | 15 | 12 |
| 12 | 9.7 | 9.2 | 15 | 18 | 47 | 81 | 79 | 38 | 24 | 19 | 15 | 12 |
| 13 | 9.7 | 7.5 | 14 | 16 | 44 | 61 | 76 | 38 | 23 | 18 | 15 | 12 |
| 14 | 9.7 | 9.2 | 16 | 15 | 40 | 77 | 76 | 43 | 23 | 18 | 14 | 12 |
| 15 | 10 | 8.6 | 15 | 14 | 38 | 73 | 73 | 41 | 23 | 17 | 14 | 12 |
| 16 | 11 | 8.0 | 13 | 14 | 38 | 78 | 72 | 38 | 22 | 17 | 14 | 12 |
| 17 | 10 | 8.6 | 12 | 13 | 52 | 85 | 71 | *36 | 22 | 17 | 14 | 12 |
| 18 | 10 | 8.6 | 28 | 13 | 52 | 104 | 70 | 35 | 22 | 17 | 14 | 12 |
| 19 | 10 | 9.2 | 24 | 22 | 47 | 126 | 69 | 34 | 22 | 16 | 14 | 12 |
| 20 | 10 | 9.2 | 19 | 24 | 44 | 127 | 66 | 33 | 22 | 16 | 14 | 12 |
| 21 | 10 | 8.6 | 16 | 24 | 41 | 122 | 65 | 32 | 22 | 16 | 15 | 12 |
| 22 | 10 | 9.2 | 15 | 35 | 52 | 142 | 65 | 32 | 21 | 16 | 15 | 12 |
| 23 | 9.7 | 8.0 | 14 | 47 | 108 | 134 | 64 | 31 | 21 | 22 | 16 | 12 |
| 24 | 10 | 9.2 | 13 | 41 | 100 | 126 | 63 | 30 | 21 | 20 | 15 | 12 |
| 25 | 10 | 8.0 | 13 | 33 | 89 | 120 | 63 | 29 | 21 | 17 | 14 | 12 |
| 26 | 9.7 | 8.6 | 12 | 30 | 82 | 123 | 60 | 28 | 20 | 16 | 14 | a12 |
| 27 | 10 | 7.5 | a12 | 27 | 83 | 118 | 58 | 27 | 19 | 15 | 13 | a12 |
| 28 | 9.7 | 12 | a12 | 25 | 87 | 111 | 54 | 26 | 19 | 15 | 14 | a12 |
| 29 | 10 | 23 | a50 | 24 | - | 105 | 52 | 26 | 18 | 15 | 13 | a12 |
| 30 | 10 | 12 | a45 | 22 | ------ | 102 | 50 | 26 | 18 | 14 | 13 | a12 |
| 31 | 10 | -- -- | 36 | 22 | ------- | 99 | ------- | 26 | ------- | 15 | 13 | ---- -- |
| Total | 316.2 | 289.5 | 584.9 | 681 | 1,462 | 3,020 | 2,214 | 1,133 | 669 | 551 | 444 | 361 |
| Mean | 10.2 | 9.65 | 18.9 | 22.0 | 52.2 | 97.4 | 73.8 | 36.5 | 22.3 | 17.8 | 14.3 | 12.0 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 157 Min 7.4 Mean 34.3 Cfsm - In. -
Water year 1955-54: Max 142 Min 7.5 Mean 32.1 Cfsm - In. -

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage when available, and by comparison with Mill Spring near Jefferson City.

## Holston River near Jefferson City, Tenn.

Location.--Lat 36°10'03", long 83°30'10", on left bank 250 ft upstream from bridge on State Highway 92, 0.2 mile downstream from Cherokee Dam, 2.5 miles upstream from Mill Spring Creek, and 3 miles north of Jefferson City, Jefferson County.

Drainage area.--3,429 sq mi.

Records available.--April 1937 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 900.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to June 30, 1941, at datum 20.02 ft higher.

Average discharge.--18 years, 3,948 cfs (unadjusted).

Extremes.--Maximum discharge during year, 17,600 cfs Mar. 26 (gage height, 29.36 ft); minimum daily, 54 cfs Feb. 6.
1937-55: Maximum discharge, 58,700 cfs Aug. 15, 1940 (gage height, 41.82 ft, present datum); minimum, 2.2 cfs Dec. 8, 1941, discharge measurement; minimum daily, 2.6 cfs Dec. 25, 1941; minimum gage height recorded, 19.75 ft Dec. 25, 1941.

Remarks.--Records good. Flow regulated by Fort Patrick Henry, Boone, South Holston, Watauga, and Cherokee Lakes (see p. 242, 243).

Revisions (water years).--WSP 923: 1939-40(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Apr. 30, Aug. 28 to Sept. 30 | | | | May 1 to Aug. 27 | | | |
|---|---|---|---|---|---|---|---|
| 20.2 | 40 | 21.5 | 850 | 20.4 | 100 | 23.0 | 2,610 |
| 20.3 | 60 | 22.0 | 1,370 | 20.6 | 180 | 24.0 | 4,350 |
| 20.4 | 90 | 23.0 | 2,830 | 21.0 | 430 | 26.0 | 8,700 |
| 20.6 | 170 | 24.0 | 4,600 | 21.5 | 830 | 27.2 | 11,600 |
| 20.8 | 280 | 26.0 | 9,040 | 22.0 | 1,310 | | |
| 21.0 | 420 | 27.6 | 12,900 | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,390 | 6,030 | *4,310 | 58 | 3,350 | 75 | 7,030 | 3,280 | 656 | 3,470 | 7,420 | 6,960 |
| 2 | 1,570 | 6,160 | 3,980 | 58 | 2,880 | 75 | 4,490 | 5,990 | 124 | 3,450 | 7,370 | *6,740 |
| 3 | 2,110 | 6,120 | 4,030 | 58 | 3,240 | *75 | 1,900 | 6,280 | 132 | 3,450 | 7,760 | 6,840 |
| 4 | 1,880 | 6,340 | 3,780 | 58 | *3,380 | 81 | 4,360 | 6,190 | 135 | 3,470 | *7,760 | 6,580 |
| 5 | 1,890 | 6,190 | 3,820 | 1,760 | 3,700 | 81 | *2,540 | 3,220 | 140 | 4,690 | 11,500 | 7,450 |
| 6 | 1,900 | 2,430 | 3,600 | 2,070 | 54 | 90 | 532 | 2,620 | 5,640 | *3,920 | 6,820 | 7,760 |
| 7 | *2,000 | 5,470 | 72 | *8,740 | 58 | 94 | 98 | 6,620 | 6,890 | 2,330 | 10,300 | 7,120 |
| 8 | 1,620 | *6,120 | 66 | 8,690 | 282 | 90 | 94 | 4,220 | 3,410 | 5,890 | 11,300 | 7,270 |
| 9 | 1,530 | 5,260 | 1,100 | 6,640 | 816 | 87 | 98 | *7,150 | *2,630 | 3,450 | 8,100 | 6,770 |
| 10 | 1,770 | 5,110 | 5,480 | 9,070 | 56 | 90 | 1,160 | 8,680 | 2,420 | 1,920 | 5,940 | 6,560 |
| 11 | 2,100 | 5,080 | 1,300 | 9,100 | 1,370 | 94 | 2,730 | 5,880 | 3,490 | 7,550 | 8,400 | 6,370 |
| 12 | 2,320 | 4,960 | 2,170 | 7,020 | 519 | 106 | 912 | 5,640 | 3,360 | 3,450 | 7,890 | 7,120 |
| 13 | 2,400 | 1,980 | 4,090 | 8,230 | 58 | 971 | 1,090 | 5,860 | 3,360 | 3,520 | 6,690 | 6,100 |
| 14 | 1,990 | 1,900 | 6,850 | 8,950 | 5,860 | 2,660 | 114 | 5,420 | 3,360 | 2,410 | 7,510 | 7,130 |
| 15 | 2,110 | 6,430 | 5,720 | 10,700 | 1,200 | 69 | 118 | 1,160 | 4,660 | 2,290 | 8,660 | 5,520 |
| 16 | 2,020 | 6,080 | 6,900 | 6,150 | 56 | 66 | 126 | 5,260 | 5,330 | 107 | 8,020 | 5,050 |
| 17 | 1,680 | 2,150 | 6,750 | 6,220 | 178 | 962 | 138 | 6,140 | 3,520 | 3,160 | 7,320 | 4,700 |
| 18 | 5,890 | 1,040 | 4,240 | 5,760 | 56 | 1,300 | 2,700 | 5,880 | 2,250 | 3,710 | 7,640 | 5,030 |
| 19 | 7,890 | 2,380 | 6,330 | 5,790 | 58 | 102 | 2,200 | 6,160 | 2,350 | 5,980 | 7,390 | 6,030 |
| 20 | 7,340 | 924 | 7,770 | 468 | 591 | 223 | 2,680 | 7,570 | 6,550 | 6,460 | 5,770 | 6,350 |
| 21 | 7,150 | 1,200 | 1,820 | 56 | 442 | 7,160 | 5,870 | 5,860 | 6,480 | 7,580 | 5,940 | 6,420 |
| 22 | 6,840 | 2,890 | 1,500 | 4,340 | 66 | 8,360 | 5,210 | 197 | 6,550 | 6,110 | 6,250 | 6,490 |
| 23 | 1,150 | 3,600 | 3,280 | 126 | 84 | 7,530 | 1,210 | 176 | 7,090 | 3,540 | 8,680 | 6,560 |
| 24 | 1,160 | 6,250 | 1,060 | 6,180 | 75 | 8,320 | 126 | 186 | 7,110 | 3,560 | 8,980 | 4,050 |
| 25 | 7,260 | 5,730 | 598 | 6,070 | 78 | 9,490 | 6,680 | 191 | 4,630 | 6,930 | 9,130 | 3,870 |
| 26 | 5,060 | 5,910 | 335 | 5,740 | 75 | 11,300 | *486 | 202 | 3,410 | 7,970 | 8,930 | 6,220 |
| 27 | 3,010 | 5,480 | 4,050 | 5,470 | 78 | 12,800 | 87 | 255 | 3,590 | 5,680 | 8,710 | 4,970 |
| 28 | 4,200 | 3,700 | 5,110 | 6,230 | 101 | 11,500 | 583 | 153 | 3,450 | 7,510 | 9,160 | 5,340 |
| 29 | 4,320 | 3,930 | 1,900 | 5,830 | - | 9,310 | 142 | 180 | 3,490 | 7,550 | 9,410 | 5,240 |
| 30 | 4,240 | 4,040 | 366 | 3,690 | ------- | 7,110 | 150 | 180 | 3,470 | 5,140 | 9,320 | 5,190 |
| 31 | 5,100 | ------- | 56 | 4,090 | ------- | 6,300 | ------- | 180 | ------- | 3,480 | 9,130 | ------- |
| Total | 102,890 | 130,884 | 102,433 | 153,412 | 28,761 | 106,571 | 55,654 | 116,980 | 109,677 | 139,727 | 253,200 | 183,800 |
| Mean | 3,319 | 4,363 | 3,304 | 4,949 | 1,027 | 3,438 | 1,855 | 3,774 | 3,656 | 4,507 | 8,168 | 6,127 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 10,700 | Min 56 | Mean 3,247 | Mean 3,058 | Cfsm 0.892 | In. 12.11 |
| Water year 1954-55: | Max 12,800 | Min 54 | Mean 4,066 | Mean 4,284 | Cfsm 1.25 | In. 16.96 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Watauga, South Holston, Cherokee, Boone, and Fort Patrick Henry Lakes.

## Mill Spring near Jefferson City, Tenn.

Location.--Lat 36°09'08", long 83°31'35", in spring pool at TVA pumping station, 300 ft northwest of State Highway 92, half a mile above mouth, 3 miles northwest of Jefferson City, Jefferson County.

Records available.--August 1951 to September 1955 in reports of Geological Survey. October 1940 to September 1948 in files of Tennessee Valley Authority.

Gage.--Water-stage recorder and concrete weir. Datum of gage is 962.3 ft above mean sea level (Tennessee Valley Authority construction plans for waterworks).

Extremes.--Maximum discharge during year, 18 cfs Mar. 22 (gage height, 1.30 ft); minimum daily, 1.7 cfs Nov. 18-20.
1951-55: Maximum discharge, that of Mar. 22, 1955; minimum daily, that of Nov. 18-20, 1954.

Remarks.--Records good. Records do not include diversion averaging about 0.05 cfs for the domestic water supply of Cherokee Dam.

Rating table, water year 1954-55 (gage height, in feet, and discharge in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.2 | 1.2 | 0.7 | 7.4 |
| .3 | 2.4 | 1.0 | 12 |
| .5 | 4.6 | 1.3 | 18 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.1 | 2.0 | *1.9 | a2.5 | 2.4 | 7.8 | 12 | 6.5 | 4.2 | 3.4 | 2.9 | 2.4 |
| 2 | 2.1 | 2.0 | 1.8 | a2.4 | 2.5 | 7.8 | 12 | 6.4 | 4.3 | 3.4 | 2.9 | *2.4 |
| 3 | 2.1 | 2.0 | 1.8 | a2.3 | 2.5 | 7.8 | 12 | 6.4 | 4.3 | 3.4 | 2.9 | 2.4 |
| 4 | 2.1 | 2.0 | 1.8 | a2.2 | *2.4 | *7.7 | 11 | 6.2 | 4.3 | 3.4 | *2.9 | 2.4 |
| 5 | 2.1 | 2.0 | 1.9 | a2.1 | 2.5 | 7.5 | *11 | 6.1 | 4.3 | 3.4 | 2.8 | 2.2 |
| 6 | 2.1 | 2.0 | 2.0 | a2.1 | 3.2 | 7.8 | 11 | 6.1 | 4.2 | 3.4 | 2.7 | 2.2 |
| 7 | *2.1 | 2.0 | 1.9 | *2.1 | 4.0 | 8.2 | 11 | 6.0 | 4.2 | 3.4 | 2.7 | 2.2 |
| 8 | 2.1 | *2.0 | 1.8 | 2.1 | 3.8 | 8.2 | 11 | 5.8 | 4.2 | 3.4 | 2.7 | 2.1 |
| 9 | 2.1 | 2.0 | 1.9 | 2.0 | 3.8 | 8.0 | 10 | *5.7 | *4.2 | 3.4 | 2.6 | 2.1 |
| 10 | 2.1 | 1.9 | 1.9 | 2.0 | 3.7 | 7.8 | 10 | 5.6 | 4.0 | 3.3 | 2.6 | 2.1 |
| 11 | 2.1 | 1.9 | 1.8 | 2.0 | 3.8 | 7.8 | 9.8 | 5.4 | 4.0 | *3.3 | 2.6 | 2.1 |
| 12 | 2.1 | 1.9 | 1.8 | 2.0 | 3.8 | 8.2 | 9.8 | 5.3 | 4.0 | 3.4 | 2.6 | 2.1 |
| 13 | 2.0 | 1.8 | 1.8 | 2.0 | 3.7 | 8.3 | 9.4 | 5.3 | 3.9 | 3.4 | 2.5 | 2.1 |
| 14 | 2.0 | 1.8 | 1.9 | 2.0 | 3.7 | 8.2 | 9.3 | 5.7 | 3.9 | 3.3 | 2.5 | 2.1 |
| 15 | 2.0 | 1.8 | 1.9 | 2.0 | 3.7 | 8.0 | 9.1 | 5.3 | 3.8 | 3.3 | 2.5 | 2.1 |
| 16 | 2.0 | 1.8 | 1.9 | 2.0 | 3.7 | 8.3 | 9.0 | 5.2 | 3.8 | 3.3 | 2.5 | 2.1 |
| 17 | 2.0 | 1.8 | 1.9 | 2.0 | 3.8 | 8.5 | 8.6 | 5.2 | 3.8 | 3.3 | 2.5 | 2.1 |
| 18 | 2.0 | 1.7 | 2.1 | 1.9 | 3.8 | 10 | 8.5 | 5.2 | 3.8 | 3.2 | 2.4 | 2.1 |
| 19 | 2.0 | 1.7 | 2.1 | 2.0 | 3.8 | 12 | 8.2 | 5.0 | 3.7 | 3.2 | 2.4 | 2.1 |
| 20 | 2.0 | 1.7 | 2.1 | 2.1 | 3.8 | 13 | 8.0 | 4.9 | 3.7 | 3.2 | 2.4 | 2.1 |
| 21 | 2.0 | 1.8 | 2.0 | 2.1 | 3.8 | 13 | 7.8 | 4.9 | 3.7 | 3.1 | 2.4 | 2.1 |
| 22 | 2.0 | 1.8 | 2.0 | 2.2 | 4.5 | 18 | 7.8 | 4.9 | 3.7 | 3.1 | 2.4 | 2.1 |
| 23 | 2.0 | 1.8 | 2.0 | 2.5 | 8.5 | 17 | 7.7 | 4.8 | 3.6 | 3.1 | 2.4 | 2.1 |
| 24 | 2.0 | 1.8 | 1.9 | 2.4 | 8.0 | 16 | 7.5 | 4.8 | 3.6 | 3.1 | 2.4 | 2.1 |
| 25 | 2.0 | 1.8 | 1.9 | 2.4 | 7.7 | 15 | 7.4 | 4.6 | 3.6 | 3.0 | 2.4 | 2.1 |
| 26 | 2.0 | 1.8 | 1.9 | 2.4 | 7.4 | 15 | 7.1 | 4.5 | 3.6 | 3.0 | 2.4 | 2.1 |
| 27 | 2.0 | 1.8 | 1.9 | 2.4 | 7.5 | 15 | 7.1 | 4.5 | 3.6 | 3.0 | 2.4 | 2.1 |
| 28 | 2.0 | 1.8 | 1.9 | 2.4 | 7.7 | 14 | 6.8 | 4.5 | 3.6 | 2.9 | 2.4 | 2.1 |
| 29 | 2.0 | 1.9 | 2.9 | 2.4 | - | 14 | 6.6 | 4.4 | 3.4 | 2.9 | 2.4 | 2.1 |
| 30 | 2.0 | 1.9 | 2.7 | 2.4 | ------- | 13 | 6.6 | 4.3 | 3.4 | 2.9 | 2.4 | 2.1 |
| 31 | 2.0 | ------- | a2.6 | 2.4 | ------- | 13 | ------- | 4.3 | ------- | 2.9 | 2.4 | ------- |
| Total | 63.2 | 56.0 | 61.7 | 67.8 | 123.5 | 333.9 | 273.1 | 163.8 | 116.4 | 99.8 | 79.0 | 64.5 |
| Mean | 2.04 | 1.87 | 1.99 | 2.19 | 4.41 | 10.8 | 9.10 | 5.28 | 3.88 | 3.22 | 2.55 | 2.15 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 14 Min 1.7 Mean 4.10 Cfsm - In. -
Water year 1954-55: Max 18 Min 1.7 Mean 4.12 Cfsm - In. -

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage and records for Mossy Spring.

## Holston River near Knoxville, Tenn.

Location.--Lat 36°00'56", long 83°49'54", on left bank 300 ft upstream from bridge on U. S. Highway 70, 1.8 miles northeast of Knoxville city limits, Knox County, and 5.5 miles upstream from confluence with French Broad River.

Drainage area.--3,747 sq mi.

Records available.--October 1930 to September 1955. Published as "at Strawberry Plains" 1930-48. Records published for both sites June 1945 to September 1948.

Gage.--Water-stage recorder at present site and datum since June 19, 1945. Datum of gage is 815.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Oct. 1, 1930, to June 8, 1931, staff gage and June 9, 1931, to Sept. 30, 1948, water-stage recorder, at site 12 miles upstream at datum 22.55 ft higher.

Average discharge.--25 years, 4,360 cfs (unadjusted).

Extremes.--Maximum discharge during year, 17,800 cfs Mar. 27 (gage height, 7.87 ft); minimum daily, 272 cfs June 5.
1930-55: Maximum discharge, 62,900 cfs Mar. 28, 1935 (gage height, 20.20 ft, site and datum then in use); minimum daily, 44 cfs Dec. 21, 22, 1941.

Remarks.--Records good. Flow regulated by South Holston, Watauga, Cherokee, Boone, and Fort Patrick Henry Lakes (see p. 242, 243).

Revisions (water years).--WSP 893: 1935(M). WSP 1336: 1939.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,120 | 4,690 | 3,960 | 595 | 3,480 | 1,340 | 6,230 | 954 | 290 | 3,560 | 5,310 | 9,720 |
| 2 | 1,530 | 5,690 | 4,110 | 400 | 3,470 | 1,370 | 5,700 | 3,930 | 628 | 3,560 | 7,520 | 6,490 |
| 3 | 1,720 | 6,730 | 3,830 | 346 | 3,050 | 1,030 | 4,090 | 5,740 | 353 | 3,510 | 7,900 | 6,670 |
| 4 | 2,090 | 5,730 | 3,820 | 318 | 3,610 | *830 | 3,410 | 6,850 | 278 | 3,540 | 7,970 | 6,010 |
| 5 | 2,000 | 5,900 | 4,130 | 290 | 3,320 | 734 | 3,700 | 4,240 | 272 | 3,750 | *10,000 | 6,880 |
| 6 | 1,990 | 4,470 | 3,500 | 1,560 | 4,410 | 1,250 | 2,300 | 3,300 | 912 | 4,610 | 8,540 | 8,380 |
| 7 | 1,980 | 3,660 | 3,310 | 4,390 | 1,570 | 1,260 | 1,020 | 4,400 | 6,910 | *3,270 | 9,240 | 6,890 |
| 8 | 2,030 | 4,710 | 508 | 8,100 | 929 | 968 | 540 | 5,150 | 5,150 | 3,900 | 10,800 | *7,260 |
| 9 | 1,770 | *6,630 | 400 | 8,220 | *830 | 794 | 480 | 5,440 | 3,510 | 5,080 | 10,000 | 7,400 |
| 10 | 1,710 | 4,600 | *1,780 | 7,280 | 1,140 | 698 | 490 | 8,000 | 2,010 | 3,560 | 5,840 | 6,470 |
| 11 | 1,810 | 5,000 | 4,350 | 9,840 | 903 | 650 | 1,860 | 6,310 | 3,330 | 2,760 | 8,770 | 6,190 |
| 12 | 2,090 | 5,050 | 1,410 | 6,600 | 1,820 | 968 | 2,360 | 5,470 | 3,510 | 6,780 | 8,450 | 7,480 |
| 13 | *2,340 | 3,330 | 2,380 | 9,960 | 854 | 842 | 1,340 | 5,600 | 3,440 | 3,680 | 6,370 | 6,040 |
| 14 | 2,340 | 2,140 | 5,640 | 8,000 | 2,210 | 1,490 | 1,500 | 5,780 | *3,490 | 2,840 | 8,260 | 6,250 |
| 15 | 2,040 | 4,390 | 6,140 | 9,990 | 4,210 | 3,000 | *746 | 4,150 | 4,610 | 2,500 | 8,740 | 6,580 |
| 16 | 2,070 | 5,580 | 5,930 | 8,240 | 1,670 | 1,160 | 530 | 1,390 | 3,870 | 2,410 | 7,810 | 5,050 |
| 17 | 1,970 | 4,000 | 7,060 | 6,940 | 758 | 1,030 | 510 | 5,730 | 4,770 | 790 | 7,810 | 4,530 |
| 18 | 3,300 | 1,900 | 5,610 | 4,910 | 606 | 4,070 | 655 | *5,490 | 2,900 | 3,610 | 7,740 | 4,890 |
| 19 | 6,810 | 1,170 | 5,920 | 6,360 | 540 | 4,020 | 2,730 | 5,520 | 2,370 | 4,560 | 7,780 | 5,180 |
| 20 | 7,430 | 2,150 | 5,340 | 4,540 | 450 | 2,270 | 2,540 | 6,280 | 3,740 | 6,010 | 7,050 | 6,160 |
| 21 | 7,000 | 1,130 | 6,730 | 942 | 845 | 3,450 | 3,680 | 6,010 | 6,950 | 7,170 | 6,340 | 6,040 |
| 22 | 6,650 | 1,380 | 1,390 | 910 | 1,150 | 13,000 | 6,480 | 4,440 | 5,940 | 6,790 | 6,490 | 6,160 |
| 23 | 4,960 | 2,770 | 1,460 | 4,200 | 3,260 | *9,960 | 4,380 | 639 | 7,740 | 5,080 | 8,190 | 6,340 |
| 24 | 1,310 | 4,370 | 3,070 | *2,460 | 1,950 | 9,690 | 1,500 | 384 | 7,040 | 3,780 | 9,140 | 5,260 |
| 25 | 2,730 | 5,910 | 1,230 | 5,840 | 2,000 | 9,240 | 1,250 | 311 | 5,920 | 4,690 | 8,800 | 4,060 |
| 26 | 6,490 | 5,500 | 798 | 6,160 | 890 | 10,900 | 6,480 | 304 | 4,160 | 8,130 | 9,450 | 4,950 |
| 27 | 4,440 | 5,360 | 702 | 5,450 | 994 | 15,700 | 794 | 304 | 3,330 | 6,130 | 8,710 | 5,420 |
| 28 | 2,880 | 4,570 | 4,350 | 5,640 | 1,160 | 12,600 | 470 | 297 | 3,820 | 7,490 | 9,480 | 3,960 |
| 29 | 4,040 | 3,870 | 6,440 | 6,020 | - | 11,700 | 782 | 346 | 3,540 | 7,710 | 9,270 | 5,020 |
| 30 | 4,280 | 3,780 | 3,080 | 4,930 | ------- | 8,280 | 470 | 297 | 3,540 | 6,640 | 9,850 | 5,150 |
| 31 | 4,390 | ------- | 1,050 | 4,560 | ------- | 7,070 | ------- | 290 | ------- | 4,450 | 9,410 | ------- |
| Total | 100,310 | 126,160 | 109,428 | 153,991 | 52,079 | 141,364 | 69,017 | 113,346 | 108,323 | 142,340 | 257,030 | 182,880 |
| Mean | 3,236 | 4,205 | 3,530 | 4,967 | 1,860 | 4,560 | 2,301 | 3,656 | 3,611 | 4,592 | 8,291 | 6,096 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 10,800 | Min 325 | Mean 3,578 | Mean 3,389 | Cfsm 0.904 | In. 12.28 |
| Water year 1954-55: | Max 15,700 | Min 272 | Mean 4,264 | Mean 4,482 | Cfsm 1.20 | In. 16.24 |

† Adjusted for change in contents in South Holston, Watuaga, Cherokee, Boone, and Fort Patrick Henry Lakes.
* Discharge measurement made on this day.

First Creek at Mineral Springs Avenue, at Knoxville, Tenn.

Location.--Lat 36°00'53", long 83°55'18", on right bank at Mineral Springs Avenue Bridge in Knoxville, Knox County, 0.3 mile downstream from Whites Creek, 4.1 miles upstream from gage at Fifth Avenue in Knoxville, and 5.9 miles upstream from mouth.

Drainage area.--15.7 sq mi, includes 3.8 sq mi without surface drainage.

Records available.--April 1945 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 940.87 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--10 years, 22.7 cfs.

Extremes.--Maximum discharge during year, 306 cfs Mar. 22 (gage height, 5.92 ft); minimum, 2.7 cfs Sept. 20, 21; minimum gage height, 1.58 ft Oct. 26.
1945-55: Maximum discharge, 1,280 cfs Feb. 13, 1948 (gage height, 8.62 ft); minimum, 1.8 cfs Sept. 26, 1948; minimum gage height, 1.32 ft Sept. 21, Oct. 1, 1945.

Remarks.--Records good. Discharge measurements generally made twice a month.

Revisions.--WSP 1276: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 29 to Nov. 28, Dec. 31 to Feb. 22, Aug. 31 to Sept. 30)

| | | | |
|---|---|---|---|
| 1.5 | 2.4 | 4.0 | 72 |
| 1.7 | 4.2 | 4.5 | 89 |
| 1.9 | 6.8 | 5.0 | 115 |
| 2.2 | 13 | 5.3 | 155 |
| 2.5 | 22 | 5.6 | 220 |
| 3.0 | 38 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.8 | 3.2 | 5.0 | 32 | 11 | 57 | 31 | 15 | 11 | 6.2 | 6.2 | 3.2 |
| 2 | 8.2 | 3.4 | 5.0 | 26 | 20 | 46 | 30 | 14 | 10 | 6.0 | 6.1 | 3.1 |
| 3 | 4.3 | 3.1 | 4.6 | 21 | 13 | 39 | 28 | 13 | 9.5 | 13 | 6.4 | 2.9 |
| 4 | 4.1 | 3.4 | 4.2 | 19 | 11 | 35 | 24 | 13 | 9.0 | 13 | 5.8 | 2.8 |
| 5 | 4.0 | 3.8 | 26 | 17 | 12 | 33 | 23 | 12 | 8.8 | 7.7 | 6.1 | 3.0 |
| 6 | 3.7 | 3.2 | 33 | 18 | 92 | 98 | 41 | 13 | 8.6 | 6.7 | 5.8 | 3.0 |
| 7 | 3.6 | 3.2 | 12 | 15 | 64 | 61 | 29 | 12 | 12 | 6.2 | 5.2 | 3.1 |
| 8 | 3.6 | 3.1 | 9.0 | 14 | 38 | 45 | 25 | 11 | 16 | 6.0 | 6.1 | 3.1 |
| 9 | 3.6 | 3.2 | 43 | 13 | 30 | 39 | 22 | 11 | 14 | 6.0 | 13 | 3.1 |
| 10 | 3.5 | 3.1 | 18 | 17 | 26 | 35 | 21 | 11 | 11 | 5.5 | 10 | 3.0 |
| 11 | 3.7 | 3.1 | 12 | 27 | 50 | 32 | 23 | 10 | 19 | 6.0 | 6.2 | 3.0 |
| 12 | 3.6 | 3.1 | 10 | 18 | 33 | 79 | 21 | 11 | 12 | 6.2 | 5.3 | 3.0 |
| 13 | 3.6 | 3.1 | 14 | 15 | 27 | 40 | 30 | 22 | 10 | 6.2 | 4.8 | 3.0 |
| 14 | 3.4 | 2.8 | 13 | 13 | 25 | 34 | 32 | 28 | 9.7 | 6.0 | 4.4 | 2.9 |
| 15 | 3.4 | 2.8 | 11 | 13 | 24 | 32 | 26 | 15 | 8.8 | 6.1 | 4.6 | 2.8 |
| 16 | 3.2 | 4.1 | 9.7 | 12 | 28 | 56 | 23 | 13 | 8.2 | 5.8 | 4.6 | 2.8 |
| 17 | 3.3 | 3.7 | 19 | 11 | 33 | 42 | 21 | 12 | 7.9 | 5.4 | 4.6 | 2.8 |
| 18 | 3.3 | 3.4 | 60 | 11 | 26 | 83 | 20 | 11 | 7.5 | 5.2 | 4.3 | 3.0 |
| 19 | 3.3 | 6.4 | 24 | 18 | 23 | 108 | 20 | 10 | 7.3 | 5.2 | 4.0 | 2.8 |
| 20 | 3.3 | 5.7 | 17 | 14 | 22 | 68 | 17 | 28 | 7.2 | 9.6 | 3.8 | 2.7 |
| 21 | 3.3 | 3.8 | 14 | 16 | 20 | 74 | 18 | 26 | 7.0 | 28 | 4.1 | 2.7 |
| 22 | 3.2 | 3.5 | 12 | 32 | 63 | 191 | 17 | 24 | 7.3 | 14 | 4.4 | 2.8 |
| 23 | 3.2 | 3.4 | 11 | 25 | 168 | 69 | 16 | 33 | 7.7 | 8.1 | 3.9 | 2.8 |
| 24 | 3.1 | 3.3 | 9.9 | 20 | 59 | 56 | 46 | 23 | 7.5 | 49 | 3.9 | 3.8 |
| 25 | 3.1 | 3.0 | 8.8 | 18 | 47 | 52 | 39 | 17 | 16 | 34 | 3.6 | 4.0 |
| 26 | 3.1 | 3.0 | 8.2 | 15 | 41 | 56 | 24 | 15 | 12 | 11 | 3.5 | 3.2 |
| 27 | 3.5 | 4.0 | 8.1 | 14 | 53 | 44 | 22 | 13 | 8.4 | 8.4 | 3.4 | 3.0 |
| 28 | 3.5 | 14 | 17 | 13 | 43 | 40 | 19 | 12 | 7.2 | 7.3 | 3.5 | 3.6 |
| 29 | 3.6 | 12 | 203 | 12 | - | 37 | 17 | 15 | 6.7 | 11 | 3.5 | 3.2 |
| 30 | 3.4 | 5.7 | 75 | 11 | ------- | 35 | 16 | 12 | 6.7 | 9.3 | 3.8 | 20 |
| 31 | 3.2 | ------- | 40 | 10 | ------- | 33 | ------- | 12 | ------- | 6.8 | 3.4 | ------- |
| Total | 113.7 | 126.6 | 756.5 | 530 | 1,102 | 1,749 | 741 | 487 | 294.0 | 324.9 | 158.3 | 108.2 |
| Mean | 3.67 | 4.22 | 24.4 | 17.1 | 39.4 | 56.4 | 24.7 | 15.7 | 9.80 | 10.5 | 5.11 | 3.61 |
| Cfsm | 0.234 | 0.269 | 1.55 | 1.09 | 2.51 | 3.59 | 1.57 | 1.00 | 0.624 | 0.669 | 0.325 | 0.230 |
| In. | 0.27 | 0.30 | 1.79 | 1.26 | 2.61 | 4.14 | 1.76 | 1.15 | 0.70 | 0.77 | 0.37 | 0.26 |

Calendar year 1954: Max 352 Min 2.8 Mean 19.3 Cfsm 1.23 In. 16.67
Water year 1954-55: Max 203 Min 2.7 Mean 17.8 Cfsm 1.13 In. 15.38

Peak discharge (base, 300 cfs).--Mar. 22 (3 a.m.) 306 cfs (5.92 ft).

## First Creek at Fifth Avenue, at Knoxville, Tenn.

Location.--Lat 35°58'40", long 83°54'51", on left bank at Fifth Avenue Bridge in Knoxville, Knox County, 1.8 miles upstream from mouth and 4.1 miles downstream from gage at Mineral Springs Avenue in Knoxville.

Drainage area.--21.1 sq mi, includes 4.5 sq mi without surface drainage.

Records available.--June 1932 to March 1934, April 1945 to September 1955. Published as "at Knoxville" 1932-34.

Gage.--Water-stage recorder. Datum of gage is 883.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. June 23, 1932, to Mar. 31, 1934, staff gage at McCalla Avenue Bridge a quarter of a mile downstream at different datum.

Average discharge.--11 years (1932-33, 1945-55), 28.6 cfs.

Extremes.--Maximum discharge during year, 336 cfs Mar. 22 (gage height, 5.33 ft); minimum, 2.1 cfs Sept. 8; minimum gage height, 0.31 ft Sept. 3.
1932-34, 1945-55: Maximum discharge, 1,230 cfs Feb. 13, 1948 (gage height, 8.92 ft); minimum, that of Sept. 8, 1955; minimum gage height, 0.24 ft Jan. 9, 1954.

Remarks.--Records good. Discharge measurements generally made twice each month.

Revisions (water years).--WSP 1276: Drainage area. WSP 1336: 1933.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 24 to May 29, Sept. 5-30)

| | | | |
|---|---|---|---|
| 0.3 | 2.5 | 1.5 | 32 |
| .5 | 4.6 | 2.0 | 51 |
| .7 | 7.8 | 3.0 | 100 |
| .9 | 12 | 4.0 | 180 |
| 1.1 | 18 | 4.7 | 254 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.1 | 3.3 | 5.6 | 33 | 16 | 72 | 33 | 17 | 13 | 7.8 | 7.8 | 4.3 |
| 2 | 18 | 3.6 | 5.3 | 26 | 23 | 56 | 32 | 16 | 12 | 7.3 | 7.1 | 3.7 |
| 3 | 4.3 | 3.2 | 5.2 | 21 | 14 | 45 | 29 | 15 | 12 | 19 | 7.3 | 3.0 |
| 4 | 3.8 | 6.9 | 4.7 | 20 | 12 | 40 | 25 | 15 | 12 | 22 | 7.4 | 3.0 |
| 5 | 3.6 | 4.8 | 43 | 18 | 14 | 39 | 24 | 16 | 13 | 9.1 | 6.7 | 3.6 |
| 6 | 3.5 | 3.4 | 42 | 20 | 120 | 142 | 51 | 15 | 13 | 8.2 | 7.4 | 3.3 |
| 7 | 3.2 | 3.3 | 13 | 16 | 87 | 74 | 31 | 14 | 24 | 7.8 | 9.9 | 3.3 |
| 8 | 3.1 | 3.2 | 9.3 | 15 | 40 | 48 | 26 | 13 | 26 | 8.6 | 7.1 | 3.6 |
| 9 | 3.3 | 3.3 | 57 | 14 | 31 | 40 | 23 | 13 | 20 | 7.3 | 43 | 4.0 |
| 10 | 3.1 | 3.2 | 20 | 20 | 26 | 35 | 22 | 13 | 14 | 7.1 | 16 | 3.7 |
| 11 | 3.1 | 3.2 | 12 | 30 | 65 | 33 | 26 | 13 | 28 | 13 | 9.1 | 4.9 |
| 12 | 3.1 | 3.1 | 11 | 19 | 37 | 108 | 22 | 18 | 13 | 8.7 | 7.6 | 3.9 |
| 13 | 3.1 | 3.0 | 18 | 16 | 29 | 44 | 39 | 34 | 12 | 7.3 | 6.9 | 3.6 |
| 14 | 3.0 | 2.9 | 14 | 14 | 27 | 36 | 39 | 46 | 11 | 7.3 | 6.5 | 3.4 |
| 15 | 3.0 | 2.9 | 12 | 15 | 26 | 36 | 29 | 20 | 10 | 8.0 | 6.5 | 3.3 |
| 16 | 2.9 | 5.5 | 10 | 14 | 32 | 87 | 25 | 17 | 9.3 | 7.1 | 6.5 | 2.9 |
| 17 | 2.8 | 3.5 | 24 | 12 | 37 | 48 | 23 | 16 | 8.9 | 6.4 | 6.7 | 2.8 |
| 18 | 2.9 | 3.2 | 76 | 14 | 28 | 126 | 21 | 14 | 8.7 | 6.0 | 6.2 | 2.7 |
| 19 | 2.8 | 8.0 | 26 | 24 | 25 | 151 | 21 | 14 | 8.7 | 6.0 | 5.7 | 3.0 |
| 20 | 2.9 | 7.9 | 18 | 17 | 23 | 84 | 19 | 47 | 8.5 | 14 | 5.6 | 2.6 |
| 21 | 2.9 | 3.8 | 15 | 20 | 21 | 100 | 21 | 38 | 8.5 | 44 | 5.6 | 2.8 |
| 22 | 2.9 | 3.4 | 14 | 35 | 88 | 246 | 19 | 32 | 19 | 19 | 6.5 | 2.8 |
| 23 | 3.0 | 3.3 | 12 | 28 | 225 | 82 | 19 | 39 | 13 | 10 | 5.7 | 2.8 |
| 24 | 3.0 | 3.7 | 11 | 22 | 72 | 62 | 65 | 30 | 7.8 | 54 | 4.9 | 9.6 |
| 25 | 2.9 | 3.3 | 9.6 | 19 | 54 | 62 | 47 | 23 | 24 | 51 | 5.0 | 7.3 |
| 26 | 2.9 | 3.1 | 8.9 | 16 | 45 | 66 | 28 | 20 | 17 | 14 | 4.9 | 3.7 |
| 27 | 3.8 | 5.4 | 8.7 | 15 | 70 | 47 | 24 | 18 | 10 | 11 | 4.6 | 3.4 |
| 28 | 3.9 | 23 | 24 | 14 | 53 | 44 | 23 | 16 | 8.7 | 9.6 | 4.4 | 6.8 |
| 29 | 4.0 | 15 | 246 | 13 | - | 40 | 20 | 21 | 8.2 | 13 | 4.4 | 3.8 |
| 30 | 3.5 | 6.4 | 98 | 12 | ------ | 36 | 19 | 14 | 7.8 | 11 | 5.5 | 62 |
| 31 | 3.3 | ---- | 41 | 12 | ------- | 35 | ------- | 13 | -------- | 8.9 | 5.2 | ---- |
| Total | 117.7 | 151.8 | 914.3 | 584 | 1,340 | 2,164 | 845 | 650 | 401.1 | 433.5 | 243.7 | 173.6 |
| Mean | 3.80 | 5.06 | 29.5 | 18.8 | 47.9 | 69.8 | 28.2 | 21.0 | 13.4 | 14.0 | 7.86 | 5.79 |
| Cfsm | 0.180 | 0.240 | 1.40 | 0.891 | 2.27 | 3.31 | 1.34 | 0.995 | 0.635 | 0.664 | 0.373 | 0.274 |
| In. | 0.21 | 0.27 | 1.61 | 1.03 | 2.36 | 3.81 | 1.49 | 1.15 | 0.71 | 0.76 | 0.43 | 0.31 |

Calendar year 1954: Max 467 Min 2.8 Mean 23.8 Cfsm 1.13 In. 15.27
Water year 1954-55: Max 246 Min 2.6 Mean 22.0 Cfsm 1.04 In. 14.14

Peak discharge (base, 400 cfs).--No peak above base.

## Tennessee River at Knoxville, Tenn.

Location.--Lat 35°57'17", long 83°51'42", on left bank 0.7 mile downstream from confluence of French Broad and Holston Rivers, 3.5 miles upstream from First Creek, 3.6 miles upstream from Gay Street Bridge at Knoxville, Knox County, and at mile 651.4.

Drainage area.--8,934 sq mi, includes that of First Creek.

Records available.--January 1899 to December 1912 (1899 and 1910-12, gage heights only) and October 1918 to September 1955 in reports of Geological Survey. October 1899 to September 1924 (prior to October 1918, revised) in Tennessee Division of Geology Bulletin 34. Gage-height records collected in this vicinity since 1883 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 797.38 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Sept. 1, 1943, staff or recording gages at several sites within 4 miles of present site at various datums. Since Sept. 1, 1943, auxiliary water-stage recorder 6.3 miles downstream.

Average discharge.--56 years (1899-1955), 12,730 cfs (unadjusted).

Extremes.--Maximum discharge during year, 40,800 cfs Mar. 22; maximum gage height, 17.62 ft July 12; minimum daily discharge, 1,450 cfs Apr. 25; minimum gage height, 0.05 ft Jan. 3.

1899-1955: Maximum discharge observed, 195,000 cfs Mar. 1, 1902 (gage height, 36.4 ft, site and datum then in use), from rating curve extended above 130,000 cfs; minimum daily, 1,010 cfs Mar. 28, 1954; minimum gage height, -1.7 ft Sept. 11, 1925, site and datum then in use.

Maximum stage known, 45.8 ft Mar. 10, 1867, site and datum of gage at old city pumping plant, 3.2 miles downstream from base gage (discharge, 270,000 cfs, from rating curve extended above 130,000 cfs), from high-water profile by Corps of Engineers and Tennessee Valley Authority.

Remarks.--Records good above 10,000 cfs and fair below. Flow regulated by Douglas, South Holston, Boone, Fort Patrick Henry, Cherokee, and Watauga Lakes (see p. 242, 243).

Revisions (water years).--WSP 583: 1902(M). WSP 823: Drainage area. See also Records available.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,300 | 7,240 | 7,100 | 3,470 | 7,520 | 6,290 | 18,300 | 4,820 | 4,190 | 10,700 | 13,300 | 19,700 |
| 2 | 2,580 | 9,030 | *6,570 | 3,540 | 8,340 | 8,230 | 17,100 | 12,200 | 2,880 | 9,500 | 15,600 | 15,700 |
| 3 | 2,610 | 9,450 | 6,400 | 5,230 | 7,080 | 8,490 | 12,400 | 15,900 | 1,470 | 7,260 | 15,900 | 15,400 |
| 4 | 2,020 | 8,260 | 7,900 | 5,820 | 8,190 | 8,790 | 15,600 | 17,000 | 2,180 | 7,090 | 15,700 | 15,400 |
| 5 | 2,670 | 8,590 | 8,420 | 5,660 | 7,800 | 8,060 | 15,200 | 11,900 | 2,870 | 11,200 | *18,000 | 16,400 |
| 6 | 4,460 | 6,030 | 8,990 | 7,850 | 9,800 | 10,400 | 8,030 | 10,100 | 10,300 | 13,300 | 16,600 | *18,100 |
| 7 | 2,620 | 6,230 | 9,030 | 10,100 | 7,210 | 13,900 | 5,070 | 13,700 | 19,500 | 10,200 | 17,100 | 16,500 |
| 8 | 3,250 | 7,130 | 4,290 | 13,900 | 2,350 | 10,900 | 3,870 | 14,700 | 14,800 | 13,600 | 19,800 | 16,400 |
| 9 | 3,230 | 9,110 | 5,460 | 14,800 | 2,060 | 9,500 | 4,680 | 14,400 | 13,700 | 15,100 | 19,800 | 16,900 |
| 10 | 1,980 | 6,730 | 7,370 | 13,300 | 6,250 | 9,310 | 9,250 | 19,800 | 9,560 | 9,930 | 15,800 | 15,900 |
| 11 | 2,640 | 7,520 | 10,200 | 16,300 | 6,940 | 9,250 | 10,800 | 18,600 | 7,560 | 14,600 | 18,600 | 15,500 |
| 12 | 3,300 | 7,430 | 3,770 | 13,500 | 6,100 | 11,700 | 10,900 | 18,200 | 7,610 | 16,100 | 17,700 | 16,800 |
| 13 | 3,280 | 4,900 | 5,620 | 15,600 | 3,210 | 9,520 | 6,090 | 19,100 | 7,150 | *5,740 | 15,100 | 14,200 |
| 14 | 2,610 | 3,310 | 10,900 | 14,900 | 7,900 | 8,740 | 7,830 | 10,200 | 6,680 | 2,830 | 16,000 | 14,200 |
| 15 | 4,350 | 7,570 | 12,900 | 16,100 | 10,900 | 12,400 | 4,270 | 6,090 | 8,360 | 3,890 | 15,000 | 13,700 |
| 16 | 4,140 | 8,530 | 12,700 | 14,700 | 7,960 | 12,100 | 3,750 | 3,490 | *7,150 | 3,290 | 16,200 | 12,100 |
| 17 | 3,530 | 6,040 | 14,600 | 14,200 | 6,990 | 12,000 | 4,330 | 15,700 | 8,120 | 4,610 | 15,300 | 11,200 |
| 18 | 5,540 | *3,250 | 13,500 | *11,100 | 6,360 | 19,500 | 6,760 | 15,400 | 3,610 | 9,740 | 16,200 | 9,460 |
| 19 | 10,300 | 2,380 | 10,800 | 13,000 | 4,200 | 26,200 | 10,500 | 16,000 | 2,160 | 11,900 | 16,100 | 8,870 |
| 20 | 10,500 | 4,040 | 11,200 | 11,900 | 2,680 | 25,100 | 12,100 | 17,200 | 9,780 | 14,300 | 15,300 | 7,650 |
| 21 | 9,790 | 2,410 | 12,000 | 7,580 | 5,860 | 23,000 | 14,700 | 14,500 | 18,900 | 16,400 | 15,400 | 7,090 |
| 22 | 9,760 | 2,390 | *6,150 | 7,690 | 8,310 | 33,800 | 17,000 | 8,020 | 16,600 | 15,800 | 14,700 | 8,350 |
| 23 | 6,790 | 4,740 | 6,070 | 10,800 | 15,400 | *31,000 | 12,700 | 2,830 | 16,300 | 10,900 | 18,100 | 8,580 |
| 24 | 2,210 | 7,100 | 8,460 | 9,240 | *7,440 | 30,300 | 7,560 | 4,160 | 15,400 | 6,600 | 18,500 | 6,910 |
| 25 | 4,510 | 10,400 | 6,180 | 12,800 | 2,250 | 29,200 | 1,450 | 3,560 | 15,000 | 10,400 | 17,900 | 4,940 |
| 26 | 9,800 | 10,500 | 5,680 | 10,300 | 3,610 | 31,200 | 13,100 | 6,630 | 12,500 | 16,300 | 19,200 | 6,540 |
| 27 | 7,470 | 10,500 | 4,850 | 9,800 | 4,590 | 33,500 | 2,860 | 8,400 | 10,700 | 14,200 | 18,400 | 6,290 |
| 28 | 5,790 | 10,200 | 7,720 | 10,400 | 6,300 | 27,600 | 5,970 | 5,460 | 11,800 | 16,000 | 19,600 | 2,650 |
| 29 | *7,170 | 8,820 | 14,000 | 11,100 | - | 25,600 | 4,880 | 4,190 | 11,500 | 16,100 | 19,200 | 4,370 |
| 30 | 7,500 | *6,440 | 10,500 | 10,100 | ------- | 21,400 | 5,520 | 3,560 | 9,740 | 14,800 | 19,900 | 7,480 |
| 31 | 6,160 | ---- | 4,520 | 8,500 | ------- | 19,600 | ------- | 2,840 | ------- | 11,300 | 20,300 | ------- |
| Total | 155,860 | 206,270 | 263,850 | 333,280 | 183,600 | 546,580 | 272,570 | 338,650 | 288,070 | 343,680 | 530,300 | 353,280 |
| Mean | 5,028 | 6,876 | 8,511 | 10,750 | 6,557 | 17,630 | 9,086 | 10,920 | 9,602 | 11,090 | 17,110 | 11,780 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 30,600 Min 1,010 Mean 9,752 Cfsm 1.09 In. 14.82
Water year 1954-55: Max 33,800 Min 1,450 Mean 10,450 Cfsm 1.17 In. 15.88

* Discharge measurement made on this day.

## Little River near Maryville, Tenn.

Location.--Lat 35°47'10", long 83°53'04", on right bank on downstream side of bridge on U. S. Highway 411, 0.8 mile downstream from Crooked Creek, 5.0 miles east of Maryville, Blount County, and at mile 17.3.

Drainage area.--269 sq mi.

Records available.--July 1951 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 850.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 7,770 cfs Feb. 23 (gage height, 14.69 ft); minimum, 33 cfs Oct. 7 (gage height, 6.72 ft).
1951-55: Maximum discharge, 13,300 cfs Jan. 16, 1954 (gage height, 18.44 ft); minimum, 33 cfs Sept. 16, 18, Oct. 7, 1954 (gage height, 6.72 ft).
Floods of March 1875, April 1920, and Mar. 29, 1951, reached stages of 31.0, 24.0, and 21.05 ft (discharge, 20,200 cfs) respectively, present datum, from floodmarks.

Remarks.--Records good. Diurnal fluctuation at low flow caused by small mills above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 1-8, July 13 to Aug. 7)

| | | | |
|---|---|---|---|
| 6.8 | 41 | 8.0 | 510 |
| 6.9 | 54 | 9.0 | 1,250 |
| 7.0 | 73 | 11.0 | 3,250 |
| 7.3 | 164 | 13.0 | 5,540 |
| 7.6 | 285 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 56 | 58 | 157 | 588 | 175 | 1,100 | 620 | 357 | 186 | *150 | 228 | 127 |
| 2 | 62 | 56 | *127 | 456 | *352 | *1,070 | 568 | *335 | *178 | 137 | *310 | *103 |
| 3 | 65 | *62 | 109 | *362 | 320 | 878 | 542 | 310 | 168 | 130 | 513 | 95 |
| 4 | *62 | 62 | 97 | 310 | 281 | 745 | *468 | 295 | 161 | 182 | 480 | 92 |
| 5 | 50 | 103 | 161 | 285 | 267 | 634 | 432 | 285 | 157 | 154 | 320 | 89 |
| 6 | 51 | 92 | 846 | 285 | 2,560 | 1,680 | 1,210 | 272 | 150 | 137 | 295 | 89 |
| 7 | 48 | 62 | 346 | 276 | 3,140 | 2,040 | 2,610 | 262 | 178 | 175 | 495 | 81 |
| 8 | 63 | 62 | 228 | 228 | 1,430 | 1,140 | 1,470 | 249 | 383 | 150 | 840 | 78 |
| 9 | 64 | 50 | 723 | 216 | 908 | 855 | 1,030 | 240 | 2,360 | 201 | 620 | 76 |
| 10 | 49 | 56 | 654 | 220 | 682 | 710 | 818 | 232 | 795 | 353 | 652 | 73 |
| 11 | 60 | 59 | 362 | 340 | 802 | 614 | 766 | 228 | 634 | 228 | 374 | 73 |
| 12 | 48 | 60 | 272 | 305 | 640 | 582 | 682 | 220 | 516 | 285 | 300 | 71 |
| 13 | 50 | 53 | 262 | 272 | 504 | 523 | 627 | 374 | 420 | 408 | 262 | 69 |
| 14 | 50 | 54 | 346 | 236 | 504 | 468 | 840 | 379 | 362 | 313 | 232 | 69 |
| 15 | 46 | 54 | 305 | 236 | 450 | 438 | 689 | 346 | 325 | 208 | 224 | 65 |
| 16 | 50 | 59 | 254 | 244 | 438 | 877 | 608 | 305 | 281 | 193 | 240 | 65 |
| 17 | 51 | 58 | 224 | 212 | 766 | 938 | 549 | 438 | 254 | 193 | 204 | 58 |
| 18 | 60 | 76 | 934 | 196 | 738 | 3,000 | 492 | 352 | 232 | 164 | 186 | 60 |
| 19 | 50 | 67 | 620 | 450 | 627 | 3,740 | 456 | 300 | 220 | 164 | 171 | 65 |
| 20 | 53 | 70 | 420 | 340 | 542 | 2,590 | 420 | 295 | 240 | 168 | 161 | 51 |
| 21 | 46 | 103 | 315 | 295 | 480 | 1,660 | 492 | 310 | 212 | 219 | 150 | 56 |
| 22 | 53 | 121 | 267 | 498 | 1,050 | 4,450 | 588 | 305 | 193 | 513 | 178 | 58 |
| 23 | 48 | 89 | 236 | 420 | *5,530 | 2,420 | 456 | 486 | 193 | 330 | 161 | 58 |
| 24 | 45 | 76 | 216 | 335 | 2,270 | 1,500 | 536 | 402 | 240 | 444 | 140 | 49 |
| 25 | 58 | 69 | 193 | 285 | 1,310 | 1,390 | 634 | 340 | 216 | 408 | 127 | 120 |
| 26 | 50 | 65 | 178 | 244 | 946 | 2,610 | 542 | 295 | 285 | 396 | 118 | 140 |
| 27 | 49 | 64 | 182 | 224 | 1,060 | 1,820 | 530 | 262 | 204 | 267 | 112 | 84 |
| 28 | 52 | 115 | 228 | 208 | 1,150 | 1,290 | 480 | 236 | 178 | 224 | 109 | 89 |
| 29 | 56 | 557 | 1,890 | 193 | - | 1,030 | 432 | 254 | 164 | 244 | 103 | 112 |
| 30 | 76 | 228 | 1,660 | 182 | ------ | 825 | 590 | 232 | 161 | 285 | 95 | 220 |
| 31 | 67 | ----- | 848 | 164 | ------- | 703 | ------- | 204 | ------- | 232 | 133 | ------ |
| Total | 1,688 | 2,760 | 13,660 | 9,105 | 29,922 | 44,320 | 20,977 | 9,400 | 10,246 | 7,655 | 8,533 | 2,535 |
| Mean | 54.5 | 92.0 | 441 | 294 | 1,069 | 1,430 | 699 | 303 | 342 | 247 | 275 | 84.5 |
| Cfsm | 0.203 | 0.342 | 1.64 | 1.09 | 3.97 | 5.32 | 2.60 | 1.13 | 1.27 | 0.918 | 1.02 | 0.314 |
| In. | 0.23 | 0.38 | 1.89 | 1.26 | 4.14 | 6.13 | 2.90 | 1.30 | 1.42 | 1.06 | 1.18 | 0.35 |

Calendar year 1954: Max 10,400 Min 44 Mean 440 Cfsm 1.64 In. 22.20
Water year 1954-55: Max 5,530 Min 45 Mean 441 Cfsm 1.64 In. 22.24

Peak discharge (base, 4,800 cfs).--Feb. 6 (9 p.m.) 6,440 cfs (13.74 ft); Feb. 23 (7 a.m.) 7,770 cfs (14.69 ft); Mar. 18 (6:30 p.m.) 5,010 cfs (12.56 ft); Mar. 22 (9 a.m.) 6,910 cfs (14.08 ft).
* Discharge measurement made on this day.

## Cullasaja River at Highlands, N. C.

Location (revised).--Lat 35°04'14", long 83°13'57", on right bank 0.6 mile downstream from Highlands municipal dam, 1.0 mile downstream from Big Creek, and 2.3 miles northwest of Highlands, Macon County.

Drainage area.--14.9 sq mi.

Records available.--December 1927 to September 1955. Except for figures of momentary maximum discharge, records prior to Aug. 29, 1931, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 3,373.63 ft above mean sea level. Prior to Aug. 29, 1931, water-stage recorder on crest of Highlands municipal dam 0.6 mile upstream at datum 230.22 ft higher.

Average discharge.--24 years (1931-55), 58.6 cfs.

Extremes.--Maximum discharge during year, 945 cfs Dec. 29 (gage height, 3.40 ft); minimum, 1.8 cfs Nov. 12-15 (gage height, 0.16 ft).
1927-55: Maximum discharge, 5,100 cfs Aug. 30, 1940 (gage height, 9.35 ft), from rating curve extended above 800 cfs on basis of computation of peak flow over dam; minimum, 0.2 cfs Oct. 13, 14, 1947; minimum daily, 0.2 cfs Oct. 13, 1947.

Remarks.--Records excellent. Low flow regulated by Sequoyah Lake. Some diurnal fluctuation caused by powerplant at Highlands minicipal dam.

Revisions (water years).--WSP 728: 1931. WSP 823: Drainage area. WSP 953: 1941(M). WSP 1206: 1950(m). See also Records available.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.1 | 1.2 | 1.2 | 58 |
| .2 | 2.2 | 1.4 | 82 |
| .3 | 3.8 | 1.7 | 133 |
| .4 | 6.3 | 2.0 | 203 |
| .6 | 16 | 2.3 | 303 |
| .8 | 27 | 2.6 | 446 |
| 1.0 | 40 | 3.1 | 751 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.2 | 12 | 18 | 102 | 21 | 68 | 50 | 48 | 76 | 30 | 58 | 34 |
| 2 | 3.1 | 3.0 | 17 | 85 | 42 | 57 | 56 | 46 | 69 | 29 | 58 | 32 |
| 3 | 3.1 | 2.8 | 17 | 72 | 36 | 53 | 92 | 45 | *65 | 29 | 45 | 32 |
| 4 | 3.1 | 2.8 | 8.1 | 64 | 29 | 53 | 66 | 43 | 60 | 65 | 125 | 30 |
| 5 | 3.1 | 2.8 | 9.6 | 54 | 33 | 50 | 61 | 41 | 57 | 34 | 114 | 29 |
| 6 | 3.1 | 2.5 | 50 | 45 | 485 | 51 | 129 | 39 | 53 | 32 | 84 | 28 |
| 7 | 3.1 | 2.4 | 20 | 40 | 218 | 46 | 135 | 38 | 64 | 51 | 70 | 26 |
| 8 | 3.0 | 2.2 | 15 | 37 | 120 | 45 | 97 | 37 | 60 | *40 | 65 | 24 |
| 9 | 3.0 | 2.2 | 34 | 36 | 96 | 43 | 86 | *35 | 72 | 34 | 56 | 26 |
| 10 | 3.0 | 2.1 | *26 | *41 | 84 | 45 | 67 | 33 | 58 | 36 | *61 | 27 |
| 11 | 2.8 | 2.0 | 18 | 51 | 99 | 43 | *252 | 32 | 99 | 57 | 48 | 24 |
| 12 | 2.6 | *1.8 | 16 | 39 | 73 | 41 | 144 | 33 | 60 | 117 | 36 | 20 |
| 13 | 2.6 | 1.8 | 36 | 34 | 65 | 46 | 303 | 73 | 53 | 191 | 36 | 21 |
| 14 | *2.5 | 1.8 | 27 | 32 | 62 | *62 | 282 | 55 | 47 | 92 | 40 | *22 |
| 15 | 2.4 | 1.8 | 20 | 34 | 57 | 47 | 180 | 49 | 45 | 73 | 156 | 22 |
| 16 | 2.2 | 7.2 | 17 | 32 | *55 | 48 | 146 | 307 | 41 | 61 | 98 | 21 |
| 17 | 2.2 | 13 | 20 | 30 | 57 | 47 | 127 | 240 | 38 | 52 | 58 | 19 |
| 18 | 2.2 | 10 | 53 | 31 | 50 | 50 | 114 | 124 | 34 | 50 | 52 | 18 |
| 19 | 2.1 | 12 | 29 | 32 | 47 | 56 | 102 | 100 | 51 | 53 | 59 | 18 |
| 20 | 2.1 | 25 | 22 | 28 | 45 | 51 | 96 | 84 | 102 | 52 | 59 | 18 |
| 21 | 17 | 13 | 20 | 28 | 45 | 58 | 94 | 216 | 82 | 44 | 58 | 18 |
| 22 | 10 | 9.0 | 19 | 29 | 87 | 372 | 88 | 502 | 69 | 41 | 68 | 18 |
| 23 | 4.9 | 10 | 18 | 25 | 192 | 137 | 79 | 380 | 52 | 38 | 52 | 18 |
| 24 | 4.4 | 9.5 | 19 | 22 | 106 | 102 | 85 | 215 | 47 | 45 | 50 | 18 |
| 25 | 4.0 | 8.1 | 18 | 22 | 88 | 90 | 77 | 175 | 48 | 52 | 45 | 21 |
| 26 | 3.8 | 11 | 18 | 21 | 79 | 111 | 66 | 144 | 40 | 42 | 42 | 20 |
| 27 | 9.2 | 14 | 18 | 21 | 82 | 82 | 61 | 124 | 37 | 38 | 36 | 18 |
| 28 | 19 | 17 | 85 | 20 | 74 | 76 | 58 | 109 | 35 | 36 | 35 | 18 |
| 29 | 19 | 48 | *692 | 19 | - | 72 | 54 | 100 | 34 | 34 | 38 | 18 |
| 30 | 19 | 16 | 346 | 19 | ------- | 60 | 51 | 92 | 32 | 34 | 38 | 19 |
| 31 | 19 | ------- | 144 | 18 | ------- | 53 | ------- | 82 | ------- | 37 | 45 | ------- |
| Total | 183.8 | 266.8 | 1,869.7 | 1,163 | 2,527 | 2,215 | 3,298 | 3,641 | 1,680 | 1,619 | 1,885 | 677 |
| Mean | 5.93 | 8.89 | 60.3 | 37.5 | 90.2 | 71.5 | 110 | 117 | 56.0 | 52.2 | 60.8 | 22.6 |
| Cfsm | 0.398 | 0.597 | 4.05 | 2.52 | 6.05 | 4.80 | 7.38 | 7.85 | 3.76 | 3.50 | 4.08 | 1.52 |
| In. | 0.46 | 0.67 | 4.67 | 2.90 | 6.31 | 5.53 | 8.23 | 9.09 | 4.19 | 4.04 | 4.70 | 1.69 |

Calendar year 1954: Max 692 Min 1.8 Mean 43.2 Cfsm 2.90 In. 39.36
Water year 1954-55: Max 692 Min 1.8 Mean 57.6 Cfsm 3.87 In. 52.48

Peak discharge (base, 550 cfs).--Dec. 29 (9 p.m.) 945 cfs (3.40 ft); Feb. 6 (3 p.m.) 783 cfs (3.15 ft); Mar. 22 (5 p.m.) 713 cfs (3.04 ft); Apr. 13 (8:30 p.m.) 556 cfs (2.79 ft); May 22 (2 a.m.) 643 cfs (2.93 ft).
* Discharge measurement made on this day.

## Cullasaja River at Cullasaja, N. C.

Location.--Lat 35°09'59", long 83°19'25", on right bank at Cullasaja, Macon County, 1.4 miles (corrected) downstream from Ellijay Creek and 4.1 miles upstream from mouth.

Drainage area.--86.5 sq mi.

Records available.--June 1907 to December 1909, February 1921 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,023.37 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 23, 1934, staff gages at same site and datum.

Average discharge.--36 years, 223 cfs.

Extremes.--Maximum discharge during year, 3,460 cfs May 22 (gage height, 11.33 ft); minimum, 27 cfs, Oct. 17 (gage height, 0.49 ft).
1907-9, 1921-55: Maximum discharge, 16,500 cfs Aug. 30, 1940 (gage height, 20.83 ft), from rating curve extended above 8,100 cfs on basis of slope-area determination of peak flow; minimum, 19 cfs Sept. 18-22, 1925, Jan. 2, 1940.
Maximum stage known, that of Aug. 30, 1940. A stage of 17.2 ft, from floodmarks, occurred in July 1916, but has been exceeded at other times, according to information by State Highway Commission.

Remarks.--Records excellent except those for period of ice effect, which are good. Slight regulation at low flow by Sequoyah Lake and mill on Buck Creek. Records of chemical analyses for the water year 1955 are given in WSP 1400.

Revisions (water years).--WSP 823: Drainage area. WSP 1143: 1907-10, 1921-31, 1932(M), 1933-38, 1939(M), 1940-43, 1944(M), 1946, 1947(M).

Rating table, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.5 | 28 | 1.5 | 134 |
| .6 | 35 | 2.0 | 226 |
| .7 | 42 | 3.0 | 487 |
| .8 | 50 | 5.0 | 1,080 |
| 1.0 | 69 | 7.0 | 1,780 |
| 1.2 | 92 | 8.6 | 2,340 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 35 | 44 | 54 | 250 | 79 | 209 | 205 | 187 | 300 | 124 | 157 | 136 |
| 2 | 45 | 41 | 54 | 207 | 143 | 191 | 209 | 180 | 278 | 119 | 165 | 125 |
| 3 | 37 | 35 | 54 | 174 | 136 | 178 | 312 | 174 | *260 | 132 | 233 | 119 |
| 4 | 35 | 34 | 53 | 153 | 112 | 174 | 233 | 171 | 248 | 140 | 283 | 116 |
| 5 | 33 | 54 | 61 | 139 | 104 | 171 | 222 | 164 | 237 | 148 | 324 | 113 |
| 6 | 32 | 41 | 139 | 125 | 1,350 | 176 | 568 | 157 | 224 | 118 | 308 | 111 |
| 7 | 31 | 36 | 78 | 115 | 794 | 165 | 714 | 150 | 250 | 131 | 230 | 106 |
| 8 | 31 | 34 | 64 | 109 | 423 | 153 | 452 | 145 | 273 | 157 | 253 | 98 |
| 9 | 31 | 33 | 90 | 105 | 315 | 147 | 376 | *142 | 315 | 144 | 241 | 97 |
| 10 | 31 | 32 | *91 | *116 | 260 | 152 | 312 | 137 | 235 | 132 | *201 | 97 |
| 11 | 30 | 32 | 70 | 145 | 285 | 152 | *598 | 134 | 290 | 193 | 178 | 95 |
| 12 | 29 | *31 | 66 | 119 | 228 | 140 | 496 | 139 | 226 | 314 | 150 | 90 |
| 13 | 29 | 30 | 98 | 109 | b205 | 152 | 786 | 252 | 205 | 444 | 139 | 88 |
| 14 | *29 | 30 | 96 | 100 | b195 | *189 | 966 | 222 | 193 | *255 | 167 | 88 |
| 15 | 29 | 30 | 77 | 104 | 183 | 165 | 635 | 199 | 185 | 230 | 384 | 86 |
| 16 | 28 | 59 | 68 | 100 | *174 | 162 | 525 | 723 | 169 | 195 | 350 | 82 |
| 17 | 34 | 64 | 67 | 95 | 183 | 165 | 455 | 859 | 164 | 169 | 226 | 79 |
| 18 | 36 | 48 | 138 | 93 | 164 | 169 | 404 | 470 | 153 | 167 | 191 | 77 |
| 19 | 35 | 54 | 101 | 108 | 153 | 203 | 365 | 357 | 169 | 157 | 189 | *76 |
| 20 | 36 | 82 | 79 | 91 | 147 | 195 | 330 | 300 | 255 | 162 | 203 | 74 |
| 21 | 40 | 54 | 72 | 93 | 142 | 187 | 320 | 572 | 233 | 153 | 323 | 73 |
| 22 | 47 | 46 | 71 | 98 | 180 | 1,060 | 305 | 2,310 | 228 | 145 | 342 | 72 |
| 23 | 38 | 44 | 67 | 92 | 524 | 496 | 276 | 1,800 | 218 | 134 | 228 | 70 |
| 24 | 34 | 45 | 65 | 84 | 320 | 365 | 283 | 894 | 183 | 148 | 191 | 73 |
| 25 | 32 | 43 | 65 | 82 | 278 | 315 | 264 | 720 | 178 | 164 | 174 | 104 |
| 26 | 31 | 41 | 62 | 81 | 241 | 381 | 246 | 591 | 162 | 160 | 162 | 82 |
| 27 | 31 | 44 | 62 | 81 | 235 | 295 | 226 | 507 | 147 | 134 | 147 | 77 |
| 28 | 34 | 69 | 105 | 78 | 224 | 273 | 218 | 441 | 142 | 147 | 139 | 80 |
| 29 | 48 | 143 | *1,290 | 76 | - | 257 | 207 | 398 | 136 | 140 | 136 | 79 |
| 30 | 47 | 78 | 870 | 72 | ------- | 237 | 197 | 362 | 131 | 130 | 139 | 92 |
| 31 | 44 | ------- | 351 | 72 | ------- | 220 | ------- | 325 | ------- | 125 | 174 | ------- |
| Total | 1,082 | 1,451 | 4,678 | 3,466 | 7,777 | 7,494 | 11,705 | 13,982 | 6,387 | 5,211 | 6,727 | 2,755 |
| Mean | 34.9 | 48.4 | 151 | 112 | 278 | 242 | 390 | 451 | 213 | 168 | 217 | 91.8 |
| Cfsm | 0.403 | 0.560 | 1.75 | 1.29 | 3.21 | 2.80 | 4.51 | 5.21 | 2.46 | 1.94 | 2.51 | 1.06 |
| In. | 0.47 | 0.62 | 2.01 | 1.49 | 3.34 | 3.22 | 5.03 | 6.01 | 2.75 | 2.24 | 2.89 | 1.18 |

Calendar year 1954: Max 1,940 Min 28 Mean 167 Cfsm 1.93 In. 26.19
Water year 1954-55: Max 2,310 Min 28 Mean 199 Cfsm 2.30 In. 31.25

Peak discharge (base, 2,000 cfs).--Feb. 6 (5:30 p.m.) 2,520 cfs (9.04 ft); May 22 (6 p.m.) 3,460 cfs (11.33 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Little Tennessee River at Needmore, N. C.

Location.--Lat 35°20'11", long 83°31'39", on left bank 0.8 mile downstream from DeHart Creek, 0.8 mile north of Needmore, Swain County, 2.4 miles downstream from Brush Creek, and 6.3 miles downstream from Tellico Creek.

Drainage area.--436 sq mi.

Records available.--June 1944 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,761.19 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--11 years, 1,024 cfs.

Extremes.--Maximum discharge during year, 8,840 cfs Feb. 7 (gage height, 7.30 ft); minimum, 52 cfs Nov. 7, 8 (gage height, 1.16 ft); minimum daily, 71 cfs Nov. 7.
1944-55: Maximum discharge, 20,200 cfs June 16, 1949 (gage height, 11.10 ft), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, that of Nov 7, 8, 1954; minimum daily, that of Nov. 7, 1954.
Floods of October 1898 and Aug. 30, 1940, reached stages of about 13 and 11.5 ft, respectively, from flood profiles by Tennessee Valley Authority.

Remarks.--Records excellent except those below 300 cfs, which are good. Considerable diurnal fluctuation caused by Porters Bend powerplant at Lake Emory.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.2 | 59 | 3.0 | 1,120 |
| 1.3 | 79 | 4.0 | 2,350 |
| 1.5 | 131 | 5.0 | 3,960 |
| 1.7 | 202 | 6.0 | 5,880 |
| 2.0 | 352 | 6.6 | 7,190 |
| 2.5 | 703 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 202 | 216 | 361 | 1,140 | 421 | 1,080 | 1,060 | 945 | 1,260 | 606 | 790 | 534 |
| 2 | 288 | 213 | 310 | 998 | 686 | 1,030 | 1,040 | 912 | 1,190 | 584 | 887 | 498 |
| 3 | 226 | 220 | 281 | 870 | 806 | 928 | 1,370 | 895 | 1,130 | 572 | 854 | 480 |
| 4 | 189 | 208 | 281 | 768 | 648 | 895 | 1,140 | 870 | 1,070 | 628 | 879 | 473 |
| 5 | 173 | 431 | 308 | 721 | 588 | 879 | 1,080 | 854 | 1,020 | 701 | 946 | 460 |
| 6 | 186 | 286 | 773 | 634 | 4,380 | 887 | 2,980 | 814 | 1,010 | 680 | 952 | 460 |
| 7 | 212 | 71 | 574 | 586 | 6,790 | 928 | 4,860 | 798 | 1,030 | 677 | 854 | 440 |
| 8 | 174 | 211 | 434 | 522 | 2,980 | 822 | 2,820 | 766 | 1,140 | 691 | *879 | 421 |
| 9 | 198 | 201 | 479 | 533 | 1,800 | 790 | 2,170 | 766 | 1,400 | 749 | 928 | 427 |
| 10 | 188 | 215 | 672 | 551 | 1,380 | 782 | 1,860 | 728 | 1,080 | 695 | 790 | 414 |
| 11 | 173 | 190 | 486 | 773 | 1,370 | 806 | 2,190 | *704 | 1,150 | 814 | 707 | 395 |
| 12 | 159 | 205 | 427 | 646 | 1,190 | 774 | 2,760 | 746 | 1,050 | 1,160 | 646 | 383 |
| 13 | 184 | 193 | 454 | 530 | 1,000 | 766 | 2,380 | 1,010 | 970 | 1,730 | 570 | 371 |
| 14 | 193 | 198 | 582 | 544 | 979 | 830 | 3,830 | 1,280 | 920 | 1,220 | 735 | 389 |
| 15 | 160 | 196 | 487 | 562 | 928 | 814 | 2,900 | 954 | 870 | *1,000 | 918 | 364 |
| 16 | 174 | 232 | 421 | 537 | 895 | 798 | 2,310 | 1,780 | 838 | 928 | 1,340 | 352 |
| 17 | 183 | 416 | 389 | 516 | 912 | 814 | 1,990 | 3,490 | 790 | 858 | 928 | 352 |
| 18 | 186 | *316 | 715 | 467 | *887 | 854 | *1,760 | 2,150 | 774 | 778 | 770 | 330 |
| 19 | 141 | 272 | 652 | 593 | 814 | 979 | 1,620 | 1,550 | 774 | 822 | 688 | 324 |
| 20 | 182 | 353 | 544 | 534 | 782 | 1,080 | 1,480 | 1,290 | 937 | 764 | 722 | *313 |
| 21 | 181 | 382 | 460 | *527 | 766 | 970 | 1,410 | 1,620 | 1,090 | 774 | 678 | 307 |
| 22 | 186 | 256 | *414 | 551 | 846 | 4,180 | 1,400 | 3,940 | 979 | 846 | 992 | 302 |
| 23 | 196 | 258 | 402 | 558 | 2,690 | 3,580 | 1,260 | 7,170 | 854 | 828 | 790 | 296 |
| 24 | 191 | 280 | 383 | 537 | 2,000 | 2,110 | 1,300 | 4,500 | 970 | 862 | 678 | 296 |
| 25 | 189 | 250 | 364 | 480 | 1,630 | *1,760 | 1,310 | 2,920 | 814 | 814 | 623 | 447 |
| 26 | 171 | 239 | 341 | 454 | 1,320 | 1,990 | 1,170 | 2,220 | 796 | 862 | 567 | 414 |
| 27 | 209 | 237 | 346 | 447 | 1,190 | 1,670 | 1,110 | 1,970 | 695 | 748 | 572 | 383 |
| 28 | 166 | 398 | 364 | 467 | 1,140 | 1,450 | 1,060 | 1,800 | *673 | 693 | 522 | 371 |
| 29 | 242 | 831 | 2,210 | 440 | - | 1,330 | 1,020 | 1,620 | 690 | 854 | 501 | 395 |
| 30 | 236 | 492 | 4,490 | 421 | ------- | 1,190 | 979 | 1,490 | 656 | 788 | 508 | 402 |
| 31 | 200 | ---- | 1,880 | 414 | ------- | 1,100 | ------- | 1,360 | ------- | 698 | 617 | ------ |
| Total | 5,938 | 8,466 | 21,284 | 18,319 | 41,820 | 38,866 | 55,619 | 53,912 | 28,600 | 25,424 | 23,831 | 11,793 |
| Mean | 192 | 282 | 687 | 591 | 1,494 | 1,254 | 1,854 | 1,739 | 953 | 820 | 769 | 393 |
| Cfsm | 0.440 | 0.647 | 1.58 | 1.36 | 3.43 | 2.88 | 4.25 | 3.99 | 2.19 | 1.88 | 1.76 | 0.901 |
| In. | 0.51 | 0.72 | 1.82 | 1.56 | 3.57 | 3.32 | 4.74 | 4.60 | 2.44 | 2.17 | 2.03 | 1.01 |

Calendar year 1954: Max 9,020 Min 71 Mean 863 Cfsm 1.98 In. 26.89
Water year 1954-55: Max 7,170 Min 71 Mean 915 Cfsm 2.10 In. 28.49

Peak discharge (base, 5,000 cfs).--Dec. 30 (7:30 a.m.) 5,190 cfs (5.66 ft); Feb. 7 (1 a.m.) 8,840 cfs (7.30 ft); Mar. 22 (4 p.m.) 5,840 cfs (5.98 ft); Apr. 6 (12 p.m.) 6,940 cfs (6.49 ft); May 23 (7 a.m.) 7,880 cfs (6.90 ft).
* Discharge measurement made on this day.

## Nantahala River near Rainbow Springs, N. C.

Location.--Lat 35°07'35", long 83°37'11", on right bank on Nantahala Forest Service road 300 ft upstream from Roaring Fork, 1,000 ft downstream from Buck Creek, and 5 miles downstream from town of Rainbow Springs, Macon County.

Drainage area.--51.9 sq mi.

Records available.--October 1940 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 3,072.97 ft above mean sea level, datum of 1929.

Average discharge.--15 years, 194 cfs.

Extremes.--Maximum discharge during year, 2,140 cfs Mar. 22 (gage height, 4.84 ft); minimum, 38 cfs Oct. 14, 15, 25-28, Nov. 14-16 (gage height, 0.61 ft).
1940-55: Maximum discharge, 6,300 cfs June 16, 1949 (gage height, 9.70 ft), from rating curve extended above 3,000 cfs on basis of slope-area determination of peak flow; minimum, 33 cfs Nov. 18, 19, 1953 (gage height, 0.60 ft).

Remarks.--Records good except those for periods of ice effect, which are fair. Occasional regulation caused by fish trap above gage beginning Mar. 11, 1955.

Revisions (water years).--WSP 973: 1941(M).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.6 | 34 | 2.0 | 418 |
| .8 | 65 | 2.5 | 641 |
| 1.0 | 103 | 3.0 | 910 |
| 1.2 | 149 | 3.6 | 1,270 |
| 1.5 | 235 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 54 | 40 | 57 | 223 | 85 | 303 | 242 | 178 | 210 | 114 | 190 | 93 |
| 2 | 54 | *44 | 52 | 187 | 210 | 278 | 268 | 172 | 198 | 110 | 181 | 87 |
| 3 | 44 | b44 | *49 | 162 | 142 | 258 | 310 | 170 | 190 | 127 | *187 | *85 |
| 4 | 43 | 49 | 52 | *147 | 121 | 255 | 248 | *165 | 184 | 118 | 178 | 83 |
| 5 | 42 | 87 | 81 | 135 | 123 | 242 | 258 | 162 | 178 | 132 | 165 | 83 |
| 6 | *40 | 51 | 122 | 130 | 1,220 | 275 | 564 | 157 | 178 | *118 | 152 | 81 |
| 7 | 43 | 44 | 70 | 118 | 704 | 258 | 565 | 152 | 207 | 121 | 144 | 79 |
| 8 | 43 | 43 | 67 | 112 | 422 | 238 | 426 | 147 | 261 | 105 | 154 | 76 |
| 9 | 42 | 43 | 189 | 110 | 322 | 229 | 367 | 144 | 245 | 127 | 152 | 74 |
| 10 | 42 | 42 | 112 | 139 | 278 | 248 | 336 | 139 | 201 | 123 | 132 | 72 |
| 11 | 40 | 40 | 83 | 157 | 292 | 232 | 438 | 137 | 245 | 157 | 123 | 70 |
| 12 | 40 | 40 | 78 | 125 | 232 | 223 | 363 | 157 | 198 | 275 | 116 | 72 |
| 13 | 42 | 40 | 110 | 116 | b215 | 226 | 476 | 245 | 184 | 232 | 110 | 70 |
| 14 | 42 | 38 | 85 | b106 | b200 | 223 | 485 | 195 | 172 | 190 | 114 | 72 |
| 15 | 42 | 38 | 76 | 116 | 192 | 207 | 418 | 165 | 165 | 184 | 147 | 72 |
| 16 | 40 | 94 | 70 | 105 | 190 | *216 | 374 | 244 | 157 | 175 | 127 | 70 |
| 17 | 40 | 62 | 76 | 101 | *204 | 204 | 344 | 278 | 149 | 154 | 114 | 69 |
| 18 | 40 | 49 | 154 | 99 | 181 | 238 | 318 | 216 | 144 | 142 | 103 | 62 |
| 19 | 40 | 57 | 101 | 110 | 172 | 275 | 300 | 192 | 170 | 137 | 103 | 62 |
| 20 | 40 | 87 | 87 | 97 | 165 | 255 | 282 | 178 | 184 | 135 | 124 | 60 |
| 21 | 40 | 51 | *b82 | 97 | 162 | 251 | 282 | 303 | 165 | 139 | 147 | 60 |
| 22 | 40 | 46 | 79 | 99 | 304 | 1,050 | *281 | 742 | 147 | 132 | 139 | 60 |
| 23 | 40 | 46 | 74 | 91 | 644 | 502 | 248 | 730 | *167 | 192 | 130 | 59 |
| 24 | 40 | 49 | 70 | 89 | 390 | 398 | 261 | 502 | 159 | 181 | 112 | 60 |
| 25 | 38 | 46 | 69 | b88 | 325 | 363 | 235 | 430 | 152 | 172 | 101 | 97 |
| 26 | 38 | 43 | 67 | b86 | 289 | 410 | 223 | 351 | 147 | 238 | 97 | 67 |
| 27 | 38 | 55 | 70 | 85 | 296 | 329 | 210 | 310 | 135 | 165 | 95 | 63 |
| 28 | 40 | 115 | 112 | 83 | 289 | 310 | 201 | 278 | 132 | 218 | 91 | 79 |
| 29 | 57 | 148 | 860 | 81 | - | 286 | 192 | 265 | 125 | 204 | 91 | 69 |
| 30 | 43 | 67 | 487 | b79 | ------ | 265 | 184 | 245 | 121 | 178 | 91 | 93 |
| 31 | 40 | -- | 272 | b77 | ------ | 252 | ------ | 226 | ------ | 167 | 136 | ------ |
| Total | 1,307 | 1,698 | 4,013 | 3,550 | 8,369 | 9,299 | 9,679 | 7,975 | 5,270 | 4,962 | 4,046 | 2,199 |
| Mean | 42.2 | 56.6 | 129 | 115 | 299 | 300 | 323 | 257 | 176 | 160 | 131 | 73.3 |
| Cfsm | 0.813 | 1.09 | 2.49 | 2.22 | 5.76 | 5.78 | 6.22 | 4.95 | 3.39 | 3.08 | 2.52 | 1.41 |
| In. | 0.94 | 1.22 | 2.88 | 2.54 | 6.00 | 6.66 | 6.94 | 5.71 | 3.78 | 3.56 | 2.90 | 1.58 |

Calendar year 1954: Max 2,160 Min 38 Mean 181 Cfsm 3.49 In. 47.31
Water year 1954-55: Max 1,220 Min 38 Mean 171 Cfsm 3.29 In. 44.71

Peak discharge (base, 1,500 cfs).--Feb. 6 (4 p.m.) 2,050 cfs (4.71 ft); Mar. 22 (4 a.m.) 2,140 cfs (4.84 ft); May 22 (6:30 p.m.) 1,580 cfs (4.05 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Nantahala River at Nantahala, N. C.

Location.--Lat 35°17'55", long 83°39'22", on left bank on U. S. Highway 19, 1 mile northeast of Nantahala, Swain County, 2.3 miles downstream from Rowlin Creek, and 2.6 miles downstream from Nantahala Dam powerhouse.

Drainage area.--144 sq mi.

Records available.--May 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,894.68 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 483 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 1,830 cfs Feb. 6 (gage height, 4.58 ft); minimum, 22 cfs Oct. 21 (gage height, 1.27 ft); minimum daily, 25 cfs Oct. 3.
1942-55: Maximum discharge, 7,510 cfs Feb. 10, 1946 (gage height, 8.15 ft); minimum, 16 cfs Nov. 9, 1953 (gage height, 1.19 ft); minimum daily, 17 cfs Nov. 8, 16, 1952, Oct. 25, 1953.

Remarks.--Records excellent. Flow regulated by Nantahala Lake (see p. 243) and Queens Creek Lake (capacity, about 300 cfs-days).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.3 | 24 | 2.5 | 289 |
| 1.4 | 33 | 3.0 | 540 |
| 1.7 | 75 | 3.5 | 865 |
| 2.0 | 135 | 4.0 | 1,250 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 378 | 558 | 376 | 546 | 234 | 168 | 131 | 429 | 632 | 632 | 48 | 576 |
| 2 | 35 | 613 | 390 | 439 | 105 | 436 | 338 | 612 | 626 | 536 | 57 | 510 |
| 3 | 25 | 632 | 347 | 452 | 320 | 428 | 244 | 473 | 626 | 429 | 63 | 452 |
| 4 | 155 | 564 | 394 | 600 | 331 | 434 | 294 | 652 | 626 | 612 | 52 | 582 |
| 5 | 365 | 576 | 76 | 600 | 282 | 354 | 350 | 614 | 626 | 244 | 48 | 576 |
| 6 | 338 | 564 | 470 | 600 | 1,040 | 219 | 800 | 652 | 626 | 49 | 37 | 582 |
| 7 | 360 | 558 | 439 | 522 | 793 | 471 | 880 | 555 | 646 | 49 | 39 | 538 |
| 8 | 339 | 564 | 423 | 142 | 613 | 456 | 749 | 646 | 698 | 46 | *43 | 582 |
| 9 | 348 | 564 | 471 | 39 | 534 | 460 | 693 | 483 | 698 | 59 | 43 | 582 |
| 10 | 350 | 564 | 446 | 326 | 528 | 466 | 280 | 456 | 634 | 46 | 38 | 582 |
| 11 | 539 | 564 | 545 | 469 | 546 | 456 | 544 | *84 | 691 | 53 | 38 | 582 |
| 12 | 626 | 564 | 594 | 452 | 510 | 302 | 473 | 582 | 474 | 93 | 43 | 588 |
| 13 | 626 | 564 | 600 | 452 | 434 | 84 | 520 | 661 | 482 | 133 | 61 | *594 |
| 14 | 562 | 516 | *502 | 447 | 468 | 256 | 544 | 491 | 652 | 93 | 65 | 594 |
| 15 | 558 | 380 | 446 | 64 | 111 | 406 | 510 | 330 | 646 | *88 | 64 | 594 |
| 16 | 558 | 516 | 393 | 418 | 228 | 408 | 454 | 317 | 646 | 49 | 73 | 594 |
| 17 | 458 | 360 | 280 | 447 | 438 | 410 | 168 | 437 | 646 | 56 | 58 | 464 |
| 18 | 558 | *381 | 260 | 447 | 526 | 312 | 300 | 448 | 626 | 49 | 73 | 588 |
| 19 | 600 | 510 | 55 | 353 | *358 | 232 | 168 | 461 | 436 | 55 | 496 | 594 |
| 20 | 200 | 393 | 355 | 447 | 416 | 152 | 146 | 424 | 626 | 53 | 582 | 600 |
| 21 | 170 | 358 | 368 | *452 | 580 | 172 | 124 | 455 | 639 | 51 | 576 | 474 |
| 22 | 600 | 384 | 360 | 340 | 658 | 1,010 | 120 | 478 | *639 | 53 | 582 | 517 |
| 23 | 594 | 384 | 369 | 318 | 900 | 410 | 113 | 603 | 646 | 61 | 576 | 594 |
| 24 | 508 | 378 | 388 | 342 | 736 | 217 | 117 | 548 | 646 | 56 | 576 | 600 |
| 25 | 552 | 383 | 69 | 160 | 554 | 202 | 476 | 373 | 632 | 53 | 576 | 570 |
| 26 | 558 | 367 | 31 | 248 | 548 | 280 | 558 | 622 | 222 | 49 | 576 | 596 |
| 27 | 552 | 406 | 337 | 242 | 144 | 199 | 500 | 652 | 600 | 46 | 576 | 594 |
| 28 | 558 | 66 | 383 | 194 | 124 | 442 | *665 | 652 | 632 | 52 | 576 | 606 |
| 29 | 564 | 402 | 664 | 194 | - | 442 | 658 | 130 | 632 | 62 | 582 | 600 |
| 30 | 558 | 354 | 600 | 106 | -------- | 355 | 603 | 590 | 632 | 38 | 582 | 613 |
| 31 | 558 | -------- | 510 | 166 | -------- | *200 | -------- | 632 | -------- | 41 | 588 | -------- |
| Total | 13,753 | 13,987 | 11,951 | 11,024 | 13,059 | 10,839 | 12,520 | 15,542 | 18,283 | 3,986 | 8,387 | 17,118 |
| Mean | 444 | 466 | 386 | 356 | 466 | 350 | 417 | 501 | 609 | 129 | 271 | 571 |
| (†) | -10,000 | -9,300 | -1,900 | -2,400 | +8,700 | +11,900 | +12,300 | +2,300 | -5,600 | +6,600 | +700 | -11,900 |

Adjusted for change in contents in Nantahala Lake

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 121 | 156 | 324 | 278 | 777 | 734 | 827 | 576 | 423 | 341 | 293 | 174 |
| Cfsm | 0.840 | 1.08 | 2.25 | 1.93 | 5.40 | 5.10 | 5.74 | 4.00 | 2.94 | 2.37 | 2.03 | 1.21 |
| In. | 0.97 | 1.21 | 2.60 | 2.23 | 5.62 | 5.87 | 6.41 | 4.61 | 3.28 | 2.73 | 2.35 | 1.35 |

| | Observed | | | Adjusted | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 1,910 | Min 25 | Mean 473 | Mean 437 | Cfsm 3.03 | In. 41.21 | |
| Water year 1954-55: | Max 1,040 | Min 25 | Mean 412 | Mean 416 | Cfsm 2.89 | In. 39.23 | |

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Nantahala Lake; furnished by Tennessee Valley Authority.

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## Tuckasegee River at Tuckasegee, N. C.

Location.--Lat 35°16'55", long 83°07'37", on right bank 0.9 mile north of Tuckasegee, Jackson County, and 1.0 mile downstream from West Fork Tuckasegee River.

Drainage area.--143 sq mi.

Records available.--June 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,125.16 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 387 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 5,090 cfs May 22 (gage height, 7.67 ft); minimum, 10 cfs Oct. 4, 17, 18, 27-29 (gage height, 0.68 ft); minimum daily, 10 cfs Oct. 28. 1934-55: Maximum discharge, 40,800 cfs Aug. 30, 1940 (gage height, 21.1 ft, from floodmarks), from rating curve extended above 7,000 cfs on basis of slope-area determinations at gage heights 14.3 and 21.1 ft; minimum, 5.3 cfs Sept. 6, 7, 1954 (gage height, 0.56 ft); minimum daily, 8.0 cfs Sept. 6, 1952.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Flow regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, and Tennessee Creek project lakes (see p. 243, 247).

Revisions (water years).--WSP 823: Drainage area. WSP 1053: 1943.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.6 | 6.5 | 2.0 | 327 |
| .8 | 19 | 2.5 | 595 |
| 1.0 | 39 | 3.0 | 935 |
| 1.3 | 89 | 4.0 | 1,710 |
| 1.6 | 170 | 5.0 | 2,550 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 156 | 168 | *147 | 658 | 220 | 306 | 176 | 191 | 588 | a300 | 598 | 74 |
| 2 | 29 | 358 | 44 | 570 | 263 | 234 | 187 | 163 | 566 | a180 | 662 | 192 |
| 3 | 18 | 250 | 22 | 306 | 278 | 200 | 367 | 176 | 658 | 157 | 600 | 31 |
| 4 | *11 | 420 | 82 | 301 | 288 | 272 | 192 | 160 | 698 | 218 | 486 | 32 |
| 5 | 122 | 189 | 140 | 144 | 69 | 150 | 207 | 302 | 597 | 238 | 576 | 143 |
| 6 | 116 | 42 | 272 | 378 | 661 | 197 | 662 | 314 | 629 | 274 | 534 | 298 |
| 7 | 125 | 20 | 84 | *93 | 764 | 284 | 848 | 98 | 652 | 284 | 456 | 282 |
| 8 | 136 | *139 | 176 | 30 | 864 | 272 | 727 | 90 | 689 | 406 | 483 | 276 |
| 9 | 86 | 186 | 143 | 219 | *837 | 165 | 454 | 216 | 484 | 208 | *888 | 290 |
| 10 | 52 | 170 | 161 | 270 | 796 | 172 | 368 | 76 | 419 | 216 | 893 | 175 |
| 11 | 419 | 472 | 100 | 292 | 572 | 150 | 504 | 67 | 606 | 418 | 627 | 34 |
| 12 | 246 | 664 | 170 | 272 | 263 | 146 | 752 | 190 | 221 | 834 | 499 | 260 |
| 13 | 262 | 358 | 273 | 351 | 245 | 180 | 900 | 216 | 252 | 972 | 264 | 43 |
| 14 | 283 | 59 | 180 | 320 | 467 | 235 | 1,020 | 58 | 322 | 369 | 276 | 24 |
| 15 | 201 | 21 | 240 | 36 | 250 | 162 | *874 | 242 | 504 | 646 | 604 | 76 |
| 16 | 197 | 232 | 139 | 182 | 339 | 173 | 680 | 1,080 | 370 | 478 | 582 | 120 |
| 17 | 23 | 23 | 134 | 324 | 276 | 230 | 543 | 928 | 367 | 190 | 472 | 185 |
| 18 | 141 | 20 | 32 | 322 | 329 | 172 | 600 | 511 | 348 | *490 | 392 | 54 |
| 19 | 208 | 218 | 28 | 398 | 124 | 214 | 584 | 172 | 349 | 352 | 510 | 279 |
| 20 | 212 | 32 | 135 | 314 | 208 | 252 | 561 | 188 | *573 | 428 | 408 | 250 |
| 21 | 212 | 149 | 165 | 275 | 484 | 297 | 265 | 687 | 391 | 394 | 428 | *258 |
| 22 | 212 | 112 | 142 | 144 | 361 | 944 | 290 | 2,310 | 522 | 344 | 332 | 268 |
| 23 | 212 | 113 | 159 | 32 | 779 | 620 | 369 | 1,870 | 570 | 352 | 37 | 264 |
| 24 | 110 | 188 | 140 | 259 | 420 | 629 | 372 | *1,230 | 298 | 214 | 234 | 131 |
| 25 | 138 | 118 | 68 | 261 | 360 | 380 | 204 | 960 | 458 | 202 | 145 | 160 |
| 26 | 11 | 14 | 106 | 256 | 364 | 309 | 290 | 998 | 215 | 416 | 229 | 178 |
| 27 | 30 | 124 | 134 | 292 | 220 | 358 | 144 | 996 | 254 | 267 | 102 | 353 |
| 28 | 10 | 38 | 140 | 304 | 158 | 226 | 54 | 750 | 343 | 535 | 104 | 361 |
| 29 | 161 | 301 | 792 | 184 | - | 304 | 94 | 699 | 272 | 659 | 188 | 254 |
| 30 | 142 | 116 | 791 | 88 | ------- | *272 | 201 | 535 | a400 | 509 | 90 | 274 |
| 31 | 28 | ------- | 696 | 244 | ------- | 209 | ------- | 538 | ------- | 239 | 258 | ------- |
| Total | 4,309 | 5,314 | 6,035 | 8,119 | 11,259 | 8,714 | 13,489 | 17,011 | 13,615 | 11,789 | 12,957 | 5,619 |
| Mean | 139 | 177 | 195 | 262 | 402 | 281 | 450 | 549 | 454 | 380 | 418 | 187 |
| (†) | -2,712 | -2,523 | +1,456 | -2,960 | +1,935 | +3,740 | +7,303 | +9,877 | -1,818 | -625 | -838 | -1,337 |
| Adjusted for change in lake contents | | | | | | | | | | | | |
| Mean | 51.5 | 93.0 | 242 | 166 | 471 | 402 | 693 | 867 | 393 | 360 | 391 | 143 |
| Cfsm | 0.360 | 0.650 | 1.69 | 1.16 | 3.29 | 2.81 | 4.85 | 6.06 | 2.75 | 2.52 | 2.73 | 1.00 |
| In. | 0.42 | 0.73 | 1.95 | 1.34 | 3.43 | 3.24 | 5.41 | 6.99 | 3.07 | 2.90 | 3.15 | 1.11 |

| | Observed | | | Adjusted | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 970 | Min 10 | Mean 270 | Mean 282 | Cfsm 1.97 | In. 26.78 | |
| Water year 1954-55: | Max 2,310 | Min 10 | Mean 324 | Mean 355 | Cfsm 2.48 | In. 33.74 | |

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Thorpe, Cedar Cliff, Bear Creek, Wolf Creek, and East Fork Lakes, furnished by Tennessee Valley Authority and Nantahala Power and Light Co.
a No gage-height record; discharge estimated on basis of weather records, records for station at Dillsboro, and records of release at THorpe Dam.

## Scott Creek above Sylva, N. C.

Location.--Lat 35°23'02", long 83°12'51", on right bank 800 ft downstream from Allens Branch, 3,500 ft upstream from Cope Creek, and 0.8 mile upstream from Sylva, Jackson County.

Drainage area.--50.7 sq mi.

Records available.--June 1941 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,056.42 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--14 years, 103 cfs.

Extremes.--Maximum discharge during year, 1,070 cfs Mar. 22 (gage height, 4.88 ft); minimum, 17 cfs Dec. 4 (gage height, 1.64 ft), result of freezeup.
1941-55: Maximum discharge, 1,990 cfs Feb. 10, 1946; maximum gage height, 6.77 ft Feb. 21, 1953; minimum discharge, 8.0 cfs Sept. 22, 23, 1941 (gage height, 1.30 ft); minimum daily, 22 cfs Sept. 19, 29, 30, Oct. 4, 1954.
Maximum stage known, 8.6 ft Aug. 30, 1940, from floodmarks (discharge, 3,200 cfs, from rating curve extended above 1,800 cfs by logarithmic plotting).

Remarks.--Records good.

Revisions (water years).--WSP 1053: 1942-44(M).

**Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)**

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.6 | 15 | 2.4 | 130 | 1.7 | 25 | 2.7 | 207 |
| 1.7 | 23 | 2.7 | 207 | 1.8 | 35 | 3.0 | 303 |
| 1.8 | 33 | 3.0 | 303 | 2.0 | 61 | 3.5 | 500 |
| 2.0 | 59 | 3.2 | 380 | 2.2 | 94 | 3.8 | 620 |
| 2.2 | 92 | | | 2.4 | 133 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 26 | 25 | 28 | 67 | 36 | 129 | 129 | 98 | 105 | 54 | 74 | 41 |
| 2 | 25 | 31 | 26 | 58 | 74 | 115 | 129 | 96 | 102 | 53 | 66 | 39 |
| 3 | 23 | 27 | 24 | 51 | 54 | 107 | 137 | 92 | 98 | 51 | 61 | 40 |
| 4 | *22 | 30 | 23 | 47 | 45 | 104 | 117 | 91 | 94 | 54 | 64 | 41 |
| 5 | 23 | 44 | 44 | 45 | 45 | 98 | 115 | 89 | 91 | 65 | 64 | 39 |
| 6 | 23 | 31 | 55 | 50 | 589 | 113 | 298 | 87 | 89 | 60 | 63 | 39 |
| 7 | 24 | 28 | 29 | *43 | 266 | 102 | 283 | 84 | 98 | 74 | 63 | 39 |
| 8 | 24 | *26 | *28 | 41 | 153 | 91 | 199 | 82 | 144 | 71 | 75 | 36 |
| 9 | 24 | 27 | 58 | 41 | *119 | *87 | 175 | 80 | 125 | 77 | *72 | 36 |
| 10 | 24 | 28 | 41 | 50 | 104 | 87 | 160 | *79 | 102 | 63 | 58 | 36 |
| 11 | 23 | 27 | 32 | 71 | 119 | 86 | 183 | 79 | 133 | 57 | 54 | 36 |
| 12 | 23 | 26 | 31 | 51 | 84 | 87 | 158 | 86 | 104 | 138 | 51 | 39 |
| 13 | 23 | 26 | 52 | 46 | 80 | 89 | 196 | 117 | 94 | 165 | 50 | 37 |
| 14 | 23 | 26 | 41 | 42 | 79 | 94 | 228 | 105 | 89 | 121 | 50 | 36 |
| 15 | 24 | 26 | 35 | 46 | 77 | 92 | *183 | 100 | 86 | 107 | 58 | *35 |
| 16 | 25 | 34 | 32 | 42 | 74 | 104 | 168 | 170 | 82 | 102 | 54 | 34 |
| 17 | 25 | 31 | 35 | 40 | 82 | 113 | 155 | 170 | 79 | 86 | 48 | 33 |
| 18 | 25 | 28 | 85 | 39 | 71 | 144 | 148 | 137 | 77 | *80 | 47 | 33 |
| 19 | 25 | 31 | 44 | 43 | 66 | 183 | 140 | 125 | 87 | 93 | 46 | 33 |
| 20 | 25 | 51 | 35 | 39 | 64 | 160 | 135 | 111 | *103 | 102 | 50 | 33 |
| 21 | 25 | 28 | 32 | 41 | 63 | 154 | 133 | 135 | 123 | 91 | 50 | 32 |
| 22 | 25 | 26 | 32 | 45 | 183 | *543 | 133 | 314 | 92 | 77 | 47 | 32 |
| 23 | 25 | 28 | 31 | 41 | 370 | 266 | 123 | 253 | 86 | 82 | 48 | 31 |
| 24 | 25 | 28 | 32 | 37 | 196 | 210 | 140 | 199 | 80 | 84 | 43 | 32 |
| 25 | 25 | 26 | 30 | 35 | 155 | 204 | 129 | 175 | 86 | 89 | 42 | 61 |
| 26 | 25 | 24 | 31 | 34 | 133 | 243 | 123 | 155 | 80 | 74 | 41 | 40 |
| 27 | 25 | 25 | 34 | 39 | 144 | 183 | 115 | 142 | 72 | 66 | 41 | 37 |
| 28 | 27 | 63 | 51 | 55 | 131 | 168 | 109 | 129 | 63 | 69 | 40 | 42 |
| 29 | 38 | 67 | 341 | 33 | - | 155 | 105 | 125 | 60 | 71 | 40 | 40 |
| 30 | 26 | 31 | 148 | 33 | ------- | 144 | 102 | 121 | 57 | 63 | 39 | 54 |
| 31 | 25 | ------- | 87 | 33 | ------- | 135 | ------- | 111 | ------- | 63 | 51 | ------- |
| Total | 770 | 950 | 1,627 | 1,358 | 3,656 | 4,590 | 4,648 | 3,937 | 2,781 | 2,502 | 1,650 | 1,136 |
| Mean | 24.8 | 31.7 | 52.5 | 43.8 | 131 | 148 | 155 | 127 | 92.7 | 80.7 | 53.2 | 37.9 |
| Cfsm | 0.489 | 0.625 | 1.04 | 0.864 | 2.58 | 2.92 | 3.06 | 2.50 | 1.83 | 1.59 | 1.05 | 0.748 |
| In. | 0.56 | 0.70 | 1.19 | 1.00 | 2.68 | 3.37 | 3.41 | 2.89 | 2.04 | 1.84 | 1.21 | 0.83 |

Calendar year 1954: Max 953 Min 22 Mean 80.1 Cfsm 1.58 In. 21.43
Water year 1954-55: Max 589 Min 22 Mean 81.1 Cfsm 1.60 In. 21.72

Peak discharge (base, 900 cfs).--Feb. 6 (3 p.m.) 1,010 cfs (4.76 ft); Mar. 22 (3:30 a.m.) 1,070 cfs (4.88 ft).
* Discharge measurement made on this day.

## Tuckasegee River at Dillsboro, N. C.

Location.--Lat 35°21'59", long 83°15'38", on left bank 0.4 mile downstream from Scott Creek and 0.5 mile downstream from U. S. Highway 23 at Dillsboro, Jackson County.

Drainage area.--347 sq mi.

Records available.--June 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,950.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 24, 1934, staff gage at site below Scott Creek 0.4 mile upstream at datum 7.27 ft higher.

Average discharge.--27 years, 752 cfs (unadjusted).

Extremes.--Maximum discharge during year, 4,560 cfs May 23 (gage height, 7.20 ft); minimum, 59 cfs Oct. 24 (gage height, 1.73 ft); minimum daily, 112 cfs Oct. 3, 4, 27.
1928-55: Maximum discharge, 52,600 cfs Aug. 30, 1940 (gage height, 21.96 ft, from floodmarks), from rating curve extended above 8,400 cfs on basis of slope-area determination and computation of peak flow over dam; minimum, 35 cfs Sept. 17, 1953 (gage height, 1.60 ft); minimum daily, 107 cfs Sept. 19, 1954.

Remarks.--Records excellent. Considerable diurnal fluctuation caused by Dillsboro powerplant 0.7 mile above station. Flow partly regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, and Tennessee Creek project lakes (see p. 243, 247).

Revisions (water years).--WSP 823: Drainage area. WSP 923: 1940(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 2.0 | 112 | 3.5 | 790 |
| 2.2 | 165 | 4.0 | 1,140 |
| 2.4 | 230 | 5.0 | 2,000 |
| 2.7 | 349 | 6.0 | 3,050 |
| 3.0 | 490 | 6.2 | 3,290 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 284 | 184 | 229 | 900 | 410 | 611 | 615 | 507 | 938 | 518 | 824 | 377 |
| 2 | 247 | 446 | 284 | 818 | 550 | 672 | 598 | 484 | 956 | 356 | 986 | 373 |
| 3 | 112 | 358 | 154 | 588 | 466 | 536 | 698 | 478 | 1,020 | 322 | 968 | 263 |
| 4 | *112 | 408 | 134 | 470 | 469 | 560 | 701 | 456 | 1,060 | 434 | 901 | 222 |
| 5 | 120 | 494 | 254 | 332 | 366 | 523 | 582 | 504 | 956 | 515 | 806 | 316 |
| 6 | 212 | 256 | 534 | 496 | 2,190 | 538 | 1,460 | 581 | 922 | 526 | 899 | 422 |
| 7 | 223 | 127 | 282 | 373 | 1,910 | 612 | 2,170 | 448 | 1,020 | 542 | 790 | 442 |
| 8 | 233 | *160 | *270 | 224 | 1,390 | 528 | 1,540 | 349 | 1,090 | 694 | 778 | 466 |
| 9 | 214 | 279 | 372 | 190 | *1,210 | 500 | 1,190 | 419 | 1,290 | 524 | *1,090 | 454 |
| 10 | 200 | 278 | 388 | 500 | 1,120 | 460 | 892 | 378 | 744 | 450 | 1,180 | 456 |
| 11 | 391 | 438 | 252 | 592 | 1,050 | 447 | 1,110 | 309 | 986 | 672 | 920 | 241 |
| 12 | 360 | 735 | 344 | 442 | 604 | 444 | 1,280 | 377 | 780 | 1,090 | 826 | 353 |
| 13 | 349 | 604 | 287 | 483 | 550 | 442 | 1,520 | 672 | 522 | 1,380 | 582 | 279 |
| 14 | 402 | 228 | 490 | 516 | 594 | 560 | 1,880 | 576 | 614 | 947 | 490 | 190 |
| 15 | 315 | 172 | 352 | 298 | 738 | 498 | 1,540 | 443 | 744 | 858 | 774 | 180 |
| 16 | 299 | 224 | 317 | 280 | 472 | 501 | 1,320 | 1,700 | 716 | 884 | 948 | 302 |
| 17 | 216 | 288 | 290 | 470 | 617 | 514 | 1,170 | 1,800 | 654 | 538 | 734 | 240 |
| 18 | 148 | 143 | 380 | 492 | 598 | 657 | 1,120 | 1,160 | 669 | *648 | 637 | 308 |
| 19 | 304 | 212 | 216 | 523 | 412 | 723 | 1,100 | 804 | 684 | 682 | 700 | 310 |
| 20 | 315 | 363 | 210 | *488 | 410 | 724 | 1,060 | 574 | 906 | 731 | 702 | 398 |
| 21 | 317 | 203 | 310 | 477 | 614 | 676 | 890 | 1,120 | 822 | 720 | 669 | *384 |
| 22 | 311 | 258 | 296 | 327 | 812 | 2,370 | 750 | 3,200 | 723 | 650 | 563 | 406 |
| 23 | 314 | 248 | 302 | 290 | 1,680 | 1,560 | 644 | 3,250 | 847 | 664 | 562 | 400 |
| 24 | 264 | 302 | 292 | 341 | 1,140 | *1,320 | 851 | *2,170 | 742 | 573 | 380 | 359 |
| 25 | 235 | 266 | 260 | 408 | 843 | 1,090 | *758 | 1,740 | 648 | 503 | 406 | 308 |
| 26 | 162 | 218 | 244 | 412 | 764 | 1,200 | 668 | 1,620 | 562 | 645 | 317 | 310 |
| 27 | 112 | 140 | 220 | 433 | 284 | 900 | 570 | 1,580 | 486 | 578 | 416 | 496 |
| 28 | 117 | 342 | 297 | 468 | 572 | 902 | 428 | 1,340 | 526 | 702 | 306 | 513 |
| 29 | 134 | 562 | 1,370 | 331 | - | 788 | 402 | 1,210 | 527 | 1,230 | 363 | 432 |
| 30 | 312 | 252 | 1,290 | 330 | ------- | 718 | 548 | 1,150 | 581 | 796 | 337 | 458 |
| 31 | 214 | ---- | 932 | 350 | ------- | 671 | ------- | 895 | ------- | 630 | 442 | ------- |
| Total | 7,548 | 9,188 | 11,852 | 13,642 | 22,835 | 23,245 | 30,055 | 32,294 | 23,715 | 21,002 | 21,096 | 10,658 |
| Mean | 243 | 306 | 382 | 440 | 816 | 750 | 1,002 | 1,042 | 790 | 677 | 681 | 355 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 4,490 Min 107 Mean 559 Cfsm 1.61 In. 21.87
Water year 1954-55: Max 3,250 Min 112 Mean 622 Cfsm 1.79 In. 24.34

Peak discharge (base, 4,500 cfs).--May 23 (1 a.m.) 4,560 cfs (7.20 ft).
* Discharge measurement made on this day.

## Oconaluftee River at Birdtown, N. C.

Location.--Lat 35°27'42", long 83°21'13", on right bank 200 ft upstream from county bridge, 0.5 mile south of Birdtown, Swain County, 0.6 mile downstream from Adams Creek, 0.6 mile upstream from Goose Creek, and 2.2 miles southwest of Cherokee.

Drainage area.--184 sq mi.

Records available.--July 1945 to September 1946, July 1948 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,843.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. July 10, 1945, to Sept. 30, 1946, staff gage at same site and datum.

Average discharge.--8 years, 499 cfs.

Extremes.--Maximum discharge during year, 10,500 cfs July 9 (gage height, 9.43 ft); minimum, 80 cfs Oct. 19 (gage height, 0.66 ft).
1945-46, 1948-55: Maximum discharge, 15,000 cfs Jan. 7, 1946 (gage height, 12.0 ft, from floodmarks), from rating curve extended above 8,300 cfs on basis of computation of peak flow over dam; minimum, that of Oct. 19, 1954.

Remarks.--Records excellent.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.6 | 67 | 2.0 | 640 |
| .7 | 89 | 3.0 | 1,400 |
| .8 | 114 | 4.0 | 2,400 |
| 1.0 | 172 | 5.0 | 3,580 |
| 1.2 | 239 | 5.3 | 3,970 |
| 1.5 | 365 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 125 | 92 | 185 | 580 | 188 | 1,130 | 610 | 439 | 384 | 236 | 439 | 198 |
| 2 | 145 | 114 | 169 | 487 | 348 | 998 | 592 | 423 | 365 | 225 | 423 | 178 |
| 3 | 104 | 99 | 148 | 403 | 274 | 840 | 574 | 403 | 352 | 239 | 498 | 175 |
| 4 | 94 | 104 | 131 | 360 | 222 | 749 | 514 | 389 | 338 | 274 | 492 | 172 |
| 5 | 92 | 142 | 201 | 347 | 198 | 670 | 487 | 375 | 329 | 312 | 526 | 172 |
| 6 | 94 | 112 | 520 | 352 | 3,470 | 870 | 1,090 | 360 | *320 | 286 | 532 | 178 |
| 7 | 120 | 102 | 251 | 324 | 2,270 | 798 | 1,680 | 352 | 352 | 266 | 556 | 163 |
| 8 | 104 | 106 | 208 | 282 | 1,120 | 658 | 990 | 338 | 468 | 295 | 849 | 154 |
| 9 | 96 | *117 | 365 | 270 | 791 | 604 | 826 | 329 | 752 | *2,390 | 658 | 151 |
| 10 | 89 | 134 | 299 | 282 | 634 | 580 | 728 | 316 | 418 | 902 | 514 | 157 |
| 11 | 87 | 125 | 225 | 408 | 763 | *544 | 855 | 312 | 598 | 580 | 434 | 148 |
| 12 | 87 | 114 | 204 | 312 | 580 | 556 | 742 | *316 | 482 | 616 | *408 | 166 |
| 13 | 87 | 109 | 266 | 282 | 538 | 568 | 777 | 444 | 418 | 574 | 389 | *154 |
| 14 | 87 | 106 | 255 | 255 | 492 | 544 | 982 | 429 | 384 | 509 | 379 | 142 |
| 15 | 85 | 102 | 222 | 274 | *449 | 538 | 798 | 423 | 360 | 492 | 401 | 134 |
| 16 | 82 | 109 | 201 | 258 | 429 | 628 | 714 | 681 | 338 | 476 | 532 | 131 |
| 17 | 82 | 128 | *191 | 236 | 470 | 700 | 658 | 646 | 316 | 439 | 365 | 125 |
| 18 | 82 | 109 | 448 | 228 | 408 | 945 | 604 | 544 | 307 | 439 | 329 | 122 |
| 19 | *82 | 112 | 291 | 247 | 384 | 1,300 | *568 | 492 | 312 | 434 | 307 | 122 |
| 20 | 82 | 172 | 239 | *218 | 365 | 1,170 | 538 | 439 | 324 | 915 | 295 | 120 |
| 21 | 82 | 175 | 211 | 222 | 360 | 1,010 | 532 | 444 | 303 | 610 | 274 | 117 |
| 22 | 82 | 148 | 201 | 228 | 1,160 | 3,890 | 550 | 879 | 282 | 509 | 262 | 117 |
| 23 | 85 | 131 | 188 | 211 | 3,270 | 1,790 | 498 | 1,060 | 295 | 492 | 262 | 114 |
| 24 | 85 | 125 | 188 | 194 | 1,470 | 1,290 | 640 | 798 | 303 | 504 | 232 | 114 |
| 25 | 85 | 117 | 172 | 194 | 1,090 | 1,170 | 616 | 682 | 286 | 532 | 218 | 361 |
| 26 | 85 | 106 | 169 | 188 | 870 | 1,490 | 634 | 616 | 307 | 470 | 211 | 172 |
| 27 | 87 | 104 | 188 | 201 | 998 | 1,100 | 592 | 550 | 270 | 408 | 204 | 142 |
| 28 | 102 | 201 | 418 | 182 | 1,010 | 945 | 532 | 492 | 258 | 745 | 198 | 157 |
| 29 | 131 | 711 | 3,550 | 178 | - | 826 | 492 | 465 | 247 | 910 | 188 | 169 |
| 30 | 106 | 239 | 1,630 | 172 | ------ | 728 | 460 | 444 | 243 | 556 | 185 | 462 |
| 31 | 94 | - - - | 798 | 163 | ------- | 664 | ------- | 413 | ------- | 482 | 258 | - - - - |
| Total | 2,930 | 4,365 | 12,732 | 8,538 | 24,621 | 30,293 | 20,873 | 15,293 | 10,711 | 17,117 | 11,818 | 4,987 |
| Mean | 94.5 | 146 | 411 | 275 | 879 | 977 | 696 | 493 | 357 | 552 | 381 | 166 |
| Cfsm | 0.514 | 0.793 | 2.23 | 1.49 | 4.78 | 5.31 | 3.78 | 2.68 | 1.94 | 3.00 | 2.07 | 0.902 |
| In. | 0.59 | 0.88 | 2.57 | 1.73 | 4.98 | 6.12 | 4.22 | 3.09 | 2.16 | 3.46 | 2.39 | 1.01 |

Calendar year 1954: Max 5,720 Min 82 Mean 404 Cfsm 2.20 In. 29.81
Water year 1954-55: Max 3,890 Min 82 Mean 450 Cfsm 2.45 In. 33.20

Peak discharge (base, 4,000 cfs).--Dec. 29 (10 a.m.) 6,900 cfs (7.28 ft); Feb. 6 (6 p.m.) 6,910 cfs (7.29 ft); Feb. 23 (4 a.m.) 5,500 cfs (6.37 ft); Mar. 22 (4 a.m.) 7,920 cfs (7.92 ft); July 9 (3 p.m.) 10,500 cfs (9.43 ft); July 28 (10 p.m.) 4,980 cfs (6.02 ft).
* Discharge measurement made on this day.

## Tuckasegee River at Bryson City, N. C.

Location.--Lat 35°25'40", long 83°26'50", on left bank 400 ft downstream from bridge on State Highway 288 at Bryson City, Swain County, and 0.6 mile downstream from Deep Creek.
Drainage area.--655 sq mi.
Records available.--November 1897 to September 1955 in reports of Geological Survey. Records prior to October 1913 revised in Tennessee Division of Geology Bulletin 34 and North Carolina Department of Conservation and Development Bulletin 34.
Gage.--Water-stage recorder. Datum of gage is 1,716.54 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Nov. 7, 1897, to Feb. 2, 1914, and May 18, 1920, to June 27, 1927, staff gages at bridge 400 ft upstream at same datum. Feb. 3, 1914, to May 17, 1920, water-stage recorder at site 200 ft upstream at same datum.
Average discharge.--57 years (1898-1955), 1,567 cfs (unadjusted).
Extremes.--Maximum discharge during year, 13,200 cfs Feb. 6 (gage height, 6.71 ft); minimum, 202 cfs Oct. 27, 28 (gage height, 0.57 ft); minimum daily, 224 cfs Oct. 5.
1897-1955: Maximum discharge, 61,600 cfs Aug. 30, 1940 (gage height, 15.96 ft), from rating curve extended above 25,000 cfs on basis of logarithmic plotting and slope-area determination of peak flow; minimum, 27 cfs Sept. 10, 1925; minimum gage height, 0.47 ft Oct. 26, 1952; minimum daily discharge, 31 cfs Sept. 9, 10, 1925, caused by filling reservoir on Oconaluftee River; minimum daily during normal regulation, 186 cfs Oct. 13, 1925.
Flood in May 1840 reached a stage of 21 ft, from survey by Tennessee Valley Authority.
Remarks.--Records excellent except those for periods of no gage-height record, which are good. Considerable diurnal fluctuation caused by powerplants above station. Flow regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, and Tennessee Creek project lakes (see p. 243,247), and two small reservoirs with combined capacity of about 250 cfs-days.
Revisions (water years).--WSP 523: 1916, 1918-20. WSP 823: Drainage area. WSP 1336: 1899(M), 1907, 1915(M), 1916-20, 1921-29(M), 1933-34(M). See also Records available.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 6 | | | | Feb. 7 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 220 | 2.0 | 1,780 | 0.8 | 360 | 3.0 | 3,590 |
| .7 | 285 | 3.0 | 3,570 | 1.0 | 530 | 4.0 | 5,710 |
| 1.0 | 530 | 4.0 | 5,710 | 1.5 | 1,090 | 5.0 | 8,180 |
| 1.5 | 1,070 | 5.0 | 8,180 | 2.0 | 1,810 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 424 | 255 | 450 | 1,690 | 650 | 2,140 | 1,580 | 1,210 | 1,520 | 912 | 1,250 | 725 |
| 2 | 466 | 476 | 476 | 1,480 | 986 | 2,160 | 1,510 | 1,150 | 1,570 | 753 | 1,570 | 518 |
| 3 | 274 | 559 | 332 | 1,210 | 856 | 1,750 | 1,600 | a1,100 | 1,500 | 590 | 1,540 | 597 |
| 4 | 232 | 465 | 274 | 854 | 774 | 1,650 | 1,560 | a1,070 | 1,550 | 786 | 1,530 | 432 |
| 5 | 224 | 750 | 438 | 912 | 734 | 1,530 | 1,320 | a1,000 | 1,440 | 943 | 1,440 | 440 |
| 6 | 306 | 410 | 1,060 | 806 | 6,970 | 1,710 | 2,970 | a1,160 | 1,400 | 930 | 1,600 | 594 |
| 7 | 355 | 280 | 721 | 944 | 5,510 | 1,760 | 4,920 | a1,020 | 1,530 | 912 | 1,460 | 652 |
| 8 | 378 | 260 | 484 | 619 | 3,150 | 1,540 | 3,230 | 872 | 1,650 | 1,050 | *1,880 | 656 |
| 9 | 345 | 360 | 800 | 544 | 2,430 | 1,420 | 2,500 | 856 | 2,730 | 3,450 | 1,830 | 640 |
| 10 | 304 | 435 | 742 | 809 | 2,140 | 1,280 | 2,140 | 876 | 1,480 | 1,820 | 1,810 | 655 |
| 11 | 312 | 415 | 595 | 1,060 | 2,190 | 1,250 | 2,490 | *792 | 1,910 | 1,470 | 1,470 | 537 |
| 12 | 563 | 816 | 540 | 858 | 1,620 | 1,240 | 2,500 | 774 | 1,760 | 1,940 | 1,320 | 426 |
| 13 | 425 | 803 | 623 | 839 | 1,280 | 1,250 | 2,610 | 1,310 | 1,300 | 2,260 | 1,110 | 620 |
| 14 | 438 | 453 | 823 | 838 | 1,210 | 1,290 | 3,460 | 1,350 | 1,280 | 1,790 | 966 | 402 |
| 15 | 466 | 288 | 568 | 790 | 1,500 | *1,300 | 2,870 | 1,020 | 1,290 | 1,590 | 1,170 | 372 |
| 16 | 410 | 284 | 636 | 561 | 1,030 | 1,340 | 2,540 | 2,480 | 1,420 | 1,610 | 1,680 | 413 |
| 17 | 402 | 523 | *522 | 674 | 1,310 | 1,500 | 2,290 | 3,000 | 1,230 | 1,300 | 1,150 | 445 |
| 18 | 242 | 280 | 996 | 796 | 1,200 | 2,010 | *2,080 | 2,130 | 1,250 | 1,180 | 1,090 | 516 |
| 19 | 350 | 264 | 630 | *a800 | 1,000 | 2,570 | 2,030 | 1,660 | 1,240 | 1,350 | 994 | 391 |
| 20 | 388 | 587 | 512 | a800 | 890 | 2,510 | 1,920 | 1,330 | 1,400 | 1,810 | 1,110 | *569 |
| 21 | 404 | 400 | 557 | a780 | *1,000 | 2,170 | 1,800 | 1,650 | 1,270 | 1,630 | 1,010 | 544 |
| 22 | 391 | 452 | 584 | 720 | 2,310 | 7,650 | 1,640 | 3,760 | 1,150 | 1,440 | 928 | 547 |
| 23 | 383 | 385 | 530 | 614 | 6,340 | 4,370 | 1,380 | 5,080 | 1,250 | 1,330 | 842 | 552 |
| 24 | 381 | 404 | 548 | 482 | 3,400 | 3,320 | 1,860 | 3,500 | 1,320 | 1,360 | 580 | 530 |
| 25 | 300 | 450 | 512 | 664 | 2,480 | 2,860 | 1,780 | 2,920 | 1,030 | 1,240 | 724 | 772 |
| 26 | 344 | 352 | 432 | 642 | 2,040 | 3,450 | 1,660 | 2,530 | 1,070 | 1,190 | 614 | 596 |
| 27 | 228 | 276 | 476 | 688 | 2,260 | 2,540 | 1,490 | 2,480 | 844 | 1,240 | 690 | 618 |
| 28 | 248 | 480 | 672 | 694 | 2,110 | 2,390 | 1,280 | 2,150 | *898 | 1,150 | 554 | 666 |
| 29 | 294 | 1,400 | 5,140 | 672 | - | 2,090 | 1,170 | 1,940 | 920 | 2,540 | 546 | 753 |
| 30 | 423 | *852 | 3,740 | 546 | ------ | 1,870 | 1,170 | 1,850 | 876 | *1,480 | 632 | 944 |
| 31 | 340 | ------ | 2,070 | 445 | ------ | 1,750 | ------ | 1,480 | ------ | 1,330 | 670 | ------ |
| Total | 11,040 | 14,214 | 27,483 | 24,831 | 59,370 | 67,660 | 63,350 | 55,500 | 41,078 | 44,376 | 35,760 | 17,122 |
| Mean | 356 | 474 | 887 | 801 | 2,120 | 2,183 | 2,112 | 1,790 | 1,369 | 1,431 | 1,154 | 571 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 12,800 Min 224 Mean 1,147 Cfsm 1.75 In. 23.77
Water year 1954-55: Max 7,650 Min 224 Mean 1,265 Cfsm 1.93 In. 26.22

Peak discharge (base, 9,000 cfs).--Dec. 29 (1 p.m.) 9,270 cfs (5.40 ft); Feb. 6 (7:30 p.m.) 13,200 cfs (6.71 ft); Mar. 22 (7 a.m.) 11,700 cfs (6.22 ft); July 9 (4:30 p.m.) 11,200 cfs (6.07 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, and records for stations at Dillsboro and Oconaluftee River at Birdtown.

## Noland Creek near Bryson City, N. C.

Location.--Lat 35°29'06", long 83°30'15", on right bank in Great Smoky Mountain National Park, 1.1 miles downstream from Mill Creek, 3.6 miles upstream from Fontana Lake, and 5 miles northwest of Bryson City, Swain County.

Drainage area.--13.8 sq mi.

Records available.--October 1935 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 2,280 ft (from topographic map).

Average discharge.--20 years, 43.8 cfs.

Extremes.--Maximum discharge during year, 1,210 cfs July 9 (gage height, 4.50 ft); minimum, 5.2 cfs Oct. 5, 6 (gage height, 0.75 ft).
1935-55: Maximum discharge, 1,530 cfs Aug. 30, 1940 (gage height, 4.87 ft), from rating curve extended above 540 cfs on basis of critical-depth determination of peak flow; minimum, 3.5 cfs Oct. 24, 1939 (gage height, 0.66 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1936, 1937-39(M).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.7 | 4.2 | 1.8 | 67 |
| .8 | 6.1 | 2.0 | 92 |
| .9 | 8.7 | 2.3 | 143 |
| 1.0 | 12 | 2.6 | 210 |
| 1.2 | 21 | 3.0 | 337 |
| 1.4 | 33 | 3.2 | 420 |
| 1.6 | 48 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.9 | 5.7 | 12 | 47 | a20 | 135 | 64 | 46 | 39 | 22 | 44 | 15 |
| 2 | 7.4 | 6.9 | 11 | 43 | a30 | 112 | 62 | 43 | 36 | 20 | 56 | 14 |
| 3 | 5.7 | 6.1 | 10 | 36 | a27 | 96 | 60 | 40 | 34 | 22 | 43 | 14 |
| 4 | 5.5 | 7.1 | 9.4 | 33 | a25 | 86 | 52 | 39 | 32 | 21 | 36 | 14 |
| 5 | 5.3 | 9.7 | 28 | 34 | a24 | 75 | 50 | 37 | 30 | 20 | 38 | 14 |
| 6 | 5.5 | 6.9 | 36 | 39 | a380 | 95 | 150 | 35 | 28 | 22 | 47 | 13 |
| 7 | 9.7 | 6.6 | 17 | 31 | a200 | 79 | 160 | 34 | 33 | 20 | 41 | 13 |
| 8 | 6.4 | 7.4 | 14 | 26 | a120 | 69 | 107 | 32 | 90 | 23 | 35 | 12 |
| 9 | 5.9 | *8.2 | 37 | 25 | a85 | 63 | 89 | 31 | 119 | 257 | 33 | 13 |
| 10 | 5.7 | 9.0 | 23 | 29 | a70 | 61 | 80 | 30 | 59 | 96 | 30 | 14 |
| 11 | 5.5 | 8.2 | 18 | 43 | a85 | *54 | 95 | 29 | 80 | 112 | 27 | 12 |
| 12 | 5.5 | 7.1 | 15 | 32 | a65 | 58 | 79 | 29 | 63 | 135 | 25 | 12 |
| 13 | 5.5 | 7.1 | 22 | 29 | a55 | 59 | *88 | 44 | 55 | 101 | 25 | 12 |
| 14 | 5.3 | 6.9 | 22 | 25 | *a50 | 54 | 96 | 37 | 51 | 83 | 24 | 11 |
| 15 | 5.3 | 6.9 | 18 | 28 | 48 | 55 | 83 | 32 | 46 | 82 | 28 | 11 |
| 16 | 5.5 | 16 | *16 | 26 | 46 | 63 | 75 | 59 | 43 | 78 | 26 | 11 |
| 17 | 5.7 | 14 | 17 | 24 | 52 | 65 | 69 | 62 | *39 | 66 | 23 | 10 |
| 18 | 5.7 | 8.7 | 37 | 24 | 43 | 92 | 64 | 46 | 36 | 61 | 22 | 10 |
| 19 | *5.7 | 9.0 | 20 | *25 | 40 | 130 | 59 | 41 | 37 | 58 | 21 | 9.7 |
| 20 | 5.5 | 15 | 16 | 22 | 39 | 121 | 55 | 38 | 39 | 60 | 20 | 9.4 |
| 21 | 5.5 | 16 | b15 | 22 | 39 | 112 | 55 | 42 | 34 | 53 | 19 | 9.4 |
| 22 | 5.5 | 11 | 14 | 22 | 198 | 345 | 52 | 75 | 31 | *52 | 20 | 9.0 |
| 23 | 5.5 | 9.4 | 14 | 20 | 314 | 179 | 49 | 89 | 30 | 49 | 20 | 9.0 |
| 24 | 5.5 | 9.0 | 14 | b18 | 164 | 134 | 76 | 66 | 29 | 46 | 17 | 10 |
| 25 | *5.3 | 8.2 | 13 | b17 | 121 | 122 | 64 | 61 | 32 | 46 | 16 | 46 |
| 26 | 5.3 | 7.4 | 13 | a17 | 98 | 143 | 64 | 70 | 30 | 42 | 16 | *14 |
| 27 | 5.3 | 7.7 | 15 | a21 | 133 | 109 | 60 | *73 | 26 | 39 | 16 | 12 |
| 28 | 6.9 | 36 | 34 | a19 | 112 | 98 | 55 | 57 | 25 | 36 | 15 | 16 |
| 29 | 7.9 | 36 | 271 | a18 | - | 86 | 51 | 51 | 24 | 37 | 14 | 14 |
| 30 | 5.9 | 14 | 104 | a17 | ------- | 77 | 47 | 46 | 23 | 34 | 14 | 50 |
| 31 | 5.7 | -- | 59 | a17 | ------- | 69 | ------- | 42 | ------- | 33 | *20 | ------- |
| Total | 183.5 | 327.2 | 964.4 | 829 | 2,683 | 3,096 | 2,210 | 1,458 | 1,273 | 1,826 | 831 | 433.5 |
| Mean | 5.92 | 10.9 | 31.1 | 26.7 | 95.8 | 99.9 | 73.7 | 47.0 | 42.4 | 58.9 | 26.8 | 14.4 |
| Cfsm | 0.429 | 0.790 | 2.25 | 1.93 | 6.94 | 7.24 | 5.34 | 3.41 | 3.07 | 4.27 | 1.94 | 1.04 |
| In. | 0.49 | 0.88 | 2.60 | 2.23 | 7.23 | 8.34 | 5.96 | 3.93 | 3.43 | 4.92 | 2.24 | 1.17 |

Calendar year 1954: Max 596 Min 5.2 Mean 34.9 Cfsm 2.53 In. 34.36
Water year 1954-55: Max 380 Min 5.3 Mean 44.1 Cfsm 3.20 In. 43.42

Peak discharge (base, 600 cfs).--Feb. 6 (time unknown) 702 cfs (3.75 ft); Mar. 22 (2 a.m.) 814 cfs (3.94 ft); July 9 (12:30 p.m.) 1,210 cfs (4.50 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Oconaluftee River at Birdtown and Jonathan Creek near Cove Creek.

b Stage-discharge relation affected by ice.

## Little Tennessee River at Fontana Dam, N. C.

Location.--Lat 35°26'44", long 83°48'19", on left bank 0.4 mile downstream from Fontana Dam, Swain and Graham Counties, 5.3 miles upstream from Twenty Mile Creek, and at mile 60.6.

Drainage area.--1,571 sq mi.

Records available.--August 1938 to June 1955 (discontinued). Prior to October 1944, published as "near Fontana."

Gage.--Water-stage recorder. Datum of gage is 1,270.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1944, at site 500 ft upstream at datum 5.09 ft higher. Oct. 1, 1944, to Feb. 12, 1945, at site 1,200 ft downstream at present datum. Feb. 13, 1945, to Sept. 24, 1946 (corrected), discharge computed from powerplant records at Fontana Dam. Since Sept. 25, 1946, auxiliary water-stage recorder 2 miles downstream from base gage.

Average discharge.--16 years (1939-55), 3,586 cfs (adjusted for storage).

Extremes.--Maximum discharge during period October to June, about 8,100 cfs at times (capacity of 3 turbines); maximum gage height, 8.46 ft June 9; minimum discharge, 40 cfs at times; minimum gage height, 3.42 ft Feb. 20.
1938-55: Maximum discharge, 71,200 cfs Aug. 30, 1940 (gage height, 15.94 ft, site and datum then in use), from rating curve extended above 21,000 cfs on basis of computation of flow into Cheoah Lake below station; minimum daily, 5 cfs (estimated leakage prior to installation of turbines) Nov. 8-11, 1944, Dec. 24, 1944, to Jan. 1, 1945.
Floods of May 1840 and March 1867 reached stages of 21 and 23 ft, respectively (former datum), from flood profiles by Tennessee Valley Authority.

Remarks.--Records good. Flow completely regulated by Thorpe Lake, Nantahala Lake, Bear Creek Lake, Cedar Cliff Lake, Tennessee Creek project lakes, and Fontana Lake (see p. 243, 247).

Revisions.--WSP 973: Drainage area.

Discharge, in cubic feet per second, October 1954 to June 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,900 | 4,990 | 3,150 | 4,060 | 1,740 | 2,920 | 155 | 2,390 | 4,440 | ‡6,030 | | |
| 2 | 2,800 | 4,660 | 3,210 | 3,330 | 1,040 | 3,700 | 40 | 1,750 | 4,820 | | | |
| 3 | 2,690 | 5,250 | 4,580 | 4,560 | 2,020 | 3,270 | 40 | 2,610 | 5,000 | | | |
| 4 | 3,220 | 4,130 | 3,880 | 5,010 | 1,960 | 3,320 | 40 | 1,760 | 4,980 | | | |
| 5 | 3,020 | 3,530 | 2,720 | 3,580 | 812 | 2,980 | 40 | 3,360 | 3,890 | | | |
| 6 | 2,640 | 3,360 | 3,240 | 4,000 | 289 | 2,720 | 359 | 2,080 | 4,040 | | | |
| 7 | 2,730 | 2,810 | 4,800 | 4,510 | 1,380 | 3,750 | 2,250 | 778 | 2,680 | | | |
| 8 | 2,560 | 4,850 | 3,880 | 1,560 | 2,550 | 2,810 | 2,040 | 40 | 4,010 | | | |
| 9 | 2,780 | 4,310 | 4,050 | 1,100 | 3,060 | 1,970 | 1,480 | 2,170 | 3,860 | | | |
| 10 | 2,450 | 3,880 | 4,140 | 2,280 | 4,220 | 1,870 | 123 | 1,550 | 4,590 | | | |
| 11 | 3,450 | 4,050 | 3,730 | 4,960 | 4,470 | 1,310 | 1,200 | 2,140 | 4,740 | | | |
| 12 | 3,330 | 4,320 | 3,420 | 3,640 | 4,340 | 74 | 1,400 | 3,450 | 3,890 | | | |
| 13 | *3,640 | 3,530 | 3,810 | 4,920 | 3,700 | 40 | 1,610 | 3,300 | 5,310 | | | |
| 14 | 3,320 | 3,050 | *2,230 | 3,500 | 4,900 | 948 | 1,410 | 2,480 | 4,700 | | | |
| 15 | 3,060 | *3,840 | 1,860 | 1,570 | 4,460 | 1,100 | 1,510 | 1,800 | 5,110 | | | |
| 16 | 3,460 | 3,830 | 1,910 | 2,760 | 4,850 | 818 | 569 | 3,030 | 5,180 | | | |
| 17 | 2,890 | 3,800 | 2,350 | 4,020 | 4,370 | 1,670 | 40 | 2,490 | 5,090 | | | |
| 18 | 3,860 | 4,040 | 2,980 | *3,950 | 4,540 | 521 | 401 | 1,980 | 5,080 | | | |
| 19 | 4,020 | 3,980 | 3,350 | 2,970 | 2,690 | 97 | 40 | 2,490 | 3,430 | | | |
| 20 | 3,970 | 3,280 | 5,260 | 3,090 | 3,090 | 40 | 40 | 1,580 | 3,860 | | | |
| 21 | 3,300 | 2,810 | 5,290 | 2,290 | *3,130 | 125 | 40 | 982 | 3,910 | | | |
| 22 | 3,020 | 2,780 | 4,670 | 1,820 | 3,740 | 517 | 40 | 1,460 | 4,510 | | | |
| 23 | 2,810 | 3,040 | 4,740 | 1,670 | 2,540 | 146 | 40 | 2,570 | 4,210 | | | |
| 24 | 3,150 | 2,590 | 5,360 | 2,820 | 3,700 | 457 | 40 | 2,100 | 4,300 | | | |
| 25 | 4,440 | 2,030 | 4,170 | 3,580 | 3,620 | 513 | 283 | 3,520 | 3,830 | | | |
| 26 | 4,220 | 2,330 | 4,280 | 3,560 | 3,410 | 1,930 | *2,390 | 3,610 | 3,760 | | | |
| 27 | 3,930 | 1,800 | 5,080 | 3,440 | 3,580 | 385 | 3,070 | *4,010 | 4,330 | | | |
| 28 | 4,320 | 1,810 | 4,580 | 3,220 | 3,770 | 974 | 3,690 | 3,180 | 4,600 | | | |
| 29 | 3,710 | 1,740 | 4,130 | 2,700 | - | 429 | 3,080 | 3,170 | 4,400 | | | |
| 30 | 3,820 | 1,890 | 4,750 | 858 | ------- | 322 | 2,300 | 3,430 | 3,420 | | | |
| 31 | 2,780 | ------- | 5,050 | 1,830 | ------- | *447 | ------ | 4,690 | ------- | | | |
| Total | 102,290 | 102,310 | 120,650 | 97,158 | 87,971 | 42,173 | 29,760 | 75,950 | 129,970 | | | |
| Mean | 3,300 | 3,410 | 3,892 | 3,134 | 3,142 | 1,360 | 992 | 2,450 | 4,332 | | | |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 5,420 | Min 857 | Mean 3,284 | Mean 3,002 | Cfsm 1.91 | In. 25.94 |
| Water year 1954-55: | Max - | Min - | Mean - | Mean - | Cfsm - | In. - |

* Discharge measurement made on this day.
† Adjusted for change in contents in Thorpe, Nantahala, and Fontana Lakes.
‡ Result of discharge measurement.

## Little Tennessee River at Calderwood, Tenn.

Location.--Lat 35°30'24", long 84°00'14", on right bank 250 ft downstream from Scona Lodge Ferry, two-thirds of a mile west of Calderwood, Blount County, 2½ miles downstream from Calderwood Dam, and at mile 41.1.

Drainage area.- 1,862 sq mi.

Records available.--January 1912 to December 1918, January 1921 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 861.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1927, staff gages and water-stage recorders at several sites within 1 mile of present site at various datums.

Average discharge.--39 years (1912-18, 1922-55), 4,291 cfs (unadjusted).

Extremes.--Maximum discharge during year, 8,250 cfs Feb. 23 (gage height, 2.94 ft); minimum daily, 446 cfs Apr. 3.
1912-18, 1921-55: Maximum discharge, 82,000 cfs Mar. 4, 1917; maximum gage height observed, 11.75 ft Mar. 4, 1917, before breaking of levee near gage; minimum discharge observed, 16 cfs May 28, 1950; minimum daily, 102 cfs Aug. 31, 1947.

Remarks.--Records good. Flow regulated by several reservoirs above station (see p. 244).

Cooperation.--Water-stage recorder inspected by employee of Aluminum Co. of America.

Revisions (water years).--WSP 803: 1933-35. WSP 823: 1917(M), drainage area. WSP 923: 1930. WSP 1336: 1912, 1916, 1926.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.1 | 400 | 1.5 | 2,830 |
| .4 | 680 | 2.0 | 4,430 |
| .7 | 1,070 | 2.6 | 6,770 |
| 1.0 | 1,590 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug.* | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,560 | 5,330 | 3,580 | 4,860 | 1,830 | 4,460 | 1,900 | 3,330 | 4,940 | 3,580 | 2,940 | 2,650 |
| 2 | 2,930 | 5,440 | 3,610 | 3,650 | 1,660 | 4,850 | 668 | 3,260 | 5,670 | 4,830 | 2,370 | 1,930 |
| 3 | 2,050 | 5,280 | 4,530 | 5,460 | 3,000 | 4,810 | *446 | 2,870 | 5,640 | 3,590 | 4,770 | 1,930 |
| 4 | 3,860 | 4,960 | 4,310 | 5,100 | 2,490 | 4,450 | 1,200 | 2,920 | 4,960 | 5,170 | 5,870 | *695 |
| 5 | 3,240 | 3,400 | 3,420 | 4,160 | 1,550 | 3,770 | 1,180 | 4,370 | 4,850 | 4,860 | *6,200 | 802 |
| 6 | 3,110 | 3,700 | 3,680 | 4,190 | 1,420 | 4,020 | 2,960 | 3,290 | 3,920 | 5,380 | 6,050 | 3,800 |
| 7 | 2,960 | 3,240 | *5,300 | 5,000 | 3,270 | *5,240 | 5,950 | 1,980 | 3,790 | 5,450 | 5,040 | *3,980 |
| 8 | 2,850 | 5,340 | 4,270 | 2,180 | 4,420 | 4,430 | *3,880 | 1,150 | 4,840 | 5,180 | 5,680 | 2,800 |
| 9 | 2,640 | *4,870 | 4,600 | 1,150 | *3,450 | 3,160 | 3,200 | 2,480 | 5,070 | 5,250 | 3,900 | 3,550 |
| 10 | 2,460 | 4,210 | 4,430 | 2,520 | 4,860 | 2,870 | 1,630 | *1,540 | *5,060 | 5,980 | 6,000 | 2,430 |
| 11 | *4,020 | 4,550 | 4,480 | 5,570 | 4,830 | 2,140 | 1,650 | 2,540 | 5,390 | 6,040 | 6,400 | 1,780 |
| 12 | 4,100 | 4,590 | 3,770 | *3,810 | 5,020 | 1,120 | 2,580 | 3,610 | 4,800 | *6,160 | 5,560 | 3,150 |
| 13 | 4,170 | 3,740 | 4,330 | 5,560 | 4,640 | 1,220 | 3,170 | 4,620 | 5,650 | 6,220 | 3,810 | 4,550 |
| 14 | 3,550 | 3,510 | 2,410 | 3,580 | 5,090 | 2,060 | 2,520 | 2,500 | 2,250 | 5,950 | 1,730 | 4,320 |
| 15 | 3,400 | 3,830 | 2,240 | 2,040 | 5,310 | 2,060 | 2,410 | 2,340 | 5,780 | 5,510 | 4,070 | 4,220 |
| 16 | 3,800 | 4,480 | 2,440 | 2,880 | 5,570 | 1,740 | 1,400 | 4,100 | 5,860 | 5,570 | 4,200 | 4,400 |
| 17 | 3,280 | 3,960 | 3,140 | 4,650 | 5,950 | 2,370 | 1,180 | 3,400 | 5,480 | 4,230 | 3,780 | 2,760 |
| 18 | 3,900 | 4,650 | 3,370 | 4,470 | 5,710 | 1,940 | 1,180 | 2,660 | 5,380 | 4,720 | 5,580 | 1,420 |
| 19 | 4,530 | 4,420 | 2,970 | 3,580 | 4,540 | 1,820 | 1,180 | 3,110 | 4,030 | 5,880 | 6,340 | 3,960 |
| 20 | 4,090 | 3,640 | 6,200 | 3,530 | 3,200 | 1,260 | 1,210 | 2,250 | 4,520 | 6,550 | 3,880 | 3,750 |
| 21 | 3,900 | 3,140 | 6,070 | 3,310 | 4,340 | 1,250 | 1,230 | 1,650 | 4,290 | 4,360 | 2,960 | 2,790 |
| 22 | 3,830 | 3,100 | 5,300 | 2,030 | 4,840 | 2,300 | 1,280 | 2,050 | 2,750 | 3,560 | 4,440 | 3,870 |
| 23 | 3,210 | 3,300 | 5,090 | 2,030 | 5,370 | 2,070 | 1,280 | 3,460 | 5,400 | 4,940 | 4,410 | 3,880 |
| 24 | 3,030 | 2,880 | 5,820 | 3,160 | 4,840 | 1,360 | 1,230 | 3,450 | 5,040 | 2,620 | 3,340 | 1,860 |
| 25 | 4,850 | 3,050 | 4,800 | 4,330 | 5,560 | 1,340 | 1,250 | 4,460 | 4,180 | 3,330 | 3,270 | 2,260 |
| 26 | 5,020 | 2,590 | 4,600 | 3,790 | 4,420 | 2,550 | 3,200 | 4,400 | 4,260 | 4,760 | 3,600 | 4,900 |
| 27 | 4,360 | 2,160 | 5,090 | 4,110 | 4,480 | 1,480 | 4,480 | 4,550 | 5,080 | 5,060 | 2,470 | 4,360 |
| 28 | 4,260 | 1,950 | 5,570 | 3,710 | 4,410 | 2,270 | 4,560 | 4,360 | 4,840 | 2,980 | 1,340 | 4,190 |
| 29 | 4,170 | 2,550 | 4,580 | 2,860 | - | 1,590 | 4,050 | 4,120 | 5,190 | 3,200 | 2,770 | 5,540 |
| 30 | 4,340 | 2,020 | 6,040 | 1,160 | ------- | 1,520 | 3,410 | 4,390 | 4,200 | 5,790 | 2,630 | 4,050 |
| 31 | 3,280 | ------- | 5,570 | 2,220 | ------- | 1,520 | ------- | 5,270 | ------- | 2,840 | 2,810 | ------- |
| Total | 112,750 | 113,880 | 135,610 | 110,650 | 116,070 | 79,040 | 67,464 | 100,480 | 148,110 | 149,540 | 128,210 | 96,577 |
| Mean | 3,637 | 3,796 | 4,375 | 3,569 | 4,145 | 2,550 | 2,249 | 3,241 | 4,937 | 4,824 | 4,136 | 3,219 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 6,520 | Min 1,070 | Mean 4,011 | Mean 3,732 | Cfsm 2.00 | In. 27.21 |
| Water year 1954-55: | Max 6,550 | Min 446 | Mean 3,722 | Mean 3,791 | Cfsm 2.04 | In. 27.63 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Fontana, Cheoah, Calderwood, Nantahala, Thorpe and Santeetlah Lakes.

## Tellico River at Tellico Plains, Tenn.

Location.--Lat 35°21'42", long 84°16'44", on right bank 200 ft upstream from bridge on Tellico Plains-Rafter Road, 0.4 mile downstream from Laurel Creek, 0.8 mile east of Tellico Plains, Monroe County, and at mile 28.2.

Drainage area.--118 sq mi.

Records available.--July 1925 to September 1955. Published as "near Tellico Plains" October 1927 to September 1930.

Gage.--Water-stage recorder. Datum of gage is 846.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. July 20, 1925, to Sept. 30, 1927, staff gage at same site and datum. Oct. 1, 1927, to Sept. 30, 1930, staff gage at site half a mile upstream at datum 8.29 ft higher.

Average discharge.--30 years, 279 cfs.

Extremes.--Maximum discharge during year, 5,960 cfs Apr. 6 (gage height, 9.35 ft); minimum, 23 cfs Oct. 1, 12, 13 (gage height, 0.91 ft).
1925-55: Maximum discharge, 15,100 cfs Mar. 29, 1951 (gage height, 12.82 ft), from rating curve extended above 6,500 cfs; minimum, 13 cfs Sept. 7, 1925 (gage height, 0.25 ft).

Remarks.--Records good.

Revisions (water years).--WSP 1336: 1927-28(M), 1936, 1940, 1944.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.9 | 22 | 2.5 | 465 |
| 1.0 | 32 | 3.0 | 705 |
| 1.2 | 60 | 4.0 | 1,240 |
| 1.5 | 123 | 6.3 | 2,580 |
| 2.0 | 268 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 27 | 30 | 65 | 246 | 104 | 372 | 332 | 215 | 136 | *82 | 142 | 76 |
| 2 | 48 | 38 | *55 | 206 | *237 | *329 | 321 | *206 | *131 | 76 | *164 | *65 |
| 3 | 33 | *44 | 49 | *169 | 189 | 295 | 313 | 200 | 121 | 74 | 210 | 60 |
| 4 | *28 | 37 | 44 | 150 | 161 | 278 | *271 | 192 | 113 | 73 | 239 | 58 |
| 5 | 26 | 80 | 140 | 139 | 147 | 268 | 292 | 186 | 111 | 76 | 189 | 58 |
| 6 | 26 | 52 | 385 | 145 | 1,880 | 370 | 2,550 | 172 | 109 | 95 | 177 | 58 |
| 7 | 26 | 38 | 134 | 145 | 1,210 | 412 | 2,340 | 166 | 172 | 86 | 186 | 57 |
| 8 | 26 | 33 | 224 | 121 | 595 | 340 | 876 | 161 | 276 | 84 | 166 | 52 |
| 9 | 26 | 33 | 400 | 121 | 412 | 295 | 625 | 155 | 605 | 436 | 197 | 49 |
| 10 | 26 | 33 | 242 | 142 | 321 | 282 | 519 | 145 | 258 | 262 | 203 | 97 |
| 11 | 25 | 34 | 145 | 246 | 388 | 268 | 524 | 145 | 306 | 183 | 147 | 57 |
| 12 | 24 | 32 | 111 | 194 | 310 | 246 | 452 | 155 | 239 | 197 | 128 | 52 |
| 13 | 24 | 31 | 109 | 169 | 275 | 227 | 707 | 224 | 206 | 158 | 116 | 49 |
| 14 | 24 | 30 | 113 | 145 | 252 | 227 | 720 | 206 | 192 | 139 | 106 | 47 |
| 15 | 26 | 30 | 99 | 153 | 233 | 215 | 528 | 194 | 169 | 186 | 177 | 44 |
| 16 | 29 | 34 | 88 | 150 | 227 | 239 | 452 | 242 | 153 | 246 | 183 | 43 |
| 17 | 27 | 69 | 84 | 131 | 400 | 268 | 400 | 285 | 139 | 212 | 134 | 42 |
| 18 | 26 | 42 | 432 | 123 | 340 | 660 | 368 | 203 | 128 | 161 | 113 | 39 |
| 19 | 26 | 38 | 233 | 203 | 292 | 1,020 | 340 | 203 | 126 | 158 | 101 | 39 |
| 20 | 25 | 74 | 166 | 161 | 255 | 755 | 317 | 169 | 131 | 212 | 97 | 38 |
| 21 | 25 | 113 | 131 | 153 | 230 | 620 | 336 | 166 | 128 | 256 | 91 | 38 |
| 22 | 25 | 65 | 113 | 180 | 650 | 2,090 | 344 | 180 | 121 | 192 | 91 | 37 |
| 23 | 25 | 46 | 106 | 169 | 2,500 | 871 | 302 | 330 | 134 | 211 | 95 | 36 |
| 24 | 25 | 42 | 101 | 153 | 844 | 615 | 321 | 221 | 155 | 408 | 84 | 36 |
| 25 | 25 | 42 | 95 | 139 | 570 | 570 | 313 | 233 | 111 | 278 | 76 | 182 |
| 26 | 25 | 38 | 88 | 123 | 447 | 1,190 | 299 | 212 | 113 | 233 | 73 | 69 |
| 27 | 25 | 38 | 95 | 121 | 400 | 720 | 285 | 177 | 101 | 169 | 69 | 55 |
| 28 | 26 | 121 | 116 | 113 | 364 | 560 | 262 | 158 | 95 | 142 | 69 | 107 |
| 29 | 42 | 321 | 1,040 | 106 | - | 474 | 249 | 215 | 91 | 203 | 64 | 101 |
| 30 | 52 | 91 | 660 | 99 | ------- | 400 | 230 | 174 | 86 | 177 | 62 | 69 |
| 31 | 36 | ------- | 336 | 95 | ------- | 360 | --------- | 158 | --------- | 145 | 118 | ------ |
| Total | 879 | 1,749 | 6,199 | 4,710 | 14,233 | 15,836 | 16,188 | 6,048 | 4,956 | 5,610 | 4,067 | 1,810 |
| Mean | 28.4 | 58.3 | 200 | 152 | 508 | 511 | 540 | 195 | 165 | 181 | 131 | 60.3 |
| Cfsm | 0.241 | 0.494 | 1.69 | 1.29 | 4.31 | 4.33 | 4.58 | 1.65 | 1.40 | 1.53 | 1.11 | 0.511 |
| In. | 0.28 | 0.55 | 1.95 | 1.48 | 4.49 | 4.99 | 5.10 | 1.91 | 1.56 | 1.77 | 1.28 | 0.57 |

Calendar year 1954: Max 5,070 Min 22 Mean 240 Cfsm 2.03 In. 27.55
Water year 1954-55: Max 2,550 Min 24 Mean 225 Cfsm 1.91 In. 25.93

Peak discharge (base, 2,800 cfs).--Feb. 6 (5 p.m.) 3,850 cfs (7.93 ft); Feb. 23 (3 a.m.) 4,560 cfs (8.51 ft); Mar. 22 (4 a.m.) 4,000 cfs (8.06 ft); Apr. 6 (11 p.m.) 5,960 cfs (9.35 ft).
* Discharge measurement made on this day.

## Little Tennessee River at McGhee, Tenn.

Location.--Lat 35°36'16", long 84°12'43", on right bank at mouth of Tellico River, 100 ft upstream from bridge on U. S. Highway 411, 0.3 mile upstream from Louisville & Nashville Railroad bridge, and 0.5 mile south of McGhee, Monroe County. Records include flow of Tellico River.
Drainage area.--2,443 sq mi, including that of Tellico River.
Records available.--January 1905 to December 1913 (gage heights only October to December 1913) and October 1918 to September 1955 in reports of Geological Survey. November 1904 to September 1924 (most records prior to 1919, revised) in Tennessee Division of Geology Bulletin 34.
Gage.--Water-stage recorder. Datum of gage is 760.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Sept. 6, 1929, chain or staff gages located at various sites and datums within 0.4 mile of present site.
Average discharge.--50 years (1905-55), 5,648 cfs (unadjusted).
Extremes.--Maximum discharge during year, 20,900 cfs Apr. 7 (gage height, 11.61 ft); minimum daily, 574 cfs Sept. 5.
1904-55: Maximum discharge, 104,000 cfs Nov. 19, 1906, from rating curve extended above 66,000 cfs; maximum gage height, 30.5 ft Apr. 2, 1920, site and datum then in use; minimum daily discharge, 500 cfs Sept. 13, 14, 1925.
Maximum stage known, 39.0 ft in March 1867, original site and datum.
Remarks.--Records good. Flow regulated by many reservoirs above station.
Revisions (water years).--WSP 803: 1933-35. WSP 823: Drainage area. WSP 1336: 1905, 1906-10(M), 1911, 1912(M), 1913, 1914(M), 1915-22, 1923-24(M), 1925-29. See also Records available.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 22 | | Feb. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 3.5 | 1,490 | 2.7 | 510 | 5.0 | 4,230 |
| 4.0 | 2,330 | 3.0 | 780 | 7.0 | 9,040 |
| 6.0 | 6,750 | 3.5 | 1,350 | 10.9 | 19,100 |
| 6.9 | 8,910 | 4.0 | 2,150 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,260 | 4,300 | 3,500 | 6,250 | 2,010 | 5,450 | 2,570 | 4,010 | 5,080 | 3,860 | 2,050 | 2,350 |
| 2 | 3,350 | 5,810 | 3,420 | 4,060 | 2,220 | 6,630 | 1,960 | 4,030 | 5,860 | 4,300 | 2,320 | 2,460 |
| 3 | 2,500 | 5,380 | 4,860 | 3,840 | 2,940 | 6,440 | 1,300 | 3,370 | 5,860 | 4,620 | 4,370 | 1,880 |
| 4 | 3,120 | 5,140 | 4,980 | 5,770 | 3,220 | 5,520 | 1,480 | 3,200 | 5,360 | 4,530 | 5,860 | 1,520 |
| 5 | 3,560 | 4,130 | 3,400 | 4,960 | 2,390 | 4,530 | 1,820 | 4,140 | 5,380 | 5,480 | *6,750 | *574 |
| 6 | *3,370 | 3,600 | 5,380 | 4,130 | 4,540 | 5,600 | 7,170 | 4,160 | 4,410 | 5,430 | 6,560 | 2,290 |
| 7 | 2,910 | 3,440 | *5,740 | 5,290 | 8,790 | *7,820 | 19,000 | 2,720 | 3,680 | 5,550 | 5,260 | 4,200 |
| 8 | 3,440 | 4,590 | 4,790 | 4,160 | 7,660 | 6,340 | *11,300 | 1,790 | 5,200 | 5,060 | 6,700 | 3,160 |
| 9 | 2,890 | *5,170 | 5,070 | 1,520 | *5,050 | 4,850 | 5,790 | 2,510 | 6,630 | 5,620 | 4,640 | 3,280 |
| 10 | 2,350 | 4,430 | 5,570 | 2,070 | 6,050 | 3,860 | 3,750 | *1,670 | *6,120 | 6,680 | 6,080 | 2,550 |
| 11 | 3,540 | 4,700 | 5,450 | 5,360 | 6,320 | 3,040 | 2,810 | 2,450 | 6,050 | 6,650 | 7,180 | 2,640 |
| 12 | 4,040 | 4,790 | 3,690 | *4,890 | 6,650 | 2,320 | 4,010 | 3,550 | 5,810 | *6,750 | 6,080 | 2,410 |
| 13 | 4,110 | 3,910 | 4,500 | 5,960 | 5,530 | 1,720 | 4,690 | 4,940 | 5,640 | 6,800 | 4,230 | 3,920 |
| 14 | 3,890 | 3,950 | 3,750 | 5,140 | 6,220 | 2,340 | 6,220 | 3,770 | 5,980 | 6,360 | 2,650 | 4,990 |
| 15 | 3,310 | 4,020 | 2,350 | 2,500 | 6,290 | 2,640 | 4,460 | 2,770 | 6,320 | 6,720 | 3,130 | 3,570 |
| 16 | 3,520 | 4,060 | 2,660 | 3,330 | 6,610 | 2,360 | 3,180 | 3,610 | 6,270 | 5,500 | 5,100 | 4,490 |
| 17 | 3,840 | 4,500 | 3,210 | 4,150 | 7,540 | 2,890 | 2,280 | 4,370 | 5,720 | 5,130 | 3,330 | 3,360 |
| 18 | 3,360 | 4,270 | 4,790 | 5,530 | 7,330 | 4,460 | 2,100 | 3,040 | 6,030 | 4,730 | 5,570 | 2,020 |
| 19 | 4,470 | 4,720 | 3,910 | 4,400 | 5,860 | 7,540 | 1,950 | 3,330 | 4,710 | 5,640 | 6,560 | 2,840 |
| 20 | 4,380 | 3,870 | 6,030 | 4,750 | 4,820 | 6,000 | 1,900 | 2,950 | 4,300 | 7,350 | 4,780 | 3,950 |
| 21 | 4,040 | 3,700 | 6,680 | 3,840 | 4,840 | 4,120 | 2,040 | 1,990 | 4,530 | 4,940 | 2,580 | 2,870 |
| 22 | 3,970 | 3,610 | 6,340 | 2,980 | 6,510 | 9,190 | 2,190 | 2,080 | 4,940 | 4,760 | 4,670 | 3,570 |
| 23 | 3,310 | 3,540 | 4,930 | 3,370 | *14,300 | 7,660 | 1,940 | 3,210 | 5,960 | 4,740 | 4,280 | 3,830 |
| 24 | 3,140 | 2,930 | 5,930 | 2,990 | 10,900 | 3,860 | 2,100 | 3,810 | 5,480 | 4,510 | 3,540 | 2,940 |
| 25 | 4,200 | 3,420 | 5,960 | 5,000 | 7,920 | 3,270 | 2,470 | 4,830 | 4,440 | 3,010 | 3,540 | 1,830 |
| 26 | 5,090 | 2,720 | 4,840 | 4,630 | 6,220 | 6,580 | 2,990 | 4,760 | 4,530 | 5,130 | 3,310 | 4,250 |
| 27 | 4,630 | 2,390 | 5,210 | 4,150 | 5,910 | 5,760 | 5,200 | 4,990 | 5,130 | 5,150 | 3,010 | 4,600 |
| 28 | 4,500 | 2,010 | 6,010 | 4,360 | 6,000 | 4,190 | 5,570 | 4,740 | 5,430 | 4,400 | 1,780 | 4,230 |
| 29 | 4,240 | 3,330 | 7,090 | 3,520 | - | 3,390 | 4,710 | 4,460 | 5,520 | 3,010 | 2,190 | 5,380 |
| 30 | 4,400 | 2,640 | 8,720 | 2,000 | ------- | 2,710 | 4,230 | 4,690 | 4,760 | 6,030 | 2,660 | 4,620 |
| 31 | 3,690 | ------- | 7,180 | 2,280 | ------- | 2,510 | ------- | 5,310 | ------- | 4,480 | 3,100 | ------- |
| Total | 114,420 | 118,870 | 155,940 | 127,180 | 170,640 | 145,590 | 123,180 | 111,250 | 161,130 | 162,930 | 134,060 | 96,554 |
| Mean | 3,691 | 3,962 | 5,030 | 4,103 | 6,094 | 4,696 | 4,106 | 3,589 | 5,371 | 5,256 | 4,325 | 3,218 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954 : | Max 24,600 | Min 1,780 | Mean 4,802 | Mean 4,523 | Cfsm 1.85 | In. 25.13 |
| Water year 1954-55 : | Max 19,000 | Min 574 | Mean 4,443 | Mean 4,512 | Cfsm 1.85 | In. 25.07 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Santeetlah, Fontana, Thorpe, Cheoah, Calderwood and Nantahala Lakes.

## Tennessee River at Loudon, Tenn.

Location.--Lat 35°44'33", long 84°19'56", in second pier from left bank at bridge on U. S. Highway 11, at Loudon, Loudon County, 9⅜ miles downstream from Little Tennessee River, 10⅜ miles downstream from Fort Loudoun Dam, 61 miles upstream from Watts Bar Dam, and at mile 591.6.

Drainage area.--12,220 sq mi.

Records available.--October 1922 to July 1955 (discontinued). Gage-height records collected in same vicinity sice 1884 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 726.29 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1929, staff gage at Huff Ferry, 5½ miles downstream at datum 6.60 ft lower. Since Feb. 17, 1942, auxiliary water-stage recorder at Lenoir City, 8¾ miles upstream from base gage.

Average discharge.--32 years (1922-54), 18,810 cfs.

Extremes.--Maximum discharge during period October 1954 to July 1955, 51,100 cfs Mar. 22; maximum gage height, 17.10 ft Dec. 30; minimum daily discharge, 2,490 cfs Oct. 3; minimum gage height, 8.55 ft Feb. 4.

1922-55: Maximum discharge, 169,000 cfs Mar. 28, 1936 (gage height, 25.75 ft); minimum daily, 1,820 cfs Apr. 30, 1950; minimum gage height, 0.82 ft Sept. 12, 1925, site and datum then in use.

Floods of Mar. 5, 1917, reached a stage of 32.9 ft, present site and datum (discharge, 225,000 cfs, from rating curve extended above 151,000 cfs). U. S. Weather Bureau reports stages of 49.7 ft Mar. 10 or 11, 1867, 42.7 ft Feb. 27, 1875, and 34.9 ft Mar. 31, 1886, present site and datum. Flood of Mar. 31, 1886, may have reached a higher stage; no readings obtained that year after Mar. 31.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by many lakes above station.

Revisions.--WSP 823: Drainage area.

Discharge, in cubic feet per second, October 1954 to July 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9,100 | 12,000 | 12,600 | 15,500 | 8,950 | 14,900 | 27,100 | 11,400 | 6,810 | 18,100 | | |
| 2 | 6,600 | 15,000 | 13,200 | 14,700 | 11,700 | 17,800 | 20,400 | 19,300 | 6,710 | 11,200 | | |
| 3 | 2,490 | 15,500 | 13,600 | 15,700 | 13,000 | 17,600 | 15,500 | 17,400 | 8,290 | 10,200 | | |
| 4 | 5,680 | 13,000 | 15,900 | 11,100 | 9,240 | 17,500 | 18,400 | 16,900 | 7,080 | 9,990 | | |
| 5 | 9,030 | 12,000 | 6,700 | 10,500 | 11,600 | 14,400 | 17,200 | 16,700 | 7,680 | 21,200 | | |
| 6 | 7,900 | 10,500 | 20,200 | 14,300 | 3,020 | 16,100 | 21,500 | 16,300 | 13,600 | 19,600 | | |
| 7 | 7,410 | 10,000 | 15,600 | 12,800 | 19,000 | 18,200 | 24,600 | 16,200 | 21,600 | 21,300 | | |
| 8 | 8,950 | *13,000 | 9,820 | 17,000 | 21,700 | 20,500 | 17,500 | 14,200 | 21,500 | 16,200 | | |
| 9 | 5,780 | 13,200 | 8,850 | 14,200 | 17,000 | *19,400 | 8,280 | 17,500 | 21,000 | 14,800 | | |
| 10 | 5,000 | 13,500 | 12,100 | *18,200 | *11,700 | 15,100 | 5,270 | *17,900 | 20,000 | 20,000 | | |
| 11 | 6,500 | 13,500 | 16,500 | 21,800 | 14,700 | 14,200 | 10,500 | 20,600 | 14,000 | - | | |
| 12 | *9,450 | 13,400 | 11,400 | 22,900 | 11,500 | 12,300 | 9,380 | 21,300 | 14,000 | - | | |
| 13 | 8,440 | 10,500 | 8,190 | 18,900 | 11,900 | 8,350 | 10,400 | 26,000 | 14,000 | - | | |
| 14 | 9,000 | 8,010 | 14,200 | 18,600 | 16,900 | 14,600 | 12,100 | 19,000 | 14,000 | - | | |
| 15 | 12,500 | 11,600 | 15,900 | 19,500 | 16,100 | 15,100 | 11,000 | 13,000 | *15,500 | - | | |
| 16 | 10,600 | 12,800 | *15,400 | 18,000 | 17,800 | 14,900 | 6,850 | 14,000 | 13,300 | - | | |
| 17 | 6,500 | 11,600 | 17,700 | 17,200 | 13,300 | 19,400 | 4,760 | 18,000 | 13,700 | - | | |
| 18 | 8,000 | 7,290 | 19,800 | 18,000 | 16,400 | 21,700 | 10,300 | 17,000 | 11,000 | - | | |
| 19 | 13,000 | 8,940 | 13,400 | 18,600 | 13,700 | 27,500 | 10,500 | 17,000 | 11,000 | - | | |
| 20 | 13,000 | 7,170 | 17,500 | 16,500 | 8,720 | 37,800 | 11,200 | 17,000 | 16,700 | - | | |
| 21 | 16,000 | 6,030 | 19,100 | 12,700 | 13,000 | 41,200 | 14,100 | 17,000 | 22,400 | - | | |
| 22 | 15,000 | 8,590 | 12,200 | 10,300 | 12,100 | 44,200 | 15,600 | 12,000 | 21,600 | - | | |
| 23 | 12,000 | 9,430 | 11,700 | 9,980 | 22,300 | 45,900 | 14,400 | 8,000 | 21,500 | - | | |
| 24 | 6,500 | 10,400 | 10,600 | 15,400 | 30,100 | *36,700 | 13,100 | 6,390 | 23,200 | - | | |
| 25 | 13,000 | 11,200 | 10,800 | 16,500 | 20,700 | 35,100 | 14,000 | 7,610 | 14,900 | - | | |
| 26 | 12,000 | 10,000 | 10,400 | 16,100 | 13,700 | 33,100 | 10,100 | 12,400 | 14,400 | - | | |
| 27 | 9,100 | 15,800 | 10,100 | 15,700 | 13,000 | 42,200 | 13,100 | 12,800 | 17,200 | - | | |
| 28 | 10,500 | 11,600 | 17,800 | 16,000 | 12,500 | 38,600 | 7,600 | 8,650 | 18,500 | - | | |
| 29 | 10,500 | 11,500 | 16,100 | 15,100 | - | 31,600 | 7,100 | 5,450 | 19,800 | - | | |
| 30 | 10,500 | 12,200 | 21,100 | 9,580 | ------ | 28,900 | 9,420 | 5,990 | 15,700 | - | | |
| 31 | 9,000 | ------ | 21,500 | 13,800 | ------ | 27,900 | ------ | 6,110 | ------ | - | | ------ |
| Total | 289,030 | 339,260 | 439,960 | 485,160 | 405,330 | 762,750 | 391,260 | 449,100 | 460,670 | - | | |
| Mean | 9,324 | 11,310 | 14,190 | 15,650 | 14,480 | 24,600 | 13,040 | 14,490 | 15,360 | - | | |
| Cfsm | - | - | - | - | - | - | - | - | - | - | | |
| In. | - | - | - | - | - | - | - | - | - | - | | |

Calendar year 1954: Max 65,300 Min 2,490 Mean 15,220 Cfsm 1.25 In. 16.91
Water year 1954-55: Max - Min - Mean - Cfsm - In. -

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 10-11, Oct. 17 to Nov. 8, May 13-23, June 8-15; discharge estimated on basis of Fort Loudoun Dam releases combined with records for Little Tennessee River at McGhee.

## Clinch River at Richlands, Va.

Location.--Lat 37°05'10", long 81°46'52", on right bank 1 mile southeast of Richlands, Tazewell County, 1.6 miles downstream from Middle Creek, and 2.2 miles upstream from Big Creek.

Drainage area.--139 sq mi.

Records available.--January 1946 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,923.99 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Aug. 6, 1950, wire-weight gage at bridge 1.1 miles downstream at datum 6.53 ft lower.

Average discharge.--9 years, 180 cfs.

Extremes.--Maximum discharge during year, 4,700 cfs Mar. 1, Mar. 6; maximum gage height, 12.51 ft Mar. 1; minimum discharge, 3.2 cfs Sept. 8; minimum gage height, 0.48 ft Sept. 8, 24; minimum daily discharge, 9.0 cfs Sept. 5.
1946-55: Maximum discharge, 5,080 cfs May 19, 1953 (gage height, 13.23 ft); minimum, that of Sept. 8, 1955; minimum gage height, 0.45 ft July 2, 3, 1951; minimum daily discharge, that of Sept. 5, 1955.

Remarks.--Records good. Diurnal fluctuation at low flow caused by mill above station.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1-15 | | Oct. 16 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 0.7 | 18 | 0.5 | 5.0 | 3.0 | 488 |
| 1.0 | 54 | .6 | 10 | 5.0 | 1,150 |
| 1.5 | 137 | .7 | 18 | 7.0 | 2,000 |
| 2.0 | 237 | 1.0 | 60 | 11.0 | 3,900 |
| | | 2.0 | 237 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32 | 68 | 155 | 303 | *121 | 3,550 | 247 | 195 | 58 | 37 | *18 | 21 |
| 2 | 54 | 66 | 128 | 237 | 297 | 2,090 | 229 | 177 | 58 | 37 | 32 | 17 |
| 3 | 42 | 73 | 107 | 196 | 448 | 955 | 214 | 160 | 52 | 45 | 27 | 22 |
| 4 | 36 | *71 | 91 | 202 | 291 | 690 | 195 | 148 | 52 | 42 | 27 | 14 |
| 5 | *34 | 86 | 112 | 291 | 233 | 1,190 | *178 | 139 | 50 | 41 | 30 | 9.0 |
| 6 | 29 | 110 | 353 | 340 | 1,240 | 3,300 | 178 | 128 | *51 | 45 | 35 | *15 |
| 7 | 28 | 107 | 220 | 315 | 2,140 | 2,360 | 177 | 121 | 73 | 41 | 35 | 19 |
| 8 | 22 | 98 | 171 | 268 | 955 | *1,070 | 153 | 117 | 96 | 45 | 60 | 16 |
| 9 | 23 | 88 | 162 | 235 | 558 | 660 | 141 | *112 | 86 | 60 | 57 | 17 |
| 10 | 25 | 78 | 191 | 207 | 394 | 488 | 132 | 102 | 70 | 51 | 39 | 15 |
| 11 | 22 | 71 | 166 | *245 | 353 | 407 | 139 | 100 | 73 | *66 | 30 | 14 |
| 12 | 26 | 66 | 148 | 249 | 291 | 474 | 150 | 133 | 81 | 100 | 76 | 12 |
| 13 | 23 | 65 | *237 | 247 | 257 | 516 | 135 | 187 | 66 | 71 | 60 | 16 |
| 14 | 23 | 57 | 366 | 216 | 247 | 615 | 916 | 204 | 62 | 52 | 44 | 14 |
| 15 | 162 | 54 | 279 | 204 | 224 | 1,280 | 600 | 222 | 58 | 45 | 37 | 11 |
| 16 | 385 | 56 | 222 | 191 | 235 | 3,000 | 394 | 169 | 54 | 42 | 37 | 23 |
| 17 | 137 | 54 | 189 | 175 | 434 | 2,040 | 291 | 146 | 52 | 38 | 37 | 13 |
| 18 | 91 | 56 | 327 | 162 | 434 | 2,090 | 245 | 124 | 48 | 35 | 54 | 14 |
| 19 | 71 | 50 | 407 | 169 | 340 | 1,730 | 214 | 110 | 50 | 38 | 103 | 12 |
| 20 | 60 | 81 | 291 | 159 | 270 | 990 | 193 | 98 | 79 | 34 | 57 | 14 |
| 21 | 56 | 95 | 229 | 150 | 229 | 720 | 187 | 91 | 57 | 33 | 39 | 15 |
| 22 | 48 | 81 | 195 | 153 | 222 | 1,520 | 214 | 86 | 46 | 30 | 32 | 21 |
| 23 | 45 | 74 | 178 | 151 | 558 | 1,190 | 182 | 86 | 50 | 24 | 42 | 13 |
| 24 | 44 | 74 | 180 | 142 | 558 | 705 | 191 | 93 | 65 | 30 | 32 | 13 |
| 25 | 42 | 81 | 164 | 137 | 394 | 586 | 229 | 95 | 58 | 39 | 31 | 22 |
| 26 | 39 | 78 | 148 | 133 | 335 | 735 | 277 | 81 | 60 | 38 | 23 | 19 |
| 27 | 39 | 74 | 139 | 135 | 2,250 | 630 | 327 | 71 | 54 | 32 | 21 | 22 |
| 28 | 44 | 88 | 142 | 135 | 2,360 | 502 | 315 | 66 | 45 | 28 | 19 | 24 |
| 29 | 70 | 275 | 472 | 135 | - | 407 | 261 | 62 | 41 | 26 | 13 | 15 |
| 30 | 86 | 204 | 690 | 121 | ------ | 327 | 222 | 62 | 39 | 26 | 23 | 31 |
| 31 | 76 | --- | 434 | 117 | ------ | 279 | ------ | 62 | ------ | 24 | 21 | ------ |
| Total | 1,914 | 2,579 | 7,293 | 6,120 | 16,668 | 37,096 | 7,526 | 3,747 | 1,784 | 1,295 | 1,191 | 503.0 |
| Mean | 61.7 | 86.0 | 235 | 197 | 595 | 1,197 | 251 | 121 | 59.5 | 41.8 | 38.4 | 16.8 |
| Cfsm | 0.444 | 0.619 | 1.69 | 1.42 | 4.28 | 8.61 | 1.81 | 0.871 | 0.428 | 0.301 | 0.276 | 0.121 |
| In. | 0.51 | 0.69 | 1.95 | 1.64 | 4.46 | 9.93 | 2.02 | 1.00 | 0.48 | 0.35 | 0.32 | 0.14 |

Calendar year 1954: Max 1,250 Min 18 Mean 151 Cfsm 1.09 In. 14.69
Water year 1954-55: Max 3,550 Min 9.0 Mean 240 Cfsm 1.73 In. 23.49

Peak discharge (base, 1,300 cfs).--Feb. 7 (1 to 2 a.m.) 2,720 cfs (8.58 ft); Feb. 27 (4:30 p.m.) 3,400 cfs (10.00 ft); Mar. 1 (1:30 p.m.) 4,700 cfs (12.51 ft); Mar. 6 (7:30 p.m.) 4,700 cfs (12.49 ft); Mar. 16 (6 p.m.) 4,050 cfs (11.29 ft); Mar. 18 (6:30 p.m.) 2,860 cfs (8.90 ft); Mar. 22 (4:30 p.m.) 2,140 cfs (7.33 ft); Apr. 14 (11:30 a.m.) 1,430 cfs (5.69 ft).
* Discharge measurement made on this day.

## Cedar Creek near Lebanon, Va.

Location.--Lat 36°54'29", long 82°02'20", on right bank 800 ft upstream from Roaring Spring Creek, 1.3 miles downstream from Burgess Creek, 1.9 miles upstream from Little Cedar Creek, and 2.3 miles east of Lebanon, Russell County.

Drainage area.--51.5 sq mi.

Records available.--October 1952 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,928.96 ft above mean sea level (Tennessee Valley Authority benchmark).

Extremes.--1952-53: Maximum discharge during water year, 3,830 cfs May 19 (gage height, 4.20 ft); minimum, 4.2 cfs Oct. 19 (gage height, 1.27 ft).
1953-54: Maximum discharge during water year, 1,980 cfs Jan. 22 (gage height, 3.47 ft); minimum, 4.6 cfs Sept. 16-20; minimum gage height, 1.27 ft Dec. 26 (result of freezeup).
1954-55: Maximum discharge during water year, 3,980 cfs Mar. 16 (gage height, 4.27 ft); minimum daily, 5.6 cfs Sept. 23; minimum gage height, 1.34 ft Oct. 14, 15.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Rating tables, Oct. 1, 1952, to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1, 1952, to Sept. 4, 1953 | | | | Sept. 5, 1953, to May 18, 1954 | | | | May 19, 1954, to Sept. 30, 1955 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.3 | 5.0 | 2.0 | 120 | 1.2 | 3.0 | 1.9 | 85 | 1.3 | 4.0 | 2.0 | 110 |
| 1.4 | 10 | 2.1 | 160 | 1.3 | 6.0 | 2.0 | 120 | 1.4 | 7.0 | 2.1 | 160 |
| 1.5 | 16 | 2.3 | 300 | 1.4 | 11 | 2.1 | 160 | 1.5 | 13 | 2.3 | 300 |
| 1.6 | 26 | 2.6 | 580 | 1.5 | 19 | 2.3 | 300 | 1.6 | 22 | 2.6 | 580 |
| 1.7 | 40 | 3.0 | 1,090 | 1.6 | 29 | 2.6 | 580 | 1.7 | 34 | 3.0 | 1,090 |
| 1.8 | 60 | 3.5 | 2,050 | 1.7 | 42 | 3.0 | 1,090 | 1.8 | 51 | 3.5 | 2,050 |
| 1.9 | 85 | | | 1.8 | 60 | | | 1.9 | 75 | | |

Discharge, in cubic feet per second, water year October 1952 to September 1953

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *6.0 | a6.0 | 17 | a67 | 99 | 70 | 52 | 65 | 37 | 46 | 12 | *6.5 |
| 2 | 6.0 | a6.0 | 16 | a59 | 78 | 144 | *48 | 52 | 33 | 37 | 12 | 6.5 |
| 3 | 6.0 | a6.4 | 18 | a52 | 68 | 228 | 46 | 44 | 30 | 44 | 13 | 6.5 |
| 4 | 6.0 | a7.2 | 17 | a46 | 60 | 628 | 44 | 40 | 27 | 37 | 12 | 8.0 |
| 5 | 6.5 | a6.5 | 25 | a37 | 50 | 354 | 42 | 40 | 25 | 32 | 11 | 25 |
| 6 | 6.0 | a6.2 | 52 | a33 | 54 | 190 | 40 | 118 | 29 | 29 | 11 | 23 |
| 7 | 6.5 | *6.0 | 39 | a35 | 120 | 136 | 52 | 408 | 44 | 34 | 11 | 14 |
| 8 | 6.5 | 6.0 | 29 | a66 | 110 | 113 | 52 | 160 | 29 | 51 | 20 | 11 |
| 9 | 8.5 | 6.0 | 22 | a120 | 82 | 88 | 46 | 120 | 25 | 52 | 18 | 10 |
| 10 | 8.5 | 8.5 | 400 | a135 | 70 | 78 | 46 | 96 | 48 | 37 | 14 | 9.5 |
| 11 | 7.5 | 10 | 580 | a130 | 65 | 70 | 42 | 78 | 42 | 32 | 12 | 9.0 |
| 12 | 6.5 | a9.6 | a250 | a100 | 296 | 62 | 42 | 62 | 29 | 27 | 11 | 8.5 |
| 13 | 6.5 | a9.2 | a140 | a80 | 236 | 58 | 140 | 56 | 94 | 24 | *10 | 8.0 |
| 14 | 6.0 | a8.8 | a88 | a72 | 144 | 52 | 120 | 50 | 96 | 21 | 9.5 | 7.5 |
| 15 | 6.0 | a7.8 | a60 | a67 | 158 | 102 | 92 | 80 | 54 | 19 | 9.5 | 7.5 |
| 16 | 6.0 | a7.4 | *40 | a64 | 148 | 99 | 80 | 60 | *40 | *17 | 9.0 | 8.0 |
| 17 | 6.0 | a6.8 | 36 | a58 | 236 | 78 | 65 | 52 | 37 | 15 | 8.5 | 7.5 |
| 18 | 6.5 | a6.6 | 30 | a64 | 152 | 160 | 60 | 52 | 33 | 15 | 8.5 | 7.5 |
| 19 | 5.0 | a9.0 | 26 | a74 | 128 | 144 | 68 | 2,000 | 26 | 15 | 8.5 | 7.5 |
| 20 | 5.5 | a27 | a24 | a76 | 440 | 102 | 60 | 824 | 24 | 14 | 8.5 | 13 |
| 21 | 5.0 | 39 | a24 | *148 | 1,450 | 80 | 54 | 336 | 181 | 13 | 8.0 | 10 |
| 22 | 5.0 | 56 | a23 | 144 | 500 | 70 | 48 | 190 | 208 | 15 | 8.0 | 9.5 |
| 23 | 5.0 | 46 | a23 | 110 | 276 | 78 | 44 | 132 | 80 | 37 | 8.0 | 8.0 |
| 24 | 5.0 | 68 | a23 | 284 | 184 | 236 | 44 | 102 | 56 | 20 | 8.0 | 7.5 |
| 25 | 5.0 | 85 | a22 | 268 | 140 | 152 | 39 | 82 | 44 | 15 | 7.5 | 7.5 |
| 26 | 5.0 | 102 | a20 | 160 | 113 | 113 | 42 | 72 | 36 | 14 | 7.5 | 7.5 |
| 27 | 5.0 | 96 | a19 | 140 | 92 | 88 | 40 | 60 | 32 | 12 | 7.5 | 8.0 |
| 28 | 5.0 | 52 | a18 | *512 | 80 | 78 | 37 | 52 | 36 | 12 | 7.0 | 8.0 |
| 29 | 6.0 | 32 | a14 | 318 | - | 68 | 33 | 46 | 78 | 12 | 6.5 | 8.0 |
| 30 | a6.0 | 24 | a14 | 172 | ------- | 60 | 52 | 42 | 68 | 12 | 6.5 | 7.0 |
| 31 | a6.0 | ------ | a42 | 120 | ------- | 54 | ------- | 40 | ------- | 12 | 6.5 | ------- |
| Total | 186.0 | 767.0 | 2,151 | 3,811 | 5,627 | 4,033 | 1,670 | 5,621 | 1,621 | 772 | 310.0 | 285.0 |
| Mean | 6.00 | 25.6 | 69.4 | 123 | 201 | 130 | 55.7 | 181 | 54.0 | 24.9 | 10.0 | 9.50 |
| Cfsm | 0.116 | 0.497 | 1.35 | 2.39 | 3.90 | 2.52 | 1.08 | 3.51 | 1.05 | 0.483 | 0.194 | 0.184 |
| In. | 0.13 | 0.55 | 1.56 | 2.76 | 4.06 | 2.90 | 1.20 | 4.05 | 1.17 | 0.56 | 0.22 | 0.21 |

Calendar year 1952: Max - Min - Mean - Cfsm - In. -
Water year 1952-53: Max 2,000 Min 5.0 Mean 73.6 Cfsm 1.43 In. 19.37

Peak discharge (base, 700 cfs).--Dec. 10 (10 p.m.) 1,320 cfs (3.14 ft); Jan. 28 (10:30 a.m.) 978 cfs (2.92 ft); Feb. 21 (8 a.m.) 2,580 cfs (3.73 ft); Mar. 4 (10 to 11 a.m.) 1,030 cfs (2.96 ft); May 6 (11 p.m.) 908 cfs (2.87 ft); May 19 (11 a.m.) 3,830 cfs (4.20 ft); June 13 (8 p.m.) 1,110 cfs (3.01 ft); June 21 (9 p.m.) 3,270 cfs (4.01 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for North Fork Holston River near Saltville.

## Cedar Creek near Lebanon, Va.--Continued

Discharge, in cubic feet per second, water year October 1953 to September 1954

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *7.0 | 7.0 | 6.0 | 7.5 | 42 | 144 | 68 | 39 | 28 | 8.8 | 23 | *7.0 |
| 2 | 7.0 | 6.5 | 5.7 | 7.0 | 39 | 156 | 55 | 38 | 27 | 8.8 | 26 | 6.7 |
| 3 | 7.0 | 6.5 | 5.7 | 7.0 | 38 | 345 | 51 | 37 | 26 | 8.8 | 29 | 6.4 |
| 4 | 7.0 | *6.0 | 6.0 | 7.0 | 38 | 190 | 47 | 41 | 26 | 8.8 | 17 | 6.1 |
| 5 | 7.0 | 6.0 | 7.5 | 7.0 | 36 | 136 | 47 | 39 | 24 | 8.8 | 13 | 6.1 |
| 6 | 7.0 | 6.5 | 8.5 | 7.0 | 33 | 113 | 65 | 37 | 21 | 8.8 | 16 | 6.1 |
| 7 | 7.0 | 6.5 | 20 | 7.0 | 32 | 96 | 58 | 38 | 20 | 8.8 | 12 | 5.8 |
| 8 | 7.0 | 6.0 | 13 | 6.5 | 28 | 96 | 58 | 41 | 19 | 22 | 10 | 5.5 |
| 9 | 7.0 | 6.0 | 28 | 6.5 | 27 | 110 | 55 | 38 | *18 | 18 | *9.4 | 5.5 |
| 10 | 7.5 | 6.0 | 33 | 11 | 27 | 113 | 51 | 37 | 23 | 12 | 8.8 | 5.5 |
| 11 | 7.5 | 6.0 | a22 | 41 | 27 | 110 | 51 | 34 | 20 | 10 | 8.2 | 5.8 |
| 12 | 7.0 | 6.0 | a14 | 22 | 27 | 92 | 46 | 33 | 19 | 9.4 | 7.6 | 5.5 |
| 13 | 7.0 | 6.0 | a26 | 19 | 25 | 96 | 42 | 33 | 18 | 8.8 | 7.0 | 5.2 |
| 14 | 6.5 | 6.0 | a40 | 17 | 23 | 148 | 42 | 51 | 24 | 8.2 | 7.0 | 4.9 |
| 15 | 6.5 | 6.0 | a50 | 391 | 23 | 120 | 44 | 80 | 18 | 9.4 | 7.0 | 4.9 |
| 16 | 7.0 | 6.0 | *a24 | 624 | *23 | 100 | 75 | 62 | 18 | 13 | 6.7 | 4.6 |
| 17 | 7.0 | 6.0 | 11 | 184 | 27 | 85 | 426 | 51 | 33 | 10 | 19 | 4.6 |
| 18 | 7.0 | 6.0 | 10 | 106 | 37 | 72 | a260 | 132 | 27 | 8.2 | 22 | 4.6 |
| 19 | 7.0 | 7.0 | 10 | 72 | 34 | 62 | *140 | 190 | 22 | 11 | 12 | 4.6 |
| 20 | 7.0 | 8.5 | 9.5 | 58 | 60 | 88 | 106 | 103 | 19 | *11 | 10 | 15 |
| 21 | 7.0 | 11 | 9.5 | 148 | 417 | 92 | 85 | 78 | 17 | 15 | 8.8 | 23 |
| 22 | 7.0 | 8.5 | 9.5 | 1,100 | 178 | 75 | 75 | 63 | 15 | 26 | 8.2 | a17 |
| 23 | 7.0 | 7.5 | 8.5 | *510 | 113 | 68 | 68 | 51 | 14 | 20 | 7.6 | a12 |
| 24 | 7.0 | 7.5 | 7.5 | 220 | 85 | 62 | 60 | *44 | 12 | 13 | a7.8 | 7.6 |
| 25 | 7.0 | 6.5 | 7.5 | 140 | 68 | *65 | 55 | 41 | 12 | 11 | a8.8 | 6.1 |
| 26 | 7.0 | 6.0 | 7.5 | 106 | 55 | 435 | 51 | 36 | 11 | 10 | a70 | 6.1 |
| 27 | 8.0 | 6.0 | 8.0 | 88 | 47 | 172 | 49 | 41 | 11 | 8.8 | a20 | 6.1 |
| 28 | 8.5 | 6.0 | 8.0 | 72 | 46 | 124 | 49 | 33 | 11 | 8.8 | a13 | 5.8 |
| 29 | 7.5 | 6.0 | 8.0 | 62 | - | 102 | 47 | 34 | 11 | 7.6 | a 11 | 5.5 |
| 30 | 7.5 | 8.0 | 8.0 | 56 | ------- | 85 | 44 | 39 | 8.8 | 7.6 | 8.8 | 6.7 |
| 31 | 7.5 | --- | 7.5 | 47 | ------- | 72 | ------- | 30 | ------- | 7.0 | 7.6 | --- |
| Total | 221.0 | 197.5 | 439.4 | 4,156.5 | 1,655 | 3,824 | 2,370 | 1,644 | 572.8 | 347.4 | 442.3 | 216.3 |
| Mean | 7.13 | 6.58 | 14.2 | 134 | 59.1 | 123 | 79.0 | 53.0 | 19.1 | 11.2 | 14.3 | 7.21 |
| Cfsm | 0.138 | 0.128 | 0.276 | 2.60 | 1.15 | 2.39 | 1.53 | 1.03 | 0.371 | 0.217 | 0.278 | 0.140 |
| In. | 0.16 | 0.14 | 0.32 | 3.00 | 1.20 | 2.76 | 1.71 | 1.19 | 0.41 | 0.25 | 0.32 | 0.16 |

Calendar year 1953: Max 2,000 Min 5.7 Mean 67.4 Cfsm 1.31 In. 17.75
Water year 1953-54: Max 1,100 Min 4.6 Mean 44.1 Cfsm 0.856 In. 11.62

Peak discharge (base, 700 cfs).--Jan. 15 (9 to 10 p.m.) 1,250 cfs (3.10 ft); Jan. 22 (12 m.) 1,980 cfs (3.47 ft); Mar. 26 (2 a.m.) 838 cfs (2.82 ft). * Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for North Fork Holston River near Saltville.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | a13 | a46 | 110 | *34 | 1,250 | 78 | 46 | 18 | 12 | *11 | 8.2 |
| 2 | 26 | a15 | a37 | 82 | 194 | 602 | 70 | 41 | 17 | 12 | 10 | 7.6 |
| 3 | 14 | 18 | a32 | 63 | 178 | 336 | 65 | 37 | 16 | 12 | 9.4 | 7.6 |
| 4 | 10 | *12 | a27 | 51 | 110 | 228 | 58 | 36 | 16 | 12 | 9.4 | 7.0 |
| 5 | *9.4 | a15 | a25 | 51 | 92 | 540 | *56 | 33 | 15 | 13 | 9.4 | 7.0 |
| 6 | 8.8 | a16 | a90 | 53 | 1,100 | *1,680 | 56 | 32 | *15 | 27 | 10 | *6.7 |
| 7 | 8.2 | a16 | a70 | 56 | *884 | 767 | 53 | 29 | 16 | 20 | 9.4 | 6.7 |
| 8 | 7.0 | a16 | a42 | 48 | 381 | 372 | 48 | 28 | 19 | 22 | 11 | 6.4 |
| 9 | 7.0 | a15 | a47 | 44 | 220 | 228 | 44 | *28 | 22 | 23 | 13 | 6.4 |
| 10 | 6.7 | a16 | a87 | 41 | 150 | 172 | 42 | 28 | 20 | 20 | 12 | 6.1 |
| 11 | 7.0 | a15 | a70 | *96 | 140 | 140 | 44 | 29 | 20 | *80 | 10 | 6.7 |
| 12 | 6.7 | a15 | a58 | 82 | 106 | 166 | 53 | 29 | 20 | 56 | 19 | 7.0 |
| 13 | 6.7 | a14 | *a225 | 70 | 89 | 135 | 48 | 30 | 19 | 37 | 15 | 6.7 |
| 14 | 6.7 | a13 | 150 | 58 | 82 | 166 | 110 | 39 | 18 | 28 | 12 | 6.4 |
| 15 | 8.2 | a12 | 100 | 51 | 73 | 288 | 82 | 34 | 18 | 32 | 11 | 6.4 |
| 16 | 19 | a12 | 70 | 48 | 92 | 1,760 | 65 | 32 | 17 | 22 | 9.4 | 6.1 |
| 17 | 16 | a12 | 56 | 41 | 202 | 738 | 56 | 29 | 16 | 21 | 9.4 | 5.8 |
| 18 | 11 | a12 | 208 | 37 | 160 | 1,240 | 49 | 28 | 14 | 19 | 11 | 5.8 |
| 19 | 10 | a14 | 155 | 39 | 125 | 702 | 46 | 26 | 17 | 18 | 17 | 5.8 |
| 20 | 8.8 | a21 | 100 | 37 | 86 | 435 | 42 | 24 | 18 | 16 | 13 | 5.8 |
| 21 | 8.2 | a27 | 70 | 33 | 82 | 309 | 42 | 23 | 16 | 13 | 11 | 5.8 |
| 22 | 8.2 | a31 | 56 | 37 | 89 | 1,220 | 46 | 22 | 15 | 12 | 11 | a5.8 |
| 23 | 8.2 | a23 | 46 | 42 | 399 | 462 | 42 | 22 | 16 | 11 | 11 | a5.6 |
| 24 | 7.6 | a22 | 42 | 39 | 228 | 284 | 46 | 22 | 18 | 34 | 11 | a5.8 |
| 25 | 7.6 | a21 | 37 | 36 | 150 | 214 | 53 | 24 | 17 | 51 | 9.4 | a6.6 |
| 26 | 7.0 | a19 | a35 | 32 | 115 | 399 | 82 | 22 | 22 | 22 | 8.8 | a6.7 |
| 27 | 7.0 | a18 | a33 | 36 | 389 | 236 | 89 | 21 | 18 | 17 | 8.2 | a6.8 |
| 28 | 7.0 | a23 | a60 | 33 | 513 | 178 | 78 | 18 | 14 | 16 | 7.6 | a6.4 |
| 29 | 11 | a47 | a140 | 32 | - | 145 | 63 | 18 | 13 | 18 | 7.6 | a6.4 |
| 30 | a14 | a76 | *a360 | 30 | ------- | 110 | 51 | 18 | 12 | 13 | 7.0 | a6.4 |
| 31 | a15 | --- | 172 | 30 | ------- | 92 | ------- | 18 | ------- | 12 | 8.8 | --- |
| Total | 320.0 | 599 | 2,746 | 1,538 | 6,463 | 15,594 | 1,757 | 866 | 512 | 721 | 332.8 | 194.5 |
| Mean | 10.3 | 20.0 | 88.6 | 49.6 | 231 | 503 | 58.6 | 27.9 | 17.1 | 23.3 | 10.7 | 6.48 |
| Cfsm | 0.200 | 0.388 | 1.72 | 0.963 | 4.49 | 9.77 | 1.14 | 0.542 | 0.332 | 0.452 | 0.208 | 0.126 |
| In. | 0.23 | 0.43 | 1.98 | 1.11 | 4.68 | 11.26 | 1.27 | 0.62 | 0.37 | 0.52 | 0.24 | 0.14 |

Calendar year 1954: Max 1,100 Min 4.6 Mean 51.8 Cfsm 1.01 In. 13.64
Water year 1954-55: Max 1,760 Min 5.6 Mean 86.7 Cfsm 1.68 In. 22.85

Peak discharge (base, 700 cfs).--Feb. 6 (5 p.m.) 2,070 cfs (3.51 ft); Mar. 1 (12 m.) 2,290 cfs (3.61 ft); Mar. 6 (12:30 p.m.) 2,850 cfs (3.84 ft); Mar. 16 (12:30 p.m.) 3,980 cfs (4.27 ft); Mar. 18 (11 a.m.) 2,410 cfs (3.66 ft); Mar. 22 (7 a.m.) 2,290 cfs (3.61 ft); July 11 (5 p.m.) 714 cfs (2.72 ft).
* Discharge measurement made on this day. a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for North Fork Holston River near Saltville.

## Clinch River at Cleveland, Va.

Location.--Lat 36°56'41", long 82°09'18", on right bank 500 ft upstream from highway bridge at Cleveland, Russell County, 0.5 mile downstream from Muddy Hollow, 2.3 miles downstream from Weaver Creek, and 4.4 miles downstream from Thompson Creek.

Drainage area.--528 sq mi.

Records available.--October 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,500.24 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Nov. 1, 1931, chain gage on highway bridge 500 ft downstream at different datum.

Average discharge.--33 years (1921-23, 1924-55), 684 cfs.

Extremes.--Maximum discharge during year, 15,500 cfs Mar. 7 (gage height, 16.35 ft); minimum, 38 cfs Sept. 21 (gage height, 1.16 ft).
1920-55: Maximum discharge, 26,500 cfs Dec. 22, 1926 (gage height, 23.0 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 13,000 cfs by logarithmic plotting; minimum, that of Sept. 21, 1955; minimum gage height, 0.96 ft Feb. 10, 1934.

Remarks.--Records good.

Revisions (water years).--WSP 823: Drainage area. WSP 1276: 1926(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.2 | 40 | 4.0 | 1,160 |
| 1.6 | 120 | 6.0 | 2,690 |
| 2.0 | 215 | 10.0 | 6,380 |
| 2.5 | 380 | 14.0 | 11,900 |
| 3.0 | 600 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 112 | 225 | 595 | 1,350 | *420 | 11,800 | 950 | 700 | 176 | 104 | *90 | 92 |
| 2 | 154 | 200 | 440 | 1,010 | 716 | 10,600 | 865 | 600 | 171 | 102 | 84 | 86 |
| 3 | 161 | 208 | 352 | 782 | 1,610 | 4,050 | 782 | 535 | 161 | 94 | 108 | 84 |
| 4 | 144 | *212 | 288 | 650 | 1,190 | 2,690 | 700 | 484 | 159 | 102 | 106 | 78 |
| 5 | *116 | 215 | 274 | 810 | 892 | 2,530 | *625 | 440 | 149 | 127 | 100 | 82 |
| 6 | 104 | 252 | 1,130 | 1,100 | 2,600 | 9,380 | 625 | 408 | *140 | 562 | 178 | *72 |
| 7 | 94 | 294 | 1,040 | 1,070 | 8,380 | 11,800 | 595 | 376 | 135 | 376 | 166 | 66 |
| 8 | 88 | 261 | 625 | 920 | 4,410 | 4,410 | 530 | 348 | 176 | 232 | 280 | 62 |
| 9 | 82 | 235 | 590 | 810 | 2,450 | *2,690 | 472 | *326 | 232 | 270 | 675 | 64 |
| 10 | 76 | 215 | 810 | 700 | 1,570 | 1,890 | 432 | 305 | 208 | 222 | 336 | 64 |
| 11 | 80 | 200 | 700 | *892 | 1,350 | 1,530 | 428 | 291 | 185 | *305 | 208 | 64 |
| 12 | 78 | 190 | 550 | 1,010 | 1,190 | 1,650 | 492 | 302 | 190 | 892 | 173 | 64 |
| 13 | 76 | 180 | *916 | 920 | 950 | 1,690 | 472 | 392 | 192 | 480 | 198 | 60 |
| 14 | 80 | 173 | 1,350 | 810 | 892 | 1,970 | 1,020 | 480 | 168 | 288 | 180 | 54 |
| 15 | 96 | 161 | 1,130 | 700 | 838 | 3,240 | 2,050 | 625 | 156 | 222 | 144 | 50 |
| 16 | 578 | 154 | 892 | 650 | 838 | 10,700 | 1,250 | 555 | 144 | 185 | 129 | 54 |
| 17 | 535 | 149 | 700 | 570 | 1,650 | 9,800 | 950 | 420 | 135 | 154 | 116 | 52 |
| 18 | 270 | 147 | 920 | 510 | 1,810 | 7,100 | 782 | 360 | 122 | 142 | 116 | 48 |
| 19 | 200 | 147 | 1,570 | 535 | 1,380 | 7,460 | 675 | 316 | 122 | 135 | 204 | 48 |
| 20 | 168 | 195 | 1,190 | 500 | 1,100 | 5,040 | 590 | 280 | 133 | 142 | 333 | 44 |
| 21 | 147 | 280 | 892 | 448 | 892 | 2,930 | 550 | 255 | 156 | 120 | 212 | 42 |
| 22 | 135 | 280 | 728 | 480 | 810 | 4,950 | 625 | 243 | 144 | 106 | 166 | 42 |
| 23 | 124 | 235 | 600 | 520 | 2,210 | 4,860 | 585 | 235 | 129 | 100 | 152 | 46 |
| 24 | 116 | 215 | 570 | 520 | 2,610 | 2,930 | 575 | 238 | 152 | 124 | 149 | 56 |
| 25 | 112 | 205 | 530 | 448 | 1,770 | 2,210 | 728 | 261 | 156 | 536 | 133 | 66 |
| 26 | 106 | 202 | 460 | 416 | 1,320 | 2,930 | 1,040 | 252 | 166 | 215 | 114 | 62 |
| 27 | 108 | 195 | 420 | 420 | 3,890 | 2,690 | 1,220 | 225 | 154 | 152 | 106 | 60 |
| 28 | 120 | 200 | 400 | 416 | 8,380 | 2,130 | 1,160 | 205 | 138 | 122 | 98 | 56 |
| 29 | 168 | 884 | 1,270 | 412 | - | 1,650 | 1,010 | 192 | 120 | 114 | 92 | 60 |
| 30 | 246 | 950 | 3,330 | 396 | ------ | 1,320 | 838 | 180 | 108 | 110 | 86 | 76 |
| 31 | 284 | ------ | 2,130 | 380 | ------ | 1,100 | ------ | 178 | ------ | 96 | 78 | ------ |
| Total | 4,954 | 7,659 | 27,392 | 21,155 | 58,118 | 141,720 | 23,616 | 11,007 | 4,677 | 6,931 | 5,310 | 1,854 |
| Mean | 160 | 255 | 884 | 682 | 2,076 | 4,572 | 787 | 355 | 156 | 224 | 171 | 61.8 |
| Cfsm | 0.303 | 0.483 | 1.67 | 1.29 | 3.93 | 8.66 | 1.49 | 0.672 | 0.295 | 0.424 | 0.324 | 0.117 |
| In. | 0.35 | 0.54 | 1.92 | 1.49 | 4.09 | 9.98 | 1.66 | 0.77 | 0.33 | 0.49 | 0.37 | 0.13 |

Calendar year 1954: Max 5,620 Min 58 Mean 533 Cfsm 1.01 In. 13.70
Water year 1954-55: Max 11,800 Min 42 Mean 861 Cfsm 1.63 In. 22.12

Peak discharge (base, 5,000 cfs).--Feb. 7 (11 a.m.) 9,500 cfs (12.36 ft); Mar. 1 (10 to 11 p.m.) 14,900 cfs (15.97 ft); Mar. 7 (12:30 a.m.) 15,500 cfs (16.35 ft); Mar. 16 (6 p.m.) 14,600 cfs (15.84 ft); Mar. 18 (12 p.m.) 9,500 cfs (12.45 ft); Mar. 22 (10 p.m.) 6,160 cfs (9.82 ft).
* Discharge measurement made on this day.

## Guest River at Coeburn, Va.

Location.--Lat 36°55'45", long 82°27'23", on right bank at downstream side of bridge on State Highway 72, 1.0 mile southeast of Coeburn, Wise County, 1.4 miles upstream from Jaybird Branch, 1.8 miles downstream from Pine Camp Creek, and 6 miles upstream from mouth.

Drainage area.--87.3 sq mi.

Records available.--September 1949 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,925.00 ft above mean sea level (Interstate Railway benchmark).

Average discharge.--6 years, 140 cfs.

Extremes.--Maximum discharge during year, 3,040 cfs Mar. 16 (gage height, 10.26 ft); minimum, 2.0 cfs Sept. 22, 23 (gage height, 1.23 ft).
1949-55: Maximum discharge, that of Mar. 16, 1955; minimum, 1.6 cfs Oct. 21, 22, 25, 26, Nov. 9, 10, 1953; minimum gage height, that of Sept. 22, 23, 1955.

Remarks.--Records good.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.2 | 1.0 | 2.5 | 143 |
| 1.3 | 3.4 | 3.0 | 230 |
| 1.4 | 6.0 | 4.0 | 475 |
| 1.5 | 15 | 6.0 | 1,190 |
| 2.0 | 73 | 9.0 | 2,440 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 6.0 | 46 | 197 | 60 | 2,120 | 132 | 111 | 23 | 10 | 20 | 4.2 |
| 2 | 62 | 6.9 | 36 | 134 | *210 | 1,350 | 118 | 101 | 21 | 10 | *17 | 4.2 |
| 3 | 22 | 6.9 | 30 | 100 | 385 | 540 | 120 | 92 | 19 | 13 | 15 | 4.2 |
| 4 | 15 | 6.0 | 28 | 85 | 236 | 348 | 106 | 74 | 18 | 37 | 14 | 3.7 |
| 5 | 10 | *6.9 | 36 | 80 | 172 | 475 | 99 | 70 | 16 | 30 | 16 | 3.7 |
| 6 | *7.8 | 8.7 | 110 | 77 | 1,440 | 1,830 | *101 | 66 | 16 | 32 | 41 | 3.7 |
| 7 | 6.9 | 8.7 | 87 | 72 | 1,950 | 1,790 | 101 | 63 | 20 | 36 | 27 | *3.7 |
| 8 | 5.5 | 7.8 | 66 | 65 | 662 | 558 | 90 | 55 | *21 | 66 | 42 | 3.4 |
| 9 | 5.5 | 7.8 | 85 | 64 | 310 | *322 | 83 | 52 | 25 | 59 | 77 | 3.2 |
| 10 | 5.2 | 7.8 | 124 | 64 | 212 | 238 | 78 | *49 | 21 | 37 | 46 | 2.9 |
| 11 | 5.2 | 6.9 | 86 | 111 | 250 | 201 | 87 | 48 | 24 | 28 | 27 | 2.9 |
| 12 | 5.0 | 6.9 | 65 | *145 | 260 | 222 | 98 | 48 | 24 | *126 | 20 | 2.9 |
| 13 | 5.0 | 6.0 | 200 | 137 | 206 | 224 | 77 | 60 | 22 | 192 | 17 | 2.7 |
| 14 | 5.0 | 6.0 | *250 | 111 | 192 | 246 | 127 | 124 | 20 | 86 | 13 | 2.4 |
| 15 | 12 | 6.0 | 148 | 99 | 156 | 603 | 216 | 322 | 19 | 54 | 12 | 2.7 |
| 16 | 18 | 6.0 | 104 | 92 | 165 | 2,300 | 192 | 164 | 18 | 43 | 20 | 2.4 |
| 17 | 6.9 | 8.7 | 82 | 82 | 385 | 1,670 | 159 | 134 | 15 | 36 | 15 | 2.4 |
| 18 | 5.2 | 13 | 150 | 76 | 360 | 1,310 | 122 | 97 | 14 | 27 | 13 | 2.4 |
| 19 | 4.4 | 12 | 185 | 70 | 270 | 1,190 | 107 | 78 | 15 | 22 | 15 | 2.9 |
| 20 | 3.7 | 14 | 134 | 72 | 203 | 575 | 103 | 66 | 30 | 20 | 12 | 2.9 |
| 21 | 3.7 | 15 | 94 | 74 | 165 | 475 | 103 | 58 | 26 | 20 | 9.6 | 2.4 |
| 22 | 3.7 | 15 | 77 | 65 | 159 | 2,120 | 103 | 52 | 18 | 16 | 8.7 | 2.0 |
| 23 | 3.7 | 14 | 65 | 64 | 963 | 950 | 83 | 49 | 19 | 16 | 6.9 | 2.0 |
| 24 | 3.7 | 13 | 64 | 61 | 715 | 445 | 125 | 50 | 30 | 20 | 6.0 | 3.2 |
| 25 | 3.4 | 14 | 58 | 61 | 335 | 300 | 260 | 52 | 21 | 48 | 5.7 | 5.0 |
| 26 | 3.4 | 14 | 52 | 65 | 236 | 505 | 280 | 46 | 23 | 25 | 5.7 | 6.0 |
| 27 | 3.2 | 14 | 50 | 63 | 827 | 430 | 260 | 40 | 21 | 19 | 5.5 | 4.7 |
| 28 | 3.7 | 24 | 55 | 65 | 1,430 | 310 | 206 | 34 | 16 | 16 | 5.0 | 3.9 |
| 29 | 5.2 | 89 | 617 | 65 | - | 234 | 169 | 32 | 14 | 27 | 5.0 | 3.9 |
| 30 | 7.8 | 66 | *960 | 61 | ------- | 180 | 130 | 28 | 11 | 36 | 4.7 | 9.6 |
| 31 | 9.6 | ------- | 383 | 56 | ------- | 149 | ------- | 26 | ------- | 24 | 4.4 | ------- |
| Total | 281.4 | 437.0 | 4,527 | 2,633 | 12,914 | 24,210 | 4,033 | 2,341 | 600 | 1,231 | 546.2 | 106.2 |
| Mean | 9.08 | 14.6 | 146 | 84.9 | 461 | 781 | 134 | 75.5 | 20.0 | 39.7 | 17.6 | 3.54 |
| Cfsm | 0.104 | 0.167 | 1.67 | 0.973 | 5.28 | 8.95 | 1.54 | 0.865 | 0.229 | 0.455 | 0.202 | 0.041 |
| In. | 0.12 | 0.19 | 1.92 | 1.12 | 5.50 | 10.32 | 1.71 | 1.00 | 0.26 | 0.52 | 0.23 | 0.05 |

Calendar year 1954: Max 1,310 Min 2.9 Mean 85.2 Cfsm 0.976 In. 13.26
Water year 1954-55: Max 2,300 Min 2.0 Mean 148 Cfsm 1.70 In. 22.94

Peak discharge (base, 1,500 cfs).--Feb. 6 (10:30 p.m.) 2,580 cfs (9.29 ft); Mar. 1 (5:30 p.m.) 2,580 cfs (9.30 ft); Mar. 6 (8 p.m.) 2,800 cfs (9.83 ft); Mar. 16 (5 p.m.) 3,040 cfs (10.26 ft); Mar. 22 (9:30 a.m.) 2,660 cfs (9.50 ft).
* Discharge measurement made on this day.

414660 O - 57 - 11

## Quillin Spring near Gate City, Va.

Location.--Lat 36°41'49", long 82°34'38", 4 miles north of Gate City, Scott County.
Records available.--January 1954 to September 1955 (discharge measurements only).
Extremes.--Maximum discharge measured during year, 10.6 cfs Mar. 2; minimum measured, 0.790 cfs Oct. 7.
1954-55: Maximum discharge measured, that of Mar. 2, 1955; minimum measured, that of Oct. 7, 1954.
Remarks.--Discharge measurements made 50 ft below spring.

Discharge measurements, in cubic feet per second, water year October 1954 to September 1955

| | | |
|---|---|---|
| Oct. 7..... 0.79 | Feb. 3..... 1.63 | June 10..... 1.36 |
| Nov. 9..... 1.05 | Mar. 2..... 10.6 | July 13..... 1.28 |
| Dec. 15..... 1.02 | Apr. 7..... 3.17 | Aug. 3..... 1.30 |
| Jan. 13..... 1.75 | May 10..... 2.19 | Sept. 8..... .82 |

## Clinch River at Speers Ferry, Va.

Location.--Lat 36°38'55", long 82°45'02", on right bank 100 ft downstream from bridge on U. S. Highway 58, 0.5 mile downstream from Copper Creek, 0.8 mile northwest of Speers Ferry, Scott County, and 1.8 miles downstream from Clinchport.
Drainage area.--1,126 sq mi.
Records available.--October 1920 to September 1955. Gage-height records collected in this vicinity February 1895 to July 1933 are contained in reports of U. S. Weather Bureau.
Gage.--Water-stage recorder. Datum of gage is 1,196.52 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Nov. 22, 1926, staff gage at site 400 ft upstream at datum 1.50 ft higher. Nov. 22, 1926, to Nov. 6, 1931, chain gage at present site and datum.
Average discharge.--35 years, 1,564 cfs.
Extremes.--Maximum discharge during year, 25,600 cfs Mar. 17 (gage height, 20.67 ft); minimum, 95 cfs Sept. 24 (gage height, 1.09 ft).
1920-55: Maximum discharge, 37,200 cfs Feb. 3, 1923 (gage height, 25.85 ft, present datum, from graph based on gage readings), from rating curve extended above 11,000 cfs by logarithmic plotting; minimum, 42 cfs Sept. 29, Oct. 23, 1939; minimum daily, 77 cfs Oct. 7, 8, 14, 15, 22, 1930.
Remarks.--Records good except those for period of no gage-height record, which are fair. Prior to May 1951, diurnal fluctuation at low flow caused by mill above station.
Revisions.--WSP 823: Drainage area. WSP 1276: 1925(M), 1927, 1928-31(M), 1932, 1935(M).

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 162 | 335 | a1,200 | a3,000 | 720 | 15,800 | 2,110 | 1,540 | 332 | 200 | 207 | 124 |
| 2 | 230 | 310 | a900 | a2,200 | 996 | *20,400 | 1,880 | 1,340 | 317 | 188 | *195 | 118 |
| 3 | 355 | 262 | a740 | a1,700 | *2,400 | 11,300 | 1,750 | 1,180 | 304 | 183 | 188 | 119 |
| 4 | 260 | 251 | a600 | a1,400 | 2,900 | 5,600 | 1,580 | 1,080 | 292 | 202 | 192 | 122 |
| 5 | 237 | 271 | a560 | a1,800 | 2,110 | 4,310 | 1,420 | 970 | 280 | 217 | 183 | 122 |
| 6 | 207 | 271 | a2,300 | a2,300 | 5,500 | 8,870 | 1,540 | 882 | 268 | 254 | 192 | 118 |
| 7 | *170 | 277 | a2,000 | a2,200 | 14,900 | 22,000 | *1,580 | 800 | 262 | 518 | 230 | 115 |
| 8 | 153 | *339 | a1,400 | a1,900 | 11,600 | 12,800 | 1,460 | 745 | 277 | 620 | 307 | *113 |
| 9 | 145 | 332 | a1,200 | a1,700 | 5,720 | 5,840 | 1,300 | 695 | *310 | 478 | 371 | 110 |
| 10 | 139 | 301 | a1,700 | a1,500 | 3,540 | 3,980 | 1,140 | *645 | 381 | 490 | 772 | 106 |
| 11 | 131 | 277 | a1,400 | a1,800 | 2,900 | 3,100 | 1,140 | 595 | 399 | 399 | 550 | 105 |
| 12 | 125 | 251 | a1,200 | a2,200 | 2,900 | 2,800 | 1,180 | 595 | 361 | 494 | 335 | 106 |
| 13 | 123 | 235 | a1,800 | *a2,000 | 2,400 | 2,900 | 1,220 | 670 | 345 | 1,500 | 277 | 105 |
| 14 | 123 | 217 | a2,700 | 1,750 | 1,980 | 2,900 | 1,620 | 910 | 339 | 940 | 246 | 105 |
| 15 | 127 | 204 | a2,400 | 1,500 | 1,930 | 3,760 | 2,900 | 1,750 | 314 | 595 | 271 | 105 |
| 16 | 125 | 197 | a2,000 | 1,340 | 1,840 | 14,300 | 3,100 | 1,620 | 283 | 450 | 314 | 102 |
| 17 | 370 | 195 | a1,500 | 1,220 | 3,100 | 23,700 | 2,300 | 1,300 | 265 | 368 | 262 | 100 |
| 18 | 620 | 186 | a2,000 | 1,080 | 4,090 | 15,300 | 1,880 | 1,000 | 246 | 307 | 214 | 98 |
| 19 | 355 | 181 | a3,200 | 1,000 | 3,430 | 16,100 | 1,620 | 828 | 237 | 265 | 195 | 98 |
| 20 | 260 | 186 | a2,500 | 1,000 | 2,700 | 10,200 | 1,460 | 695 | 227 | 251 | 214 | 98 |
| 21 | 209 | 204 | a1,800 | 910 | 2,160 | 6,920 | 1,340 | 620 | 232 | 248 | 375 | 97 |
| 22 | 179 | 289 | a1,500 | 910 | 1,930 | 12,700 | 1,340 | 572 | 240 | 232 | 335 | 99 |
| 23 | 162 | 358 | a1,300 | 1,000 | 6,080 | 12,100 | 1,340 | 530 | 286 | 209 | 274 | 98 |
| 24 | 151 | 326 | a1,200 | 1,040 | 7,160 | 7,280 | 1,380 | 530 | 289 | 200 | 214 | 98 |
| 25 | 145 | 292 | a1,100 | 940 | 4,530 | 4,880 | 1,660 | 510 | 265 | 283 | 192 | 110 |
| 26 | 137 | 268 | a960 | 882 | 3,100 | 5,840 | 1,930 | 510 | 292 | 595 | 183 | 115 |
| 27 | 133 | a260 | a900 | 882 | 4,530 | 6,080 | 2,200 | 502 | 286 | 402 | 168 | 119 |
| 28 | 135 | a270 | a860 | 882 | 11,400 | 4,640 | 2,250 | 462 | 268 | 286 | 152 | 118 |
| 29 | 141 | a1,600 | a1,500 | 882 | - | 3,650 | 2,060 | 417 | 243 | 295 | 143 | 117 |
| 30 | 164 | a1,900 | a5,600 | 828 | ------- | 2,900 | 1,750 | 385 | 222 | 240 | 133 | 134 |
| 31 | 243 | ------- | a4,500 | 720 | ------- | 2,400 | ------- | 355 | ------- | 227 | 128 | ------- |
| Total | 6,216 | 10,845 | 54,520 | 44,466 | 118,546 | 275,350 | 51,430 | 25,233 | 8,662 | 12,136 | 8,012 | 3,294 |
| Mean | 201 | 362 | 1,759 | 1,434 | 4,234 | 8,882 | 1,714 | 814 | 289 | 391 | 258 | 110 |
| Cfsm | 0.179 | 0.321 | 1.56 | 1.27 | 3.76 | 7.89 | 1.52 | 0.723 | 0.257 | 0.347 | 0.229 | 0.098 |
| In. | 0.21 | 0.36 | 1.80 | 1.46 | 3.92 | 9.10 | 1.70 | 0.83 | 0.29 | 0.40 | 0.26 | 0.11 |

Calendar year 1954: Max 10,700 Min 99 Mean 1,089 Cfsm 0.967 In. 13.15
Water year 1954-55: Max 23,700 Min 97 Mean 1,695 Cfsm 1.51 In. 20.44

Peak discharge (base, 10,000 cfs).--Feb. 7 (7 to 8 a.m.) 15,300 cfs (15.45 ft); Mar. 2 (12 m.) 21,400 cfs (18.67 ft); Mar. 7 (1 p.m.) 23,700 cfs (19.85 ft); Mar. 17 (6 to 7 a.m.) 25,600 cfs (20.67 ft); Mar. 19 (8 a.m.) 17,000 cfs (16.37 ft); Mar. 22 (7 to 8 p.m.) 15,600 cfs (15.59 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Clinch River at Cleveland and North Fork Holston River near Gate City.

## North Fork Clinch River at Duffield, Va.

Location.--Lat 36°42'40", long 82°47'45", on right bank at upstream side of bridge on U. S. Highways 58 and 421, 0.2 mile downstream from Spurlock Branch, 0.5 mile south of Duffield, Scott County, and 1.6 miles upstream from Harris Branch.

Drainage area.--23.1 sq mi.

Records available.--October 1952 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,814.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 766 cfs Mar. 16 (gage height, 7.24 ft); minimum, 1.0 cfs Sept. 17-19, 23, 24 (gage height, 1.27 ft).
1952-55: Maximum discharge, 782 cfs Feb. 21, 1953 (gage height, 7.32 ft); minimum, that of Sept. 17-19, 23, 24, 1955.

Remarks.--Records good except those for period of ice effect, which are fair.

Rating tables, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.3 | 1.1 | 2.0 | 37 | 1.2 | 0.3 | 1.8 | 26 |
| 1.4 | 3.0 | 2.5 | 79 | 1.3 | 1.3 | 2.0 | 42 |
| 1.5 | 6.0 | 3.0 | 137 | 1.4 | 3.3 | 3.0 | 136 |
| 1.6 | 11 | 4.0 | 280 | 1.5 | 6.3 | 4.0 | 275 |
| 1.8 | 22 | | | 1.6 | 12 | 6.0 | 575 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.9 | 1.7 | 3.0 | 35 | 10 | 440 | 52 | 28 | 8.2 | 3.1 | 3.3 | 1.3 |
| 2 | 1.9 | 1.9 | 2.5 | 25 | 46 | *282 | 48 | 25 | 6.3 | 2.9 | *10 | 1.3 |
| 3 | 1.7 | 2.1 | 2.3 | 19 | *68 | 154 | 45 | 22 | 6.0 | 2.9 | 4.8 | 1.3 |
| 4 | 1.7 | 1.9 | 2.3 | 16 | 48 | 104 | 40 | 21 | 5.7 | 3.1 | 2.9 | 1.3 |
| 5 | 1.7 | 2.1 | 3.3 | 16 | 39 | 84 | 40 | 20 | 5.4 | 3.1 | 2.5 | 1.3 |
| 6 | *1.7 | 2.1 | 12 | 14 | 346 | 338 | 63 | 18 | 4.8 | 3.1 | 2.9 | 1.2 |
| 7 | 1.9 | 2.1 | 5.7 | 14 | 358 | 290 | *75 | 16 | 5.1 | 2.9 | 3.3 | *1.3 |
| 8 | 1.7 | *1.7 | 5.4 | 13 | 164 | 154 | 65 | 14 | 6.0 | 2.9 | 4.8 | 1.2 |
| 9 | 1.9 | 2.1 | 8.8 | 12 | 94 | 101 | 57 | 13 | *6.7 | 2.9 | 3.9 | 1.2 |
| 10 | 1.7 | 1.9 | 12 | 13 | 64 | 77 | 52 | *12 | 6.0 | 2.9 | 3.1 | 1.2 |
| 11 | 1.7 | 1.9 | 7.2 | 57 | 80 | 64 | 51 | 13 | 6.7 | 4.2 | 2.9 | 1.2 |
| 12 | 1.7 | 1.9 | 6.0 | 53 | 76 | 60 | 48 | 13 | 6.7 | 4.5 | 2.5 | 1.2 |
| 13 | 1.7 | 1.9 | 19 | *40 | 64 | 52 | 48 | 19 | 6.0 | *3.9 | 2.3 | 1.2 |
| 14 | 1.7 | 1.9 | 16 | 28 | 57 | 49 | 63 | 20 | 5.7 | 3.3 | 2.3 | 1.2 |
| 15 | 1.9 | 2.1 | *9.7 | 23 | 52 | 73 | 77 | 16 | 5.1 | 3.3 | 2.3 | 1.2 |
| 16 | 1.9 | 2.1 | 7.6 | 19 | 60 | 542 | 68 | 13 | 4.5 | 3.1 | 2.1 | 1.2 |
| 17 | 1.9 | 2.3 | 6.0 | 16 | 128 | 335 | 58 | 11 | 4.2 | 2.9 | 1.9 | 1.1 |
| 18 | 1.9 | 2.1 | 19 | 13 | 102 | 485 | 50 | 10 | 3.9 | 2.7 | 1.9 | 1.1 |
| 19 | 1.9 | 1.9 | 18 | 12 | 78 | 305 | 45 | 8.8 | 3.9 | 2.3 | 1.9 | 1.1 |
| 20 | 1.9 | 2.5 | 12 | 11 | 62 | 186 | 40 | 7.6 | 3.9 | 2.5 | 1.7 | 1.1 |
| 21 | 1.9 | 2.5 | 8.8 | 9.4 | 52 | 154 | 37 | 7.1 | 3.6 | 2.5 | 1.5 | 1.1 |
| 22 | 1.9 | 2.1 | 7.6 | 11 | 58 | 515 | 35 | 7.1 | 3.3 | 2.3 | 1.7 | 1.2 |
| 23 | 1.9 | 1.9 | 6.8 | 13 | 425 | 222 | 32 | 10 | 4.2 | 2.1 | 1.9 | 1.1 |
| 24 | 1.7 | 2.1 | 6.4 | 13 | 193 | 129 | 36 | 11 | 4.8 | 2.7 | 1.5 | 1.7 |
| 25 | 1.5 | 1.9 | 6.0 | 12 | 112 | 108 | 37 | 11 | 5.1 | 4.8 | 1.5 | 1.5 |
| 26 | 1.5 | 2.1 | 5.4 | 10 | 78 | 208 | 38 | 8.2 | 5.4 | 3.3 | 1.3 | 1.3 |
| 27 | 1.7 | 1.9 | 5.1 | b10 | 240 | 137 | 39 | 6.3 | 4.5 | 2.7 | 1.5 | 1.3 |
| 28 | 1.7 | 2.5 | 6.4 | b9.6 | 275 | 100 | 38 | 17 | 3.9 | 15 | 1.3 | 1.5 |
| 29 | 1.9 | 7.2 | 150 | b9.4 | - | 80 | 35 | 13 | 3.3 | 12 | 1.5 | 1.5 |
| 30 | 1.9 | 3.9 | 129 | b9.2 | ------ | 65 | 31 | 11 | 3.3 | 6.3 | 1.5 | 2.9 |
| 31 | 1.7 | ---- | 56 | b9.0 | ------ | 57 | ------ | 8.8 | ------ | 4.2 | 1.3 | ------ |
| Total | 55.3 | 68.3 | 565.3 | 564.6 | 3,429 | 5,950 | 1,443 | 430.9 | 152.2 | 120.4 | 79.8 | 39.3 |
| Mean | 1.78 | 2.28 | 18.2 | 18.2 | 122 | 192 | 48.1 | 13.9 | 5.07 | 3.88 | 2.57 | 1.31 |
| Cfsm | 0.077 | 0.099 | 0.788 | 0.788 | 5.28 | 8.31 | 2.08 | 0.602 | 0.219 | 0.168 | 0.111 | 0.057 |
| In. | 0.09 | 0.11 | 0.91 | 0.91 | 5.50 | 9.58 | 2.32 | 0.69 | 0.24 | 0.19 | 0.13 | 0.06 |

Calendar year 1954: Max 415 Min 1.5 Mean 21.7 Cfsm 0.939 In. 12.77
Water year 1954-55: Max 542 Min 1.1 Mean 35.3 Cfsm 1.53 In. 20.73

Peak discharge (base, 500 cfs).--Feb. 6 (5:30 p.m.) 590 cfs (6.14 ft); Feb. 23 (5:30 a.m.) 606 cfs (6.18 ft); Mar. 1 (12:30 p.m.) 622 cfs (6.34 ft); Mar. 6 (3 to 4 p.m.) 606 cfs (6.20 ft); Mar. 16 (11:30 a.m.) 766 cfs (7.24 ft); Mar. 18 (10:30 a.m.) 670 cfs (6.59 ft); Mar. 22 (3:30 a.m.) 702 cfs (6.84 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Clinch River above Tazewell, Tenn.

Location.--Lat 36°25'30", long 83°23'54", on right bank 0.4 mile upstream from Grissom Island, 4.6 miles downstream from Big War Creek, 10 miles east of Tazewell, Claiborne County, and at mile 159.8.

Drainage area.--1,474 sq mi.

Records available.--April 1919 to September 1927 (published as "near Lone Mountain"), August 1927 to December 1936 (published as "near Tazewell"), July 1935 to September 1955.

Gage.--Water-stage recorder at present site and datum since Dec. 4, 1935. Datum of gage is 1,060.7 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Apr. 1, 1919, to Sept. 30, 1927, chain gage on railroad bridge 23 miles downstream at datum 102.7 ft lower. Aug. 8, 1927, to Dec. 31, 1936, water-stage recorder at site 7.7 miles downstream at datum 47.2 ft lower. July 29 to Dec. 3, 1935, staff gage at present site and datum.

Average discharge.--36 years, 2,066 cfs.

Extremes.--Maximum discharge during year, 29,700 cfs Mar. 18 (gage height, 15.29 ft); minimum, 111 cfs Sept. 20 (gage height, 0.33 ft Sept. 20).
1919-55: Maximum discharge observed, 39,700 cfs Feb. 4, 1923 (gage height, 20.3 ft, site and datum then in use); minimum observed, 108 cfs Sept. 11, 1925.
Maximum stage known, about 24 ft, present site and datum, in 1862 from information by local resident.

Remarks.--Records good.

Revisions (water years).--WSP 1336: 1928.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 30 to Dec. 2, Dec. 7-26, Dec. 30 to Jan. 31, Feb. 2-4)

| | | | |
|---|---|---|---|
| 0.3 | 105 | 3.0 | 2,100 |
| .4 | 125 | 4.0 | 3,350 |
| .5 | 151 | 6.0 | 6,450 |
| .7 | 220 | 8.0 | 10,200 |
| 1.0 | 355 | 10.0 | 14,700 |
| 1.5 | 675 | 12.0 | 19,800 |
| 2.0 | 1,070 | 14.7 | 27,800 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 179 | 216 | *1,190 | 4,140 | *795 | *15,600 | 2,900 | 1,970 | 446 | 292 | 296 | 163 |
| 2 | 173 | 340 | 985 | 2,590 | 905 | 20,500 | 2,540 | 1,700 | 422 | 264 | *274 | *160 |
| 3 | 179 | 345 | 780 | 1,900 | 1,790 | 19,500 | 2,300 | 1,500 | 404 | 248 | 252 | 154 |
| 4 | *350 | *300 | 647 | 1,470 | 3,170 | 9,360 | *2,090 | *1,350 | 388 | 244 | 248 | 148 |
| 5 | 300 | 287 | 584 | *1,210 | 2,920 | 5,940 | 1,900 | 1,210 | 372 | *248 | 232 | 148 |
| 6 | 264 | 296 | 690 | 1,120 | 3,890 | 7,220 | 1,950 | 1,120 | 355 | 274 | 224 | 151 |
| 7 | 244 | 296 | 849 | 1,290 | *13,600 | 19,300 | 2,400 | 1,020 | *399 | 305 | 220 | 148 |
| 8 | 205 | 292 | 1,550 | 1,440 | *16,500 | 21,900 | 2,180 | 945 | 404 | 534 | 364 | 143 |
| 9 | 179 | 340 | 1,260 | 1,320 | 10,300 | 10,500 | 1,900 | 881 | 452 | 742 | 458 | 143 |
| 10 | 170 | 360 | 1,150 | 1,200 | 5,360 | 5,920 | 1,690 | 825 | 440 | 577 | 410 | 138 |
| 11 | 163 | 340 | 1,120 | 1,460 | 3,980 | 4,320 | 1,570 | 788 | 470 | 549 | 780 | 135 |
| 12 | 160 | 320 | 1,130 | 2,380 | g3,910 | 4,160 | 1,580 | 788 | 502 | 502 | 598 | 133 |
| 13 | 154 | 305 | 1,010 | 2,420 | g3,420 | 4,100 | 1,570 | 889 | 464 | 662 | 399 | 130 |
| 14 | 151 | 292 | 1,420 | 2,000 | g2,750 | 3,810 | 1,720 | 1,540 | 428 | 1,390 | 320 | 128 |
| 15 | 148 | 274 | 2,260 | 1,670 | g2,440 | 4,120 | 2,420 | 1,510 | 416 | 985 | 296 | 125 |
| 16 | 148 | 274 | 1,880 | 1,430 | 2,330 | 11,200 | 4,050 | 2,140 | 394 | 682 | 428 | 123 |
| 17 | 146 | 278 | 1,440 | 1,260 | 3,210 | 26,500 | 3,180 | 1,740 | 360 | 528 | 382 | 121 |
| 18 | 226 | *264 | 1,360 | 1,130 | 4,860 | *27,600 | 2,540 | 1,380 | 335 | 440 | 340 | 121 |
| 19 | 619 | 252 | 1,370 | 1,060 | 4,650 | 22,900 | 2,150 | 1,120 | 315 | 372 | 278 | 119 |
| 20 | 404 | 269 | 2,040 | 1,000 | 3,660 | 18,400 | 1,880 | 953 | 320 | 345 | 248 | 115 |
| 21 | 305 | 269 | 1,920 | 969 | 2,910 | 11,300 | 1,700 | 833 | 300 | 355 | 240 | 113 |
| 22 | 252 | 264 | 1,460 | 961 | 2,640 | 14,800 | 1,640 | 788 | 292 | 300 | 355 | 113 |
| 23 | 224 | 315 | 1,160 | 1,090 | 6,740 | 18,700 | 1,600 | 802 | 305 | 305 | 394 | 113 |
| 24 | 201 | 422 | 977 | 1,140 | 10,300 | 12,500 | 1,660 | 720 | 382 | 274 | 345 | 121 |
| 25 | 188 | 410 | 873 | 1,090 | 7,590 | 7,690 | 1,950 | 698 | 440 | 278 | 269 | 141 |
| 26 | 179 | 377 | 825 | 977 | 4,770 | 7,310 | 2,270 | 682 | 452 | 340 | 240 | 135 |
| 27 | 173 | 350 | 795 | 961 | 4,880 | 8,340 | 2,470 | 654 | 394 | 598 | 220 | 135 |
| 28 | 170 | 355 | 758 | 1,000 | 10,100 | 6,990 | 2,650 | 633 | 372 | 522 | 212 | 146 |
| 29 | 173 | 502 | 2,020 | 969 | - | 5,380 | 2,580 | 591 | 345 | 528 | 193 | 148 |
| 30 | 173 | 619 | 4,440 | 929 | ------ | 4,240 | 2,290 | 522 | 320 | 399 | 176 | 176 |
| 31 | 176 | -- -- | 6,110 | 857 | ------ | 3,410 | ------- | 483 | ------- | 340 | 170 | -- -- |
| Total | 6,774 | 9,823 | 46,053 | 44,433 | 144,150 | 363,510 | 65,320 | 32,775 | 11,688 | 14,422 | 9,861 | 4,087 |
| Mean | 219 | 327 | 1,486 | 1,433 | 5,148 | 11,730 | 2,177 | 1,057 | 390 | 465 | 318 | 136 |
| Cfsm | 0.149 | 0.222 | 1.01 | 0.972 | 3.49 | 7.96 | 1.48 | 0.717 | 0.265 | 0.315 | 0.216 | 0.092 |
| In. | 0.17 | 0.25 | 1.16 | 1.12 | 3.64 | 9.17 | 1.65 | 0.83 | 0.29 | 0.36 | 0.25 | 0.10 |

Calendar year 1954: Max 12,100 Min 141 Mean 1,310 Cfsm 0.889 In. 12.07
Water year 1954-55: Max 27,600 Min 113 Mean 2,063 Cfsm 1.40 In. 18.99

Peak discharge (base, 14,000 cfs).--Feb. 7 (11:30 p.m.) 18,000 cfs (11.33 ft); Mar. 2 (11:30 p.m.) 22,600 cfs (13.01 ft); Mar. 8 (2:30 a.m.) 24,700 cfs (13.71 ft); Mar. 18 (1 p.m.) 29,700 cfs (15.29 ft); Mar. 23 (7:30 a.m.) 19,800 cfs (12.03 ft).

* Discharge measurement made on this day.

g Computed from range in stage and bihourly readings from radio gage in same well.

## Powell River at Big Stone Gap, Va.

Location.--Lat 36°52'08", long 82°46'32", on right bank 10 ft upstream from bridge on U. S. Highway 23 at Big Stone Gap, Wise County, 1 mile upstream from South Fork Powell River, and 2.5 miles downstream from Pigeon Creek.

Drainage area.--112 sq mi.

Records available.--October 1944 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,459.07 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Apr. 27, 1948, staff gage at same site and datum.

Average discharge.--10 years (1945-55), 203 cfs.

Extremes.--Maximum discharge during year, 6,340 cfs Mar. 16 (gage height, 6.62 ft); minimum, 4.0 cfs Sept. 16, 17, 19; minimum gage height, 0.60 ft Oct. 12, Sept. 16, 17, 19.
1944-55: Maximum discharge, 16,500 cfs Jan. 7, 1946 (gage height, 9.8 ft, from floodmark); minimum, that of Sept. 16, 17, 19, 1955.

Remarks.--Records good.

Revisions (water years).--WSP 1053: Drainage area. WSP 1276: 1948.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 1 | | | | Feb. 2 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 8.5 | 1.6 | 190 | 0.6 | 4.0 | 2.5 | 570 |
| .7 | 15 | 2.0 | 340 | .7 | 14 | 3.0 | 920 |
| .8 | 24 | 2.5 | 570 | .8 | 26 | 4.0 | 1,790 |
| 1.0 | 51 | 3.0 | 870 | 1.0 | 52 | 5.0 | 3,020 |
| 1.3 | 106 | 4.0 | 1,780 | 1.5 | 149 | 6.0 | 4,900 |
| | | | | 2.0 | 330 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.8 | 10 | 32 | 217 | 68 | 2,680 | 218 | 196 | 38 | 21 | 36 | 10 |
| 2 | 12 | 11 | 25 | 157 | *266 | *1,340 | 192 | 167 | 35 | 19 | *47 | 10 |
| 3 | 12 | 12 | 22 | 116 | 430 | 745 | 206 | 146 | 32 | 19 | 49 | 9.0 |
| 4 | 10 | 11 | 19 | 111 | 274 | 510 | 152 | 132 | 31 | 29 | 35 | 9.0 |
| 5 | 9.8 | 13 | 30 | 106 | 206 | 654 | 142 | 120 | 31 | 39 | 36 | 10 |
| 6 | *9.8 | 13 | 98 | 120 | 2,450 | 2,860 | 157 | 110 | 30 | 30 | 46 | 9.0 |
| 7 | 9.8 | 12 | 54 | 123 | 2,120 | 1,560 | *144 | 102 | 42 | 40 | 61 | *9.0 |
| 8 | 10 | *12 | 36 | 120 | 752 | 773 | 126 | 98 | *42 | 47 | 136 | 8.0 |
| 9 | 10 | 11 | 79 | 111 | 430 | 500 | 118 | 90 | 47 | 43 | 124 | 8.0 |
| 10 | 9.8 | 11 | 86 | 104 | 322 | 382 | 116 | *81 | 42 | 36 | 70 | 8.0 |
| 11 | 10 | 10 | 60 | 166 | 334 | 342 | 124 | 81 | 44 | 48 | 46 | 7.0 |
| 12 | 9.8 | 10 | 51 | *184 | 274 | 342 | 120 | 82 | 44 | 138 | 35 | 7.0 |
| 13 | 9.8 | 9.8 | 174 | 178 | 238 | 350 | 120 | 94 | 40 | *206 | 31 | 6.0 |
| 14 | 10 | 10 | *190 | 136 | 210 | 346 | 172 | 108 | 36 | 90 | 29 | 7.0 |
| 15 | 14 | 10 | 123 | 123 | 192 | 873 | 242 | 132 | 34 | 69 | 27 | 6.0 |
| 16 | 20 | 13 | 81 | 111 | 203 | 3,930 | 230 | 102 | 31 | 66 | 29 | 5.0 |
| 17 | 14 | 16 | 68 | 94 | 386 | 1,520 | 200 | 88 | 27 | 55 | 26 | 5.0 |
| 18 | 11 | 14 | 175 | 86 | 406 | 1,900 | 167 | 77 | 26 | 44 | 25 | 5.0 |
| 19 | 11 | 14 | 181 | 92 | 338 | 1,380 | 149 | 70 | 40 | 36 | 22 | 6.0 |
| 20 | 10 | 28 | 118 | 82 | 278 | 829 | 134 | 64 | 55 | 32 | 20 | 6.0 |
| 21 | 9.8 | 26 | 86 | 79 | 234 | 724 | 134 | 61 | 39 | 34 | 19 | 7.0 |
| 22 | 10 | 25 | 68 | 84 | 270 | 3,020 | 129 | 69 | 31 | 29 | 19 | 8.0 |
| 23 | 9.8 | 22 | 56 | 81 | 1,880 | 1,120 | 120 | 76 | 31 | 25 | 20 | 7.0 |
| 24 | 9.2 | 24 | 58 | 72 | 878 | 682 | 427 | 67 | 34 | 29 | 18 | 16 |
| 25 | 10 | 22 | 48 | 72 | 485 | 528 | 584 | 66 | 30 | 46 | 15 | 19 |
| 26 | 9.8 | 21 | 44 | 70 | 378 | 710 | 612 | 58 | 40 | 31 | 15 | 13 |
| 27 | 11 | 21 | 45 | 68 | 1,550 | 640 | 552 | 54 | 31 | 25 | 14 | 10 |
| 28 | 9.8 | 31 | 72 | 67 | 1,780 | 480 | 410 | 52 | 26 | 39 | 12 | 9.0 |
| 29 | 10 | 77 | 1,110 | 66 | - | 378 | 314 | 48 | 22 | 82 | 12 | 7.0 |
| 30 | 13 | 46 | 930 | 64 | ------- | 310 | 242 | 46 | 21 | 70 | 12 | 32 |
| 31 | 12 | ------ | 376 | 60 | ------- | 258 | ------- | 40 | ------ | 47 | 11 | ------- |
| Total | 337.0 | 565.8 | 4,595 | 3,320 | 17,632 | 32,666 | 6,753 | 2,777 | 1,052 | 1,564 | 1,097 | 278.0 |
| Mean | 10.9 | 18.9 | 148 | 107 | 630 | 1,054 | 225 | 89.6 | 35.1 | 50.5 | 35.4 | 9.27 |
| Cfsm | 0.097 | 0.169 | 1.32 | 0.955 | 5.62 | 9.41 | 2.01 | 0.800 | 0.313 | 0.451 | 0.316 | 0.083 |
| In. | 0.11 | 0.19 | 1.52 | 1.10 | 5.85 | 10.85 | 2.24 | 0.92 | 0.35 | 0.52 | 0.36 | 0.09 |

Calendar year 1954: Max 1,960 Min 8.0 Mean 112 Cfsm 1.00 In. 13.57
Water year 1954-55: Max 3,930 Min 5.0 Mean 199 Cfsm 1.78 In. 24.10

Peak discharge (base, 1,600 cfs).--Feb. 6 (7 to 8 p.m.) 4,670 cfs (5.88 ft); Feb. 23 (8 a.m.) 2,000 cfs (4.21 ft); Mar. 1 (1:30 p.m.) 3,760 cfs (5.43 ft); Mar. 6 (3 p.m.) 4,900 cfs (6.01 ft); Mar. 16 (1:30 p.m.) 6,340 cfs (6.62 ft); Mar. 18 (3 p.m.) 2,680 cfs (4.76 ft); Mar. 22 (5:30 a.m.) 5,380 cfs (6.20 ft).

* Discharge measurement made on this day.

## Powell River near Jonesville, Va.

Location.--Lat 36°39'43", long 83°05'42", on right bank 35 ft downstream from highway bridge, 2 miles southeast of Jonesville, Lee County, and 10 miles upstream from Wallen Creek.

Drainage area.--319 sq mi.

Records available.--November 1931 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,259.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years (1932-55), 501 cfs.

Extremes.--Maximum discharge during year, 11,400 cfs Mar. 16 (gage height, 19.38 ft); minimum, 18 cfs Oct. 27, 28; minimum gage height, 0.88 ft Sept. 19-24.
1931-55: Maximum discharge, 35,000 cfs Jan. 8, 1946 (gage height, 30.8 ft), from rating curve extended above 17,000 cfs by logarithmic plotting; minimum, 17 cfs Sept. 19, 20, 1954.

Remarks.--Records good.

Revisions (water years).--WSP 823: Drainage area. WSP 1033: 1932-44.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 14-29)

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.9 | 13 | 2.0 | 167 | 0.8 | 13 | 3.0 | 540 |
| 1.0 | 23 | 2.5 | 310 | 1.0 | 28 | 4.0 | 1,040 |
| 1.3 | 57 | 3.0 | 530 | 1.3 | 61 | 6.0 | 2,220 |
| 1.6 | 102 | 4.0 | 1,040 | 1.6 | 103 | 10.0 | 4,820 |
| | | | | 2.0 | 184 | 15.0 | 8,170 |

Note.--Same as following table above 4.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 | 29 | 111 | 648 | 159 | 5,600 | 540 | 468 | 105 | 52 | 141 | 30 |
| 2 | 25 | 29 | 86 | 452 | 448 | *5,080 | 480 | 406 | 96 | 48 | *106 | 29 |
| 3 | 24 | 28 | 70 | 343 | *1,170 | 2,040 | 452 | 357 | 90 | 46 | 118 | 27 |
| 4 | 23 | 26 | 58 | 280 | 842 | 1,380 | 402 | 322 | 85 | 44 | 120 | 26 |
| 5 | 23 | 27 | 56 | 270 | 625 | 1,200 | 371 | 290 | 82 | 58 | 87 | 26 |
| 6 | 24 | 28 | 126 | 301 | 2,870 | 3,580 | *460 | 259 | 80 | 78 | 73 | 26 |
| 7 | *23 | 28 | 204 | 312 | 7,890 | 5,730 | 560 | 228 | 97 | 69 | 91 | *26 |
| 8 | 21 | *30 | 125 | 294 | 2,610 | 2,160 | 484 | 206 | *117 | 68 | 214 | 26 |
| 9 | 21 | 30 | 151 | 280 | 1,290 | 1,350 | 428 | 192 | 115 | 88 | 374 | 25 |
| 10 | 21 | 27 | 268 | 259 | 870 | 1,040 | 388 | *174 | 108 | 78 | 245 | 23 |
| 11 | 21 | 26 | 192 | 456 | 815 | 815 | 378 | 159 | 106 | 69 | 147 | 22 |
| 12 | 21 | 26 | 147 | *648 | 842 | 740 | 413 | 153 | 106 | *85 | 102 | 22 |
| 13 | 21 | 26 | 210 | 580 | 648 | 692 | 371 | 176 | 96 | 388 | 81 | 22 |
| 14 | 21 | 25 | 490 | 464 | 625 | 670 | 420 | 222 | 88 | 308 | 70 | 22 |
| 15 | 23 | 24 | *303 | 371 | 560 | 952 | 625 | 228 | 78 | 212 | 66 | 22 |
| 16 | 20 | 25 | 201 | 346 | 540 | 6,910 | 625 | 238 | 71 | 182 | 81 | 22 |
| 17 | 27 | 29 | 153 | 298 | 1,010 | 6,080 | 560 | 198 | 66 | 147 | 74 | 21 |
| 18 | 38 | 34 | 314 | 252 | 1,170 | 4,500 | 476 | 172 | 61 | 115 | 64 | 20 |
| 19 | 29 | 38 | 503 | 256 | 952 | 4,500 | 416 | 153 | 66 | 92 | 58 | 19 |
| 20 | 25 | 41 | 310 | 242 | 740 | 2,350 | 374 | 137 | 81 | 81 | 52 | 19 |
| 21 | 21 | 47 | 209 | 206 | 602 | 1,860 | 350 | 130 | 96 | 98 | 47 | 19 |
| 22 | 21 | 51 | 160 | 228 | 580 | 7,470 | 350 | 126 | 80 | 87 | 45 | 19 |
| 23 | 20 | 47 | 135 | 262 | 4,430 | 3,580 | 318 | 147 | 70 | 82 | 45 | 19 |
| 24 | 19 | 49 | 128 | 242 | 3,000 | 1,800 | 573 | 184 | 77 | 69 | 44 | 21 |
| 25 | 19 | 47 | 116 | 219 | 1,440 | 1,260 | 1,380 | 198 | 113 | 85 | 40 | 26 |
| 26 | 19 | 46 | 104 | 201 | 980 | 1,740 | 1,230 | 184 | 122 | 98 | 37 | 28 |
| 27 | 18 | 44 | 98 | 190 | 2,610 | 1,560 | 1,140 | 155 | 96 | 78 | 34 | 33 |
| 28 | 18 | 45 | 153 | 180 | 4,500 | 1,230 | 898 | 135 | 82 | 75 | 33 | 31 |
| 29 | 23 | 94 | 3,260 | 175 | - | 952 | 692 | 130 | 68 | 358 | 32 | 26 |
| 30 | 26 | 143 | 3,130 | 170 | ------- | 740 | 560 | 124 | 58 | 392 | 31 | 37 |
| 31 | 30 | ------- | 1,060 | 157 | ------- | 625 | ------- | 113 | ------- | 256 | 31 | ------- |
| Total | 710 | 1,189 | 12,631 | 9,582 | 44,818 | 80,166 | 16,714 | 6,364 | 2,656 | 3,986 | 2,783 | 734 |
| Mean | 22.9 | 39.6 | 407 | 309 | 1,601 | 2,586 | 557 | 205 | 88.5 | 129 | 89.8 | 24.5 |
| Cfsm | 0.072 | 0.124 | 1.28 | 0.969 | 5.02 | 8.11 | 1.75 | 0.643 | 0.277 | 0.404 | 0.282 | 0.077 |
| In. | 0.08 | 0.14 | 1.48 | 1.12 | 5.23 | 9.35 | 1.95 | 0.74 | 0.31 | 0.47 | 0.33 | 0.09 |

Calendar year 1954: Max 6,510 Min 18 Mean 305 Cfsm 0.956 In. 12.96
Water year 1954-55: Max 7,890 Min 18 Mean 500 Cfsm 1.57 In. 21.29

Peak discharge (base, 5,000 cfs).--Dec. 29 (9:30 p.m.) 5,140 cfs (10.47 ft); Feb. 7 (6 a.m.) 9,990 cfs (17.57 ft); Feb. 23 (5 p.m.) 6,250 cfs (12.23 ft); Feb. 28 (1 to 2 a.m.) 5,860 cfs (11.55 ft); Mar. 1 (11:30 p.m.) 7,890 cfs (14.59 ft); Mar. 7 (1 a.m.) 8,730 cfs (15.84 ft); Mar. 16 (9 p.m.) 11,400 cfs (19.38 ft); Mar. 18 (10:30 p.m.) 6,320 cfs (12.33 ft); Mar. 22 (1:30 p.m.) 9,710 cfs (17.15 ft).
* Discharge measurement made on this day.

## Powell River near Arthur, Tenn.

Location.--Lat 36°32'30", long 83°37'49", on left bank 30 ft downstream from bridge on U. S. Highway 25E, 2.3 miles east of Arthur, Claiborne County, and 2.4 miles downstream from Indian Creek.

Drainage area.--685 sq mi.

Records available.--October 1919 to September 1955 in reports of Geological Survey. Gage-height records collected at same site December 1892 to August 1920 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 1,045.84 ft above mean sea level (Tennessee River Survey datum). Prior to July 22, 1927, chain gage at same site and datum.

Average discharge.--36 years, 1,133 cfs.

Extremes.--Maximum discharge during year, 14,800 cfs Mar. 17 (gage height, 16.32 ft); minimum, 60 cfs Sept. 23 (gage height, 0.05 ft).
1919-55: Maximum discharge, 33,000 cfs Jan. 9, 1946 (gage height, 27.15 ft, from floodmark), from rating curve extended above 25,000 cfs on basis of slope-area determination of peak flow; minimum, 47 cfs Jan. 6, 1940, result of freezeup; minimum gage height, -0.12 ft Oct. 28, 29, 1948; minimum daily discharge, 60 cfs Sept. 23, 1955.
Maximum stage known, 27.2 ft Jan. 29, 1918 (discharge, 33,000 cfs).

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 1336: 1920, 1921(M), 1923.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 8 | | | | Feb. 8 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.0 | 66 | 1.0 | 370 | 0.0 | 53 | 2.0 | 800 |
| .2 | 98 | 3.0 | 1,500 | .2 | 84 | 4.0 | 2,200 |
| .5 | 180 | 4.0 | 2,200 | .5 | 145 | 7.0 | 4,800 |
| | | | | 1.0 | 280 | 11.0 | 8,600 |
| Note.--Same as following table above 4.0 ft. | | | | 1.5 | 505 | 15.1 | 13,100 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 89 | 79 | *204 | 2,660 | *425 | *7,740 | 1,470 | 956 | 250 | 192 | 478 | *93 |
| 2 | 87 | 80 | 222 | 1,510 | 532 | 8,930 | 1,300 | 830 | 235 | 172 | *319 | 89 |
| 3 | 82 | 82 | 174 | 1,080 | 1,120 | 7,220 | 1,160 | 752 | 223 | 160 | a250 | 88 |
| 4 | *77 | *84 | 141 | 818 | 1,870 | 3,800 | *1,050 | *680 | 212 | 152 | a220 | 88 |
| 5 | 76 | 89 | 144 | *686 | 1,490 | 2,940 | 950 | 620 | 210 | *145 | a210 | 84 |
| 6 | 74 | 89 | 250 | 614 | 2,320 | 4,820 | 1,060 | 566 | 202 | 162 | a200 | 84 |
| 7 | 73 | 87 | 297 | 586 | 6,780 | 8,660 | 1,350 | 522 | 220 | 172 | a190 | 81 |
| 8 | 72 | 85 | 278 | 592 | *10,300 | 9,010 | 1,320 | 483 | *253 | 262 | a400 | 81 |
| 9 | 73 | 85 | 388 | 570 | 4,620 | 4,380 | 1,120 | 450 | 284 | 232 | a800 | 79 |
| 10 | 72 | 82 | 495 | 548 | 2,460 | 2,810 | 980 | 420 | 287 | 247 | a600 | 77 |
| 11 | 70 | 85 | 440 | 762 | 1,880 | 2,100 | 938 | 400 | 280 | 215 | 538 | 76 |
| 12 | 72 | 82 | 384 | 1,040 | 1,830 | 1,880 | 908 | 405 | 256 | 373 | 331 | 76 |
| 13 | 72 | 82 | 348 | 1,210 | 1,660 | 1,740 | 932 | 445 | 241 | 355 | 259 | 76 |
| 14 | 70 | 80 | 532 | 984 | 1,330 | 1,530 | 1,200 | 494 | 235 | 301 | 208 | 70 |
| 15 | 72 | 77 | 702 | 823 | 1,220 | 1,580 | 1,340 | 527 | 223 | 505 | 185 | 72 |
| 16 | 73 | 89 | 576 | 686 | 1,170 | 5,550 | 1,390 | 466 | 215 | 364 | 165 | 72 |
| 17 | 76 | 98 | 435 | 614 | 1,580 | 11,800 | 1,330 | 466 | 200 | 319 | 175 | 69 |
| 18 | 73 | 94 | 1,020 | 554 | 2,120 | 13,100 | 1,180 | 425 | 188 | 280 | 172 | 66 |
| 19 | 74 | 94 | 954 | 526 | 2,170 | 10,800 | 1,020 | 396 | 182 | 244 | 170 | 64 |
| 20 | 72 | 105 | 924 | 490 | 1,780 | 8,810 | 920 | 355 | 192 | 220 | 152 | 64 |
| 21 | 76 | 138 | 674 | 475 | 1,430 | 5,570 | 842 | 335 | 185 | 212 | 140 | 67 |
| 22 | 80 | 122 | 490 | 480 | 1,270 | 10,100 | 800 | 327 | 202 | 226 | 138 | 63 |
| 23 | 76 | 105 | 388 | 608 | 4,490 | 12,300 | 770 | 335 | 202 | 195 | 134 | 60 |
| 24 | 74 | 105 | 325 | 652 | 7,440 | 7,320 | 830 | 343 | 202 | 212 | 124 | 76 |
| 25 | 73 | 105 | 289 | 592 | 5,380 | 4,160 | 1,140 | 382 | 210 | 280 | 116 | 93 |
| 26 | 74 | 100 | 268 | 515 | 2,950 | 3,790 | 1,960 | 382 | 382 | 265 | 112 | 89 |
| 27 | 74 | 105 | 246 | 490 | 2,990 | 3,900 | 1,830 | 355 | 355 | 208 | 108 | 84 |
| 28 | 76 | 120 | 259 | 505 | 6,080 | 3,410 | 1,700 | 319 | 290 | 441 | 102 | 84 |
| 29 | 79 | 190 | 3,020 | 532 | - | 2,690 | 1,440 | 290 | 235 | 426 | 98 | 88 |
| 30 | 80 | 240 | 6,700 | 495 | ------- | 2,120 | 1,170 | 274 | 208 | 483 | 97 | 138 |
| 31 | 80 | ------- | 5,990 | 465 | ------- | 1,730 | ------- | 268 | ------- | 500 | 97 | ------- |
| Total | 2,341 | 3,058 | 27,557 | 23,162 | 80,687 | 176,270 | 35,400 | 14,258 | 7,059 | 8,520 | 7,308 | 2,391 |
| Mean | 75.5 | 102 | 889 | 747 | 2,882 | 5,686 | 1,180 | 460 | 236 | 275 | 236 | 79.7 |
| Cfsm | 0.110 | 0.149 | 1.30 | 1.09 | 4.21 | 8.30 | 1.72 | 0.672 | 0.345 | 0.401 | 0.345 | 0.116 |
| In. | 0.13 | 0.17 | 1.50 | 1.26 | 4.38 | 9.57 | 1.92 | 0.77 | 0.38 | 0.46 | 0.40 | 0.13 |

Calendar year 1954: Max 9,700 Min 65 Mean 657 Cfsm 0.959 In. 13.04
Water year 1954-55: Max 13,100 Min 60 Mean 1,063 Cfsm 1.55 In. 21.07

Peak discharge (base, 9,000 cfs).--Feb. 8 (8 a.m.) 11,700 cfs (13.94 ft); Mar. 2 (9:30 p.m.) 9,930 cfs (12.30 ft); Mar. 8 (2:30 a.m.) 11,200 cfs (13.45 ft); Mar. 17 (11:30 p.m.) 14,800 cfs (16.32 ft); Mar. 23 (1:30 p.m.) 13,300 cfs (15.24 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station above Tazewell.

## Clinch River below Norris Dam, Tenn.

Location.--Lat 36°12'56", long 84°04'56", 0.5 mile upstream from Clear Creek, 1.0 mile downstream from Norris Dam, 1.5 miles north of Norris, Anderson County, and at mile 78.8.

Drainage area.--2,913 sq mi.

Records available.--October 1918 to September 1927 (published as "at Clinton"), May 1927 to September 1937 (published as "near Coal Creek"), and April 1936 to September 1955 in reports of Geological Survey. October 1903 to September 1924 (published as "at Clinton") in Bulletin 34 of Tennessee Division of Geology. Gage-height records collected in vicinity of Clinton from 1884 to 1943 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder at present site and datum since Jan. 28, 1937. Datum of gage is 819.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Oct. 1, 1903, to June 30, 1920, staff gage at railroad bridge 19.6 miles downstream at datum 42.49 ft lower. July 1, 1920, to Sept. 30, 1927, chain gage at highway bridge 19.8 miles downstream (1,000 ft downstream from previous site) at datum 42.59 ft lower. May 27 to Sept. 8, 1927, staff gage and Sept. 9, 1927, to Sept. 30, 1935, water-stage recorder, at site 2.9 miles downstream at datum 10.50 ft lower. Oct. 1, 1935, to Sept. 30, 1937, water-stage recorder at site 2.9 miles downstream at datum 13.50 ft lower. Apr. 16, 1936, to Jan. 27, 1937, staff gage at present site and datum.

Average discharge.--52 years, 4,319 cfs (unadjusted).

Extremes.--Maximum discharge during year, 22,100 cfs Mar. 20 (gage height, 10.01 ft); minimum, 38 cfs sometime during period Nov. 6-24 (gage height, 1.15 ft, from recorded range in stage); minimum daily, 57 cfs Nov. 28.

1903-55: Maximum discharge, 87,000 cfs Mar. 5, 1917 (gage height, 38.5 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 62,000 cfs; minimum, 1.3 cfs May 17, 18, 20, 24-26, May 29 to June 5, 1936 (gage height, 0.62 ft).

Flood of Mar. 31, 1886, reached a stage of 45 ft (Discharge, 113,000 cfs) at Clinton.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow completely regulated by Norris Lake (see p. 244).

Revisions (water years).--WSP 1336: 1917-18, 1928.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 18 to Sept. 30)

| | | | |
|---|---|---|---|
| 1.2 | 50 | 3.0 | 2,520 |
| 1.3 | 95 | 4.0 | 4,580 |
| 1.4 | 160 | 6.0 | 9,900 |
| 1.6 | 360 | 8.0 | 15,900 |
| 2.0 | 880 | 9.0 | 18,900 |
| 2.5 | 1,640 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,400 | 2,800 | 1,040 | 61 | 5,240 | 836 | 9,350 | 2,290 | 1,160 | 2,960 | 3,080 | 5,850 |
| 2 | 852 | 3,850 | 944 | 65 | 4,740 | 1,810 | 7,230 | 2,470 | 89 | 6,080 | 3,140 | 5,850 |
| 3 | 303 | 4,140 | 2,110 | 2,240 | 4,880 | 74 | 6,080 | 6,770 | 89 | 6,200 | 3,060 | 5,900 |
| 4 | 3,310 | 3,450 | 2,140 | 545 | *4,890 | *74 | 5,920 | 6,190 | 1,760 | 6,220 | 3,260 | 5,900 |
| 5 | 2,050 | 2,660 | 1,420 | 1,600 | 5,130 | 79 | 6,200 | 2,620 | 4,100 | 6,300 | *2,510 | 6,050 |
| 6 | *1,850 | 402 | 3,810 | 2,080 | 73 | 84 | 4,140 | 2,460 | 4,820 | 5,320 | 3,180 | 5,950 |
| 7 | 1,950 | 200 | 244 | 4,270 | 61 | 5,440 | *3,140 | 5,310 | 5,580 | 4,990 | 3,200 | *6,000 |
| 8 | 1,870 | 1,500 | 160 | 3,830 | 311 | 7,810 | 3,850 | 5,530 | 5,800 | *5,780 | 3,200 | 6,000 |
| 9 | 354 | 1,500 | 2,710 | 3,000 | 596 | 7,930 | 1,460 | *5,650 | 5,630 | 5,880 | 3,200 | 6,100 |
| 10 | 314 | 1,500 | 3,710 | 5,020 | 986 | 7,700 | 3,730 | 3,210 | 4,020 | 3,650 | 3,200 | 6,100 |
| 11 | 3,400 | 1,550 | 249 | 4,860 | 1,420 | 7,650 | 2,300 | 3,900 | 3,400 | 3,630 | 3,200 | 6,100 |
| 12 | 2,350 | 1,600 | 1,270 | *4,000 | 1,540 | 7,670 | 259 | 3,900 | 3,860 | *3,460 | 3,180 | 6,100 |
| 13 | 2,400 | 300 | 2,810 | 5,870 | 595 | 7,700 | 95 | 3,790 | *6,540 | 3,420 | 3,180 | 6,100 |
| 14 | 2,230 | 350 | 2,500 | 5,710 | 3,230 | 7,730 | 95 | 3,820 | 5,800 | 2,940 | 3,180 | 6,200 |
| 15 | 2,320 | 2,200 | 2,930 | 5,660 | 3,260 | 6,510 | 95 | 5,270 | 4,880 | 3,060 | 3,160 | 6,300 |
| 16 | 1,080 | 2,400 | 3,180 | 4,460 | 1,200 | 7,010 | 958 | 5,380 | 6,180 | 3,360 | 3,160 | 6,300 |
| 17 | 811 | 1,400 | 3,870 | 6,180 | 1,290 | 8,710 | 820 | 4,880 | 5,630 | 3,280 | 3,160 | 6,300 |
| 18 | 4,400 | 400 | 752 | 4,860 | 65 | 10,200 | 2,110 | 5,220 | 6,510 | 3,160 | 3,160 | 6,300 |
| 19 | 4,220 | 300 | 572 | 4,300 | 65 | 16,900 | 2,610 | 5,440 | 6,510 | 3,120 | 3,140 | 6,400 |
| 20 | 3,800 | 250 | 3,740 | 4,400 | 1,040 | 18,900 | 4,320 | 6,200 | 6,510 | 3,060 | 3,140 | 6,400 |
| 21 | 3,810 | 200 | 3,220 | 6,030 | 2,030 | *13,300 | 4,090 | 4,850 | 5,060 | 3,100 | 3,140 | 5,900 |
| 22 | 3,750 | 1,100 | *2,640 | 6,590 | 199 | 9,260 | 4,980 | 155 | 3,080 | 3,100 | 3,160 | 6,380 |
| 23 | 244 | 1,500 | 2,770 | 6,480 | 69 | 9,260 | 1,760 | 95 | 3,100 | 3,180 | 3,160 | 6,410 |
| 24 | 286 | *2,700 | 1,500 | 6,590 | 685 | 9,260 | 905 | 95 | 3,040 | 3,120 | 3,160 | 6,410 |
| 25 | 2,440 | 2,420 | 696 | 6,610 | 74 | 9,290 | 2,760 | 95 | 3,500 | 3,180 | 3,360 | 6,430 |
| 26 | 1,780 | 2,610 | 575 | 5,460 | 530 | 11,200 | 2,910 | 2,490 | 3,400 | 3,140 | 3,710 | 6,480 |
| 27 | 1,440 | 2,530 | 2,440 | 4,960 | 1,240 | 13,700 | 2,880 | 284 | 2,850 | 3,160 | 6,050 | 6,330 |
| 28 | 1,510 | 57 | 2,420 | 6,380 | 1,090 | 12,900 | 406 | 281 | 2,840 | 3,100 | 6,050 | 6,610 |
| 29 | 2,220 | 1,720 | 912 | 6,480 | - | 9,320 | 109 | 95 | 2,900 | 3,100 | 6,180 | 6,590 |
| 30 | 1,920 | 1,500 | 1,040 | 4,280 | ------- | 9,350 | 89 | 95 | 2,800 | 3,040 | 6,100 | 5,890 |
| 31 | 1,440 | ------- | 112 | 5,490 | ------- | 9,350 | ------- | 95 | ------- | 3,100 | 6,220 | ------- |
| Total | 63,104 | 49,089 | 58,486 | 138,361 | 46,529 | 247,007 | 85,651 | 98,930 | 121,438 | 120,190 | 112,980 | 185,630 |
| Mean | 2,036 | 1,636 | 1,887 | 4,463 | 1,662 | 7,968 | 2,855 | 3,191 | 4,048 | 3,877 | 3,645 | 6,188 |

| | Observed | | | Adjusted† | | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 7,270 | Min 53 | Mean 2,455 | Mean 2,681 | Cfsm 0.920 | In. 12.49 | | |
| Water year 1954-55: | Max 18,900 | Min 57 | Mean 3,637 | Mean 4,052 | Cfsm 1.39 | In. 18.88 | | |

* Discharge measurement made on this day.
† Adjusted for change in contents in Norris Lake.
Note.--No gage-height record Nov. 7-24, Sept. 8-21; discharge estimated on basis of weather records, records for station at Scarboro, and Norris Dam releases.

## Clinch River near Scarboro, Tenn.

Location.--Lat 35°56'45", long 84°13'17", on right bank 0.6 mile downstream from Beaver Creek, 2½ miles south of Scarboro, Anderson County, 4¾ miles downstream from Solway Bridge, and 17 miles west of Knoxville.

Drainage area.--3,300 sq mi.

Records available.--September 1936 to September 1955. Published as "near Wheat" September 1936 to January 1941.

Gage.--Water-stage recorder. Datum of gage is 753.35 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Feb. 1, 1941, at site 24.5 miles downstream at datum 35.99 ft lower.

Average discharge.--19 years, 4,479 cfs (unadjusted).

Extremes.--Maximum discharge during year, 25,600 cfs Mar. 20 (gage height, 14.21 ft); minimum daily, 204 cfs Nov. 22.

1936-55: Maximum discharge, 42,900 cfs Feb. 9, 1937 (gage height, 23.45 ft, site and datum then in use), from rating curve extended above 27,000 cfs; minimum daily, 131 cfs Jan. 23, 1941.

Remarks.--Records good. Flow regulated by Norris Lake, 41 miles upstream (see p. 244). The town of Oak Ridge diverts an average of about 25 cfs for municipal supply, 2½ miles above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1937, superseding those published in WSP 823, are given herewith:

May 7, 1937..... 1,070

| Month | Observed | | | | Adjusted† | | |
|---|---|---|---|---|---|---|---|
| | Cfs-days | Maximum | Minimum | Mean | Mean | Per square mile | Runoff in inches |
| May 1937..... | 37,022 | 6,230 | 482 | 1,194 | - | - | - |
| Water year 1937..... | 1,667,497 | 39,600 | 193 | 4,568 | 5,509 | 1.63 | 22.09 |
| Calendar year 1937..... | 2,298,929 | 39,600 | 374 | 6,298 | 5,537 | 1.64 | 22.20 |

† Adjusted for change in contents in Norris Lake.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.1 | 175 | 3.0 | 2,990 |
| 1.3 | 314 | 5.0 | 6,990 |
| 1.5 | 501 | 9.0 | 15,000 |
| 1.8 | 870 | 13.7 | 24,600 |
| 2.0 | 1,160 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *3,340 | 1,720 | *1,630 | 1,530 | *5,770 | *1,790 | 10,100 | 626 | *218 | *3,230 | *3,190 | *6,270 |
| 2 | 2,440 | *2,750 | 1,160 | 1,040 | 5,170 | 3,250 | 8,750 | *2,760 | 1,150 | 4,690 | 3,190 | 6,030 |
| 3 | 1,040 | 4,490 | 1,060 | *792 | 5,330 | 2,620 | 7,150 | 4,290 | 272 | 6,630 | 3,210 | 6,050 |
| 4 | 410 | 3,490 | 2,130 | 2,890 | 5,130 | 1,180 | *6,410 | 7,030 | 274 | 6,810 | 3,070 | 6,110 |
| 5 | 3,130 | 3,430 | 2,310 | 1,250 | 5,650 | 968 | 6,530 | 4,770 | 2,510 | 6,770 | 3,190 | 6,090 |
| 6 | 2,050 | 2,390 | 2,840 | 2,040 | 5,610 | 1,580 | 6,270 | 2,790 | 3,540 | 6,270 | 2,530 | 6,250 |
| 7 | 1,830 | 472 | 3,660 | 3,320 | 4,810 | 3,430 | 3,990 | 3,540 | 5,590 | 5,450 | 3,190 | 6,210 |
| 8 | 1,930 | 275 | 535 | 4,410 | 2,610 | 8,950 | 4,150 | 5,510 | 5,910 | 5,590 | 3,310 | 6,210 |
| 9 | 1,880 | 1,490 | 698 | 3,800 | 1,790 | 9,390 | 3,530 | 5,430 | 5,970 | 6,270 | 3,350 | 6,210 |
| 10 | 520 | 1,540 | 3,840 | 3,910 | 1,930 | 8,630 | 2,810 | 4,290 | 5,430 | 5,610 | 3,410 | 6,230 |
| 11 | 676 | 1,560 | 3,450 | 5,730 | 2,320 | 8,450 | 4,010 | 3,330 | 3,590 | 3,870 | 3,270 | 6,250 |
| 12 | 3,000 | 1,610 | 535 | 4,650 | 2,570 | 8,970 | 2,460 | 4,070 | 3,850 | 3,830 | 3,290 | 6,270 |
| 13 | 2,300 | 1,660 | 1,870 | 5,990 | 2,540 | 8,790 | 954 | 4,270 | 4,670 | 3,710 | 3,230 | 6,270 |
| 14 | 2,330 | 338 | 3,060 | 6,370 | 2,050 | 8,570 | 1,990 | 4,750 | 6,070 | 3,390 | 3,250 | 6,270 |
| 15 | 2,270 | 333 | 2,690 | 5,190 | 3,890 | 7,430 | 2,230 | 4,250 | 5,210 | 3,150 | 3,250 | 6,290 |
| 16 | 2,200 | 2,410 | 3,120 | 4,990 | 3,710 | 8,030 | 1,580 | 5,370 | 5,750 | 3,290 | 3,230 | 6,330 |
| 17 | 1,160 | 2,250 | 3,970 | 6,050 | 1,960 | 10,100 | 1,970 | 6,070 | 5,810 | 3,390 | 3,230 | 6,410 |
| 18 | 1,610 | 1,410 | 4,950 | 5,710 | 1,980 | 11,800 | 2,080 | 4,530 | 6,530 | 3,350 | 3,210 | 6,410 |
| 19 | 4,470 | 360 | 1,960 | 4,610 | 792 | 18,200 | 2,520 | 5,490 | 6,590 | 3,150 | 3,210 | 6,410 |
| 20 | 4,170 | 298 | 1,680 | 4,810 | 904 | 24,500 | 4,210 | 5,290 | 6,590 | 3,150 | 3,210 | 6,450 |
| 21 | 3,590 | 259 | 4,090 | 6,150 | 1,520 | *18,000 | 4,530 | 5,250 | 6,450 | 3,150 | 3,250 | 5,930 |
| 22 | 3,790 | *204 | 3,550 | 7,130 | 2,690 | 18,800 | 4,570 | 4,090 | 3,330 | 3,230 | 3,270 | 6,290 |
| 23 | 3,360 | 1,170 | 2,950 | 7,570 | 4,450 | 13,900 | 4,400 | 702 | 3,350 | 3,230 | 3,290 | 6,530 |
| 24 | 462 | 1,870 | 2,610 | 7,290 | 3,890 | 11,700 | 2,470 | 558 | 3,350 | 3,210 | 3,250 | 6,610 |
| 25 | 789 | 2,860 | 1,780 | 7,210 | 2,450 | 11,100 | 1,790 | 369 | 3,650 | 3,430 | 3,350 | 6,610 |
| 26 | 2,230 | 2,460 | 991 | 6,290 | 1,370 | 11,800 | 3,330 | 375 | 4,270 | 3,250 | 3,670 | 6,590 |
| 27 | 1,640 | 2,950 | 1,030 | 5,150 | 1,850 | 15,300 | 3,190 | 2,330 | 3,710 | 3,190 | 4,750 | 6,450 |
| 28 | 1,460 | 2,250 | 2,830 | 6,610 | 3,410 | 15,300 | 2,890 | 512 | 3,230 | 3,170 | 6,170 | 6,750 |
| 29 | 1,540 | 443 | 7,850 | 6,850 | - | 11,700 | 714 | 472 | 3,330 | 3,210 | 6,210 | 6,770 |
| 30 | 2,240 | 1,800 | 9,710 | 4,810 | ------- | 10,300 | 424 | 298 | 3,290 | 3,190 | 6,510 | 7,350 |
| 31 | 2,090 | ------- | 3,560 | 5,450 | ------- | 10,200 | ------- | 244 | ------- | 3,190 | 6,270 | ------- |
| Total | 65,947 | 50,542 | 88,099 | 149,592 | 88,146 | 304,728 | 112,002 | 103,656 | 123,484 | 127,050 | 114,010 | 190,900 |
| Mean | 2,127 | 1,685 | 2,842 | 4,826 | 3,148 | 9,830 | 3,733 | 3,344 | 4,116 | 4,098 | 3,678 | 6,363 |

| | Observed | | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 9,910 | Min 204 | Mean 2,894 | | Mean 3,120 | Cfsm 0.945 | In. 12.83 | |
| Water year 1954-55: | Max 24,500 | Min 204 | Mean 4,159 | | Mean 4,575 | Cfsm 1.39 | In. 18.82 | |

* Discharge measurement made on this day.

† Adjusted for change in contents in Norris Lake.

## Whiteoak Creek at Oak Ridge National Laboratory, near Oak Ridge, Tenn.

Location.--Lat 35°55'34", long 84°18'49", on right bank 500 ft southeast of Oak Ridge National Laboratory, Roane County, 1.2 miles upstream from Melton Branch, and 6 miles south of Oak Ridge.

Drainage area.--2.08 sq mi.

Records available.--June 1950 to July 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 775.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during period October 1954 to July 1955, 291 cfs Dec. 29 (gage height, 3.00 ft); minimum daily, 1.0 cfs Oct. 23, 24, Nov. 7-15, 18, 21-26. 1950-55: Maximum discharge, 616 cfs Aug. 2, 1950 (gage height, 4.31 ft), from rating curve extended above 170 cfs; minimum daily, 0.7 cfs Nov. 2, 1950, Aug. 2, 8, 12, 13, 21, 26-28, 30, 31, Sept. 8, 9, Oct. 14, 1951, July 25, 26, 1953.

Remarks.--Records good. Natural flow affected by operations of Oak Ridge National Laboratory above station.

Rating tables, Oct. 1, 1954, to July 14, 1955 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 28 | | | | Dec. 29 to July 14 | | | |
|---|---|---|---|---|---|---|---|
| 0.1 | 0.9 | 0.4 | 7.0 | 0.1 | 1.2 | 0.8 | 30 |
| .2 | 1.8 | .6 | 18 | .2 | 3.3 | 1.2 | 55 |
| .3 | 3.6 | | | .4 | 10 | 1.6 | 85 |

Discharge, in cubic feet per second, water year October 1954 to July 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *1.5 | 1.2 | *1.2 | 4.8 | *2.9 | *7.2 | 3.6 | 2.7 | *1.6 | *1.8 | | |
| 2 | 1.8 | *1.2 | 1.2 | 3.6 | 2.7 | 5.8 | 3.3 | *2.5 | 1.8 | 1.6 | | |
| 3 | 1.4 | 1.1 | 1.2 | *3.3 | 2.3 | 5.2 | 3.0 | 2.3 | 1.6 | 1.6 | | |
| 4 | 1.2 | 1.9 | 1.2 | 3.0 | 2.0 | 4.5 | *2.7 | 2.0 | 1.6 | 2.0 | | |
| 5 | 1.2 | 1.2 | 11 | 2.7 | 5.2 | 7.5 | 2.7 | 2.0 | 1.8 | 1.6 | | |
| 6 | 1.2 | 1.1 | 2.4 | 3.3 | 32 | 24 | 8.5 | 2.0 | 2.3 | 1.6 | | |
| 7 | 1.1 | 1.0 | 1.5 | 2.5 | 15 | 13 | 4.8 | 1.8 | 4.1 | 1.8 | | |
| 8 | 1.1 | 1.0 | 1.4 | 2.3 | 8.4 | 8.0 | 4.2 | 1.8 | 7.3 | 1.9 | | |
| 9 | 1.1 | 1.0 | 10 | 2.3 | 5.8 | 6.1 | 3.9 | 1.6 | 3.6 | 1.6 | | |
| 10 | 1.1 | 1.0 | 1.9 | 3.6 | 5.2 | 5.2 | 3.6 | 1.8 | 3.2 | 1.6 | | |
| 11 | 1.2 | 1.0 | 1.6 | 3.0 | 8.9 | 4.5 | 5.0 | 1.8 | 3.4 | 1.6 | | |
| 12 | 1.2 | 1.0 | 1.5 | 2.7 | 5.5 | 9.8 | 3.6 | 3.5 | 2.7 | 1.6 | | |
| 13 | 1.3 | 1.0 | 2.6 | 2.5 | 4.8 | 5.8 | 13 | 6.7 | 2.5 | 1.6 | | |
| 14 | 1.6 | 1.0 | 1.8 | 2.3 | 4.5 | 5.2 | 19 | 5.9 | 1.8 | 1.8 | | |
| 15 | 2.6 | 1.0 | 1.6 | 2.3 | 4.5 | 4.8 | 13 | 2.7 | 1.5 | - | | |
| 16 | 1.2 | 1.3 | 1.4 | 2.0 | 4.8 | 14 | 8.9 | 2.5 | 1.5 | - | | |
| 17 | 1.2 | 1.1 | 11 | 1.8 | 4.5 | 9.7 | 6.4 | 2.3 | 1.5 | - | | |
| 18 | 1.3 | 1.0 | 8.4 | 2.6 | 4.2 | 18 | 5.5 | 2.3 | 1.5 | - | | |
| 19 | 1.1 | 1.1 | 2.7 | 5.6 | 3.9 | 22 | 4.8 | 2.0 | 1.9 | - | | |
| 20 | 1.1 | 1.3 | 2.0 | 3.0 | 3.6 | 13 | 4.2 | 2.0 | 1.8 | - | | |
| 21 | 1.1 | 1.0 | 1.8 | 4.2 | 3.3 | 29 | 4.3 | 2.6 | 1.8 | - | | |
| 22 | 1.1 | 1.0 | 1.6 | 4.5 | 21 | 25 | 3.6 | 3.5 | 2.3 | - | | |
| 23 | 1.0 | 1.0 | 1.5 | 3.9 | 27 | 12 | 3.3 | 2.3 | 2.0 | - | | |
| 24 | 1.0 | 1.0 | 1.3 | 3.3 | 11 | 8.9 | 6.6 | 1.8 | 2.3 | - | | |
| 25 | 1.1 | 1.0 | 1.3 | 3.0 | 7.6 | 8.2 | 4.2 | 1.8 | 9.4 | - | | |
| 26 | 1.1 | 1.0 | 1.3 | 2.7 | 5.8 | 7.8 | 3.9 | 1.8 | 3.9 | - | | |
| 27 | 1.1 | 1.5 | 1.3 | 2.3 | 7.1 | 5.8 | 3.6 | 2.3 | 2.7 | - | | |
| 28 | 1.3 | 4.1 | 14 | 2.0 | 5.8 | 5.2 | 3.3 | 1.8 | 2.0 | - | | |
| 29 | 1.2 | 1.4 | *80 | 2.0 | - | 4.8 | 3.0 | 2.8 | 1.8 | - | | |
| 30 | 1.2 | 1.1 | 14 | 1.8 | ------- | 4.2 | 2.7 | 1.6 | 1.6 | - | | |
| 31 | 1.1 | ---- | 6.8 | 1.8 | ------- | 3.9 | ------- | 1.5 | -------- | - | | ------- |
| Total | 38.8 | 36.6 | 192.5 | 90.7 | 219.3 | 308.1 | 162.2 | 76.0 | 78.8 | - | | |
| Mean | 1.25 | 1.22 | 6.21 | 2.93 | 7.83 | 9.94 | 5.41 | 2.45 | 2.63 | - | | |
| Cfsm | - | - | - | - | - | - | - | - | - | - | | |
| In. | - | - | - | - | - | - | - | - | - | - | | |

Calendar year 1954: Max 80 Min 1.0 Mean 3.89 Cfsm - In. -
Water year 1954-55: Max - Min - Mean - Cfsm - In. -

Peak discharge (base, 170 cfs).--Dec. 29 (2 p.m.) 291 cfs (3.00 ft); Mar. 21 (10 p.m.) 180 cfs (2.38 ft).

* Discharge measurement made on this day.

## Whiteoak Creek at Whiteoak Dam near Oak Ridge, Tenn.

Location.--Lat 35°53'17", long 84°19'15", at Whiteoak Dam, on White Wing Ferry Road, 0.9 mile downstream from Melton Branch, 2 miles south of Oak Ridge National Laboratory, Roane County, and 8 miles south of Oak Ridge.

Drainage area.--6.01 sq mi.

Records available.--July 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 740.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 669 cfs Dec. 29 (gage height, 12.04 ft, gate setting, 6.00 ft); no flow Sept. 3-6.
1953-55: Maximum discharge, that of Dec. 29, 1954; no flow July 17-20, 1953, Dec. 1, May 18, 19, 1954, Sept. 3-6, 1955.

Remarks.--Records good except those for periods when there is flow over top of dam, which are fair. Flow affected by operations of Oak Ridge National Laboratory above station.

Rating table, water year 1954-55, except when flow is over top of dam (head, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.0 | 0 | 0.8 | 8.9 |
| .1 | .3 | 1.3 | 19 |
| .2 | .8 | 2.0 | 37 |
| .3 | 1.7 | 3.0 | 67 |
| .5 | 4.1 | 3.4 | 81 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 3.3 | *4.4 | 18 | *4.9 | *14 | 1.7 | 6.3 | 3.7 | 4.0 | 5.2 | 4.5 |
| 2 | 7.6 | *3.3 | 3.7 | 13 | 8.2 | 15 | 4.8 | 5.8 | 3.6 | 3.8 | 5.1 | 2.6 |
| 3 | 5.7 | 3.3 | 3.3 | 4.6 | 7.3 | 13 | 6.3 | 5.5 | 3.6 | 3.4 | 11 | 0 |
| 4 | 4.5 | 3.7 | 3.2 | 1.3 | 6.3 | 12 | 6.5 | 5.5 | 3.4 | 3.4 | 10 | 0 |
| 5 | 4.2 | 5.2 | 7.3 | 3.7 | 6.1 | 11 | 6.5 | 5.2 | 3.4 | 3.4 | 6.1 | 0 |
| 6 | 4.0 | 4.4 | 18 | 5.7 | e117 | e74 | 26 | 4.8 | 3.6 | 3.6 | 4.9 | 0 |
| 7 | 3.6 | 3.8 | 10 | 6.1 | e66 | 39 | 19 | 4.5 | 5.2 | 4.1 | 4.5 | 0.4 |
| 8 | 3.3 | 3.6 | 6.6 | 5.7 | 27 | 28 | 9.5 | 4.4 | 8.5 | 4.2 | 6.8 | 4.5 |
| 9 | 3.3 | 3.4 | g18 | 5.4 | 14 | 20 | 9.8 | 4.2 | 14 | 4.2 | 7.3 | 6.5 |
| 10 | 3.2 | 3.4 | g16 | 5.7 | 13 | 16 | 9.3 | 4.2 | 8.9 | 3.8 | 5.4 | 4.7 |
| 11 | 3.2 | 3.4 | g9.3 | 9.1 | 20 | 13 | 11 | 4.2 | 9.3 | 3.8 | 4.9 | 4.0 |
| 12 | 3.3 | 3.4 | g6.6 | 8.7 | 19 | 19 | 9.2 | 5.1 | 7.1 | 3.8 | 4.5 | 4.0 |
| 13 | 3.6 | 3.4 | g6.8 | 7.6 | 15 | 18 | 30 | 14 | 5.7 | 3.8 | 4.1 | 3.8 |
| 14 | 3.7 | 3.2 | 7.3 | 6.8 | 12 | 15 | 78 | 16 | 4.8 | 4.0 | 3.6 | 3.7 |
| 15 | 5.8 | 3.1 | 6.6 | 6.3 | 11 | 13 | 42 | 11 | 4.2 | 3.8 | 3.6 | 6.9 |
| 16 | 4.7 | 3.6 | 5.8 | 5.8 | 11 | 43 | 26 | 8.2 | 4.0 | 3.8 | 4.0 | 6.9 |
| 17 | 4.0 | 3.7 | 7.3 | 5.2 | 13 | 34 | 19 | 6.6 | 3.7 | 3.7 | 4.0 | 4.8 |
| 18 | 3.7 | 3.6 | 33 | 5.2 | 18 | 51 | 14 | 5.7 | 3.4 | 3.7 | 4.2 | 4.1 |
| 19 | 3.7 | 3.6 | 20 | 11 | 19 | 69 | 6.1 | 5.2 | 3.3 | 3.8 | 4.1 | 4.2 |
| 20 | 3.4 | 3.8 | 12 | 11 | 12 | 53 | 2.9 | 5.1 | 3.4 | 4.0 | 4.0 | 4.4 |
| 21 | 3.3 | 3.3 | 8.7 | 10 | 9.5 | 48 | 6.5 | 5.2 | 3.6 | 5.1 | 4.0 | 4.5 |
| 22 | 3.3 | 2.9 | 6.8 | 14 | e22 | e113 | 7.6 | 6.0 | 3.7 | 7.3 | 4.4 | 4.7 |
| 23 | 3.3 | 2.8 | 5.5 | 13 | e144 | 46 | 7.1 | 7.6 | 3.8 | 5.7 | 4.7 | 4.7 |
| 24 | 3.3 | 2.7 | 4.8 | 11 | *40 | 22 | 14 | 6.3 | 3.7 | 7.5 | 4.5 | 5.4 |
| 25 | 3.3 | 2.7 | 4.2 | 9.7 | 24 | 20 | 15 | 5.4 | 8.0 | 16 | 4.2 | 7.5 |
| 26 | 3.6 | 2.7 | 3.8 | 8.0 | 18 | 23 | 12 | 4.9 | 13 | 9.7 | 4.2 | 7.1 |
| 27 | 3.6 | 3.2 | 3.6 | 7.1 | 10 | 18 | 10 | 4.7 | 8.4 | 14 | 4.0 | 6.8 |
| 28 | 3.7 | 4.9 | 6.5 | 6.3 | 8.5 | 15 | 8.5 | 4.4 | 5.8 | 14 | 3.8 | 8.0 |
| 29 | 4.1 | 7.8 | *e296 | 5.5 | - | 13 | 7.6 | 5.2 | 4.8 | 11 | 3.8 | 8.0 |
| 30 | 3.8 | 5.5 | e71 | 5.2 | ------ | 11 | 6.8 | 4.5 | 4.2 | 7.5 | 4.5 | 14 |
| 31 | 3.4 | ------ | 30 | 4.9 | ------ | 5.0 | ------ | 4.0 | ------ | 5.8 | 5.1 | ------ |
| Total | 129.2 | 110.7 | 646.1 | 240.6 | 695.8 | 904.0 | 432.7 | 189.7 | 165.8 | 179.7 | 154.5 | 140.7 |
| Mean | 4.17 | 3.69 | 20.8 | 7.76 | 24.8 | 29.2 | 14.4 | 6.12 | 5.53 | 5.80 | 4.98 | 4.69 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 296 Min 0 Mean 11.3 Cfsm - In. -
Water year 1954-55: Max 296 Min 0 Mean 10.9 Cfsm - In. -

* Discharge measurement made on this day.
e Part of flow over top of dam.
g Computed from hourly readings from long distance recorder in same well.

## Emory River near Wartburg, Tenn.

Location.--Lat 36°06'46", long 84°36'54", on right bank 50 ft downstream from highway bridge on Wartburg-Lancing Road, 1.1 miles (corrected) downstream from Rock Creek, 1¼ miles northwest of Wartburg, Morgan County, and 6.1 miles (corrected) upstream from Obed River, and at mile 34.5.
Drainage area.--83.2 sq mi.
Records available.--May 1934 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 1,003.06 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.
Average discharge.--21 years, 143 cfs.
Extremes.--Maximum discharge during year, 12,900 cfs Mar. 22 (gage height, 22.18 ft); minimum, 0.1 cfs Oct. 18, 19.
1934-55: Maximum discharge, 18,700 cfs Feb. 3, 1939 (gage height, 25.62 ft), from rating curve extended above 7,700 cfs; no flow at times.
Remarks.--Records good except those below 1 cfs, which are poor.
Revisions.--WSP 823: Drainage area. Revised figures of discharge, in cubic feet per second, for the water year 1935, superseding those published in WSP 783, are given herewith:

Apr. 11, 1935..... 259

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| April 1935..... | 11,260 | 2,240 | 81 | 375 | 4.51 | 5.03 |
| Water year 1934-35..... | 44,504.35 | 2,580 | 0 | 122 | 1.47 | 19.88 |
| Calendar year 1935..... | 47,386.54 | 2,580 | 0 | 130 | 1.56 | 21.17 |

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 1 to Dec. 5)

| | | | |
|---|---|---|---|
| 1.1 | 0 | 2.5 | 179 |
| 1.2 | .8 | 3.0 | 281 |
| 1.3 | 2.8 | 4.0 | 526 |
| 1.4 | 6.6 | 6.0 | 1,210 |
| 1.5 | 13 | 8.0 | 2,030 |
| 1.7 | 36 | 11.0 | 3,550 |
| 2.0 | 83 | 14.2 | 5,520 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *1.8 | 0.3 | 16 | 239 | 52 | 541 | 108 | 35 | 23 | 21 | 25 | 7.1 |
| 2 | 1.4 | .3 | 11 | 177 | *93 | *470 | 108 | 31 | *16 | 13 | 23 | *5.8 |
| 3 | 3.1 | *.3 | *8.1 | 129 | 123 | 322 | 189 | *28 | 12 | 9.9 | *16 | 4.6 |
| 4 | 2.5 | .4 | 6.2 | *108 | 108 | 241 | 175 | 25 | 9.3 | 35 | 15 | 4.2 |
| 5 | 1.4 | .6 | 14 | 91 | 100 | 185 | *157 | 22 | 7.6 | *37 | 17 | 3.5 |
| 6 | 1.2 | .5 | 99 | 83 | 1,350 | 359 | 459 | 21 | 6.6 | 23 | 21 | 3.5 |
| 7 | .9 | .5 | 62 | 76 | 1,130 | 490 | 498 | 17 | 11 | 16 | 47 | 3.1 |
| 8 | .7 | .6 | 40 | 67 | 439 | 322 | 313 | 15 | 50 | 44 | 134 | 2.8 |
| 9 | .6 | .5 | 41 | 65 | 279 | 237 | 225 | 13 | 311 | 157 | 102 | 2.5 |
| 10 | .6 | .5 | 59 | 62 | 207 | 185 | 175 | 11 | 183 | 94 | 80 | 2.2 |
| 11 | .6 | .5 | 46 | 89 | 217 | 150 | 159 | 11 | 707 | 78 | 282 | 2.2 |
| 12 | .6 | .4 | 36 | 104 | 181 | 169 | 136 | 11 | 264 | 113 | 320 | 3.1 |
| 13 | .5 | .4 | 36 | 112 | 151 | 165 | 159 | 37 | 157 | 72 | 153 | 3.5 |
| 14 | .4 | .4 | 42 | 94 | 148 | 159 | 296 | 125 | 106 | 46 | 91 | 2.8 |
| 15 | .3 | .4 | 44 | 89 | 138 | 150 | 285 | 81 | 74 | 36 | 59 | 2.2 |
| 16 | .3 | .5 | 42 | 81 | 151 | 250 | 227 | 59 | 52 | 35 | 44 | 1.8 |
| 17 | .3 | .6 | 188 | 69 | 195 | 421 | 179 | 49 | 37 | 29 | 34 | 1.6 |
| 18 | .2 | .6 | 1,060 | 62 | 207 | 1,970 | 142 | 39 | 29 | 21 | 25 | 1.4 |
| 19 | .3 | .7 | 256 | 85 | 187 | 1,240 | 115 | 37 | 24 | 15 | 20 | 1.2 |
| 20 | .4 | 1.6 | 138 | 83 | 155 | 689 | 96 | 32 | 191 | 27 | 14 | 1.1 |
| 21 | .4 | 3.1 | 92 | 100 | 157 | 2,040 | 83 | 36 | 92 | 24 | 11 | 1.1 |
| 22 | .4 | 3.1 | 70 | 239 | 678 | 5,460 | 74 | 50 | 54 | 32 | 15 | 1.1 |
| 23 | .3 | 2.5 | 57 | 268 | 1,700 | 676 | 65 | 81 | 42 | 33 | 23 | .9 |
| 24 | .3 | 3.1 | 49 | 211 | 580 | 372 | 63 | 63 | 39 | 196 | 17 | 1.2 |
| 25 | .3 | 3.8 | 42 | 159 | 328 | 331 | 63 | 62 | 77 | 348 | 11 | 1.6 |
| 26 | .3 | 3.8 | 40 | 117 | 237 | 476 | 59 | 46 | 199 | 179 | 8.1 | 1.6 |
| 27 | .3 | 4.2 | 35 | 102 | 506 | 365 | 52 | 35 | 104 | 113 | 7.1 | 1.4 |
| 28 | .3 | 6.6 | 378 | 87 | 656 | 277 | 46 | 26 | 62 | 79 | 5.8 | 1.6 |
| 29 | .2 | 11 | *5,050 | 79 | - | 213 | 42 | 37 | 42 | 57 | 5.4 | 1.8 |
| 30 | .2 | 17 | 1,200 | 67 | ------- | 159 | 39 | 40 | 30 | 42 | 5.4 | 209 |
| 31 | .3 | ---- | 384 | 55 | ------- | 127 | ------- | 30 | ------- | 32 | 8.7 | ---- |
| Total | 21.4 | 68.8 | 9,641.3 | 3,449 | 10,453 | 19,211 | 4,787 | 1,205 | 3,011.5 | 2,056.9 | 1,639.5 | 281.5 |
| Mean | 0.69 | 2.29 | 311 | 111 | 373 | 620 | 160 | 38.9 | 100 | 66.4 | 52.9 | 9.38 |
| Cfsm | 0.0083 | 0.028 | 3.74 | 1.33 | 4.48 | 7.45 | 1.92 | 0.468 | 1.20 | 0.798 | 0.636 | 0.113 |
| In. | 0.01 | 0.03 | 4.31 | 1.54 | 4.67 | 8.59 | 2.14 | 0.54 | 1.35 | 0.92 | 0.73 | 0.13 |

Calendar year 1954: Max 5,050 Min 0 Mean 136 Cfsm 1.63 In. 22.18
Water year 1954-55: Max 5,460 Min 0.2 Mean 153 Cfsm 1.84 In. 24.96

Peak discharge (base, 3,600 cfs).--Dec. 29 (7 p.m.) 6,700 cfs (15.86 ft); Mar. 18 (2 p.m.) 4,050 cfs (11.88 ft); Mar. 22 (3 a.m.) 12,900 cfs (22.18 ft).
* Discharge measurement made on this day.

## Daddys Creek near Crab Orchard, Tenn.

Location.--Lat 35°55'33", long 84°54'47", on left bank 0.6 mile upstream from North Creek, 1.5 miles downstream from bridge on U. S. Highway 70, 1.5 miles downstream from Bird Creek, and 2 miles northwest of Crab Orchard, Cumberland County.

Drainage area.--93.5 sq mi.

Records available.--October 1930 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,569.19 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 17, 1934, staff gage at same site and datum.

Average discharge.--25 years, 168 cfs.

Extremes.--Maximum discharge during year, 8,030 cfs Mar. 22 (gage height, 17.53 ft); minimum, 0.06 cfs Oct. 27 (gage height, 0.43 ft).
1930-55: Maximum discharge, 11,600 cfs Feb. 13, 1948 (gage height, 21.30 ft); no flow Sept. 23, 24, 1936, Sept. 11-22, 1954.

Remarks.--Records good.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second

| | | | |
|---|---|---|---|
| 0.44 | 0.07 | 2.0 | 85 |
| .5 | .2 | 2.8 | 200 |
| .6 | .6 | 3.5 | 338 |
| .7 | 1.2 | 6.0 | 1,040 |
| .8 | 2.7 | 8.0 | 1,880 |
| .9 | 5.2 | 11.0 | 3,510 |
| 1.1 | 14 | 13.1 | 4,840 |
| 1.5 | 38 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *0.2 | 0.2 | 3.7 | 348 | 80 | 435 | 134 | 51 | 101 | 59 | 16 | 13 |
| 2 | 2.4 | .2 | 3.2 | 293 | 136 | 393 | 150 | 45 | 78 | 44 | 16 | 12 |
| 3 | 2.6 | .2 | 2.4 | 222 | 167 | 295 | 410 | 40 | 57 | 34 | 10 | 11 |
| 4 | 1.0 | .2 | 2.0 | 177 | 161 | 241 | 357 | 36 | 44 | 27 | 6.8 | 9.9 |
| 5 | .8 | .4 | 4.4 | 148 | 137 | 198 | 269 | 32 | 33 | 25 | 64 | 9.4 |
| 6 | .6 | .4 | 40 | 183 | 1,420 | 428 | 836 | 28 | 29 | 30 | 50 | 8.6 |
| 7 | .6 | .4 | 41 | 244 | 1,590 | 543 | 1,030 | 25 | 53 | 17 | 40 | 7.9 |
| 8 | .5 | .6 | 31 | 198 | 666 | 369 | 508 | 22 | 87 | 25 | 31 | 6.7 |
| 9 | .4 | .6 | 38 | 162 | 384 | 265 | 324 | 19 | 258 | 18 | 27 | 6.3 |
| 10 | .4 | .6 | 57 | 156 | 279 | 208 | 241 | 17 | 250 | 16 | 26 | 6.3 |
| 11 | .4 | .5 | 49 | 258 | 300 | 175 | 246 | 15 | 524 | 14 | 27 | 6.3 |
| 12 | .4 | .5 | 39 | 239 | 279 | 210 | *264 | 17 | 381 | 11 | 25 | 6.3 |
| 13 | .3 | .4 | 47 | 192 | 210 | 202 | 295 | 60 | 219 | 8.2 | 18 | 6.0 |
| 14 | .3 | .4 | 76 | 149 | 190 | 190 | 398 | 70 | 155 | 7.5 | 15 | 5.0 |
| 15 | .2 | .4 | 72 | 134 | 181 | 173 | 306 | 60 | 113 | 7.5 | 12 | *4.7 |
| 16 | .2 | .4 | 55 | 134 | 210 | 198 | 237 | 76 | *91 | 7.5 | 14 | 4.2 |
| 17 | .2 | .4 | 98 | 118 | 243 | 239 | 188 | 80 | 55 | 7.5 | 23 | 4.0 |
| 18 | .2 | .4 | 790 | 104 | 217 | 465 | 152 | 64 | 41 | 7.1 | 21 | 3.7 |
| 19 | .1 | .5 | 425 | 120 | 177 | 877 | 126 | 124 | 37 | 6.7 | *19 | 3.2 |
| 20 | .1 | 2.5 | 217 | 126 | 156 | 764 | 106 | 63 | 39 | *6.3 | 18 | 3.0 |
| 21 | .09 | 4.0 | 148 | *130 | 169 | 1,620 | 95 | 77 | 32 | 6.0 | 16 | 2.7 |
| 22 | .09 | 2.0 | 114 | 237 | 426 | 4,800 | 86 | 285 | 25 | 5.2 | 16 | 2.1 |
| 23 | .07 | 1.2 | 98 | 304 | 1,250 | 1,240 | 80 | *458 | 32 | 5.2 | 15 | 1.8 |
| 24 | .07 | 1.0 | 85 | 244 | *750 | *545 | 90 | 277 | 71 | 9.0 | 14 | 2.0 |
| 25 | .07 | .9 | 71 | 192 | 420 | 391 | 116 | 215 | 340 | 8.2 | 13 | 2.2 |
| 26 | .07 | .8 | 59 | 155 | 297 | 450 | 102 | 158 | 612 | 9.7 | 13 | 2.7 |
| 27 | .07 | .9 | *52 | 143 | 381 | 360 | 90 | 97 | 289 | 21 | 17 | 3.0 |
| 28 | .09 | 1.4 | 367 | 126 | 465 | 279 | 80 | 74 | 166 | 24 | 18 | 3.7 |
| 29 | *.1 | 7.9 | 4,260 | 109 | - | 222 | 68 | 285 | 114 | 42 | 16 | 4.2 |
| 30 | .1 | *5.2 | 1,940 | 96 | ------ | 181 | 58 | 250 | 82 | 28 | 16 | 5.2 |
| 31 | .1 | ---- | 629 | 83 | ------- | 155 | ------- | 166 | -------- | 20 | 16 | ---- |
| Total | 12.82 | 35.5 | 9,913.7 | 5,524 | 11,341 | 17,111 | 7,442 | 3,286 | 4,408 | 556.6 | 648.8 | 167.1 |
| Mean | 0.414 | 1.18 | 320 | 178 | 405 | 552 | 248 | 106 | 147 | 18.0 | 20.9 | 5.57 |
| Cfsm | 0.0044 | 0.013 | 3.42 | 1.90 | 4.33 | 5.90 | 2.65 | 1.13 | 1.57 | 0.193 | 0.224 | 0.060 |
| In. | 0.005 | 0.01 | 3.94 | 2.20 | 4.51 | 6.81 | 2.96 | 1.31 | 1.75 | 0.22 | 0.26 | 0.07 |

Calendar year 1954: Max 4,860 Min 0 Mean 172 Cfsm 1.84 In. 24.98
Water year 1954-55: Max 4,800 Min 0.07 Mean 166 Cfsm 1.78 In. 24.04

Peak discharge (base, 1,700 cfs).--Dec. 29 (6 a.m.) 4,930 cfs (13.23 ft); Feb. 6 (7 p.m.) 2,610 cfs (9.42 ft); Mar. 22 (2:30 a.m.) 8,030 cfs (17.53 ft).
* Discharge measurement made on this day.

## Emory River at Oakdale, Tenn.

Location.--Lat 35°58'59", long 84°33'29", at Oakdale, Morgan County, 1,000 ft downstream from highway bridge and 1,100 ft downstream from Mud Lick Creek.
Drainage area.--764 sq mi.
Records available.--June 1927 to September 1955. Prior to October 1929, published as Emery River at Harriman and October 1929 to September 1934 as Emery River at Oakdale.
Gage.--Water-stage recorder. Datum of gage is 763.38 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1929, staff gage at site 5.8 miles downstream at datum 45.60 ft lower.
Average discharge.--28 years, 1,379 cfs.
Extremes.--Maximum discharge during year, 79,700 cfs Mar. 22 (gage height, 27.30 ft); minimum, 3.4 cfs Sept. 23-24.

1927-55: Maximum discharge, 195,000 cfs (revised) Mar. 23, 1929 (gage height, about 42.3 ft, present site and datum, and 61.1 ft, site and datum then in use, from flood-marks), from rating curve extended above 85,000 cfs by logarithmic plotting; no flow at times in 1944, 1952-53.

Maximum stage known, that of Mar. 23, 1929.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 663 | 1928 | June 29, 1928 | 63,800 | †40.1 |
| 683 | 1929 | Mar. 23, 1929 | 195,000 | †61.1 |
| 698 | 1930 | Nov. 17, 1929 | 26,400 | 15.7 |
| 728 | 1932 | Feb. 3, 1932 | 36,000 | 18.2 |

† Site and datum then in use.

Remarks.--Records good.
Revisions (water years).--WSP 823: Drainage area. WSP 923: 1940. Revised figures of discharge, in cubic feet per second, for periods in the water years 1932, 1943 and supplemental peak discharge for water year 1945, superseding figures published in WSP 728, 973, and 1033, are given herewith:

Apr. 25, 1932..... 6,210
Apr. 26, 1932..... 12,400
Dec. 23, 1942..... 6,420

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| April 1932 | - | 12,400 | 433 | 2,330 | 3.05 | 3.40 |
| Water year 1931-32 | - | 20,800 | .5 | 1,330 | 1.74 | 23.63 |
| Calendar year 1932 | - | 21,400 | 4.0 | 1,550 | 2.03 | 27.55 |
| December 1942 | 192,245 | 47,800 | 825 | 6,201 | 8.12 | 9.36 |
| Calendar year 1942 | 547,227 | 47,800 | 19 | 1,499 | 1.96 | 26.64 |
| Water year 1942-43 | 549,207.3 | 47,800 | 4.8 | 1,505 | 1.97 | 26.74 |

Revised peak discharge.--1944-45: Feb. 13 (3 p.m.) 13,700 cfs.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *13 | 6.0 | 264 | 3,300 | 746 | 4,410 | 1,350 | 413 | 749 | 316 | 131 | 29 |
| 2 | 22 | 6.0 | 211 | 2,560 | *1,070 | *4,490 | 1,230 | 360 | *539 | 228 | 108 | *31 |
| 3 | 163 | *5.4 | *172 | 2,030 | 1,570 | 3,300 | 2,100 | *332 | 407 | 180 | *104 | 26 |
| 4 | 226 | 5.7 | 148 | *1,660 | 1,420 | 2,570 | 2,300 | 280 | 305 | 172 | 97 | 22 |
| 5 | 150 | 6.7 | 150 | 1,420 | 1,290 | 2,070 | *1,970 | 246 | 233 | *198 | 82 | 20 |
| 6 | 101 | 6.7 | 842 | 1,290 | 8,350 | 3,640 | 4,280 | 212 | 187 | 265 | 68 | 17 |
| 7 | 72 | 6.7 | 1,270 | 1,380 | 13,200 | 6,540 | 6,970 | 187 | 187 | 516 | 70 | 15 |
| 8 | 54 | 6.4 | 1,190 | 1,240 | 5,820 | 4,090 | 4,140 | 166 | 370 | 365 | 160 | 14 |
| 9 | 44 | 6.0 | 641 | 1,100 | 3,520 | 2,910 | 2,890 | 148 | 1,890 | 670 | 161 | 12 |
| 10 | 38 | 5.7 | 832 | 1,040 | 2,580 | 2,260 | 2,260 | 134 | 2,160 | 546 | 136 | 11 |
| 11 | 31 | 6.0 | 760 | 1,330 | 2,480 | 1,860 | 2,060 | 123 | 4,190 | 348 | 136 | 10 |
| 12 | 27 | 6.0 | 571 | 1,560 | 2,400 | 2,120 | 2,150 | 125 | 3,330 | 290 | 616 | 11 |
| 13 | 24 | 5.7 | 514 | 1,460 | 1,910 | 2,630 | 2,120 | 349 | 2,130 | 256 | 285 | 9.5 |
| 14 | 22 | 5.7 | 984 | 1,230 | 1,800 | 2,240 | 3,810 | 920 | 1,540 | 187 | 175 | 9.1 |
| 15 | 22 | 5.7 | 1,020 | 1,100 | 1,620 | 1,960 | 3,340 | 904 | 1,160 | 153 | 129 | 8.2 |
| 16 | 17 | 6.0 | 824 | 1,100 | 1,680 | 2,200 | 2,600 | 700 | 888 | 139 | 104 | 7.0 |
| 17 | 15 | 6.4 | 974 | 1,000 | 1,960 | 3,680 | 2,080 | 686 | 679 | 125 | 85 | 6.4 |
| 18 | 14 | 6.7 | 7,330 | 880 | 2,000 | 9,770 | 1,720 | 581 | 490 | 121 | 70 | 6.0 |
| 19 | 13 | 7.4 | 4,400 | 1,000 | 1,800 | 11,800 | 1,440 | 215 | 377 | 95 | 57 | 5.7 |
| 20 | 12 | 11 | 2,460 | 1,050 | 1,560 | 7,840 | 1,210 | 525 | 512 | 90 | 52 | 4.7 |
| 21 | 11 | 14 | 1,660 | 1,040 | 1,520 | 14,800 | 1,060 | 470 | 504 | 161 | 50 | 4.4 |
| 22 | 10 | 15 | 1,280 | 1,660 | 3,920 | 46,000 | 976 | 818 | 343 | 139 | 56 | 4.2 |
| 23 | 10 | 19 | 1,070 | 2,330 | 12,400 | 10,300 | 864 | 2,120 | 397 | 110 | 55 | 3.7 |
| 24 | 8.6 | 28 | 944 | 2,140 | 6,740 | 5,100 | 805 | 1,750 | 348 | 139 | 52 | 3.9 |
| 25 | 7.7 | 37 | 800 | 1,740 | 3,910 | 3,740 | 819 | 1,330 | 645 | 672 | 44 | 4.4 |
| 26 | 6.7 | 37 | 676 | 1,440 | 2,800 | 4,250 | 791 | 1,070 | 2,030 | 425 | 36 | 4.2 |
| 27 | 6.4 | 38 | 592 | 1,280 | 2,960 | 3,410 | 714 | 791 | 1,540 | 316 | 31 | 3.9 |
| 28 | 6.0 | 42 | 1,340 | 1,200 | 4,860 | 2,720 | 637 | 567 | 936 | 215 | 26 | 4.4 |
| 29 | 6.7 | 52 | 40,800 | 1,080 | - | 2,240 | 560 | 600 | 623 | 332 | 24 | 5.4 |
| 30 | 7.0 | 208 | 16,900 | 952 | ------- | 1,820 | 484 | 1,440 | 438 | 187 | 22 | 34 |
| 31 | 6.4 | ---- | 5,680 | 832 | ------- | 1,560 | ------- | 1,030 | ------- | 151 | 24 | ---- |
| Total | 1,166.5 | 617.9 | 97,299 | 44,424 | 97,886 | 178,320 | 59,730 | 19,592 | 30,127 | 8,107 | 3,246 | 347.1 |
| Mean | 37.6 | 20.6 | 3,139 | 1,433 | 3,496 | 5,752 | 1,991 | 632 | 1,004 | 262 | 105 | 11.6 |
| Cfsm | 0.049 | 0.027 | 4.11 | 1.88 | 4.58 | 7.53 | 2.61 | 0.827 | 1.31 | 0.343 | 0.137 | 0.015 |
| In. | 0.06 | 0.03 | 4.74 | 2.16 | 4.76 | 8.68 | 2.91 | 0.95 | 1.47 | 0.39 | 0.16 | 0.02 |

Calendar year 1954: Max 42,300 Min 0.1 Mean 1,380 Cfsm 1.81 In. 24.54
Water year 1954-55: Max 46,000 Min 3.7 Mean 1,482 Cfsm 1.94 In. 26.33

Peak discharge (base, 19,000 cfs).--Dec. 29 (9 a.m.) 48,900 cfs (21.37 ft); Feb. 6 (11 p.m.) 21,100 cfs (14.70 ft); Mar. 22 (3 a.m.) 79,700 cfs (27.30 ft).
* Discharge measurement made on this day.

## White Creek near Glen Alice, Tenn.

Location.--Lat 35°47'49", long 84°45'37", on left bank a quarter of a mile upstream from Black Creek (also known as Hines Creek), half a mile upstream from Southern Railway bridge, and 1½ miles southwest of Glen Alice, Roane County.

Drainage area.--123 sq mi.

Records available.--May 1934 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 758.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 215 cfs.

Extremes.--Maximum discharge during year, 17,300 cfs Mar. 22 (gage height, 18.63 ft, from floodmark in gage well); minimum, 0.1 cfs Oct. 4 (gage height, 0.62 ft).
1934-55: Maximum discharge, 19,000 cfs Jan. 5, 1949 (gage height, 19.45 ft); minimum, 0.06 cfs Sept. 11, 1954; minimum gage height, 0.55 ft Oct. 3-5, 1936.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 783: 1934. WSP 803: 1935(M). WSP 823: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 21

| | | | |
|---|---|---|---|
| 0.64 | 0.2 | 3.0 | 158 |
| .70 | .3 | 3.9 | 310 |
| .75 | .6 | 5.0 | 590 |
| .80 | 1.2 | 6.0 | 990 |
| .90 | 2.9 | 8.0 | 2,210 |
| 1.1 | 7.0 | 10.0 | 3,850 |
| 1.4 | 18 | 12.0 | 5,830 |
| 1.8 | 40 | 14.8 | 9,690 |
| 2.4 | 89 | | |

Mar. 22 to Sept. 30

| | | | |
|---|---|---|---|
| 0.68 | 0.2 | 1.4 | 17 |
| .75 | .3 | 1.8 | 40 |
| .80 | .4 | 2.4 | 87 |
| .90 | 1.3 | 3.0 | 150 |
| 1.1 | 4.9 | 3.9 | 310 |
| 1.2 | 8.0 | | |

Note.--Same as preceding table above 3.9 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *0.2 | 0.2 | 8.6 | 560 | 112 | *412 | *173 | 81 | 84 | 39 | 31 | 0.3 |
| 2 | .2 | *.3 | *7.3 | 425 | *190 | 358 | 212 | *71 | 70 | 30 | 29 | .3 |
| 3 | .2 | .5 | 6.1 | *336 | 206 | 306 | 546 | 62 | 55 | 24 | 24 | .3 |
| 4 | .2 | .6 | 4.6 | 268 | 191 | 260 | 455 | 54 | 50 | 18 | 18 | .2 |
| 5 | .4 | 2.0 | 11 | 219 | 186 | 218 | 378 | 47 | 40 | 19 | 14 | .2 |
| 6 | .3 | 1.5 | 167 | 216 | 2,900 | 502 | 1,340 | 40 | 35 | 38 | 11 | .2 |
| 7 | .2 | 2.0 | 76 | 211 | 1,610 | 641 | 1,080 | 34 | 60 | 30 | 10 | .2 |
| 8 | .2 | 1.8 | 43 | 194 | 748 | 476 | 632 | 29 | 100 | 35 | 14 | .2 |
| 9 | .2 | 1.5 | 67 | 177 | 515 | 365 | 460 | 25 | 150 | 40 | 12 | .2 |
| 10 | .2 | 1.0 | 108 | 167 | 374 | 290 | 347 | 22 | 140 | 34 | 8.4 | .2 |
| 11 | .2 | .9 | 65 | 302 | 471 | 240 | 395 | 20 | 290 | 27 | 8.8 | .2 |
| 12 | .2 | .8 | 46 | 304 | 417 | 251 | 405 | 23 | 260 | 31 | 34 | *.2 |
| 13 | .2 | .8 | 62 | 262 | 341 | 249 | 530 | 231 | 190 | 29 | 24 | .2 |
| 14 | .2 | .8 | 104 | 210 | 298 | 233 | 752 | 209 | 150 | 26 | 14 | .2 |
| 15 | .2 | .7 | 82 | 194 | 253 | 224 | 611 | 181 | 120 | 23 | 9.2 | .2 |
| 16 | .2 | .9 | 60 | 178 | 260 | 249 | 468 | 350 | 95 | 27 | *6.8 | .2 |
| 17 | .2 | 1.0 | 441 | 155 | 294 | 332 | 352 | 273 | 75 | 26 | 4.9 | .2 |
| 18 | .2 | 1.0 | 1,580 | 140 | 286 | 516 | 269 | 185 | 60 | 22 | 3.8 | .2 |
| 19 | .2 | 1.2 | 476 | 226 | 259 | 945 | 210 | 202 | 45 | *20 | 2.9 | .2 |
| 20 | .2 | 2.2 | 247 | 226 | 223 | 915 | 168 | 195 | 35 | 15 | 2.2 | .2 |
| 21 | .2 | 1.8 | 168 | 237 | 235 | 2,160 | 149 | 439 | *28 | 18 | 1.8 | .2 |
| 22 | .2 | 2.6 | 128 | 321 | 642 | 5,470 | 131 | 908 | 22 | 14 | 1.9 | .2 |
| 23 | .2 | 2.2 | 103 | 367 | 1,960 | 1,130 | 113 | 1,020 | 29 | 11 | 1.9 | .2 |
| 24 | .2 | 1.8 | 87 | 310 | 895 | 671 | 140 | 590 | 42 | 34 | 1.6 | .2 |
| 25 | .2 | 1.5 | 72 | 255 | 578 | 549 | 161 | 395 | 103 | 81 | 1.1 | .3 |
| 26 | .2 | .9 | 63 | 206 | 424 | 614 | 145 | 255 | 253 | 262 | .9 | .2 |
| 27 | .2 | 1.5 | 56 | 188 | 414 | 518 | 133 | 175 | 138 | 146 | .7 | .2 |
| 28 | .2 | 2.2 | 1,120 | 168 | 442 | 419 | 120 | 140 | 93 | 83 | .6 | .4 |
| 29 | *.2 | 6.8 | 9,450 | 149 | - | 332 | 105 | 170 | 69 | 120 | .4 | .4 |
| 30 | .2 | 10 | 1,900 | 133 | ------- | 257 | 91 | 140 | 52 | 66 | .4 | *.8 |
| 31 | .2 | ------- | 800 | 116 | ------- | 209 | ------- | *104 | ------- | 43 | .4 | ------- |
| Total | 6.5 | 53.0 | 17,608.6 | 7,420 | 15,724 | 20,311 | 11,071 | 6,670 | 2,933 | 1,431 | 293.7 | 7.4 |
| Mean | 0.21 | 1.77 | 568 | 239 | 562 | 655 | 369 | 215 | 97.8 | 46.2 | 9.47 | 0.25 |
| Cfsm | 0.0017 | 0.014 | 4.62 | 1.94 | 4.57 | 5.33 | 3.00 | 1.75 | 0.795 | 0.376 | 0.077 | 0.0020 |
| In. | 0.002 | 0.02 | 5.32 | 2.24 | 4.75 | 6.14 | 3.35 | 2.02 | 0.89 | 0.43 | 0.09 | 0.002 |

Calendar year 1954: Max 9,450 Min 0.2 Mean 211 Cfsm 1.72 In. 23.28
Water year 1954-55: Max 9,450 Min 0.2 Mean 229 Cfsm 1.86 In. 25.25

Peak discharge (base, 4,800 cfs).--Dec. 29 (2:30 a.m.) 14,700 cfs (17.40 ft); Feb. 6 (2 p.m.) 5,740 cfs (11.92 ft); Mar. 22 (about 1 a.m.) 17,300 cfs (18.63 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 30 to Jan. 2, May 27-30, June 2-20; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Sewee Creek near Decatur, Tenn.

Location.--Lat 35°34'53", long 84°44'53", on right bank a third of a mile downstream from bridge on State Highway 58, half a mile downstream from Dry Fork, 4½ miles upstream from mouth, and 5 miles north of Decatur, Meigs County.

Drainage area.--117 sq mi.

Records available.--May 1934 to September 1955. Prior to October 1935, published as Suee Creek near Decatur.

Gage.--Water-stage recorder. Datum of gage is 694.32 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 188 cfs.

Extremes.--Maximum discharge during year, 3,900 cfs Dec. 29 (gage height, 9.71 ft, from floodmark in gage well); minimum, 13 cfs Oct. 25-28; minimum gage height, 0.17 ft many days in October.

1934-55: Maximum discharge, 29,000 cfs Jan. 7, 1946 (gage height, 23.97 ft, from floodmarks), from rating curve extended above 6,700 cfs on basis of contracted-opening determination of peak flow; minimum, 11 cfs Sept. 24, 1935, Jan. 7-10, Oct. 4, 5, 7, 11, 12, 14, 15, 1940; minimum gage height, 0.15 ft Sept. 2, 3, 7-9, 13, 20, 1954.

Remarks.--Records good.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Apr. 14 | | | | Apr. 15 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.17 | 13 | 0.9 | 320 | 0.41 | 83 | 2.0 | 650 | 0.19 | 14 | 0.4 | 70 |
| .20 | 17 | 2.0 | 650 | .6 | 178 | 5.0 | 1,770 | .22 | 18 | .5 | 115 |
| .24 | 24 | 4.5 | 1,480 | .9 | 339 | 6.7 | 2,460 | .3 | 36 | .6 | 178 |
| .3 | 38 | 6.4 | 2,320 | | | | | Note.--Same as preceding table above 0.6 ft. | | | |
| .5 | 108 | | | | | | | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 70 | 14 | *18 | 342 | 83 | 299 | 203 | 115 | 63 | 28 | 24 | 20 |
| 2 | 30 | 14 | 18 | 273 | 135 | 251 | 248 | 106 | 60 | 28 | 24 | 18 |
| 3 | 18 | *14 | 17 | 215 | 101 | 221 | 290 | 102 | 56 | 26 | 22 | 16 |
| 4 | *17 | 17 | 17 | *178 | 87 | 203 | 203 | *97 | 53 | 26 | *22 | 16 |
| 5 | 17 | 26 | 76 | 156 | 87 | 178 | 190 | 92 | 53 | 26 | 22 | 16 |
| 6 | 17 | 22 | 190 | 146 | 1,180 | 365 | 1,650 | 88 | *50 | 26 | 22 | 16 |
| 7 | 17 | 17 | 54 | 124 | 1,200 | *350 | 1,040 | 84 | 60 | 30 | 20 | 16 |
| 8 | 17 | 16 | 36 | 110 | 509 | 273 | 530 | 79 | 60 | *36 | 24 | 15 |
| 9 | 17 | 16 | 118 | 106 | 370 | 234 | 410 | 74 | 63 | 221 | 20 | *15 |
| 10 | 17 | 16 | 81 | 106 | 299 | 203 | 330 | 70 | 56 | 186 | 20 | 15 |
| 11 | 16 | 16 | 54 | 190 | 418 | 190 | 335 | 70 | 67 | 60 | 22 | 15 |
| 12 | 14 | 16 | 41 | *140 | 321 | 173 | 262 | 92 | 56 | 97 | 36 | 15 |
| 13 | 14 | 16 | 54 | 119 | 251 | 156 | 448 | 368 | 50 | 102 | 24 | 15 |
| 14 | 14 | 16 | 67 | *106 | 234 | 140 | *1,180 | 165 | 46 | 74 | 22 | 83 |
| 15 | 16 | 16 | 60 | 106 | 215 | 129 | 839 | 140 | 46 | 63 | 22 | 20 |
| 16 | 14 | 17 | 51 | 101 | 209 | 197 | 494 | 172 | 43 | 56 | 22 | 16 |
| 17 | 14 | 17 | 111 | 87 | 209 | 178 | 385 | 106 | 43 | 46 | 20 | 15 |
| 18 | 14 | 17 | 718 | *83 | 173 | 412 | 313 | 97 | 39 | 43 | 20 | 15 |
| 19 | 14 | 18 | 208 | 264 | 162 | 780 | 262 | 84 | 36 | 36 | 20 | 15 |
| 20 | 14 | 44 | 133 | 178 | 151 | 602 | 234 | 79 | 43 | 36 | 18 | 15 |
| 21 | 14 | 22 | 100 | 162 | 146 | 906 | 215 | 88 | 36 | 33 | 18 | 14 |
| 22 | 14 | 16 | 85 | 240 | 445 | 2,450 | 203 | 179 | 36 | 43 | 20 | 14 |
| 23 | 14 | 14 | 74 | *190 | *1,570 | 808 | 178 | 153 | 36 | 46 | 20 | 14 |
| 24 | 14 | 14 | 67 | 167 | 660 | 521 | 702 | 97 | 36 | 124 | 18 | 15 |
| 25 | 13 | 14 | 57 | 146 | 438 | 620 | 390 | 92 | 43 | 241 | 18 | 16 |
| 26 | 13 | 14 | 51 | 124 | 348 | 818 | 268 | 79 | 50 | 53 | 18 | 16 |
| 27 | 13 | 14 | 48 | 115 | 370 | 460 | 209 | 70 | 39 | 39 | 16 | 16 |
| 28 | 13 | 18 | 65 | 106 | 313 | 382 | 178 | 63 | 33 | 33 | 16 | 24 |
| 29 | 16 | 51 | 2,300 | 96 | - | 321 | 159 | 128 | 30 | 28 | 16 | 28 |
| 30 | 14 | 24 | 1,740 | 87 | ------ | 262 | 134 | 88 | 30 | 26 | 18 | 18 |
| 31 | 14 | ---- | 473 | 83 | ------- | 228 | -------- | 74 | ------- | 36 | 28 | ------ |
| Total | 533 | 566 | 7,182 | 4,646 | 10,684 | 13,310 | 12,482 | 3,391 | 1,412 | 1,948 | 652 | 562 |
| Mean | 17.2 | 18.9 | 232 | 150 | 382 | 429 | 416 | 109 | 47.1 | 62.8 | 21.0 | 18.7 |
| Cfsm | 0.147 | 0.162 | 1.98 | 1.28 | 3.26 | 3.67 | 3.56 | 0.932 | 0.403 | 0.537 | 0.179 | 0.160 |
| In. | 0.17 | 0.18 | 2.28 | 1.48 | 3.40 | 4.23 | 3.97 | 1.08 | 0.45 | 0.62 | 0.21 | 0.18 |

Calendar year 1954: Max 4,460 Min 13 Mean 146 Cfsm 1.25 In. 16.97
Water year 1954-55: Max 2,450 Min 13 Mean 157 Cfsm 1.34 In. 18.25

Peak discharge (base, 2,000 cfs).--Dec. 29 (about 11 p.m.) 3,900 cfs (9.71 ft); Feb. 6 (10 to 11 p.m.) 2,160 cfs (5.98 ft); Mar. 22 (11 a.m.) 3,220 cfs (8.39 ft); Apr. 6 (6 p.m.) 2,700 cfs (7.23 ft).

* Discharge measurement made on this day.

## Richland Creek near Dayton, Tenn.

Location.--Lat 35°30'17", long 85°01'20", on left bank at Morgantown, 0.4 mile upstream from bridge on State Highway 30, 1 mile northwest of Dayton, Rhea County, and 1¾ miles downstream from Payne Creek (formerly Gooch Creek).

Drainage area.--50.2 sq mi.

Records available.--June 1927 to September 1931, June 1934 to September 1955 (discontinued). Published as "at Dayton" 1927-31.

Gage.--Water-stage recorder. Datum of gage is 728.59 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. June 22, 1927, to Sept. 30, 1931, staff gage at bridge 1 mile downstream at datum 43.61 ft lower.

Average discharge.--25 years, 107 cfs.

Extremes.--Maximum discharge during year, 4,880 cfs Dec. 29 (gage height, 6.98 ft); minimum, 0.02 cfs many days in October (gage height, 0.25 ft).
1927-31, 1934-55: Maximum discharge, 9,000 cfs Jan. 7, 1946 (gage height, 9.08 ft), from rating curve extended above 4,600 cfs (corrected) by logarithmic plotting; no flow July 28, Aug. 19 to Sept. 12, 1929, Sept. 14-30, 1931.

Remarks.--Records good except those below 1 cfs, which are fair. City of Dayton diverts an average of about 1 cfs 3 miles upstream.

Revisions (water years).--WSP 823: 1935-36(M), 1937, drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.25 | 0.02 | 0.8 | 28 | 0.27 | 0.05 | 0.6 | 11 |
| .28 | .04 | 1.2 | 86 | .30 | .14 | .8 | 29 |
| .30 | .08 | 1.8 | 207 | .32 | .32 | 1.0 | 52 |
| .34 | .2 | 2.5 | 430 | .34 | .66 | 1.3 | 95 |
| .38 | .7 | 3.5 | 915 | .38 | 1.6 | 1.8 | 207 |
| .42 | 1.9 | 4.5 | 1,610 | .5 | 5.8 | | |
| .5 | 5.0 | 5.7 | 2,900 | Note.--Same as preceding table above 1.8 ft. | | | |
| .6 | 10 | | | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *0.03 | 0.03 | 0.5 | 250 | 48 | *207 | *86 | 64 | 60 | 5.8 | 15 | 0.2 |
| 2 | .03 | *.03 | *.3 | 184 | *83 | 178 | 155 | *54 | 42 | 4.1 | 20 | .2 |
| 3 | .02 | .04 | .3 | *148 | 78 | 150 | 346 | 46 | 38 | 3.4 | 24 | .1 |
| 4 | .02 | .08 | .3 | 121 | 70 | 129 | 247 | 40 | 29 | 2.5 | 15 | .1 |
| 5 | .02 | .08 | 2.6 | 103 | 73 | 110 | 207 | 34 | 24 | 2.2 | 11 | .1 |
| 6 | .03 | .08 | 29 | 96 | 1,280 | 171 | 1,260 | 28 | 20 | 1.9 | 8.9 | .1 |
| 7 | .03 | .08 | 18 | 88 | 790 | 238 | 725 | 24 | 37 | 3.7 | 9.4 | .1 |
| 8 | .03 | .08 | 10 | 76 | 395 | 182 | 388 | 19 | 57 | 8.4 | 10 | .1 |
| 9 | .03 | .08 | 12 | 75 | 262 | 144 | 265 | 16 | 99 | 15 | 7.4 | .1 |
| 10 | .02 | .08 | 28 | 76 | 194 | 125 | 197 | 14 | 83 | 10 | *5.3 | .1 |
| 11 | .02 | .1 | 22 | 108 | 307 | 110 | 286 | 13 | 171 | 6.8 | 7.7 | .1 |
| 12 | .02 | .1 | 15 | 103 | 247 | 101 | 268 | 15 | 135 | 7.4 | 37 | *.1 |
| 13 | .02 | .1 | 18 | 91 | 187 | 93 | 316 | 53 | 99 | 10 | 17 | .1 |
| 14 | .02 | .1 | 31 | 78 | 160 | 81 | 398 | 53 | 77 | 12 | 11 | .1 |
| 15 | .03 | .1 | 26 | 76 | 136 | 75 | 313 | 42 | 60 | 25 | 7.9 | .1 |
| 16 | .02 | .2 | 21 | 73 | 142 | 84 | 229 | 50 | 46 | 33 | 5.8 | .1 |
| 17 | .02 | .2 | 49 | 64 | 158 | 108 | 171 | 57 | 37 | 26 | 4.5 | .1 |
| 18 | .03 | .2 | 292 | 60 | 144 | 218 | 133 | 46 | 28 | *17 | 3.4 | .07 |
| 19 | .03 | .3 | 150 | 100 | 125 | 458 | 105 | 39 | 22 | 13 | 2.8 | .07 |
| 20 | .02 | .2 | 96 | 96 | 110 | 416 | 83 | 32 | *19 | 11 | 1.9 | .05 |
| 21 | .02 | .2 | 72 | 96 | 107 | 736 | 72 | 59 | 15 | 10 | 1.3 | .05 |
| 22 | .02 | .2 | 58 | 144 | 224 | 1,390 | 64 | 205 | 11 | 8.4 | 1.1 | .05 |
| 23 | .02 | .2 | 52 | 162 | 625 | 502 | 68 | 420 | 10 | 7.4 | .9 | .05 |
| 24 | .02 | .2 | 47 | 142 | 374 | 316 | 227 | 244 | 11 | 5.8 | .7 | .07 |
| 25 | .02 | .2 | 38 | 116 | 253 | 325 | 313 | 159 | 15 | 31 | .7 | .1 |
| 26 | .02 | .2 | 33 | 96 | 187 | 346 | 218 | 105 | 36 | 59 | .5 | .05 |
| 27 | .02 | .2 | 28 | 84 | 207 | 259 | 162 | 74 | 21 | 48 | .3 | .05 |
| 28 | .02 | .3 | 104 | 75 | 224 | 202 | 125 | 57 | 14 | 29 | .3 | .3 |
| 29 | *.03 | .5 | 2,840 | 66 | - | 157 | 97 | 129 | 9.4 | 57 | .2 | .1 |
| 30 | .03 | .7 | 855 | 58 | ------- | 121 | 78 | 111 | 7.4 | 33 | .2 | *.5 |
| 31 | .03 | --- | 384 | 49 | ------- | 103 | ------- | *80 | ------- | 21 | .2 | --- |
| Total | 0.74 | 5.16 | 5,332.0 | 3,154 | 7,190 | 7,835 | 7,602 | 2,382 | 1,332.8 | 527.8 | 231.4 | 3.41 |
| Mean | 0.024 | 0.172 | 172 | 102 | 257 | 253 | 253 | 76.8 | 44.4 | 17.0 | 7.46 | 0.114 |
| Cfsm | 0.00048 | 0.0034 | 3.43 | 2.03 | 5.12 | 5.04 | 5.04 | 1.53 | 0.884 | 0.339 | 0.149 | 0.0023 |
| In. | 0.0005 | 0.004 | 3.95 | 2.34 | 5.33 | 5.80 | 5.63 | 1.76 | 0.99 | 0.39 | 0.17 | 0.003 |

Calendar year 1954: Max 2,840 Min 0.02 Mean 92.5 Cfsm 1.84 In. 25.01
Water year 1954-55: Max 2,840 Min 0.02 Mean 97.5 Cfsm 1.94 In. 26.37

Peak discharge (base, 1,300 cfs).--Dec. 29 (2 p.m.) 4,880 cfs (6.98 ft); Feb. 6 (3 to 4 p.m.) 2,180 cfs (5.09 ft); Mar. 22 (12:30 a.m.) 2,950 cfs (5.74 ft); Apr. 6 (12 m.) 2,280 cfs (5.18 ft).
* Discharge measurement made on this day.

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## Hiwassee River at Presley, Ga.

Location.--Lat 34°54'17", long 83°43'01", on left bank 0.1 mile downstream from Cynth Creek, 0.5 mile southeast of Presley, Towns County, 1.3 miles upstream from Hightower Creek, and at mile 133.9.

Drainage area.--45.5 sq mi.

Records available.--December 1941 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,932.69 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years (1942-55), 130 cfs.

Extremes.--Maximum discharge during year, 1,220 cfs Feb. 6 (gage height, 6.78 ft); minimum, 22 cfs Oct. 5, 6, 10, 11, 12, 14 (gage height, 1.60 ft).
1941-55: Maximum discharge, 5,700 cfs Mar. 11, 1952 (gage height, 15.24 ft), from rating curve extended above 2,000 cfs on basis of slope-area and contracted-opening determinations at gage heights 12.80 and 15.24 ft, respectively; minimum, 22 cfs Sept. 27-30, Oct. 5, 6, 10, 11, 12, 14, 1954; minimum gage height, 1.60 ft Oct. 6, 7, 1947, Oct. 5, 6, 10, 11, 12, 14, 1954.

Remarks.--Records excellent.

Revisions (water years).--WSP 973: 1942.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.6 | 22 | 2.5 | 134 |
| 1.7 | 29 | 3.0 | 232 |
| 1.9 | 27 | 4.0 | 464 |
| 2.1 | 72 | 5.4 | 828 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 26 | *26 | 34 | 129 | 49 | 122 | 124 | 120 | 165 | 73 | 119 | 58 |
| 2 | 26 | 28 | *32 | 114 | 86 | 115 | 153 | 115 | 158 | 71 | 134 | *55 |
| 3 | 24 | 27 | 31 | 98 | *78 | *109 | 203 | *114 | 150 | 78 | *120 | 53 |
| 4 | 24 | 32 | 30 | *86 | 71 | 111 | 169 | 112 | 143 | 76 | 120 | 53 |
| 5 | 23 | 45 | 70 | 79 | 71 | 107 | 165 | 109 | 139 | 76 | 111 | 53 |
| 6 | *23 | 29 | 90 | 75 | 706 | 112 | 203 | 106 | 132 | *73 | 103 | 52 |
| 7 | 24 | 28 | 55 | 68 | 432 | 107 | *213 | 103 | 136 | 75 | 100 | 51 |
| 8 | 23 | 27 | 45 | 64 | 239 | 101 | 189 | 101 | 141 | 71 | 125 | 47 |
| 9 | 24 | 27 | 55 | 62 | 183 | 98 | 171 | 98 | *136 | 73 | 126 | 47 |
| 10 | 23 | 26 | 48 | 73 | 152 | 101 | 160 | 96 | 131 | 88 | 104 | 47 |
| 11 | 23 | 26 | 43 | 78 | 145 | 98 | 381 | 95 | 138 | 124 | 96 | 46 |
| 12 | 23 | 26 | 42 | 69 | 124 | 101 | 312 | 95 | 122 | 114 | 94 | 45 |
| 13 | 23 | 26 | 64 | 66 | 112 | 104 | 310 | 151 | 115 | 126 | 83 | 45 |
| 14 | 26 | 25 | 53 | 62 | 107 | 103 | 335 | 122 | 111 | 191 | 83 | 45 |
| 15 | 25 | 26 | 47 | 64 | 104 | 100 | 278 | 107 | 107 | 131 | 92 | 43 |
| 16 | 25 | 72 | 43 | 60 | 101 | 104 | 245 | 233 | 104 | 117 | 86 | 42 |
| 17 | 26 | 41 | 46 | 58 | 112 | 103 | 219 | 369 | 100 | 106 | 79 | 40 |
| 18 | 26 | 36 | 89 | 60 | 100 | 101 | 203 | 247 | 98 | 109 | 75 | 40 |
| 19 | 25 | 48 | 64 | 85 | 94 | 109 | 189 | 195 | 104 | 100 | 75 | 40 |
| 20 | 26 | 58 | 52 | 69 | 90 | 106 | 179 | 169 | 103 | 90 | 80 | 38 |
| 21 | 26 | 36 | 46 | 69 | 88 | 120 | 177 | 264 | 98 | 96 | 75 | 38 |
| 22 | 25 | 31 | 43 | 72 | 107 | 612 | 165 | 601 | 90 | 98 | 75 | 37 |
| 23 | 25 | 35 | 41 | 69 | 234 | 283 | 158 | 809 | 100 | 208 | 75 | 36 |
| 24 | 25 | 33 | 38 | 64 | 183 | 215 | 173 | 462 | 95 | 298 | 72 | 37 |
| 25 | 25 | 29 | 36 | 59 | 160 | 189 | 158 | 356 | 95 | 175 | 66 | 54 |
| 26 | 25 | 28 | 35 | 57 | 143 | 187 | 148 | 291 | 88 | 147 | 63 | 42 |
| 27 | 25 | 30 | 35 | 57 | 132 | 162 | 141 | 252 | 83 | 127 | 62 | 40 |
| 28 | 26 | 45 | 52 | 54 | 126 | 152 | 134 | 226 | 83 | 132 | 59 | 48 |
| 29 | 30 | 66 | 507 | 52 | - | 143 | 127 | 209 | 79 | 115 | 58 | 44 |
| 30 | 26 | 40 | 288 | 49 | ------- | 134 | 124 | 195 | 76 | 109 | 57 | 51 |
| 31 | 26 | ------- | 147 | 47 | ------- | 127 | ------- | 179 | ------- | 104 | 66 | ------- |
| Total | 772 | 1,052 | 2,301 | 2,168 | 4,329 | 4,436 | 5,906 | 6,701 | 3,420 | 3,571 | 2,733 | 1,367 |
| Mean | 24.9 | 35.1 | 74.2 | 69.9 | 155 | 143 | 197 | 216 | 114 | 115 | 88.2 | 45.6 |
| Cfsm | 0.547 | 0.771 | 1.63 | 1.54 | 3.41 | 3.14 | 4.33 | 4.75 | 2.51 | 2.53 | 1.94 | 1.00 |
| In. | 0.63 | 0.86 | 1.88 | 1.77 | 3.54 | 3.63 | 4.83 | 5.48 | 2.80 | 2.92 | 2.23 | 1.12 |

Calendar year 1954: Max. 1,300 Min 23 Mean 118 Cfsm 2.59 In. 35.19
Water year 1954-55: Max. 809 Min 23 Mean 106 Cfsm 2.33 In. 31.69

Peak discharge (base, 800 cfs).--Feb. 6 (5 p.m.) 1,220 cfs (6.78 ft); Mar. 22 (4 a.m.) 1,050 cfs (6.22 ft); May 22 (6 p.m.) 1,140 cfs (6.53 ft).
* Discharge measurement made on this day.

## Shooting Creek near Hayesville, N. C.

Location.--Lat 35°01'25", long 83°42'25", on left bank 400 ft downstream from Hothouse Branch, half a mile upstream from Chatuge Lake, and 6.5 miles east of Hayesville, Clay County.

Drainage area.--37.6 sq mi.

Records available.--August 1922 to March 1924, October 1941 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,930.33 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Aug. 15, 1922, to Mar. 13, 1924, chain gage at bridge 0.7 mile downstream at datum 16.82 ft lower.

Average discharge.--15 years (1922-23, 1941-55), 88.7 cfs.

Extremes.--Maximum discharge during year, 1,450 cfs May 22 (gage height, 5.82 ft); minimum, 11 cfs Oct. 13, 14 (gage height, 1.28 ft).
1922-24, 1941-55: Maximum discharge, 6,820 cfs June 16, 1949 (gage height, 9.20 ft), from rating curve extended above 1,300 cfs on basis of slope-area determination of peak flow; minimum, 9.6 cfs Sept. 19, 1954 (gage height, 1.22 ft).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Slight diurnal fluctuation caused by small mill above station.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.3 | 12 | 2.0 | 50 | 1.5 | 18 | 2.5 | 129 |
| 1.4 | 15 | 2.3 | 87 | 1.6 | 23 | 3.0 | 258 |
| 1.6 | 22 | 2.6 | 143 | 1.8 | 36 | 3.5 | 424 |
| 1.8 | 34 | 3.1 | 286 | 2.0 | 54 | 3.8 | 540 |
| | | | | 2.2 | 79 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17 | a17 | 24 | 72 | 33 | 99 | 92 | 70 | 84 | 41 | 111 | 42 |
| 2 | 16 | *18 | 22 | 61 | 80 | 90 | 128 | 67 | 79 | 39 | 104 | 38 |
| 3 | 14 | 16 | *21 | 50 | *54 | *80 | 150 | 65 | 74 | 55 | *90 | *36 |
| 4 | 14 | 20 | 20 | *45 | 47 | 84 | 121 | *62 | 70 | 45 | 82 | 35 |
| 5 | 13 | 31 | 38 | 41 | 47 | 78 | 123 | 59 | 69 | 40 | 72 | 34 |
| 6 | *13 | 18 | 49 | 39 | 494 | 90 | 324 | 55 | 67 | *40 | 87 | 33 |
| 7 | 14 | 17 | 30 | 36 | 303 | 84 | 341 | 54 | 84 | 42 | 78 | 31 |
| 8 | 14 | 17 | 26 | 35 | 167 | 76 | *240 | 52 | 119 | 48 | 127 | 29 |
| 9 | 14 | 17 | 50 | 35 | 118 | 72 | 187 | 51 | *116 | 44 | 104 | 28 |
| 10 | 13 | 16 | 36 | 50 | 97 | 80 | 157 | 49 | 92 | 51 | 80 | 27 |
| 11 | 13 | 16 | 30 | 55 | 96 | 75 | 179 | 50 | 99 | 98 | 69 | 27 |
| 12 | 13 | 16 | 29 | 45 | 76 | 72 | 155 | 59 | 86 | 104 | 62 | 27 |
| 13 | 13 | 16 | 36 | 42 | 70 | 74 | 231 | 111 | 78 | 86 | 56 | 27 |
| 14 | 14 | 16 | 33 | 38 | 64 | 70 | 261 | 72 | 72 | 75 | 54 | 25 |
| 15 | 14 | 17 | 29 | 42 | 61 | 66 | 203 | 62 | 67 | 78 | 56 | 25 |
| 16 | 14 | 32 | 27 | 39 | 60 | 71 | 169 | 79 | 64 | 79 | 54 | 24 |
| 17 | 14 | 22 | 29 | 37 | 67 | 69 | 148 | 100 | 60 | 67 | 50 | 23 |
| 18 | 14 | 20 | 56 | 44 | 59 | 79 | 133 | 84 | 58 | 58 | 46 | 23 |
| 19 | 14 | 40 | 40 | 72 | 54 | 105 | 123 | 74 | 66 | 53 | 56 | 22 |
| 20 | 13 | 41 | 34 | 52 | 52 | 102 | 114 | 65 | 66 | 91 | 55 | 22 |
| 21 | 13 | 24 | 30 | 49 | 50 | 104 | 116 | 138 | 58 | 74 | 47 | 21 |
| 22 | 13 | 21 | 29 | 56 | 98 | 526 | 107 | 488 | 54 | 61 | 56 | 21 |
| 23 | 14 | 22 | 28 | 52 | 252 | 252 | 102 | 460 | 64 | 111 | 63 | 21 |
| 24 | 14 | 22 | 26 | 46 | 164 | 182 | 102 | 277 | 56 | 110 | 51 | 21 |
| 25 | 14 | 20 | 25 | 42 | 131 | 152 | 96 | 211 | 65 | 99 | 43 | 29 |
| 26 | 14 | 19 | 24 | 40 | 112 | 177 | 91 | 162 | 59 | 104 | 40 | 24 |
| 27 | 14 | 21 | 25 | 40 | 105 | 137 | 85 | 133 | 50 | 86 | 38 | 23 |
| 28 | 14 | 49 | 29 | 38 | 99 | 125 | 79 | 116 | 48 | 80 | 38 | 32 |
| 29 | a22 | 51 | 261 | 35 | - | 112 | 75 | 108 | 45 | 82 | 47 | 27 |
| 30 | a18 | 28 | 170 | b31 | ------ | 105 | 71 | 102 | 43 | 76 | 42 | 80 |
| 31 | a17 | --- | 90 | b30 | ------ | 99 | ------ | 92 | ------ | 67 | 70 | ------ |
| Total | 445 | 700 | 1,396 | 1,389 | 3,110 | 3,587 | 4,503 | 3,627 | 2,112 | 2,184 | 2,028 | 877 |
| Mean | 14.4 | 23.3 | 45.0 | 44.8 | 111 | 116 | 150 | 117 | 70.4 | 70.5 | 65.4 | 29.2 |
| Cfsm | 0.383 | 0.620 | 1.20 | 1.19 | 2.95 | 3.09 | 3.99 | 3.11 | 1.87 | 1.87 | 1.74 | 0.777 |
| In. | 0.44 | 0.69 | 1.38 | 1.37 | 3.08 | 3.55 | 4.45 | 3.59 | 2.09 | 2.16 | 2.01 | 0.87 |

Calendar year 1954: Max 1,120 Min 12 Mean 74.6 Cfsm 1.98 In. 26.93
Water year 1954-55: Max 526 Min 13 Mean 71.1 Cfsm 1.89 In. 25.68

Peak discharge (base, 700 cfs).--Feb. 6 (3:30 p.m.) 825 cfs (4.50 ft); Mar. 22 (2:30 a.m.) 1,140 cfs (5.20 ft); May 22 (2 p.m.) 1,450 cfs (5.82 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Nantahala River near Rainbow Springs.

b Stage-discharge relation affected by ice.

## Hiwassee River below Chatuge Dam, near Hayesville, N. C.

Location.--Lat 35°01'45", long 83°47'45", on left bank 0.4 mile upstream from Hyatt Mill Creek, 1.6 miles downstream from Chatuge Dam, 1.7 miles southeast of Hayesville, Clay County, and at mile 119.3.
Drainage area.--190 sq mi.
Records available.--May 1907 to December 1909 (fragmentary), August 1922 to September 1923 (gage heights only), April 1942 to September 1955. Published as "near Hayesville" 1907-9, 1922-23.
Gage.--Water-stage recorder. Datum of gage is 1,789.90 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. May 20, 1907, to Dec. 31, 1909, staff gage and Aug. 16, 1922, to Sept. 30, 1923, chain gage, at site 1.1 miles upstream at different datum.
Average discharge.--13 years (1942-55), 439 cfs (adjusted for storage).
Extremes.--Maximum discharge during year, 1,550 cfs Dec. 10 (gage height, 5.25 ft); minimum, 1.7 cfs July 27 (gage height, 0.41 ft).
1907-9, 1922-23, 1942-55: Maximum gage height recorded, 11.9 ft Mar. 13, 1909, site and datum then in use (discharge not determined); minimum discharge, 0.6 cfs Oct. 21, 1952; minimum gage height, 0.30 ft Aug. 3, 1942, Oct. 21, 1952.
Remarks.--Records excellent except those below 10 cfs, which are good. Flow completely regulated by Chatuge Lake since 1942 (see p. 244).
Revisions (water years).--WSP 973: 1942.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 6 | | | | Mar. 7 to Sept. 30 | |
|---|---|---|---|---|---|
| 0.4 | 1.6 | 1.7 | 150 | 3.5 | 712 |
| .6 | 4.1 | 2.0 | 229 | 4.0 | 922 |
| .8 | 8.4 | 2.5 | 372 | 4.8 | 1,290 |
| 1.0 | 16 | 3.0 | 530 | Note.--Same as | |
| 1.1 | 24 | 3.5 | 712 | preceding table | |
| 1.2 | 38 | 4.0 | 930 | below 3.5 ft. | |
| 1.4 | 78 | 5.3 | 1,580 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 74 | 48 | 160 | 1,460 | 1,160 | 3.3 | 12 | 1,140 | 1,190 | 1,090 | 12 | 12 |
| 2 | 85 | *49 | 150 | 1,480 | 1,180 | 3.1 | 12 | 1,150 | 886 | 1,100 | 17 | 45 |
| 3 | 80 | 46 | *140 | 1,460 | *1,180 | *2.9 | 12 | 1,160 | 1,200 | 1,120 | *321 | *11 |
| 4 | 76 | 55 | 132 | 1,460 | 1,180 | 2.7 | 691 | *1,160 | 1,210 | 1,130 | 12 | 11 |
| 5 | 72 | 85 | 155 | *1,460 | 1,190 | 2.7 | 1,080 | 1,010 | 1,220 | 1,120 | 11 | 11 |
| 6 | *70 | 85 | 221 | 1,470 | 624 | 3.2 | 1,100 | 1,160 | 1,230 | *1,140 | 11 | 12 |
| 7 | 70 | 83 | 251 | 1,480 | 19 | 404 | 947 | 1,060 | 1,090 | 1,150 | 11 | 94 |
| 8 | 53 | 80 | 285 | 1,460 | 14 | 1,100 | *1,080 | 1,160 | *1,090 | 1,170 | 39 | 11 |
| 9 | 42 | 78 | 511 | 1,450 | 8.3 | 1,090 | 1,080 | 1,180 | 1,260 | 1,090 | 199 | 11 |
| 10 | 42 | 80 | 1,100 | 1,450 | 7.9 | 1,100 | 992 | 1,070 | 1,130 | 12 | 11 | 11 |
| 11 | 44 | 74 | 1,520 | 1,380 | 196 | 1,100 | 1,090 | 1,060 | 1,120 | 11 | 82 | 11 |
| 12 | 46 | 74 | 1,520 | 1,220 | 14 | 1,100 | 1,090 | 1,070 | 1,120 | 599 | 11 | 11 |
| 13 | 48 | 74 | 1,500 | 1,220 | 12 | 1,100 | 1,090 | 1,060 | 1,050 | 675 | 11 | 11 |
| 14 | 51 | 72 | 1,530 | 1,240 | 11 | 1,120 | 1,100 | 1,070 | 1,130 | 125 | 11 | 11 |
| 15 | 44 | 76 | 1,270 | 1,180 | 10 | 1,120 | 1,100 | 1,070 | 86 | 9.6 | 12 | 11 |
| 16 | 33 | 111 | 1,510 | 1,240 | 153 | 1,120 | 1,090 | 1,090 | 77 | 10 | 11 | 11 |
| 17 | 29 | 130 | 1,490 | 1,150 | 161 | 1,110 | 1,100 | 1,070 | 12 | 9.3 | 11 | 11 |
| 18 | 29 | 135 | 1,510 | 1,120 | 4.8 | 1,130 | 1,100 | 1,080 | 1,060 | 11 | 11 | 11 |
| 19 | 29 | 145 | 1,510 | 1,150 | 2.8 | 759 | 1,100 | 985 | 1,140 | 11 | 11 | 11 |
| 20 | 27 | 179 | 1,510 | 1,120 | 2.7 | 15 | 1,100 | 1,100 | 1,140 | 4.5 | 11 | 11 |
| 21 | 26 | 166 | 1,510 | 1,130 | 2.4 | 15 | 1,110 | 1,090 | 1,090 | 2.7 | 11 | 57 |
| 22 | 26 | 150 | 1,500 | 1,130 | 5.0 | 20 | 1,100 | 1,110 | 1,160 | 2.4 | 59 | 175 |
| 23 | 27 | 148 | 1,510 | 1,130 | 8.7 | 25 | 1,120 | 1,070 | 1,160 | 2.0 | 205 | 11 |
| 24 | 30 | 142 | 1,500 | 1,140 | 4.6 | 14 | 1,110 | 1,080 | 1,170 | 3.4 | 11 | 12 |
| 25 | 31 | 130 | 1,490 | 1,110 | 3.9 | 14 | 1,120 | 1,070 | 1,190 | 2.6 | 39 | 12 |
| 26 | 34 | 120 | 1,490 | 1,140 | 3.5 | 15 | 1,120 | 1,060 | 1,190 | 2.1 | 11 | 745 |
| 27 | 38 | 120 | 1,490 | *1,150 | 3.5 | 14 | 1,120 | 1,070 | 1,200 | 1.9 | 11 | 721 |
| 28 | 44 | 142 | 1,490 | 1,160 | 3.3 | 13 | 1,140 | 1,040 | 1,220 | 9.6 | 11 | 731 |
| 29 | 57 | 192 | 1,470 | 1,180 | - | 12 | 1,130 | 1,070 | 1,220 | 11 | 11 | 720 |
| 30 | 53 | 179 | 1,480 | 1,170 | -------- | 12 | 1,140 | 1,070 | 977 | 10 | 11 | 739 |
| 31 | 48 | -------- | 1,470 | 1,170 | -------- | 12 | -------- | 851 | -------- | 10 | 12 | -------- |
| Total | 1,458 | 3,248 | 34,375 | 39,240 | 7,165.4 | 13,551.9 | 29,176 | 33,486 | 31,018 | 11,645.1 | 1,218 | 4,262 |
| Mean | 47.0 | 108 | 1,109 | 1,266 | 256 | 437 | 973 | 1,080 | 1,034 | 376 | 39.3 | 142 |
| (†) | -100 | +700 | -25,000 | -29,100 | +8,400 | +2,900 | -8,000 | -10,000 | -18,300 | -200 | +6,400 | -200 |
| Adjusted for change in contents in Chatuge Lake | | | | | | | | | | | | |
| Mean | 43.8 | 132 | 302 | 327 | 556 | 531 | 706 | 758 | 424 | 369 | 246 | 135 |
| Cfsm | 0.231 | 0.695 | 1.59 | 1.72 | 2.93 | 2.79 | 3.72 | 3.99 | 2.23 | 1.94 | 1.29 | 0.711 |
| In. | 0.27 | 0.77 | 1.84 | 1.98 | 3.05 | 3.22 | 4.14 | 4.60 | 2.49 | 2.24 | 1.49 | 0.80 |

| | Observed | | | Adjusted | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 1,530 | Min 2.0 | Mean 312 | Mean 395 | Cfsm 2.08 | In. 28.21 | |
| Water year 1954-55: | Max 1,530 | Min 1.9 | Mean 575 | Mean 376 | Cfsm 1.98 | In. 26.89 | |

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Chatuge Lake, furnished by Tennessee Valley Authority.

## Hiwassee River above Murphy, N. C.

Location.--Lat 35°04'50", long 84°00'10", on right bank on U. S. Highway 64, 600 ft upstream from Will Scott Creek, 1.9 miles (corrected) east of Murphy, Cherokee County, and at mile 99.2.
Drainage area.--406 sq mi.
Records available.--June 1896 to August 1897 (gage heights only), October 1897 to June 1917, and October 1918 to September 1955 in reports of Geological Survey. Published as "at Murphy" prior to April 1940. October 1897 to December 1923 (including revised records for January 1901 to December 1902 and January 1904 to June 1917) in North Carolina Department of Conservation and Development Bulletin 34. October 1897 to September 1924 (including revised records for January 1901 to December 1902 and January 1904 to June 1917) in Tennessee Division of Geology Bulletin 34.
Gage.--Water-stage recorder. Datum of gage is 1,538.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Jan. 30, 1921, wire-weight or chain gages at bridge 2.8 miles downstream at datum 30.40 ft lower. Jan. 30, 1921, to Nov. 8, 1926, chain gage 2.8 miles downstream at datum 28.40 ft lower. Nov. 9, 1926, to Apr. 30, 1940, water-stage recorder 2.8 miles downstream at datum 28.20 ft lower.
Average discharge.--57 years (1898-1955), 914 cfs (adjusted for storage).
Extremes.--Maximum discharge during year, 8,230 cfs Feb. 6 (gage height, 9.14 ft); minimum, 62 cfs Oct. 31 (gage height, 1.90 ft); minimum daily, 69 cfs Oct. 31.
1896-1917, 1918-55: Maximum discharge observed, 23,100 cfs Mar. 19, 1899 (gage height, 18.4 ft, site and datum then in use), from rating curve extended above 5,000 cfs; minimum daily, 10 cfs Dec. 3, 1924, result of freezeup and filling of Andrews Reservoir; minimum daily during normal regulation, 62 cfs Oct. 19, 1952.
Remarks.--Records excellent. Considerable diurnal fluctuation caused by Mission powerplant at Andrews Dam (normal regulated storage, about 75 cfs-days). Flow partly regulated by Chatuge Lake beginning Feb. 12, 1942 (see p. 244).
Revisions (water years).--WSP 583: 1899(M). WSP 973: Drainage area. WSP 1003: 1943. See also Records available.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.9 | 62 | 3.5 | 895 |
| 2.1 | 111 | 4.0 | 1,280 |
| 2.3 | 180 | 5.0 | 2,260 |
| 2.6 | 320 | 6.0 | 3,440 |
| 3.0 | 551 | 7.0 | 4,780 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 158 | *75 | 294 | 1,760 | 1,320 | 557 | 460 | 1,440 | 1,450 | 1,150 | 461 | 164 |
| 2 | 182 | 110 | *269 | 1,720 | *1,480 | *545 | 484 | 1,430 | 1,180 | 1,240 | *618 | *155 |
| 3 | 168 | 137 | 250 | 1,680 | 1,410 | 502 | 745 | *1,430 | 1,470 | 1,270 | 782 | 178 |
| 4 | 280 | 140 | 236 | 1,640 | 1,400 | 472 | 934 | 1,430 | 1,460 | 1,290 | 665 | 146 |
| 5 | *158 | 209 | 307 | *1,630 | 1,380 | 449 | 1,610 | 1,280 | 1,470 | *1,270 | 460 | 145 |
| 6 | 147 | 184 | 592 | 1,620 | 4,410 | 490 | 2,730 | 1,410 | 1,480 | 1,280 | 397 | 148 |
| 7 | 143 | 168 | 397 | 1,610 | 2,250 | 530 | 2,930 | 1,340 | *1,390 | 1,310 | 593 | 224 |
| 8 | 143 | 172 | 479 | 1,600 | 992 | 1,500 | 2,200 | 1,360 | 1,480 | 1,370 | 590 | 130 |
| 9 | 127 | 166 | 694 | 1,600 | 687 | 1,490 | 1,960 | 1,400 | 1,680 | 1,450 | 634 | 132 |
| 10 | 121 | 158 | 1,050 | 1,660 | 533 | 1,540 | 1,710 | 1,310 | 1,490 | 592 | 369 | 129 |
| 11 | 117 | 168 | 1,610 | 1,740 | 583 | 1,500 | 2,020 | 1,290 | 1,550 | 382 | 388 | 128 |
| 12 | 117 | 153 | 1,600 | 1,430 | 635 | 1,490 | 1,900 | 1,350 | 1,500 | 704 | 286 | 120 |
| 13 | 121 | 157 | 1,620 | 1,410 | 420 | 1,500 | 1,940 | 1,510 | 1,370 | 934 | 259 | 128 |
| 14 | 121 | 159 | 1,640 | 1,410 | 388 | 1,480 | 2,070 | 1,400 | 1,400 | 612 | 382 | 113 |
| 15 | 124 | 154 | 1,390 | 1,360 | 352 | 1,470 | 1,920 | 1,330 | 706 | 288 | 410 | 113 |
| 16 | 108 | 216 | 1,600 | 1,400 | 452 | 1,490 | 1,800 | 1,470 | 338 | 315 | 390 | 114 |
| 17 | 106 | 260 | 1,620 | 1,340 | 564 | 1,470 | 1,700 | 1,470 | 306 | 290 | 292 | 104 |
| 18 | 106 | 218 | 1,880 | 1,270 | 360 | 1,500 | 1,650 | 1,410 | 916 | 246 | 255 | 109 |
| 19 | 106 | 250 | 1,730 | 1,420 | 316 | 1,560 | 1,610 | 1,280 | 1,370 | 236 | 340 | 104 |
| 20 | 103 | 363 | 1,680 | 1,340 | 298 | 554 | 1,580 | 1,350 | 1,370 | 238 | 143 | 108 |
| 21 | 103 | 284 | 1,650 | 1,340 | 276 | 508 | 1,580 | 1,420 | 1,400 | 297 | 226 | 101 |
| 22 | 103 | 260 | 1,630 | 1,370 | 452 | 2,940 | *1,560 | 2,560 | 1,290 | 311 | 216 | 292 |
| 23 | 100 | 246 | 1,620 | 1,360 | 2,630 | 1,360 | 1,520 | 3,040 | 1,390 | 323 | 398 | 100 |
| 24 | 103 | 246 | 1,610 | 1,340 | 1,290 | 918 | 1,570 | 2,040 | 1,380 | 509 | 242 | 96 |
| 25 | 106 | 227 | 1,600 | 1,270 | 895 | 757 | 1,530 | 1,860 | 1,440 | 415 | 211 | 157 |
| 26 | 108 | 214 | 1,580 | 1,300 | 708 | 895 | 1,510 | 1,630 | 1,400 | 322 | 177 | 492 |
| 27 | 111 | 214 | 1,580 | 1,310 | 596 | 715 | 1,480 | 1,530 | 1,390 | 342 | 172 | 784 |
| 28 | 114 | 303 | 1,580 | 1,300 | 564 | 648 | 1,480 | 1,470 | 1,390 | 270 | 160 | 858 |
| 29 | 150 | 524 | 2,510 | 1,310 | - | 577 | 1,460 | 1,460 | 1,390 | 560 | 160 | 822 |
| 30 | 133 | 336 | 2,250 | 1,300 | -------- | 533 | 1,450 | 1,430 | 1,260 | 526 | 160 | 858 |
| 31 | 69 | -------- | 1,870 | 1,290 | -------- | 484 | -------- | 1,190 | -------- | 412 | 172 | -------- |
| Total | 3,956 | 6,471 | 40,418 | 45,130 | 27,641 | 32,424 | 49,093 | 47,320 | 39,106 | 20,754 | 11,008 | 7,252 |
| Mean | 128 | 216 | 1,304 | 1,456 | 987 | 1,046 | 1,636 | 1,526 | 1,304 | 669 | 355 | 242 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 9,250 | Min 69 | Mean 715 | Mean 798 | Cfsm 1.97 | In. 26.67 |
| Water year 1954-55: | Max 4,410 | Min 69 | Mean 906 | Mean 707 | Cfsm 1.74 | In. 23.64 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Chatuge Lake.

## Valley River at Tomotla, N. C.

Location.--Lat 35°08'20", long 83°58'50", on right bank at highway bridge at Tomotla, Cherokee County, 0.2 mile upstream from Rodgers Creek, 4.7 miles northeast of Murphy, and 6.6 miles upstream from mouth.

Drainage area.--104 sq mi.

Records available.--June 1904 to December 1909, January 1914 to April 1917, October 1918 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,556.46 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 11, 1934, various staff or chain gages at same site and datum.

Average discharge.--43 years (1904-9, 1914-16, 1919-55), 251 cfs.

Extremes.--Maximum discharge during year, 3,860 cfs Feb. 6 (gage height, 11.44 ft); minimum, 20 cfs Oct. 15, 16 (gage height, 1.55 ft).
1904-9, 1914-17, 1918-55: Maximum discharge observed, 9,030 cfs Nov. 19, 1906 (gage height, 17.3 ft), from rating curve extended above 5,300 cfs; minimum, 12 cfs several times in August and September 1925 (gage height, 0.52 ft).

Remarks.--Records excellent except those for period of no gage-height record, which are fair.

Revisions (water years).--WSP 503: 1905-9, 1915-17. WSP 783: 1907(M). WSP 823: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.5 | 16 | 3.0 | 388 |
| 1.6 | 25 | 3.5 | 598 |
| 1.7 | 36 | 4.0 | 793 |
| 1.9 | 64 | 5.0 | 1,140 |
| 2.1 | 102 | 7.7 | 2,170 |
| 2.5 | 208 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 29 | *29 | 54 | 202 | 86 | 368 | 274 | 181 | 132 | 73 | 210 | *75 |
| 2 | 34 | 46 | *49 | 164 | *178 | *340 | 285 | *172 | 125 | 69 | *167 | 69 |
| 3 | 27 | 36 | 45 | 138 | 145 | 299 | 314 | 164 | 120 | 69 | 153 | 66 |
| 4 | 25 | 36 | 42 | 123 | 130 | 292 | 267 | 158 | 114 | 68 | 306 | 68 |
| 5 | *23 | 61 | 118 | *114 | 125 | 267 | 271 | 153 | 111 | *78 | 227 | 71 |
| 6 | 22 | 40 | 181 | 114 | 2,160 | 310 | 1,190 | 145 | 109 | 94 | 193 | 68 |
| 7 | 23 | 35 | 86 | 104 | 1,310 | 299 | *1,420 | 142 | *123 | 124 | 288 | 66 |
| 8 | 25 | 33 | 68 | 98 | 577 | *267 | 800 | 138 | 184 | 99 | 267 | 61 |
| 9 | 25 | 33 | 237 | 100 | 384 | 240 | 581 | 132 | 205 | 224 | 208 | 60 |
| 10 | 24 | 32 | 148 | 118 | 296 | 250 | 471 | 128 | 153 | 145 | 181 | 66 |
| 11 | 23 | 30 | 96 | 167 | 344 | 240 | 527 | 128 | 205 | 200 | 150 | 60 |
| 12 | 22 | 30 | 82 | 140 | 271 | 227 | 463 | 128 | 164 | 270 | 132 | 58 |
| 13 | 22 | 30 | 94 | 125 | 234 | 218 | 454 | 184 | 145 | 200 | 118 | 66 |
| 14 | 22 | 30 | 82 | 111 | 211 | 208 | 488 | 178 | 132 | 160 | 147 | 58 |
| 15 | 21 | 30 | 73 | 125 | 196 | 196 | 425 | 140 | 120 | 170 | 150 | 55 |
| 16 | 21 | 51 | 68 | 116 | 190 | 208 | 372 | 164 | 116 | 190 | 142 | 54 |
| 17 | 24 | 46 | 78 | 107 | 237 | 211 | 333 | 172 | 107 | 150 | 120 | 50 |
| 18 | 25 | 37 | 292 | 104 | 199 | 274 | 303 | 170 | 102 | 130 | 109 | 49 |
| 19 | 24 | 41 | 167 | 167 | 184 | 352 | 281 | 167 | 102 | 105 | 100 | 48 |
| 20 | 24 | 69 | 120 | 130 | 172 | 364 | 264 | 142 | 104 | 130 | 104 | 44 |
| 21 | 24 | 46 | 104 | 125 | 167 | 329 | 260 | 150 | 109 | 170 | 102 | 42 |
| 22 | 25 | 40 | 92 | 140 | 444 | 1,560 | 250 | 326 | 98 | 200 | 116 | 41 |
| 23 | 24 | 39 | 86 | 132 | 1,770 | 824 | 234 | 518 | 96 | 230 | 111 | 41 |
| 24 | 24 | 40 | 84 | 120 | 810 | 564 | 296 | 337 | 94 | 300 | 92 | 45 |
| 25 | 25 | 37 | 77 | 111 | 580 | 471 | 267 | 278 | 90 | 200 | 86 | 100 |
| 26 | 25 | 35 | 73 | 104 | 433 | 652 | 243 | 230 | 94 | 220 | 82 | 56 |
| 27 | 25 | 44 | 71 | 102 | 380 | 505 | 227 | 199 | 84 | 180 | 77 | 52 |
| 28 | 26 | 82 | 75 | 98 | 340 | 429 | 211 | 172 | 84 | 150 | 75 | 78 |
| 29 | 36 | 133 | 706 | 92 | - | 372 | 202 | 164 | 78 | 200 | 71 | 68 |
| 30 | 32 | 62 | 540 | 88 | ------- | 329 | 190 | 153 | 77 | 180 | 73 | 84 |
| 31 | 29 | ---- | 274 | 84 | ------- | 296 | ------- | 142 | ------- | 170 | 98 | ------- |
| Total | 780 | 1,333 | 4,362 | 3,763 | 12,533 | 11,761 | 12,163 | 5,755 | 3,577 | 4,948 | 4,455 | 1,819 |
| Mean | 25.2 | 44.4 | 141 | 121 | 448 | 379 | 405 | 186 | 119 | 160 | 144 | 60.6 |
| Cfsm | 0.242 | 0.427 | 1.36 | 1.16 | 4.31 | 3.64 | 3.89 | 1.79 | 1.14 | 1.54 | 1.38 | 0.583 |
| In. | 0.28 | 0.48 | 1.56 | 1.35 | 4.48 | 4.21 | 4.35 | 2.06 | 1.28 | 1.77 | 1.59 | 0.65 |

Calendar year 1954: Max 4,660 Min 21 Mean 206 Cfsm 1.98 In. 26.84
Water year 1954-55: Max 2,160 Min 21 Mean 184 Cfsm 1.77 In. 24.06

Peak discharge (base, 1,700 cfs).--Feb. 6 (8:30 p.m.) 3,860 cfs (11.44 ft); Feb. 23 (6:30 a.m.) 2,520 cfs (8.58 ft); Mar. 22 (7:30 a.m.) 2,190 cfs (7.74 ft); Apr. 6 (4 p.m.) 2,090 cfs (7.50 ft).
* Discharge measurement made on this day.
Note.--No gage-height record July 11 to Aug. 1; discharge estimated on basis of recorded range in stage, weather records, and records for Shooting Creek near Hayesville.

## Nottely River near Blairsville, Ga.

Location.--Lat 34°50'28", long 83°56'10", on left bank 250 ft upstream from county road bridge, 0.1 mile downstream from Arkaqua Creek, 0.2 mile upstream from Akins Creek, and 2.7 miles southeast of Blairsville, Union County.

Drainage area.--74.8 sq mi.

Records available.--January 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,812.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 173 cfs.

Extremes.--Maximum discharge during year, 4,430 cfs May 22 (gage height, 11.59 ft); minimum, 28 cfs Oct. 6 (gage height, 1.80 ft).
1942-55: Maximum discharge, 8,500 cfs Mar. 11, 1952 (gage height, 16.78 ft, from floodmark), from rating curve extended above 3,000 cfs on basis of contracted-opening determination of peak flow; minimum, 27 cfs Sept. 8, Oct. 7, 1947 (gage height, 1.77 ft).

Remarks.--Records excellent. Slight diurnal fluctuation at low flow caused by mills above station. Occasional regulation by Lake Trahlyta in Vogel State Park.

Revisions (water years).--WSP 1053: 1942(M), 1943. WSP 1236: 1946(M), 1950(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Nov. 19, July 11 to Sept. 30 | | | | Nov. 20 to July 10 | | | |
|---|---|---|---|---|---|---|---|
| 1.8 | 28 | 3.5 | 420 | 1.8 | 31 | 2.6 | 144 |
| 2.0 | 46 | 4.0 | 665 | 1.9 | 40 | 3.0 | 242 |
| 2.3 | 85 | 5.0 | 1,250 | 2.0 | 50 | 3.5 | 420 |
| 2.6 | 140 | 6.0 | 1,690 | 2.3 | 89 | | |
| 3.0 | 240 | 7.0 | 2,070 | | | | |

Note.--Same as preceding table above 3.5 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | *34 | 54 | 188 | 73 | 165 | 165 | 144 | 201 | 88 | 104 | *64 |
| 2 | 34 | 36 | *50 | 163 | *115 | *165 | 188 | 140 | 186 | 84 | *117 | 81 |
| 3 | 32 | 35 | 48 | 138 | 96 | 150 | 225 | *136 | 176 | 114 | 107 | 58 |
| 4 | 31 | 40 | 47 | *122 | 88 | 152 | 188 | 134 | 167 | 114 | 144 | 58 |
| 5 | 30 | 64 | 145 | 111 | 89 | 150 | 186 | 130 | 163 | *122 | 159 | 57 |
| 6 | *30 | 39 | 155 | 104 | 1,500 | 163 | 276 | 126 | 159 | 143 | 152 | 57 |
| 7 | 30 | 37 | 86 | 96 | 738 | 154 | *298 | 122 | 167 | 108 | 173 | 54 |
| 8 | 30 | 36 | 69 | 89 | 364 | 144 | 239 | 120 | 167 | 104 | 170 | 52 |
| 9 | 30 | 36 | 96 | 89 | 260 | 138 | 209 | 119 | *163 | 101 | 196 | 50 |
| 10 | 30 | 36 | 83 | 108 | 211 | 146 | 196 | 115 | 154 | 258 | 140 | 49 |
| 11 | 30 | 35 | 70 | 117 | 204 | 140 | 644 | 117 | 172 | 284 | 122 | 49 |
| 12 | 30 | 35 | 66 | 103 | 165 | 154 | 424 | 115 | 148 | 169 | 113 | 49 |
| 13 | 30 | 35 | 89 | 98 | 150 | 163 | 507 | 229 | 140 | 181 | 100 | 49 |
| 14 | 31 | 34 | 80 | 89 | 144 | 148 | 501 | 152 | 136 | 164 | 107 | 47 |
| 15 | 31 | 36 | 71 | 94 | 138 | 146 | 388 | 134 | 128 | 138 | 111 | 46 |
| 16 | 30 | 93 | 65 | 89 | 134 | 159 | 322 | 296 | 126 | 128 | 116 | 44 |
| 17 | 32 | 55 | 74 | 83 | 157 | 152 | 282 | 404 | 120 | 113 | 100 | 42 |
| 18 | 32 | 50 | 165 | 86 | 134 | 146 | 254 | 312 | 119 | 104 | 94 | 42 |
| 19 | 31 | 87 | 110 | 136 | 126 | 159 | 234 | 239 | 128 | 97 | 90 | 43 |
| 20 | 31 | 92 | 89 | 101 | 122 | 150 | 217 | 204 | 122 | 111 | 92 | 40 |
| 21 | 31 | 57 | 77 | 99 | 117 | 207 | 220 | 286 | 113 | 118 | 87 | 40 |
| 22 | 31 | 50 | 71 | 108 | 156 | 1,440 | 204 | 1,530 | 110 | 122 | 96 | 39 |
| 23 | 31 | 52 | 68 | 104 | 461 | 478 | 193 | 1,910 | 108 | 167 | 90 | 39 |
| 24 | 31 | 50 | 65 | 96 | 285 | 333 | 209 | 753 | 111 | 176 | 82 | 39 |
| 25 | 30 | 46 | 61 | 89 | 228 | 282 | 188 | 515 | 104 | 130 | 73 | 54 |
| 26 | 31 | 44 | 59 | 83 | 198 | 288 | 176 | 388 | 106 | 157 | 69 | 44 |
| 27 | 31 | 52 | 59 | 82 | 179 | 234 | 167 | 326 | 99 | 116 | 67 | 43 |
| 28 | 31 | 80 | 76 | 78 | 165 | 211 | 161 | 279 | 96 | 111 | 66 | 52 |
| 29 | 39 | 96 | 975 | 76 | - | 196 | 152 | 257 | 92 | 109 | 65 | 52 |
| 30 | 35 | 62 | 480 | 73 | ------- | 181 | 148 | 236 | 91 | 107 | 62 | 57 |
| 31 | 34 | ------- | 225 | 70 | ------- | 172 | ------- | 217 | ------- | 99 | 67 | ------- |
| Total | 976 | 1,534 | 3,928 | 3,162 | 6,797 | 7,066 | 7,761 | 10,185 | 4,074 | 4,137 | 3,331 | 1,470 |
| Mean | 31.5 | 51.1 | 127 | 102 | 243 | 228 | 259 | 329 | 136 | 133 | 107 | 49.0 |
| Cfsm | 0.421 | 0.683 | 1.70 | 1.36 | 3.25 | 3.05 | 3.46 | 4.40 | 1.82 | 1.78 | 1.43 | 0.655 |
| In. | 0.49 | 0.76 | 1.95 | 1.57 | 3.38 | 3.51 | 3.86 | 5.06 | 2.03 | 2.06 | 1.66 | 0.73 |

Calendar year 1954: Max 2,540 Min 30 Mean 163 Cfsm 2.18 In. 29.55
Water year 1954-55: Max 1,910 Min 30 Mean 149 Cfsm 1.99 In. 27.06

Peak discharge (base, 1,500 cfs).--Dec. 29 (10 a.m.) 1,550 cfs (5.65 ft); Feb. 6 (4 p.m.) 2,570 cfs (6.25 ft); Mar. 22 (3:30 a.m.) 3,090 cfs (9.32 ft); May 22 (7 p.m.) 4,430 cfs (11.59 ft).
* Discharge measurement made on this day.

## Nottely River at Nottely Dam, near Ivylog, Ga.

Location.--Lat 34°57'55", long 84°05'25", on right bank 1,600 ft downstream from Rhodes Branch, 0.6 mile downstream from Nottely Dam, 0.6 mile upstream from Dooley Creek, and 1.8 miles west of Ivylog, Union County.

Drainage area.--215 sq mi.

Records available.--July 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,599.21 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 404 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 3,130 cfs May 23 (gage height, 6.54 ft); minimum, 0.2 cfs Oct. 10, 11 (gage height, 0.16 ft).
1942-55: Maximum discharge, that of May 23, 1955; minimum, 0.1 cfs Sept. 6-9, 19, 1954 (gage height, 0.15 ft).

Remarks.--Records excellent except those below 20 cfs, which are fair. Flow completely regulated by Nottely Lake (see p. 244).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to May 15 | | May 16 to Aug. 22 | | | | Aug. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.1 | 0.05 | 1.2 | 79 | 3.0 | 640 | 0.3 | 1.3 | 1.0 | 42 |
| .2 | .3 | 1.5 | 133 | 4.0 | 1,170 | .4 | 3.1 | 1.2 | 71 |
| .3 | 1.0 | 1.8 | 198 | 5.0 | 1,830 | .5 | 6.0 | 1.5 | 126 |
| .4 | 2.2 | 2.1 | 282 | 6.3 | 2,910 | .6 | 10 | 1.8 | 195 |
| .5 | 4.2 | 2.5 | 427 | | | .8 | 22 | 2.1 | 282 |
| .6 | 7.2 | | | | | | | | |
| .8 | 18 | | | | | Note.--Same as preceding table above 2.1 ft. | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.6 | 1.3 | 0.8 | 1.0 | 1.6 | 1.6 | 1.6 | 1.5 | 435 | 196 | 248 | *1.9 |
| 2 | .5 | 1.2 | .7 | 1.0 | *1.8 | 1.6 | 2.1 | 1.5 | 396 | 186 | *248 | 1.9 |
| 3 | .5 | 1.1 | .7 | 1.0 | 1.5 | 1.6 | 1.8 | 1.6 | 373 | 182 | 245 | 1.9 |
| 4 | .5 | 1.4 | .6 | 1.0 | 1.5 | 1.8 | 1.8 | 1.6 | 351 | 200 | 254 | 1.8 |
| 5 | .4 | 1.5 | 1.6 | 1.1 | 1.6 | 1.8 | 1.9 | 1.6 | 334 | *229 | 282 | 1.9 |
| 6 | .5 | 1.2 | 1.0 | 1.0 | 8.1 | 2.1 | 2.4 | 1.8 | 326 | 237 | 276 | 2.0 |
| 7 | .5 | 1.1 | .8 | 1.0 | 2.4 | 1.9 | *2.1 | 1.9 | 337 | 245 | 306 | 2.2 |
| 8 | .5 | 1.2 | .7 | 1.1 | 1.6 | 1.6 | 1.8 | 1.9 | 340 | 240 | 400 | 2.0 |
| 9 | .5 | 1.2 | .9 | 1.2 | 1.5 | 1.6 | 1.6 | 1.9 | *351 | 248 | 384 | 2.0 |
| 10 | .2 | 1.2 | .9 | 1.5 | 1.4 | 1.8 | 1.6 | 1.8 | 355 | 263 | 337 | 2.2 |
| 11 | .7 | 1.1 | 1.0 | 1.6 | 1.5 | 1.6 | 2.1 | 1.8 | 381 | 475 | 299 | 2.2 |
| 12 | .6 | 1.1 | 1.0 | 1.5 | 1.5 | 1.9 | 1.8 | 2.1 | 348 | 512 | 263 | 2.2 |
| 13 | .6 | 1.1 | 1.0 | 1.5 | 1.4 | 1.9 | 2.4 | 2.3 | 316 | 455 | 237 | 2.2 |
| 14 | .5 | 1.0 | 1.0 | 1.4 | 1.5 | 1.8 | 1.9 | 1.8 | 296 | 431 | 223 | 2.4 |
| 15 | .6 | 1.4 | .8 | 1.5 | 1.2 | 1.5 | 1.8 | 13 | 285 | 396 | 273 | 2.2 |
| 16 | .8 | 1.6 | 1.0 | 1.5 | 1.5 | 1.9 | 1.8 | *114 | 273 | 355 | 337 | 2.4 |
| 17 | .7 | 1.0 | 1.0 | 1.5 | 1.5 | 1.6 | 1.8 | 326 | 263 | 330 | 302 | 2.6 |
| 18 | .8 | 1.0 | 1.6 | 1.6 | 1.5 | 1.9 | 1.6 | 423 | 251 | 289 | 260 | 3.3 |
| 19 | .9 | 1.2 | 1.1 | 1.8 | 1.4 | 2.4 | 1.6 | 411 | 257 | 265 | 251 | 3.6 |
| 20 | .8 | 1.1 | 1.1 | 1.6 | 1.5 | 1.9 | 1.5 | 388 | 285 | 251 | 218 | 3.6 |
| 21 | .8 | .9 | *1.1 | 1.6 | 1.5 | 2.9 | 1.8 | 400 | 273 | 276 | 206 | 3.3 |
| 22 | .8 | 1.0 | 1.0 | 1.8 | 2.5 | 4.1 | 1.8 | 1,010 | 254 | 285 | *92 | 3.3 |
| 23 | .9 | 1.0 | 1.0 | 1.8 | 2.8 | 2.1 | 1.8 | 2,880 | 245 | 309 | 3.6 | *278 |
| 24 | .7 | 1.0 | 1.0 | 1.6 | 1.8 | 1.9 | 1.9 | 2,140 | 245 | 404 | 3.1 | 685 |
| 25 | 1.0 | 1.0 | 1.0 | 1.6 | 1.8 | 1.8 | 1.6 | 1,500 | 251 | 384 | 3.1 | 600 |
| 26 | .9 | 1.0 | 1.0 | 1.5 | 1.6 | 2.1 | 1.6 | 1,110 | 251 | 348 | 2.8 | 663 |
| 27 | .9 | 1.0 | 1.0 | 1.5 | 1.6 | 1.8 | 1.5 | 873 | 237 | 313 | 2.6 | 770 |
| 28 | 1.0 | 1.4 | 1.1 | 1.5 | 1.5 | 1.8 | 1.5 | 705 | 223 | 282 | 2.4 | 631 |
| 29 | 1.2 | 1.1 | 2.2 | 1.5 | - | 1.8 | 1.5 | 604 | 213 | 306 | 2.6 | 451 |
| 30 | 1.0 | .7 | 1.4 | 1.5 | ------- | 1.6 | 1.5 | 525 | 206 | 299 | 2.2 | 340 |
| 31 | .9 | ------- | 1.2 | 1.5 | ------- | 1.6 | ------- | 471 | ------- | 263 | 1.9 | --------- |
| Total | 21.8 | 34.1 | 32.3 | 43.8 | 52.6 | 59.3 | 53.5 | 13,918.1 | 8,951 | 9,452 | 5,945.3 | 4,471.1 |
| Mean | 0.70 | 1.14 | 1.04 | 1.41 | 1.88 | 1.91 | 1.78 | 449 | 298 | 305 | 192 | 149 |
| (†) | +2,900 | +4,400 | +8,500 | +7,200 | +15,200 | +16,100 | +15,300 | +5,000 | -500 | +100 | +1,400 | -1,100 |

Adjusted for change in contents in Nottely Lake

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 94.3 | 148 | 275 | 234 | 545 | 521 | 512 | 610 | 282 | 308 | 237 | 112 |
| Cfsm | 0.439 | 0.688 | 1.28 | 1.09 | 2.53 | 2.42 | 2.38 | 2.84 | 1.31 | 1.43 | 1.10 | 0.521 |
| In. | 0.51 | 0.77 | 1.48 | 1.25 | 2.64 | 2.80 | 2.66 | 3.27 | 1.46 | 1.65 | 1.27 | 0.58 |

| | Observed | | | Adjusted | | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 2,250 | Min 0.2 | Mean 358 | Mean 399 | Cfsm 1.86 | In. 25.23 | | |
| Water year 1954-55: | Max 2,880 | Min 0.2 | Mean 118 | Mean 322 | Cfsm 1.50 | In. 20.34 | | |

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Nottely Lake, furnished by Tennessee Valley Authority.

## Turtletown Creek at Turtletown, Tenn.

Location.--Lat 36°07'57", long 84°20'37", on left bank half a mile north of Turtletown, Polk County, three-quarters of a mile downstream from Nigger Creek, and 6 miles upstream from mouth.

Drainage area.--26.9 sq mi.

Records available.--May 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,490.61 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 48.6 cfs.

Extremes.--Maximum discharge during year, 659 cfs Feb. 6 (gage height, 5.27 ft); minimum, 10 cfs Sept. 23 (gage height, 0.86 ft).
1934-55: Maximum discharge, 1,120 cfs June 13, 1952 (gage height, 6.50 ft); minimum, 9.3 cfs Oct. 10, 1941; minimum gage height, 0.86 ft Oct. 10, 1941, Sept. 23, 1955.

Remarks.--Records good. Some diurnal fluctuation caused by small mills above station.

Revisions (water years).--WSP 823: Drainage area. WSP 1143: 1936(M), 1946-47(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Feb. 6)

| | | | |
|---|---|---|---|
| 0.88 | 11 | 2.0 | 149 |
| 1.0 | 18 | 2.5 | 262 |
| 1.2 | 34 | 3.2 | 353 |
| 1.5 | 70 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25 | 16 | 23 | 40 | 24 | 58 | 49 | 46 | 37 | 24 | *23 | 19 |
| 2 | 22 | 21 | 22 | 34 | 44 | 53 | 55 | 45 | 36 | 24 | 23 | 17 |
| 3 | 18 | 17 | 19 | 30 | 30 | 49 | 61 | 44 | 35 | 23 | 22 | 17 |
| 4 | 16 | 20 | 19 | 30 | 27 | 49 | 50 | 44 | 33 | 22 | 23 | 17 |
| 5 | 16 | *33 | 81 | 29 | 28 | 46 | 60 | 43 | 33 | 35 | 22 | 17 |
| 6 | *15 | 20 | 85 | *26 | 352 | 65 | 131 | *41 | *33 | 42 | 21 | 16 |
| 7 | 15 | 18 | 37 | 24 | 219 | 61 | 181 | 40 | 51 | *32 | 20 | 16 |
| 8 | 15 | 17 | 30 | 24 | *83 | 51 | 93 | 40 | 49 | 32 | 21 | 15 |
| 9 | 15 | 16 | 41 | 27 | 64 | *49 | 76 | 38 | 50 | 32 | 34 | *16 |
| 10 | 14 | 16 | 32 | 34 | 52 | 52 | 69 | 38 | 44 | 41 | 25 | 16 |
| 11 | 14 | 16 | 27 | 44 | 53 | 51 | 79 | 38 | 49 | 35 | 22 | 14 |
| 12 | 14 | 16 | 26 | 33 | 45 | 50 | *69 | 38 | 41 | 46 | 20 | 14 |
| 13 | 14 | 15 | 30 | 30 | 41 | 49 | 102 | 57 | 37 | 35 | 19 | 14 |
| 14 | 14 | 15 | 28 | 27 | 40 | 47 | 96 | 45 | 35 | 40 | 19 | 14 |
| 15 | 15 | 15 | 25 | 31 | 38 | 45 | 78 | 42 | 33 | 42 | 19 | 13 |
| 16 | 14 | 24 | 23 | 30 | 41 | 52 | 71 | 78 | 31 | 38 | 21 | 13 |
| 17 | 15 | 22 | 32 | 27 | 56 | 50 | 66 | 58 | 30 | 35 | 20 | 12 |
| 18 | 15 | 19 | 75 | 26 | 44 | 53 | 62 | 49 | 30 | 34 | 18 | 11 |
| 19 | 14 | 22 | 41 | 43 | 41 | 76 | 60 | 44 | 31 | 31 | 17 | 11 |
| 20 | 14 | 31 | 33 | 33 | 38 | 66 | 57 | 43 | 30 | 29 | 17 | 11 |
| 21 | 14 | 26 | 30 | 30 | 37 | 65 | 58 | 47 | 29 | 29 | 17 | 11 |
| 22 | 14 | 21 | 28 | 34 | 79 | 154 | 57 | 55 | 30 | 29 | 19 | 11 |
| 23 | 14 | 19 | 26 | 33 | 266 | 86 | 56 | 82 | 34 | 51 | 17 | 11 |
| 24 | 14 | 19 | 24 | 30 | 98 | 69 | 67 | 55 | 33 | 48 | 16 | 15 |
| 25 | 14 | 18 | 23 | 29 | 75 | 65 | 61 | 55 | 30 | 35 | 16 | 40 |
| 26 | 14 | 17 | 22 | 27 | 62 | 74 | 56 | 46 | 30 | 30 | 15 | 19 |
| 27 | *14 | 19 | 22 | 27 | 57 | 60 | 53 | 44 | 27 | 27 | 15 | 18 |
| 28 | 14 | 38 | 22 | 25 | 56 | 57 | 51 | 40 | 26 | 24 | 15 | 48 |
| 29 | 19 | *49 | 126 | 24 | - | 55 | 50 | 66 | 25 | 24 | 14 | 27 |
| 30 | 17 | 26 | 70 | 24 | ------ | 51 | 47 | 47 | 24 | 23 | 15 | 33 |
| 31 | 16 | --- | 45 | 23 | -------- | 50 | -------- | 42 | -------- | 22 | 30 | ----- |
| Total | 478 | 641 | 1,167 | 928 | 2,090 | 1,858 | 2,121 | 1,490 | 1,036 | 1,014 | 615 | 526 |
| Mean | 15.4 | 21.4 | 37.6 | 29.9 | 74.6 | 59.9 | 70.7 | 48.1 | 34.5 | 32.7 | 19.8 | 17.5 |
| Cfsm | 0.572 | 0.796 | 1.40 | 1.11 | 2.77 | 2.23 | 2.63 | 1.79 | 1.28 | 1.22 | 0.736 | 0.651 |
| In. | 0.66 | 0.89 | 1.61 | 1.28 | 2.89 | 2.57 | 2.93 | 2.06 | 1.43 | 1.40 | 0.85 | 0.73 |

Calendar year 1954: Max 534 Min 13 Mean 44.7 Cfsm 1.66 In. 22.55
Water year 1954-55: Max 352 Min 11 Mean 38.3 Cfsm 1.42 In. 19.30

Peak discharge (base, 300 cfs).--Feb. 6 (6 p.m.) 659 cfs (5.27 ft); Feb. 23 (6 a.m.) 384 cfs (3.51 ft).
* Discharge measurement made on this day.

## Hiwassee River near McFarland, Tenn.

Location.--Lat 35°10'48", long 84°26'36", on left bank a quarter of a mile downstream from Smith Creek, 0.4 mile downstream from Apalachia powerhouse of Tennessee Valley Authority, 2.8 miles west of McFarland, Polk County, and at mile 53.2.

Drainage area.--1,136 sq mi.

Records available.--October 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 830.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years, 2,346 cfs (unadjusted).

Extremes.--Maximum discharge during year, 6,620 cfs Feb. 23 (gage height, 5.58 ft); minimum daily, 30 cfs (estimated) Sept. 18-20.
1942-55: Maximum discharge, 22,500 cfs June 13, 1952 (gage height, 10.42 ft), from rating curve extended above 15,000 cfs; minimum daily, that of Sept. 18-20, 1955.

Remarks.--Records good except those below 500 cfs and those for periods of no gage-height record, which are fair. Flow regulated by Chatuge, Nottely, Hiwassee, and Apalachia Lakes (see pp. 244, 245).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.0 | 30 | 2.4 | 620 |
| 1.2 | 58 | 3.0 | 1,170 |
| 1.4 | 103 | 4.0 | 2,800 |
| 1.8 | 240 | 5.1 | 5,340 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,960 | 2,040 | 805 | 1,410 | 1,460 | 2,160 | 438 | 2,880 | 1,380 | 2,500 | 2,800 | 78 |
| 2 | 462 | 2,050 | 830 | 820 | 2,550 | 1,860 | 327 | 2,840 | 1,370 | 2,500 | 2,800 | 55 |
| 3 | 86 | 2,760 | 2,430 | 1,400 | 2,600 | 1,680 | 1,050 | 2,450 | 1,410 | 2,500 | 2,800 | e50 |
| 4 | 1,840 | 2,450 | 1,260 | 1,960 | 2,840 | 1,630 | 1,410 | 2,440 | 2,440 | 2,500 | 2,800 | e55 |
| 5 | *1,950 | 1,420 | 1,260 | 2,510 | 2,340 | 1,410 | 725 | 835 | 2,460 | 2,500 | 2,760 | e50 |
| 6 | 1,840 | 1,300 | 2,600 | 1,800 | 2,890 | 1,580 | 1,630 | 2,020 | 1,670 | *2,530 | 2,800 | e45 |
| 7 | 1,900 | 140 | 202 | 1,930 | 4,060 | 2,630 | 2,360 | 2,520 | 1,380 | 2,500 | 2,760 | e45 |
| 8 | 1,740 | 758 | 254 | 2,550 | 3,020 | 2,210 | 1,510 | 2,780 | 1,410 | 2,530 | 2,760 | e45 |
| 9 | 645 | 935 | 1,600 | 2,560 | 2,270 | 1,900 | 1,320 | 2,700 | 1,490 | 2,500 | 2,760 | e45 |
| 10 | *58 | 808 | *1,060 | 2,560 | 2,200 | 2,080 | 962 | 1,870 | 1,410 | 2,500 | 2,910 | e50 |
| 11 | 1,760 | 852 | 1,180 | 2,600 | 2,310 | 2,220 | 1,460 | 2,820 | 1,440 | 2,500 | 3,120 | e45 |
| 12 | 1,900 | 815 | 664 | 2,700 | 2,600 | 1,500 | 1,160 | 2,800 | 1,430 | 2,500 | 3,120 | *e40 |
| 13 | 1,870 | 62 | 1,640 | 3,070 | 1,840 | 1,110 | 1,050 | 2,900 | 1,380 | 2,500 | 3,120 | e40 |
| 14 | 1,900 | 62 | 2,070 | 2,620 | 2,250 | 2,110 | 1,280 | 2,100 | 1,380 | 2,500 | 3,140 | e40 |
| 15 | 1,950 | 742 | 2,050 | 2,620 | 2,220 | 2,120 | 694 | 1,410 | 1,370 | 2,500 | 3,160 | e35 |
| 16 | 1,540 | 778 | 1,800 | 2,620 | 2,240 | 2,080 | 472 | 1,460 | 1,370 | 2,500 | 3,080 | e35 |
| 17 | 195 | 858 | 2,100 | 2,370 | 2,210 | 2,230 | 412 | *1,470 | 1,780 | 2,500 | 3,120 | e35 |
| 18 | 1,840 | 665 | 2,500 | 1,760 | 2,360 | 2,500 | 402 | 1,400 | 2,550 | 2,500 | 3,140 | e30 |
| 19 | 1,970 | 632 | 1,700 | 1,470 | 1,860 | 1,730 | 384 | 1,380 | 2,530 | 2,500 | 3,140 | e30 |
| 20 | 1,910 | 118 | 2,100 | 1,460 | 2,600 | 785 | 777 | 1,280 | 2,550 | 2,500 | 3,140 | e30 |
| 21 | 1,700 | 118 | 1,800 | 1,430 | 2,140 | 662 | 844 | 1,380 | 2,530 | 2,500 | 3,120 | 49 |
| 22 | 1,880 | 960 | 1,800 | 1,440 | 2,780 | 2,290 | 1,200 | 1,320 | 2,530 | 2,500 | 1,820 | e40 |
| 23 | 1,990 | 852 | 1,910 | 1,460 | 5,120 | 1,410 | 1,170 | 1,210 | 2,560 | 2,500 | 745 | e35 |
| 24 | 1,740 | 1,080 | 1,900 | 1,430 | 2,890 | 1,120 | 312 | 1,340 | 2,530 | 2,500 | 1,000 | e40 |
| 25 | 2,180 | 74 | 712 | 1,430 | 2,710 | 702 | 1,110 | 1,460 | 2,530 | 2,700 | 1,020 | 112 |
| 26 | 2,080 | 785 | 465 | 1,410 | 2,510 | 1,840 | 1,340 | 968 | 2,550 | 2,800 | 974 | 90 |
| 27 | 1,940 | 1,680 | 1,710 | 1,400 | 1,600 | 1,500 | 1,450 | 1,380 | 2,550 | 2,800 | 865 | 265 |
| 28 | 2,130 | 602 | 1,030 | 1,350 | 2,120 | 1,300 | 1,900 | 1,380 | 2,530 | 2,800 | 792 | 1,400 |
| 29 | 2,010 | 825 | 1,360 | 1,400 | - | 1,220 | 2,900 | 1,470 | 2,530 | 2,800 | 222 | 1,410 |
| 30 | 1,840 | 127 | 1,220 | 1,380 | ------- | 792 | 2,900 | 1,430 | 2,530 | 2,800 | e45 | 1,340 |
| 31 | 1,640 | ------- | 1,220 | *1,410 | ------- | 562 | ------- | 1,400 | ------- | 2,800 | 159 | ------- |
| Total | 50,446 | 27,348 | 45,232 | 58,330 | 70,590 | 50,923 | 34,949 | 57,093 | 59,570 | 79,560 | 69,992 | 5,659 |
| Mean | 1,627 | 912 | 1,459 | 1,882 | 2,521 | 1,643 | 1,165 | 1,842 | 1,986 | 2,566 | 2,258 | 189 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 10,500 | Min 58 | Mean 2,020 | Mean 2,144 | Cfsm 1.89 | In. 25.61 |
| Water year 1954-55: | Max 5,120 | Min 30 | Mean 1,670 | Mean 1,804 | Cfsm 1.59 | In. 21.56 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Chatuge, Nottely, Hiwassee, and Apalachia Lakes.
e No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, and records for Turtletown Creek at Turtletown.
Note.--No gage-height record Dec. 16-21, 24, Jan. 10-11, July 1-5, 7, July 9 to Aug. 2; discharge estimated on basis of powerplant records.

## Toccoa River near Dial, Ga.

Location.--Lat 34°47'24", long 84°14'24", on right bank 1.4 miles upstream from Shallowford Bridge, 1.8 miles upstream from Stanley Creek, and 2.5 miles northwest of Dial, Fannin County.

Drainage area.--177 sq mi.

Records available.--January 1913 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,782.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1927, water-stage recorder and Oct. 1, 1927, to Nov. 16, 1928, staff gage, at same site and datum.

Average discharge.--42 years, 484 cfs.

Extremes.--Maximum discharge during year, 5,170 cfs Mar. 22 (gage height, 7.30 ft); minimum, 109 cfs Oct. 25-29 (gage height, 0.68 ft).

1913-55: Maximum discharge, 10,800 cfs Mar. 11, 1952 (gage height, 11.20 ft), from rating curve extended above 5,000 cfs on basis of slope-area determination of peak flow; minimum, 60 cfs Sept. 6, 1925 (gage height, 0.40 ft).

Flood in 1898 reached a stage about 2.8 ft higher than that of Mar. 11, 1952.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply paper indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 563 | 1923 | Dec. 17, 1922 | 3,160 | 5.5 |
| 583 | 1924 | Mar. 5, 1924 | 3,660 | 6.00 |
| 643 | 1927 | Dec. 28, 1926 | 3,060 | 5.40 |
| 683 | 1929 | Sept.25, 1929 | 4,810 | 7.03 |
| 698 | 1930 | (a) | 3,260 | b5.61 |
| 713 | 1931 | Apr. 4, 1931 | 2,400 | 4.57 |
| 728,893 | 1932 | Dec. 14, 1931 | 6,060 | 8.05 |
| 743 | 1933 | Dec. 28, 1932 | 6,190 | 8.10 |
| 758 | 1934 | Mar. 3, 1934 | 4,810 | 7.05 |
| 1003 | 1944 | (c) | 3,040 | d5.43 |

a Occurred Nov. 5, 1929, Mar. 7, 1930.
b Occurred only on Mar. 7, 1930
c Occurred Feb. 27, Mar. 19, 1944.
d Occurred only on Feb. 27, 1944.

The minimum discharge for the water year 1924 has been revised to 152 cfs Sept. 6-8, and 13, 1924 (gage height, 0.85 ft), superseding figure published in WSP 583.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair.

Revisions.--WSP 823: Drainage area. Revised figures of discharge, in cubic feet per second, for the water year 1924 and 1933, superseding those published in WSP 583 and 743 are given herewith:

| Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|
| 1924 | | 1924-Con. | | 1932-Con. | |
| Sept. 1 | 165 | Sept.14 | 170 | Dec. 13 | 1,570 |
| 2 | 170 | 15 | 185 | 14 | 1,680 |
| 3 | 178 | 16 | 188 | 17 | 2,110 |
| 4 | 172 | 17 | 182 | 18 | 1,430 |
| 5 | 168 | 18 | 185 | 25 | 2,470 |
| 6 | 160 | 19 | 185 | 26 | 2,160 |
| 7 | 158 | 20 | 545 | 27 | 3,140 |
| 8 | 158 | 22 | 468 | 28 | 5,410 |
| 10 | 190 | | | 29 | 3,140 |
| 11 | 172 | 1932 | | 30 | 2,340 |
| 12 | 165 | Dec. 11 | 1,460 | 31 | 2,650 |
| 13 | 160 | 12 | 2,470 | | |

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| September 1924 | 545 | 158 | 240 | 1.36 | 1.51 |
| Water year 1923-24 | 2,710 | 158 | 495 | 2.80 | 38.12 |
| Calendar year 1924 | 2,710 | 142 | 469 | 2.65 | 36.06 |
| December 1932 | 5,410 | 421 | 1,480 | 8.36 | 9.61 |
| Calendar year 1932 | 5,410 | 192 | 676 | 3.82 | 51.98 |
| Water year 1932-33 | 5,410 | 159 | 685 | 3.87 | 52.53 |

## Toccoa River near Dial, Ga.--Continued

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 6 | | | | Feb. 7 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.68 | 109 | 2.0 | 530 | 0.88 | 156 | 3.0 | 1,070 |
| 1.0 | 178 | 3.0 | 1,070 | 1.5 | 335 | 5.0 | 2,650 |
| 1.5 | 328 | 5.1 | 2,740 | 2.0 | 560 | 5.6 | 3,240 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 174 | 120 | 154 | 402 | 199 | 515 | 520 | 497 | 664 | 319 | 319 | 210 |
| 2 | 143 | 118 | 145 | 379 | 294 | 605 | 610 | 488 | 636 | 315 | *353 | 203 |
| 3 | 128 | 118 | 136 | 321 | 244 | 515 | 654 | 479 | 623 | 307 | 362 | 198 |
| 4 | 124 | 118 | 132 | 294 | 221 | 492 | 556 | 466 | 600 | 323 | 384 | 196 |
| 5 | 120 | a200 | 256 | 278 | 218 | 515 | 546 | *456 | 578 | 384 | 407 | 196 |
| 6 | *118 | a170 | 452 | 262 | 2,690 | 515 | 650 | 443 | 564 | 497 | 353 | 191 |
| 7 | 122 | a145 | 232 | *241 | 1,750 | 492 | 690 | 434 | *556 | 394 | 319 | *186 |
| 8 | 118 | a135 | 186 | 221 | *815 | a470 | 600 | 425 | 556 | 362 | 331 | 179 |
| 9 | 118 | *124 | 298 | 221 | 628 | a450 | 564 | 416 | 551 | 394 | 470 | 177 |
| 10 | 116 | a122 | 256 | 275 | 538 | *461 | 542 | 407 | 528 | 394 | 344 | 179 |
| 11 | 116 | a122 | 199 | 357 | 560 | 443 | 1,470 | 407 | 628 | 750 | 443 | 177 |
| 12 | 116 | a120 | 181 | 281 | 470 | 430 | *1,060 | 407 | 587 | *623 | 327 | 177 |
| 13 | 116 | a120 | 221 | 256 | 425 | 425 | 962 | 664 | 538 | 556 | 292 | 177 |
| 14 | 116 | a120 | 215 | 235 | 425 | 412 | 1,000 | 502 | 497 | 582 | 311 | 177 |
| 15 | 116 | a120 | *188 | 244 | 402 | 398 | 856 | 438 | 470 | 506 | 420 | 172 |
| 16 | 116 | 208 | 171 | 241 | 394 | 412 | 780 | 834 | 456 | 461 | 344 | 167 |
| 17 | 114 | 199 | 183 | 224 | 470 | 407 | 731 | 731 | 438 | 389 | 288 | 165 |
| 18 | 112 | *150 | 498 | 226 | 425 | 394 | 695 | 605 | 425 | 348 | 267 | 160 |
| 19 | 112 | 168 | 297 | 314 | 402 | 425 | 668 | 533 | 434 | 331 | 264 | 162 |
| 20 | 112 | 229 | 238 | 253 | 358 | 412 | 646 | 497 | 456 | 335 | 270 | 158 |
| 21 | 112 | 166 | 204 | 244 | 335 | 451 | 659 | 596 | 412 | 380 | 264 | 158 |
| 22 | 112 | 143 | 194 | 262 | 475 | 2,990 | 641 | 2,240 | 394 | 529 | 257 | 158 |
| 23 | 112 | 139 | 183 | 253 | 1,400 | 1,120 | 614 | 3,170 | 389 | 502 | 264 | 156 |
| 24 | 112 | 136 | 176 | 235 | 765 | 820 | 632 | 1,450 | 389 | 533 | 243 | 158 |
| 25 | 110 | 128 | 166 | 224 | 628 | 731 | 596 | 1,150 | 380 | 420 | 230 | 208 |
| 26 | *109 | 126 | 159 | 215 | 592 | 750 | 574 | 956 | 380 | 380 | 227 | 179 |
| 27 | 109 | 152 | 156 | 215 | 546 | 636 | 556 | 873 | 366 | 331 | 222 | 172 |
| 28 | 109 | 238 | 164 | 210 | 515 | 605 | 538 | 810 | 353 | 387 | 215 | 201 |
| 29 | 116 | 304 | 1,120 | 204 | - | 578 | 524 | 770 | 340 | 453 | 213 | 201 |
| 30 | 124 | *183 | 776 | 196 | ----- | 551 | 506 | 736 | 327 | 362 | 213 | 203 |
| 31 | 122 | -- - | 430 | 188 | --- - | 533 | -- --- | 700 | -- --- | 331 | 213 | - |
| Total | 3,674 | 4,641 | 8,366 | 7,971 | 17,184 | 18,953 | 20,640 | 23,580 | 14,515 | 13,178 | 9,429 | 5,401 |
| Mean | 119 | 155 | 270 | 257 | 614 | 611 | 688 | 761 | 484 | 425 | 304 | 180 |
| Cfsm | 0.672 | 0.876 | 1.53 | 1.45 | 3.47 | 3.45 | 3.89 | 4.30 | 2.73 | 2.40 | 1.72 | 1.02 |
| In. | 0.77 | 0.98 | 1.76 | 1.67 | 3.61 | 3.98 | 4.34 | 4.95 | 3.05 | 2.77 | 1.98 | 1.13 |

Calendar year 1954: Max 5,310 Min 109 Mean 402 Cfsm 2.27 In. 30.84
Water year 1954-55: Max 3,170 Min 109 Mean 404 Cfsm 2.28 In. 30.99

Peak discharge (base, 2,400 cfs).--Feb. 6 (4 p.m.) 4,310 cfs (6.58 ft); Mar. 22 (4 a.m.) 5,170 cfs (7.30 ft); May 22 (3 p.m.) 4,320 cfs (6.59 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

Note.--Discharge Dec. 31 to Jan. 7, Feb. 8 to Mar. 7 computed from graph based on bihourly radio-gage readings furnished by Tennessee Valley Authority.

Toccoa River near Blue Ridge, Ga.

Location.--Lat 34°53'14", long 84°17'07", on left bank three-eighths of a mile downstream from Blue Ridge Dam of Tennessee Valley Authority, 2¼ miles west of Morganton, and 2½ miles northeast of Blue Ridge, Fannin County.

Drainage area.--233 sq mi.

Records available.--November 1898 to March 1903 and April 1913 to September 1955 in reports of Geological Survey. November 1898 to March 1903 and April 1913 to September 1924 (prior to April 1913, revised) in Tennessee Division of Geology Bulletin 34, published as Toccoa River near Morganton.

Gage.--Water-stage recorder. Datum of gage is 1,538.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Apr. 20, 1931, staff gage and water-stage recorders at sites within 1 mile of present site at different datum.

Average discharge.--42 years (1913-55), 583 cfs (unadjusted).

Extremes.--Maximum discharge during year, 1,870 cfs July 20 (gage height, 5.10 ft); minimum, 4.9 cfs Mar. 16, 18 (gage height, 0.82 ft); minimum daily, 5.3 cfs Mar. 16, 17.
1913-55: Maximum discharge, 13,900 cfs July 9, 1916 (gage height, 13.0 ft, site and datum then in use), from rating curve extended above 5,000 cfs; no flow Dec. 6, 1930, to Mar. 3, 1931 (caused by closing of Blue Ridge Dam).
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| (a) | 1901 | Aug. 22, 1901 | 15,500 | 14.0 |
| (a) | 1902 | Dec. 14, 1901 | 12,300 | 12.0 |
| 663 | 1928 | Mar. 30, 1928 | 4,380 | 8.81 |
| 683 | 1929 | May 7, 1929 | 5,060 | 9.71 |

a Tennessee Division of Geology Bulletin 34.

Remarks.--Records good. Flow regulated by Blue Ridge Lake beginning Dec. 6, 1930 (see p. 245).

Revisions (water years).--WSP 823: Drainage area. WSP 783: 1934 (adjusted monthly mean and runoff). See also Records available. Monthly and yearly figures of discharge, in cubic feet per second, and runoff in inches for December 1930 to September 1933 published in WSP 713, 728, and 743, may be considerably in error owing to regulation by Blue Ridge Lake and should not be used (adjusted yearly figures are given herewith). Revised figures of discharge, in cubic feet per second, for water years 1901, 1903, 1927, 1929, and 1931, superseding those published in Tennessee Division of Geology Bulletin 34, WSP 643, 683, and 713, are given herewith:

| Date | Discharge | Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|---|---|
| 1901 | | 1926-Con. | | 1929-Con. | | 1929-Con. | |
| Aug. 22 | 15,500 | Dec. 3 | 322 | Mar. 8 | 1,230 | Apr. 15 | 1,160 |
| 23 | 6,050 | 4 | 312 | 9 | 1,180 | 16 | 1,280 |
| Dec. 14 | 12,300 | 5 | 308 | 10 | 1,060 | 17 | 1,030 |
| 29 | 9,090 | 6 | 308 | 11 | 980 | 18 | 930 |
| | | 7 | 296 | 12 | 955 | 19 | 885 |
| 1926 | | 8 | 458 | 13 | 1,800 | 20 | 840 |
| Nov. 1 | 235 | 9 | 615 | 14 | 3,780 | 21 | 862 |
| 2 | 210 | 10 | 474 | 15 | 3,180 | 22 | 908 |
| 3 | 210 | 11 | 410 | 16 | 2,320 | 23 | 818 |
| 4 | 202 | 12 | 430 | 17 | 1,860 | 24 | 795 |
| 5 | 198 | 13 | 1,160 | 18 | 1,620 | 25 | 1,500 |
| 6 | 192 | 14 | 1,080 | 19 | 1,440 | 26 | 1,180 |
| 7 | 190 | 15 | 818 | 20 | 1,360 | 27 | 980 |
| 8 | 188 | 16 | 660 | 21 | 1,340 | 28 | 1,860 |
| 9 | 750 | 17 | 550 | 22 | 1,560 | 29 | 1,740 |
| 10 | 482 | 18 | 514 | 23 | 3,030 | 30 | 1,280 |
| 11 | 319 | 19 | 474 | 24 | 2,460 | May 1 | 2,120 |
| 12 | 275 | 20 | 454 | 25 | 1,860 | 2 | 2,060 |
| 13 | 254 | 21 | 462 | 26 | 1,620 | 3 | 1,740 |
| 14 | 242 | 22 | 682 | 27 | 1,560 | 4 | 1,440 |
| 15 | 1,060 | 23 | 530 | 28 | 1,440 | 5 | 1,390 |
| 16 | 1,280 | 24 | 772 | 29 | 1,360 | 6 | 2,390 |
| 17 | 638 | 25 | 1,740 | 30 | 1,390 | 7 | 3,630 |
| 18 | 728 | 26 | 2,260 | 31 | 1,280 | 8 | 2,190 |
| 19 | 592 | 27 | 1,230 | Apr. 1 | 1,280 | 9 | 2,120 |
| 20 | 502 | 28 | 2,740 | 2 | 1,130 | 10 | 1,740 |
| 21 | 446 | 29 | 2,190 | 3 | 1,080 | 11 | 1,560 |
| 22 | 410 | 30 | 1,390 | 4 | 1,080 | 12 | 1,440 |
| 23 | 392 | 31 | 1,160 | 5 | 1,030 | 13 | 1,340 |
| 24 | 375 | | | 6 | 1,000 | 14 | 1,260 |
| 25 | 350 | 1929 | | 7 | 980 | 15 | 1,280 |
| 26 | 410 | Mar. 1 | 1,500 | 8 | 930 | 16 | 1,280 |
| 27 | 442 | 2 | 1,230 | 9 | 908 | 17 | 1,200 |
| 28 | 347 | 3 | 1,030 | 10 | 908 | 18 | 1,260 |
| 29 | 333 | 4 | 1,360 | 11 | 1,000 | 19 | 2,120 |
| 30 | 358 | 5 | 2,670 | 12 | 930 | 20 | 2,190 |
| Dec. 1 | 333 | 6 | 1,800 | 13 | 862 | 21 | 1,800 |
| 2 | 326 | 7 | 1,440 | 14 | 862 | 22 | 1,440 |

Toccoa River near Blue Ridge, Ga.--Continued

Revised figures of discharge, in cubic feet per second, 1901, 1903, 1927, 1929, 1931--Continued

| Date | Discharge | Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|---|---|
| 1929-Con. | | 1929-Con. | | 1930-Con. | | 1930-Con. | |
| May 23 | 1,310 | June 16 | 705 | Oct. 8 | 238 | Nov. 2 | 182 |
| 24 | 1,200 | 17 | 750 | 10 | 257 | 3 | 185 |
| 25 | 1,160 | 18 | 772 | 11 | 235 | 4 | 185 |
| 26 | 1,100 | 19 | 728 | 12 | 214 | 5 | 182 |
| 27 | 1,310 | 20 | 728 | 13 | 208 | 6 | 179 |
| 28 | 1,180 | 21 | 682 | 14 | 202 | 7 | 171 |
| 29 | 1,100 | 22 | 660 | 15 | 196 | 8 | 168 |
| 30 | 1,100 | 23 | 705 | 16 | 190 | 9 | 168 |
| 31 | 1,100 | 24 | 818 | 17 | 185 | 10 | 179 |
| June 1 | 1,060 | 25 | 1,080 | 18 | 185 | 11 | 185 |
| 2 | 1,000 | 26 | 1,500 | 19 | 182 | 12 | 267 |
| 3 | 1,100 | 27 | 2,460 | 20 | 179 | 14 | 238 |
| 4 | 980 | 28 | 1,860 | 21 | 179 | 23 | 307 |
| 5 | 930 | 29 | 1,560 | 22 | 179 | 24 | 270 |
| 6 | 885 | 30 | 1,200 | 23 | 185 | 25 | 264 |
| 7 | 840 | | | 24 | 199 | 26 | 260 |
| 8 | 885 | 1930 | | 25 | 196 | 27 | 253 |
| 9 | 862 | Oct. 1 | 208 | 26 | 185 | 28 | 238 |
| 10 | 818 | 2 | 199 | 27 | 182 | 29 | 238 |
| 11 | 795 | 3 | 196 | 28 | 187 | 30 | 277 |
| 12 | 772 | 4 | 190 | 29 | 257 | Dec. 2 | 270 |
| 13 | 750 | 5 | 190 | 30 | 229 | 3 | 250 |
| 14 | 750 | 6 | 182 | 31 | 190 | 4 | 241 |
| 15 | 750 | 7 | 176 | Nov. 1 | 185 | 5 | 267 |

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| August 1901 | 15,500 | 700 | 2,290 | 9.91 | 11.42 |
| Water year 1900-1901 | 15,500 | 425 | 1,150 | 4.98 | 67.67 |
| December 1901 | 12,300 | 575 | 2,300 | 9.96 | 11.48 |
| Calendar year 1901 | 15,500 | 470 | 1,240 | 5.37 | 72.68 |
| Water year 1901-2 | 12,300 | 310 | 1,080 | 4.68 | 63.48 |
| November 1926 | 1,280 | 188 | 420 | 1.80 | 2.01 |
| December | 2,740 | 296 | 821 | 3.52 | 4.06 |
| Calendar year 1926 | 2,740 | 170 | 426 | 1.83 | 24.84 |
| Water year 1926-27 | 2,740 | 176 | 528 | 2.27 | 30.75 |
| March 1929 | 3,780 | 955 | 1,700 | 7.30 | 8.41 |
| April | 1,860 | 795 | 1,070 | 4.59 | 5.11 |
| May | 3,630 | 1,100 | 1,600 | 6.87 | 7.91 |
| June | 2,460 | 660 | 980 | 4.21 | 4.69 |
| Water year 1928-29 | 3,780 | 337 | 843 | 3.62 | 49.08 |
| Calendar year 1929 | 3,780 | 337 | 946 | 4.06 | 55.12 |

| Month | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Mean | Per square mile | Runoff in inches |
| October 1930 | 428 | 176 | 207 | - | 0.888 | 1.02 |
| November | 1,120 | 168 | 329 | - | 1.41 | 1.58 |
| December | 342 | 0 | 44.2 | - | - | - |
| Calendar year 1930 | 2,880 | 168 | 433 | 460 | 1.97 | 26.78 |
| Water year 1930-31 | 1,120 | 0 | 284 | 408 | 1.75 | 23.80 |
| Calendar year 1931 | 1,110 | 0 | 351 | 443 | 1.90 | 25.81 |
| Water year 1931-32 | 1,900 | 2.9 | 601 | 664 | 2.85 | 38.78 |
| Calendar year 1932 | 3,190 | 6.0 | 697 | 792 | 3.40 | 46.27 |
| Water year 1932-33 | 3,340 | 41 | 838 | 790 | 3.39 | 46.00 |

† Adjusted for change in contents in Blue Ridge Lake.

Toccoa River near Blue Ridge, Ga.--Continued

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.8 | 4.2 | 1.6 | 90 |
| 1.0 | 13 | 2.0 | 216 |
| 1.2 | 28 | 3.0 | 640 |
| 1.4 | 52 | 4.3 | 1,350 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 959 | 893 | 314 | 380 | 450 | 565 | 351 | 470 | 782 | 796 | 684 | 772 |
| 2 | 666 | 930 | 352 | 458 | 882 | 567 | 168 | 550 | 601 | 856 | 756 | 767 |
| 3 | 794 | 743 | 346 | 672 | 934 | 412 | 125 | 474 | 584 | 845 | 645 | 756 |
| 4 | 737 | 1,300 | 429 | 563 | 599 | 252 | 417 | 529 | 612 | 844 | 598 | 738 |
| 5 | 660 | 1,010 | 285 | 576 | 387 | 11 | 75 | *461 | 612 | 748 | 658 | 755 |
| 6 | 646 | 966 | 10 | 583 | 33 | 221 | 16 | 684 | 393 | 743 | 500 | 750 |
| 7 | 730 | 685 | 220 | *578 | 12 | 610 | 15 | 590 | 17 | 626 | 491 | *912 |
| 8 | 948 | 874 | 10 | 776 | 11 | 403 | 356 | 660 | 100 | 613 | 723 | 805 |
| 9 | 1,060 | *836 | 10 | 830 | 11 | 430 | 240 | 646 | 702 | 783 | 624 | 890 |
| 10 | 875 | 770 | 10 | 351 | 10 | 509 | 256 | 560 | 278 | 715 | 491 | 886 |
| 11 | 548 | 766 | 318 | 734 | 10 | *384 | 89 | 482 | 660 | *755 | 496 | 863 |
| 12 | 1,040 | 751 | 9.6 | 773 | 345 | 446 | 15 | 440 | 622 | 186 | 763 | 887 |
| 13 | 830 | 867 | 9.6 | 790 | 517 | 398 | 16 | 82 | 626 | 500 | 647 | 900 |
| 14 | 848 | 848 | 628 | 777 | 509 | 446 | 16 | 434 | 694 | 636 | 632 | 1,050 |
| 15 | 857 | 932 | 691 | 275 | 734 | 95 | 16 | 426 | 645 | 634 | 699 | 803 |
| 16 | 766 | 124 | 489 | 583 | 584 | 5.3 | 365 | 232 | 633 | 622 | 128 | 986 |
| 17 | 782 | 574 | 310 | 586 | 572 | 5.3 | 238 | 754 | 653 | 684 | 758 | 927 |
| 18 | 660 | 428 | 10 | 657 | 402 | 14 | 18 | 366 | 640 | 654 | 928 | 902 |
| 19 | 729 | 869 | 9.6 | 198 | 10 | 80 | 503 | 462 | 707 | 661 | 918 | 922 |
| 20 | 738 | 620 | 347 | 640 | 10 | 142 | 390 | 385 | 720 | 878 | 944 | 834 |
| 21 | 796 | 588 | 184 | 440 | 453 | 24 | 112 | 148 | 722 | 92 | 968 | 813 |
| 22 | 776 | 348 | 290 | 435 | 551 | 18 | 218 | 93 | 680 | 257 | 772 | 808 |
| 23 | 759 | 368 | 186 | 434 | 11 | 14 | 424 | 19 | 690 | 739 | 689 | 828 |
| 24 | 840 | 315 | 177 | 435 | 11 | 14 | 516 | 19 | 681 | 706 | 732 | 298 |
| 25 | 722 | 437 | 330 | 656 | 11 | 15 | 15 | 672 | 494 | 15 | 649 | 15 |
| 26 | 907 | 545 | 333 | 647 | 11 | 16 | 475 | 595 | 17 | 682 | 722 | 508 |
| 27 | 873 | 448 | 546 | 628 | 11 | 15 | 516 | 670 | 725 | 624 | 702 | 934 |
| 28 | 929 | 238 | 327 | 599 | 562 | 274 | 500 | 631 | 801 | 632 | 749 | 627 |
| 29 | 921 | 55 | 34 | 609 | - | 202 | 420 | 44 | 808 | 658 | 756 | 774 |
| 30 | 921 | 304 | 10 | 389 | --- | 250 | 468 | 240 | 890 | 693 | 809 | 84 |
| 31 | 722 | --- | 10 | 392 | --- | 328 | --- | 578 | --- | 689 | 746 | --- |
| Total | 25,039 | 19,232 | 7,234.8 | 17,444 | 8,643 | 7,165.6 | 7,349 | 13,396 | 17,769 | 19,566 | 21,377 | 22,794 |
| Mean | 808 | 641 | 233 | 563 | 309 | 231 | 245 | 432 | 592 | 631 | 690 | 760 |

| | Observed | | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 1,800 | Min 7.9 | Mean 481 | | Mean 508 | Cfsm 2.17 | In. 29.46 | |
| Water year 1954-55: | Max 1,300 | Min 5.3 | Mean 512 | | Mean 490 | Cfsm 2.10 | In. 28.57 | |

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge Lake.

## Ocoee River at Copperhill, Tenn.

Location.--Lat 34°59'29", long 84°22'36", on right bank 0.2 mile upstream from Fightingtown Creek and 0.4 mile downstream from Copperhill, Polk County.

Drainage area.--352 sq mi.

Records available.--March 1903 to December 1913, October 1918 to August 1925 (gage heights only), and November 1942 to September 1955 in reports of Geological Survey. March 1903 to September 1924 (March 1903 to December 1911, revised records; gage heights only after December 1913) in Tennessee Division of Geology Bulletin 34.

Gage.--Water-stage recorder and wooden control. Datum of gage is 1,445.28 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Aug. 27, 1925, staff or chain gages at several sites within 0.5 mile of present site at different datum.

Average discharge.--20 years (1903-6, 1907-10, 1911-13, 1943-55), 836 cfs (unadjusted).

Extremes.--Maximum discharge during year, 4,900 cfs Feb. 6 (gage height, 5.61 ft); minimum daily, 155 cfs Dec. 12, June 26.
1903-13, 1918-25, 1942-55: Maximum gage height observed, 18.5 ft Nov. 19, 1906, site and datum then in use (discharge not determined); minimum daily discharge determined, 76 cfs Dec. 24, 1943, Oct. 5, 1947.

Remarks.--Records good. Sixty-six percent of drainage area regulated by Blue Ridge Lake beginning Dec. 6, 1930 (see p. 245). Record includes diversion from this stream by Tennessee Copper Co.

Revisions.--WSP 973: Drainage area. See also Records available. Revised figures of discharge, in cubic feet per second, for a period in water year 1945, superseding those published in WSP 1033, are given herewith:

| 1945 | |
|---|---|
| Aug. 17 | 128 |
| 18 | 116 |
| 19 | 110 |

| Month | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| | Maximum | Minimum | Mean | Mean | Per square mile | Runoff in inches |
| August 1945 | 1,260 | 108 | 555 | - | - | - |
| Water year 1944-45 | 1,600 | 91 | 635 | 572 | 1.62 | 22.04 |
| Calendar year 1945 | 1,600 | 80 | 509 | 642 | 1.82 | 24.76 |

† Adjusted for change in contents in Blue Ridge Lake.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 961 | 836 | 430 | 344 | 564 | 820 | 609 | 528 | 776 | 946 | 888 | 884 |
| 2 | 827 | 975 | 452 | 884 | 920 | 854 | 422 | 788 | 954 | 955 | *986 | 868 |
| 3 | 544 | 878 | 456 | 674 | 1,100 | 717 | 458 | 614 | 864 | 988 | 886 | 813 |
| 4 | 1,110 | 1,320 | 517 | 848 | 931 | 512 | 642 | 772 | 814 | 958 | 793 | 855 |
| 5 | *714 | 1,150 | 683 | 670 | 500 | 245 | 378 | 770 | 722 | 930 | 792 | 873 |
| 6 | 741 | 1,150 | 500 | 790 | 2,800 | 492 | 470 | *898 | *643 | 899 | 760 | 855 |
| 7 | 771 | 882 | 409 | 728 | *1,080 | 836 | 426 | 764 | 225 | 750 | 644 | 858 |
| 8 | 862 | 566 | 160 | 737 | 462 | 635 | 660 | 770 | 304 | 740 | 862 | *643 |
| 9 | 1,080 | *934 | 220 | 1,000 | 350 | 682 | 525 | 894 | 906 | 938 | 829 | 985 |
| 10 | 1,200 | 1,040 | 195 | 762 | 299 | *655 | 508 | 668 | 491 | 880 | 604 | 1,150 |
| 11 | 316 | 807 | 458 | *838 | 318 | 700 | 437 | 807 | 875 | *1,010 | 658 | 972 |
| 12 | 1,220 | 796 | 155 | 912 | 586 | 732 | 344 | 654 | 803 | 431 | 868 | 960 |
| 13 | 1,030 | 838 | 160 | 965 | 674 | 706 | *344 | 378 | 817 | 672 | 788 | 880 |
| 14 | 896 | 909 | 570 | 929 | 607 | 694 | 391 | 644 | 846 | 796 | 773 | 1,240 |
| 15 | 930 | 1,020 | 1,010 | 624 | 974 | 354 | 324 | 616 | 860 | 831 | 830 | 777 |
| 16 | 865 | 364 | 590 | 657 | *884 | 287 | 592 | 725 | 831 | 858 | 288 | 1,310 |
| 17 | 862 | 633 | 507 | 730 | 821 | 287 | 520 | 996 | 816 | 860 | 828 | 939 |
| 18 | 685 | 466 | 419 | 718 | 656 | 281 | 293 | 716 | 804 | 830 | 935 | 1,000 |
| 19 | 892 | 969 | 230 | 560 | 234 | 390 | 726 | 707 | 874 | 830 | 1,060 | 1,000 |
| 20 | 810 | 806 | 500 | 666 | 200 | 436 | 630 | 588 | 903 | 1,020 | 1,080 | 940 |
| 21 | 676 | 698 | 356 | 720 | 580 | 324 | 350 | 366 | 875 | 391 | 1,220 | 851 |
| 22 | 1,020 | 558 | 434 | 628 | 818 | 1,290 | 453 | 445 | 822 | 466 | 1,080 | 888 |
| 23 | 816 | 455 | 322 | 596 | 836 | 530 | 666 | 575 | 844 | 1,040 | 872 | 908 |
| 24 | 855 | 414 | 301 | 581 | 412 | 419 | 776 | 344 | 852 | 1,020 | 868 | 533 |
| 25 | 900 | 511 | 428 | 697 | 324 | 384 | 263 | 698 | 620 | 275 | 796 | 192 |
| 26 | *828 | 570 | 449 | 784 | 287 | 448 | 703 | 939 | 155 | 838 | 806 | 456 |
| 27 | *978 | 588 | 537 | 771 | 263 | 357 | 709 | 868 | 784 | 810 | 831 | 920 |
| 28 | 952 | 437 | 573 | 750 | 742 | 580 | 711 | 1,020 | 964 | 760 | 905 | 1,050 |
| 29 | 1,010 | *341 | 690 | 761 | - | 466 | 698 | 321 | 942 | 820 | 878 | 845 |
| 30 | 1,050 | 438 | 440 | 642 | -------- | 508 | 678 | 406 | 1,000 | 857 | 920 | 338 |
| 31 | 950 | -------- | 257 | 524 | -------- | 542 | -------- | 782 | -------- | 792 | 892 | -------- |
| Total | 27,351 | 22,349 | 13,408 | 22,490 | 19,222 | 17,163 | 15,706 | 21,061 | 22,966 | 25,191 | 26,200 | 25,783 |
| Mean | 882 | 745 | 433 | 725 | 686 | 554 | 524 | 679 | 766 | 813 | 845 | 859 |

| | Observed | | | Adjusted † | | |
|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 3,770 | Min 126 | Mean 669 | Mean 723 | Cfsm 2.05 | In. 27.88 |
| Water year 1954-55: | Max 2,800 | Min 155 | Mean 709 | Mean 687 | Cfsm 1.95 | In. 26.51 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge Lake.

## Fightingtown Creek at McCaysville, Ga.

Location.--Lat 34°58'53", long 84°23'12", on right bank 0.2 mile upstream from highway bridge, 0.9 mile upstream from mouth, and 0.9 mile west of McCaysville, Fannin County.

Drainage area.--70.9 sq mi.

Records available.--November 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,449.75 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--12 years (1943-55), 196 cfs.

Extremes.--Maximum discharge during year, 2,600 cfs Feb. 5 (gage height, 8.12 ft); minimum, 37 cfs Oct. 22, 23, 24, 25, 26, 27, 28.
1942-55: Maximum discharge, 5,420 cfs Mar. 29, 1951 (gage height, 11.92 ft); minimum, 37 cfs Nov. 19, 1953, Sept. 29, 30, Oct. 22, 23, 24, 25, 26, 27, 28, 1954.

Remarks.--Records good. Some diurnal fluctuation at low flow caused by small mills above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 1.38 | 37 | 2.8 | 360 |
| 1.6 | 65 | 4.0 | 830 |
| 2.0 | 138 | 5.8 | 1,550 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 162 | 41 | 73 | 203 | 101 | 246 | 223 | 173 | 125 | 85 | 99 | 55 |
| 2 | 61 | 45 | 64 | 180 | 158 | 274 | 238 | 170 | 119 | 83 | *112 | 54 |
| 3 | 52 | 45 | 58 | 158 | 125 | 241 | 265 | 168 | 117 | 79 | 185 | 51 |
| 4 | 47 | 47 | 54 | 140 | 115 | 233 | 230 | 163 | 113 | 78 | 173 | 51 |
| 5 | *46 | 71 | 255 | 132 | 115 | 226 | 238 | *158 | 113 | 110 | 130 | 51 |
| 6 | 45 | 51 | 366 | 125 | 1,540 | 246 | 332 | 150 | *113 | 95 | 113 | *51 |
| 7 | 47 | 45 | 132 | *117 | *870 | 241 | 301 | 148 | 136 | *85 | 99 | 51 |
| 8 | 46 | 44 | 101 | 112 | 454 | 228 | 265 | 148 | 138 | 92 | 95 | 49 |
| 9 | 45 | *43 | 180 | 112 | 346 | *213 | 246 | 143 | 140 | 117 | 104 | 46 |
| 10 | 45 | 43 | 146 | 123 | 289 | 220 | 236 | 140 | 128 | 117 | 95 | 45 |
| 11 | 44 | 41 | 110 | 188 | 295 | 218 | 336 | 148 | 168 | 103 | 85 | 45 |
| 12 | 44 | 41 | 97 | 143 | 249 | 220 | *289 | 146 | 128 | 123 | 79 | 44 |
| 13 | 43 | 41 | 106 | 132 | 228 | 230 | 295 | 176 | 115 | 104 | 76 | 44 |
| 14 | 43 | 41 | 95 | 121 | 216 | 210 | 301 | 156 | 110 | 94 | 75 | 45 |
| 15 | 41 | 41 | *86 | 132 | 208 | 200 | 271 | 143 | 106 | 99 | 73 | 43 |
| 16 | 41 | 70 | 79 | 130 | 206 | 220 | 257 | 193 | 103 | 103 | 78 | 43 |
| 17 | 40 | 67 | 85 | 121 | 228 | 210 | 243 | 183 | 99 | 94 | 73 | 45 |
| 18 | 40 | 52 | 263 | 117 | 203 | 210 | 233 | 166 | 95 | 86 | 68 | 40 |
| 19 | 39 | 54 | 166 | 153 | 193 | 226 | 226 | 160 | 97 | 81 | 65 | 39 |
| 20 | 39 | 73 | 130 | 128 | 186 | 216 | 220 | 146 | 101 | 85 | 64 | 38 |
| 21 | 39 | 62 | 112 | 123 | 180 | 245 | 220 | 176 | 95 | 119 | 68 | 38 |
| 22 | 38 | 55 | 103 | 132 | 254 | 858 | 216 | 188 | 92 | 108 | 65 | 38 |
| 23 | 38 | 50 | 99 | 128 | 592 | 416 | 213 | 252 | 141 | 219 | 62 | 38 |
| 24 | 38 | 46 | 92 | 121 | 364 | 332 | 226 | 190 | 112 | 148 | 59 | 41 |
| 25 | 37 | 47 | 86 | 115 | 295 | 301 | 208 | 198 | 99 | 121 | 57 | 75 |
| 26 | *37 | 44 | 83 | 112 | 262 | 346 | 200 | 166 | 99 | 106 | 57 | 52 |
| 27 | 37 | 55 | 81 | 110 | 249 | 280 | 196 | 148 | 94 | 92 | 54 | 49 |
| 28 | 39 | 127 | 79 | 108 | 241 | 265 | 188 | 140 | 92 | 92 | 54 | 94 |
| 29 | 45 | 201 | 590 | 106 | - | 249 | 183 | 146 | 90 | 85 | 52 | 79 |
| 30 | 44 | *90 | 416 | 103 | ------ | 233 | 176 | 138 | 86 | 88 | 54 | 70 |
| 31 | 41 | ---- | 238 | 99 | ------ | 228 | ------ | 130 | ---- | 81 | 61 | ---- |
| Total | 1,443 | 1,773 | 4,625 | 4,024 | 8,762 | 8,281 | 7,271 | 5,050 | 3,364 | 3,172 | 2,584 | 1,504 |
| Mean | 46.5 | 59.1 | 149 | 130 | 313 | 267 | 242 | 163 | 112 | 102 | 83.4 | 50.1 |
| Cfsm | 0.656 | 0.834 | 2.10 | 1.83 | 4.41 | 3.77 | 3.41 | 2.30 | 1.58 | 1.44 | 1.18 | 0.707 |
| In. | 0.76 | 0.93 | 2.43 | 2.11 | 4.60 | 4.34 | 3.81 | 2.65 | 1.76 | 1.66 | 1.36 | 0.79 |

Calendar year 1954: Max 2,160 Min 37 Mean 169 Cfsm 2.38 In. 32.33
Water year 1954-55: Max 1,540 Min 37 Mean 142 Cfsm 2.00 In. 27.20

Peak discharge (base, 1,200 cfs).--Feb. 5 (8 p.m.) 2,600 cfs (8.12 ft); Mar. 22 (5 a.m.) 1,330 cfs (5.16 ft).
* Discharge measurement made on this day.

414660 O - 57 - 13

## Davis Mill Creek at Copperhill, Tenn.

Location.--Lat 34°59'43", long 84°22'56", on right bank 0.4 mile northwest of Louisville & Nashville Railroad station, 0.8 mile from post office at Copperhill, Polk County, and 0.1 mile upstream from mouth.

Drainage area.--5.16 sq mi.

Records available.--July 1940 to September 1941 (published as Mill Creek at Copperhill), December 1948 to September 1955.

Gage.--Water-stage recorder and concrete San Dimas flume and dam. Datum of gage is 1,451.06 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. July 16, 1940, to Sept. 30, 1941, water-stage recorder and sharp-crested weir at site 145 ft upstream at datum 1.58 ft higher.

Average discharge.--6 years (1949-55), 33.9 cfs.

Extremes.--Maximum discharge during year, 1,940 cfs July 20 (gage height, 4.56 ft), from rating curve extended above 150 cfs on basis of critical-depth determination of peak flow; minimum daily, 21 cfs Dec. 27, Jan. 30.
1940-41, 1948-55: Maximum discharge, 3,950 cfs Oct. 6, 1949 (gage height, 6.02 ft), from rating curve extended above 150 cfs on basis of critical-depth determination of peak flow; minimum daily, 3.1 cfs July 30, 1940.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Flow includes an unknown amount of diversion from other drainage basins through the sulphuric acid plant of Tennessee Copper Co. Some fluctuation due to irregular release of wastes by Tennessee Copper Co. just above gage.

Cooperation.--Water-stage recorder inspected by employee of Tennessee Copper Co.

Revisions.--WSP 1206: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 10, 12-30)

| | | | |
|---|---|---|---|
| 1.3 | 21 | 2.5 | 98 |
| 1.6 | 32 | 2.8 | 128 |
| 2.0 | 58 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 28 | 26 | a29 | 24 | 39 | 29 | 29 | 30 | 43 | 39 | 37 |
| 2 | 32 | 29 | 26 | a29 | 27 | 34 | 32 | 29 | 32 | 39 | *100 | 40 |
| 3 | 32 | 29 | 26 | a28 | 25 | 34 | 31 | 28 | 31 | 40 | 54 | 40 |
| 4 | 30 | 33 | 24 | a28 | 25 | 35 | 31 | 30 | 30 | 40 | 38 | 39 |
| 5 | *29 | *26 | 57 | a28 | 26 | 36 | 36 | 30 | 30 | 50 | 76 | 39 |
| 6 | 28 | 26 | 31 | *28 | 98 | 41 | 50 | *29 | *35 | 43 | 40 | *40 |
| 7 | 27 | 26 | 22 | 26 | 42 | 33 | 40 | 30 | 40 | 45 | 39 | 40 |
| 8 | 27 | 26 | 24 | 24 | 38 | 33 | 29 | 28 | 37 | 43 | 37 | 37 |
| 9 | 28 | 26 | 28 | 26 | 34 | *33 | 29 | 30 | 33 | 43 | 50 | 39 |
| 10 | 28 | 26 | 27 | 30 | *33 | 35 | 29 | 32 | 37 | 45 | 39 | 38 |
| 11 | 27 | 27 | 25 | 26 | 34 | 34 | 36 | 34 | 35 | *40 | 39 | a38 |
| 12 | 30 | 27 | 28 | 26 | 28 | 60 | *32 | 34 | 34 | *47 | 40 | 39 |
| 13 | 29 | 26 | 27 | 24 | 30 | a43 | 59 | 38 | 36 | 45 | 38 | 39 |
| 14 | 29 | 26 | 26 | 24 | 31 | 38 | 46 | 32 | 39 | 43 | 52 | 37 |
| 15 | 28 | 28 | 25 | 26 | 32 | 35 | 36 | 32 | 40 | 43 | 40 | 39 |
| 16 | 28 | 33 | 25 | 24 | 32 | 42 | 32 | 54 | 39 | 39 | 40 | 39 |
| 17 | 29 | 28 | 31 | 24 | 32 | 32 | 32 | 35 | 40 | 38 | 39 | 36 |
| 18 | 29 | 28 | 31 | 26 | 31 | 32 | 32 | 33 | 38 | 40 | 39 | 35 |
| 19 | 29 | 35 | 28 | 27 | 30 | 32 | 34 | 34 | 41 | 40 | 39 | 36 |
| 20 | 28 | 29 | 25 | 24 | 32 | 29 | 35 | 32 | 39 | 119 | 39 | 38 |
| 21 | 28 | 27 | 24 | 25 | 33 | 55 | 37 | 37 | 38 | 45 | 63 | 36 |
| 22 | 29 | 27 | 24 | 25 | 46 | 53 | 32 | 70 | 47 | 42 | 40 | 35 |
| 23 | 29 | 26 | 24 | 24 | 44 | 32 | 34 | 38 | 44 | 104 | 42 | 35 |
| 24 | 30 | 26 | 23 | 24 | 39 | 30 | 36 | 36 | 39 | a40 | 42 | 41 |
| 25 | 29 | 26 | 23 | 24 | 36 | 32 | 28 | 36 | 40 | 40 | 43 | 39 |
| 26 | 30 | 26 | 22 | 25 | 35 | 30 | 26 | 34 | 42 | 40 | 43 | 36 |
| 27 | 31 | 26 | 21 | 23 | 37 | 29 | 27 | 37 | 43 | 40 | 42 | 35 |
| 28 | 31 | 43 | 22 | 22 | 37 | 29 | 28 | 32 | 43 | 40 | 43 | 57 |
| 29 | 30 | *26 | 52 | 22 | - | 28 | 28 | 32 | 42 | 40 | 43 | 39 |
| 30 | 29 | 26 | 30 | 21 | ------ | 26 | 27 | 29 | 42 | 38 | 43 | 39 |
| 31 | 29 | - - | a29 | 22 | -- --- | 29 | ------ | 30 | ------ | 39 | 44 | - - |
| Total | 908 | 841 | 856 | 784 | 991 | 1,105 | 1,013 | 1,084 | 1,136 | 1,433 | 1,405 | 1,157 |
| Mean | 29.3 | 28.0 | 27.6 | 25.3 | 35.4 | 35.6 | 33.8 | 34.3 | 37.9 | 46.2 | 45.3 | 38.6 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 113 Min 21 Mean 32.9 Cfsm - In. -
Water year 1954-55: Max 119 Min 21 Mean 34.8 Cfsm - In. -

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

## North Potato Creek near Ducktown, Tenn.

Location.--Lat 35°00'54", long 84°22'58", on right bank 50 ft upstream from bridge on State Highway 40, 1½ miles south of Ducktown, Polk County, and 2 miles upstream from mouth.

Drainage area.--13.0 sq mi.

Records available.--May 1934 to September 1955. Prior to October 1950, published as Potato Creek near Ducktown.

Gage.--Water-stage recorder and concrete San Dimas flume. Datum of gage is 1,492.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 8, 1935 (revised), water-stage recorder and wooden weir and Oct. 8, 1935, to Aug. 25, 1948, water-stage recorder and Parshall flume, at same site and datum.

Average discharge.--21 years, 28.1 cfs.

Extremes.--Maximum discharge during year, 1,360 cfs July 23 (gage height, 5.61 ft); minimum daily, 11 cfs Sept. 20.
1934-55: Maximum discharge, 7,080 cfs Apr. 6, 1936 (gage height, 7.2 ft), from rating curve then in use, extended above 1,100 cfs; minimum daily, 2.8 cfs June 16, 17, 1941.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Discharge includes diversion from Brush Creek and from Ocoee River. Some fluctuations caused by Tennessee Copper Co. plant's irregular pumpage from mines.

Revisions.--WSP 823: Drainage area. Revised figures of discharge, in cubic feet per second, for the water year 1935, superseding those published in WSP 783, are given herewith:

June 23, 1935..... 16

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| June 1935..... | 561.7 | 85 | 8.0 | 18.7 | 1.44 | 1.61 |
| Water year 1934-35..... | 8,390.2 | 313 | 6.4 | 25.0 | 1.77 | 24.01 |
| Calendar year 1935..... | 7,888.2 | 313 | 6.2 | 21.6 | 1.66 | 22.59 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 28 | 18 | 22 | 25 | 20 | 28 | 22 | 20 | 22 | 20 | 23 | a12 |
| 2 | 19 | 17 | 19 | 20 | 31 | 23 | 32 | 20 | 21 | 19 | 26 | 13 |
| 3 | 18 | 14 | 19 | 20 | 19 | 21 | 28 | 18 | 20 | 19 | *27 | a14 |
| 4 | 18 | 26 | 19 | 19 | 17 | 23 | 24 | 18 | 21 | 19 | 21 | a14 |
| 5 | 15 | *24 | 151 | 18 | 23 | 20 | 35 | 17 | 22 | 44 | 46 | a14 |
| 6 | *16 | 17 | 46 | *17 | 275 | 41 | 71 | *17 | 24 | 32 | 22 | *14 |
| 7 | 16 | 17 | 24 | 16 | 60 | 27 | 48 | 16 | *34 | 24 | 20 | 14 |
| 8 | 14 | 17 | 22 | 17 | 32 | 20 | a30 | 18 | 32 | 20 | 62 | 13 |
| 9 | 14 | 15 | 32 | 20 | 26 | *20 | 28 | 19 | 28 | 21 | 35 | 13 |
| 10 | 15 | 15 | 22 | 32 | *24 | 27 | 31 | 18 | 33 | 25 | 21 | 12 |
| 11 | 15 | 16 | 20 | 23 | 27 | 23 | 44 | 17 | 29 | *20 | 17 | 12 |
| 12 | 14 | 15 | 21 | 19 | 20 | 47 | *27 | 18 | 24 | 30 | 17 | 13 |
| 13 | 14 | 14 | 25 | 17 | 21 | 29 | 68 | 33 | 24 | 22 | 15 | 13 |
| 14 | 14 | 14 | 20 | 17 | 20 | 25 | 43 | 18 | 23 | 26 | 28 | 12 |
| 15 | 15 | 16 | 20 | 22 | 20 | 22 | 32 | 19 | 20 | 23 | 20 | a12 |
| 16 | 14 | 29 | 19 | 18 | 24 | 39 | 29 | 66 | 21 | 49 | 17 | a12 |
| 17 | 16 | 18 | 36 | 18 | 24 | 24 | 28 | 35 | 21 | 22 | 17 | 12 |
| 18 | 16 | 18 | 42 | 22 | 20 | 26 | 25 | 21 | 20 | 22 | 15 | a12 |
| 19 | 13 | 40 | 28 | 26 | 19 | 38 | 24 | 21 | 22 | 20 | 15 | 12 |
| 20 | 13 | 29 | 25 | 18 | 18 | 27 | 23 | 23 | 22 | 118 | 13 | 11 |
| 21 | 14 | 21 | 21 | 20 | 18 | 56 | 27 | 29 | 20 | 39 | 31 | 12 |
| 22 | 14 | 19 | 21 | 23 | 53 | 81 | 24 | 73 | 23 | 31 | 20 | 12 |
| 23 | 14 | 17 | 20 | 18 | 74 | 34 | 24 | 80 | 33 | 113 | 15 | 12 |
| 24 | 14 | 17 | 19 | 19 | 38 | 29 | 40 | 34 | 25 | 44 | 14 | 34 |
| 25 | 15 | 16 | a19 | 18 | 28 | 31 | 27 | 29 | 22 | 35 | 15 | 32 |
| 26 | 14 | 17 | a18 | 16 | 24 | 31 | 23 | 27 | 22 | 21 | 14 | 16 |
| 27 | 14 | 20 | 18 | 16 | 24 | 24 | 22 | 25 | 21 | 22 | a14 | 14 |
| 28 | 16 | 70 | 18 | 16 | 25 | 25 | 21 | 23 | 21 | 20 | a14 | 60 |
| 29 | 18 | *30 | 95 | 15 | - | 23 | 20 | 39 | 20 | 21 | 13 | 21 |
| 30 | 15 | 22 | 30 | 14 | ------ | 23 | 18 | 26 | 19 | 20 | 14 | 28 |
| 31 | 15 | ---- | 24 | 15 | ------ | 22 | ------ | 24 | ------ | 20 | 17 | ------ |
| Total | 480 | 638 | 935 | 594 | 1,024 | 929 | 938 | 861 | 709 | 981 | 658 | 495 |
| Mean | 15.5 | 21.3 | 30.2 | 19.2 | 36.6 | 30.0 | 31.3 | 27.8 | 23.6 | 31.6 | 21.2 | 16.5 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 329 Min 9.8 Mean 30.2 Cfsm - In. -
Water year 1954-55: Max 275 Min 11 Mean 25.3 Cfsm - In. -

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, and records for stations on nearby streams.

## Ocoee River at Emf, Tenn.

Location.--Lat 35°05'48", long 84°32'07", on left bank 700 ft downstream from Tennessee Valley Authority powerplant, three-quarters of a mile upstream from former village of Emf, Polk County, and 2 miles downstream from Goforth Creek.

Drainage area.--524 sq mi.

Records available.--January 1913 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 837.88 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--42 years, 1,222 cfs (unadjusted).

Extremes.--Maximum discharge during year, 13,600 cfs Feb. 6 (gage height, 9.60 ft); minimum daily, 44 cfs June 7.
1913-55: Maximum discharge, 29,400 cfs July 10, 1916 (gage height, 13.7 ft), from rating curve extended above 17,000 cfs; minimum daily, 5.0 cfs July 28, 1944.

Remarks.--Records good. Flow regulated by Blue Ridge and Ocoee No. 3 Lakes (see p. 245) and by powerplant above station.

Cooperation.--Water-stage recorder inspected by employee of Tennessee Valley Authority.

Revisions (water years).--WSP 783: 1913-34.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 2.5 | 38 | 4.0 | 760 |
| 2.6 | 54 | 4.5 | 1,200 |
| 2.8 | 99 | 5.0 | 1,790 |
| 3.1 | 202 | 6.0 | 3,360 |
| 3.5 | 404 | 7.0 | 5,250 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 981 | 1,030 | 655 | 1,010 | 768 | 1,010 | 998 | 998 | *815 | 981 | *1,030 | 1,020 |
| 2 | 981 | 1,040 | 678 | 998 | 862 | 1,020 | 1,010 | 998 | 981 | 972 | 1,020 | 981 |
| 3 | 947 | 1,020 | 686 | 1,020 | 1,010 | 1,010 | 1,010 | 998 | 990 | 972 | 990 | 972 |
| 4 | 938 | *1,020 | 662 | 998 | 972 | 990 | 1,010 | *998 | 981 | 981 | 990 | 972 |
| 5 | 981 | 1,030 | 1,000 | *879 | 990 | 990 | 1,030 | 990 | 990 | 972 | 998 | 972 |
| 6 | 1,030 | 1,010 | 1,340 | 998 | 5,100 | 1,010 | 1,470 | 956 | 846 | 990 | 990 | 964 |
| 7 | 964 | 1,010 | 854 | 990 | 3,240 | 1,050 | 1,350 | 990 | 44 | 990 | 981 | 947 |
| 8 | 990 | 1,010 | 647 | 990 | 1,400 | 1,020 | 1,090 | 990 | 583 | 990 | 990 | 981 |
| 9 | 981 | 1,020 | 694 | 1,010 | 990 | 998 | 1,030 | 998 | 972 | 990 | 990 | 981 |
| 10 | 930 | 981 | 686 | 1,010 | 1,230 | 998 | 1,030 | 990 | 981 | 1,010 | 964 | 1,050 |
| 11 | 896 | 1,030 | 678 | 1,020 | 1,520 | 990 | 1,030 | 981 | 981 | 998 | 972 | 1,040 |
| 12 | 964 | 956 | 678 | 1,020 | 990 | 998 | 1,020 | 998 | 972 | 1,100 | 981 | 998 |
| 13 | 956 | 972 | 777 | 1,020 | 981 | 1,010 | 1,100 | 1,020 | 972 | 990 | 981 | 1,010 |
| 14 | 956 | 922 | 703 | 1,010 | 981 | 990 | 1,140 | 981 | 972 | 981 | 972 | 1,010 |
| 15 | 938 | 947 | 703 | 1,020 | 981 | 990 | 1,080 | 990 | 981 | 990 | 981 | 998 |
| 16 | 947 | 1,010 | 686 | 981 | 990 | 998 | 1,030 | 990 | 981 | 998 | 981 | 990 |
| 17 | 938 | 964 | 686 | 981 | *1,010 | 1,020 | 1,010 | 990 | 981 | 981 | 972 | 947 |
| 18 | 972 | 727 | 777 | 990 | 1,010 | 1,020 | 768 | 981 | 972 | 990 | 972 | 998 |
| 19 | 938 | 647 | 703 | 1,020 | 998 | 1,090 | 1,010 | 981 | 964 | 990 | 981 | 972 |
| 20 | 947 | 655 | 686 | 990 | 990 | 972 | 1,010 | 981 | 972 | 887 | 972 | 964 |
| 21 | 1,020 | 623 | 662 | 990 | 998 | 802 | 1,010 | 972 | 981 | 1,160 | 981 | 947 |
| 22 | 1,030 | 686 | 662 | 990 | 1,090 | 1,460 | 1,010 | 990 | 981 | 1,020 | 972 | 947 |
| 23 | 1,030 | 735 | 655 | 998 | 1,860 | 1,340 | 1,010 | 1,080 | 972 | 1,040 | 964 | 956 |
| 24 | 1,030 | 639 | 662 | 998 | 1,310 | 1,040 | 1,020 | 1,020 | 964 | 1,090 | 964 | 756 |
| 25 | 981 | 647 | 655 | 998 | 1,270 | 1,020 | 1,020 | 1,020 | 972 | 1,100 | 964 | 410 |
| 26 | 981 | 647 | 662 | 990 | 1,010 | 1,200 | 1,010 | 998 | 972 | 998 | 930 | 724 |
| 27 | 964 | 647 | 836 | 835 | 998 | 1,040 | 998 | 981 | 972 | 990 | 972 | 922 |
| 28 | 964 | 711 | 998 | 990 | 1,010 | 1,050 | 888 | 990 | 972 | 990 | 964 | 1,030 |
| 29 | 981 | 735 | 1,540 | 990 | - | 1,020 | 1,020 | 1,030 | 972 | 998 | 972 | 1,350 |
| 30 | 1,050 | 662 | 1,330 | 981 | ------- | 964 | 998 | 998 | 998 | 998 | 972 | 947 |
| 31 | 1,050 | ------- | 1,020 | 981 | ------- | 990 | ------- | 1,020 | ------- | 998 | 981 | ------- |
| Total | 30,256 | 25,733 | 24,661 | 30,696 | 36,559 | 32,100 | 31,190 | 30,898 | 27,687 | 31,135 | 30,344 | 28,756 |
| Mean | 976 | 858 | 796 | 990 | 1,306 | 1,035 | 1,040 | 997 | 923 | 1,004 | 979 | 959 |

| | Observed | | | Adjusted† | | | |
|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 8,260 | Min 48 | Mean 1,031 | Mean 1,053 | Cfsm 2.01 | In. 27.27 |
| Water year 1954-55: | Max 5,100 | Min 44 | Mean 986 | Mean 965 | Cfsm 1.84 | In. 25.00 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge and Ocoee No. 3 Lakes.

## Ocoee River at Parksville, Tenn.

Location.--Lat 35°05'48", long 84°39'15", on right bank 0.4 mile downstream from dam and Ocoee No. 1 powerplant of Tennessee Valley Authority at Parksville, Polk County, and at mile 11.5.

Drainage area.--595 sq mi.

Records available.--January 1911 to September 1916, March 1921 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 716.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--39 years, 1,277 cfs (unadjusted).

Extremes.--Maximum discharge during year, 3,160 cfs Feb. 8 (gage height, 6.40 ft); minimum, 90 cfs Jan. 21 (gage height, 2.90 ft).
1911-16, 1921-55: Maximum discharge, 21,700 cfs Mar. 29, 1951 (gage height, 20.22 ft); minimum daily, 10 cfs (revised) Oct 28, 1925.
Revisions.--The minimum daily discharge for the water year 1926 has been revised to 10 cfs Oct. 28, 1925, superseding figure published in WSP 623.

Remarks.--Records excellent. Flow regulated by Blue Ridge, Ocoee No. 3, and Parksville Lakes (see p. 245).

Cooperation.--Water-stage recorder inspected by employees of Tennessee Valley Authority.

Revisions.--WSP 823: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | |
|---|---|
| 3.0 | 130 |
| 3.5 | 400 |
| 4.0 | 775 |
| 6.1 | 2,640 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,040 | a1,550 | 1,720 | 1,270 | 1,390 | 1,490 | 1,470 | 139 | *1,400 | 1,530 | *1,060 | 977 |
| 2 | 230 | a1,700 | 1,650 | 1,190 | 1,270 | 1,380 | 180 | 1,120 | 1,450 | 190 | 1,500 | 968 |
| 3 | 225 | a1,700 | 1,330 | 1,370 | 1,320 | 1,440 | 175 | 1,320 | 1,470 | 144 | 1,480 | 968 |
| 4 | 1,220 | *a1,850 | 166 | 1,470 | 1,440 | 1,440 | 2,020 | *1,220 | 238 | 144 | 1,460 | 1,070 |
| 5 | 1,320 | 1,850 | 170 | *1,480 | 185 | 1,460 | 2,110 | 1,310 | 166 | 1,180 | 1,380 | 1,060 |
| 6 | 1,320 | 590 | 980 | a1,400 | 660 | 425 | 2,100 | 1,270 | 1,360 | 1,470 | 175 | 1,040 |
| 7 | 1,330 | 170 | 1,600 | 1,400 | 2,690 | 1,420 | 2,820 | 190 | 962 | 1,480 | 180 | 1,050 |
| 8 | 1,450 | 1,650 | 1,590 | 166 | 2,720 | 1,470 | 2,120 | 185 | 1,010 | 1,480 | 1,480 | 1,060 |
| 9 | 247 | 1,550 | 1,360 | 868 | 2,010 | 1,480 | 166 | 1,380 | 1,000 | 808 | 1,580 | 1,150 |
| 10 | 236 | 1,520 | 1,120 | a1,400 | 2,120 | 1,460 | 166 | 1,370 | 950 | 195 | 1,500 | 1,000 |
| 11 | 1,330 | 1,530 | 175 | a1,250 | 2,550 | 1,470 | 1,990 | 1,330 | 205 | 1,340 | 1,500 | 990 |
| 12 | 1,190 | 1,560 | 266 | a1,350 | a1,900 | 180 | 2,710 | 1,320 | 152 | 1,520 | 956 | 1,000 |
| 13 | 1,200 | 166 | 1,290 | a1,400 | a1,950 | 170 | 788 | 1,320 | 1,190 | 1,510 | 175 | 988 |
| 14 | 1,170 | 162 | 904 | a1,400 | a1,800 | 1,450 | 170 | 1,310 | 1,440 | 1,460 | 157 | 990 |
| 15 | 1,260 | 1,280 | 812 | a165 | a1,850 | 1,470 | 1,940 | 180 | 1,470 | 1,490 | 1,200 | 1,030 |
| 16 | 166 | 1,250 | 951 | a165 | 1,910 | 1,490 | 1,900 | 1,130 | 1,480 | 268 | 1,870 | 1,050 |
| 17 | 166 | 1,280 | 981 | a1,400 | *1,840 | 1,460 | 1,790 | 1,270 | 1,240 | 185 | 1,500 | 1,100 |
| 18 | 1,160 | 1,280 | 166 | a1,500 | 1,890 | 1,460 | 1,680 | 1,140 | 228 | 1,230 | 1,520 | 1,120 |
| 19 | 1,280 | 1,000 | 162 | a1,500 | 175 | 157 | 1,700 | 1,160 | 157 | 1,470 | 1,360 | 1,130 |
| 20 | 1,350 | 200 | 851 | 1,580 | 180 | 166 | 1,720 | 1,130 | 1,170 | 1,480 | 170 | 1,130 |
| 21 | 1,350 | 215 | 1,160 | 220 | 1,680 | 416 | 1,780 | 175 | 1,470 | 1,470 | 170 | 1,100 |
| 22 | 1,320 | 905 | 1,170 | 1,530 | 1,530 | 825 | 1,790 | 170 | 1,480 | 1,470 | 1,360 | 1,040 |
| 23 | 162 | 1,160 | 1,090 | 152 | 1,500 | 1,090 | 858 | 1,830 | 1,470 | 235 | 1,160 | 1,020 |
| 24 | 162 | 1,210 | 1,060 | 1,420 | 1,480 | 1,000 | 166 | 1,760 | 1,480 | 162 | 1,220 | 972 |
| 25 | 1,320 | 1,220 | 170 | 1,440 | 1,470 | 1,540 | 1,310 | 1,740 | 218 | 1,420 | 1,270 | 972 |
| 26 | 1,550 | 1,220 | 162 | 1,450 | 1,470 | 1,750 | 1,030 | 1,330 | 152 | 1,460 | 1,270 | 1,070 |
| 27 | 1,560 | 165 | 1,170 | 1,440 | 185 | 1,060 | 1,380 | 1,420 | 1,160 | 1,470 | 245 | 988 |
| 28 | 1,600 | 165 | 962 | 1,460 | 1,480 | 1,460 | 156 | 877 | 1,470 | 1,460 | 902 | 1,050 |
| 29 | 1,550 | 1,550 | 1,270 | 157 | - | 1,450 | 144 | 190 | 1,460 | 1,480 | 1,020 | 1,040 |
| 30 | 166 | 1,740 | 1,270 | 157 | ------- | 1,460 | 139 | 898 | 1,480 | 1,210 | 986 | 1,030 |
| 31 | a166 | ------- | 1,190 | 1,470 | ------- | 1,440 | ------- | 1,370 | ------- | 175 | 968 | ------- |
| Total | 29,796 | 33,388 | 28,918 | 34,620 | 42,645 | 36,429 | 38,468 | 32,554 | 30,578 | 32,586 | 32,774 | 31,153 |
| Mean | 961 | 1,113 | 933 | 1,117 | 1,523 | 1,175 | 1,282 | 1,050 | 1,019 | 1,051 | 1,057 | 1,038 |

| | Observed | | | | | | Adjusted† | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max | 7,840 | Min | 144 | Mean | 1,143 | Mean | 1,170 | Cfsm | 1.97 | In. | 26.69 |
| Water year 1954-55: | Max | 2,820 | Min | 139 | Mean | 1,107 | Mean | 1,084 | Cfsm | 1.82 | In. | 24.72 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge, Ocoee No.3, and Parksville Lakes.
a No gage-height record; discharge estimated on basis of records for Ocoee No. 1 powerplant.

## Hiwassee River above Charleston, Tenn.

Location.--Lat 35°12'33", long 84°39'31", on right bank 0.2 mile downstream from Ocoee River, a third of a mile upstream from Louisville & Nashville Railroad bridge, 2½ miles north of Benton, Polk County, and at mile 34.1.

Drainage area.--2,001 sq mi.

Records available.--October 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 682.86 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Auxiliary water-stage recorder 1.8 miles downstream.

Extremes.--Maximum discharge during year, 12,700 cfs Apr. 7 (gage height, 11.84 ft); minimum, 320 cfs Nov. 14, 15 (gage height, 1.40 ft); minimum daily, 355 cfs Nov. 14.
1953-55: Maximum discharge, 25,800 cfs Jan. 22, 1954 (gage height, 20.55 ft); minimum, that of Nov. 14, 15, 1954; minimum daily, that of Nov. 14, 1954.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by seven reservoirs (see p. 242).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 6 | | Feb. 7 to Sept. 30 | |
|---|---|---|---|
| 1.4 | 320 | 2.6 | 1,020 |
| 2.0 | 620 | 4.0 | 2,100 |
| 3.0 | 1,230 | 6.0 | 4,540 |
| 4.0 | 2,070 | 8.0 | 7,140 |
| 6.8 | 5,580 | 11.3 | 11,900 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,160 | 3,360 | 2,210 | 3,120 | 2,950 | a4,000 | 2,390 | 3,460 | 3,160 | 4,440 | 3,850 | 1,240 |
| 2 | 1,530 | 3,680 | 2,670 | 2,620 | 3,470 | a3,800 | 1,250 | 4,230 | 3,180 | 3,110 | 4,580 | 1,160 |
| 3 | 640 | *4,590 | 3,450 | 3,170 | 4,120 | *3,720 | 1,500 | 4,510 | 3,160 | 2,900 | *4,550 | 1,120 |
| 4 | 2,040 | 4,320 | 2,070 | 3,310 | 4,310 | 3,530 | 3,410 | 3,940 | 2,970 | 2,870 | 4,510 | 1,190 |
| 5 | *3,200 | 3,980 | 1,530 | 4,220 | 2,830 | 3,520 | 3,710 | 2,930 | 2,970 | 3,700 | 4,480 | 1,180 |
| 6 | 3,230 | 2,450 | 4,360 | 3,530 | 5,530 | 2,630 | 5,600 | 3,100 | 3,500 | 4,490 | 3,360 | 1,250 |
| 7 | 3,180 | 841 | 2,780 | 3,670 | 9,800 | 4,210 | 11,800 | 3,080 | 2,750 | *4,340 | 3,140 | 1,200 |
| 8 | 3,180 | 1,660 | 2,080 | 3,130 | 7,270 | 4,330 | 7,400 | 3,270 | *2,760 | 4,340 | 4,180 | 1,200 |
| 9 | 1,650 | 2,560 | 2,690 | 3,700 | 5,400 | 3,930 | 3,660 | 4,320 | 2,840 | 4,060 | 4,500 | *1,170 |
| 10 | 710 | 2,410 | 3,180 | 4,140 | 4,840 | 3,950 | 2,410 | 3,500 | 2,640 | 3,190 | 4,570 | 1,190 |
| 11 | 1,950 | 2,410 | 890 | 4,540 | *5,700 | 4,000 | 3,810 | 4,430 | 2,090 | 4,150 | 4,840 | 1,120 |
| 12 | 3,110 | 2,430 | 1,380 | *4,280 | 4,920 | 2,490 | 4,830 | 4,500 | 1,840 | 4,500 | 4,460 | 1,100 |
| 13 | 3,060 | 1,050 | 2,640 | 4,700 | 4,250 | 1,690 | 3,540 | 4,720 | 2,530 | 4,580 | 3,640 | 1,150 |
| 14 | 3,050 | 355 | 3,040 | 4,320 | 4,390 | 3,420 | *3,770 | 4,380 | 3,020 | 4,440 | 3,500 | 1,080 |
| 15 | 3,140 | 1,410 | 3,180 | 3,140 | 4,480 | 3,870 | 3,990 | 2,120 | 3,050 | 4,420 | 4,280 | 1,060 |
| 16 | 2,100 | 2,120 | 3,010 | 3,060 | 4,280 | 3,930 | 3,400 | 2,580 | 3,050 | 3,500 | 4,940 | 1,100 |
| 17 | 1,140 | 2,200 | 3,620 | 3,960 | 4,710 | 4,000 | 3,190 | *3,370 | 2,870 | 3,050 | 4,890 | 1,200 |
| 18 | 1,960 | 2,150 | 4,180 | 3,660 | 4,730 | 4,570 | 2,760 | 2,680 | 3,280 | 3,820 | 4,810 | 1,180 |
| 19 | 3,140 | 1,670 | 3,180 | 3,300 | 3,260 | 3,780 | 2,740 | 2,810 | 2,940 | 4,290 | 4,830 | 1,210 |
| 20 | 3,320 | 855 | 3,450 | 3,340 | 3,020 | 2,700 | 2,580 | 2,750 | 3,730 | 4,580 | 3,640 | 1,210 |
| 21 | 3,190 | 455 | 3,080 | 1,590 | 4,140 | 2,270 | 3,600 | 2,120 | 4,320 | 4,490 | 3,460 | 1,210 |
| 22 | 3,250 | 1,420 | 3,300 | 3,270 | 4,650 | 6,670 | 3,140 | 1,840 | 4,310 | 4,530 | 3,800 | 1,240 |
| 23 | 2,510 | 1,900 | 3,280 | 2,180 | a4,700 | 5,220 | 2,860 | 3,420 | 4,440 | 3,560 | 2,060 | 1,150 |
| 24 | 1,740 | 2,140 | 3,510 | 2,920 | a4,300 | 3,620 | 1,490 | 3,680 | 4,400 | 3,240 | 2,170 | 1,100 |
| 25 | 3,360 | 1,950 | 1,600 | 3,270 | a4,200 | 2,910 | 2,690 | 3,680 | 3,340 | 4,230 | 2,430 | 1,120 |
| 26 | 3,560 | 1,590 | 798 | 3,120 | a4,100 | 5,310 | 2,930 | 2,870 | 2,950 | 4,670 | 2,350 | 1,220 |
| 27 | 3,550 | 1,870 | 2,180 | 3,100 | a2,300 | 4,670 | 3,740 | 3,000 | 3,730 | 4,570 | 1,490 | 1,210 |
| 28 | 3,680 | 1,590 | 2,720 | 3,040 | a3,900 | 3,900 | 2,240 | 2,890 | 4,330 | 4,550 | 2,110 | 2,160 |
| 29 | 3,760 | 2,090 | 3,770 | 1,890 | - | 3,450 | 3,550 | 2,200 | 4,320 | 4,530 | 1,290 | 2,690 |
| 30 | 2,420 | *2,290 | 4,270 | 1,690 | ------- | 3,060 | 3,530 | 2,820 | 4,310 | 4,450 | 1,330 | 2,560 |
| 31 | 1,890 | ------- | 3,160 | 2,640 | ------- | 2,800 | ------- | 2,900 | ------- | 3,270 | 1,240 | ------- |
| Total | 81,400 | 63,796 | 87,258 | 101,620 | 126,550 | 115,950 | 107,510 | 102,100 | 98,780 | 124,860 | 109,280 | 38,970 |
| Mean | 2,626 | 2,127 | 2,815 | 3,278 | 4,520 | 3,740 | 3,584 | 3,294 | 3,293 | 4,028 | 3,525 | 1,299 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 23,200 | Min 355 | Mean 3,571 | Mean 3,721 | Cfsm 1.86 | In. 25.24 |
| Water year 1954-55: | Max 11,800 | Min 355 | Mean 3,173 | Mean 3,284 | Cfsm 1.64 | In. 22.28 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Hiwassee, Nottely, Chatuge, Apalachia, Blue Ridge, Ocoee No. 3, and Parksville Lakes.
a No gage height record; discharge estimated on basis of records for Apalachia and Parksville powerplants.

## Oostanaula Creek near Sanford, Tenn.

Location.--Lat 35°19'39", long 84°42'19", on right bank 20 ft downstream from highway bridge, 1.3 miles southeast of Sanford, 3.5 miles northeast of Calhoun, McMinn County, and at mile 5.6

Drainage area.--57.0 sq mi.

Records available.--October 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 716.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 1,260 cfs Apr. 7 (gage height, 7.41 ft); minimum observed, 16 cfs Oct. 13-28; minimum gage height observed, 2.12 ft Oct. 28.

Remarks.--Records good.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 28 to Aug. 8)

| Oct. 1 to Apr. 7 | | | | Apr. 8 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 2.1 | 16 | 3.5 | 125 | 2.2 | 22 | 3.5 | 138 |
| 2.3 | 21 | 4.0 | 195 | 2.5 | 36 | 4.0 | 220 |
| 2.5 | 32 | 5.0 | 415 | 3.0 | 76 | 5.1 | 459 |
| 3.0 | 72 | 6.7 | 940 | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *63 | 17 | *31 | 125 | 56 | 121 | 125 | 104 | 67 | 44 | 48 | 29 |
| 2 | 38 | 17 | 27 | 106 | 67 | 115 | 121 | 99 | 64 | 43 | 46 | 27 |
| 3 | 21 | 17 | 24 | 92 | 65 | 105 | 135 | 95 | 61 | 41 | *44 | 26 |
| 4 | 17 | 18 | 22 | 85 | 56 | 100 | 121 | *89 | 60 | 41 | 41 | 26 |
| 5 | 17 | 21 | 79 | 78 | 54 | 94 | 132 | 87 | 57 | 52 | 41 | 26 |
| 6 | 17 | 20 | *202 | 75 | *228 | 108 | 391 | 84 | 56 | 41 | 40 | 26 |
| 7 | 17 | 18 | 83 | 70 | 306 | *127 | 916 | 80 | 66 | *40 | 40 | 26 |
| 8 | 17 | 17 | 45 | 66 | 157 | 108 | 454 | 77 | *65 | 46 | 84 | 25 |
| 9 | 17 | 17 | 74 | 64 | 120 | 97 | 289 | 74 | 67 | 66 | 53 | 25 |
| 10 | 17 | 17 | 89 | 66 | 109 | 91 | 230 | 72 | 62 | 87 | 57 | 24 |
| 11 | 17 | 18 | 52 | *86 | 130 | 87 | 212 | 70 | 60 | 57 | 38 | 25 |
| 12 | 17 | 18 | 42 | 76 | 131 | 85 | 198 | 69 | 58 | 78 | 35 | *25 |
| 13 | 16 | 18 | 47 | 67 | 106 | 81 | 212 | 93 | 53 | 101 | 34 | 25 |
| 14 | 16 | 18 | 54 | 62 | 100 | 77 | *312 | 218 | 51 | 69 | 33 | 25 |
| 15 | *16 | 18 | 46 | 60 | 97 | 76 | 310 | 162 | 49 | 62 | 32 | 25 |
| 16 | 16 | 18 | 40 | 59 | 93 | 84 | 212 | 95 | 48 | 65 | 32 | 25 |
| 17 | 16 | 19 | 52 | 56 | 97 | 97 | 179 | 84 | 46 | 55 | 31 | 25 |
| 18 | 16 | *19 | 195 | 55 | 92 | 105 | 160 | 77 | 45 | 48 | 30 | 24 |
| 19 | 16 | 19 | 123 | 92 | 86 | 189 | 148 | 72 | 45 | 45 | 29 | 24 |
| 20 | 16 | 33 | 73 | 85 | 83 | 200 | 137 | 70 | 45 | 48 | 29 | 24 |
| 21 | 16 | 31 | 62 | 71 | 79 | 194 | 179 | 69 | 44 | 58 | 29 | 24 |
| 22 | 16 | 20 | 56 | 87 | 102 | 401 | 252 | 78 | 55 | 43 | 30 | 24 |
| 23 | 16 | 19 | 51 | 81 | *206 | 405 | 174 | 97 | 154 | 68 | 30 | 24 |
| 24 | 16 | 19 | 48 | 74 | 332 | 215 | 158 | 83 | 116 | 84 | 29 | 23 |
| 25 | 16 | 18 | 45 | 69 | 207 | 185 | 194 | 71 | 61 | 76 | 28 | 24 |
| 26 | 16 | 18 | 42 | 67 | 150 | 360 | 148 | 84 | 73 | 55 | 28 | 25 |
| 27 | 16 | 18 | 40 | 63 | 135 | 301 | 131 | 66 | 55 | 51 | 27 | 25 |
| 28 | 16 | 46 | 40 | 61 | 127 | 187 | 123 | 62 | 51 | 49 | 27 | 28 |
| 29 | *17 | 141 | 202 | 59 | - | 163 | 115 | 109 | 48 | 48 | 26 | 43 |
| 30 | 17 | 66 | 389 | 57 | ------ | 145 | 107 | 125 | 46 | 46 | 27 | 29 |
| 31 | 17 | --- | 266 | 56 | ------- | 133 | ------- | 76 | ------- | 45 | 29 | ------- |
| Total | 582 | 773 | 2,641 | 2,270 | 3,571 | 4,836 | 6,575 | 2,791 | 1,828 | 1,752 | 1,127 | 776 |
| Mean | 18.8 | 25.8 | 85.2 | 73.2 | 128 | 156 | 219 | 90.0 | 60.9 | 56.5 | 36.4 | 25.9 |
| Cfsm | 0.330 | 0.453 | 1.49 | 1.28 | 2.25 | 2.74 | 3.84 | 1.58 | 1.07 | 0.991 | 0.639 | 0.454 |
| In. | 0.38 | 0.50 | 1.72 | 1.48 | 2.33 | 3.16 | 4.29 | 1.82 | 1.19 | 1.14 | 0.74 | 0.51 |

Calendar year 1954: Max - Min - Mean - Cfsm - In. -
Water year 1954-55: Max 916 Min 16 Mean 80.9 Cfsm 1.42 In. 19.26

Peak discharge (base, 400 cfs).--Dec. 30 (10 p.m.) 449 cfs (5.13 ft); Mar. 23 (6 a.m.) 449 cfs (5.13 ft); Apr. 7 (1 p.m.) 1,260 cfs (7.41 ft).

* Discharge measurement made on this day.

Note.--Discharge Oct. 1-27 computed from twice-daily staff-gage readings.

## South Chickamauga Creek below Georgia-Tennessee State line

Location.--Lat 34°59'52", long 85°10'36", on right bank 1,200 ft downstream from Mackey Branch, 1.0 mile below Georgia-Tennessee State line, and 16.3 miles upstream from mouth.

Drainage area.--249 sq mi.

Records available.--July 1952 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 659.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 5,740 cfs Feb. 7 (gage height, 15.33 ft); minimum, 44 cfs Oct. 5 (gage height, 1.51 ft).
1952-55: Maximum discharge, 10,700 cfs Jan. 17, 1954 (gage height, 18.78 ft), from rating curve extended above 7,600 cfs on basis of velocity-area study; minimum, that of Oct. 5, 1954; minimum gage height, 1.46 ft Sept. 3, 1954.

Remarks.--Records good. Some diurnal fluctuations caused by small mills above station.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7, Sept. 2-30

| | | | |
|---|---|---|---|
| 1.4 | 41 | 9.0 | 2,020 |
| 2.5 | 185 | 12.0 | 3,310 |
| 3.5 | 364 | 14.7 | 5,140 |
| 6.0 | 980 | | |

Feb. 8 to Sept. 1

| | |
|---|---|
| 1.7 | 62 |
| 2.5 | 174 |
| 3.5 | 364 |

Note.--Same as preceding table above 3.5 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 66 | *51 | 66 | 384 | 149 | 384 | 286 | 194 | *224 | 107 | 191 | *110 |
| 2 | 54 | 51 | 60 | 334 | 377 | *480 | 559 | 179 | 199 | 103 | 855 | 83 |
| 3 | 48 | 52 | 57 | 265 | 292 | 332 | 1,930 | *169 | 184 | 100 | 201 | 78 |
| 4 | 46 | 54 | 56 | 224 | 207 | 296 | 1,080 | 163 | 172 | 94 | *147 | 75 |
| 5 | 44 | 64 | 272 | 203 | 198 | 290 | 998 | 155 | 161 | *90 | 127 | 74 |
| 6 | *114 | 63 | 494 | 187 | 2,910 | 308 | 2,280 | 148 | 156 | 90 | 117 | 75 |
| 7 | 68 | 56 | 157 | 165 | *5,080 | 384 | 2,110 | 138 | 217 | 101 | 110 | 74 |
| 8 | 48 | 54 | 89 | 148 | 1,880 | 286 | 1,220 | 131 | 185 | 454 | 108 | 73 |
| 9 | 46 | 53 | 189 | 144 | 785 | 249 | 751 | 127 | 160 | 662 | 103 | 73 |
| 10 | 46 | 52 | 155 | 245 | 581 | 235 | 610 | 124 | 152 | 390 | 99 | 69 |
| 11 | 47 | 52 | 100 | 578 | 660 | 233 | *607 | 124 | 206 | 155 | 96 | 69 |
| 12 | 47 | 52 | 82 | 342 | 521 | 219 | 583 | 124 | 184 | 466 | 96 | 69 |
| 13 | 46 | 52 | 167 | 261 | 377 | 219 | 1,080 | 314 | 145 | 559 | 92 | 69 |
| 14 | 46 | 52 | 149 | 215 | 338 | 197 | 2,230 | 280 | 136 | 228 | 85 | 68 |
| 15 | 47 | 52 | 114 | 198 | 318 | 180 | 1,440 | 641 | 129 | 176 | 84 | 66 |
| 16 | 47 | 60 | 93 | 203 | 314 | 177 | 802 | 3,900 | 121 | 275 | 82 | 66 |
| 17 | 46 | 62 | 154 | 178 | 487 | 195 | 605 | 1,700 | 117 | 336 | 82 | 65 |
| 18 | 46 | 58 | 848 | 164 | 379 | 176 | 490 | 710 | 113 | 188 | 82 | 66 |
| 19 | 47 | 55 | 362 | 558 | 314 | 278 | 408 | 439 | 110 | 145 | 79 | 65 |
| 20 | 47 | 54 | 191 | 449 | 276 | 362 | 353 | 342 | 108 | 129 | 78 | 63 |
| 21 | 47 | 54 | 148 | 315 | 255 | 1,040 | 330 | 686 | 104 | 226 | 75 | 65 |
| 22 | 47 | 54 | 125 | 528 | 473 | 4,600 | 308 | 850 | 103 | 153 | 74 | 64 |
| 23 | 48 | 54 | 112 | 395 | 2,290 | 2,410 | 497 | 1,860 | 245 | 128 | 76 | 64 |
| 24 | 48 | 54 | 103 | 311 | 1,310 | 932 | 547 | 959 | 300 | 201 | 80 | 66 |
| 25 | 49 | 54 | 94 | 268 | 732 | 670 | 485 | 906 | 348 | 1,050 | 73 | 75 |
| 26 | 49 | 54 | 87 | 229 | 559 | 863 | 326 | 600 | 353 | 400 | 72 | *74 |
| 27 | 50 | 55 | 83 | 209 | 463 | 682 | 282 | 446 | 172 | 188 | 69 | 74 |
| 28 | 51 | 246 | *87 | 195 | 401 | 494 | 253 | 336 | 134 | 150 | 68 | 71 |
| 29 | 51 | 176 | 2,210 | 178 | - | 422 | 231 | 360 | 120 | 131 | 68 | 70 |
| 30 | 52 | *96 | 2,230 | 164 | ------ | 355 | 208 | 357 | 113 | 122 | 69 | 71 |
| 31 | 51 | - | 665 | *152 | ------ | 314 | ------ | 260 | --- --- | 118 | 397 | --- - |
| Total | 1,589 | 1,996 | 9,799 | 8,389 | 22,926 | 18,262 | 23,889 | 17,722 | 5,171 | 7,715 | 4,035 | 2,144 |
| Mean | 51.3 | 66.5 | 316 | 271 | 819 | 589 | 796 | 572 | 172 | 249 | 130 | 71.5 |
| Cfsm | 0.206 | 0.267 | 1.27 | 1.09 | 3.29 | 2.37 | 3.20 | 2.30 | 0.691 | 1.00 | 0.522 | 0.287 |
| In. | 0.24 | 0.30 | 1.46 | 1.25 | 3.42 | 2.73 | 3.57 | 2.65 | 0.77 | 1.15 | 0.60 | 0.32 |

Calendar year 1954: Max 7,630 Min 44 Mean 298 Cfsm 1.20 In. 16.26
Water year 1954-55: Max 5,080 Min 44 Mean 339 Cfsm 1.36 In. 18.46

Peak discharge (base, 4,000 cfs).--Dec. 29 (7 p.m.) 4,100 cfs (13.38 ft); Feb. 7 (10 a.m.) 5,740 cfs (15.33 ft); Mar. 22 (6 p.m.) 5,300 cfs (14.88 ft); May 16 (1 to 2 p.m.) 4,750 cfs (14.24 ft).
* Discharge measurement made on this day.

South Chickamauga Creek near Chickamauga, Tenn.

Location.--Lat 35°00'50", long 85°12'27", on right bank a third of a mile upstream from bridge on U. S. Highway 11, 1½ miles south of Chickamauga, Hamilton County, 6 miles east of Chattanooga, and 12 miles upstream from mouth.

Drainage area.--428 sq mi.

Records available.--October 1928 to September 1955. Prior to October 1937, published as Chickamauga Creek near Chickamauga.

Gage.--Water-stage recorder. Datum of gage is 651.12 ft above mean sea level, datum of 1929. Prior to Oct. 7, 1930, staff gage at same site and datum.

Average discharge.--27 years, 697 cfs.

Extremes.--Maximum discharge during year, 9,050 cfs Feb. 7 (gage height, 14.20 ft); minimum, 62 cfs Oct. 18, 19 (gage height, 0.47 ft).
1928-55: Maximum discharge, 27,600 cfs Mar. 30, 1951 (gage height, 20.73 ft); minimum, 61 cfs Oct. 8, 1941; minimum gage height, 0.47 ft Sept. 4, Oct. 18, 19, 1954.

Remarks.--Records good. Some diurnal fluctuation at low flow caused by small mills above station.

Revisions (water years).--WSP 823: Drainage area. WSP 853: 1937. Revised figures of discharge, in cubic feet per second, for periods in the water year 1932, superseding those published in WSP 728, are given herewith:

| Date | Discharge | Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|---|---|
| 1932 | | 1932-Con. | | 1932-Con. | | 1932-Con. | |
| July 8 | 1,600 | July 29 | 493 | Aug. 19 | 415 | Sept. 9 | 110 |
| 9 | 698 | 30 | 617 | 20 | 235 | 10 | 110 |
| 10 | 501 | 31 | 336 | 21 | 172 | 11 | 114 |
| 11 | 395 | Aug. 1 | 283 | 22 | 158 | 12 | 107 |
| 12 | 325 | 2 | 461 | 23 | 149 | 13 | 112 |
| 13 | 277 | 3 | 883 | 24 | 137 | 14 | 112 |
| 14 | 245 | 4 | 477 | 25 | 129 | 15 | 114 |
| 15 | 223 | 5 | 290 | 26 | 120 | 16 | 115 |
| 16 | 206 | 6 | 195 | 27 | 122 | 17 | 114 |
| 17 | 209 | 7 | 160 | 28 | 126 | 18 | 115 |
| 18 | 201 | 8 | 165 | 29 | 120 | 19 | 115 |
| 19 | 198 | 9 | 156 | 30 | 129 | 20 | 114 |
| 20 | 251 | 10 | 149 | 31 | 127 | 21 | 158 |
| 21 | 190 | 11 | 384 | Sept. 1 | 122 | 22 | 149 |
| 22 | 177 | 12 | 172 | 2 | 119 | 23 | 117 |
| 23 | 188 | 13 | 193 | 3 | 117 | 24 | 112 |
| 24 | 264 | 14 | 165 | 4 | 114 | 25 | 112 |
| 25 | 201 | 15 | 172 | 5 | 110 | 26 | 109 |
| 26 | 163 | 16 | 226 | 6 | 115 | 27 | 101 |
| 27 | 242 | 17 | 226 | 7 | 114 | 28 | 102 |
| 28 | 537 | 18 | 637 | 8 | 112 | 29 | 104 |
| | | | | | | 30 | 114 |

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| July 1932..... | 2,710 | 163 | 555 | 1.30 | 1.49 |
| August..... | 883 | 120 | 243 | .568 | .65 |
| September..... | 158 | 102 | 115 | .269 | .30 |
| Water year 1931-32..... | 9,570 | 74 | 753 | 1.76 | 23.96 |
| Calendar year 1932..... | 11,500 | 98 | 1,030 | 2.41 | 32.86 |

South Chickamauga Creek near Chickamauga, Tenn.--Continued

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Feb. 7, May 17 to July 25 | | | | Feb. 8 to May 16, July 26 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.4 | 51 | 8.0 | 3,000 | 0.6 | 87 | 4.0 | 1,240 |
| 1.0 | 157 | 10.0 | 4,020 | 1.0 | 172 | 8.0 | 3,000 |
| 2.0 | 422 | 12.0 | 5,720 | 2.0 | 470 | | |
| 4.0 | 1,180 | 13.8 | 8,260 | Note.--Same as preceding table above 8.0 ft. | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 197 | *77 | 129 | 1,080 | 260 | 645 | 530 | 372 | *394 | 180 | 301 | *190 |
| 2 | 122 | 90 | 107 | 702 | 555 | *779 | 1,090 | 346 | *355 | 175 | 1,020 | 149 |
| 3 | 98 | 83 | 97 | 545 | 555 | 582 | 3,900 | *321 | 330 | 168 | 324 | 134 |
| 4 | 86 | 97 | 95 | 457 | 382 | 530 | 2,310 | 300 | 311 | 164 | *246 | 125 |
| 5 | 86 | 116 | 402 | 410 | 341 | 505 | 1,800 | 286 | 294 | *159 | 214 | 123 |
| 6 | *166 | 109 | *986 | 379 | 4,010 | 544 | 3,670 | 271 | *286 | 155 | 200 | 125 |
| 7 | 142 | 104 | 330 | 336 | *8,260 | 634 | 3,840 | 257 | 361 | 182 | 187 | 119 |
| 8 | 88 | 98 | 192 | 305 | 5,820 | 522 | 2,460 | 249 | 325 | 554 | 184 | 119 |
| 9 | 80 | 104 | 322 | 292 | 2,320 | 460 | 1,370 | 238 | 281 | 1,150 | 177 | 119 |
| 10 | 77 | 95 | 330 | 384 | 1,120 | 426 | 1,060 | 227 | 262 | 680 | 172 | 115 |
| 11 | 77 | 92 | 225 | 962 | 1,210 | 419 | *1,090 | 227 | 305 | 283 | 167 | 115 |
| 12 | 78 | 92 | 178 | 662 | 967 | 402 | 1,530 | 230 | 302 | 555 | 160 | 109 |
| 13 | 73 | 93 | 316 | 467 | 723 | 386 | 2,050 | 392 | 255 | 662 | 158 | 113 |
| 14 | 73 | 93 | 330 | 388 | 645 | 356 | 3,970 | 460 | 237 | 347 | 149 | 115 |
| 15 | 67 | 92 | 252 | 355 | 606 | 330 | 4,090 | 622 | 227 | 313 | 147 | 123 |
| 16 | 78 | 128 | 201 | 353 | 582 | 324 | 2,850 | 4,440 | 215 | 361 | 142 | 109 |
| 17 | 77 | 126 | 265 | 325 | 755 | 343 | 1,310 | 2,750 | 210 | 476 | 142 | 109 |
| 18 | 64 | 122 | 1,570 | 302 | 670 | 318 | 971 | 942 | 201 | 311 | 147 | 111 |
| 19 | 73 | 114 | 722 | 798 | 578 | 433 | 791 | 585 | 196 | 250 | 138 | 99 |
| 20 | 70 | 114 | 376 | 846 | 530 | 582 | 690 | 480 | 194 | 225 | 131 | 103 |
| 21 | 69 | 111 | 292 | 549 | 498 | 1,710 | 642 | 1,030 | 187 | 319 | 131 | 103 |
| 22 | 73 | 107 | 250 | 942 | 799 | 5,970 | 600 | 1,650 | 185 | 252 | 131 | 103 |
| 23 | 73 | 113 | 225 | 826 | *3,490 | 5,800 | 791 | 3,250 | 336 | 220 | 134 | 103 |
| 24 | 72 | 107 | 205 | 588 | 2,810 | 3,300 | 1,020 | 2,610 | 379 | 358 | 134 | 119 |
| 25 | 69 | 105 | 189 | 486 | 1,360 | 1,340 | 831 | 1,760 | 417 | 1,500 | 125 | 140 |
| 26 | 69 | 102 | 178 | 416 | 975 | 1,450 | 638 | 1,130 | 435 | 747 | 123 | *119 |
| 27 | 81 | 109 | 168 | 367 | 799 | 1,260 | 547 | 790 | 270 | 409 | 119 | 119 |
| 28 | 75 | 417 | *180 | 341 | 701 | 891 | 491 | 596 | 220 | 315 | 121 | 113 |
| 29 | 80 | 504 | 2,910 | 313 | - | 759 | 450 | 602 | 198 | 269 | 119 | 113 |
| 30 | 86 | *178 | 4,980 | 289 | ------- | 652 | 409 | 596 | 189 | 249 | 129 | 115 |
| 31 | 80 | ------- | 3,380 | *268 | ------- | 582 | ------- | 454 | ------- | 233 | 440 | ------- |
| Total | 2,699 | 3,892 | 20,382 | 15,733 | 42,321 | 33,234 | 47,791 | 28,463 | 8,357 | 12,221 | 6,212 | 3,571 |
| Mean | 87.1 | 130 | 657 | 508 | 1,511 | 1,072 | 1,593 | 918 | 279 | 394 | 200 | 119 |
| Cfsm | 0.204 | 0.304 | 1.54 | 1.19 | 3.53 | 2.50 | 3.72 | 2.14 | 0.652 | 0.921 | 0.467 | 0.278 |
| In. | 0.23 | 0.34 | 1.77 | 1.37 | 3.68 | 2.89 | 4.15 | 2.47 | 0.73 | 1.06 | 0.54 | 0.31 |

Calendar year 1954: Max 13,100 Min 64 Mean 546 Cfsm 1.28 In. 17.32
Water year 1954-55: Max 8,260 Min 64 Mean 616 Cfsm 1.44 In. 19.54

Peak discharge (base, 5,500 cfs).---Dec. 30 (1:30 a.m.) 5,970 cfs (12.23 ft); Feb. 7 (5 p.m.) 9,050 cfs (14.20 ft); Mar.22 (11 p.m.) 7,120 cfs (13.11 ft); May 16 (7 p.m.) 5,560 cfs (11.85 ft).

* Discharge measurement made on this day.

## Tennessee River at Chattanooga, Tenn.

Location.--Lat 35°05'12", long 85°16'43", on right bank at Meadow Lake Country Club golf course, half a mile downstream from South Chickamauga Creek, 3 miles downstream from Chickamauga Dam, 3½ miles upstream from Walnut Street Bridge in Chattanooga, Hamilton County, and at mile 467.6.

Drainage area.--21,400 sq mi, approximately.

Records available.--April 1874 to October 1913, March 1915 to June 1930, and January 1936 to September 1955 in reports of Geological Survey. April 1874 to September 1924 in Tennessee Division of Geology Bulletin 34. July 1930 to September 1955 at site 38 miles downstream, published as Tennessee River at Hales Bar, near Chattanooga. Gage-height records collected in this vicinity since 1874 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 621.12 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Feb. 1, 1939, staff or chain gages or water-stage recorders at several sites from 7 miles upstream from Chattanooga to Hales Bar Dam and 33 miles downstream at or within 0.2 ft of present datum; except staff gage at Bridgeport, Ala., 49.9 miles downstream at different datum Oct. 22, 1913, to Feb. 28, 1915, and Oct 1, 1918, to Jan 5, 1921. Auxiliary gages at several sites parts of period since Feb. 28, 1915. Present auxiliary gage at site 2¼ miles downstream from base gage.

Average discharge.--81 years (1874-1955), using records at Hales Bar July 1930 to December 1935, 37,120 cfs.

Extremes.--Maximum discharge during year, 118,000 cfs Mar. 23; maximum gage height, 24.22 ft Mar. 23; minimum daily discharge, 5,100 cfs Oct. 10; minimum gage height, 10.92 ft Dec. 25.

1874-1955: Maximum discharge observed, 410,000 cfs Mar. 1, 1875 (gage height, 53.8 ft, present datum, at Walnut Street), from rating curve extended above 250,000 cfs; minimum daily, 1,200 cfs Nov. 1, 1953; minimum gage height, 0.0 ft Sept. 11-14, 1881, Sept. 19, 1883 (before filling of Hales Bar pool).

Maximum stage known, 57.9 ft Mar. 11, 1867, present datum at Walnut Street (discharge, about 459,000 cfs).

Remarks.--Records good. Since 1936, flow regulated by increasing numbers of reservoirs above station (see p. 242).

Revisions (water years).--WSP 353: 1874-1912. WSP 783: 1917. WSP 823: 1875(M). WSP 973: 1942.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12,200 | 23,900 | 20,800 | 74,600 | 22,400 | 44,700 | 44,200 | 21,800 | 20,500 | 34,400 | 30,000 | 32,400 |
| 2 | 18,500 | 19,800 | 19,500 | 60,200 | 24,400 | 40,700 | 42,200 | 28,100 | 21,400 | 23,400 | *35,000 | 31,800 |
| 3 | 8,800 | 27,100 | 25,500 | 47,300 | 25,400 | 36,000 | 34,300 | 31,400 | 24,900 | 22,100 | 34,300 | 23,800 |
| 4 | 17,900 | 22,600 | 19,700 | 43,500 | 33,100 | 35,600 | 40,900 | 30,400 | 26,000 | 18,500 | 34,000 | 25,000 |
| 5 | 14,900 | 27,300 | 13,300 | 38,700 | 29,600 | 40,400 | 40,400 | 31,300 | 19,000 | 30,700 | 30,000 | 25,900 |
| 6 | 16,900 | 21,500 | 25,700 | 36,400 | 31,700 | 33,500 | 45,400 | 34,200 | 30,700 | 33,300 | 35,600 | 29,000 |
| 7 | 20,700 | *9,600 | 26,700 | 30,800 | 45,500 | 22,300 | 50,100 | 28,300 | 32,500 | 29,900 | 27,500 | 31,600 |
| 8 | 24,400 | *18,400 | 29,200 | 30,000 | 52,400 | 36,800 | 42,900 | 25,500 | 32,100 | 29,200 | 36,100 | 31,700 |
| 9 | 13,900 | 19,900 | 22,700 | 24,800 | 47,900 | 43,300 | 33,800 | 30,100 | 31,400 | 36,200 | 35,500 | 29,700 |
| 10 | 5,100 | 20,000 | 31,200 | 35,100 | 46,600 | 44,000 | 28,300 | 34,800 | 34,700 | 33,200 | 37,000 | 27,400 |
| 11 | 18,400 | 17,200 | 27,300 | 36,800 | 46,400 | 43,400 | 26,100 | 34,900 | 28,400 | 34,200 | 33,900 | 26,400 |
| 12 | 21,000 | 18,300 | 19,300 | 33,500 | 43,700 | 22,300 | 22,200 | 34,000 | 24,000 | 32,300 | 35,700 | 26,600 |
| 13 | 19,100 | *17,400 | 22,100 | 37,300 | 34,400 | 28,100 | 23,500 | 31,700 | 31,900 | 28,000 | 27,800 | 27,600 |
| 14 | 18,300 | 10,400 | 19,900 | 41,700 | 38,300 | 31,800 | 35,400 | 28,800 | 32,800 | 35,900 | 26,300 | 27,900 |
| 15 | 26,000 | 17,800 | 25,500 | 39,600 | 31,000 | 34,300 | 39,000 | 24,100 | 31,700 | 31,300 | 32,800 | 26,900 |
| 16 | 22,200 | 18,100 | 22,900 | 27,400 | 30,900 | 35,000 | 31,800 | 34,000 | 33,100 | 28,800 | 33,000 | 27,800 |
| 17 | 16,600 | 14,700 | 21,600 | 28,900 | 30,000 | 40,700 | 34,100 | 35,600 | 32,000 | 11,600 | 33,400 | 23,800 |
| 18 | 19,500 | 18,000 | 32,700 | 32,700 | 27,800 | 44,400 | 26,200 | 33,300 | 23,600 | 32,400 | 34,600 | 25,600 |
| 19 | 18,500 | 18,600 | 36,400 | 35,100 | 34,900 | 55,300 | 23,400 | 32,100 | 22,200 | 30,800 | 28,700 | 22,800 |
| 20 | 20,700 | 21,400 | 30,300 | 37,200 | 28,000 | 86,700 | 25,000 | 28,800 | 30,000 | 27,700 | 28,400 | 23,500 |
| 21 | 22,000 | 18,500 | 26,800 | 26,600 | 34,700 | *88,800 | 24,700 | 22,800 | 32,700 | 29,600 | 25,600 | 22,300 |
| 22 | 24,500 | 20,400 | 27,000 | 30,600 | 25,100 | 103,000 | 27,800 | 11,900 | 34,600 | 32,600 | 31,400 | 22,000 |
| 23 | *16,900 | 23,600 | 22,100 | 25,100 | 52,400 | 117,000 | 27,300 | 14,200 | 34,800 | 30,000 | 30,300 | 26,500 |
| 24 | 14,500 | 24,000 | 20,100 | *29,700 | 63,000 | 109,000 | 8,500 | 29,000 | 33,000 | 22,400 | 30,100 | 20,200 |
| 25 | 17,700 | 14,500 | 14,600 | 33,700 | 55,600 | 94,200 | 30,100 | 33,000 | 23,900 | 28,400 | 30,600 | 16,800 |
| 26 | 17,500 | 19,000 | 9,900 | 33,600 | 38,100 | 88,900 | 28,900 | 22,700 | 20,700 | 31,200 | 28,000 | 20,500 |
| 27 | 17,400 | 15,100 | 27,600 | 32,100 | 22,200 | 87,600 | 20,600 | 18,400 | 32,800 | 31,200 | 26,700 | 20,400 |
| 28 | 20,500 | 12,200 | 29,300 | 30,100 | 35,400 | 80,000 | 15,900 | 18,600 | 35,400 | 33,700 | 29,100 | 19,600 |
| 29 | 17,400 | 16,400 | 41,800 | 40,600 | ------ | 58,200 | 18,800 | 11,100 | 34,200 | 28,700 | 33,000 | *22,400 |
| 30 | 22,700 | 29,300 | 66,800 | 23,100 | ------ | 48,200 | 23,600 | 7,800 | 32,700 | 30,400 | 33,900 | 25,400 |
| 31 | 14,400 | ------ | 70,400 | 22,900 | ------ | 44,600 | ------ | *15,300 | ------ | 19,200 | 34,400 | ------ |
| Total | 559,100 | 575,000 | 848,700 | ‡1,099.7 | ‡1,030.9 | ‡1,718.8 | 915,400 | 818,000 | 877,700 | 901,300 | 982,700 | 763,300 |
| Mean | 18,040 | 19,170 | 27,380 | 35,470 | 36,820 | 55,450 | 30,510 | 26,390 | 29,260 | 29,070 | 31,700 | 25,440 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 180,000 Min 5,100 Mean 28,150 Cfsm 1.32 In. 17.86
Water year 1954-55: Max 117,000 Min 5,100 Mean 30,390 Cfsm 1.42 In. 19.27

* Discharge measurement made on this day.
‡ Expressed in thousands.

## Chattanooga Creek near Flintstone, Ga.

Location.--Lat 34°58'20", long 85°19'40", on right bank 0.8 mile south of Georgia-Tennessee State line and 2.3 miles northeast of Flintstone, Walker County.

Drainage area.--50.6 sq mi.

Records available.--December 1950 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 649.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 2,850 cfs Feb. 6 (gage height, 10.44 ft); minimum, 1.9 cfs Oct. 26 (gage height, 0.36 ft).
1950-55: Maximum discharge, 6,140 cfs Mar. 29, 1951 (gage height, 12.90 ft, from high-water mark in gage well); minimum, 1.0 cfs Sept. 8, 9, 1954; minimum gage height, 0.15 ft July 29, 1952.

Remarks.--Records good.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-3, Oct. 19 to Nov. 28, Feb. 26 to Mar. 21, May 30 to June 18, June 24, 26)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.2 | 2.0 | 5.0 | 185 | 0.3 | 2.7 | 6.0 | 320 |
| .6 | 5.4 | 6.5 | 305 | .6 | 7.0 | 6.5 | 392 |
| 1.0 | 10 | 7.0 | 370 | 1.0 | 16 | 7.0 | 513 |
| 1.5 | 18 | 7.4 | 530 | 2.0 | 41 | 7.5 | 695 |
| 2.0 | 31 | 8.6 | 1,400 | 3.0 | 87 | 8.5 | 1,320 |
| 3.0 | 68 | | | 5.0 | 226 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.8 | *3.0 | 8.7 | 137 | 38 | 99 | 77 | 60 | *68 | 14 | 21 | *5.9 |
| 2 | 5.9 | 3.4 | 7.5 | 111 | 90 | *94 | 129 | 53 | 56 | 12 | 20 | 5.3 |
| 3 | 3.8 | 3.4 | 7.0 | 84 | 80 | 80 | 308 | *47 | 49 | 12 | 19 | 5.0 |
| 4 | 3.5 | 4.0 | 6.4 | 68 | 68 | 76 | 208 | 42 | 43 | 11 | 18 | 4.8 |
| 5 | 3.2 | 5.2 | 14 | 60 | 64 | 70 | 312 | 39 | 39 | *10 | *15 | 4.7 |
| 6 | *3.1 | 4.4 | *74 | 54 | *1,380 | 78 | 830 | 36 | 36 | 11 | 14 | 4.7 |
| 7 | 2.9 | 3.4 | 22 | 44 | *1,050 | 104 | 580 | 34 | 49 | 11 | 13 | 5.1 |
| 8 | 2.6 | 3.5 | 14 | 38 | 312 | 93 | 326 | 31 | 40 | 31 | 13 | 5.0 |
| 9 | 2.6 | 3.4 | 20 | 38 | 213 | 84 | 229 | 29 | 35 | 44 | 12 | 4.0 |
| 10 | 2.3 | 3.3 | 25 | 48 | 155 | 75 | 176 | 28 | 32 | 25 | 12 | 4.0 |
| 11 | 2.2 | 3.2 | 17 | 100 | 171 | 68 | *286 | 27 | 34 | 19 | 11 | 4.0 |
| 12 | 2.3 | 3.1 | 14 | 82 | 143 | 61 | 305 | 25 | 30 | 19 | 11 | 4.3 |
| 13 | 2.4 | 3.0 | 33 | 70 | 120 | 56 | 942 | 34 | 28 | 17 | 9.4 | 4.3 |
| 14 | 2.4 | 3.3 | 35 | 58 | 105 | 49 | 927 | 30 | 26 | 16 | 9.0 | 4.4 |
| 15 | 2.4 | 3.0 | 24 | 56 | 91 | 44 | 476 | 33 | 25 | 17 | 8.4 | 4.1 |
| 16 | 2.5 | 5.0 | 18 | 55 | 82 | 48 | 300 | 45 | 23 | 20 | 8.0 | 4.0 |
| 17 | 2.1 | 5.9 | 24 | 48 | 86 | 50 | 214 | 49 | 22 | 22 | 8.2 | 3.7 |
| 18 | 2.1 | 4.6 | 162 | 46 | 76 | 47 | 164 | 36 | 21 | 18 | 7.8 | 3.3 |
| 19 | 2.3 | 4.4 | 76 | 114 | 70 | 67 | 130 | 30 | 20 | 17 | 7.0 | 3.5 |
| 20 | 2.3 | 4.6 | 47 | 99 | 64 | 86 | 107 | 28 | 19 | 16 | 6.2 | 3.7 |
| 21 | 2.3 | 4.6 | 35 | 90 | 62 | 344 | 99 | 117 | 18 | 15 | 6.0 | 3.5 |
| 22 | 2.3 | 4.9 | 29 | 172 | 102 | 1,270 | 88 | 457 | 17 | 14 | 5.9 | 3.5 |
| 23 | 2.2 | 5.0 | 24 | 147 | *323 | 466 | 124 | 756 | 23 | 20 | 5.7 | 3.5 |
| 24 | 2.1 | 4.6 | 21 | 113 | *248 | 280 | 180 | 274 | 25 | 39 | 5.7 | 4.5 |
| 25 | 2.1 | 4.4 | 18 | 89 | 176 | 209 | 193 | 206 | 20 | 143 | 5.3 | 8.6 |
| 26 | 2.0 | 3.9 | 17 | 72 | 143 | 197 | 146 | 200 | 23 | 78 | 5.0 | *5.5 |
| 27 | 2.1 | 4.6 | 15 | 64 | 122 | 158 | 116 | 164 | 20 | 44 | 4.7 | 5.0 |
| 28 | 2.3 | 14 | *17 | 57 | 107 | 136 | 97 | 114 | 17 | 34 | 4.8 | 4.8 |
| 29 | 2.6 | 42 | 707 | 51 | - | 117 | 80 | 116 | 15 | 27 | 5.0 | 4.8 |
| 30 | 2.7 | *12 | 692 | 45 | ------ | 98 | 68 | 101 | 14 | 24 | 5.0 | 5.5 |
| 31 | 2.8 | ---- | 195 | *39 | ------ | 86 | ------ | 83 | ------ | 22 | 5.7 | ------ |
| Total | 84.2 | 177.1 | 2,417.6 | 2,349 | 5,741 | 4,790 | 8,217 | 3,324 | 887 | 822 | 301.8 | 137.0 |
| Mean | 2.72 | 5.90 | 78.0 | 75.8 | 205 | 155 | 274 | 107 | 29.6 | 26.5 | 9.74 | 4.57 |
| Cfsm | 0.054 | 0.117 | 1.54 | 1.50 | 4.05 | 3.06 | 5.42 | 2.11 | 0.585 | 0.524 | 0.192 | 0.090 |
| In. | 0.06 | 0.13 | 1.78 | 1.73 | 4.22 | 3.52 | 6.04 | 2.44 | 0.65 | 0.60 | 0.22 | 0.10 |

Calendar year 1954: Max 2,040 Min 1.3 Mean 60.4 Cfsm 1.19 In. 16.21
Water year 1954-55: Max 1,380 Min 2.0 Mean 80.1 Cfsm 1.58 In. 21.49

Peak discharge (base, 800 cfs).--Dec. 29 (9 p.m.) 1,800 cfs (9.14 ft); Feb. 6 (6 p.m.) 2,850 cfs (10.44 ft); Mar. 22 (6 a.m.) 1,900 cfs (9.26 ft); Apr. 6 (4 p.m.) 1,070 cfs (8.16 ft); Apr. 13 (8 p.m.) 1,160 cfs (8.28 ft); May 23 (1 a.m.) 1,050 cfs (8.13 ft).
* Discharge measurement made on this day.

## Tennessee River at Hales Bar, near Chattanooga, Tenn.

Location.--Lat 35°01'43", long 85°32'48", in center pier of bridge on U. S. Highways 41, 64, and 72, 1.4 miles downstream from Hales Bar Dam, 5½ miles southeast of Jasper, Marion County, 7 miles upstream from Sequatchie River, 34.5 miles downstream from Chattanooga, and at mile 429.7.

Drainage area.--21,800 sq mi, approximately.

Records available.--July 1930 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 588.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Feb. 13, 1932, water-stage recorder on lower lock wall 1.4 miles upstream at datum 0.35 ft higher. Since Jan. 27, 1939, auxiliary water-stage recorder 22 miles downstream.

Average discharge.--25 years, 34,020 cfs.

Extremes.--Maximum discharge during year 122,000 cfs Mar. 23 (gage height, 20.48 ft); minimum daily, 5,500 cfs Dec. 26; minimum gage height, 4.59 ft Oct. 16.

1930-55: Maximum discharge, 241,000 cfs (revised) Dec. 31, 1932, Jan. 1, 1933, Mar. 30, 1936 (gage height, 31.2 ft); minimum daily, 2,900 cfs Nov. 1, 15, 1953; minimum gage height, 1.21 ft Oct. 27, 1931, site and datum then in use.

Maximum stage known, 44.6 ft in March 1867, present site and datum. A stage of 37.4 ft occurred Mar. 8, 1917, present site and datum (discharge, 320,000 cfs, revised, from rating curve extended above 225,000 cfs).

Revisions.--The maximum discharge for the water years 1933 and 1934 and the minimum discharge for water year 1934 have been revised to 241,000 cfs Dec. 31, 1932, Jan. 1, 1933 (gage height, 31.2 ft), 215,000 cfs Mar. 6, 1934, and 6,620 cfs Oct. 31, 1933 (gage height, 1.59 ft), respectively, superseding figures published in WSP 743 and 758, respectively.

Remarks.--Records good. Flow regulated by many reservoirs above station (see p. 242).

Revisions (water years).--WSP 853: Drainage area. WSP 973: 1942. Monthly figures of discharge in cubic feet per second per square mile and runoff in inches for March to September 1936 published in WSP 803 may be considerably in error owing to regulation by Norris Lake and should not be used. Revised figures of discharge, in cubic feet per second, for the water years 1932-34, superseding those published in WSP 728, 743, and 758, are given herewith:

| Date | Discharge | Date | Discharge | Date | Discharge | Date | Discharge | Date | Discharge |
|---|---|---|---|---|---|---|---|---|---|
| 1932 | | 1932-Con. | | 1933-Con. | | 1933-Con. | | 1933-Con. | |
| Sept. 1 | 11,100 | Sept.21 | 8,470 | Oct. 2 | 10,400 | Oct. 22 | 10,400 | Nov. 11 | 9,660 |
| 2 | 10,400 | 22 | 8,980 | 3 | 9,660 | 23 | 10,400 | 12 | 10,000 |
| 3 | 10,700 | 23 | 11,100 | 4 | 10,000 | 24 | 9,660 | 13 | 8,980 |
| 4 | 10,000 | 24 | 10,400 | 5 | 10,000 | 25 | 8,980 | 14 | 9,320 |
| 5 | 10,000 | 25 | 9,320 | 6 | 10,700 | 26 | 8,640 | 15 | 8,980 |
| 6 | 8,980 | 26 | 8,640 | 7 | 9,660 | 27 | 8,640 | 16 | 8,640 |
| 7 | 7,960 | 27 | 9,320 | 8 | 8,640 | 28 | 8,640 | 17 | 8,640 |
| 8 | 7,620 | 28 | 10,700 | 9 | 8,470 | 29 | 8,640 | 18 | 8,640 |
| 9 | 7,790 | 29 | 10,400 | 10 | 8,130 | 30 | 7,790 | 19 | 8,640 |
| 10 | 8,300 | 30 | 11,800 | 11 | 7,960 | 31 | 7,620 | 20 | 7,960 |
| 11 | 8,470 | Dec. 29 | 176,000 | 12 | 8,640 | Nov. 1 | 7,790 | 21 | 8,300 |
| 12 | 7,790 | 30 | 215,000 | 13 | 8,980 | 2 | 8,130 | 22 | 8,130 |
| 13 | 7,450 | 31 | 237,000 | 14 | 8,640 | 3 | 9,320 | 23 | 8,980 |
| 14 | 7,110 | | | 15 | 8,300 | 4 | 10,000 | 24 | 8,980 |
| 15 | 6,940 | 1933 | | 16 | 8,130 | 5 | 9,660 | 25 | 9,660 |
| 16 | 8,130 | Jan. 1 | 239,000 | 17 | 8,980 | 6 | 9,320 | 26 | 9,320 |
| 17 | 7,960 | 2 | 226,000 | 18 | 8,470 | 7 | 8,980 | 27 | 8,980 |
| 18 | 7,450 | 3 | 188,000 | 19 | 8,980 | 8 | 8,980 | 28 | 8,980 |
| 19 | 7,450 | 4 | 142,000 | 20 | 9,660 | 9 | 9,320 | 29 | 8,130 |
| 20 | 7,280 | Oct. 1 | 11,500 | 21 | 10,000 | 10 | 9,660 | 30 | 8,130 |

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| September 1932..... | 11,800 | 6,940 | 8,930 | 0.410 | 0.46 |
| Water year 1931-32.. | 188,000 | 5,350 | 36,470 | 1.67 | 22.76 |
| December 1932..... | 237,000 | 20,800 | 74,400 | 3.41 | 3.94 |
| Calendar year 1932.. | 237,000 | 6,940 | 42,100 | 1.93 | 26.30 |
| January 1933..... | 239,000 | 39,400 | 79,300 | 3.64 | 4.19 |
| Water year 1932-33.. | 239,000 | 10,000 | 43,300 | 1.99 | 26.97 |
| October 1933..... | 11,500 | 7,620 | 9,139 | .419 | .48 |
| November 1933..... | 10,000 | 7,790 | 8,940 | .410 | .46 |
| Calendar year 1933.. | 239,000 | 7,200 | 35,070 | 1.61 | 21.84 |
| Water year 1933-34.. | 229,000 | 7,200 | 26,970 | 1.24 | 16.81 |

Tennessee River at Hales Bar, near Chattanooga, Tenn.--Continued

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12,700 | 23,600 | *23,000 | 87,600 | *23,300 | 45,200 | 45,100 | 21,500 | 20,400 | 33,000 | 30,400 | 31,900 |
| 2 | 17,100 | 22,600 | 19,600 | 71,400 | 24,600 | 43,700 | 44,300 | *29,700 | 21,600 | 25,300 | 33,500 | 32,300 |
| 3 | 6,800 | 27,100 | 23,500 | 53,400 | 29,200 | 40,000 | 39,300 | 30,800 | 24,400 | 23,800 | 32,900 | 26,200 |
| 4 | 15,600 | 24,100 | 19,800 | 46,500 | 32,600 | 38,100 | 43,700 | 30,800 | 25,900 | 20,300 | 36,900 | 26,400 |
| 5 | 15,400 | 27,900 | 15,800 | 39,800 | 31,700 | 41,400 | 44,600 | 31,600 | 19,200 | 28,000 | 33,100 | 28,000 |
| 6 | 18,400 | 22,700 | 24,000 | 44,000 | 39,400 | 40,300 | 51,600 | 34,000 | 28,900 | 31,300 | 37,800 | 31,200 |
| 7 | 18,600 | 9,500 | 29,200 | 32,400 | 57,300 | 26,000 | 59,600 | 31,200 | 33,700 | 29,000 | 31,400 | 31,200 |
| 8 | 25,100 | 18,200 | 29,100 | 32,500 | 62,600 | 39,800 | 53,300 | 28,800 | 32,900 | 29,600 | 33,900 | 30,400 |
| 9 | 14,400 | 19,300 | 25,600 | 28,300 | 51,800 | 43,700 | 42,500 | 29,700 | 32,600 | 35,400 | 32,600 | 28,900 |
| 10 | 5,700 | 19,300 | 34,300 | 34,900 | 48,500 | 46,100 | 32,900 | 32,900 | 33,000 | 36,700 | 33,700 | 29,200 |
| 11 | 15,000 | 20,000 | 30,200 | 38,900 | 49,100 | 45,200 | 30,700 | 34,800 | 32,400 | 33,100 | 33,900 | 29,500 |
| 12 | 22,300 | 18,900 | 18,100 | 35,400 | 48,700 | 28,500 | 28,600 | 33,400 | 24,500 | 31,600 | 35,600 | 26,900 |
| 13 | 17,000 | 15,600 | 20,800 | 38,700 | 39,900 | 30,400 | 29,400 | 33,300 | 31,900 | 28,400 | 30,400 | 26,300 |
| 14 | 22,000 | 8,700 | 20,500 | 41,800 | 39,800 | 33,900 | 44,300 | 29,100 | 32,900 | 33,000 | 29,300 | 27,900 |
| 15 | 22,600 | 19,000 | 24,300 | 40,500 | 33,000 | 35,700 | 45,400 | 24,200 | 31,900 | 32,000 | 32,000 | 27,200 |
| 16 | 21,200 | 17,700 | 25,000 | 29,400 | 35,200 | 38,300 | 37,200 | 33,300 | 32,500 | 31,300 | 33,000 | 29,000 |
| 17 | 19,000 | 14,500 | 25,200 | 31,400 | 32,100 | 41,200 | 37,600 | 37,500 | 32,400 | 15,300 | 33,400 | 26,500 |
| 18 | 19,200 | 17,600 | 37,000 | 33,100 | 31,100 | 44,500 | 31,900 | 33,100 | 24,700 | 28,500 | 34,600 | 27,800 |
| 19 | 19,400 | 17,900 | 44,700 | 37,300 | 35,700 | 55,700 | 26,600 | 32,200 | 23,400 | 28,400 | 31,400 | 23,600 |
| 20 | 21,300 | 21,700 | 32,100 | 40,100 | 30,000 | 87,500 | 26,900 | 31,200 | 30,300 | 29,400 | 31,700 | 24,800 |
| 21 | 24,900 | 19,900 | 27,100 | 30,100 | 33,400 | 92,800 | 26,100 | 25,500 | 32,100 | 30,700 | 29,600 | 21,100 |
| 22 | 26,000 | 21,900 | 29,300 | 32,900 | 32,500 | 113,000 | 27,600 | 15,900 | 34,300 | 33,900 | 30,400 | 20,800 |
| 23 | 16,300 | 25,200 | 21,600 | 29,400 | 60,300 | 121,000 | 28,200 | 14,000 | 34,000 | 33,400 | 31,000 | 24,700 |
| 24 | 12,200 | 25,000 | 21,000 | 34,200 | 68,400 | *114,000 | 17,000 | 34,000 | 33,200 | 24,800 | 29,800 | 20,600 |
| 25 | 20,000 | 16,600 | 9,200 | 36,700 | 58,300 | 96,600 | 32,200 | 33,300 | 27,200 | 28,800 | 29,200 | 17,800 |
| 26 | 19,000 | 19,900 | 5,500 | 35,800 | 44,300 | 92,400 | 31,700 | 25,400 | 24,000 | 33,300 | 26,900 | 20,800 |
| 27 | 18,200 | 17,900 | 27,100 | 34,600 | 28,600 | 89,200 | 22,300 | 21,400 | 34,200 | 32,500 | 31,100 | 19,400 |
| 28 | 20,000 | 12,800 | 31,300 | 32,900 | 38,300 | 80,600 | 18,400 | 20,400 | 35,200 | 33,400 | 32,000 | 19,600 |
| 29 | 18,000 | 19,000 | 53,600 | 41,000 | - | 62,000 | 18,600 | 16,800 | *33,400 | 29,900 | 31,400 | 23,900 |
| 30 | 23,800 | 31,400 | 81,200 | 25,500 | ------ | 50,900 | 24,900 | 10,400 | 32,000 | 32,700 | 34,400 | 26,600 |
| 31 | 13,900 | ------ | 82,000 | 26,500 | ------ | 48,000 | ------ | 16,400 | ------ | 23,700 | *33,500 | ------ |
| Total | 561,100 | 595,500 | 910,700 | ‡1,197 | ‡1,139.7 | ‡1,805.7 | ‡1,042.5 | 856,600 | 889,100 | 920,500 | ‡1,000.8 | 780,500 |
| Mean | 18,100 | 19,850 | 29,380 | 38,610 | 40,700 | 58,250 | 34,750 | 27,630 | 29,640 | 29,690 | 32,280 | 26,020 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 192,000 Min 5,500 Mean 29,410 Cfsm 1.35 In. 18.31
Water year 1954-55: Max 121,000 Min 5,500 Mean 32,050 Cfsm 1.47 In. 19.96

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--No gage-height record at base gage Dec. 4-6, Dec. 9 to Jan. 3; discharge estimated on basis of records at Hales Bar Dam.

Sequatchie River near Whitwell, Tenn.

Location.--Lat 35°12'22", long 85°29'48", on right bank 15 ft downstream from highway bridge, 1½ miles east of Whitwell, Marion County, 3 miles upstream from bridge on State Highway 27, and 4½ miles downstream from Griffith Creek.

Drainage area.--384 sq mi.

Records available.--December 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 632.73 ft above mean sea level, datum of 1929, supplementary adjustment of 1936 (levels by Tennessee Valley Authority). Prior to Sept. 18, 1927, staff gage at same site at datum 0.03 ft higher. Sept. 18, 1927, to Oct. 31, 1929, staff gage and Nov. 1, 1929, to Sept. 30, 1930, wire-weight gage, at bridge 15 ft upstream at present datum.

Average discharge.--34 years (1921-55), 720 cfs.

Extremes.--Maximum discharge during year, 9,370 cfs Mar. 22 (gage height, 14.58 ft); minimum daily, 30 cfs (estimated) Oct. 20-26.

1920-55: Maximum discharge, 21,400 cfs Jan. 5, 1949 (gage height, 16.55 ft); minimum, 16 cfs (revised) Sept. 6-21, 27, 28, 1925.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 523 | 1921 | Feb. 11, 1921 | 12,100 | 15.1 |
| 603 | 1922 | Mar. 2, 1922 | 16,300 | 15.8 |
| 563 | 1923 | Dec. 16, 1922 | 7,100 | 13.6 |
| 583 | 1924 | May 1, 1924 | 6,850 | 13.5 |
| 603 | 1925 | Apr. 28, 1925 | 6,630 | 13.4 |
| 643 | 1927 | Dec. 26, 1926 | 13,200 | 15.3 |
| 663 | 1928 | June 30, 1928 | 13,200 | 15.3 |
| 698 | 1930 | Nov. 15, 1929 | 9,300 | 14.4 |
| 743 | 1933 | Feb. 15, 1933 | 12,300 | 14.95 |

The minimum discharge for the water year 1925 has been revised to 16 cfs Sept. 6-21, 27, 28, 1925 (gage height, 0.70 ft), superseding figure published in WSP 603.

Remarks.--Records good except those for period of no gage-height record, which are fair. Some diurnal fluctuation caused by two small mills above station.

Revisions (water years).--WSP 603: 1922(M). WSP 758: 1929(M). WSP 823: Drainage area. WSP 1033: 1943(M). Revised figures of discharge, in cubic feet per second, for periods in the water years 1921 and 1922, superseding those published in WSP 523, 543, are given herewith:

| 1921 | | 1922 | |
|---|---|---|---|
| Feb. 10 | 5,930 | Mar. 2 | 14,400 |
| 11 | 11,600 | 3 | 9,300 |
| 12 | 8,100 | 4 | 6,430 |
| Apr. 17 | 8,100 | 10 | 4,430 |
| 18 | 4,700 | 11 | 9,300 |
| | | 12 | 6,230 |

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| February 1921 | 11,600 | 865 | 2,470 | 6.43 | 6.69 |
| April | 8,100 | 335 | 1,410 | 3.67 | 4.11 |
| Calendar year 1921 | 11,600 | 50 | 645 | 1.68 | 22.79 |
| March 1922 | 14,400 | 935 | 3,400 | 8.85 | 10.20 |
| Water year 1921-22 | 14,400 | 50 | 974 | 2.54 | 34.43 |
| Calendar year 1922 | 14,400 | 40 | 983 | 2.56 | 34.74 |

## Sequatchie River near Whitwell, Tenn.--Continued

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.48 | 30 | 6.0 | 1,510 |
| .60 | 36 | 10.0 | 3,000 |
| .80 | 48 | 12.0 | 4,120 |
| 1.0 | 65 | 13.0 | 5,200 |
| 1.5 | 125 | 14.0 | 7,220 |
| 2.0 | 209 | 14.3 | 8,190 |
| 3.0 | 482 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 37 | 31 | *45 | 2,460 | 351 | 1,290 | 894 | 575 | 460 | 197 | 173 | 61 |
| 2 | 63 | *31 | 42 | 1,450 | 409 | 1,240 | 887 | 517 | 386 | 182 | *148 | *59 |
| 3 | 170 | 31 | 41 | 1,100 | 424 | 1,080 | 1,690 | 472 | 334 | 171 | 154 | 57 |
| 4 | *82 | 32 | 42 | *796 | 412 | 959 | 1,650 | 431 | 296 | 163 | 142 | 56 |
| 5 | 62 | 36 | 119 | 670 | 418 | 850 | 1,490 | 398 | 262 | *157 | 134 | 56 |
| 6 | 52 | 35 | 194 | 595 | 2,670 | 850 | 3,180 | 372 | 307 | 152 | 126 | 60 |
| 7 | 44 | 34 | 176 | 543 | 5,880 | 1,450 | 7,550 | 346 | 857 | 166 | 121 | 54 |
| 8 | 40 | 34 | 132 | 511 | 4,390 | 1,400 | 5,000 | 323 | 986 | 209 | 126 | 52 |
| 9 | 38 | 33 | 161 | 485 | 2,850 | 1,160 | 2,970 | 304 | 1,040 | 250 | 112 | 51 |
| 10 | 37 | 34 | 165 | 463 | 1,770 | 966 | 1,910 | 282 | 1,050 | 175 | 110 | 49 |
| 11 | 36 | 34 | 148 | 476 | 1,740 | 843 | 2,190 | 270 | 1,410 | 163 | 110 | 49 |
| 12 | 35 | 33 | 126 | 501 | 1,650 | 751 | 2,430 | *264 | 1,390 | 169 | 179 | 48 |
| 13 | 34 | 33 | 121 | 527 | 1,390 | 680 | 2,380 | 340 | 1,010 | 184 | 148 | 50 |
| 14 | 33 | 32 | 115 | 495 | 1,190 | 609 | 3,320 | 581 | 745 | 155 | 134 | 49 |
| 15 | 32 | 32 | 112 | 456 | 1,040 | 559 | *2,550 | 511 | 585 | 149 | 130 | 49 |
| 16 | 32 | 32 | 110 | 476 | 945 | 536 | 1,870 | 415 | 482 | 155 | 115 | 47 |
| 17 | 31 | 33 | 119 | 472 | 912 | 585 | 1,830 | 392 | 404 | 150 | 111 | 45 |
| 18 | 31 | 33 | 516 | 447 | 864 | 721 | 1,210 | 380 | 346 | 144 | 125 | 44 |
| 19 | 31 | 34 | 690 | 498 | 819 | 1,770 | 1,000 | 343 | 304 | 137 | 97 | 43 |
| 20 | 30 | 34 | 619 | 520 | 751 | 2,730 | 867 | 323 | 272 | 166 | 90 | 42 |
| 21 | 30 | 33 | 409 | 543 | 731 | 3,550 | 785 | 340 | 252 | 274 | 86 | 42 |
| 22 | 30 | 32 | 304 | 700 | 1,760 | 7,850 | 734 | 819 | 240 | 197 | 88 | 41 |
| 23 | 30 | 32 | 254 | 898 | 4,100 | 6,730 | 881 | 1,720 | 227 | 178 | *97 | 42 |
| 24 | 30 | 32 | 225 | 881 | 3,930 | 5,160 | 1,440 | 1,230 | 211 | 207 | 85 | 43 |
| 25 | 30 | 32 | 201 | 755 | 2,720 | 3,050 | 1,750 | 962 | 321 | 277 | 78 | 44 |
| 26 | 30 | 32 | 182 | 636 | 1,800 | 3,200 | 1,350 | 717 | 392 | 231 | 75 | 42 |
| 27 | 31 | 34 | 168 | 552 | 1,400 | 2,580 | 1,050 | 559 | 348 | 217 | 71 | 42 |
| 28 | 33 | 38 | 189 | *495 | *1,380 | 1,880 | 874 | 453 | 318 | 187 | 70 | 43 |
| 29 | 33 | 45 | 3,220 | 447 | - | 1,490 | 748 | 683 | 250 | 374 | 68 | *55 |
| 30 | 32 | 52 | 5,730 | 404 | ------- | 1,220 | 649 | 670 | 215 | 301 | 65 | 67 |
| 31 | 31 | ------- | 4,230 | 369 | ------- | 1,030 | ------- | *546 | ------- | 178 | 63 | ------- |
| Total | 1,290 | 1,023 | 18,905 | 20,621 | 48,699 | 58,769 | 57,129 | 16,538 | 15,700 | 6,015 | 3,431 | 1,482 |
| Mean | 41.6 | 34.1 | 610 | 665 | 1,739 | 1,896 | 1,904 | 533 | 523 | 194 | 111 | 49.4 |
| Cfsm | 0.108 | 0.089 | 1.59 | 1.73 | 4.53 | 4.94 | 4.96 | 1.39 | 1.36 | 0.505 | 0.289 | 0.129 |
| In. | 0.12 | 0.10 | 1.83 | 2.00 | 4.72 | 5.69 | 5.53 | 1.60 | 1.52 | 0.58 | 0.33 | 0.14 |

Calendar year 1954: Max 12,800 Min 30 Mean 570 Cfsm 1.48 In. 20.14
Water year 1954-55: Max 7,850 Min 30 Mean 684 Cfsm 1.78 In. 24.16

Peak discharge (base, 5,500 cfs).--Dec. 30 (7 a.m.) 6,200 cfs (13.59 ft); Feb. 7 (11 a.m.) 6,330 cfs (13.65 ft); Mar. 22 (5 p.m.) 9,370 cfs (14.58 ft); Apr. 7 (6 a.m.) 8,750 cfs (14.44 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 12 to Nov. 1; discharge estimated on basis of weather records and records for stations on nearby streams.

## Paint Rock River near Woodville, Ala.

Location.--Lat 34°37'27", long 86°18'23", in NW¼ sec. 10, T. 5 S., R. 3 E., on left bank 20 ft downstream from bridge on U. S. Highway 72, 1,000 ft downstream from Southern Railway bridge, 2 miles west of Woodville, and 4 miles upstream from Little Paint Creek.

Drainage area.--320 sq mi.

Records available.--December 1935 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 570.95 ft above mean sea level, datum of 1929. Dec. 23, 1935, to Jan. 16, 1938, staff gage and Jan. 17, 1938, to July 24, 1940, water-stage recorder, at site 20 ft upstream at same datum.

Average discharge.--19 years (1936-55), 624 cfs.

Extremes.--Maximum discharge during year, 9,640 cfs Mar. 22 (gage height, 17.92 ft); minimum, 1.3 cfs Oct. 21 (gage height, 0.28 ft); minimum gage height, 0.24 ft Sept. 23, 24, 25.

1935-55: Maximum discharge, 31,300 cfs Dec. 28, 1942; maximum gage height, 20.84 ft Jan. 5, 1949; minimum discharge, that of Oct. 21, 1954.

Remarks.--Records good.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 29-30, Dec. 1-6, 9, 13; rate of change in stage used as a factor Dec. 29-31, Jan. 1, Feb. 6-9, 22-26, Mar. 21-25, Apr. 6-9, 13-16, May 23, 24, 29-31, June 1)

Oct. 1 to Dec. 30

| | | | |
|---|---|---|---|
| 0.29 | 1.4 | 5.9 | 790 |
| .4 | 3.6 | 7.4 | 1,160 |
| .5 | 6.2 | 10.0 | 1,910 |
| .7 | 13 | 14.0 | 3,620 |
| 1.2 | 40 | 16.0 | 5,050 |
| 2.0 | 108 | 17.0 | 6,650 |
| 3.0 | 234 | 17.5 | 8,050 |

Dec. 31 to Sept. 30

| | | | |
|---|---|---|---|
| 0.23 | 6.0 | 2.0 | 108 |
| .4 | 12 | 3.0 | 231 |
| .7 | 24 | 5.0 | 606 |
| 1.0 | 38 | 7.4 | 1,160 |
| 1.5 | 63 | | |

Note.--Same as preceding table above 7.4 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.4 | 2.1 | *48 | 2,310 | *206 | *624 | *467 | 332 | 1,790 | 42 | *53 | 14 |
| 2 | 5.9 | *2.1 | 40 | 1,080 | *556 | 557 | 419 | *290 | *694 | 39 | 46 | 13 |
| 3 | 10 | 1.9 | 32 | 626 | 973 | 505 | 516 | 257 | 447 | 38 | 41 | 12 |
| 4 | 7.8 | 3.0 | 27 | 473 | 569 | 457 | 670 | 230 | 347 | 35 | 39 | 12 |
| 5 | 4.9 | 5.4 | 29 | 390 | 457 | 421 | 768 | 203 | 284 | 34 | 36 | 12 |
| 6 | 3.6 | 5.7 | 75 | 336 | 2,730 | 419 | 2,520 | 184 | 242 | 38 | 34 | 11 |
| 7 | 3.2 | 5.7 | 236 | 288 | 6,980 | 882 | 3,730 | 166 | 269 | 47 | 35 | 11 |
| 8 | 2.8 | 8.8 | 151 | 248 | 5,370 | 889 | 3,270 | 149 | 383 | 69 | 34 | 10 |
| 9 | 2.8 | 8.4 | 95 | 225 | 2,930 | 630 | 1,690 | 134 | 316 | 52 | 36 | 10 |
| 10 | 2.8 | 8.4 | 358 | 225 | 1,430 | 525 | 1,140 | 121 | 234 | 55 | 50 | 10 |
| 11 | 2.8 | 8.1 | 291 | 284 | 1,260 | 463 | 1,240 | 109 | 210 | 47 | 59 | 10 |
| 12 | 2.6 | 8.1 | 141 | 368 | 1,400 | 409 | 1,650 | 101 | 228 | 42 | 51 | 10 |
| 13 | 2.6 | 8.1 | 90 | 345 | 968 | 358 | 1,880 | 97 | 199 | 40 | 72 | 10 |
| 14 | 2.6 | 9.1 | 77 | 286 | 766 | 313 | 3,200 | 95 | 167 | 39 | 50 | 9.7 |
| 15 | 2.3 | 9.1 | 102 | 257 | 659 | 286 | 3,420 | 101 | 146 | 46 | 41 | 8.9 |
| 16 | 1.9 | 13 | 116 | 303 | 593 | 275 | 2,210 | 132 | 128 | 56 | 36 | 8.2 |
| 17 | 1.9 | 13 | 129 | 352 | 812 | 341 | 1,210 | 123 | 111 | 69 | 32 | 7.8 |
| 18 | 1.7 | 16 | 924 | 316 | 937 | 406 | 858 | 94 | 96 | 86 | 29 | 7.4 |
| 19 | 1.4 | 16 | 1,070 | 584 | 747 | 610 | 681 | 82 | 84 | 61 | 27 | 7.1 |
| 20 | 1.4 | 19 | 399 | 980 | 615 | 1,750 | 586 | 86 | 75 | 50 | 24 | *7.1 |
| 21 | 1.4 | 19 | 237 | 690 | 558 | 2,730 | 493 | 203 | 67 | 102 | 22 | 7.8 |
| 22 | 1.5 | 18 | 174 | 1,030 | 2,100 | 6,990 | 562 | 775 | 62 | 178 | 23 | 7.4 |
| 23 | 1.7 | 16 | 139 | 1,280 | 5,410 | 6,850 | 809 | 1,820 | 59 | 98 | 27 | 6.8 |
| 24 | 1.9 | 16 | 116 | 835 | 5,540 | 3,940 | 1,760 | 1,600 | 56 | 69 | 22 | 6.8 |
| 25 | 2.3 | 14 | 99 | 606 | 3,440 | 2,100 | 1,420 | 830 | 54 | 78 | 19 | 6.8 |
| 26 | 2.3 | 13 | 84 | 455 | 1,730 | 1,700 | 978 | 580 | 53 | 443 | 18 | 6.4 |
| 27 | 2.1 | 12 | 74 | 370 | 985 | 1,360 | 736 | 548 | 51 | 245 | 18 | 6.4 |
| 28 | 1.9 | 18 | 138 | 316 | 745 | 978 | 591 | 390 | 50 | 148 | 18 | 6.4 |
| 29 | 2.1 | 27 | 2,830 | 280 | - | 786 | 481 | 1,050 | *48 | 129 | 16 | 6.4 |
| 30 | 2.6 | 43 | *7,970 | 246 | ------- | 646 | 396 | 5,440 | 45 | 85 | 16 | 6.0 |
| 31 | 2.3 | ---- | 4,870 | 220 | ------- | 538 | ------- | 4,200 | ------- | 64 | *15 | ------- |
| Total | 90.5 | 367.0 | 21,161 | 16,804 | 51,466 | 39,738 | 40,331 | 20,522 | 6,995 | 2,624 | 1,039 | 268.4 |
| Mean | 2.92 | 12.2 | 683 | 536 | 1,838 | 1,282 | 1,344 | 662 | 233 | 84.6 | 33.5 | 8.95 |
| Cfsm | 0.0091 | 0.038 | 2.13 | 1.68 | 5.74 | 4.01 | 4.20 | 2.07 | 0.728 | 0.264 | 0.105 | 0.028 |
| In. | 0.01 | 0.04 | 2.46 | 1.93 | 5.98 | 4.62 | 4.69 | 2.39 | 0.81 | 0.30 | 0.12 | 0.03 |

Calendar year 1954: Max 20,300 Min 1.4 Mean 530 Cfsm 1.66 In. 22.51
Water year 1954-55: Max 7,970 Min 1.4 Mean 551 Cfsm 1.72 In. 23.38

Peak discharge (base, 6,000 cfs).--Dec. 30 (11 a.m.) 9,470 cfs (17.88 ft); Feb. 7 (4 p.m.) 8,330 cfs (17.58 ft); Feb. 23 (10 to 11 p.m.) 6,950 cfs (17.12 ft); Mar. 22 (9:30 p.m.) 9,640 cfs (17.92 ft); May 30 (2 p.m.) 6,500 cfs (16.94 ft).

* Discharge measurement made on this day.

## Flint River near Chase, Ala.

Location.--Lat 34°49'08", long 86°28'52", in SW¼ sec. 36, T. 2 S., R. 1 E., on left bank 250 ft downstream from Nashville, Chattanooga & St. Louis Railway bridge, a quarter of a mile downstream from highway bridge, a third of a mile downstream from Brier Fork, and 5 miles northeast of Chase.

Drainage area.--342 sq mi.

Records available.--May 1930 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 640.37 ft above mean sea level, datum of 1929. Prior to May 18, 1934, staff gage at railway bridge 250 ft upstream at same datum.

Average discharge.--25 years, 516 cfs.

Extremes.--Maximum discharge during year, 20,200 cfs Mar. 22 (gage height, 17.79 ft); minimum, 53 cfs Oct. 2 (gage height, 0.84 ft).

1930-55: Maximum discharge, 42,000 cfs Jan. 21, 1954 (gage height, 25.00 ft); minimum, 44 cfs Sept. 20, 27, 30, 1931; minimum gage height, 0.82 ft Sept. 3, 27, 1954.

Flood of September 1929 reached a stage of 25.0 ft, from floodmarks (discharge, 42,000 cfs, from rating curve extended above 27,000 cfs).

Remarks.--Records good. Some diurnal fluctuation caused by small mills above station.

Revisions (water years).--WSP 823: Drainage area. WSP 853: 1936(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Apr. 24 | | | | Apr. 25 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.88 | 58 | 7.3 | 3,540 | 0.93 | 67 | 3.0 | 870 |
| 1.0 | 78 | 11.0 | 7,000 | 1.2 | 122 | 7.3 | 3,540 |
| 1.3 | 153 | 14.0 | 10,500 | 1.8 | 307 | | |
| 1.8 | 350 | 15.3 | 13,100 | | | | |
| 3.0 | 945 | | | | | | |

Note.--Same as preceding table above 7.3 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 61 | 64 | 112 | 755 | *266 | 590 | 450 | 271 | 493 | 111 | *160 | 86 |
| 2 | 148 | 64 | *98 | 655 | 1,320 | 580 | 460 | 251 | 365 | 109 | 146 | 82 |
| 3 | 125 | 64 | 93 | 505 | 660 | 505 | 570 | *227 | 296 | 109 | 134 | 78 |
| 4 | 78 | 71 | 91 | 420 | 430 | 465 | 480 | 215 | 257 | 107 | 118 | 78 |
| 5 | 70 | 71 | 108 | 377 | 422 | 455 | 1,480 | 205 | 231 | 122 | 127 | 80 |
| 6 | 70 | 73 | 228 | 341 | 3,780 | 655 | 2,970 | 196 | 259 | 293 | 122 | 76 |
| 7 | 66 | 71 | 159 | 305 | 3,090 | *1,070 | 2,440 | 183 | 394 | 227 | 120 | 76 |
| 8 | 63 | 70 | 125 | 269 | 1,210 | 645 | 1,100 | 177 | 333 | 146 | 190 | 75 |
| 9 | 61 | 70 | 163 | 260 | 815 | 515 | 750 | 168 | 244 | 124 | 157 | 73 |
| 10 | 60 | 70 | 188 | *287 | 660 | 445 | 655 | 163 | 519 | 330 | 124 | 69 |
| 11 | 58 | 70 | 145 | 368 | 740 | 410 | 1,080 | 163 | 2,000 | 183 | 165 | 73 |
| 12 | 58 | 70 | 128 | 332 | 635 | 382 | 880 | 174 | 650 | 288 | 199 | 76 |
| 13 | 58 | 70 | 128 | 278 | 490 | 354 | 1,410 | 234 | *390 | 171 | 136 | 75 |
| 14 | 58 | 66 | 131 | 248 | 455 | 332 | 1,300 | 224 | 300 | 136 | 115 | 71 |
| 15 | 58 | 68 | 128 | 240 | 435 | 314 | 815 | 183 | 257 | 134 | 109 | 71 |
| 16 | 58 | *184 | 122 | 274 | 420 | 346 | 645 | 180 | 244 | 185 | 104 | 69 |
| 17 | 58 | 169 | 139 | 252 | 520 | 435 | 545 | 190 | 199 | 210 | 122 | 69 |
| 18 | 58 | 105 | 372 | 240 | 475 | 510 | 475 | 168 | 183 | 139 | 107 | 69 |
| 19 | 58 | 87 | 240 | 765 | 400 | 1,580 | *425 | 160 | 168 | 122 | 100 | 73 |
| 20 | 60 | 82 | 182 | 575 | 364 | 1,600 | 382 | 166 | 163 | 514 | 96 | 67 |
| 21 | 60 | 78 | 156 | 465 | 619 | 7,660 | 530 | 787 | 154 | 268 | 94 | 69 |
| 22 | 58 | 78 | 145 | 1,060 | 4,400 | 13,100 | 655 | 2,240 | 149 | 157 | 98 | 69 |
| 23 | 60 | 78 | 136 | 685 | 3,940 | 2,530 | 1,060 | 1,440 | 144 | 171 | 146 | 67 |
| 24 | 61 | 73 | 128 | 505 | 1,590 | 1,320 | 2,000 | 630 | 141 | 144 | 124 | 73 |
| 25 | 60 | 73 | 122 | 405 | 1,010 | 1,100 | 1,490 | 466 | 139 | 1,120 | 98 | 78 |
| 26 | 61 | 75 | 120 | 346 | 810 | 1,010 | 640 | 337 | 141 | 392 | 92 | 78 |
| 27 | 60 | 78 | 118 | 310 | 700 | 740 | 475 | 264 | 139 | 211 | 88 | 75 |
| 28 | 60 | 140 | 494 | 282 | 645 | 660 | 394 | 227 | 129 | 210 | 84 | 73 |
| 29 | 61 | 200 | *9,440 | 252 | - | 605 | 337 | 9,820 | *122 | 539 | 84 | 73 |
| 30 | 61 | 139 | *4,770 | 232 | ------- | 530 | 296 | 2,240 | 118 | 231 | 84 | 76 |
| 31 | 63 | --- | 1,090 | 220 | ------- | 480 | ------- | 770 | ------- | 171 | *92 | ----- |
| Total | 2,049 | 2,671 | 19,799 | 12,508 | 31,301 | 41,923 | 27,189 | 22,919 | 9,321 | 7,374 | 3,735 | 2,217 |
| Mean | 66.1 | 89.0 | 639 | 403 | 1,118 | 1,352 | 906 | 739 | 311 | 238 | 120 | 73.9 |
| Cfsm | 0.193 | 0.260 | 1.87 | 1.18 | 3.27 | 3.95 | 2.65 | 2.16 | 0.909 | 0.696 | 0.351 | 0.216 |
| In. | 0.22 | 0.29 | 2.15 | 1.36 | 3.40 | 4.56 | 2.96 | 2.49 | 1.01 | 0.80 | 0.41 | 0.24 |

Calendar year 1954: Max 24,900 Min 55 Mean 422 Cfsm 1.23 In. 16.75
Water year 1954-55: Max 13,100 Min 58 Mean 501 Cfsm 1.46 In. 19.89

Peak discharge (base, 5,000 cfs).--Dec. 29 (4 p.m.) 13,600 cfs (15.50 ft); Feb. 6 (9 p.m.) 5,310 cfs (9.27 ft); Feb. 22 (9 p.m.) 6,500 cfs (10.50 ft); Mar. 22 (7 a.m.) 20,200 cfs(17.79 ft); May 29 (11:30 a.m.) 17,400 cfs (16.85 ft).

* Discharge measurement made on this day.

## Tennessee River at Whitesburg, Ala.

Location.--Lat 34°34'27", long 86°32'42", in NE¼ sec. 30, T. 5 S., R. 1 E., on right bank at Whitesburg, a quarter of a mile upstream from Aldridge Creek, a third of a mile upstream from Clement C. Clay Bridge on State Highway 38, 5½ miles downstream from Flint River, 11 miles south of Huntsville, 15½ miles downstream from Guntersville Dam, 58½ miles upstream from Wheeler Dam, and at mile 333.3.

Drainage area.--25,610 sq mi, approximately.

Records available.--October 1924 to September 1955. Prior to October 1936, published as "at Decatur." Gage-height records collected in this vicinity since 1875 (fragmentary prior to April 1909) are contained in files of Corps of Engineers and in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 549.00 ft above mean sea level, datum of 1929. Oct. 1, 1924, to Dec. 2, 1926, staff gage and Dec. 3, 1926, to Sept. 30, 1936, water-stage recorder, at site 28.3 miles downstream at datum 14.70 ft lower. Since Mar. 4, 1937, auxiliary water-stage recorder 28.3 miles downstream.

Average discharge.--30 years (1924-36, 1937-55), 41,930 cfs.

Extremes.--Maximum discharge during year, 173,000 cfs Mar. 24; maximum gage height, 16.62 ft Mar. 24; minimum daily discharge, 1,200 cfs Sept. 18; minimum gage height, 0.89 ft Dec. 8, 9.

1924-36, 1937-55: Maximum discharge, 283,000 cfs Jan. 1, 1927 (gage height, 23.2 ft, site and datum then in use); minimum daily, 700 cfs Sept. 7, 1952, Nov. 1, 1953, Aug. 1, 1954.

Maximum stage known, 31.4 ft in March 1867 present site and datum, from high-water profile by Corps of Engineers.

Remarks.--Records good. Discharge below 20,000 cfs computed on basis of records for Guntersville Dam, adjusted for storage and inflow. Flow regulated by many reservoirs above station (see p. 242).

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *24,400 | 18,000 | 25,200 | 99,900 | 31,400 | 50,800 | 56,200 | 28,800 | 32,800 | 42,000 | 40,000 | *43,000 |
| 2 | 24,200 | 30,100 | *22,300 | 97,700 | *35,900 | 51,900 | 51,600 | 35,000 | 32,900 | 14,400 | 42,700 | 40,000 |
| 3 | 5,900 | 30,900 | 28,500 | 82,200 | 39,700 | 48,400 | 45,800 | *32,400 | 25,700 | 2,000 | 43,200 | 16,600 |
| 4 | 17,400 | 25,200 | 24,100 | 57,900 | 38,100 | 47,200 | 49,100 | 26,200 | 25,600 | 23,800 | 40,700 | 11,900 |
| 5 | 16,100 | 30,700 | 10,800 | 54,100 | 32,700 | 44,800 | 51,300 | 40,800 | 16,800 | 32,700 | 40,900 | 14,400 |
| 6 | 15,800 | 26,200 | 32,400 | 49,600 | 46,900 | 44,200 | 63,000 | 32,900 | 36,600 | 34,900 | 25,600 | 37,400 |
| 7 | 15,900 | 9,600 | 35,900 | 43,300 | 77,500 | 41,300 | 75,400 | 29,800 | 47,100 | 36,500 | 10,500 | 38,100 |
| 8 | 21,300 | 15,500 | 29,500 | 37,500 | 89,100 | 45,300 | 59,600 | 24,400 | 44,700 | 37,400 | 37,600 | 39,600 |
| 9 | 10,300 | 21,200 | 29,100 | 29,000 | 93,600 | 49,600 | 52,800 | 33,000 | 38,600 | 23,600 | 38,500 | 39,600 |
| 10 | 3,400 | 24,500 | 30,100 | 36,660 | 93,800 | 47,600 | 59,400 | 34,400 | 30,800 | 13,700 | 40,700 | 16,900 |
| 11 | 14,600 | 21,500 | 28,100 | 43,500 | 87,900 | 51,000 | 59,000 | 38,500 | 33,100 | 31,700 | 40,300 | 10,900 |
| 12 | 21,900 | 15,400 | 27,600 | 35,000 | 70,300 | 36,000 | 49,000 | 37,900 | 28,600 | 37,100 | 41,900 | 32,000 |
| 13 | 15,100 | 14,400 | 35,500 | 44,800 | 54,700 | 37,600 | 58,000 | 31,200 | 42,900 | 47,200 | 12,600 | 30,100 |
| 14 | 21,600 | 8,600 | 28,700 | 46,300 | 52,500 | 38,500 | 57,300 | 32,400 | 45,600 | 50,100 | 12,200 | 35,800 |
| 15 | 31,600 | 21,400 | 26,400 | 41,700 | 44,700 | 42,300 | 60,800 | 30,800 | 42,300 | 48,700 | 38,800 | 35,500 |
| 16 | 22,200 | 20,600 | 25,800 | 33,600 | 45,300 | 44,900 | 60,700 | 37,000 | 45,100 | 28,000 | 39,600 | 39,500 |
| 17 | 8,400 | 13,900 | 28,000 | 35,400 | 48,000 | 43,900 | 60,100 | 43,000 | 42,300 | 2,800 | 41,700 | 10,700 |
| 18 | 20,000 | 16,200 | 34,700 | 38,000 | 43,400 | 47,600 | 50,900 | 39,500 | 20,200 | 36,400 | 42,200 | 1,200 |
| 19 | 22,400 | 15,200 | 38,200 | 44,100 | 45,800 | 54,400 | 42,500 | 42,200 | 1,900 | 38,600 | 39,600 | 27,800 |
| 20 | 24,800 | 26,100 | 40,400 | 51,800 | 34,500 | 74,600 | 41,700 | 33,700 | 41,900 | 37,200 | 18,300 | 25,600 |
| 21 | 29,900 | 20,800 | 37,000 | 41,800 | 45,000 | 108,000 | 46,700 | 29,100 | 38,900 | 34,500 | 12,300 | 23,500 |
| 22 | 22,500 | 29,300 | 26,900 | 39,800 | 49,800 | 136,000 | 35,100 | 28,400 | 44,100 | 38,200 | 38,700 | 25,200 |
| 23 | 12,900 | 29,100 | 29,700 | 41,900 | 69,400 | 156,000 | 37,300 | 25,800 | 45,900 | 12,300 | 37,800 | 26,100 |
| 24 | 9,100 | 30,300 | 22,000 | 40,500 | 90,600 | *171,000 | 30,500 | 45,300 | 46,500 | 17,600 | 38,300 | 22,500 |
| 25 | 21,100 | 11,800 | 14,100 | 42,400 | 88,600 | 165,000 | 48,800 | 39,200 | 10,700 | 41,000 | 39,200 | 14,100 |
| 26 | 16,400 | 22,000 | 10,000 | 39,300 | 74,900 | 150,000 | 34,200 | 35,100 | 1,800 | 43,100 | 31,100 | 19,200 |
| 27 | 20,300 | 15,400 | 25,100 | 40,200 | 59,200 | 124,000 | 25,900 | 25,100 | 36,100 | 46,000 | 16,200 | 21,000 |
| 28 | 21,700 | 12,300 | 32,700 | 43,200 | 52,100 | 113,000 | 25,900 | 24,700 | 38,500 | 46,900 | 12,900 | 22,000 |
| 29 | 22,100 | 24,700 | 54,800 | 42,300 | - | 96,300 | 36,100 | 24,500 | 42,900 | 42,000 | 35,900 | 23,800 |
| 30 | 24,000 | 37,000 | 79,000 | 27,800 | ------- | 72,600 | 32,700 | 32,600 | *42,400 | 24,400 | 38,700 | 25,600 |
| 31 | 22,600 | ------- | 87,200 | 35,100 | ------- | 61,400 | ------- | 35,000 | ------- | 10,800 | 39,500 | ------- |
| Total | 579,900 | 637,900 | 999,800 | ‡1,436.3 | ‡1,635.4 | ‡2,293.2 | ‡1,457.4 | ‡1,028.7 | ‡1,023.3 | 975,600 | ‡1,028.2 | 769,600 |
| Mean | 18,710 | 21,260 | 32,250 | 46,330 | 58,410 | 73,970 | 48,580 | 33,180 | 34,110 | 31,470 | 33,170 | 25,650 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 255,000 Min 700 Mean 34,290 Cfsm 1.34 In. 18.17
Water year 1954-55: Max 171,000 Min 1,200 Mean 37,990 Cfsm 1.48 In. 20.13

* Discharge measurement made on this day.
‡ Expressed in thousands.

## Flint Creek near Falkville, Ala.

Location.--Lat 34°22'23", long 86°56'01", in SW¼ sec. 2, T. 8 S., R. 4 W., near left bank on downstream side of highway bridge, 1.2 miles downstream from Robinson Creek, 1.5 miles west of Falkville, and 2.8 miles upstream from Cedar Creek.

Drainage area.--86.3 sq mi.

Records available.--July 1952 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 580 ft (from topographic map).

Extremes.--Maximum discharge during year, 6,100 cfs Mar. 21 (gage height, 14.60 ft); no flow Oct. 11 to Nov. 15, Sept. 16-30.
1952-54: Maximum discharge, that of Mar. 21, 1955; no flow at times each year.

Remarks.--Records good above 50 cfs, fair between 10 and 50 cfs, and poor below 10 cfs.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 3-28, Apr. 26 to May 22)

| Oct. 1 to Dec. 28 | | | | Dec. 29 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.7 | 0 | 2.0 | 13 | 0.7 | 0 | 2.0 | 14 | 9.0 | 550 |
| .8 | .2 | 2.5 | 27 | .8 | .1 | 2.5 | 24 | 10.0 | 795 |
| .9 | .4 | 3.0 | 45 | .9 | .4 | 3.5 | 54 | 10.5 | 970 |
| 1.1 | 1.0 | 4.0 | 93 | 1.0 | .8 | 4.5 | 99 | 11.0 | 1,280 |
| 1.2 | 1.4 | 6.0 | 225 | 1.1 | 1.4 | 6.0 | 183 | 12.0 | 2,230 |
| 1.6 | 5.3 | | | 1.3 | 3.1 | 7.0 | 255 | 14.0 | 5,000 |
| | | | | 1.6 | 6.8 | 8.0 | 361 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.1 | 0 | 5.3 | 197 | 57 | 183 | 104 | 22 | 56 | 9.2 | 2.0 | 0.4 |
| 2 | .1 | 0 | 2.9 | 171 | 102 | 153 | 116 | 21 | 42 | 7.6 | 1.6 | .3 |
| 3 | .2 | 0 | 1.9 | 116 | 79 | 129 | 141 | 22 | 32 | 7.0 | 1.4 | .3 |
| 4 | .2 | 0 | 1.5 | 94 | 57 | 116 | 99 | 20 | 26 | 6.8 | 1.2 | .3 |
| 5 | .2 | 0 | 5.2 | 82 | 77 | 112 | 86 | *18 | 21 | 6.7 | 1.0 | .3 |
| 6 | .3 | 0 | 15 | 72 | 1,380 | 168 | 92 | 17 | 19 | 6.7 | .9 | .3 |
| 7 | .4 | 0 | 14 | 59 | 1,420 | 239 | 247 | 15 | *20 | 7.8 | .9 | .3 |
| 8 | .2 | 0 | 10 | 50 | 745 | 159 | 165 | 13 | 21 | 7.4 | 2.5 | .2 |
| 9 | .1 | 0 | 8.2 | 54 | 443 | 132 | 129 | 12 | 16 | 12 | 6.7 | .2 |
| 10 | .1 | 0 | 7.0 | 109 | 272 | 116 | 126 | 10 | 14 | 8.1 | 3.4 | .2 |
| 11 | 0 | 0 | 6.2 | 183 | 468 | 109 | 263 | 9.0 | 14 | 6.7 | 1.9 | .1 |
| 12 | *0 | 0 | 5.2 | 122 | 463 | 94 | 218 | 8.1 | 13 | 6.4 | 1.3 | .1 |
| 13 | 0 | 0 | 4.7 | 102 | 272 | 82 | 399 | 8.4 | 11 | 5.8 | .9 | .1 |
| 14 | 0 | 0 | 4.5 | 79 | 232 | 72 | 670 | 8.1 | 9.7 | *6.4 | 1.2 | .1 |
| 15 | 0 | 0 | 3.9 | 104 | 197 | 63 | 670 | 7.6 | 10 | 5.5 | 1.1 | .1 |
| 16 | 0 | .4 | *3.4 | 165 | 177 | 121 | 375 | 10 | 9.8 | 5.3 | .8 | 0 |
| 17 | 0 | 13 | 9.9 | 129 | 211 | 197 | 239 | 20 | 8.4 | 5.4 | 28 | 0 |
| 18 | 0 | *3.4 | 25 | 122 | 171 | 144 | 190 | 14 | 7.1 | 4.1 | 7.0 | 0 |
| 19 | 0 | 1.1 | 24 | 443 | 153 | 381 | 150 | 9.5 | 6.5 | 3.5 | 2.8 | 0 |
| 20 | 0 | .7 | 16 | 312 | 135 | 505 | 124 | 7.6 | 6.2 | 1.8 | 1.5 | *0 |
| 21 | 0 | .4 | 11 | 239 | 204 | 3,990 | 122 | 9.2 | 6.1 | .8 | 8.5 | 0 |
| 22 | 0 | .3 | 8.4 | 463 | 768 | 3,660 | 112 | 108 | 5.8 | 1.2 | 2.7 | 0 |
| 23 | 0 | .2 | 7.2 | 312 | 1,360 | *1,130 | 86 | 97 | 9.9 | 33 | 3.5 | 0 |
| 24 | 0 | .2 | 6.5 | *218 | *820 | 695 | 102 | 53 | 6.0 | 19 | *7.4 | 0 |
| 25 | 0 | .1 | 5.6 | 171 | 574 | 463 | 86 | 179 | 146 | 64 | 2.0 | 0 |
| 26 | 0 | .1 | 5.2 | 129 | 347 | 335 | 61 | 56 | 56 | 15 | .9 | 0 |
| 27 | 0 | .1 | 4.9 | 112 | 255 | 218 | 51 | 37 | 45 | 8.7 | .6 | 0 |
| 28 | 0 | 7.2 | 96 | 96 | 211 | 183 | 45 | 26 | 24 | 6.1 | .4 | 0 |
| 29 | 0 | 9.7 | 1,880 | 82 | - | 159 | 40 | 353 | 16 | 4.6 | .4 | 0 |
| 30 | 0 | 8.6 | 1,090 | 72 | ------ | 135 | 34 | 355 | 12 | 3.8 | .4 | 0 |
| 31 | 0 | ---- | 426 | 61 | ------ | 116 | ---- | 89 | ------ | 2.8 | .4 | ------ |
| Total | 1.9 | 45.5 | 3,714.6 | 4,720 | 11,650 | 14,359 | 5,342 | 1,634.5 | 689.5 | 289.2 | 95.2 | 3.3 |
| Mean | 0.061 | 1.52 | 120 | 152 | 416 | 463 | 178 | 52.7 | 23.0 | 9.33 | 3.07 | 0.11 |
| Cfsm | 0.00071 | 0.018 | 1.39 | 1.76 | 4.82 | 5.36 | 2.06 | 0.611 | 0.267 | 0.108 | 0.036 | 0.0013 |
| In. | 0.0008 | 0.02 | 1.60 | 2.03 | 5.02 | 6.19 | 2.30 | 0.70 | 0.30 | 0.12 | 0.04 | 0.001 |

Calendar year 1954: Max 3,500 Min 0 Mean 88.7 Cfsm 1.03 In. 13.94
Water year 1954-55: Max 3,990 Min 0 Mean 117 Cfsm 1.36 In. 18.32

Peak discharge (base, 2,000 cfs).--Dec. 29 (1 p.m.) 2,460 cfs (12.25 ft); Feb. 6 (7:30 p.m.) 2,460 cfs (12.15 ft); Mar. 21 (5 p.m.) 6,100 cfs (14.60 ft).
* Discharge measurement or observation of no flow made on this day.

## West Fork Flint Creek near Oakville, Ala.

Location.--Lat 34°28'35", long 87°08'30", in SW¼ sec. 35, T. 6 S., R. 6 W., on left bank at upstream side of bridge on county highway, 0.9 mile east of Five Points, 0.9 mile upstream from Shoal Creek, 1¼ miles downstream from McDaniel Branch, and 2⅝ miles northeast of Oakville.

Drainage area.--87.6 sq mi.

Records available.--August 1952 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 576.59 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 3,180 cfs Mar. 22 (gage height, 20.28 ft); no flow Oct. 30 to Nov. 15, Sept. 18-30.
1952-55: Maximum discharge, that of Mar. 22, 1955; no flow at times each year.

Remarks.--Records good except those below 10 cfs and those for periods of fragmentary gage-height records, which are fair.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.0 | 0 | 1.0 | 33 |
| .1 | .2 | 1.5 | 83 |
| .2 | .5 | 3.0 | 278 |
| .3 | 1.2 | 6.0 | 538 |
| .4 | 2.7 | 11.0 | 1,090 |
| .5 | 4.7 | 16.0 | 2,100 |
| .7 | 14 | 20.0 | 3,100 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 0 | 10 | 244 | 68 | 162 | 109 | 42 | 43 | 5.0 | 14 | 1.4 |
| 2 | 34 | 0 | 5.6 | 194 | 84 | 143 | 120 | 38 | 34 | 4.1 | 12 | 1.2 |
| 3 | 13 | 0 | 4.3 | 148 | 75 | 124 | 116 | 35 | 27 | 3.7 | 10 | 1.0 |
| 4 | 3.3 | 0 | 3.7 | 126 | 64 | 115 | 96 | 31 | 23 | 14 | 14 | .9 |
| 5 | 1.4 | 0 | 6.1 | 113 | 82 | 106 | 300 | *28 | 20 | 3.4 | 14 | .8 |
| 6 | 15 | 0 | 17 | 101 | 1,070 | 124 | 284 | 25 | 18 | 11 | 8.5 | .8 |
| 7 | 20 | 0 | 14 | 88 | 1,150 | 152 | 250 | 23 | *27 | f51 | 6.5 | .7 |
| 8 | 4.5 | 0 | 11 | 79 | 685 | 119 | 173 | 21 | 18 | 14 | 15 | .7 |
| 9 | 2.3 | 0 | 14 | 81 | 289 | 104 | 140 | 19 | 14 | 8.5 | f256 | .7 |
| 10 | 1.5 | 0 | 18 | 109 | 220 | 97 | 148 | 17 | 16 | 12 | f187 | .6 |
| 11 | 1.4 | 0 | 16 | 166 | 232 | 92 | 330 | 16 | 31 | 6.0 | 42 | .6 |
| 12 | *1.0 | 0 | 12 | 122 | 180 | 86 | 262 | 14 | 19 | 4.5 | 28 | .6 |
| 13 | .7 | 0 | 14 | 104 | 144 | 79 | 320 | 14 | 16 | 8.0 | 22 | .6 |
| 14 | .6 | 0 | 14 | 90 | 136 | 73 | 300 | 12 | 14 | *5.6 | 18 | .5 |
| 15 | .6 | 0 | 14 | 99 | 126 | 71 | 226 | 12 | 14 | 5.0 | 15 | .5 |
| 16 | 4.7 | 2.6 | *11 | 117 | 119 | 105 | 187 | 10 | 13 | 20 | 12 | .3 |
| 17 | 3.3 | 12 | 11 | 104 | 126 | 157 | 160 | 9.5 | 10 | 72 | 11 | .1 |
| 18 | 1.6 | *6.0 | 18 | 156 | 109 | 117 | 134 | 9.0 | 9.0 | 21 | 12 | 0 |
| 19 | 1.0 | 3.5 | 19 | 495 | 99 | 285 | 115 | 8.0 | 7.0 | 15 | 9.0 | 0 |
| 20 | .8 | 2.7 | 18 | 330 | 90 | 310 | 101 | 7.0 | 5.6 | 12 | 7.0 | *0 |
| 21 | .7 | 1.9 | 16 | 244 | 461 | 1,900 | 105 | 26 | 5.3 | 10 | 5.6 | 0 |
| 22 | .6 | 1.6 | 14 | 348 | 1,220 | 2,900 | 106 | 38 | 6.5 | f127 | 4.7 | 0 |
| 23 | .4 | 1.4 | 12 | 226 | 1,150 | *1,670 | 87 | 41 | 6.0 | f207 | 4.3 | 0 |
| 24 | .4 | 1.2 | 11 | *166 | *695 | 566 | 152 | 148 | 15 | 74 | *3.9 | 0 |
| 25 | .3 | 1.1 | 9.0 | 137 | 348 | 310 | 112 | 320 | 8.5 | 49 | 3.3 | 0 |
| 26 | .2 | 1.0 | 8.0 | 113 | 256 | 262 | 76 | 108 | 16 | 62 | 2.7 | 0 |
| 27 | .1 | .9 | 6.5 | 102 | 214 | 207 | 66 | 68 | 43 | 36 | 2.3 | 0 |
| 28 | .1 | 10 | 174 | 95 | 187 | 180 | 59 | 50 | 16 | 28 | 2.1 | 0 |
| 29 | .1 | 22 | 2,240 | 84 | - | 156 | 53 | 99 | 10 | 28 | 1.7 | 0 |
| 30 | 0 | 18 | 2,120 | 76 | ------ | 136 | 48 | 83 | 7.0 | 20 | 1.6 | 0 |
| 31 | 0 | --- | 845 | 70 | ------ | 122 | ------ | 58 | ------ | 16 | 1.5 | ----- |
| Total | 124.6 | 85.9 | 5,706.2 | 4,727 | 9,679 | 11,030 | 4,735 | 1,429.5 | 511.9 | 952.8 | 746.7 | 12.0 |
| Mean | 4.02 | 2.86 | 184 | 152 | 346 | 356 | 158 | 46.1 | 17.1 | 30.7 | 24.1 | 0.40 |
| Cfsm | 0.046 | 0.033 | 2.10 | 1.74 | 3.95 | 4.06 | 1.80 | 0.526 | 0.195 | 0.350 | 0.275 | 0.0046 |
| In. | 0.05 | 0.04 | 2.42 | 2.01 | 4.11 | 4.68 | 2.01 | 0.61 | 0.22 | 0.40 | 0.32 | 0.005 |

Calendar year 1954: Max 2,800 Min 0 Mean 78.1 Cfsm 0.892 In. 12.10
Water year 1954-55: Max 2,900 Min 0 Mean 109 Cfsm 1.24 In. 16.88

Peak discharge (base, 2,000 cfs).--Dec. 29 (7 p.m.) 2,650 cfs (18.20 ft); Mar. 22 (5:30 a.m.) 3,180 cfs (20.28 ft).

* Discharge measurement made on this day.

f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

## Elk River near Pelham, Tenn.

Location.--Lat 35°17'48", long 85°52'12", on right bank at downstream side of bridge on U. S. Highway 41, 1.1 miles southeast of Pelham, Grundy County, and 1.8 miles upstream from Caldwell Creek.

Drainage area.--65.6 sq mi.

Records available.--November 1951 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 981.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 3,780 cfs Dec. 29 (gage height, 11.43 ft); minimum, 1.2 cfs Oct. 25-27; minimum gage height, 1.91 ft Sept. 29.
1951-55: Maximum discharge, 4,520 cfs Jan. 21, 1954 (gage height, 12.00 ft); minimum, 1.0 cfs Sept. 27, 28, 1954; minimum gage height, that of Sept. 29, 1955.

Remarks.--Records fair.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 6, Sept. 27-29)

| | | | |
|---|---|---|---|
| 1.8 | 1.2 | 4.0 | 140 |
| 2.0 | 3.1 | 8.0 | 780 |
| 2.5 | 17 | 9.0 | 1,060 |
| 3.0 | 43 | 9.5 | 1,340 |
| 3.5 | 79 | 10.6 | 2,700 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.0 | 2.4 | 3.1 | 230 | 50 | 182 | 108 | 94 | 98 | 24 | 40 | 4.9 |
| 2 | 6.2 | 2.6 | 2.8 | 197 | 83 | 197 | 100 | 80 | 72 | 21 | 28 | 4.7 |
| 3 | 3.8 | 2.6 | 2.6 | 148 | 84 | 162 | 166 | 67 | 55 | 18 | 22 | 4.5 |
| 4 | 3.5 | 3.3 | 2.3 | 117 | 69 | 137 | 134 | 60 | 44 | 16 | 21 | 4.4 |
| 5 | 3.1 | 4.9 | 3.1 | 98 | 68 | 116 | 156 | 52 | 37 | 15 | 21 | 4.2 |
| 6 | 2.8 | 4.4 | 18 | 88 | 665 | 309 | 1,750 | 45 | 136 | 14 | 18 | 4.0 |
| 7 | 2.6 | 3.5 | 35 | 90 | *1,240 | 534 | 1,880 | 40 | 268 | *13 | 14 | 3.8 |
| 8 | 2.3 | 3.3 | 21 | 76 | 597 | 321 | 784 | 35 | 184 | 12 | 20 | 3.6 |
| 9 | 2.1 | 3.3 | *19 | 71 | 291 | 215 | 403 | 31 | 161 | 11 | 102 | 3.5 |
| 10 | 2.0 | 3.1 | 32 | 81 | 197 | 166 | 251 | 28 | 142 | 10 | 58 | 3.5 |
| 11 | 1.9 | 3.0 | 28 | 111 | 198 | 136 | 210 | 25 | 278 | 9.5 | 38 | 3.6 |
| 12 | 1.8 | 3.0 | 22 | 106 | 168 | 113 | 188 | *29 | 210 | 10 | 29 | *3.5 |
| 13 | 1.7 | 2.8 | 20 | 92 | 126 | 100 | 422 | 114 | 148 | 9.3 | 23 | 2.9 |
| 14 | 1.7 | 2.6 | 32 | 76 | 120 | 90 | *683 | 179 | *106 | 9.3 | 18 | 2.8 |
| 15 | 1.7 | 2.4 | 35 | 77 | 111 | 81 | 489 | 131 | 81 | 9.3 | 15 | 2.8 |
| 16 | 1.6 | 2.8 | 28 | 112 | 109 | 77 | 292 | 87 | 63 | 9.3 | 13 | 2.8 |
| 17 | 1.6 | 2.9 | 32 | 94 | 170 | 99 | 206 | 67 | 50 | 9.5 | 12 | 2.7 |
| 18 | 1.6 | 3.0 | 192 | 84 | 166 | 294 | 158 | 53 | 41 | 9.0 | 12 | 2.6 |
| 19 | 1.5 | 2.9 | 161 | 198 | 140 | 667 | 128 | 42 | 34 | *8.4 | 14 | 2.6 |
| 20 | 1.5 | 2.9 | *84 | *176 | 116 | 727 | 107 | 35 | 29 | 9.3 | 11 | 2.7 |
| 21 | 1.5 | 2.2 | 60 | 160 | 166 | *1,380 | 112 | 73 | 24 | 9.8 | 9.5 | 2.8 |
| 22 | 1.4 | 1.7 | 49 | 324 | 1,050 | 2,680 | 125 | 297 | 33 | 10 | 8.7 | *2.8 |
| 23 | 1.4 | 1.7 | 44 | 280 | 1,380 | 932 | 457 | 723 | 51 | 36 | *9.0 | 2.7 |
| 24 | 1.3 | *1.6 | 39 | 191 | 712 | 480 | 1,690 | 360 | 36 | 36 | 10 | 2.8 |
| 25 | *1.2 | 1.8 | 34 | 140 | 364 | 332 | 983 | 196 | 81 | 429 | 9.8 | 2.7 |
| 26 | 1.2 | 1.8 | 30 | 106 | 236 | 569 | 489 | 130 | 160 | 136 | 8.1 | 2.3 |
| 27 | 1.2 | 1.9 | 26 | 86 | 196 | 384 | 273 | 87 | 83 | 54 | 7.3 | 2.0 |
| 28 | 1.5 | 2.1 | 135 | 74 | 203 | 259 | 192 | 65 | 52 | 49 | 6.6 | 2.0 |
| 29 | 1.8 | *2.3 | *2,660 | 64 | - | 197 | 146 | 277 | 38 | 40 | 6.1 | *2.1 |
| 30 | 2.1 | 2.8 | 1,360 | 57 | ------- | 154 | 115 | 241 | 30 | 25 | 5.9 | 2.8 |
| 31 | 2.1 | ------- | 506 | 50 | ------- | 125 | ------- | 144 | ------- | 19 | 5.6 | ------- |
| Total | 64.7 | 81.6 | 5,715.9 | 3,854 | 9,075 | 12,215 | 13,197 | 3,887 | 2,825 | 1,090.7 | 615.6 | 95.1 |
| Mean | 2.09 | 2.72 | 184 | 124 | 324 | 394 | 440 | 125 | 94.2 | 35.2 | 19.9 | 3.17 |
| Cfsm | 0.032 | 0.041 | 2.80 | 1.89 | 4.94 | 6.01 | 6.71 | 1.91 | 1.44 | 0.537 | 0.303 | 0.048 |
| In. | 0.04 | 0.05 | 3.24 | 2.18 | 5.14 | 6.92 | 7.48 | 2.20 | 1.60 | 0.62 | 0.35 | 0.05 |

Calendar year 1954: Max 3,350 Min 1.0 Mean 109 Cfsm 1.66 In. 22.61
Water year 1954-55: Max 2,680 Min 1.2 Mean 144 Cfsm 2.20 In. 29.87

Peak discharge (base, 1,000 cfs).--Dec. 29 (10 a.m.) 3,780 cfs (11.43 ft); Feb. 7 (2 a.m.) 1,670 cfs (9.80 ft); Feb. 22 (10 p.m.) 1,970 cfs (10.04 ft); Mar. 22 (4 a.m.) 3,680 cfs (11.35 ft); Apr. 6 (6 p.m.) 3,540 cfs (11.25 ft); Apr. 24 (12:30 p.m.) 2,880 cfs (10.74 ft).
* Discharge measurement made on this day,

## Bradley Creek near Prairie Plains, Tenn.

Location.--Lat 35°21'21", long 85°58'45", on left bank 165 ft downstream from highway bridge, 1.1 miles northwest of Prairie Plains, Coffee County, and 3.6 miles upstream from Elk River.
Drainage area.--41.3 sq mi.
Records available.--November 1951 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 968.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.
Extremes.--Maximum discharge during year, 4,050 cfs Mar. 22 (gage height, 11.95 ft), from rating curve extended above 2,000 cfs on basis of slope-conveyance study; minimum, 3.2 cfs Nov. 23, 24; minimum gage height, 1.10 ft Oct. 12-20, 22-27.
1951-55: Maximum discharge, that of Mar. 22, 1955; minimum, that of Nov. 23, 24, 1954; minimum gage height, 1.01 ft Nov. 17, 18, 1952.
Revisions.--Figures of maximum discharge for the water years 1952 and 1954 have been revised to 3,780 cfs Jan. 27, 1952 (gage height, 11.68 ft) and 2,070 cfs Jan. 21, 1954 (gage height, 9.79 ft), superseding figures published in WSP 1236 and 1336, respectively.
Remarks.--Records good.
Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1952, superseding those published in WSP 1236, are given herewith:

Jan. 27, 1952..... 1,860

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| January 1952..... | 7,000 | 1,860 | 79 | 226 | 5.47 | 6.30 |
| Calendar year 1952..... | 18,207.8 | 1,860 | 3.3 | 49.7 | 1.20 | 16.41 |

Revised peak discharge.--1952: Dec. 21 (3 a.m.) 2,080 cfs (9.80 ft); Jan. 27 (12 m.) 3,780 cfs (11.68 ft).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 6 to Dec. 5)

| Oct. 1 to Dec. 29, June 26 to Sept. 30 | | | | Dec. 30 to June 25 | |
|---|---|---|---|---|---|
| 1.05 | 3.2 | 2.0 | 52 | 1.65 | 35 |
| 1.1 | 3.7 | 3.2 | 190 | 2.0 | 65 |
| 1.2 | 4.8 | 5.0 | 481 | 3.2 | 190 |
| 1.3 | 7.5 | 7.0 | 851 | | |
| 1.5 | 16 | 8.5 | 1,330 | Note.--Same as preceding table above 3.2 ft. | |
| 1.7 | 28 | 9.7 | 2,000 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 4.2 | 3.9 | 162 | 41 | 139 | 91 | 61 | 66 | 41 | 15 | 8.7 |
| 2 | 7.9 | 4.4 | 3.8 | 130 | 90 | 124 | 89 | 56 | 58 | 37 | 14 | 8.3 |
| 3 | 6.1 | 4.8 | 3.7 | 107 | 58 | 100 | 97 | 52 | 52 | 35 | 14 | 8.3 |
| 4 | 5.2 | 5.2 | 3.7 | 94 | 45 | 89 | 80 | 50 | 48 | 32 | 14 | 7.9 |
| 5 | 5.0 | 5.2 | 8.0 | 86 | 51 | 80 | 284 | 46 | 45 | 30 | 14 | 7.9 |
| 6 | 4.4 | 4.8 | 41 | 80 | 533 | 333 | 1,910 | 44 | 170 | 29 | 13 | 7.9 |
| 7 | 4.3 | 4.4 | 16 | 71 | *399 | 260 | 572 | 41 | 122 | *27 | 12 | 7.5 |
| 8 | 4.1 | 4.0 | 12 | 64 | 196 | 143 | 256 | 39 | 84 | 27 | 13 | 7.1 |
| 9 | 4.1 | 3.8 | *11 | 60 | 144 | 115 | 183 | 37 | 72 | 26 | 12 | 7.1 |
| 10 | 3.9 | 3.7 | 9.9 | 60 | 120 | 99 | 150 | 36 | 241 | 24 | 12 | 6.7 |
| 11 | 3.9 | 3.6 | 9.1 | 65 | 128 | 89 | 156 | 35 | 515 | 24 | 12 | 6.7 |
| 12 | 3.8 | 3.5 | 8.3 | 54 | 99 | 79 | 128 | *83 | 149 | 24 | 14 | *7.1 |
| 13 | 3.8 | 3.4 | 7.9 | 50 | 84 | 71 | 220 | 91 | 108 | 24 | 12 | 6.7 |
| 14 | 3.7 | 3.4 | 7.9 | 45 | 80 | 66 | *190 | 59 | *90 | 23 | 11 | 6.4 |
| 15 | 3.7 | 3.4 | 8.3 | 45 | 76 | 60 | 131 | 47 | 78 | 22 | 11 | 6.4 |
| 16 | 3.7 | 3.5 | 8.3 | 46 | 76 | 84 | 109 | 41 | 70 | 21 | 12 | 6.1 |
| 17 | 3.7 | 3.7 | 9.5 | 40 | 88 | 88 | 95 | 38 | 63 | 20 | 18 | 6.1 |
| 18 | 3.7 | 3.7 | 37 | 38 | 73 | 201 | 87 | 35 | 58 | 19 | 14 | 5.8 |
| 19 | 3.7 | 3.8 | 24 | 88 | 64 | 370 | 78 | 44 | 53 | *18 | 11 | 5.8 |
| 20 | 3.7 | 3.8 | *20 | *67 | 58 | 229 | 72 | 36 | 50 | 25 | 11 | 5.6 |
| 21 | 3.7 | 3.6 | 18 | 85 | 134 | *1,510 | 75 | 65 | 47 | 27 | 10 | 5.4 |
| 22 | 3.7 | 3.4 | 16 | 178 | 843 | 1,690 | 75 | 164 | 46 | 34 | *12 | *5.4 |
| 23 | 3.7 | 3.2 | 15 | 109 | 496 | 336 | 200 | 116 | 189 | 59 | 14 | 5.4 |
| 24 | 3.6 | *3.2 | 14 | 89 | 256 | 221 | 384 | 77 | 85 | 26 | 11 | 5.4 |
| 25 | *3.6 | 3.4 | 12 | 78 | 180 | 282 | 189 | 65 | 191 | 23 | 10 | 5.4 |
| 26 | 3.6 | 3.5 | 11 | 66 | 144 | 376 | 123 | 57 | 299 | 20 | 9.9 | 5.4 |
| 27 | 3.6 | 3.7 | 10 | 60 | 152 | 179 | 101 | 51 | 91 | 19 | 9.5 | 5.4 |
| 28 | 3.7 | 3.9 | 156 | 53 | 142 | 150 | 87 | 46 | 64 | 18 | 9.1 | 5.4 |
| 29 | 3.8 | *4.1 | 1,950 | 48 | - | 129 | 77 | 364 | 53 | 17 | 8.7 | *5.4 |
| 30 | 3.9 | 4.0 | 475 | 43 | ------- | 112 | 69 | 115 | 46 | 16 | 11 | 5.6 |
| 31 | 4.1 | ------- | 210 | 39 | ------- | 100 | ------- | 79 | ------- | 16 | 11 | ------- |
| Total | 133.4 | 116.3 | 3,140.3 | 2,300 | 4,850 | 7,904 | 6,358 | 2,150 | 3,303 | 803 | 375.2 | 194.3 |
| Mean | 4.30 | 3.88 | 101 | 74.2 | 173 | 255 | 212 | 69.4 | 110 | 25.9 | 12.1 | 6.48 |
| Cfsm | 0.104 | 0.094 | 2.45 | 1.80 | 4.19 | 6.17 | 5.13 | 1.68 | 2.66 | 0.627 | 0.293 | 0.157 |
| In. | 0.12 | 0.10 | 2.83 | 2.07 | 4.37 | 7.12 | 5.73 | 1.94 | 2.97 | 0.72 | 0.34 | 0.17 |

Calendar year 1954: Max 1,950 Min 3.2 Mean 56.7 Cfsm 1.37 In. 18.63
Water year 1954-55: Max 1,950 Min 3.2 Mean 86.7 Cfsm 2.10 In. 28.48

Peak discharge (base, 600 cfs).--Dec. 29 (8:30 a.m.) 2,860 cfs (10.75 ft); Feb. 6 (7:30 p.m.) 772 cfs (6.68 ft); Feb. 22 (4:30 p.m.) 1,310 cfs (8.46 ft); Mar. 22 (1:30 a.m.) 4,050 cfs (11.95 ft); Apr. 6 (2 p.m.) 3,890 cfs (11.79 ft); June 11 (3:30 a.m.) 1,070 cfs (7.74 ft); June 26 (3 a.m.) 622 cfs (5.83 ft).
* Discharge measurement made on this day.

## Elk River at Estill Springs, Tenn.

Location.--Lat 35°15'30", long 86°07'17", in center of stream on downstream side of pier of old bridge, 250 ft upstream from bridge on U. S. Highway 41A, 400 ft downstream from Nashville, Chattanooga, & St. Louis Railway bridge, three-quarters of a mile southeast of Estill Springs, Franklin County, 1.0 mile upstream from Taylor Creek, and 1.4 miles upstream from Rock Creek.

Drainage area.--282 sq mi.

Records available.--December 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 859.10 ft above mean sea level, datum of 1929. Prior to Sept. 30, 1926, staff gage at site 100 ft downstream at same datum.

Average discharge.--34 years (1921-55), 476 cfs (unadjusted).

Extremes.--Maximum discharge during year, 7,520 cfs Mar. 21 (gage height, 12.10 ft); minimum daily, 30 cfs Nov. 25-27.
1920-55: Maximum discharge, 22,900 cfs Mar. 23, 1929 (gage height, 20.2 ft), from rating curve extended above 18,000 cfs; minimum, 10 cfs Oct. 9, 10, 1925; minimum gage height, 0.4 ft for several days in September, October, November 1924, October 1925.

Remarks.--Records excellent except those for period of no gage-height record, which are fair. Flow regulated by Woods Reservoir since 1952 (see p. 246).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.33 | 30 | 3.0 | 495 | 1.37 | 34 | 5.0 | 1,610 |
| 1.4 | 36 | 5.0 | 1,810 | 1.6 | 61 | 7.0 | 3,020 |
| 1.6 | 66 | 7.0 | 3,000 | 1.8 | 93 | 9.0 | 4,820 |
| 2.0 | 150 | 9.0 | 4,500 | 2.2 | 198 | 10.4 | 6,340 |
| | | | | 3.0 | 495 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 52 | 61 | 77 | 3,060 | 277 | 835 | 531 | 79 | 454 | 363 | 442 | 76 |
| 2 | 74 | 63 | 77 | 603 | 576 | 650 | 655 | 154 | 370 | 363 | 446 | 43 |
| 3 | 76 | 69 | 77 | 725 | 419 | 621 | 710 | 366 | 293 | 363 | 603 | 37 |
| 4 | 76 | 122 | 59 | 495 | 298 | 616 | 558 | 310 | 286 | 363 | 594 | 36 |
| 5 | 74 | 155 | 95 | 447 | 354 | 594 | 700 | 377 | 276 | 363 | 594 | 36 |
| 6 | 70 | 155 | 294 | 504 | *2,160 | 1,210 | 2,620 | 482 | 679 | 363 | 594 | 36 |
| 7 | 68 | 155 | 180 | 435 | *2,510 | 1,760 | 5,150 | 540 | 1,350 | *363 | 590 | 34 |
| 8 | 58 | 153 | 111 | 312 | 2,480 | 1,060 | 4,220 | 580 | 608 | a360 | 468 | 174 |
| 9 | 54 | 153 | 95 | 368 | 1,870 | 808 | 2,620 | 277 | 608 | a360 | 370 | 422 |
| 10 | 52 | 150 | 89 | 435 | 808 | 775 | 1,920 | 106 | 935 | a360 | 414 | 49 |
| 11 | 49 | 150 | 95 | 435 | 660 | 443 | 1,400 | *113 | 1,580 | a360 | 394 | 43 |
| 12 | 48 | 153 | 107 | 316 | 750 | 447 | 912 | 86 | 655 | a360 | 363 | 45 |
| 13 | 61 | 153 | 124 | 326 | 554 | 775 | 1,040 | 124 | 650 | a360 | 366 | 41 |
| 14 | 61 | 155 | 150 | 361 | 455 | 562 | *1,620 | 329 | *490 | a360 | 216 | *41 |
| 15 | 63 | 155 | 116 | 336 | 522 | 375 | 1,700 | 540 | 412 | a360 | 77 | 41 |
| 16 | 63 | 161 | 107 | 333 | 536 | 463 | 976 | 303 | 430 | a360 | 64 | 41 |
| 17 | 99 | 161 | 166 | 319 | 536 | 540 | 590 | 276 | 318 | a360 | 100 | 41 |
| 18 | 105 | 153 | 257 | *368 | 567 | 896 | 513 | 265 | 180 | a360 | 115 | 41 |
| 19 | 105 | 118 | 291 | 513 | 650 | 2,060 | 459 | 266 | 214 | a360 | *104 | 39 |
| 20 | 107 | 116 | 330 | 580 | 522 | 2,280 | 324 | 272 | 312 | a400 | 67 | 41 |
| 21 | 107 | 111 | *333 | 621 | 616 | 4,500 | 324 | 442 | 522 | 414 | 64 | 42 |
| 22 | 107 | 79 | 274 | 765 | 2,700 | *6,280 | 300 | 909 | 549 | 414 | 103 | 42 |
| 23 | 107 | 66 | 213 | 945 | 4,060 | 5,470 | 933 | 1,420 | 918 | 410 | 272 | 41 |
| 24 | 107 | *36 | 148 | 770 | 3,180 | 3,590 | 3,340 | 1,420 | 945 | 410 | 88 | 43 |
| 25 | *101 | 30 | 97 | 451 | 1,580 | 2,140 | 3,740 | 556 | 710 | 442 | 45 | 41 |
| 26 | 64 | 30 | 103 | 447 | 1,020 | 2,200 | 1,640 | 434 | 1,070 | 934 | 47 | 41 |
| 27 | 56 | 30 | 103 | 443 | 918 | 2,120 | 665 | 318 | 750 | 1,020 | 61 | 39 |
| 28 | 56 | 35 | 404 | 411 | 879 | 1,820 | 450 | 402 | 477 | 755 | 64 | 39 |
| 29 | 58 | 76 | *4,390 | 257 | - | 879 | 370 | 1,090 | 576 | 791 | 69 | *41 |
| 30 | 59 | 77 | 4,210 | 254 | ------- | 1,200 | 93 | 1,160 | 558 | 513 | 84 | 43 |
| 31 | 61 | ------- | 4,110 | 254 | ------- | 650 | ------- | 572 | ------- | 508 | 111 | ------- |
| Total | 2,298 | 3,301 | 17,282 | 16,889 | 32,457 | 48,619 | 41,073 | 14,568 | 16,175 | 13,872 | 7,989 | 1,769 |
| Mean | 74.1 | 110 | 557 | 545 | 1,159 | 1,568 | 1,369 | 471 | 606 | 447 | 258 | 59.0 |

| | Observed | | | Adjusted† | | |
|---|---|---|---|---|---|---|
| Calendar year 1954: | Max 8,460 | Min 22 | Mean 376 | Mean 394 | Cfsm 1.40 | In. 18.97 |
| Water year 1954-55: | Max 6,280 | Min 30 | Mean 598 | Mean 575 | Cfsm 2.04 | In. 27.68 |

* Discharge measurement made on this day.
† Adjusted for change in contents in Woods Reservoir.
a No gage-height record; discharge estimated on basis of records for Woods Reservoir, weather records, and records for stations on nearby streams.

## West Fork Mulberry Creek at Mulberry, Tenn.

Location.--Lat 35°12'34", long 86°27'46", near right bank on downstream side of old bridge, 1,000 ft downstream from State Highway 50, 0.2 mile southwest of Mulberry, Lincoln County, and 1.7 miles upstream from confluence with East Fork.

Drainage area.--41.2 sq mi.

Records available.--December 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 687.72 ft above mean sea level, datum of 1929.

Extremes.--1953-54: Maximum discharge during period December to September, 7,050 cfs Apr. 16 (gage height, 12.57 ft); no flow Aug. 30 to Sept. 29.
1954-55: Maximum discharge during water year, 11,200 cfs Mar. 21 (gage height, 13.15 ft), from rating curve extended above 5,600 cfs on basis of slope area determination of peak flow; no flow Sept. 14-29.

Remarks.--Records fair.

Rating table, Dec. 17, 1953 to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 16-22, Aug. 27 to Sept. 29, Nov. 6-10, 1954, Jan. 10-18, 1955)

| | | | |
|---|---|---|---|
| 0.83 | 0 | 2.5 | 122 |
| .9 | .13 | 3.0 | 222 |
| 1.0 | .45 | 4.0 | 485 |
| 1.1 | 2.2 | 6.0 | 1,210 |
| 1.3 | 7.4 | 10.0 | 2,920 |
| 1.6 | 20 | 11.3 | 4,110 |
| 2.0 | 51 | | |

Discharge, in cubic feet per second, December 1953 to September 1954

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | - | 9.6 | 32 | 119 | 188 | 12 | 9.6 | 0.6 | a0.8 | 0 |
| 2 | | | - | 8.5 | 29 | 76 | 107 | 11 | 11 | 27 | a1.0 | 0 |
| 3 | | | - | 8.1 | 25 | 66 | 74 | 17 | 32 | 17 | a.7 | 0 |
| 4 | | | - | 7.1 | 21 | 47 | 53 | 16 | 16 | 4.5 | a.5 | 0 |
| 5 | | | - | 7.1 | 18 | 39 | 40 | 12 | 11 | 2.2 | a2.0 | 0 |
| 6 | | | - | 6.6 | 15 | 34 | 33 | 11 | 8.8 | 1.2 | a.8 | 0 |
| 7 | | | - | 6.4 | 13 | 29 | 29 | 11 | 7.4 | .5 | a.5 | 0 |
| 8 | | | - | 6.1 | 11 | 25 | *27 | 11 | 6.9 | .4 | a.3 | 0 |
| 9 | | | - | 6.1 | 11 | 22 | 22 | 8.8 | 6.1 | .4 | a.2 | 0 |
| 10 | | | - | 6.9 | 11 | 21 | 18 | 8.1 | 49 | .3 | *.2 | 0 |
| 11 | | | - | 13 | *10 | *18 | 22 | 7.8 | 15 | .3 | .2 | 0 |
| 12 | | | - | 11 | 8.8 | 16 | 22 | 7.4 | 9.6 | .2 | .2 | 0 |
| 13 | | | - | 9.6 | 7.8 | 14 | 18 | *151 | 7.4 | .1 | .2 | 0 |
| 14 | | | - | *75 | 7.4 | 12 | 18 | 379 | *6.4 | .1 | .2 | 0 |
| 15 | | | - | *1,250 | 7.4 | 11 | 16 | 112 | 5.8 | .09 | .1 | 0 |
| 16 | | | - | *917 | 247 | 9.6 | 1,890 | 58 | 5.3 | *.03 | .1 | 0 |
| 17 | | | *12 | 197 | 141 | 8.8 | 439 | 38 | 5.3 | .03 | .1 | 0 |
| 18 | | | 11 | 92 | 68 | 8.8 | 178 | 41 | 8.2 | .4 | .1 | 0 |
| 19 | | | 9.2 | 54 | 47 | 11 | 95 | 37 | 5.3 | .1 | .1 | 0 |
| 20 | | | 7.8 | 1,470 | 52 | 11 | 60 | 58 | 4.5 | .03 | 1.4 | 0 |
| 21 | | | 7.8 | *1,260 | 46 | 8.8 | 45 | 30 | 4.0 | .03 | .2 | 0 |
| 22 | | | 7.1 | 1,640 | 35 | 7.8 | 37 | 23 | 3.2 | 511 | .2 | 0 |
| 23 | | | 6.6 | 331 | 30 | 8.8 | 32 | 19 | 3.0 | a200 | .1 | 0 |
| 24 | | | 6.1 | 159 | 46 | 16 | 33 | 16 | 2.2 | a50 | .09 | 0 |
| 25 | | | 5.8 | 97 | 38 | 132 | 29 | 14 | 1.7 | a20 | .07 | 0 |
| 26 | | | 5.8 | 78 | 33 | 156 | 22 | 13 | 1.7 | a10 | .05 | 0 |
| 27 | | | 5.6 | 167 | 25 | 74 | 19 | 11 | 1.2 | a5.0 | .03 | 0 |
| 28 | | | 7.1 | 99 | 135 | 50 | 22 | 16 | .9 | a3.0 | .01 | 0 |
| 29 | | | 16 | 74 | - | 38 | 18 | 35 | .8 | a2.0 | .01 | 0 |
| 30 | | | 14 | 54 | ------ | 32 | 14 | 15 | .6 | a1.5 | 0 | 52 |
| 31 | | ----- | 11 | 40 | ------- | 229 | -------- | 11 | -------- | a1.0 | *0 | ----- |
| Total | | | - | 8,160.1 | 1,170.4 | 1,350.6 | 3,620 | 1,210.1 | 249.9 | 859.01 | 10.46 | 52 |
| Mean | | | - | 263 | 41.8 | 43.6 | 121 | 39.0 | 8.33 | 27.7 | 0.337 | 1.73 |
| Cfsm | | | - | 6.38 | 1.01 | 1.06 | 2.94 | 0.947 | 0.202 | 0.672 | 0.008 | 0.042 |
| In. | | | - | 7.37 | 1.06 | 1.22 | 3.27 | 1.09 | 0.23 | 0.78 | 0.009 | 0.05 |

| | | | | | |
|---|---|---|---|---|---|
| Calendar year | : Max | Min | Mean | Cfsm | In. |
| Water year | : Max | Min | Mean | Cfsm | In. |

Peak discharge (base, 3,500 cfs).--Jan. 15 (11 p.m.) 4,260 cfs (11.40 ft); Jan. 20 (9:30 p.m.) 4,670 cfs (11.66 ft); Apr. 16 (11 a.m.) 7,050 cfs (12.57 ft).
* Discharge measurement or observation of no flow made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

## West Fork Mulberry Creek at Mulberry, Tenn.--Continued

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 0.2 | 4.8 | 68 | 93 | 51 | 35 | 26 | 28 | 2.7 | 0.8 | 0.6 |
| 2 | 20 | .2 | 3.8 | 51 | 70 | 50 | 35 | 23 | *21 | 2.2 | .6 | .4 |
| 3 | 4.5 | .3 | 3.0 | 39 | 45 | 45 | 33 | 21 | 17 | 1.9 | .4 | .3 |
| 4 | 1.9 | .7 | 2.7 | 33 | 35 | 41 | 27 | a20 | 13 | 1.7 | 1.2 | .2 |
| 5 | .9 | 1.7 | 131 | 30 | 232 | 37 | 309 | a18 | 12 | 5.5 | 8.6 | .2 |
| 6 | .6 | 1.7 | 55 | 29 | 1,310 | 523 | *2,510 | a16 | 12 | 4.9 | 2.2 | .2 |
| 7 | *.4 | 1.4 | 19 | 25 | 330 | 234 | 495 | a14 | 13 | 2.5 | 1.9 | .2 |
| 8 | .4 | 1.2 | *11 | 23 | 150 | 122 | 200 | a12 | 11 | 2.2 | *4.3 | .1 |
| 9 | .4 | .8 | 22 | 23 | 92 | 83 | 122 | *11 | 9.2 | 1.7 | 2.2 | .1 |
| 10 | .4 | *.7 | 16 | 32 | *67 | *65 | 97 | 10 | 89 | 4.0 | 33 | .09 |
| 11 | .3 | .6 | 11 | 53 | 62 | 54 | 161 | 9.9 | 31 | 1.9 | 30 | .07 |
| 12 | .3 | .5 | 11 | 36 | 48 | 45 | 107 | 24 | 17 | 7.7 | 14 | .05 |
| 13 | .2 | .5 | 38 | *27 | 40 | 38 | 224 | 15 | 13 | 5.3 | 6.6 | *.01 |
| 14 | .2 | .4 | 22 | 22 | 38 | 33 | 131 | 13 | 10 | 2.7 | 4.3 | 0 |
| 15 | .2 | .6 | 15 | 22 | 36 | 31 | 94 | 15 | 8.8 | 2.2 | 4.0 | 0 |
| 16 | .1 | 7.3 | 11 | 22 | 35 | 37 | 71 | 11 | 7.4 | 3.0 | 6.1 | 0 |
| 17 | .1 | 6.6 | 127 | 20 | 34 | 64 | 55 | 9.2 | 6.6 | 2.7 | 4.0 | 0 |
| 18 | .1 | 4.0 | 78 | 84 | 32 | 174 | 44 | 8.1 | 6.1 | 1.7 | 2.7 | 0 |
| 19 | .1 | 2.2 | 32 | 122 | 30 | 541 | 36 | 7.4 | 5.3 | *1.2 | 2.2 | 0 |
| 20 | .1 | 2.2 | 20 | 71 | 29 | 245 | *31 | 6.9 | 5.1 | 1.4 | 1.7 | 0 |
| 21 | .1 | 2.7 | 15 | 349 | 752 | *4,040 | 45 | 393 | 4.8 | .8 | 1.2 | 0 |
| 22 | .1 | 3.0 | 12 | 246 | *1,430 | 1,070 | 91 | 102 | 5.8 | 1.7 | 30 | 0 |
| 23 | .1 | 1.9 | 9.2 | 122 | 341 | 252 | 523 | 47 | 11 | 1.9 | 18 | 0 |
| 24 | .1 | 1.4 | 8.1 | 74 | 165 | 136 | 337 | 27 | 5.3 | 51 | 5.8 | 0 |
| 25 | .1 | 1.2 | 6.6 | 52 | 99 | 234 | 142 | 22 | 5.3 | 11 | 4.0 | 0 |
| 26 | .09 | .9 | 5.8 | 39 | 74 | 155 | 85 | 57 | 7.1 | 4.0 | 2.7 | 0 |
| 27 | .09 | 1.2 | 5.6 | 33 | 61 | 97 | 62 | 18 | 5.3 | 3.0 | 1.9 | 0 |
| 28 | .1 | 9.4 | a1,200 | 30 | 52 | 75 | 49 | 264 | 4.5 | 6.0 | 1.2 | 0 |
| 29 | .1 | 15 | a1,400 | 26 | - | 60 | 37 | 282 | 3.8 | 15 | .6 | 0 |
| 30 | .2 | 6.9 | 286 | 23 | ------- | 47 | 30 | 81 | 2.7 | 3.5 | .9 | .01 |
| 31 | .2 | ------- | 105 | 21 | ------- | 39 | ------- | 45 | ------- | 1.7 | .8 | ------- |
| Total | 68.48 | 77.4 | 3,686.6 | 1,847 | 5,782 | 8,718 | 6,218 | 1,628.5 | 391.1 | 158.7 | 197.9 | 2.53 |
| Mean | 2.21 | 2.58 | 119 | 59.6 | 206 | 281 | 207 | 52.5 | 13.0 | 5.12 | 6.38 | 0.08 |
| Cfsm | 0.054 | 0.063 | 2.89 | 1.45 | 5.00 | 6.82 | 5.02 | 1.27 | 0.316 | 0.124 | 0.155 | 0.0019 |
| In. | 0.06 | 0.07 | 3.33 | 1.67 | 5.22 | 7.87 | 5.61 | 1.47 | 0.35 | 0.14 | 0.18 | 0.002 |

Calendar year 1954: Max 1,890 Min 0 Mean 56.2 Cfsm 1.36 In. 18.54
Water year 1954-55: Max 4,040 Min 0 Mean 78.8 Cfsm 1.91 In. 25.97

Peak discharge (base, 3,500 cfs).--Dec. 29 (time unknown) 5,080 cfs (11.90 ft); Mar. 21 (8 p.m.) 11,200 cfs (13.15 ft); Apr. 6 (10 a.m.) 5,670 cfs (12.17 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

## Elk River above Fayetteville, Tenn.

Location.--Lat 35°08'04", long 86°32'23", on right bank 100 ft downstream from highway bridge, 1½ miles southeast of Fayetteville, Lincoln County, 4 miles upstream from Norris Creek, and at mile 93.9.

Drainage area.--827 sq mi.

Records available.--August 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 650.58 ft above mean sea level, datum of 1929.

Average discharge.--21 years, 1,372 cfs (unadjusted).

Extremes.--Maximum discharge during year, 25,000 cfs Mar. 22 (gage height, 23.65 ft); minimum, 142 cfs Oct. 14 (gage height, 1.39 ft).
1934-55: Maximum discharge, 35,500 cfs Jan. 5, 1949 (gage height, 27.14 ft); minimum, 111 cfs Sept. 17, 1954; minimum gage height, 1.02 ft Oct. 27, 1941.

Remarks.--Records good. Flow regulated by Woods Reservoir since 1952 (see p. 246).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 21 | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 1.4 | 145 | 1.49 | 150 | 15.0 | 8,650 |
| 2.0 | 360 | 2.0 | 335 | 18.0 | 11,600 |
| 2.7 | 650 | 2.7 | 650 | 20.0 | 15,100 |
| | | 4.0 | 1,330 | 23.2 | 23,600 |
| Note.--Same as following table above 2.7 ft. | | 10.0 | 5,100 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 232 | 162 | 222 | 6,250 | 860 | 2,150 | 1,950 | 1,210 | 1,660 | 870 | 685 | 255 |
| 2 | 670 | 162 | 208 | 4,710 | 1,730 | 2,040 | 1,760 | 1,060 | *1,390 | 690 | 640 | 248 |
| 3 | 316 | 156 | 198 | 1,920 | 1,570 | 1,790 | 2,050 | 1,010 | 1,140 | 625 | 615 | 212 |
| 4 | 232 | 166 | 190 | 1,670 | 1,270 | 1,630 | 2,000 | 1,180 | 1,000 | 610 | 705 | 193 |
| 5 | 198 | 204 | 565 | 1,390 | 1,120 | 1,550 | 2,410 | 1,120 | 900 | 605 | 740 | 186 |
| 6 | 187 | 243 | 618 | 1,220 | 5,720 | 2,550 | 7,810 | 1,090 | 895 | 665 | 730 | 183 |
| 7 | *180 | 246 | 508 | 1,180 | 7,630 | 3,580 | 11,000 | 1,190 | 1,790 | 665 | 730 | 179 |
| 8 | 170 | 243 | 468 | 1,110 | 6,060 | 3,440 | 11,000 | 1,190 | 2,150 | 635 | *780 | 179 |
| 9 | 166 | 240 | *408 | 920 | 4,240 | 2,470 | 7,970 | *1,220 | 1,290 | 645 | 710 | 173 |
| 10 | 162 | *240 | 344 | 990 | *3,230 | *2,020 | 4,830 | 1,010 | 1,640 | 710 | 537 | 380 |
| 11 | 156 | 240 | 296 | 1,190 | 2,260 | 1,830 | 3,910 | 720 | 3,030 | 605 | 695 | 327 |
| 12 | 152 | 240 | 278 | *1,150 | 1,990 | 1,430 | 3,220 | 755 | 2,700 | 582 | 645 | 202 |
| 13 | 148 | 240 | 356 | 950 | 1,860 | 1,310 | 3,120 | 825 | 1,580 | 596 | 550 | *186 |
| 14 | 145 | 240 | 352 | 875 | 1,600 | 1,540 | 3,530 | 930 | 1,400 | 564 | 488 | 176 |
| 15 | 152 | 243 | 332 | 890 | 1,400 | 1,360 | 3,560 | 890 | 1,200 | 560 | 483 | 166 |
| 16 | 152 | 299 | 320 | 850 | 1,410 | 1,130 | 3,210 | 1,140 | 1,040 | 564 | 398 | 163 |
| 17 | 152 | 299 | 448 | 875 | 1,430 | 1,260 | 2,450 | 910 | 915 | 564 | 299 | 163 |
| 18 | 156 | 274 | 735 | 790 | 1,420 | 1,820 | 1,960 | 850 | 860 | 542 | 279 | 160 |
| 19 | 187 | 260 | 725 | 1,570 | 1,380 | 3,830 | 1,760 | 705 | 700 | *528 | 287 | 156 |
| 20 | 194 | 257 | 596 | 1,550 | 1,400 | 5,310 | *1,610 | 760 | 645 | 750 | 283 | 156 |
| 21 | 198 | 243 | 574 | 1,840 | 2,280 | 11,500 | 1,520 | 2,060 | 635 | 1,120 | 267 | 153 |
| 22 | 198 | 232 | 540 | 2,590 | 8,180 | *23,600 | 1,520 | 2,110 | 840 | 770 | 275 | 150 |
| 23 | 201 | 222 | 512 | 2,390 | *9,590 | 18,700 | 2,950 | 2,720 | 955 | 820 | 474 | 150 |
| 24 | 201 | 190 | 412 | 2,110 | 8,870 | 10,900 | 5,100 | 2,440 | 1,260 | 780 | 371 | 153 |
| 25 | 201 | 176 | 380 | 1,790 | 6,170 | 7,250 | 6,840 | 2,210 | 1,310 | 1,200 | 335 | 163 |
| 26 | 198 | 156 | 292 | 1,290 | 3,460 | 4,990 | 6,060 | 1,510 | 1,130 | 840 | 255 | 166 |
| 27 | 194 | 148 | 268 | 1,160 | 2,600 | 4,480 | 3,380 | 1,110 | 1,410 | 1,100 | 216 | 163 |
| 28 | 166 | 208 | 2,070 | 1,090 | 2,290 | 3,780 | 2,140 | 1,100 | 1,240 | 1,250 | 209 | 160 |
| 29 | 166 | 316 | 13,400 | 1,020 | - | 3,310 | 1,750 | 4,670 | 790 | 1,090 | 216 | 160 |
| 30 | 166 | 236 | *13,000 | 825 | ------- | 2,430 | 1,540 | 5,700 | 840 | 1,070 | 230 | 170 |
| 31 | 162 | ------- | 10,500 | 745 | ------- | 2,450 | ------- | 2,540 | ------- | 730 | 279 | ------- |
| Total | 6,158 | 6,781 | 50,115 | 48,900 | 93,020 | 137,430 | 113,910 | 45,935 | 38,335 | 23,345 | 14,406 | 5,631 |
| Mean | 199 | 226 | 1,617 | 1,577 | 3,322 | 4,433 | 3,797 | 1,482 | 1,278 | 753 | 465 | 188 |

| | Observed | | | | Adjusted† | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max | 26,200 | Min | 116 | Mean | 1,155 | Mean | 1,173 | Cfsm 1.42 | In. 19.26 |
| Water year 1954-55: | Max | 23,600 | Min | 145 | Mean | 1,600 | Mean | 1,577 | Cfsm 1.91 | In. 25.88 |

Peak discharge (base, 8,000 cfs).--Dec. 29 (5 p.m.) 15,700 cfs (20.25 ft); Feb. 22 (11 p.m.) 9,680 cfs (16.08 ft); Mar. 22 (7:30 a.m.) 25,000 cfs (23.65 ft); Apr. 8 (5 a.m.) 11,400 cfs (17.83 ft).

* Discharge measurement made on this day.

† Adjusted for change in contents in Woods Reservoir.

## Bradshaw Creek at Frankewing, Tenn.

Location.--Lat 35°11'31", long 86°50'43", on downstream side of second pier from right abutment of bridge on U. S. Highway 64, 0.4 mile east of Frankewing, 2.2 miles downstream from Little Bradshaw Creek, and 10.5 miles east of Pulaski, Giles County.

Drainage area.--36.5 sq mi.

Records available.--November 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 655.61 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during period, 12,600 cfs Mar. 21 (gage height, 16.38 ft), from rating curve extended above 7,200 cfs on basis of contracted-opening determination of peak flow; no flow Sept. 18-29.

Remarks.--Records fair.

Rating tables, Nov. 16, 1954, to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 6-28)

Nov. 16 to Feb. 21

| | | | |
|---|---|---|---|
| 1.2 | 0.7 | 2.0 | 21 |
| 1.3 | 2.0 | 2.5 | 62 |
| 1.5 | 51 | 3.0 | 137 |
| 1.8 | 12 | | |

Note.--Same as following table above 3.0 ft.

Feb. 22 to May 28

| | | | |
|---|---|---|---|
| 1.5 | 4.8 | 5.0 | 546 |
| 1.7 | 9.7 | 6.0 | 810 |
| 1.9 | 19 | 8.0 | 1,650 |
| 2.3 | 49 | 9.0 | 2,360 |
| 2.7 | 90 | 12.0 | 6,380 |
| 3.0 | 137 | | |

May 29 to Sept. 30

| | | | |
|---|---|---|---|
| 1.0 | 0 | 2.0 | 40 |
| 1.1 | .2 | 2.5 | 79 |
| 1.2 | 1.1 | 3.0 | 138 |
| 1.3 | 3.4 | 5.0 | 546 |
| 1.5 | 10 | | |

Note.--Same as preceding table above 5.0 ft.

Discharge, in cubic feet per second, November 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | - | 2.6 | 66 | 98 | 59 | 101 | 13 | 29 | 1.8 | 0.2 | 0.2 |
| 2 | | - | 2.3 | 44 | 96 | 49 | 107 | 12 | 23 | 1.4 | .2 | .2 |
| 3 | | - | 1.6 | 31 | 52 | 42 | 98 | 10 | 20 | 1.1 | .2 | .2 |
| 4 | | - | 1.3 | 26 | 41 | 39 | 91 | 9.1 | 17 | 10 | .2 | .2 |
| 5 | | - | 152 | 23 | 91 | 35 | 195 | 8.5 | 15 | 5.0 | .2 | .2 |
| 6 | | - | 40 | 22 | 1,020 | 459 | *2,100 | 8.2 | 19 | 5.3 | .2 | .2 |
| 7 | | - | 13 | 17 | 281 | 154 | 403 | 7.9 | 19 | 3.4 | 32 | .2 |
| 8 | | - | *8.7 | 15 | 150 | 97 | 203 | 7.6 | 14 | 3.1 | *5.9 | .1 |
| 9 | | - | *37 | 16 | 94 | 76 | 127 | 6.7 | 12 | 2.8 | 6.4 | .1 |
| 10 | | †0.3 | 16 | 18 | *66 | *62 | 146 | 6.7 | 18 | 1.6 | 4.2 | .08 |
| 11 | | - | 11 | 22 | 59 | 54 | 245 | *6.3 | 15 | 1.1 | 9.1 | .1 |
| 12 | | - | 9.8 | *20 | 44 | 47 | 137 | 9.1 | 12 | .8 | 5.0 | .2 |
| 13 | | - | 34 | 20 | 38 | 39 | 145 | 9.4 | 10 | .8 | 1.4 | .2 |
| 14 | | - | 18 | 16 | 36 | 35 | 98 | 6.7 | 9.3 | .8 | .5 | *.1 |
| 15 | | - | 12 | 21 | 34 | 32 | 74 | 8.9 | *8.5 | 3.2 | .4 | .08 |
| 16 | | *4.3 | 8.7 | 21 | 35 | 37 | 61 | 9.4 | 7.7 | 4.0 | 87 | .05 |
| 17 | | 3.0 | 41 | 19 | 32 | 48 | 50 | 7.0 | 7.3 | 2.3 | 12 | .02 |
| 18 | | 1.7 | 40 | 23 | 30 | 52 | 42 | 6.1 | 6.5 | 1.4 | 4.3 | 0 |
| 19 | | 1.3 | 20 | 62 | 27 | 346 | *36 | 5.4 | 5.9 | .8 | 2.0 | 0 |
| 20 | | 1.3 | 14 | 46 | 26 | 186 | 32 | 21 | 5.9 | .6 | .7 | 0 |
| 21 | | 1.6 | 11 | 246 | 1,300 | *6,350 | 48 | 71 | 5.3 | .8 | .5 | 0 |
| 22 | | 1.3 | 9.4 | 191 | 1,480 | 1,050 | 33 | 63 | 5.0 | .8 | 28 | 0 |
| 23 | | 1.0 | 8.7 | 94 | 330 | 372 | 39 | 24 | 5.0 | .8 | 10 | 0 |
| 24 | | .9 | 7.3 | 62 | 171 | 243 | 64 | 158 | 4.6 | 34 | 2.8 | 0 |
| 25 | | .9 | 6.0 | 44 | 115 | 269 | 35 | 70 | 4.6 | 15 | 1.1 | 0 |
| 26 | | .7 | 6.0 | 33 | 86 | 191 | 27 | 37 | 4.6 | 7.5 | .5 | 0 |
| 27 | | 1.0 | 5.5 | 30 | 76 | 154 | 22 | 20 | 4.3 | *2.8 | .4 | 0 |
| 28 | | 13 | 1,260 | 25 | 65 | 139 | 19 | 91 | 3.4 | .8 | .2 | 0 |
| 29 | | 6.4 | *1,890 | 21 | - | 125 | 17 | 463 | 2.8 | 3.5 | .2 | 0 |
| 30 | | 3.2 | 241 | 20 | ------- | 114 | 14 | 65 | 2.3 | .6 | .2 | .01 |
| 31 | | ------ | 105 | 18 | ------- | 106 | ------- | 38 | ------- | .4 | .2 | ------ |
| Total | | - | 4,032.9 | 1,332 | 5,973 | 11,061 | 4,809 | 1,279.0 | 316.0 | 118.3 | 216.2 | 2.44 |
| Mean | | - | 130 | 43.0 | 213 | 357 | 160 | 41.3 | 10.5 | 3.82 | 6.97 | 0.081 |
| Cfsm | | - | 3.56 | 1.18 | 5.84 | 9.78 | 4.38 | 1.13 | 0.288 | 0.105 | 0.191 | 0.0022 |
| In. | | - | 4.11 | 1.36 | 6.09 | 11.27 | 4.90 | 1.30 | 0.32 | 0.12 | 0.22 | 0.002 |

| | | | | | |
|---|---|---|---|---|---|
| Calendar year | : Max | Min | Mean | Cfsm | In. |
| Water year | : Max | Min | Mean | Cfsm | In. |

Peak discharge (base, 2,500 cfs).--Dec. 29 (10:30 a.m.) 6,210 cfs (11.88 ft); Feb. 6 (7:30 a.m.) 2,580 cfs (9.20 ft); Feb. 21 (9:30 p.m.) 4,170 cfs (10.42 ft); Mar. 21 (7 p.m.) 12,600 cfs (16.38 ft); Apr. 6 (10 a.m.) 7,220 cfs (12.60 ft).

* Discharge measurement made on this day.

† Result of discharge measurement.

## Richland Creek near Pulaski, Tenn.

Location.--Lat 35°12'51", long 87°06'05", on right bank 1,200 ft (revised) upstream from bridge on U. S. Highway 64, 1 mile downstream from Weakley Creek, and 4 miles west of Pulaski, Giles County.

Drainage area.--366 sq mi.

Records available.--April 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 642.54 ft above mean sea level, datum of 1929.

Average discharge.--21 years, 593 cfs.

Extremes.--Maximum discharge during year, 75,000 cfs Mar. 21 (gage height, 27.49 ft), from rating curve extended above 32,000 cfs on basis of contracted-opening determination of peak flow; minimum, 16 cfs Sept. 20, 21 (gage height, 0.67 ft).
1934-55: Maximum discharge, that of Mar. 21, 1955; minimum, 7.9 cfs Sept. 11, 1954 (gage height, 0.52 ft).
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 1113 | 1945 | Feb. 22, 1945 | 33,600 | 22.53 |
| 1113 | 1946 | Jan. 8, 1946 | 28,000 | 21.10 |
| 1113 | 1948 | Feb. 13, 1948 | 42,600 | 24.58 |
| 1173 | 1950 | Feb. 14, 1950 | 21,600 | 20.64 |
| 1206 | 1951 | Feb. 1, 1951 | 22,400 | 20.85 |

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 823: 1935-36(M), drainage area. Revised figures of discharge, in cubic feet per second, for the water years 1935-36, 1938, 1944, and 1948, superseding those published in WSP 783, 803, 853, 1003, and 1113, are given herewith:

| | | | |
|---|---|---|---|
| 1935 | | 1943 | |
| Apr. 6 | 6,970 | Dec. 25 | 80 |
| 1936 | | 1948 | |
| July 21 | 5,650 | Feb. 12 | 14,100 |
| 22 | 2,110 | 13 | 35,400 |
| 1938 | | 14 | 14,700 |
| June 12 | 480 | | |
| 13 | 356 | | |

| Month | Cfs-days | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|---|
| April 1935 | 34,715 | 6,970 | 326 | 1,157 | 3.16 | 3.53 |
| Water year 1934-35 | 173,640 | 11,200 | 18 | 476 | 1.30 | 17.65 |
| Calendar year 1935 | 187,344 | 11,200 | 18 | 513 | 1.40 | 19.03 |
| July 1936 | 18,043 | 5,650 | 36 | 582 | 1.59 | 1.83 |
| Water year 1935-36 | 187,758 | 14,000 | 14 | 513 | 1.40 | 19.05 |
| Calendar year 1936 | 215,858 | 14,000 | 14 | 590 | 1.61 | 21.92 |
| June 1938 | 9,915 | 1,170 | 141 | 330 | .902 | 1.01 |
| Water year 1937-38 | 159,151 | 6,120 | 33 | 436 | 1.19 | 16.17 |
| Calendar year 1938 | 150,185 | 6,120 | 30 | 411 | 1.12 | 15.26 |
| December 1943 | 4,773 | 785 | 50 | 154 | .421 | .48 |
| Calendar year 1943 | 117,145 | 4,140 | 16 | 321 | .877 | 11.91 |
| Water year 1943-44 | 245,695 | 14,800 | 27 | 671 | 1.83 | 24.96 |
| February 1948 | 99,972 | 35,400 | 182 | 3,447 | 9.42 | 10.16 |
| Water year 1947-48 | 216,183 | 35,400 | 20 | 591 | 1.61 | 21.97 |
| Calendar year 1948 | 302,221 | 35,400 | 20 | 826 | 2.26 | 30.72 |

Richland Creek near Pulaski, Tenn.--Continued

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 30, Feb. 8-21, Feb. 25 to Mar. 6, Mar. 8-20)

| Oct. 1 to Mar. 21 | | | | Mar. 21 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 22 | 9.0 | 2,840 | 0.6 | 12 | 11.0 | 3,650 |
| 1.0 | 59 | 13.0 | 4,860 | .9 | 35 | 13.0 | 5,210 |
| 1.5 | 172 | 15.0 | 6,900 | 1.4 | 96 | 15.0 | 7,640 |
| 3.0 | 610 | 17.4 | 11,100 | 2.0 | 200 | 17.0 | 12,400 |
| | | | | 3.0 | 470 | 21.3 | 33,000 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 388 | 37 | 45 | 676 | 334 | 766 | 652 | 308 | 522 | 59 | 37 | 26 |
| 2 | 521 | 40 | 44 | 503 | 705 | 662 | 820 | 278 | 404 | 55 | 31 | 25 |
| 3 | 112 | 35 | 42 | 386 | 482 | 579 | 848 | 252 | 330 | 52 | 30 | 24 |
| 4 | 64 | 40 | 40 | 328 | 398 | 534 | 701 | 231 | 285 | 52 | 29 | 23 |
| 5 | 49 | 50 | 50 | 291 | 398 | 497 | 704 | 215 | 250 | 60 | 28 | 23 |
| 6 | *42 | 45 | 200 | 260 | 3,560 | 2,100 | 8,430 | 198 | 243 | 233 | 28 | 22 |
| 7 | 36 | 40 | 150 | 224 | 4,430 | 2,440 | 6,710 | 185 | 482 | 122 | 27 | 22 |
| 8 | 34 | 37 | *119 | 203 | 1,830 | 1,520 | 2,440 | 173 | 298 | 89 | 37 | 21 |
| 9 | 32 | 36 | 143 | 193 | *1,220 | *1,140 | 1,620 | 159 | 227 | 79 | *85 | 21 |
| 10 | 31 | 35 | 170 | 188 | 925 | 928 | 1,290 | 148 | 204 | 72 | 56 | 20 |
| 11 | 30 | 34 | 134 | 193 | 842 | 777 | 1,740 | *141 | 211 | 59 | 59 | 19 |
| 12 | 30 | 33 | 110 | *185 | 655 | 669 | 1,600 | 226 | 192 | 50 | 43 | 25 |
| 13 | 30 | 32 | 102 | 172 | 560 | 566 | 1,660 | 282 | 167 | 50 | 39 | 20 |
| 14 | 31 | 31 | 122 | 160 | 528 | 503 | 1,870 | 204 | 152 | 51 | 36 | *18 |
| 15 | 31 | 32 | 112 | 165 | 497 | 467 | 1,440 | 192 | *141 | 63 | 52 | 18 |
| 16 | 35 | 50 | 100 | 175 | 476 | 449 | 1,150 | 248 | 128 | 77 | 45 | 19 |
| 17 | 31 | *59 | 98 | 165 | 458 | 455 | 940 | 171 | 118 | 80 | 78 | 17 |
| 18 | 30 | 55 | 148 | 162 | 422 | 528 | 782 | 146 | 109 | 59 | 49 | 17 |
| 19 | 30 | 52 | 150 | 216 | 407 | 1,640 | 673 | 133 | 102 | 50 | 41 | 17 |
| 20 | 30 | 52 | 119 | 230 | 392 | 2,120 | *582 | 128 | 104 | 50 | 110 | 16 |
| 21 | 29 | 49 | 102 | 539 | 2,440 | *32,600 | 718 | 615 | 104 | 73 | 60 | 16 |
| 22 | 29 | 44 | 90 | 1,750 | 11,100 | *28,100 | 610 | 1,510 | 96 | 68 | 50 | 17 |
| 23 | 29 | 40 | 83 | 1,140 | *5,780 | 5,080 | 694 | 908 | 86 | 58 | 45 | 17 |
| 24 | 28 | 39 | 78 | 792 | 2,370 | 2,440 | 1,480 | 634 | 88 | 57 | 40 | 20 |
| 25 | 28 | 39 | 69 | 590 | 1,560 | 1,940 | 1,000 | 704 | 88 | *69 | 35 | 24 |
| 26 | 28 | 36 | 68 | 452 | 1,200 | 1,820 | 704 | 614 | 85 | 59 | 32 | 24 |
| 27 | 28 | 40 | 64 | 384 | 1,030 | 1,280 | 564 | 416 | 82 | 79 | 30 | 22 |
| 28 | 30 | 50 | 770 | 336 | 867 | 1,080 | 474 | 510 | 74 | 59 | 30 | 24 |
| 29 | 35 | 60 | 4,920 | 300 | - | 928 | 410 | 2,690 | 68 | 52 | 28 | 25 |
| 30 | 40 | 50 | *3,500 | 266 | ------- | 799 | 347 | 1,480 | 64 | 51 | 27 | 31 |
| 31 | 35 | ------- | 1,040 | 232 | ------- | 718 | ------- | 743 | ------- | 41 | 30 | ------- |
| Total | 1,956 | 1,272 | 12,982 | 11,856 | 45,846 | 96,125 | 43,653 | 14,842 | 5,504 | 2,118 | 1,347 | 633 |
| Mean | 63.1 | 42.4 | 419 | 382 | 1,637 | 3,101 | 1,455 | 479 | 183 | 68.3 | 43.5 | 21.1 |
| Cfsm | 0.172 | 0.116 | 1.14 | 1.04 | 4.47 | 8.47 | 3.98 | 1.31 | 0.500 | 187 | 0.119 | 0.058 |
| In. | 0.20 | 0.13 | 1.32 | 1.20 | 4.66 | 9.77 | 4.44 | 1.51 | 0.56 | 0.22 | 0.14 | 0.06 |

Calendar year 1954: Max 8,110 Min 8.2 Mean 393 Cfsm 1.07 In. 14.58
Water year 1954-55: Max 32,600 Min 16 Mean 652 Cfsm 1.78 In. 24.21

Peak discharge (base, 6,000 cfs).--Feb. 22 (12 m.) 13,500 cfs (18.35 ft); Mar. 21 (8 p.m.) 75,000 cfs (27.49 ft); Apr. 6 (6:30 p.m.) 16,000 cfs (17.90 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 16 to Nov. 16, Nov. 27 to Dec. 7, Aug. 21 to Sept. 13; discharge estimated on basis of weather records and records for stations on nearby streams.

## Elk River near Prospect, Tenn.

Location.--Lat 35°01'39", long 86°56'52", on right bank 50 ft upstream from highway bridge, 1.1 miles downstream from Richland Creek, 3.2 miles east of Prospect, Giles County, 5.2 miles upstream from Ford Creek, and 7.7 miles upstream from Tennessee-Alabama State line.

Drainage area.--1,784 sq mi.

Records available.--July 1904 to Febraury 1908, January 1919 to September 1955. Published as "near Elkmont, Ala." 1904-8, 1919-34.

Gage.--Water-stage recorder. Datum of gage is 563.29 ft above mean sea level, datum of 1929. July 1904 to Febraury 1908 and January 1919 to March 1934, chain gage at site 11⅝ miles downstream at datum 13.52 ft lower.

Average discharge.--39 years (1904-7, 1919-55), 2,986 cfs (unadjusted).

Extremes.--Maximum discharge during year, 104,000 cfs Mar. 22 (gage height, 38.96 ft), from rating curve extended above 60,000 cfs on basis of contracted-opening determination of peak flow; minimum, 148 cfs Sept. 23 (gage height, 0.73 ft).
1904-8, 1919-55: Maximum discharge, that of Mar. 22, 1955; minimum, 85 cfs Sept. 18-20, 1925, Sept. 11, 1931.

Remarks.--Records excellent. Flow regulated by Woods Reservoir since 1952 (see p. 246).

Revisions (water years).--WSP 523: 1904-8, 1919-20. WSP 823: Drainage area. WSP 1003: 1929(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 30 | | | | Dec. 31 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.9 | 172 | 10.0 | 7,040 | 0.7 | 140 | 18.0 | 15,600 |
| 1.4 | 338 | 15.0 | 12,000 | 1.0 | 220 | 25.0 | 25,100 |
| 3.0 | 1,260 | 20.0 | 18,200 | 1.8 | 540 | 30.0 | 36,100 |
| 5.0 | 2,760 | 25.0 | 25,100 | 3.0 | 1,260 | 34.0 | 58,700 |
| | | | | 6.0 | 3,640 | 37.7 | 91,500 |
| | | | | 10.0 | 7,280 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 569 | 194 | 370 | 17,600 | 1,430 | 3,780 | 3,390 | 2,040 | 3,460 | 938 | 800 | 288 |
| 2 | 2,000 | 190 | 325 | 8,720 | 3,640 | 3,410 | 3,060 | 1,670 | 2,520 | 944 | 746 | 292 |
| 3 | 1,060 | 190 | 296 | 4,900 | 3,010 | 3,120 | 3,170 | 1,500 | 2,020 | 758 | 686 | 274 |
| 4 | 490 | 194 | 274 | 2,680 | 2,540 | 2,750 | 3,170 | 1,500 | 1,720 | 728 | 668 | 250 |
| 5 | 338 | 209 | 563 | 2,400 | 2,260 | 2,540 | 4,810 | 1,530 | 1,510 | 854 | 896 | 217 |
| 6 | 263 | 236 | 2,010 | 1,980 | 11,100 | 5,560 | 13,800 | 1,430 | 1,420 | 1,560 | 818 | 199 |
| 7 | *233 | 278 | 1,250 | 1,770 | 17,900 | 9,550 | 24,400 | 1,480 | 1,680 | 1,020 | 782 | 190 |
| 8 | 217 | 296 | 878 | 1,660 | 14,400 | 7,380 | 24,200 | 1,530 | 2,830 | 896 | 1,060 | 182 |
| 9 | 206 | 289 | *830 | 1,510 | *8,890 | 5,590 | 17,100 | *1,510 | 2,240 | 812 | *950 | 180 |
| 10 | 197 | 281 | 872 | 1,380 | 6,290 | *4,090 | 11,600 | 1,470 | 1,670 | 806 | 824 | 175 |
| 11 | 194 | 274 | 710 | 1,650 | 4,620 | 3,470 | 8,800 | 1,200 | 2,940 | 830 | 758 | 301 |
| 12 | 187 | 274 | 578 | *1,720 | 3,570 | 3,020 | 7,380 | 1,130 | 3,580 | 710 | 962 | 415 |
| 13 | 184 | 270 | 590 | 1,590 | 3,100 | 2,480 | 6,880 | 1,290 | 2,810 | 680 | 746 | *254 |
| 14 | 182 | 266 | 746 | 1,370 | 2,810 | 2,320 | 7,020 | 1,250 | 1,850 | *698 | 617 | 202 |
| 15 | 180 | 270 | 686 | 1,310 | 2,480 | 2,380 | 6,620 | 1,280 | *1,660 | 740 | 551 | 185 |
| 16 | 172 | 347 | 606 | 1,350 | 2,290 | 2,090 | 5,840 | 1,520 | 1,400 | 752 | 693 | 178 |
| 17 | 182 | 469 | 634 | 1,310 | 2,290 | 1,950 | 5,000 | 1,480 | 1,230 | 728 | 1,020 | 168 |
| 18 | 184 | *404 | 1,460 | 1,280 | 2,200 | 2,660 | 3,770 | 1,180 | 1,130 | 692 | 540 | 165 |
| 19 | 180 | 370 | 1,310 | 2,440 | 2,110 | 6,850 | *3,170 | 1,090 | 1,050 | 644 | 384 | 162 |
| 20 | 190 | 343 | 1,120 | 2,610 | 2,040 | 10,100 | 2,790 | 1,000 | 884 | 869 | 356 | 158 |
| 21 | 214 | 325 | 920 | 3,180 | 5,340 | 24,600 | 2,940 | 2,210 | 842 | 1,140 | 414 | 152 |
| 22 | 217 | 309 | 854 | 7,060 | 22,000 | *91,400 | 2,770 | 5,040 | 932 | 1,230 | 497 | 152 |
| 23 | 220 | 292 | 782 | 5,690 | *28,900 | *57,300 | 3,730 | 4,160 | 1,120 | 944 | 734 | 150 |
| 24 | 220 | 278 | 728 | 4,290 | 24,500 | 32,700 | 6,490 | 3,800 | 1,160 | 938 | 662 | 152 |
| 25 | 220 | 246 | 606 | 3,550 | 14,300 | 24,500 | 8,610 | 3,870 | 1,440 | 1,030 | 495 | 155 |
| 26 | 217 | 226 | 551 | 2,730 | 8,600 | 14,500 | 8,700 | 3,120 | 1,440 | 1,380 | 427 | 162 |
| 27 | 217 | 220 | 459 | 2,180 | 5,350 | 8,140 | 7,180 | 2,080 | 1,290 | 986 | 332 | 172 |
| 28 | 217 | 233 | 3,230 | 1,930 | 4,240 | 6,590 | 3,950 | 2,250 | 1,500 | 1,250 | 268 | 175 |
| 29 | 206 | 407 | 20,300 | 1,760 | - | 5,620 | 2,880 | 10,500 | 1,200 | 1,530 | 238 | 172 |
| 30 | 190 | 524 | *24,600 | 1,590 | ------- | 4,560 | 2,390 | 9,450 | 902 | 1,160 | 241 | 178 |
| 31 | 194 | ------- | 23,800 | 1,360 | ------- | 3,720 | ------- | 5,220 | ------- | 1,080 | 250 | ------- |
| Total | 9,740 | 8,704 | 92,938 | 96,550 | 212,200 | 358,720 | 215,610 | 79,780 | 51,430 | 29,327 | 19,415 | 6,055 |
| Mean | 314 | 290 | 2,998 | 3,115 | 7,579 | 11,570 | 7,187 | 2,574 | 1,714 | 946 | 626 | 202 |

| | | observed | | | | | Adjusted† | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year 1954: | Max | 42,500 | Min | 117 | Mean | 2,258 | Mean | 2,276 | Cfsm | 1.28 | In. | 17.32 |
| Water year 1954-55: | Max | 91,400 | Min | 150 | Mean | 3,234 | Mean | 3,211 | Cfsm | 1.80 | In. | 24.43 |

Peak discharge (base, 17,000 cfs).--Dec. 30 (12 p.m.) 25,700 cfs (25.44 ft); Feb. 7 (8 p.m.) 18,400 cfs (20.18 ft); Feb. 23 (2 p.m.) 30,100 cfs (27.93 ft); Mar. 22 (1:30 p.m.) 104,000 cfs (38.96 ft); Apr. 7 (9:30 p.m.) 27,000 cfs (26.34 ft).

* Discharge measurement made on this day.

† Adjusted for change in contents in Woods Reservoir.

## Big Nance Creek at Courtland, Ala.

Location.--Lat 34°40'12", long 87°19'02", in SW¼ sec. 30, T. 4 S., R. 7 W., near right bank on downstream side of pier of bridge on State Highway 20, at Courtland, 12⅝ miles upstream from mouth.

Drainage area.--166 sq mi.

Records available.--July 1935 to September 1940, March 1945 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 537.60 ft above mean sea level, datum of 1929. July 25, 1935, to Sept. 30, 1940, staff gage at same site and datum.

Average discharge.--15 years, 272 cfs.

Extremes.--Maximum discharge during year, 7,160 cfs Mar. 22 (gage height, 20.27 ft); minimum daily, 0.5 cfs Oct. 8-10.
1935-40, 1945-55: Maximum discharge, 12,300 cfs Jan. 7, 1950 (gage height, 22.60 ft); minimum daily, 0.4 cfs Sept. 15-17, 1954; minimum gage height observed, 1.18 ft Oct. 25, 1954.

Remarks.--Records good except those below 2.0 cfs and those for period of indefinite stage-discharge relation, which are poor.

Revisions (water years).--WSP 1033: 1939, 1940(M). WSP 1053: 1939(M).

Rating tables, water year 1954-55, except period of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Oct. 1, 2, Nov. 16-20, Nov. 28 to Dec. 1, Dec. 5-28, Mar. 1, 2, 6, 8, 16, 18, Sept. 28-30; rate of change in stage used as a factor Dec. 29, 31, Feb. 22-24, Mar. 21, 23, 24)

| Oct. 1 to Dec. 29 | | | | Dec. 30 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.2 | 0.3 | 3.0 | 185 | 1.3 | 0.7 | 6.0 | 750 |
| 1.3 | 1.5 | 5.0 | 550 | 1.4 | 4.5 | 10.0 | 1,760 |
| 1.4 | 6.0 | 9.0 | 1,480 | 1.5 | 11 | 15.0 | 3,440 |
| 1.6 | 20 | 12.0 | 2,340 | 2.0 | 55 | 18.0 | 4,860 |
| 2.0 | 58 | 13.6 | 2,820 | 3.0 | 187 | 19.9 | 6,610 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.3 | 1.5 | 3.9 | 484 | 125 | 230 | 177 | 72 | 42 | 14 | 7.5 | 1.6 |
| 2 | 3.9 | 1.5 | 3.0 | 259 | 526 | 202 | 211 | 64 | 34 | 10 | 5.6 | 1.3 |
| 3 | 1.5 | 1.5 | 2.2 | 206 | 308 | 176 | 258 | 60 | 30 | 8.3 | 4.5 | .9 |
| 4 | *1.0 | 1.8 | 2.2 | 162 | 186 | 156 | 206 | 55 | 27 | 7.6 | 3.9 | .9 |
| 5 | .8 | 1.8 | 5.4 | 139 | 170 | 149 | 319 | 51 | 25 | 7.5 | 2.5 | 1.1 |
| 6 | .9 | 1.5 | *46 | 124 | 1,230 | 179 | 814 | 48 | 23 | 8.3 | 2.5 | 1.1 |
| 7 | .8 | 1.5 | 17 | 121 | *2,600 | 364 | 542 | 45 | 25 | 80 | 2.0 | 1.3 |
| 8 | .5 | 1.5 | 13 | 92 | 1,510 | *222 | 402 | 43 | 45 | 142 | *10 | *1.3 |
| 9 | .5 | 1.5 | 12 | 84 | 430 | 149 | 247 | *40 | 40 | 43 | 19 | 1.3 |
| 10 | .5 | 1.5 | 16 | *90 | 302 | 137 | 210 | 38 | 27 | 21 | 29 | 1.3 |
| 11 | .6 | 1.5 | 12 | 187 | 301 | 124 | 581 | 36 | 23 | *17 | 22 | 1.6 |
| 12 | .8 | 1.5 | 11 | 174 | 262 | 114 | 656 | 35 | 22 | 21 | 13 | 1.6 |
| 13 | .9 | 1.5 | 9.0 | 117 | 184 | 105 | 960 | 34 | *22 | 22 | 8.3 | 1.3 |
| 14 | 1.0 | 1.5 | 9.0 | 94 | 165 | 95 | 938 | 33 | 20 | 39 | 5.6 | 1.6 |
| 15 | 1.5 | 1.5 | 7.8 | 88 | 165 | 91 | 454 | 32 | 17 | 28 | 3.9 | 1.6 |
| 16 | 1.5 | *5.4 | 6.6 | 138 | 156 | 141 | 297 | 33 | 16 | 130 | 2.9 | 1.6 |
| 17 | 2.2 | 5.4 | 6.6 | 146 | 194 | 410 | 238 | 33 | 15 | 117 | 2.5 | 1.6 |
| 18 | 1.8 | 11 | 6.6 | 117 | 196 | 228 | 199 | 32 | 14 | 60 | 3.4 | 1.3 |
| 19 | e1.5 | 6.0 | 6.0 | 550 | 155 | 745 | *170 | 30 | 13 | 29 | 7.5 | 1.1 |
| 20 | e1.2 | 3.0 | 5.4 | 600 | 135 | 1,180 | 149 | 59 | 12 | 20 | 6.9 | 1.1 |
| 21 | e1.0 | 2.2 | 4.9 | 330 | 828 | 3,330 | 187 | 156 | 11 | 16 | 3.9 | *1.1 |
| 22 | e.9 | 1.5 | 4.9 | 702 | *3,580 | *6,610 | 242 | 180 | 10 | 21 | 3.9 | 1.1 |
| 23 | e.8 | 1.2 | 4.9 | 500 | 4,180 | 3,980 | 176 | 128 | 13 | 19 | 4.5 | 1.1 |
| 24 | e.8 | 1.2 | 4.9 | 265 | 1,860 | 1,210 | 208 | 98 | 11 | 57 | 3.9 | 1.1 |
| 25 | e.7 | 1.2 | 4.4 | 200 | 584 | 516 | 238 | 282 | 13 | 46 | 3.4 | 1.1 |
| 26 | e.7 | 1.2 | 3.9 | 160 | 392 | 426 | 162 | 178 | 17 | 42 | 2.5 | 1.1 |
| 27 | e.8 | 1.5 | 3.9 | 137 | 308 | 308 | 120 | 74 | 221 | 96 | 1.6 | 1.1 |
| 28 | e.9 | 12 | 175 | 125 | 264 | 259 | 101 | 52 | 162 | 32 | 1.6 | 1.1 |
| 29 | 1.0 | 25 | 2,820 | 118 | - | 238 | 91 | 52 | 35 | 19 | 1.6 | .9 |
| 30 | 1.2 | 9.6 | *5,060 | 103 | ------ | 216 | 81 | 99 | 19 | 13 | 2.0 | .9 |
| 31 | 1.5 | ---- | 2,550 | 91 | ---- ---- | 194 | ------ -- | 64 | ------- | 9.0 | 2.0 | - - |
| Total | 36.0 | 110.5 | 10,837.5 | 6,703 | 21,296 | 22,484 | 9,634 | 2,236 | 1,004 | 1,194.6 | 193.4 | 37.1 |
| Mean | 1.16 | 3.68 | 350 | 216 | 761 | 725 | 321 | 72.1 | 33.5 | 38.5 | 6.24 | 1.24 |
| Cfsm | 0.0070 | 0.022 | 2.11 | 1.30 | 4.58 | 4.37 | 1.93 | 0.434 | 0.202 | 0.232 | 0.038 | 0.0075 |
| In. | 0.01 | 0.02 | 2.43 | 1.50 | 4.77 | 5.04 | 2.16 | 0.50 | 0.22 | 0.27 | 0.04 | 0.01 |

Calendar year 1954: Max 6,690 Min 0.4 Mean 164 Cfsm 0.988 In. 13.41
Water year 1954-55: Max 6,610 Min 0.5 Mean 208 Cfsm 1.25 In. 16.97

Peak discharge (base, 3,800 cfs).--Dec. 30 (11 a.m.) 5,450 cfs (18.79 ft); Feb. 23 (6:30 a.m.) 4,680 cfs (17.70 ft); Mar. 22 (2 p.m.) 7,160 cfs (20.27 ft).
* Discharge measurement made on this day.
e Stage-discharge relationship indefinite; discharge interpolated or estimated.

## Shoal Creek at Iron City, Tenn.

Location.--Lat 35°01'20", long 87°34'44", on right bank 600 ft upstream from Louisville & Nashville Railroad bridge, 700 ft downstream from highway bridge, 0.2 mile downstream from Holly Creek, a quarter of a mile east of Iron City, Lawrence County, and at mile 21.7.

Drainage area.--348 sq mi.

Records available.--July 1925 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 534.91 ft above mean sea level, datum of 1929. Prior to Feb. 25, 1931, staff gage at railroad bridge 600 ft downstream at datum 1.54 ft lower. Feb. 25, 1931, to Sept. 30, 1933, staff gage at site 75 ft downstream at present datum.

Average discharge.--30 years, 631 cfs.

Extremes.--Maximum discharge during year, 132,000 cfs Mar. 21 (gage height, 27.22 ft), from rating curve extended above 32,000 cfs on basis of contracted-opening determination at gage height 22.9 ft and a slope-area determination at gage height 27.22 ft; minimum, 59 cfs Sept. 1, caused by temporary storage behind highway fill upstream; minimum daily, 76 cfs Sept. 23.
1925-55: Maximum discharge, that of Mar. 21, 1955; minimum, 38 cfs Aug. 31, 1943 (gage height, -0.02 ft).

Remarks.--Records good. Diurnal fluctuation at low flow caused by powerplant at Lawrenceburg.

Revisions (water years).--WSP 823: Drainage area. WSP 1113: 1927(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 31, Jan. 1-12, 16, 19-21, Jan. 23 to Feb. 5, Feb. 11-21, Feb. 24 to Mar. 20)

| Oct. 1 to Mar. 20 | | | | Mar. 21 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.6 | 93 | 4.0 | 1,670 | 0.1 | 74 | 7.0 | 3,610 |
| 1.0 | 176 | 8.0 | 4,400 | .5 | 143 | 10.0 | 6,700 |
| 1.5 | 310 | 11.0 | 8,050 | 1.0 | 243 | 13.0 | 11,600 |
| 2.0 | 510 | 13.1 | 11,800 | 1.5 | 403 | 17.0 | 22,000 |
| | | | | 3.0 | 1,150 | 20.5 | 40,500 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 176 | 113 | 129 | g347 | 208 | 632 | 526 | 352 | g645 | 156 | 151 | 92 |
| 2 | 404 | 115 | 127 | g293 | 763 | 560 | 553 | 331 | g495 | 152 | 139 | 90 |
| 3 | 221 | 109 | 125 | g242 | 545 | 490 | 980 | 311 | g411 | 151 | 132 | 88 |
| 4 | 144 | 115 | 121 | g221 | 420 | 451 | 630 | 301 | g345 | 151 | 127 | 88 |
| 5 | 121 | 140 | 135 | g208 | 375 | 420 | 598 | 278 | g305 | 162 | 144 | 88 |
| 6 | *115 | 133 | 259 | g198 | *2,400 | 1,190 | 2,920 | 270 | g285 | 289 | 139 | 90 |
| 7 | 111 | 121 | 190 | g193 | *3,300 | 2,200 | 3,220 | 257 | g292 | 562 | 129 | *90 |
| 8 | 107 | 119 | *153 | g181 | 1,340 | 1,330 | 1,430 | 250 | g285 | 589 | 146 | 87 |
| 9 | 102 | g115 | 167 | g178 | 890 | *g1,010 | 1,050 | 243 | g255 | 270 | *177 | 85 |
| 10 | 100 | g111 | 183 | g178 | 698 | g879 | 897 | *234 | g257 | 209 | 149 | 85 |
| 11 | 100 | g111 | 153 | *g188 | 632 | g676 | 1,650 | 230 | g267 | 183 | 134 | 85 |
| 12 | 102 | g111 | 142 | 178 | 525 | g571 | 1,760 | 314 | g255 | 173 | 168 | 87 |
| 13 | 100 | g111 | 144 | 169 | 433 | g505 | 3,160 | 486 | g255 | *173 | 136 | 87 |
| 14 | 104 | g111 | 146 | 160 | 395 | g442 | 2,740 | 311 | *g253 | 179 | 120 | 85 |
| 15 | 107 | g113 | 140 | 164 | 364 | g411 | 1,720 | 275 | 243 | 275 | 112 | 87 |
| 16 | 106 | g144 | g129 | 186 | 354 | g411 | 1,240 | 349 | 232 | 327 | 143 | 85 |
| 17 | 98 | *g160 | g131 | 171 | 358 | g395 | 980 | 281 | 219 | 230 | 325 | 84 |
| 18 | 98 | 140 | g149 | 169 | 322 | g515 | 800 | 245 | 211 | 197 | 177 | 82 |
| 19 | 98 | 129 | g142 | 231 | 304 | 1,150 | 700 | 232 | 205 | 179 | 136 | 80 |
| 20 | 97 | 129 | g131 | 259 | 296 | 1,880 | *612 | 232 | 201 | 170 | 139 | 79 |
| 21 | 97 | 121 | g125 | 290 | 1,450 | *g40,200 | 800 | 617 | 199 | 276 | 201 | 79 |
| 22 | 97 | 115 | g123 | 708 | *11,700 | *34,900 | 790 | 5,840 | 195 | 195 | 156 | *77 |
| 23 | 97 | 115 | g121 | 555 | *3,860 | 3,400 | 650 | g2,620 | 189 | 173 | 129 | 76 |
| 24 | 97 | 115 | g119 | 383 | 1,810 | 1,990 | 1,060 | g1,320 | 191 | 199 | 121 | 85 |
| 25 | 97 | 113 | g117 | 347 | 1,260 | 1,510 | 892 | g1,320 | 191 | 177 | 111 | 114 |
| 26 | 97 | 111 | g115 | 301 | 974 | 1,340 | 645 | g1,640 | 195 | 166 | 104 | 105 |
| 27 | 97 | 117 | g113 | 270 | 824 | 1,020 | 548 | g1,020 | 191 | 259 | 100 | 98 |
| 28 | 102 | 138 | g300 | 242 | 720 | 855 | 490 | g869 | 175 | 435 | 98 | 104 |
| 29 | 109 | 151 | *g1,660 | 226 | - | 750 | 437 | g1,880 | 168 | 236 | 95 | 151 |
| 30 | 115 | 144 | 884 | 210 | ------- | 640 | 387 | g1,200 | 162 | 183 | 93 | 136 |
| 31 | 109 | ---- | g466 | 200 | ------- | 576 | -------- | g795 | -------- | 162 | 95 | ---- |
| Total | 3,725 | 3,690 | 7,139 | 7,846 | 37,520 | 103,299 | 34,865 | 24,903 | 7,772 | 7,238 | 4,326 | 2,749 |
| Mean | 120 | 123 | 230 | 253 | 1,340 | 3,332 | 1,162 | 803 | 259 | 233 | 140 | 91.6 |
| Cfsm | 0.345 | 0.353 | 0.661 | 0.727 | 3.85 | 9.57 | 3.34 | 2.31 | 0.744 | 0.670 | 0.402 | 0.263 |
| In. | 0.40 | 0.39 | 0.76 | 0.84 | 4.01 | 11.04 | 3.73 | 2.66 | 0.83 | 0.77 | 0.46 | 0.29 |

Calendar year 1954: Max 7,770 Min 70 Mean 433 Cfsm 1.24 In. 16.90
Water year 1954-55: Max 40,200 Min 76 Mean 671 Cfsm 1.93 In. 26.18

Peak discharge (base, 6,000 cfs).--Feb. 22 (12 m.) 15,400 cfs (14.62 ft); Mar. 21 (about 11:30 p.m.) 132,000 cfs (27.22 ft); Apr. 6 (10:30 p.m.) 8,290 cfs (11.15 ft); May 22 (7 p.m.) 8,990 cfs (11.58 ft).

* Discharge measurement made on this day.

g Computed from graph based on bihourly radio-gage readings furnished by Tennessee Valley Authority.

## Tennessee River at Florence, Ala.

Location.--Lat 34°47'12", long 87°40'08", in SW¼ sec. 14, T. 3 S., R. 11 W., on left bank at lock and dam 1 at lower end of Patten Island, 700 ft upstream from Southern Railway bridge, 1,000 ft upstream from O'Neal Bridge on U. S. Highway 72, 1 mile south of Florence, 1.7 miles upstream from Cypress Creek, 2.7 miles downstream from Wilson Dam, and at mile 256.7.

Drainage area.--30,810 sq mi, approximately.

Records available.--November 1871 to September 1894 (gage heights only), October 1894 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 401.12 ft above mean sea level, datum of 1929. Prior to Apr. 1, 1926, several U. S. Weather Bureau staff gages at or near Southern Railway bridge 700 ft downstream at same datum. Since Oct. 1, 1938, auxiliary water-stage recorder 15¼ miles downstream.

Average discharge.--61 years (1894-1955), 50,670 cfs.

Extremes.--Maximum discharge during year, 326,000 cfs Mar. 22 (gage height, 25.73 ft); minimum daily, 6,700 cfs Oct. 10; minimum gage height, 6.79 ft Dec. 23.
1871-1955: Maximum discharge observed, 444,000 cfs Mar. 19, 1897 (gage height, 32.5 ft), from rating curve extended above 320,000 cfs; minimum daily, 250 cfs Sept. 13, 1953 (computed on basis of Wilson Dam records); minimum gage height, -3.0 ft Oct. 8, 1925, caused by filling of Wilson Lake.

Remarks.--Records good. Discharge below 25,000 cfs computed on basis of records for Wilson Dam. Flow regulated by many reservoirs above station (see p. 242).

Cooperation.--Auxiliary water-stage-recorder graph furnished by the Tennessee Valley Authority.

Revisions (water years).--WSP 473: 1897(M).

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17,600 | 20,300 | 21,800 | 124,000 | 34,200 | 75,900 | 59,000 | 26,500 | 42,700 | 26,700 | 36,100 | 30,900 |
| 2 | 13,500 | 22,900 | 23,600 | 116,000 | 39,600 | 73,000 | 50,300 | 37,700 | 34,800 | 24,400 | 35,900 | 31,500 |
| 3 | 13,200 | 27,000 | 25,900 | 104,000 | 46,000 | 65,300 | 49,800 | 33,700 | 31,300 | 26,000 | 38,500 | 28,400 |
| 4 | 20,400 | 25,300 | 21,300 | 79,600 | 46,900 | 59,700 | 45,100 | 30,800 | 25,500 | 19,100 | 34,500 | 23,100 |
| 5 | *23,700 | 23,700 | 15,100 | 72,600 | 39,400 | 65,200 | 53,200 | 37,700 | 20,300 | 29,300 | 37,500 | 20,800 |
| 6 | 19,400 | 21,000 | 35,100 | 55,900 | 59,100 | 53,100 | 83,600 | 35,000 | 36,600 | 32,600 | 31,600 | 28,200 |
| 7 | 18,600 | 9,800 | *42,600 | 48,100 | 85,400 | 52,200 | 97,700 | 33,300 | 44,200 | 37,500 | 26,600 | 31,200 |
| 8 | 19,700 | 18,300 | 38,600 | 45,800 | *92,800 | 52,700 | 73,400 | 28,500 | 43,600 | 40,300 | 40,000 | 31,400 |
| 9 | 11,100 | 20,800 | 25,800 | 37,300 | 104,000 | 54,600 | 79,700 | 35,800 | 42,800 | 34,600 | *31,900 | 32,500 |
| 10 | 6,700 | 21,500 | 25,600 | 50,100 | 124,000 | 49,800 | 75,500 | 34,200 | 41,800 | 29,400 | 35,100 | 26,800 |
| 11 | 19,000 | 20,300 | 25,100 | 46,400 | 108,000 | 44,800 | 76,200 | 39,600 | 32,000 | 34,100 | 29,900 | 18,500 |
| 12 | 18,400 | 17,800 | 22,500 | 42,600 | 84,600 | 44,000 | 71,300 | 32,400 | 26,700 | *40,000 | 31,800 | 31,000 |
| 13 | 17,000 | 13,400 | 32,000 | 46,500 | 73,800 | 41,800 | 82,200 | 28,500 | 41,900 | 31,200 | 30,700 | 30,700 |
| 14 | 18,200 | 9,100 | 28,600 | 50,800 | 75,900 | 40,900 | 62,500 | 34,000 | 40,900 | 37,100 | 26,300 | 30,000 |
| 15 | 17,600 | 20,800 | 25,800 | 46,000 | 61,600 | 50,400 | 67,600 | 32,500 | 42,300 | 38,200 | 35,500 | 32,000 |
| 16 | 18,200 | 19,600 | 26,100 | 31,100 | 51,100 | 60,800 | 63,100 | 43,600 | 38,700 | 33,700 | 37,200 | 27,800 |
| 17 | 8,900 | 18,600 | 26,100 | 39,200 | 47,500 | 51,400 | 63,800 | 37,700 | 35,700 | 32,000 | 32,600 | 18,700 |
| 18 | 18,900 | 19,000 | 26,200 | 46,700 | 56,000 | 57,400 | 61,900 | 37,100 | 25,200 | 31,900 | 37,500 | 17,700 |
| 19 | 23,700 | 19,300 | 25,000 | 49,600 | 65,100 | 72,700 | 50,200 | 33,000 | 24,500 | 33,900 | 33,800 | 25,600 |
| 20 | 18,400 | 20,500 | 37,400 | 58,300 | 35,500 | 89,700 | 48,200 | 40,200 | 34,000 | 30,200 | 25,700 | 26,600 |
| 21 | 18,400 | 16,100 | 48,200 | 48,700 | 61,800 | 173,000 | 48,200 | 37,100 | 39,700 | 28,900 | 22,600 | 23,900 |
| 22 | 15,100 | 25,200 | 24,800 | 41,500 | 88,300 | 280,000 | 45,600 | 58,600 | 41,900 | 31,400 | 32,600 | 21,800 |
| 23 | 13,900 | 24,400 | 31,700 | 44,200 | 122,000 | *256,000 | 30,600 | 59,200 | 33,700 | 33,400 | 34,200 | 22,500 |
| 24 | 10,400 | 23,700 | 22,000 | 52,900 | 135,000 | 233,000 | 35,100 | 40,500 | 34,200 | 26,700 | 32,300 | 16,800 |
| 25 | 19,800 | 14,100 | 18,300 | 50,300 | 120,000 | 198,000 | 51,500 | 32,300 | 23,500 | 35,500 | 33,800 | 9,800 |
| 26 | 16,800 | 21,600 | 12,200 | 48,600 | 82,600 | 194,000 | 36,100 | 28,200 | 25,000 | 36,300 | 32,800 | 21,200 |
| 27 | 15,000 | 20,700 | 22,800 | 47,700 | 90,400 | 165,000 | 34,600 | 31,300 | 29,100 | 38,900 | 26,000 | 25,400 |
| 28 | 16,900 | 13,900 | 28,500 | 52,900 | 81,500 | 135,000 | 31,200 | 30,800 | 38,800 | 52,900 | 23,100 | 25,900 |
| 29 | 18,000 | 24,600 | 78,800 | 54,000 | - | *114,000 | 35,000 | 28,300 | 38,100 | 40,400 | 37,400 | 23,700 |
| 30 | 19,400 | 28,800 | 107,000 | 20,500 | ------- | 82,400 | 33,900 | 56,200 | 31,200 | 31,800 | 42,600 | 21,400 |
| 31 | 18,000 | ------- | 123,000 | 48,400 | ------- | 71,600 | ------- | 48,900 | ------- | 28,200 | 31,300 | ------- |
| Total | 523,900 | 602,100 | ‡1,067.5 | ‡1,700.3 | ‡2,112.1 | ‡3,057.4 | ‡1,696.1 | ‡1,143.2 | ‡1,040.7 | ‡1,026.6 | ‡1,017.4 | 758,800 |
| Mean | 16,900 | 20,070 | 34,440 | 54,850 | 75,430 | 98,630 | 56,540 | 36,880 | 34,690 | 33,120 | 32,820 | 25,190 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 299,000 Min 6,700 Mean 37,870 Cfsm 1.23 In. 16.69
Water year 1954-55: Max 280,000 Min 6,700 Mean 43,130 Cfsm 1.40 In. 19.00

* Discharge measurement made on this day.
‡ Expressed in thousands.

## Bear Creek at Bishop, Ala.

Location.--Lat 34°39'21", long 88°07'21", in SE¼ sec. 5, T. 5 S., R. 15 W., on left bank 20 ft upstream from highway bridge, half a mile downstream from Little Bear Creek, and three-quarters of a mile southwest of Bishop.

Drainage area.--667 sq mi.

Records available.--August 1926 to March 1932, June 1933 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 419.91 ft above mean sea level, datum of 1929. Prior to June 23, 1928, and Feb. 10, 1929, to Mar. 31, 1932, staff gage at site 35 ft downstream at datum 5.06 ft lower. June 7, 1933, to May 28, 1934, chain gage at bridge 20 ft downstream at same datum as staff gage.

Average discharge.--25 years (1926-27, 1929-31, 1933-55), 1,062 cfs.

Extremes.--Maximum discharge during year, 37,000 cfs Mar. 22 (gage height, 21.98 ft); minimum, 16 cfs Oct. 2, 3.
1926-55: Maximum discharge, that of Mar. 22, 1955; maximum gage height, 22.0 ft (present datum) Dec. 26, 1926, from floodmarks; minimum discharge, 9.3 cfs Sept. 15-17, 1954; minimum gage height observed, -0.15 ft Sept. 1, 1943.

Remarks.--Records good.

Revisions (water years).--WSP 698: 1929. WSP 823: Drainage area. WSP 853: 1927, 1928(M), 1929, 1930(M), 1932(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 31 | | | | Jan. 1 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.5 | 14 | 5.0 | 1,140 | 1.2 | 31 | 11.0 | 4,180 |
| .8 | 42 | 8.0 | 2,500 | 2.0 | 165 | 13.0 | 6,100 |
| 1.0 | 63 | 10.0 | 3,500 | 2.8 | 340 | 15.0 | 9,300 |
| 2.0 | 207 | 12.0 | 5,000 | 4.0 | 815 | 17.0 | 14,700 |
| 2.5 | 310 | 14.4 | 8,160 | 8.0 | 2,600 | 21.6 | 35,300 |
| 3.0 | 450 | | | | | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 56 | 190 | 8,270 | 487 | 1,480 | 1,120 | 727 | 635 | 149 | 227 | 152 |
| 2 | 16 | 51 | 172 | 3,980 | 583 | 1,280 | 1,200 | 655 | 499 | 127 | 201 | 129 |
| 3 | 17 | 49 | 129 | 1,430 | 555 | 1,120 | 1,250 | 583 | 399 | 117 | 179 | 92 |
| 4 | 124 | 55 | 111 | 998 | 503 | 980 | 1,120 | 531 | 331 | 134 | 163 | 75 |
| 5 | *101 | 58 | 128 | 799 | 495 | 895 | 1,520 | 479 | 300 | 227 | 147 | 70 |
| 6 | 60 | 59 | 118 | 683 | 2,970 | 1,130 | 2,720 | 427 | 273 | 867 | 183 | 63 |
| 7 | 46 | 62 | *135 | 579 | 5,390 | 1,330 | 2,130 | 383 | 285 | 583 | 165 | 58 |
| 8 | 83 | 72 | 138 | 487 | *3,440 | *1,070 | 1,960 | 347 | 273 | 815 | 138 | *55 |
| 9 | 71 | 71 | 174 | 435 | 3,750 | 903 | 1,720 | 316 | 255 | 547 | *295 | 50 |
| 10 | 46 | 71 | 193 | 495 | 2,430 | 811 | 1,510 | *290 | 251 | 347 | 305 | 48 |
| 11 | 47 | 61 | 220 | *539 | 1,700 | 755 | 2,190 | 251 | 253 | 273 | 618 | 48 |
| 12 | 36 | 56 | 211 | 575 | 1,430 | 699 | 2,630 | 322 | 245 | *233 | 415 | 48 |
| 13 | 35 | 51 | 188 | 531 | 1,180 | 651 | 5,720 | 407 | 229 | 261 | 253 | 53 |
| 14 | 33 | 51 | 169 | 431 | 989 | 595 | 6,180 | 288 | *275 | 292 | 203 | 56 |
| 15 | 28 | 51 | 184 | 447 | 883 | 535 | 4,500 | 290 | 347 | 1,620 | 175 | 55 |
| 16 | 68 | 67 | 187 | 547 | 859 | 860 | 3,320 | 364 | 308 | 2,400 | 149 | 45 |
| 17 | 82 | *93 | 172 | 623 | 1,020 | 1,410 | 2,290 | 290 | 283 | 2,110 | 131 | 41 |
| 18 | 50 | 119 | 162 | 711 | 944 | 1,070 | 1,820 | 255 | 245 | 1,560 | 161 | 38 |
| 19 | 38 | 181 | 163 | 1,970 | 847 | 2,430 | 1,530 | 239 | 205 | 883 | 129 | 34 |
| 20 | 34 | 139 | 163 | 2,080 | 791 | 3,470 | *1,340 | 229 | 185 | 571 | 114 | 32 |
| 21 | 33 | 115 | 163 | 2,100 | 3,240 | 20,800 | 1,740 | 1,080 | 173 | 599 | 107 | 31 |
| 22 | 31 | 91 | 152 | 2,530 | 12,700 | 35,200 | 1,790 | 5,480 | 156 | 523 | 98 | 32 |
| 23 | 28 | 79 | 138 | 2,060 | 13,800 | *22,900 | 1,520 | 3,630 | 147 | 379 | 95 | 31 |
| 24 | 25 | 68 | 129 | 1,630 | 8,760 | 11,400 | 1,690 | 1,880 | 143 | 583 | 92 | 31 |
| 25 | 24 | 62 | 121 | 1,250 | 6,100 | 5,840 | 1,520 | 1,110 | 133 | 555 | 80 | 31 |
| 26 | 23 | 59 | 118 | 989 | 3,460 | 3,170 | 1,300 | 1,020 | 205 | 831 | 75 | 31 |
| 27 | 25 | 59 | 117 | 823 | 2,130 | 2,130 | 1,110 | 835 | 407 | 883 | 68 | 31 |
| 28 | 37 | 68 | 819 | 735 | 1,730 | 1,750 | 980 | 691 | 217 | 667 | 63 | 34 |
| 29 | 53 | 82 | 4,600 | 647 | - | 1,520 | 883 | 1,060 | 167 | 463 | 61 | 37 |
| 30 | 61 | 140 | *8,120 | 567 | ------- | 1,360 | 803 | 1,050 | 177 | 316 | 66 | 41 |
| 31 | 61 | ------ | 6,910 | 495 | ------- | 1,220 | ------- | 980 | ------- | 263 | 109 | ------- |
| Total | 1,435 | 2,296 | 24,694 | 40,436 | 83,166 | 130,764 | 61,106 | 26,489 | 8,001 | 20,178 | 5,265 | 1,572 |
| Mean | 46.3 | 76.5 | 797 | 1,304 | 2,970 | 4,218 | 2,037 | 854 | 267 | 651 | 170 | 52.4 |
| Cfsm | 0.069 | 0.115 | 1.19 | 1.96 | 4.45 | 6.32 | 3.05 | 1.28 | 0.400 | 0.976 | 0.255 | 0.079 |
| In. | 0.08 | 0.13 | 1.38 | 2.25 | 4.64 | 7.29 | 3.41 | 1.48 | 0.45 | 1.13 | 0.29 | 0.09 |

Calendar year 1954: Max 15,100 Min 9.3 Mean 666 Cfsm 0.999 In. 13.56
Water year 1954-55: Max 35,200 Min 16 Mean 1,111 Cfsm 1.67 In. 22.62

Peak discharge (base, 7,500 cfs).--Jan. 1 (3 to 4 a.m.) 9,400 cfs (15.05 ft); Feb. 23 (1 a.m.) 15,200 cfs (17.13 ft); Mar. 22 (7 a.m.) 37,000 cfs (21.98 ft).
* Discharge measurement made on this day.

## Tennessee River at Savannah, Tenn.

Location.--Lat 35°13'29", long 88°15'36", on left bank pier of bridge on U. S. Highway 64, at Savannah, Hardin County, 16.8 miles downstream from Pickwick Landing Dam and at mile 189.9.

Drainage area.--33,140 sq mi, approximately.

Records available.--September 1930 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 300.00 ft above mean sea level, datum of 1929. Prior to Apr. 7, 1945, at datum 41.61 ft higher. Since Oct. 1, 1948, auxiliary water-stage recorder on downstream end of lock wall in lower pool at Pickwick Landing Dam, 16.8 miles upstream. Apr. 5, 1937, to Jan. 31, 1939, auxiliary staff gage 4.0 miles downstream and Feb. 1, 1939, to Sept. 30, 1948, water-stage recorder 4.3 miles downstream.

Average discharge.--25 years, 51,710 cfs.

Extremes.--Maximum discharge during year, 321,000 cfs Mar. 22; maximum gage height, 85.58 ft Mar. 24; minimum daily discharge, 10,400 cfs Dec. 5; minimum gage height, 53.82 ft Dec. 25.

1930-55: Maximum discharge, 396,000 cfs Feb. 16, 1948; maximum gage height, 92.29 ft Feb. 17, 1948; minimum daily discharge, 1,100 cfs Sept. 3, 1945, caused by experimental closure of Pickwick Landing Dam; minimum gage height, 41.20 ft, present datum, Oct. 28, 1931.

Maximum stage known, 101.2 ft Mar. 21, 1897, present datum, from floodmarks (discharge, 450,000 cfs, from rating curve extended above 320,000 cfs). Flood of Jan. 2, 1927, reached a stage of 92.7 ft, present datum (discharge, 349,000 cfs).

Minimum stage known, 38.8 ft Sept. 8, 1925, present datum.

Remarks.--Records good. Flow regulated by many reservoirs above station (see p. 242).

Cooperation.--Auxiliary water-stage-recorder graph furnished by Tennessee Valley Authority.

Revisions (water years).--WSP 853: 1937, drainage area.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20,800 | 21,800 | 24,900 | 121,000 | 34,500 | 85,400 | 84,400 | 36,300 | 41,500 | 29,300 | 37,800 | 29,000 |
| 2 | 22,600 | 27,300 | 21,200 | 122,000 | 34,700 | 81,100 | 66,900 | 41,800 | 59,000 | 28,800 | 35,600 | 33,700 |
| 3 | e11,800 | 29,200 | 23,600 | 107,000 | 54,600 | 76,000 | 43,400 | 38,700 | 49,100 | 36,100 | 38,300 | 30,900 |
| 4 | 21,400 | 24,600 | 20,700 | 86,300 | 50,800 | 71,500 | 46,200 | 27,100 | 37,800 | 29,900 | 35,100 | 28,700 |
| 5 | 21,900 | 24,900 | e10,400 | *85,300 | 44,900 | 60,200 | 59,500 | 39,500 | 46,600 | 31,400 | 38,000 | 35,300 |
| 6 | 21,800 | 21,500 | 31,100 | 63,000 | 57,300 | 59,600 | 86,600 | 38,800 | 40,900 | 32,400 | 46,300 | 23,600 |
| 7 | 23,400 | e11,200 | 49,900 | 52,800 | 85,100 | 54,700 | 107,000 | 36,800 | 43,500 | 36,200 | 37,500 | 28,900 |
| 8 | 24,300 | e16,900 | 46,200 | 46,200 | 85,600 | 55,000 | 89,900 | 30,800 | 43,000 | 44,500 | 35,300 | 27,600 |
| 9 | 20,100 | 21,300 | 29,200 | 31,500 | 99,800 | 59,300 | 90,700 | 38,500 | 45,300 | 53,800 | 30,500 | 29,300 |
| 10 | e12,700 | 24,300 | 23,800 | 47,500 | 131,000 | 45,700 | 95,800 | 34,600 | 46,000 | 45,300 | 29,400 | 34,600 |
| 11 | e15,000 | 22,400 | e18,500 | 48,800 | 118,000 | 41,500 | 90,400 | 38,000 | 35,900 | 34,900 | 33,600 | 28,000 |
| 12 | e16,200 | 21,700 | 24,200 | 39,100 | 91,900 | 41,500 | 87,700 | 34,900 | 31,900 | 36,600 | 34,500 | 29,300 |
| 13 | e15,800 | e16,200 | 37,700 | 57,700 | 79,100 | 40,600 | 95,000 | 30,000 | *44,500 | 32,900 | 40,000 | 30,500 |
| 14 | 20,100 | e12,300 | 27,000 | 44,600 | 76,700 | 43,100 | 81,200 | 40,000 | 43,600 | 38,700 | 37,600 | 28,600 |
| 15 | 21,600 | 20,200 | 26,100 | 48,000 | 68,000 | 52,100 | 87,400 | 36,200 | 42,200 | 43,900 | 36,200 | 30,900 |
| 16 | 25,400 | 20,400 | 25,100 | 28,100 | 58,800 | 62,900 | 86,200 | 46,500 | 48,300 | 49,200 | 32,500 | 20,600 |
| 17 | e11,900 | e17,200 | 22,800 | 32,400 | 47,300 | 48,700 | 65,800 | 45,000 | 39,600 | 53,100 | *31,400 | 27,900 |
| 18 | e17,200 | 23,100 | 28,000 | 44,400 | 49,200 | 57,100 | 65,000 | 36,800 | 37,200 | 29,000 | 33,200 | 28,800 |
| 19 | 23,900 | 22,600 | 23,000 | 49,500 | 63,400 | 65,600 | 47,900 | 36,900 | 37,700 | 36,600 | 31,900 | 24,100 |
| 20 | *22,300 | 22,000 | 40,600 | 62,100 | 44,200 | 84,200 | *55,300 | 42,400 | 35,000 | 34,000 | 40,000 | 22,200 |
| 21 | e17,000 | e14,100 | 41,400 | 47,900 | 67,500 | 139,000 | 65,100 | 36,000 | 37,700 | 35,400 | 34,300 | 20,600 |
| 22 | e12,300 | 27,600 | 31,800 | 43,600 | 98,300 | 310,000 | 58,600 | 41,200 | 38,800 | 33,800 | 28,600 | e18,300 |
| 23 | 26,100 | 28,100 | 20,900 | 45,100 | 128,000 | 298,000 | 36,600 | 58,400 | 33,900 | 45,600 | 31,700 | 23,700 |
| 24 | e14,800 | 26,000 | e17,600 | 55,300 | 146,000 | 283,000 | 33,100 | 52,400 | 32,900 | 41,300 | 32,200 | e17,500 |
| 25 | e16,700 | e13,500 | e14,100 | 51,500 | 139,000 | 299,000 | 43,700 | 32,700 | 33,600 | 33,800 | 34,000 | e13,600 |
| 26 | e13,900 | 22,400 | e15,000 | 48,700 | 108,000 | 232,000 | 37,700 | 29,900 | 35,700 | 39,100 | 35,200 | 21,900 |
| 27 | e14,000 | e17,700 | 26,900 | 50,800 | 87,300 | 202,000 | 43,500 | 25,300 | 34,900 | 43,000 | 35,900 | 27,500 |
| 28 | 20,000 | e14,500 | 26,100 | 48,000 | 86,500 | 161,000 | 47,900 | 46,900 | 36,000 | 45,500 | 34,200 | 24,300 |
| 29 | e17,700 | 24,000 | 63,200 | 47,300 | - | 126,000 | 49,900 | 46,600 | 35,000 | 33,900 | 32,000 | 24,600 |
| 30 | 20,500 | 34,000 | 113,000 | 22,200 | ------ | 102,000 | 44,900 | 51,600 | 32,700 | 41,400 | 33,800 | 24,800 |
| 31 | 20,200 | ------ | 117,000 | 41,400 | ------ | 89,800 | ------- | 46,000 | ------- | 38,600 | 26,200 | ------ |
| Total | 583,400 | 643,000 | ‡1,041 | ‡1,719.1 | ‡2,235.5 | ‡3,427.6 | ‡1,993.3 | ‡1,216.6 | ‡1,199.8 | ‡1,188 | ‡1,072.8 | 789,300 |
| Mean | 18,820 | 21,430 | 33,580 | 55,450 | 79,840 | 110,600 | 66,440 | 39,250 | 39,990 | 38,320 | 34,610 | 26,310 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 290,000 Min 10,400 Mean 39,550 Cfsm 1.19 In. 16.20
Water year 1954-55: Max 310,000 Min 10,400 Mean 46,880 Cfsm 1.41 In. 19.20

* Discharge measurement made on this day.
‡ Expressed in thousands.
e Discharge computed on basis of records at Pickwick Landing Dam.

## Duck River below Manchester, Tenn.

Location.--Lat 35°28'15", long 86°07'18", on right bank 50 ft downstream from Power's bridge, 2 miles southwest of Manchester, Coffee County, 3½ miles downstream from Little Duck River, and 7 miles upstream from Crumpton Creek.

Drainage area.--107 sq mi.

Records available.--April 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 878.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 176 cfs.

Extremes.--Maximum discharge during year, 25,100 cfs Mar. 22 (gage height, 17.87 ft); minimum, 13 cfs Oct. 14 (gage height, 1.04 ft).
1934-55: Maximum discharge, 30,000 cfs Feb. 13, 1948 (gage height, 18.93 ft), from rating curve extended above 12,000 cfs on basis of slope-area determination of peak flow; minimum, 8 cfs Aug. 12, 1934; minimum gage height, 0.57 ft Sept. 19, 20, 1947.

Remarks.--Records good except those for period of no gage-height record, which are fair. Occasional regulation for short periods during low flow by small reservoir above station.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.0 | 12 | 2.0 | 135 | 1.2 | 13 | 6.0 | 1,880 |
| 1.3 | 24 | 2.5 | 265 | 1.5 | 34 | 9.0 | 3,850 |
| 1.6 | 55 | 3.0 | 445 | 2.0 | 108 | 11.0 | 5,700 |
| | | | | 2.4 | 201 | 12.8 | 8,020 |
| | | | | 3.0 | 445 | | |

Note.--Same as following table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 20 | 22 | 300 | 74 | 312 | 117 | 75 | 108 | 42 | 30 | 19 |
| 2 | 30 | 19 | 20 | 225 | 119 | 283 | 112 | 69 | 86 | 40 | 60 | 18 |
| 3 | 16 | 18 | 20 | 180 | 121 | 210 | 112 | 64 | 74 | 38 | 57 | 18 |
| 4 | 15 | 22 | 20 | 160 | 93 | 175 | 100 | 60 | 66 | 36 | 40 | 19 |
| 5 | 14 | 24 | 48 | 140 | 93 | 155 | 377 | 57 | 60 | 36 | 33 | 20 |
| 6 | 14 | 20 | 85 | 160 | 1,390 | 672 | 4,230 | 56 | 106 | 47 | 28 | 21 |
| 7 | 14 | 20 | 49 | 175 | *1,360 | 782 | 1,590 | 52 | 214 | 38 | 28 | 19 |
| 8 | 14 | 19 | 33 | 140 | 468 | 320 | 476 | 50 | 192 | 38 | 28 | 19 |
| 9 | 14 | 19 | 34 | 100 | 283 | 225 | 266 | 47 | 147 | 38 | 26 | 19 |
| 10 | 14 | 19 | 31 | 130 | 218 | 185 | 192 | *46 | 298 | 36 | 25 | 18 |
| 11 | 14 | 19 | 28 | 200 | 232 | 162 | 211 | 46 | 990 | 35 | 29 | 21 |
| 12 | 14 | 19 | 28 | 150 | 200 | 148 | 201 | 74 | 306 | 34 | 35 | *21 |
| 13 | 14 | 18 | 31 | 120 | 150 | 128 | 391 | 192 | 175 | 34 | 30 | 20 |
| 14 | 14 | 18 | 30 | 100 | 145 | 117 | *486 | 145 | *130 | 34 | 27 | 19 |
| 15 | 14 | 18 | 28 | 110 | 148 | 108 | 234 | 100 | 106 | 38 | 24 | 19 |
| 16 | 14 | 22 | 25 | 140 | 155 | 124 | 157 | 77 | 91 | 36 | 24 | 19 |
| 17 | 14 | 20 | 32 | 110 | 190 | 168 | 126 | 68 | 80 | 35 | 31 | 18 |
| 18 | 14 | 20 | 54 | 90 | 162 | 344 | 108 | 59 | 70 | 33 | *34 | 18 |
| 19 | 15 | 20 | 49 | *200 | 135 | 1,100 | 93 | 60 | 64 | *31 | 28 | 17 |
| 20 | 15 | 25 | *39 | 172 | 117 | 751 | 85 | 62 | 60 | 30 | 24 | 16 |
| 21 | 16 | 22 | 35 | 195 | 390 | 6,480 | 106 | 134 | 56 | 31 | 22 | 17 |
| 22 | 16 | 20 | 32 | 594 | 3,050 | *7,980 | 130 | 211 | 52 | 32 | 28 | 17 |
| 23 | 16 | 19 | 30 | 320 | 1,430 | 859 | 742 | 208 | 53 | 32 | 34 | 17 |
| 24 | 16 | 19 | 29 | 208 | 553 | 445 | 746 | 112 | 53 | 30 | 25 | 18 |
| 25 | 16 | 18 | 27 | 160 | 326 | 598 | 386 | 91 | 88 | 30 | 23 | 18 |
| 26 | 16 | 17 | 25 | 126 | 247 | 913 | 184 | 81 | 134 | 32 | 22 | 18 |
| 27 | *17 | 20 | 25 | 110 | 271 | 382 | 132 | 66 | 85 | 31 | 22 | 18 |
| 28 | 17 | 26 | 379 | 97 | 344 | 238 | 108 | 59 | 62 | 38 | 22 | 19 |
| 29 | 20 | *29 | 4,930 | 85 | - | 186 | 94 | 1,000 | 52 | 52 | 21 | 19 |
| 30 | 19 | 24 | 2,000 | 78 | ------- | 150 | 83 | 400 | 46 | 44 | 22 | 27 |
| 31 | 19 | ------- | 550 | 70 | ------- | 130 | ------- | 157 | ------- | 30 | 22 | ------- |
| Total | 493 | 613 | 8,768 | 5,145 | 12,464 | 24,830 | 12,375 | 3,978 | 4,104 | 1,111 | 904 | 566 |
| Mean | 15.9 | 20.4 | 283 | 166 | 445 | 801 | 412 | 128 | 137 | 35.8 | 29.2 | 18.9 |
| Cfsm | 0.149 | 0.191 | 2.64 | 1.55 | 4.16 | 7.49 | 3.85 | 1.20 | 1.28 | 0.335 | 0.273 | 0.177 |
| In. | 0.17 | 0.21 | 3.05 | 1.79 | 4.33 | 8.63 | 4.30 | 1.38 | 1.43 | 0.39 | 0.31 | 0.20 |

Calendar year 1954: Max 4,930 Min 9.1 Mean 164 Cfsm 1.53 In. 20.87
Water year 1954-55: Max 7,980 Min 14 Mean 206 Cfsm 1.93 In. 26.19

Peak discharge (base, 2,500 cfs).--Dec. 29 (time unknown) 6,730 cfs (11.94 ft); Feb. 22 (3 p.m.) 4,150 cfs (9.35 ft); Mar. 22 (3 a.m.) 25,100 cfs (17.87 ft); Apr. 6 (3 p.m.) 6,900 cfs (12.08 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 30 to Jan. 18; discharge estimated on basis of weather records and records for stations on nearby streams.

## Garrison Fork at Fairfield, Tenn.

Location.--Lat 35°33'59", long 86°17'00", near left bank on downstream side of center pier of highway bridge, 0.1 mile east of Fairfield, 0.6 mile downstream from Noah Fork, and 4.5 miles northeast of Wartrace, Bedford County.

Drainage area.--66.3 sq mi.

Records available.--November 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 800.85 ft above mean sea level, datum of 1929.

Extremes.--1953-54: Maximum discharge during period November to September, 5,540 cfs Jan. 20 (gage height, 14.92 ft); minimum, 1.2 cfs Sept. 17-20 (gage height, 0.83 ft).
1954-55: Maximum discharge during water year, 25,300 cfs Mar. 21 (gage height, 23.13 ft), from rating curve extended above 3,800 cfs on basis of slope-area determination of peak flow; minimum, 1.8 cfs Sept. 10, 11 (gage height, 0.89 ft).

Remarks.--Records good.

Rating tables, Nov. 23, 1953, to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 16-20, 1954, July 19-24, 1955)

| Nov. 23, 1953, to Mar. 21, 1955 | | | | Mar. 22 to Sept. 30, 1955 | | | |
|---|---|---|---|---|---|---|---|
| 0.8 | 1.2 | 2.5 | 217 | 0.9 | 2.0 | 2.5 | 180 |
| .9 | 4.1 | 4.0 | 680 | 1.0 | 5.0 | 3.0 | 310 |
| 1.0 | 8.4 | 10.0 | 2,890 | 1.2 | 14 | 5.0 | 1,070 |
| 1.3 | 28 | 13.0 | 4,080 | 1.5 | 37 | 8.0 | 2,270 |
| 1.6 | 61 | 15.0 | 5,620 | 2.0 | 92 | | |
| 2.0 | 118 | 16.8 | 7,830 | | | | |

Discharge, in cubic feet per second, November 1953 to September 1954

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | - | 5.6 | 13 | 71 | 310 | 280 | 32 | 26 | 8.4 | 6.5 | 1.9 |
| 2 | | - | 5.6 | 12 | 65 | 195 | 193 | 42 | 24 | 13 | 9.4 | 1.5 |
| 3 | | - | 5.2 | 12 | 60 | 150 | 143 | 58 | 48 | 79 | 9.4 | 1.5 |
| 4 | | - | 9.4 | 11 | 52 | 109 | 114 | 49 | 30 | 28 | 7.4 | 1.5 |
| 5 | | - | 9.9 | 10 | 46 | 92 | 92 | 38 | 23 | 24 | 6.5 | 1.5 |
| 6 | | - | 25 | 10 | 41 | 82 | 81 | 34 | 19 | 24 | 50 | 1.3 |
| 7 | | - | 15 | 9.4 | 36 | 71 | 73 | 38 | 17 | 23 | 12 | 1.3 |
| 8 | | - | 8.9 | 9.4 | 32 | 65 | 65 | 37 | 15 | 24 | 6.1 | 1.5 |
| 9 | | - | 75 | 8.9 | 32 | 60 | 69 | 31 | 14 | 24 | 5.2 | 1.5 |
| 10 | | - | 34 | 11 | 32 | 54 | 49 | 26 | 278 | 24 | 5.2 | 1.7 |
| 11 | | - | 17 | 46 | 31 | 49 | 65 | 25 | 78 | 23 | 3.4 | 1.5 |
| 12 | | - | 23 | 28 | 26 | 45 | 64 | 24 | 46 | 25 | 2.6 | 1.5 |
| 13 | | - | 26 | 20 | 24 | 46 | 58 | 346 | 33 | 24 | 2.6 | 1.5 |
| 14 | | - | 108 | 63 | 24 | 39 | 57 | *479 | 26 | 23 | 4.4 | 1.5 |
| 15 | | - | 54 | 2,110 | 24 | 34 | 54 | 210 | 22 | 21 | 4.4 | 1.5 |
| 16 | | - | 35 | *1,660 | 579 | 32 | 1,320 | 135 | 84 | 23 | 2.6 | *1.7 |
| 17 | | - | *25 | 452 | *369 | 30 | 871 | 100 | 65 | 23 | 1.9 | 1.3 |
| 18 | | - | 19 | 250 | 182 | 31 | 352 | 81 | 34 | 25 | 1.7 | 1.2 |
| 19 | | - | 17 | 176 | 123 | 37 | 191 | 71 | 26 | 28 | 3.0 | 1.2 |
| 20 | | - | 15 | 1,830 | 112 | 35 | 130 | 68 | 22 | 31 | 7.4 | 1.3 |
| 21 | | - | 15 | *1,850 | 88 | 30 | 103 | 52 | 19 | 32 | 5.2 | 17 |
| 22 | | - | 14 | 2,600 | 73 | 27 | *87 | 46 | 17 | 54 | 3.0 | 6.4 |
| 23 | | *7.4 | 12 | 685 | 68 | *33 | 75 | 40 | 15 | *117 | 1.9 | 4.8 |
| 24 | | 7.4 | 10 | 296 | 69 | 524 | 65 | 35 | *14 | 31 | 1.5 | 3.4 |
| 25 | | 8.4 | 9.4 | 178 | 61 | 512 | 57 | 32 | 12 | 12 | *4.1 | 3.0 |
| 26 | | 8.4 | 8.9 | 137 | 58 | 513 | 52 | 30 | 12 | 11 | 2.2 | 3.0 |
| 27 | | 7.4 | 8.9 | 197 | 52 | 261 | 47 | 28 | 11 | 8.4 | 1.9 | 2.2 |
| 28 | | 6.5 | 13 | 146 | 653 | 170 | 45 | 27 | 14 | 7.4 | 2.2 | *1.9 |
| 29 | | 6.5 | 17 | 125 | - | 128 | 42 | 26 | 11 | 6.5 | 2.2 | 2.2 |
| 30 | | 6.1 | 16 | 102 | ------- | 103 | 36 | 24 | 9.4 | 6.1 | 2.6 | 15 |
| 31 | | ------ | 14 | 81 | ------- | 344 | ------- | 21 | ------- | 5.2 | 2.2 | ------ |
| Total | | - | 670.8 | 13,138.7 | 3,083 | 4,211 | 4,930 | 2,285 | 1,064.4 | 808.0 | 180.7 | 90.3 |
| Mean | | - | 21.6 | 424 | 110 | 136 | 164 | 73.7 | 35.5 | 26.1 | 5.83 | 3.01 |
| Cfsm | | - | 0.326 | 6.40 | 1.66 | 2.05 | 2.47 | 1.11 | 0.535 | 0.394 | 0.088 | 0.045 |
| In. | | - | 0.38 | 7.37 | 1.73 | 2.36 | 2.77 | 1.28 | 0.60 | 0.45 | 0.10 | 0.05 |

| | | | | | |
|---|---|---|---|---|---|
| Calendar year | : Max | Min | Mean | Cfsm | In. |
| Water year | : Max | Min | Mean | Cfsm | In. |

Peak discharge (base, 3,000 cfs).--Jan. 15 (11 p.m.) 4,110 cfs (13.05 ft); Jan. 20 (9:30 p.m.) 5,540 cfs (14.92 ft); Apr. 16 (12 m.) 3,490 cfs (11.63 ft).
* Discharge measurement made on this day.

## Garrison Fork at Fairfield, Tenn.--Continued

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 44 | 8.4 | 12 | 130 | 45 | 106 | 102 | 57 | 68 | 17 | 16 | 2.8 |
| 2 | 43 | 7.4 | 10 | 94 | 68 | 94 | 101 | 52 | 55 | 17 | 17 | 2.6 |
| 3 | 12 | 7.4 | 8.9 | 71 | 49 | 87 | 95 | 47 | 45 | 17 | 15 | 2.4 |
| 4 | 7.0 | 9.4 | 8.4 | 60 | 44 | 80 | 85 | 44 | 39 | 17 | 15 | 2.2 |
| 5 | 5.6 | 12 | 277 | 53 | 96 | 70 | 98 | 40 | 34 | 17 | 15 | 2.0 |
| 6 | 4.1 | 8.9 | 145 | 54 | 1,510 | 371 | 1,810 | 36 | 37 | 48 | 14 | 2.2 |
| 7 | 3.4 | 7.4 | 54 | 46 | 576 | 278 | 538 | 34 | 66 | 18 | 25 | 2.2 |
| 8 | 3.0 | 7.0 | 33 | 42 | 261 | 176 | 260 | 31 | 69 | 28 | 20 | 2.2 |
| 9 | 3.0 | 6.5 | 49 | 41 | 164 | 130 | 170 | 29 | 43 | 25 | 14 | 2.2 |
| 10 | 3.4 | 6.5 | 39 | 45 | 120 | 106 | 136 | *27 | 252 | 17 | a13 | 2.2 |
| 11 | 3.4 | 7.0 | 30 | 54 | 110 | 91 | 124 | 26 | 158 | 15 | a13 | 2.4 |
| 12 | 3.0 | 7.0 | 26 | 53 | 87 | 78 | 108 | 114 | 89 | 15 | a12 | 5.8 |
| 13 | 3.0 | 7.0 | 40 | 49 | 73 | 66 | *150 | 72 | 66 | 14 | a 11 | 4.2 |
| 14 | 3.7 | 7.0 | 38 | 42 | 73 | 58 | 122 | 44 | 54 | 14 | a10 | 12 |
| 15 | 6.1 | 7.4 | 32 | 48 | *73 | 53 | 104 | 35 | *45 | 13 | a9.0 | *2.8 |
| 16 | 5.6 | 11 | 26 | 46 | 80 | 58 | 93 | 31 | 38 | 13 | a8.0 | 2.8 |
| 17 | 4.8 | 12 | 90 | 42 | 87 | 58 | 85 | 26 | 31 | 12 | 15 | 2.6 |
| 18 | 4.1 | 9.9 | 128 | 44 | 82 | 244 | 78 | 24 | 27 | 11 | *12 | 2.4 |
| 19 | 3.7 | 8.9 | 78 | *88 | 77 | 594 | 73 | 22 | 25 | 9.8 | 7.7 | 2.2 |
| 20 | 3.7 | 24 | 53 | 88 | 68 | 379 | 68 | 21 | 22 | 9.3 | 6.5 | 2.0 |
| 21 | 3.7 | 15 | *40 | 400 | 957 | *7,750 | 78 | 171 | 22 | *9.3 | 5.8 | 2.0 |
| 22 | 3.7 | 9.9 | 35 | 430 | 2,240 | *2,250 | 87 | 79 | 20 | 9.8 | 5.8 | 2.0 |
| 23 | 3.7 | 8.4 | 30 | 213 | 619 | 530 | 488 | 54 | 20 | 8.8 | 9.8 | 2.0 |
| 24 | 3.7 | *7.0 | 26 | 141 | 293 | 316 | 331 | 55 | 20 | 17 | 6.5 | 2.4 |
| 25 | 3.7 | 6.5 | 22 | 100 | 182 | 474 | 170 | 41 | 31 | 29 | 5.0 | 3.8 |
| 26 | 3.7 | 6.1 | 20 | 77 | 135 | 370 | 116 | 31 | 30 | 15 | 4.2 | 3.8 |
| 27 | *3.7 | 8.4 | 19 | 64 | 125 | 235 | 93 | 26 | 20 | 14 | 3.8 | 3.8 |
| 28 | 4.4 | 25 | 1,010 | 54 | 110 | 185 | 83 | 23 | 19 | 178 | 3.4 | 5.4 |
| 29 | 7.4 | 29 | *2,290 | 46 | - | 154 | 71 | 861 | 18 | 49 | 3.1 | 7.7 |
| 30 | 7.9 | 15 | 442 | 40 | ------- | 124 | 62 | 148 | 18 | 18 | 2.8 | 8.8 |
| 31 | 7.9 | ------- | 192 | 35 | ------- | 111 | ------- | 90 | ------- | 17 | 2.8 | ------- |
| Total | 223.1 | 312.4 | 5,303.3 | 2,790 | 8,404 | 15,676 | 5,979 | 2,391 | 1,481 | 712.0 | 321.2 | 103.9 |
| Mean | 7.20 | 10.4 | 171 | 90.0 | 300 | 506 | 199 | 77.1 | 49.4 | 23.0 | 10.4 | 3.46 |
| Cfsm | 0.109 | 0.157 | 2.58 | 1.36 | 4.52 | 7.63 | 3.00 | 1.16 | 0.745 | 0.347 | 0.157 | 0.052 |
| In. | 0.13 | 0.18 | 2.97 | 1.57 | 4.71 | 8.79 | 3.35 | 1.34 | 0.83 | 0.40 | 0.18 | 0.06 |

Calendar year 1954: Max 2,600 Min 1.2 Mean 97.6 Cfsm 1.47 In. 19.99
Water year 1954-55: Max 7,750 Min 2.0 Mean 120 Cfsm 1.81 In. 24.51

Peak discharge (base, 3,000 cfs).--Dec. 29 (10 a.m.) 4,040 cfs (12.92 ft); Feb. 22 (7 a.m.) 3,220 cfs (10.88 ft); Mar. 21 (7:30 p.m.) 25,300 cfs (23.13 ft); Apr. 6 (9 a.m.) 3,710 cfs (11.60 ft); May 29 (3 a.m.) 3,340 cfs (10.68 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

## Wartrace Creek at Bell Buckle, Tenn.

Location.--Lat 35°35'16", long 86°20'22", on downstream right bank wing wall of bridge on State Highway 82, 0.2 mile downstream from Kelly Creek, 0.9 mile east of Bell Buckle, Bedford County, 4.0 miles northeast of Fairfield, and 7.7 miles upstream from mouth.

Drainage area.--16.3 sq mi.

Records available.--December 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 822.74 ft above mean sea level, datum of 1929.

Extremes.--1953-54: Maximum discharge during period December to September, 3,610 cfs Jan. 20 (gage height, 9.08 ft); no flow July 13-21, Aug. 30 to Sept. 20.
1954-55: Maximum discharge during water year, 8,240 cfs Mar. 21 (gage height, 11.25 ft), from rating curve extended above 700 cfs on basis of contracted-opening determination of peak flow; no flow Oct. 26-28, Aug. 10-11, Aug. 28 to Sept. 30.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Rating tables, Dec. 22, 1953, to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 16-20, 1954, Mar. 22, May 28, 1955)

| Dec. 22, 1953, to Mar. 21, 1955 | | | | Mar. 22 to Sept. 30, 1955 | |
|---|---|---|---|---|---|
| 2.1 | 0 | 3.0 | 18 | 2.6 | 2.3 |
| 2.2 | .02 | 3.5 | 85 | 2.7 | 5.6 |
| 2.3 | .1 | 4.0 | 170 | 2.8 | 11 |
| 2.4 | .2 | 5.0 | 388 | 3.0 | 25 |
| 2.5 | .6 | 6.0 | 700 | 3.2 | 46 |
| 2.6 | 2.3 | 7.0 | 1,230 | 4.0 | 200 |
| 2.7 | 4.7 | 8.0 | 2,110 | 4.7 | 354 |
| 2.8 | 8.0 | 8.5 | 2,740 | | |

Note.--Same as preceding table below 2.6 ft.

Discharge, in cubic feet per second, December 1953 to September 1954

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | - | 1.2 | 11 | 35 | 75 | 5.7 | 4.7 | 0.03 | 0.02 | 0 |
| 2 | | | - | 1.2 | 9.8 | 22 | 38 | 5.4 | 4.2 | .03 | .04 | 0 |
| 3 | | | - | 1.2 | 8.9 | 18 | 24 | 8.9 | 7.0 | .07 | .03 | 0 |
| 4 | | | - | .8 | 7.3 | 13 | 18 | 8.0 | 5.0 | .08 | .02 | 0 |
| 5 | | | - | .8 | 6.7 | 12 | 14 | 6.7 | 4.2 | .07 | .01 | 0 |
| 6 | | | - | .7 | 6.0 | 10 | 11 | 5.7 | 3.0 | .06 | 63 | 0 |
| 7 | | | - | .6 | 5.0 | 8.9 | 9.8 | 6.4 | 1.6 | .04 | 3.5 | 0 |
| 8 | | | - | .6 | 4.5 | 8.0 | 8.9 | 5.7 | 1.6 | .03 | .6 | 0 |
| 9 | | | - | .6 | 4.5 | 7.3 | 7.3 | 4.5 | 1.6 | .02 | .5 | 0 |
| 10 | | | - | 3.5 | 4.2 | 7.0 | 6.4 | 4.0 | 35 | .02 | .1 | 0 |
| 11 | | | - | a10 | 4.0 | 6.4 | 10 | 3.7 | 7.7 | .01 | .08 | 0 |
| 12 | | | - | a8.0 | 3.3 | 6.0 | 9.4 | 3.5 | 5.4 | .01 | .04 | 0 |
| 13 | | | - | a5.0 | 3.0 | 7.3 | 8.9 | 201 | 3.7 | 0 | .04 | 0 |
| 14 | | | - | a25 | 3.0 | 7.3 | 8.9 | *144 | 2.8 | 0 | .02 | 0 |
| 15 | | | - | a900 | 3.0 | 5.7 | 9.4 | 51 | 1.9 | 0 | .02 | a0 |
| 16 | | | - | *414 | 230 | 5.0 | 698 | 26 | 1.2 | 0 | .01 | *a0 |
| 17 | | | - | 90 | *92 | 5.0 | 175 | 22 | 1.0 | 0 | .01 | a0 |
| 18 | | | - | 47 | 36 | 5.0 | 71 | 22 | .8 | 0 | .01 | a0 |
| 19 | | | - | 32 | 22 | 6.4 | 36 | 20 | .8 | 0 | .1 | a0 |
| 20 | | | - | 1,100 | 24 | 6.4 | 22 | 23 | .6 | 0 | .09 | a0 |
| 21 | | | - | *394 | 17 | 5.4 | 17 | 14 | .5 | 0 | .08 | .3 |
| 22 | | | *1.0 | 541 | 14 | 4.7 | *14 | 12 | .4 | .01 | .06 | .3 |
| 23 | | | .6 | 121 | 12 | *7.1 | 15 | 9.8 | .4 | 5.6 | .04 | .5 |
| 24 | | (*) | .5 | 61 | 11 | 164 | 12 | 8.5 | *.4 | 1.6 | .03 | .2 |
| 25 | | | .4 | 35 | 9.4 | 163 | 13 | 7.7 | .4 | .2 | *.02 | .03 |
| 26 | | | .4 | 26 | 7.7 | 107 | 12 | 7.0 | .3 | .1 | .02 | .02 |
| 27 | | | .4 | 63 | 7.3 | 48 | 9.4 | 6.4 | .2 | *.07 | .02 | .02 |
| 28 | | | .8 | 33 | 35 | 28 | 8.0 | 6.7 | .2 | .04 | .01 | *.01 |
| 29 | | | 2.5 | 23 | - | 20 | 7.3 | 6.4 | .08 | .03 | .01 | .07 |
| 30 | | | 2.3 | 17 | ------- | 15 | 6.4 | 5.7 | .03 | .02 | 0 | 14 |
| 31 | | ------- | 1.6 | 13 | ------- | 158 | -------- | 4.5 | -------- | .01 | 0 | ------ -- |
| Total | | | - | 3,969.2 | 601.6 | 921.9 | 1,375.1 | 665.9 | 96.71 | 8.15 | 68.53 | 15.45 |
| Mean | | | - | 128 | 21.5 | 29.7 | 45.8 | 21.5 | 3.22 | 0.263 | 2.21 | 0.515 |
| Cfsm | | | - | 7.85 | 1.32 | 1.82 | 2.81 | 1.32 | 0.198 | 0.016 | 0.136 | 0.032 |
| In. | | | - | 9.06 | 1.37 | 2.10 | 3.14 | 1.52 | 0.22 | 0.02 | 0.16 | 0.04 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Calendar year | : Max | Min | Mean | Cfsm | In. | |
| Water year | : Max | Min | Mean | Cfsm | In. | |

Peak discharge (base, 2,000 ft).--Jan. 15 (time unknown) 2,000 cfs (7.90 ft); Jan. 20 (7 p.m.) 3,610 cfs (9.08 ft); Apr. 16 (9:30 a.m.) 3,340 cfs (8.91 ft).
* Discharge measurement or observation of no flow made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

Wartrace Creek at Bell Buckle, Tenn.--Continued

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 26 | 0.02 | 2.5 | 29 | 20 | 19 | 15 | 9.4 | 11 | 0.1 | 0.06 | 0 |
| 2 | 7.3 | .02 | 1.6 | 20 | 15 | 16 | 14 | 8.3 | 8.3 | .1 | .04 | 0 |
| 3 | 1.6 | .02 | 1.0 | 16 | 12 | 14 | 12 | 7.2 | 6.7 | .1 | .03 | 0 |
| 4 | .5 | .02 | .7 | 14 | 10 | 13 | 11 | 6.7 | 5.2 | .1 | .02 | 0 |
| 5 | .2 | .08 | 129 | 12 | 190 | 12 | 20 | 5.6 | 4.3 | .09 | .02 | 0 |
| 6 | .1 | .4 | 38 | 12 | 500 | 138 | 350 | 4.3 | 3.6 | .3 | .01 | 0 |
| 7 | .07 | .4 | 13 | 9.8 | 75 | 63 | 100 | 3.9 | 5.6 | .3 | .01 | 0 |
| 8 | .06 | .3 | 8.5 | 9.4 | 50 | 35 | 60 | 3.6 | 4.7 | .2 | .01 | 0 |
| 9 | .04 | .2 | 14 | 9.8 | 40 | 24 | 50 | 3.3 | 4.3 | .1 | .01 | 0 |
| 10 | .04 | .2 | 10 | 10 | 25 | 20 | 40 | *2.7 | 26 | .09 | 0 | 0 |
| 11 | .06 | .2 | 7.3 | 13 | 30 | 17 | 35 | 2.5 | 10 | .07 | 0 | 0 |
| 12 | .06 | .2 | 7.0 | 13 | 27 | 14 | 30 | 19 | 6.7 | .04 | .7 | 0 |
| 13 | .06 | .1 | 16 | 11 | 24 | 11 | *34 | 9.9 | 4.7 | .03 | .1 | 0 |
| 14 | .06 | .09 | 13 | 8.9 | 20 | 11 | 30 | 5.6 | 3.6 | .02 | .05 | 0 |
| 15 | .08 | .08 | 10 | 11 | *19 | 10 | 27 | 3.9 | *2.7 | .02 | .03 | *0 |
| 16 | .07 | .09 | 7.3 | 10 | 21 | 11 | 23 | 3.0 | 2.3 | .08 | 4.5 | 0 |
| 17 | .04 | .2 | 36 | 9.4 | 22 | 12 | 20 | 2.7 | 1.4 | .2 | 5.0 | 0 |
| 18 | .04 | .2 | 33 | 9.4 | 19 | 106 | 18 | 1.9 | .8 | .08 | *.5 | 0 |
| 19 | .03 | .09 | 17 | *19 | 17 | 164 | 15 | 1.4 | .7 | .04 | .2 | 0 |
| 20 | .02 | 8.6 | 13 | 22 | 15 | 76 | 12 | 1.6 | .6 | .02 | .07 | 0 |
| 21 | .02 | 4.5 | *10 | 182 | 471 | *2,660 | 20 | 25 | .6 | *.02 | .04 | 0 |
| 22 | .02 | 2.3 | 8.0 | 119 | 521 | *340 | 100 | 15 | .5 | .2 | .02 | 0 |
| 23 | .01 | 1.0 | 7.3 | 54 | 124 | 83 | 320 | 9.4 | .5 | .4 | .02 | 0 |
| 24 | .01 | *.6 | 6.4 | 33 | 63 | 45 | 160 | 6.7 | .7 | .2 | .02 | 0 |
| 25 | .01 | .4 | 5.7 | 22 | 37 | 145 | 54 | 5.6 | .5 | .07 | .01 | 0 |
| 26 | 0 | .4 | 5.4 | 17 | 27 | 40 | 35 | 4.3 | .5 | .3 | .01 | 0 |
| 27 | *0 | .6 | 5.0 | 15 | 24 | 30 | 25 | 3.0 | .4 | .5 | .01 | 0 |
| 28 | 0 | 3.3 | 200 | 12 | 21 | 25 | 19 | 23 | .3 | .6 | 0 | 0 |
| 29 | .01 | 5.4 | *475 | 10 | - | 21 | 15 | 250 | .2 | 2.5 | 0 | 0 |
| 30 | .01 | 3.3 | 95 | 8.9 | ------- | 18 | 12 | 26 | .2 | .4 | 0 | 0 |
| 31 | .01 | ------- | 44 | 8.0 | ------- | 16 | ------- | 16 | ------- | .1 | 0 | ------- |
| Total | 36.53 | 33.31 | 1,239.7 | 749.6 | 2,439 | 4,209 | 1,676 | 490.5 | 117.6 | 7.37 | 11.49 | 0 |
| Mean | 1.18 | 1.11 | 40.0 | 24.2 | 87.1 | 136 | 55.9 | 15.8 | 3.92 | 0.238 | 0.371 | 0 |
| Cfsm | 0.072 | 0.068 | 2.45 | 1.48 | 5.34 | 8.34 | 3.43 | 0.969 | 0.240 | 0.015 | 0.023 | 0 |
| In. | 0.08 | 0.08 | 2.83 | 1.71 | 5.56 | 9.60 | 3.82 | 1.12 | 0.27 | 0.02 | 0.03 | 0 |

Calendar year 1954: Max 1,100 Min 0 Mean 24.7 Cfsm 1.52 In. 20.62
Water year 1954-55: Max 2,660 Min 0 Mean 30.2 Cfsm 1.85 In. 25.12

Peak discharge (base, 2,000 cfs).--Dec. 29 (time unknown) 2,480 cfs (8.30 ft); Mar. 21 (6 p.m.) 8,240 cfs (11.25 ft).

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Dec. 26-28, Jan. 31 to Feb. 14, Mar. 24-27, 30, Apr. 1-12, 14-24, 26, 27; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Duck River near Shelbyville, Tenn.

Location.--Lat 35°28'49", long 86°29'58", on right bank 150 ft downstream from highway bridge, 2 miles upstream from Sugar Creek, 2¼ miles west of Shelbyville, Bedford County, and 2½ miles downstream from Flat Creek.

Drainage area.--481 sq mi.

Records available.--April 1934 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 685.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 795 cfs.

Extremes.--Maximum discharge during year, 37,900 cfs Mar. 22 (gage height, 32.84 ft); minimum, 58 cfs Oct. 20, 21, 22, 24, 25.
1934-55: Maximum discharge, 62,900 cfs Feb. 13, 1948 (gage height, 36.40 ft, from floodmark), from rating curve extended above 27,000 cfs on basis of slope-area determination of peak flow; minimum, 5 cfs Aug. 23, 1936; minimum daily, 20 cfs (corrected) Sept. 2, 1945.

Remarks.--Records good except those for period of no gage-height record, which are fair. Prior to 1948, diurnal fluctuation caused by powerplant upstream.

Revisions (water years).--WSP 783: 1934. WSP 853: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| | | | |
|---|---|---|---|
| 0.8 | 47 | 9.0 | 3,850 |
| 1.0 | 78 | 13.0 | 6,400 |
| 1.5 | 169 | 20.0 | 12,600 |
| 2.0 | 287 | 25.0 | 19,600 |
| 3.0 | 740 | 31.1 | 32,200 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 153 | 72 | 126 | 1,620 | 304 | 1,200 | 745 | 485 | 720 | 165 | 120 | 80 |
| 2 | 490 | 70 | 106 | 1,150 | 490 | 1,150 | 725 | 432 | *510 | 158 | 109 | 76 |
| 3 | 174 | 68 | 95 | 865 | 468 | 1,000 | 885 | 384 | 396 | 150 | 113 | 73 |
| 4 | 109 | 72 | 88 | 675 | 414 | 850 | 650 | 352 | 326 | 142 | 261 | 72 |
| 5 | 81 | 78 | 540 | 565 | 376 | 740 | 1,200 | 322 | 287 | 137 | 246 | 72 |
| 6 | 72 | 83 | 1,630 | 490 | 4,760 | 2,330 | 9,640 | 298 | 269 | *167 | 120 | 72 |
| 7 | 67 | 80 | 550 | 432 | 5,780 | 3,080 | 12,400 | 278 | 445 | 171 | 108 | 72 |
| 8 | 62 | 75 | 294 | 376 | 3,140 | 2,160 | 3,710 | 263 | 585 | 146 | 172 | 70 |
| 9 | 60 | 72 | 266 | 345 | 1,780 | 1,430 | 1,970 | 247 | 510 | 148 | 139 | 70 |
| 10 | 60 | 70 | 275 | 352 | 1,300 | 1,100 | 1,500 | *234 | 561 | 148 | 115 | 68 |
| 11 | 60 | 68 | 210 | a580 | 1,140 | 920 | 1,420 | 228 | 1,940 | 131 | 117 | 67 |
| 12 | 60 | 68 | 181 | a560 | 995 | 785 | 1,240 | 242 | 1,700 | 122 | 113 | 67 |
| 13 | 59 | 67 | 223 | a460 | 815 | 670 | 1,480 | 690 | 895 | 120 | 106 | 70 |
| 14 | 60 | 67 | 254 | a410 | 715 | 585 | 1,680 | 600 | 615 | 118 | 104 | *73 |
| 15 | 70 | 67 | 217 | a450 | *680 | 520 | 1,460 | 468 | 463 | 120 | 99 | 72 |
| 16 | 67 | 85 | 185 | a430 | 660 | 540 | 1,110 | 352 | 368 | 126 | 117 | 70 |
| 17 | 62 | 92 | 197 | a400 | 695 | 585 | 905 | 287 | 308 | 124 | *182 | 67 |
| 18 | 60 | 85 | 745 | a400 | 890 | 1,210 | 770 | 252 | 272 | 118 | 144 | 65 |
| 19 | 59 | 80 | 525 | *610 | 830 | 3,300 | *675 | 240 | 242 | 111 | 122 | 64 |
| 20 | 59 | 117 | *356 | 820 | 550 | 3,500 | 595 | 240 | 225 | 357 | 106 | 62 |
| 21 | 58 | 137 | 257 | 1,220 | 2,340 | 14,400 | 615 | 686 | 214 | 225 | 95 | 62 |
| 22 | 59 | 115 | 219 | 2,950 | 10,300 | *32,200 | 685 | 1,100 | 202 | 152 | 90 | 60 |
| 23 | 59 | *93 | 191 | 2,080 | *8,640 | 13,400 | 2,790 | 785 | 189 | 135 | 109 | 60 |
| 24 | 59 | 83 | 173 | 1,400 | 3,490 | 2,820 | 2,750 | 645 | 193 | 122 | 131 | 62 |
| 25 | 59 | 78 | 158 | 1,020 | 2,020 | 2,340 | 2,200 | 463 | 221 | 122 | 102 | 65 |
| 26 | *59 | 75 | 142 | 760 | 1,470 | 2,830 | 1,440 | 356 | 384 | 129 | 92 | 67 |
| 27 | 60 | 76 | 133 | 615 | 1,240 | 2,320 | 1,040 | 290 | 330 | 115 | 83 | 67 |
| 28 | 60 | 110 | 1,650 | 500 | 1,180 | 1,570 | 825 | 260 | 242 | 120 | 81 | 67 |
| 29 | 64 | 230 | 12,800 | 427 | - | 1,250 | 680 | 4,080 | 202 | 587 | 80 | 67 |
| 30 | 67 | 167 | *11,800 | 364 | ------- | 1,030 | 565 | 2,320 | 179 | 197 | 78 | 73 |
| 31 | 70 | ---- | 3,350 | 318 | ------- | 870 | -------- | 1,180 | -------- | 139 | 78 | ---- |
| Total | 2,618 | 2,700 | 37,936 | 23,644 | 57,062 | 102,685 | 58,350 | 19,059 | 13,993 | 5,022 | 3,732 | 2,050 |
| Mean | 84.5 | 90.0 | 1,224 | 763 | 2,038 | 3,312 | 1,945 | 615 | 466 | 162 | 120 | 68.4 |
| Cfsm | 0.176 | 0.187 | 2.54 | 1.59 | 4.24 | 6.89 | 4.04 | 1.28 | 0.969 | 0.337 | 0.249 | 0.142 |
| In. | 0.20 | 0.21 | 2.93 | 1.83 | 4.41 | 7.94 | 4.51 | 1.47 | 1.08 | 0.39 | 0.29 | 0.16 |

Calendar year 1954: Max 16,400 Min 46 Mean 690 Cfsm 1.43 In. 19.47
Water year 1954-55: Max 32,200 Min 58 Mean 901 Cfsm 1.87 In. 25.42

Peak discharge (base, 8,000 cfs).--Dec. 29 (4:30 p.m.) 14,900 cfs (21.92 ft); Feb. 22 (7 to 8 p.m.) 11,300 cfs (18.60 ft); Mar. 22 (10 a.m.) 37,900 cfs (32.84 ft); Apr. 7 (12:30 a.m.) 14,400 cfs (21.50 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Big Rock Creek at Lewisburg, Tenn.

Location.--Lat 35°26'56", long 86°47'09", on downstream side of center pier of bridge on State Highway 50, 800 ft east of Marshall County Courthouse in Lewisburg and at mile 17.9.

Drainage area.--24.9 sq mi.

Records available.--January 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 705.01 ft above mean sea level, datum of 1929.

Extremes.--1954: Maximum discharge during period January to September, 2,260 cfs Jan. 20 (gage height, 9.46 ft); no flow for many days in July, August, and September.
1954-55: Maximum discharge during water year, 16,700 cfs Mar. 21 (gage height, 17.62 ft, from floodmarks), from rating curve extended above 2,400 cfs on basis of contracted-opening determination 0.6 mile upstream (drainage area, 19.0 sq mi); no flow for many days in September.

Remarks.--Records fair except those periods of no gage-height record or indefinite stage-discharge relation, which are poor.

Discharge, in cubic feet per second, January to September 1954

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | - | 28 | 80 | 83 | 13 | 10.0 | 0.06 | 0 | 0 |
| 2 | | | | - | 25 | 60 | 62 | 19 | 5.6 | 0 | .04 | 0 |
| 3 | | | | - | 23 | 50 | 48 | 36 | 26 | .05 | .02 | 0 |
| 4 | | | | - | 20 | 40 | 39 | 27 | 8.3 | .06 | 0 | 0 |
| 5 | | | | - | 18 | 35 | 32 | 19 | 5.6 | 0 | 0 | 0 |
| 6 | | | | - | 16 | 30 | 28 | 16 | 4.3 | 0 | .1 | 0 |
| 7 | | | | - | 14 | 25 | 24 | 14 | 3.5 | 0 | .02 | 0 |
| 8 | | | | - | 12 | 21 | 27 | 11 | 2.8 | 0 | 0 | 0 |
| 9 | | | | - | 11 | 18 | 19 | 7.8 | 2.2 | 0 | 0 | 0 |
| 10 | | | | - | 9.7 | 16 | 19 | 6.6 | 2.5 | 0 | 0 | 0 |
| 11 | | | | - | 8.9 | 14 | 32 | 5.6 | 1.9 | .2 | 0 | 0 |
| 12 | | | | - | 7.8 | 12 | 23 | 6.1 | 1.4 | .2 | 0 | 0 |
| 13 | | | | - | 7.2 | 20 | 20 | *234 | 1.4 | .09 | 0 | 0 |
| 14 | | | | - | 7.2 | 16 | 19 | 271 | 1.2 | 0 | 0 | 0 |
| 15 | | | | - | 6.6 | 14 | 18 | 100 | .8 | 0 | 0 | 0 |
| 16 | | | | - | *378 | 12 | 506 | 66 | .8 | 0 | 0 | 0 |
| 17 | | | †2.1 | - | 150 | 11 | 178 | 48 | 1.0 | 0 | *0 | 0 |
| 18 | | | | *42 | 90 | 10 | 101 | 38 | 1.2 | .1 | 0 | 0 |
| 19 | | | | 29 | 60 | 25 | 73 | 36 | 1.0 | 0 | 0 | 0 |
| 20 | | | | 607 | 75 | 20 | 53 | 33 | 1.2 | 0 | 0 | 0 |
| 21 | | | | 423 | 60 | 15 | *42 | 24 | 1.2 | .04 | 0 | *.8 |
| 22 | | | | 564 | 50 | 10 | 38 | 21 | .8 | .09 | 0 | 0 |
| 23 | | | | 120 | 40 | *14 | 36 | 18 | *.6 | .01 | 0 | 0 |
| 24 | | | | 85 | 35 | 27 | 34 | 15 | .4 | 0 | *0 | 0 |
| 25 | | | | 63 | 30 | 59 | 27 | 13 | .3 | 0 | .03 | 0 |
| 26 | | | | 84 | 25 | 67 | 20 | 9.7 | .2 | 0 | 0 | 0 |
| 27 | | | | 78 | 20 | 48 | 18 | 8.9 | .1 | 0 | 0 | 0 |
| 28 | | | | 60 | 130 | 37 | 20 | 12 | .2 | *0 | 0 | 0 |
| 29 | | | | 45 | - | 31 | 25 | 8.9 | .2 | 0 | 0 | 88 |
| 30 | | | | 35 | ------- | 26 | 16 | 6.6 | .2 | 0 | 0 | 13 |
| 31 | | ------- | | 30 | ------- | 157 | ------- | 5.6 | ------- | 0 | *0 | ------- |
| Total | | | | - | 1,357.4 | 1,020 | 1,680 | 1,149.8 | 86.9 | 0.90 | 0.21 | 101.8 |
| Mean | | | | - | 48.5 | 32.9 | 56.0 | 37.1 | 2.90 | 0.029 | 0.007 | 3.39 |
| Cfsm | | | | - | 1.95 | 1.32 | 2.25 | 1.49 | 0.116 | 0.0012 | 0.00028 | 0.136 |
| In. | | | | - | 2.03 | 1.52 | 2.51 | 1.72 | 0.13 | 0.001 | 0.0003 | 0.15 |

| | | | | | |
|---|---|---|---|---|---|
| Calendar year | : Max | Min | Mean | Cfsm | In. |
| Water year | : Max | Min | Mean | Cfsm | In. |

Peak discharge (base, 1,500 cfs).--Jan. 20 (6 p.m.) 2,260 cfs (9.46 ft); Feb. 16 (12 m.) 1,980 cfs (9.00 ft); Apr. 16 (9 a.m.) 1,900 cfs (8.85 ft).

* Discharge measurement or observation of no flow made on this day.

† Result of discharge measurement.

Note.--No gage-height record Jan. 29 to Feb. 1, Feb. 17 to Mar. 22, July 7-9, 15-17, 25-27; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

## Big Rock Creek at Lewisburg, Tenn.--Continued

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 44 | 0.1 | 1.4 | 50 | 30 | 40 | 42 | 15 | 21 | 0.1 | a0.1 | 0.01 |
| 2 | 13 | .1 | 1.0 | 34 | 40 | 31 | 45 | 13 | *16 | .1 | a.08 | .01 |
| 3 | 1.7 | .09 | .8 | 27 | 28 | 28 | 36 | 12 | 13 | .1 | a.07 | 0 |
| 4 | .4 | .2 | .8 | 23 | 23 | 26 | 32 | 11 | 10 | 8.4 | a.06 | 0 |
| 5 | .2 | .4 | 58 | 20 | 41 | 24 | 35 | 9.4 | 8.0 | 14 | a.08 | 0 |
| 6 | .2 | .2 | 30 | 18 | 567 | 220 | 891 | 8.5 | 8.8 | *18 | a.07 | 0 |
| 7 | .1 | .2 | 9.2 | 14 | 160 | 99 | 228 | 7.5 | 28 | 1.6 | a.06 | 0 |
| 8 | .09 | .1 | 6.8 | 13 | 93 | 65 | 132 | 7.1 | 12 | 1.1 | a.05 | 0 |
| 9 | .08 | .1 | 22 | 12 | 64 | 49 | 92 | *6.0 | 8.4 | .6 | a.08 | 0 |
| 10 | .08 | .1 | 11 | 14 | 51 | 39 | 77 | 6.0 | 8.4 | .4 | a.06 | 0 |
| 11 | .08 | .1 | 6.8 | 16 | 53 | 33 | 96 | 5.4 | 7.5 | .3 | a.04 | .01 |
| 12 | .07 | .1 | 6.0 | 14 | 40 | 28 | 71 | 12 | 5.2 | .2 | a.08 | .01 |
| 13 | .2 | .1 | 15 | 13 | 35 | 24 | 77 | 11 | 4.4 | .2 | a.06 | 0 |
| 14 | .2 | .1 | 11 | 10 | *33 | 21 | 59 | 7.5 | 3.0 | .2 | a.05 | *0 |
| 15 | 1.6 | .1 | 7.7 | 13 | 29 | 17 | 47 | 6.0 | 2.7 | .2 | a.04 | 0 |
| 16 | .2 | 4.3 | 6.0 | 12 | 29 | 20 | 39 | 5.7 | 2.0 | .5 | a.08 | 0 |
| 17 | .1 | 3.0 | 20 | 11 | 28 | 21 | 31 | 4.8 | 1.7 | .5 | *.06 | 0 |
| 18 | .09 | 1.7 | 21 | *11 | 25 | 47 | 26 | 4.4 | 1.4 | .3 | .04 | 0 |
| 19 | .08 | 1.4 | 12 | 17 | 23 | 220 | *22 | 4.0 | 1.2 | .2 | .02 | 0 |
| 20 | .08 | 2.7 | *7.7 | 20 | 23 | 136 | 19 | 28 | .9 | 11 | .02 | 0 |
| 21 | .07 | 3.3 | 7.2 | 166 | 884 | *a3,800 | 33 | 67 | .8 | 1.3 | .02 | 0 |
| 22 | .07 | 2.0 | 5.6 | 127 | 743 | a1,000 | 135 | 84 | .6 | .7 | .02 | 0 |
| 23 | .07 | *1.6 | 4.7 | 75 | 205 | a400 | 214 | 23 | .6 | .5 | .02 | 0 |
| 24 | .07 | e1.2 | 4.0 | 51 | 115 | 202 | 102 | 15 | .5 | .4 | .02 | .01 |
| 25 | .07 | e1.0 | 3.5 | 37 | 82 | 181 | 58 | 12 | .3 | 7.4 | .01 | .01 |
| 26 | *.07 | e2.9 | 3.3 | 30 | 62 | 132 | 41 | 40 | .5 | 20 | .01 | 0 |
| 27 | .07 | 2.0 | 3.5 | 25 | 55 | 96 | 33 | 11 | .5 | 5.7 | .01 | 0 |
| 28 | .08 | 1.7 | 485 | 19 | 44 | 83 | 27 | 14 | .2 | 12 | .01 | 0 |
| 29 | .09 | 2.5 | 633 | 18 | - | 68 | 21 | 272 | .1 | 1.7 | .01 | 0 |
| 30 | .1 | 1.4 | *119 | 15 | ------ | 55 | 15 | 49 | .2 | .2 | .01 | .08 |
| 31 | .1 | ---- | 70 | 14 | ------- | 48 | ------- | 29 | ------- | .2 | .01 | ------ |
| Total | 63.41 | 34.79 | 1,593.0 | 939 | 3,605 | 7,253 | 2,776 | 800.3 | 167.9 | 108.1 | 1.35 | 0.14 |
| Mean | 2.05 | 1.16 | 51.4 | 30.3 | 129 | 234 | 92.5 | 25.8 | 5.60 | 3.49 | 0.044 | 0.005 |
| Cfsm | 0.082 | 0.047 | 2.06 | 1.22 | 5.18 | 9.40 | 3.71 | 1.04 | 0.225 | 0.140 | 0.002 | 0.0002 |
| In. | 0.09 | 0.05 | 2.38 | 1.40 | 5.38 | 10.83 | 4.15 | 1.20 | 0.25 | 0.16 | 0.002 | 0.0002 |

Calendar year 1954: Max - Min - Mean - Cfsm - In. -
Water year 1954-55: Max 3,800 Min 0 Mean 47.5 Cfsm 1.91 In. 25.89

Peak discharge (base, 1,500 cfs).--Dec. 29 (8 a.m.) 2,410 cfs (9.68 ft); Feb. 21 (5:30 p.m.) 2,480 cfs (9.78 ft); Mar. 21 (4:30 p.m.) 16,700 cfs (17.62 ft); Apr. 6 (6 a.m.) 3,500 cfs (10.87 ft); May 29 (2:30 a.m.) 1,620 cfs (8.30 ft).

* Discharge measurement or observation of no flow made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

e Stage-discharge relation indefinite; discharge estimated.

## Duck River at Columbia, Tenn.

Location.--Lat 35°37'05", long 87°01'57", on right bank 4 ft downstream from bridge on former U. S. Highway 31, 2 blocks north of public square at Columbia, Maury County, three-quarters of a mile downstream from Columbia hydroelectric plant, 2¼ miles upstream from Rutherford Creek, and at mile 132.4.

Drainage area.--1,208 sq mi.

Records available.--October 1904 to December 1908 and April 1920 to September 1955 in reports of Geological Survey. October 1904 to December 1908 and April 1920 to October 1924 (prior to December 1922, revised) in Tennessee Division of Geology Bulletin 34. Gage-height records collected in this vicinity, during periods of high water, since 1886, are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 535.52 ft above mean sea level, datum of 1929. Prior to Jan. 9, 1925, chain, tape, or staff gages near this site; all gages at datum 2.37 ft higher prior to Oct. 1, 1933.

Average discharge.--39 years (1904-8, 1920-55), 1,920 cfs.

Extremes.--Maximum discharge during year, 46,500 cfs Mar. 23 (gage height, 44.78 ft); minimum, 27 cfs Aug. 17; minimum daily, 56 cfs Sept. 10, 12-14.
1904-8, 1920-55: Maximum discharge, 61,100 cfs Feb. 14, 1948 (gage height, 51.75 ft); no flow Oct. 22, 1922.
Flood of Mar. 30, 1902, reached a stage of 48.0 ft, present datum (discharge 50,700 cfs).

Remarks.--Records good. Occasional diurnal fluctuation and infrequent regulation at low flows caused by powerplants above station. Prior to about 1953, fluctuation and regulation were more pronounced.

Revisions (water years).--WSP 783: 1929(M). See also Records available.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to May 30 | | | | May 31 to Sept. 30 | |
|---|---|---|---|---|---|
| 1.8 | 60 | 20.0 | 13,700 | 1.6 | 42 |
| 2.0 | 84 | 30.0 | 22,700 | 1.9 | 129 |
| 2.2 | 132 | 35.0 | 28,400 | 3.0 | 570 |
| 3.9 | 965 | 40.0 | 36,700 | 3.9 | 965 |
| 6.0 | 2,180 | 44.6 | 46,200 | | |
| 9.0 | 4,100 | | | | |

Note.--Same as preceding table above 3.9 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 725 | 70 | 295 | 10,400 | 1,020 | 2,540 | 1,870 | 1,200 | 2,220 | 258 | 353 | 70 |
| 2 | 2,020 | 70 | 300 | 3,340 | 2,430 | 2,380 | 1,820 | 1,030 | *1,370 | 223 | 230 | 62 |
| 3 | 1,830 | 73 | 210 | 2,360 | 2,130 | 2,200 | 1,660 | 900 | 1,020 | 195 | 164 | 58 |
| 4 | 910 | 80 | 159 | 1,820 | 1,510 | 1,910 | 1,680 | 795 | 826 | 172 | 141 | 60 |
| 5 | 465 | 86 | 656 | 1,450 | 1,270 | 1,680 | 1,390 | 705 | 696 | 170 | 172 | 65 |
| 6 | 197 | 96 | 3,090 | 1,250 | 8,770 | 2,910 | 10,000 | 630 | 608 | *203 | 285 | 62 |
| 7 | 202 | 100 | 3,280 | 1,110 | 16,400 | 7,300 | 19,100 | 565 | 562 | 270 | 345 | 60 |
| 8 | 136 | 107 | 1,540 | 980 | 12,700 | 5,900 | 19,300 | 495 | 532 | 191 | 265 | 58 |
| 9 | 107 | 102 | 1,020 | 890 | 6,740 | 3,920 | 10,000 | *440 | 688 | 207 | 287 | 58 |
| 10 | 86 | 96 | 975 | 825 | 3,670 | 2,740 | 3,850 | 410 | 730 | 188 | 325 | 56 |
| 11 | 83 | 90 | 920 | 820 | 3,110 | 2,180 | 3,240 | 360 | 748 | 164 | 275 | 58 |
| 12 | 77 | 84 | 740 | 845 | 2,700 | 1,840 | 3,110 | 565 | 1,820 | 164 | 199 | 56 |
| 13 | 80 | 78 | 650 | 1,050 | 2,240 | 1,560 | 2,790 | 925 | 1,960 | 156 | 148 | 56 |
| 14 | 76 | 73 | 825 | 845 | *1,940 | 1,330 | 3,200 | 865 | 1,310 | 129 | 145 | *56 |
| 15 | 88 | 68 | 925 | 820 | 1,760 | 1,170 | 3,000 | 1,110 | 745 | 129 | 403 | 58 |
| 16 | 86 | 69 | 790 | 790 | 1,660 | *1,160 | 2,600 | 1,110 | 795 | 133 | *769 | 58 |
| 17 | 84 | 78 | 640 | 825 | 1,560 | 1,230 | 2,080 | 875 | 441 | 125 | 295 | 58 |
| 18 | 77 | 129 | 670 | *790 | 1,520 | 2,140 | 1,680 | 700 | 446 | 125 | 321 | 62 |
| 19 | 74 | 220 | 1,270 | 790 | 1,410 | 5,330 | *1,430 | 545 | 417 | 141 | 317 | 65 |
| 20 | 73 | 174 | *1,210 | 895 | 1,320 | 8,660 | 1,260 | 331 | 369 | 224 | 289 | 62 |
| 21 | 73 | 140 | 915 | 1,820 | 5,660 | 23,000 | 1,260 | 1,620 | 337 | 168 | 211 | 60 |
| 22 | 70 | 310 | 740 | 5,900 | 22,500 | *44,800 | 1,460 | 3,150 | 305 | 286 | 172 | 58 |
| 23 | 69 | *295 | 615 | 6,680 | 25,500 | *46,200 | 8,790 | 2,690 | 293 | 421 | 148 | 58 |
| 24 | 68 | 215 | 520 | 4,050 | 21,000 | 43,600 | 12,200 | 1,690 | 269 | 269 | 141 | 68 |
| 25 | 68 | 155 | 358 | 2,800 | 9,690 | 27,600 | 8,030 | 1,560 | 246 | 203 | 125 | 65 |
| 26 | *67 | 124 | 425 | 2,080 | 4,630 | 8,940 | 4,510 | 1,200 | 238 | 205 | 117 | 62 |
| 27 | 68 | 104 | 285 | 1,650 | 3,330 | 5,700 | 2,940 | 900 | 246 | 262 | 141 | 58 |
| 28 | 70 | 104 | 2,130 | 1,370 | 2,880 | 4,370 | 2,190 | 750 | 369 | 195 | 129 | 65 |
| 29 | 70 | 94 | 14,700 | 1,170 | - | 3,190 | 1,720 | 3,590 | 389 | 184 | 106 | 70 |
| 30 | 70 | 96 | *21,600 | 1,010 | ------- | 2,610 | 1,410 | 8,220 | 313 | 168 | 90 | 113 |
| 31 | 70 | --- | *21,100 | 900 | ------- | 2,220 | ------- | 4,030 | ------- | 446 | 82 | ------- |
| Total | 8,239 | 3,580 | 83,553 | 62,325 | 171,050 | 272,310 | 139,570 | 43,956 | 21,308 | 6,374 | 7,190 | 1,875 |
| Mean | 266 | 119 | 2,695 | 2,010 | 6,109 | 8,784 | 4,652 | 1,418 | 710 | 206 | 232 | 62.5 |
| Cfsm | 0.220 | 0.099 | 2.23 | 1.66 | 5.06 | 7.27 | 3.85 | 1.17 | 0.588 | 0.171 | 0.192 | 0.052 |
| In. | 0.25 | 0.11 | 2.57 | 1.92 | 5.27 | 8.38 | 4.30 | 1.35 | 0.66 | 0.20 | 0.22 | 0.06 |

Calendar year 1954: Max 27,800 Min 43 Mean 1,612 Cfsm 1.33 In. 18.11
Water year 1954-55: Max 46,200 Min 56 Mean 2,250 Cfsm 1.86 In. 25.29

Peak discharge (base, 16,000 cfs).--Dec. 30 (9 p.m.) 22,500 cfs (29.81 ft); Feb. 7 (3 p.m.) 17,100 cfs (23.77 ft); Feb. 23 (12 m.) 25,800 cfs (33.08 ft); Mar. 23 (2:30 p.m.) 46,500 cfs (44.78 ft); Apr. 7 (9:30 p.m.) 20,400 cfs (27.43 ft).
* Discharge measurement made on this day.

## Rutherford Creek near Carters Creek, Tenn.

Location.--Lat 35°40'23", long 86°58'42", on right bank at upstream side of county road bridge, 1 mile downstream from Double Branch, 3.2 miles south of town of Carters Creek, Maury County, 3.5 miles upstream from Carters Creek, and 5.1 miles northeast of Columbia.

Drainage area.--68.8 sq mi.

Records available.--September 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 590 ft (from topographic map).

Extremes.--Maximum discharge during year, 11,800 cfs Mar. 22 (gage height, 24.38 ft, from high-water mark in gage house), from rating curve extended above 2,700 cfs on basis of slope-area determination of peak flow; no flow Sept. 8-29.
1953-55: Maximum discharge that of Mar. 22, 1955; no flow for many days each year.

Remarks.--Records good except those above 3,000 cfs, which are fair, and those below 10 cfs and those for periods of no gage-height record, which are poor.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 9 to Dec. 5, May 29 to June 1)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.1 | 0.03 | 2.0 | 38 | 1.1 | 0 | 2.0 | 28 |
| 1.2 | .2 | 2.5 | 94 | 1.2 | .2 | 2.5 | 94 |
| 1.3 | 1.4 | 3.0 | 155 | 1.3 | .8 | 3.0 | 182 |
| 1.4 | 3.3 | 5.0 | 460 | 1.4 | 1.9 | 5.0 | 593 |
| 1.5 | 5.9 | 9.0 | 1,330 | 1.5 | 3.0 | 8.0 | 1,300 |
| 1.6 | 8.8 | 12.0 | 2,230 | 1.6 | 4.7 | 12.0 | 2,440 |
| 1.7 | 14 | 16.0 | 4,270 | 1.7 | 7.5 | 16.0 | 4,270 |
| 1.8 | 20 | 17.0 | 4,900 | 1.8 | 13 | 18.0 | 5,620 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 58 | 0.3 | 1.9 | 89 | 100 | *167 | 104 | 70 | *66 | 8 | 1 | 0.4 |
| 2 | 110 | .4 | *1.9 | 67 | *249 | 138 | *117 | 63 | 55 | 7 | *.3 | *.2 |
| 3 | 8.2 | .2 | 1.5 | 51 | 117 | 123 | 97 | *55 | 45 | 7 | .1 | .09 |
| 4 | 3.8 | *.3 | 1.2 | *43 | 88 | 112 | 82 | 47 | 40 | 6 | 181 | .04 |
| 5 | 2.3 | .4 | 278 | 38 | 109 | 99 | 72 | 40 | 35 | *4.9 | 71 | .02 |
| 6 | 1.7 | .4 | 92 | 34 | *1,300 | 512 | *915 | 34 | 35 | 3.1 | 6.2 | .01 |
| 7 | .6 | .4 | 26 | 28 | 494 | 276 | 362 | 29 | 35 | 2.8 | 4.0 | .01 |
| 8 | .3 | .4 | 17 | 25 | 309 | 201 | 236 | 26 | 30 | 2.8 | 11 | 0 |
| 9 | .2 | .6 | 17 | 24 | 225 | 159 | 180 | 22 | 30 | 2.5 | 18 | 0 |
| 10 | .1 | .5 | 17 | 24 | 180 | 132 | 140 | 20 | 50 | 2.2 | 3.6 | 0 |
| 11 | .09 | .5 | 12 | 24 | 247 | 117 | 180 | 18 | 35 | *2.0 | 3.1 | 0 |
| 12 | *.07 | .5 | 10 | 22 | 163 | 100 | 140 | 169 | 30 | 1.9 | 3.5 | 0 |
| 13 | 3.6 | .4 | 14 | 20 | 138 | 88 | 160 | 118 | 25 | 2 | 3.0 | 0 |
| 14 | 11 | .4 | 17 | 18 | 132 | 80 | 140 | 42 | 22 | 2 | 2.5 | 0 |
| 15 | 7.0 | .4 | 14 | 19 | 122 | 75 | 130 | 47 | 20 | 3 | 30 | 0 |
| 16 | 8.2 | .5 | 12 | 22 | 113 | 138 | 110 | 44 | 18 | 5 | 36 | 0 |
| 17 | 4.3 | .5 | 11 | 20 | 111 | 111 | 100 | 28 | 16 | 10 | 48 | 0 |
| 18 | 2.7 | .5 | 15 | 19 | 99 | 324 | 90 | 22 | 15 | 8 | 5.1 | 0 |
| 19 | 2.1 | .6 | 14 | 24 | 93 | 438 | 80 | 18 | 14 | 6 | 3.6 | 0 |
| 20 | 1.4 | .5 | 12 | 26 | 87 | 351 | 70 | 48 | 13 | 5 | 2.9 | 0 |
| 21 | 1.0 | .4 | 11 | 141 | 1,140 | 4,700 | 80 | 216 | 12 | 6 | 2.8 | *0 |
| 22 | .7 | .2 | *9.5 | 259 | *1,970 | *5,000 | 110 | 443 | 11 | 10 | 2.7 | 0 |
| 23 | .5 | .2 | 8.5 | 168 | 565 | 784 | 1,000 | 146 | 17 | 40 | 7.3 | 0 |
| 24 | .3 | .2 | 7.3 | 120 | 369 | 526 | 600 | *132 | 15 | 15 | 4.3 | 0 |
| 25 | .2 | .2 | 6.7 | 94 | 265 | 410 | 360 | 117 | 30 | 5 | 2.9 | 0 |
| 26 | .2 | .2 | 6.1 | 74 | 212 | 300 | 240 | 79 | 22 | 4 | 2.5 | 0 |
| 27 | .1 | .2 | 5.9 | 64 | 226 | 220 | 170 | 60 | 17 | 3 | 2.2 | 0 |
| 28 | .1 | .2 | 418 | 54 | 185 | 200 | 130 | 49 | 12 | 3 | 1.8 | 0 |
| 29 | .2 | .4 | 673 | 49 | - | 170 | 110 | 536 | 10 | 4 | 1.3 | 0 |
| 30 | .2 | 1.7 | 212 | 41 | ------- | 140 | 90 | 123 | 9 | 3 | .8 | 2.7 |
| 31 | .2 | ------- | 125 | 35 | ------- | 117 | ------- | 86 | ------- | 2 | .6 | ------- |
| Total | 229.36 | 12.6 | 2,067.5 | 1,736 | 9,408 | 16,308 | 6,395 | 2,947 | 784 | 186.2 | 463.1 | 3.47 |
| Mean | 7.40 | 0.420 | 66.7 | 56.0 | 336 | 526 | 213 | 95.1 | 26.1 | 6.01 | 14.9 | 0.116 |
| Cfsm | 0.108 | 0.0061 | 0.969 | 0.814 | 4.88 | 7.65 | 3.10 | 1.38 | 0.379 | 0.087 | 0.217 | 0.0017 |
| In. | 0.12 | 0.007 | 1.12 | 0.94 | 5.09 | 8.82 | 3.46 | 1.59 | 0.42 | 0.10 | 0.25 | 0.002 |

Calendar year 1954: Max 3,070 Min 0 Mean 97.7 Cfsm 1.42 In. 19.28
Water year 1954-55: Max 5,000 Min 0 Mean 111 Cfsm 1.61 In. 21.92

Peak discharge (base, 1,800 cfs).--Feb. 6 (1 p.m.) 1,970 cfs (11.26 ft); Feb. 22 (3 a.m.) 3,600 cfs (14.87 ft); Mar. 22 (about 2 a.m.) 11,800 cfs (24.38 ft); Apr. 6 (8 a.m.) 1,910 cfs (10.37 ft); Apr. 23 (time unknown) 2,300 cfs (11.6 ft).

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Mar. 22, 25-30, Apr. 9 to May 2, June 2 to July 4, July 13 to Aug. 1; discharge estimated on basis of weather records, recorded range in stage when available, and records for nearby stations.

## Big Bigby Creek at Sandy Hook, Tenn.

Location.--Lat 35°29'21", long 87°13'58", on right bank 45 ft west of Louisville & Nashville Railroad track, 0.2 mile downstream from bridge on U. S. Highway 43, 0.45 mile upstream from Dry Creek, 0.5 mile northeast of Sandy Hook, Maury County, and 3.5 miles southwest of Mount Pleasant.

Drainage area.--17.5 sq mi.

Records available.--September 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 670.59 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 2,550 cfs Mar. 21 (gage height, 11.22 ft), from rating curve extended above 830 cfs; minimum, 2.2 cfs Oct. 19-27.
1953-55: Maximum discharge, that of Mar. 21, 1955; minimum, 1.5 cfs Sept. 4-7, 1954.

Remarks.--Records fair except those for periods of no gage-height record, which are poor.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 20

| | | | |
|---|---|---|---|
| 1.2 | 1.2 | 1.7 | 23 |
| 1.3 | 3.5 | 2.0 | 47 |
| 1.4 | 7.3 | 2.5 | 104 |
| 1.5 | 12 | | |

Note.--Same as following table above 2.5 ft.

Mar. 21 to May 21

| | | | |
|---|---|---|---|
| 1.2 | 6.6 | 3.0 | 180 |
| 1.4 | 12 | 5.0 | 575 |
| 1.5 | 16 | 7.0 | 1,050 |
| 2.0 | 51 | 9.0 | 1,660 |
| 2.5 | 104 | | |

May 22 to Sept. 30

| | | | |
|---|---|---|---|
| 1.0 | 2.6 | 1.5 | 17 |
| 1.2 | 6.7 | 2.0 | 51 |
| 1.4 | 13 | | |

Note.--Same as preceding table above 2.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.3 | 3.9 | 4.6 | 11 | 19 | *21 | 17 | 12 | *25 | 6.2 | 4.5 | 3.1 |
| 2 | 5.0 | 3.5 | *5.0 | 8.7 | *41 | 18 | *17 | 11 | 18 | 5.9 | *4.5 | *3.3 |
| 3 | 4.3 | 3.5 | 5.0 | 7.3 | 22 | 16 | 16 | *11 | 15 | 5.7 | 4.3 | 3.3 |
| 4 | 3.5 | *4.6 | 4.6 | *6.5 | 17 | 16 | 15 | 9.8 | 13 | 5.5 | 4.1 | 3.3 |
| 5 | 4.3 | 5.0 | 15 | 6.2 | 16 | 15 | 14 | 9.6 | 12 | *6.2 | 4.1 | 3.5 |
| 6 | 3.5 | 3.9 | 16 | 5.8 | 269 | 94 | 519 | 9.3 | 12 | 10 | 4.1 | 3.7 |
| 7 | 3.5 | 3.5 | 8.7 | 5.8 | 78 | 71 | 128 | 9.0 | 21 | 11 | 3.9 | 3.5 |
| 8 | 3.2 | 3.2 | 7.3 | 5.4 | 41 | 44 | 62 | 8.7 | 15 | 8.7 | 5.3 | 3.5 |
| 9 | 3.2 | 3.2 | 9.2 | 5.0 | 28 | 31 | a49 | 8.5 | 12 | 7.4 | 5.1 | 3.7 |
| 10 | 3.0 | 3.2 | 7.8 | 5.0 | 24 | 23 | a45 | 8.2 | 12 | 6.7 | 15 | 3.5 |
| 11 | 3.0 | 3.0 | 6.9 | 5.4 | 26 | 19 | a65 | 8.0 | 13 | 6.2 | 14 | 3.7 |
| 12 | *3.0 | 3.0 | 6.5 | 5.4 | 20 | 17 | a55 | 12 | 12 | 6.2 | 7.2 | 3.9 |
| 13 | 3.9 | 3.0 | 7.3 | 5.0 | 17 | 15 | a100 | 12 | 11 | 6.4 | 5.7 | 3.9 |
| 14 | 3.9 | 3.0 | 6.9 | 4.6 | 16 | 14 | a74 | 10 | 10 | 5.9 | 5.1 | 3.7 |
| 15 | 4.6 | 3.2 | 6.5 | 5.4 | 16 | 13 | a57 | 9.6 | 9.6 | 6.9 | 5.1 | 3.7 |
| 16 | 3.2 | 4.6 | 6.2 | 5.8 | 16 | 13 | a45 | 9.3 | 8.7 | 6.9 | a7.9 | 3.7 |
| 17 | 2.6 | 5.0 | 6.2 | 5.0 | 16 | 15 | a35 | 8.5 | 8.2 | 5.9 | a6.7 | 3.7 |
| 18 | 2.4 | 4.6 | 6.5 | 5.0 | 15 | 36 | a30 | 8.0 | 7.9 | 5.7 | a5.7 | 3.5 |
| 19 | 2.2 | 4.6 | 6.2 | 7.3 | 14 | 93 | a25 | 7.5 | 7.4 | 5.5 | 5.3 | 3.5 |
| 20 | 2.2 | 4.6 | 5.8 | 7.3 | 14 | 107 | a22 | 7.5 | 7.7 | 7.3 | a5.5 | 3.5 |
| 21 | 2.2 | 4.3 | 5.4 | 37 | 384 | *1,400 | a32 | 17 | 8.2 | 8.4 | a5.9 | 3.5 |
| 22 | 2.2 | 4.3 | *5.0 | 42 | 411 | a200 | *24 | 193 | 7.4 | 6.9 | a4.9 | 3.5 |
| 23 | 2.2 | 4.3 | 5.0 | 24 | 97 | 68 | 22 | 50 | 10 | 6.4 | a4.5 | 3.7 |
| 24 | 2.2 | 3.9 | 5.0 | 17 | 56 | 56 | 23 | 35 | 9.3 | 6.4 | a3.7 | 6.4 |
| 25 | 2.2 | 3.9 | 5.0 | 14 | 39 | 49 | 20 | 27 | 8.7 | 5.9 | a3.5 | 6.2 |
| 26 | 2.2 | 3.9 | 4.6 | 12 | 30 | 38 | 18 | 20 | 9.3 | 5.5 | 3.7 | 5.3 |
| 27 | 2.2 | 4.6 | 4.6 | 10 | 25 | 33 | 16 | 16 | 7.9 | 5.5 | 3.7 | a5 |
| 28 | 2.6 | 5.4 | 105 | 9.2 | 22 | 29 | 15 | 20 | 7.4 | 5.9 | 3.5 | a4.5 |
| 29 | 3.2 | 6.5 | 79 | 7.8 | - | 26 | 13 | 121 | 6.9 | 5.1 | 3.3 | a5 |
| 30 | 3.2 | 5.0 | 24 | 7.3 | ------- | 23 | 13 | 50 | 6.4 | 4.7 | 3.5 | a8 |
| 31 | 3.2 | ------- | 14 | 6.9 | ------- | 18 | -------- | 34 | -------- | 4.7 | 3.5 | -------- |
| Total | 96.4 | 122.2 | 404.8 | 310.1 | 1,789 | 2,631 | 1,586 | 772.5 | 332.0 | 201.6 | 166.8 | 122.3 |
| Mean | 3.11 | 4.07 | 13.1 | 10.0 | 63.9 | 84.9 | 52.9 | 24.9 | 11.1 | 6.50 | 5.38 | 4.08 |
| Cfsm | 0.178 | 0.233 | 0.749 | 0.571 | 3.65 | 4.85 | 3.02 | 1.42 | 0.634 | 0.371 | 0.307 | 0.233 |
| In. | 0.20 | 0.26 | 0.86 | 0.66 | 3.80 | 5.59 | 3.37 | 1.64 | 0.71 | 0.43 | 0.35 | 0.26 |

Calendar year 1954: Max 424 Min 1.5 Mean 17.3 Cfsm 0.989 In. 13.38
Water year 1954-55: Max 1,400 Min 2.2 Mean 23.4 Cfsm 1.34 In. 18.13

Peak discharge (base, 600 cfs).--Feb. 22 (1 a.m.) 942 cfs (6.58 ft); Mar. 21 (4:30 p.m.) 2,550 cfs (11.22 ft); Apr. 6 (8 a.m.) 1,270 cfs (7.79 ft); May 22 (2:30 a.m.) 648 cfs (5.33 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, observer's readings, and records for station near Mount Pleasant.

## Big Bigby Creek near Mount Pleasant, Tenn.

Location.--Lat 35°30'12", long 87°13'54", near midchannel on downstream side of pier of bridge on U. S. Highway 43, 400 ft downstream from small water-supply dam, 0.8 mile downstream from Dry Creek, 2.55 miles southwest of Mount Pleasant, Maury County, and 2.6 miles upstream from West Fork.

Drainage area.--25.8 sq mi.

Records available.--September 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 654.99 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 3,740 cfs Mar. 21 (gage height, 10.20 ft), from rating curve extended above 2,200 cfs; minimum, 0.9 cfs Oct. 20-22.
1953-55: Maximum discharge, that of Mar. 21, 1955; minimum, that of Oct. 20-22, 1954.

Remarks.--Records fair except for periods of no gage height record, which are poor. Irregular discharge at low flow caused by removal and delayed return of ore-processing water upstream.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 15-17)

| Oct. 1 to Dec. 10 | | Dec. 11 to Feb. 6 | | | | Feb. 7 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.5 | 0.7 | 1.3 | 3.9 | 1.8 | 24 | 1.1 | 1.3 | 2.0 | 53 |
| .6 | 1.3 | 1.4 | 5.7 | 1.9 | 35 | 1.2 | 2.4 | 2.5 | 169 |
| .7 | 2.9 | 1.5 | 8.2 | 2.0 | 53 | 1.4 | 6.3 | 3.0 | 335 |
| .8 | 4.9 | 1.7 | 17 | | | 1.5 | 9.0 | 4.0 | 765 |
| 1.0 | 10 | | | | | 1.7 | 18 | 6.0 | 1,660 |
| | | Note.--Same as following table above 2.0 ft. | | | | 1.8 | 27 | 7.5 | 2,360 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.6 | 3.8 | | 19 | 27 | *34 | 20 | 16 | *32 | 6.0 | 4.7 | 2.8 |
| 2 | 6.7 | 2.6 | (*) | 16 | *60 | 31 | *25 | 14 | 22 | 5.6 | *4.5 | *4.0 |
| 3 | 4.9 | 2.0 | a10 | 9.6 | 29 | 27 | 24 | *11 | 18 | 5.4 | 4.3 | 3.4 |
| 4 | 2.3 | *4.3 | | *8.0 | 20 | 25 | 19 | 12 | 16 | 5.2 | 4.2 | 2.3 |
| 5 | 3.8 | 4.7 | | 8.2 | 23 | 26 | 16 | 11 | 15 | *5.0 | 4.2 | 2.2 |
| 6 | 4.4 | 8.9 | | 8.9 | *382 | 153 | 861 | 10 | 14 | 5.8 | 5.0 | 2.6 |
| 7 | 3.0 | 8.4 | | 7.4 | 144 | 106 | 202 | 12 | 22 | 8.1 | 4.8 | 3.0 |
| 8 | 1.3 | 3.5 | a8 | 8.2 | 68 | 66 | 108 | 12 | 16 | 7.0 | 4.7 | 3.0 |
| 9 | 1.6 | 2.2 | | 7.7 | 45 | 48 | 76 | 9.4 | 12 | 7.3 | 5.4 | 3.4 |
| 10 | 4.5 | 3.1 | | 8.9 | 36 | 40 | 66 | 8.4 | 13 | 6.5 | 11 | 5.2 |
| 11 | 2.7 | 5.6 | 18 | 8.2 | 36 | 33 | 115 | 8.1 | 15 | 5.6 | 12 | 3.8 |
| 12 | *1.3 | 4.0 | 18 | 6.9 | 28 | 31 | 108 | 15 | 14 | 4.8 | 6.7 | 3.6 |
| 13 | 2.5 | 8.8 | 9.8 | 5.7 | 24 | 27 | 166 | 14 | 14 | 5.0 | 5.4 | 3.6 |
| 14 | 3.7 | 8.6 | 8.2 | 5.9 | 22 | 22 | 122 | 14 | 14 | 4.8 | 5.2 | 3.8 |
| 15 | 4.3 | 4.5 | 6.2 | 8.2 | 18 | 21 | 85 | 13 | 13 | 5.0 | 5.0 | 3.0 |
| 16 | 6.8 | 8.6 | 3.9 | 8.0 | 18 | 21 | 65 | 12 | 12 | 6.0 | 6.7 | 2.3 |
| 17 | 6.8 | | 6.4 | 5.9 | 18 | 26 | 52 | 10 | 11 | 6.3 | 5.4 | 2.6 |
| 18 | 2.6 | a7 | 14 | 6.2 | 16 | 53 | 38 | 9.0 | 10 | 5.6 | 4.8 | 1.8 |
| 19 | 1.0 | | 13 | 7.7 | 18 | 145 | 31 | 8.1 | 9.7 | 4.5 | 4.3 | 2.0 |
| 20 | .9 | | 6.2 | 8.2 | 18 | 228 | 27 | 8.7 | 8.4 | 4.7 | 4.5 | 3.6 |
| 21 | .9 | | 4.0 | 41 | 559 | *2,320 | 42 | 31 | 8.7 | 7.6 | 4.8 | 1.9 |
| 22 | .9 | | *4.5 | 70 | *764 | 518 | *31 | 354 | 7.3 | 6.3 | 4.2 | 2.2 |
| 23 | 6.4 | a6 | 9.9 | 35 | 172 | 189 | 30 | 92 | 10 | 7.0 | 4.2 | 1.8 |
| 24 | 7.8 | | 10 | 21 | 83 | 120 | 33 | 56 | 9.0 | 7.0 | 3.6 | 5.4 |
| 25 | 3.3 | | 8.9 | 16 | 55 | 99 | 27 | 41 | 8.7 | 6.0 | 3.2 | 6.0 |
| 26 | 1.6 | | 9.2 | 14 | 46 | 76 | 23 | 31 | 9.0 | 4.8 | 4.0 | 4.0 |
| 27 | 4.9 | | 8.9 | 11 | 42 | 53 | 20 | 23 | 8.1 | 4.3 | 3.8 | 3.2 |
| 28 | 6.2 | a7.5 | 134 | 9.9 | 34 | 43 | 18 | 41 | 7.0 | 6.3 | 5.0 | 3.6 |
| 29 | 3.8 | | 126 | 9.6 | - | 33 | 16 | 161 | 7.0 | 6.0 | 4.2 | 6.6 |
| 30 | 7.1 | | *42 | 9.6 | ------- | 24 | 17 | 72 | 7.3 | 5.8 | 3.4 | 9.0 |
| 31 | 7.6 | ---- | 22 | 7.7 | ------- | 22 | ------- | 46 | ------- | 5.6 | 3.8 | ---- |
| Total | 120.2 | 179.1 | 573.1 | 417.6 | 2,805 | 4,660 | 2,482 | 1,175.7 | 383.2 | 180.7 | 157.0 | 105.7 |
| Mean | 3.88 | 5.97 | 18.5 | 13.5 | 100 | 150 | 82.7 | 37.9 | 12.8 | 5.83 | 5.06 | 3.52 |
| Cfsm | 0.150 | 0.231 | 0.717 | 0.523 | 3.88 | 5.81 | 3.21 | 1.47 | 0.496 | 0.226 | 0.196 | 0.136 |
| In. | 0.17 | 0.26 | 0.83 | 0.60 | 4.04 | 6.72 | 3.58 | 1.69 | 0.55 | 0.26 | 0.23 | 0.15 |

Calendar year 1954: Max 857 Min 0.9 Mean 28.9 Cfsm 1.12 In. 15.23
Water year 1954-55: Max 2,320 Min 0.9 Mean 36.3 Cfsm 1.41 In. 19.08

Peak discharge (base, 1,000 cfs).--Feb. 22 (2 a.m.) 1,640 cfs (5.95 ft); Mar. 21 (4 p.m.) 3,740 cfs (10.20 ft); Apr. 6 (8 a.m.) 2,090 cfs (6.93 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for station at Sandy Hook.

## Duck River at Centerville, Tenn.

Location.--Lat 35°47'16", long 87°27'56", on right bank 0.4 mile downstream from bridge on State Highways 48 and 100, 0.4 mile downstream from Defeated Creek, 0.6 mile north of Centerville, Hickman County, 1¼ miles upstream from Nashville, Chattanooga & St. Louis Railway bridge, 4 miles downstream from Swan Creek, and at mile 72.1.

Drainage area.--2,048 sq mi.

Records available.--March 1919 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 450.74 ft above mean sea level, datum of 1929 (levels by Tennessee Valley Authority). Prior to Jan. 2, 1920, chain gage at site three-quarters of a mile downstream at different datum. Mar. 2, 1920, to July 1, 1925, chain gage at site 75 ft upstream at datum 1.00 ft higher. July 2, 1925, to Aug. 10, 1927, tape gage and Aug. 11, 1927, to Oct. 3, 1929, staff gage, at site 75 ft upstream at present datum.

Average discharge.--35 years (1920-55), 3,114 cfs.

Extremes.--Maximum discharge during year, 68,800 cfs Mar. 22 (gage height, 32.05 ft); minimum not determined.
1919-55: Maximum discharge, 97,700 cfs Feb. 14, 1948 (gage height, 37.58 ft); minimum, 68 cfs Aug. 30, 1925; minimum gage height recorded, 0.30 ft Sept. 21, 1954, but may have been less during period of no gage height record, Aug. 23 to Sept. 20, 1954.

Remarks.--Records good except those for period of no gage-height record, which are fair. Some diurnal fluctuation at low flow caused by powerplants above station. Minor diversions for irrigation.

Revisions (water years).--WSP 543: 1921(m). WSP 803: 1935. WSP 823: Drainage area. WSP 853: 1920(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 10-23)

| Oct. 1 to Feb. 23 | | | | Feb. 24 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.5 | 190 | 2.0 | 1,150 | 1.2 | 495 | 11.0 | 11,700 |
| .8 | 310 | 5.0 | 4,130 | 1.5 | 695 | 16.0 | 19,000 |
| 1.4 | 680 | 11.0 | 11,700 | 2.0 | 1,080 | 20.0 | 25,700 |
| | | | | 4.0 | 2,900 | 25.0 | 38,000 |
| | | | | 8.0 | 7,550 | 32.0 | 68,500 |

Note.--Same as following table above 11.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 942 | a230 | 345 | 22,000 | 1,320 | 4,630 | 3,460 | 2,410 | *4,650 | | | |
| 2 | 1,130 | a235 | 360 | 9,010 | 2,040 | 4,050 | 3,100 | 2,080 | 2,910 | | | |
| 3 | 2,320 | 241 | 520 | 4,010 | 3,490 | 3,700 | 3,090 | 1,830 | 2,130 | a450 | a420 | a210 |
| 4 | 1,920 | a245 | 475 | 2,940 | 2,840 | 3,330 | 2,780 | 1,630 | 1,740 | | | |
| 5 | 1,090 | a250 | 534 | 2,360 | 2,280 | 2,930 | 2,650 | 1,480 | 1,480 | | | |
| 6 | 694 | a255 | 1,500 | 1,990 | 5,150 | 3,700 | 7,170 | 1,330 | 1,360 | | | |
| 7 | 475 | a260 | 4,080 | 1,710 | 17,500 | 8,130 | 20,800 | 1,220 | 1,230 | | | |
| 8 | 388 | a270 | 3,460 | 1,540 | 19,300 | 10,100 | 23,200 | 1,130 | 1,180 | a400 | a400 | a180 |
| 9 | 325 | a280 | 1,970 | 1,380 | 13,400 | 7,500 | 21,400 | 1,060 | 1,120 | | | |
| 10 | 278 | a290 | 1,380 | 1,260 | 7,570 | 5,330 | 9,940 | 984 | 1,290 | | | |
| 11 | 257 | a300 | 1,250 | 1,180 | 5,210 | 4,050 | 6,250 | 928 | 1,260 | | | |
| 12 | 241 | a300 | 1,210 | 1,140 | 4,560 | 3,300 | 5,720 | 1,010 | 1,480 | | | |
| 13 | 225 | a290 | 1,070 | 1,130 | 3,840 | 2,830 | 5,930 | 1,870 | 2,370 | a350 | a500 | a170 |
| 14 | 229 | a280 | 950 | 1,310 | 3,260 | 2,450 | 5,770 | 1,830 | 2,110 | | | |
| 15 | 265 | a290 | 1,040 | 1,160 | 2,920 | 2,170 | 5,750 | 1,480 | 1,600 | | | |
| 16 | 283 | a290 | 1,150 | 1,130 | 2,690 | *2,130 | 4,970 | 1,660 | 1,200 | | | |
| 17 | 283 | *283 | 1,070 | 1,090 | *2,570 | 2,370 | 4,150 | 1,710 | 1,070 | | | |
| 18 | 253 | 274 | 918 | *1,120 | 2,460 | 4,220 | *3,330 | 1,430 | 952 | a340 | a620 | a150 |
| 19 | 245 | 274 | 878 | 1,150 | 2,360 | 7,580 | 2,770 | 1,180 | 681 | | | |
| 20 | 237 | 355 | 1,460 | 1,150 | 2,230 | 11,300 | 2,340 | 1,090 | 725 | | | |
| 21 | *225 | 404 | *1,460 | 1,280 | 3,560 | 25,300 | 2,340 | 1,370 | 718 | | | |
| 22 | 225 | 376 | 1,160 | 3,720 | *22,000 | 65,700 | 2,470 | 10,800 | 632 | | | |
| 23 | 225 | 371 | 966 | 8,200 | 30,400 | 60,000 | 9,200 | 9,740 | 583 | a950 | a400 | a160 |
| 24 | 222 | 514 | 822 | 6,990 | 30,900 | 52,200 | 15,700 | 5,250 | 590 | | | |
| 25 | 218 | 451 | 736 | 4,760 | 26,200 | 48,400 | 15,000 | *3,700 | 702 | | | |
| 26 | 214 | 404 | 673 | 3,470 | 10,800 | 36,700 | 9,770 | 3,330 | 653 | | | |
| 27 | 214 | 376 | 540 | 2,710 | 6,550 | 13,400 | 6,350 | 2,760 | 590 | | | |
| 28 | a220 | 371 | 830 | 2,250 | 5,360 | 8,010 | 4,660 | 2,370 | *525 | | | |
| 29 | a225 | 371 | 6,700 | 1,930 | - | 6,200 | 3,540 | 5,180 | 531 | a450 | a280 | a200 |
| 30 | a220 | 360 | 17,700 | 1,650 | ------ | 4,860 | 2,860 | 7,780 | 590 | | | |
| 31 | a220 | ---- | 22,500 | 1,460 | ------- | 4,080 | ------- | 8,820 | ------- | | | |
| Total | 14,508 | 9,490 | 79,707 | 98,180 | 242,760 | 420,650 | 216,360 | 90,442 | 38,652 | 15,150 | 13,260 | 5,350 |
| Mean | 468 | 316 | 2,571 | 3,167 | 8,670 | 13,570 | 7,212 | 2,917 | 1,288 | 489 | 428 | 178 |
| Cfsm | 0.229 | 0.154 | 1.26 | 1.55 | 4.23 | 6.63 | 3.52 | 1.42 | 0.629 | 0.239 | 0.209 | 0.087 |
| In. | 0.26 | 0.17 | 1.45 | 1.78 | 4.41 | 7.64 | 3.93 | 1.64 | 0.70 | 0.28 | 0.24 | 0.10 |

Calendar year 1954: Max 37,500 Min 130 Mean 2,590 Cfsm 1.26 In. 17.17
Water year 1954-55: Max 65,700 Min - Mean 3,410 Cfsm 1.67 In. 22.60

Peak discharge (base, 20,000 cfs).--Jan. 1 (3 a.m.) 23,600 cfs (18.88 ft); Feb. 24 (5 a.m.) 31,100 cfs (22.43 ft); Mar. 22 (3 p.m.) 68,800 cfs (32.05 ft); Apr. 8 (9 p.m.) 23,700 cfs (18.92 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of adjacent record, weather records, recorded range in stage, and records for stations at Columbia and above Hurricane Mills.

## Piney River at Vernon, Tenn.

Location.--Lat 35°52'17", long 87°30'00", on left bank 500 ft upstream from county highway bridge, 600 ft upstream from Pretty Creek, and 0.2 mile northwest of Vernon, Hickman County, 2.2 miles downstream from Mill Creek, 6.5 miles north of Centerville, and 8.4 miles upstream from mouth.

Drainage area.--193 sq mi.

Records available.--July 1925 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 464.89 ft above mean sea level, datum of 1929. Prior to Aug. 30, 1927, tape gage and Aug. 30, 1927, to Feb. 8, 1931, chain gage, at same site and datum. Feb. 9, 1931, to May 11, 1934, staff gage at site half a mile downstream at datum 2.77 ft lower.

Average discharge.--30 years, 300 cfs.

Extremes.--Maximum discharge during year, 18,600 cfs Mar. 21 (gage height, 15.52 ft); minimum, 58 cfs Oct. 24-28, Oct. 30 to Nov. 1; minimum gage height, 0.27 ft for many days in October and November.
1925-55: Maximum discharge observed, 32,500 cfs Dec. 21, 1926 (gage height, 16.5 ft); minimum, 35 cfs Sept. 19, 20, 1936; minimum gage height observed, -0.09 ft Sept. 27, Oct. 16, 1951.

Remarks.--Records fair.

Revisions (water years).--WSP 758: 1927(M). WSP 823: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1, Oct. 4 to Nov. 23, Dec. 1 to Feb. 6)

| Oct. 1 to Mar. 21 | | | | Mar. 22 to May 28 | | May 29 to Sept. 30 | |
|---|---|---|---|---|---|---|---|
| 0.1 | 51 | 8.0 | 4,360 | 1.0 | 188 | 0.7 | 46 |
| .5 | 145 | 10.0 | 5,960 | 2.0 | 565 | 1.0 | 112 |
| 1.0 | 290 | 12.0 | 9,000 | 4.0 | 1,580 | 1.2 | 173 |
| 2.0 | 648 | 13.0 | 11,400 | Note.--Same as preceding table above 4.0 ft. | | 1.5 | 292 |
| 4.0 | 1,580 | | | | | 2.0 | 520 |
| | | | | | | 2.2 | 620 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 78 | 60 | 73 | 125 | 87 | 520 | 375 | 375 | *242 | 132 | 88 | 73 |
| 2 | a200 | 60 | 73 | 115 | 108 | 484 | 390 | 344 | 222 | 129 | 88 | 70 |
| 3 | a120 | 60 | 73 | 103 | 103 | 437 | 537 | 321 | 206 | 123 | 84 | 68 |
| 4 | a95 | 64 | 73 | 101 | 96 | 398 | 429 | 302 | 198 | 118 | 81 | 68 |
| 5 | 82 | 66 | 246 | 94 | 113 | 363 | 390 | 284 | 188 | 115 | 81 | 66 |
| 6 | 80 | 66 | 205 | 91 | *999 | 911 | 2,300 | 269 | 180 | 115 | 81 | 66 |
| 7 | 75 | 66 | 122 | 84 | 789 | 868 | 1,440 | 255 | 177 | 115 | 79 | 66 |
| 8 | 73 | 66 | 103 | 80 | 469 | 625 | 860 | 248 | 170 | 115 | 79 | 64 |
| 9 | 69 | 64 | 103 | 80 | 374 | 513 | 637 | 238 | 180 | 107 | 79 | 64 |
| 10 | 69 | 64 | 94 | 80 | 323 | 448 | 537 | 224 | 184 | 105 | 79 | 62 |
| 11 | 66 | 64 | 87 | 84 | 303 | 405 | 646 | 217 | 170 | 102 | 86 | 62 |
| 12 | 62 | 64 | 89 | 78 | 271 | 377 | 673 | 277 | 166 | 102 | 81 | 62 |
| 13 | 64 | 64 | 101 | 78 | 249 | 336 | 885 | 367 | 159 | 102 | 77 | 62 |
| 14 | 75 | 64 | 101 | 78 | 237 | 316 | 758 | 269 | 150 | 100 | 77 | 62 |
| 15 | 145 | 66 | 94 | 78 | 231 | 320 | 606 | 244 | 144 | 107 | 90 | *62 |
| 16 | 94 | 69 | 89 | 78 | 228 | *388 | 521 | 262 | 138 | 107 | 120 | 64 |
| 17 | 78 | *75 | 89 | 75 | 231 | 455 | 461 | 277 | 135 | 102 | 123 | 62 |
| 18 | 73 | 73 | 84 | *75 | 222 | *1,300 | *409 | 241 | 129 | 100 | *93 | 62 |
| 19 | 69 | 73 | 84 | 75 | 219 | 1,440 | 375 | 224 | 129 | 98 | 84 | 62 |
| 20 | 66 | 73 | 82 | 73 | 219 | 1,250 | 344 | 217 | 202 | 95 | 86 | 62 |
| 21 | *66 | 73 | *80 | 84 | 756 | *10,800 | 371 | 815 | 177 | 93 | 112 | 62 |
| 22 | 64 | 71 | 78 | 120 | *3,480 | 5,880 | 476 | 3,990 | 138 | 98 | 90 | 62 |
| 23 | 62 | 71 | 78 | 122 | 1,130 | 1,810 | 3,360 | 1,350 | 138 | 100 | 100 | 62 |
| 24 | 60 | a70 | 78 | 118 | 688 | 1,080 | 1,990 | 763 | 138 | 102 | 84 | 81 |
| 25 | 58 | a70 | 78 | 108 | 524 | 1,080 | 1,160 | *592 | 575 | 98 | 77 | 81 |
| 26 | 58 | a70 | 78 | 101 | 455 | 890 | 768 | 497 | 234 | 93 | 77 | 70 |
| 27 | 58 | a70 | 73 | 96 | 565 | 668 | 606 | 445 | 184 | 105 | 75 | 68 |
| 28 | 58 | a80 | 130 | 91 | 539 | 565 | 517 | 425 | *162 | 141 | 73 | 75 |
| 29 | 60 | a80 | 214 | 89 | - | 497 | 457 | 376 | 150 | *100 | 73 | 75 |
| 30 | 58 | a75 | 174 | 87 | ------- | 441 | 409 | 301 | 138 | 93 | 75 | 324 |
| 31 | 58 | ---- | 140 | 84 | ------- | 405 | ------- | 267 | ------- | 88 | 75 | ------- |
| Total | 2,393 | 2,051 | 3,266 | 2,825 | 14,008 | 36,270 | 23,687 | 15,276 | 5,503 | 3,300 | 2,647 | 2,249 |
| Mean | 77.2 | 68.4 | 105 | 91.1 | 500 | 1,170 | 790 | 493 | 183 | 106 | 85.4 | 75.0 |
| Cfsm | 0.400 | 0.354 | 0.544 | 0.472 | 2.59 | 6.06 | 4.09 | 2.55 | 0.948 | 0.549 | 0.442 | 0.389 |
| In. | 0.46 | 0.40 | 0.63 | 0.54 | 2.70 | 6.99 | 4.56 | 2.94 | 1.06 | 0.64 | 0.51 | 0.43 |

Calendar year 1954: Max 4,050 Min 51 Mean 198 Cfsm 1.03 In. 13.94
Water year 1954-55: Max 10,800 Min 58 Mean 311 Cfsm 1.61 In. 21.86

Peak discharge (base, 4,000 cfs).--Feb. 22 (5 a.m.) 5,180 cfs (9.02 ft); Mar. 21 (10 p.m.) 18,600 cfs (15.52 ft); Apr. 23 (7 a.m.) 4,860 cfs (8.62 ft); May 22 (9 a.m.) 5,350 cfs (9.24 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, observer's readings, and records for nearby stations.

## Duck River above Hurricane Mills, Tenn.

Location.--Lat 35°55'42", long 87°44'26", on left bank a quarter of a mile downstream from Tumbling Creek, 1.5 miles upstream from bridge on State Highway 13, 3.8 miles southeast of Hurricane Mills, Humphreys County, and at mile 26.0.

Drainage area.--2,557 sq mi.

Records available.--July 1925 to September 1955. Prior to October 1951, published as "near Hurricane Mills."

Gage.--Water-stage recorder. Datum of gage is 370.53 ft above mean sea level, datum of 1929. Prior to June 2, 1927, tape gage, June 2, 1927, to Feb. 20, 1934, staff gage, and Feb. 21, 1934, to Sept. 30, 1951, water-stage recorder, at bridge 5.6 miles downstream at datum 8.80 ft lower.

Average discharge.--30 years, 3,936 cfs.

Extremes.--Maximum discharge during year, 76,900 cfs Mar. 23 (gage height, 26.39 ft); minimum, 300 cfs Sept. 20-22 (gage height, 0.61 ft).
1925-55: Maximum discharge, 122,000 cfs Feb. 14, 1948 (gage height, 30.70 ft, from floodmark in gage house, present site and datum); minimum, 185 cfs Sept. 11, 12, 1925; minimum gage height, 0.15 ft Oct. 2, 1941, site and datum then in use.

Remarks.--Records good. Some diurnal fluctuation at low flow caused by powerplants above station. Minor diversions for irrigation.

Revisions (water years).--WSP 803: 1935. WSP 823: 1927(M). WSP 853: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 7 | | | | Dec. 8 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.9 | 375 | 2.0 | 1,150 | 0.6 | 295 | 9.0 | 9,600 |
| 1.0 | 435 | 3.0 | 1,980 | 1.0 | 500 | 16.0 | 23,000 |
| 1.2 | 575 | 4.0 | 2,980 | 1.5 | 790 | 20.0 | 34,700 |
| 1.5 | 785 | | | 2.0 | 1,180 | 23.0 | 49,000 |
| | | | | 5.0 | 4,080 | 26.4 | 77,000 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 645 | 411 | 575 | 21,800 | 1,680 | *6,380 | 4,740 | 3,700 | 7,440 | *900 | 604 | 430 |
| 2 | 1,310 | 423 | 561 | 17,600 | 1,630 | 5,680 | 4,220 | 3,260 | 4,730 | 825 | 660 | 415 |
| 3 | 1,590 | 423 | 561 | 6,130 | 2,920 | 5,090 | 4,100 | 2,900 | 3,460 | 764 | 738 | 395 |
| 4 | 2,380 | 435 | 701 | 3,890 | 3,410 | 4,670 | 3,970 | 2,580 | 2,780 | 713 | 648 | 385 |
| 5 | 1,890 | 435 | 764 | 3,050 | 2,870 | 4,150 | 3,660 | 2,310 | 2,340 | 683 | 572 | 370 |
| 6 | 1,310 | 442 | 1,060 | *2,560 | 3,440 | 4,700 | 5,850 | 2,100 | 2,060 | 654 | 533 | 360 |
| 7 | 932 | 456 | 2,320 | 2,180 | 12,400 | 7,890 | 17,400 | 1,940 | 1,860 | 660 | 604 | 355 |
| 8 | 729 | 470 | 4,460 | 1,940 | 19,000 | 11,100 | 23,500 | 1,800 | 1,730 | 677 | 621 | 350 |
| 9 | 624 | 484 | 3,170 | 1,760 | 17,900 | 10,300 | 25,200 | 1,680 | 1,640 | 738 | 638 | 345 |
| 10 | 554 | 491 | 2,110 | 1,630 | 11,100 | 7,710 | 18,600 | 1,560 | 1,620 | 713 | 643 | 345 |
| 11 | 505 | 498 | 1,670 | 1,510 | 6,790 | 5,850 | 9,310 | 1,460 | 1,810 | 648 | 695 | 345 |
| 12 | 456 | 498 | 1,580 | 1,420 | 5,450 | 4,790 | 8,240 | 1,480 | 2,800 | 632 | 751 | 340 |
| 13 | 435 | 491 | 1,500 | 1,370 | 4,720 | 4,080 | 8,580 | 2,170 | 2,000 | 610 | 818 | *330 |
| 14 | 449 | 477 | 1,340 | 1,360 | 4,040 | 3,620 | 8,540 | 2,660 | *2,850 | 594 | 677 | 325 |
| 15 | 470 | 484 | 1,230 | 1,550 | 3,580 | 3,290 | 7,870 | 2,210 | 2,600 | 599 | 610 | 325 |
| 16 | 519 | 505 | 1,340 | 1,350 | 3,280 | 3,170 | 7,080 | 2,120 | 2,070 | 610 | 555 | 320 |
| 17 | 505 | 505 | 1,400 | 1,330 | 3,080 | 3,500 | 6,080 | 2,390 | 1,550 | 604 | 751 | 320 |
| 18 | 498 | 505 | 1,290 | 1,280 | 2,940 | 5,380 | 5,160 | 2,200 | 1,500 | 604 | *1,400 | 315 |
| 19 | 449 | 505 | 1,150 | 1,350 | 2,810 | 9,650 | 4,400 | 1,830 | 1,250 | 604 | 1,040 | 315 |
| 20 | 435 | 498 | 1,180 | 1,340 | 2,700 | 12,500 | 3,840 | 1,650 | 1,030 | 577 | 654 | 310 |
| 21 | *429 | 547 | *1,760 | 1,350 | 3,600 | 26,800 | *3,700 | 1,880 | 1,160 | 917 | 695 | 300 |
| 22 | 411 | 617 | 1,650 | 1,760 | 16,300 | 54,200 | 3,810 | 9,000 | 1,060 | 1,880 | 665 | 300 |
| 23 | 405 | 589 | 1,400 | 5,630 | 28,500 | *74,500 | 7,810 | 16,800 | 948 | 940 | 660 | 305 |
| 24 | 405 | 589 | 1,180 | 8,110 | *32,200 | 62,000 | 16,200 | 9,170 | 924 | 964 | 648 | 360 |
| 25 | 399 | 701 | 1,050 | 5,900 | 32,500 | 55,300 | 18,300 | 6,050 | 1,320 | 1,400 | 566 | 385 |
| 26 | 393 | 666 | 964 | 4,360 | 24,100 | 50,500 | 14,300 | *4,890 | 1,420 | 1,040 | 522 | 370 |
| 27 | 393 | 645 | 876 | 3,420 | 9,850 | 36,700 | 9,380 | 4,200 | 1,080 | 804 | 494 | 370 |
| 28 | 399 | 617 | 860 | 2,800 | 7,410 | 12,100 | 6,810 | 3,540 | 956 | 725 | 467 | 390 |
| 29 | 411 | 596 | 1,830 | 2,370 | - | 8,480 | 5,330 | 4,490 | 868 | *744 | 435 | 400 |
| 30 | 405 | *582 | *11,400 | 2,060 | ------- | 6,660 | 4,360 | 7,120 | 868 | 719 | 440 | 566 |
| 31 | 399 | ------ | *18,600 | 1,850 | ------- | 5,510 | ------- | 9,850 | ------- | 648 | *445 | ------- |
| Total | 21,134 | 15,585 | 71,532 | 116,010 | 270,200 | 516,250 | 270,340 | 120,990 | 58,704 | 24,190 | 20,249 | 10,721 |
| Mean | 682 | 520 | 2,307 | 3,742 | 9,650 | 16,650 | 9,011 | 3,903 | 1,957 | 780 | 653 | 357 |
| Cfsm | 0.267 | 0.203 | 0.902 | 1.46 | 3.77 | 6.51 | 3.52 | 1.53 | 0.765 | 0.305 | 0.255 | 0.140 |
| In. | 0.31 | 0.23 | 1.04 | 1.69 | 3.93 | 7.51 | 3.93 | 1.76 | 0.85 | 0.35 | 0.29 | 0.16 |

Calendar year 1954: Max 40,000 Min 265 Mean 3,060 Cfsm 1.20 In. 16.25
Water year 1954-55: Max 74,500 Min 300 Mean 4,153 Cfsm 1.62 In. 22.05

* Discharge measurement made on this day.

## Buffalo River near Flat Woods, Tenn.

Location.--Lat 35°29'45", long 87°49'58", on right bank 0.5 mile downstream from Little Opossum Creek and bridge on State Highway 13, 1.3 miles north of Flat Woods, Perry County, 3.9 miles upstream from Sinking Creek, and at mile 58.7.

Drainage area.--447 sq mi.

Records available.--May 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 513.58 ft above mean sea level, datum of 1929. Prior to May 27, 1934, staff gage at same site and datum.

Average discharge.--35 years, 726 cfs.

Extremes.--Maximum discharge during year, 66,300 cfs Mar. 22 (gage height, 30.45 ft); minimum, 111 cfs Sept. 19-24 (gage height, 1.80 ft).

1920-55: Maximum discharge, 90,000 cfs Feb. 13, 1948 (gage height, 32.0 ft, from high-water mark in gage house), from rating curve extended above 50,000 cfs on basis of slope-area and contracted-opening determinations of peak flow and rainfall-runoff study; minimum observed, 65 cfs Sept. 9, 1925; minimum gage height observed, 1.12 ft Sept. 26, 1931.

Remarks.--Records good.

Revisions (water years).--WSP 758: 1933. WSP 803: 1935. WSP 823: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Mar. 21, May 30 to July 7 | | | | Mar. 22 to May 29, July 8 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 1.9 | 125 | 5.0 | 1,410 | 1.8 | 111 | 11.0 | 5,650 |
| 2.3 | 242 | 7.0 | 2,650 | 2.0 | 170 | 17.0 | 12,300 |
| 3.0 | 510 | | | 3.0 | 525 | 23.0 | 22,300 |
| Note.--Same as following table above 7.0 ft. | | | | 4.0 | 945 | 27.0 | 36,000 |
| | | | | 7.0 | 2,650 | 28.0 | 42,000 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 277 | 180 | 210 | 478 | 256 | 746 | 613 | 501 | 722 | 189 | 179 | 143 |
| 2 | 277 | 180 | 204 | 390 | 360 | 674 | 589 | 457 | 602 | 183 | 173 | 137 |
| 3 | 239 | 177 | 201 | 333 | 498 | 598 | 665 | 425 | 518 | 180 | 170 | 134 |
| 4 | 207 | 183 | 192 | 299 | 426 | 546 | 677 | 398 | 454 | 183 | 164 | 134 |
| 5 | 174 | 195 | 213 | *274 | 390 | 510 | 573 | 380 | 406 | 180 | 161 | 131 |
| 6 | 159 | 207 | 422 | 270 | 1,020 | 658 | 3,440 | 356 | 379 | 183 | 173 | 131 |
| 7 | 159 | 192 | 382 | 256 | 3,730 | 1,950 | 8,900 | 338 | 390 | 239 | 176 | 131 |
| 8 | 162 | 183 | 288 | 242 | 2,360 | 1,630 | 3,200 | 324 | 426 | 505 | 206 | 128 |
| 9 | 156 | 180 | 252 | 232 | 1,290 | 1,160 | 1,820 | 310 | 367 | 352 | 324 | 128 |
| 10 | 150 | 180 | 260 | 236 | 930 | 925 | 1,340 | 300 | 360 | 272 | 290 | 126 |
| 11 | 150 | 180 | 242 | 236 | 782 | 790 | 1,450 | 293 | 375 | 234 | 240 | 120 |
| 12 | 148 | 180 | 223 | 229 | 690 | 694 | 1,850 | 338 | 348 | 218 | 251 | 117 |
| 13 | 150 | 177 | 220 | 213 | 590 | 610 | 2,630 | 429 | *329 | 215 | 230 | 123 |
| 14 | 156 | 177 | 236 | 210 | 520 | 546 | 2,820 | 409 | 299 | 212 | 200 | 128 |
| 15 | 171 | 177 | 223 | 213 | *470 | 502 | 1,970 | 346 | 281 | 224 | 179 | 123 |
| 16 | 174 | 180 | 213 | 239 | 434 | *486 | 1,460 | 360 | 266 | 254 | 179 | 120 |
| 17 | 165 | 201 | *204 | 236 | 434 | 502 | 1,150 | 384 | 249 | 251 | *221 | 117 |
| 18 | 153 | 204 | 207 | 220 | 414 | 682 | 955 | 335 | 239 | 230 | 286 | 114 |
| 19 | 150 | 198 | 210 | 242 | 382 | 1,090 | 824 | 300 | 229 | 212 | 237 | 111 |
| 20 | *150 | 192 | 204 | 270 | 360 | 1,950 | *725 | 286 | 226 | 200 | 200 | 111 |
| 21 | *150 | 183 | 198 | 277 | 995 | 9,380 | 749 | 377 | 223 | 206 | 179 | *111 |
| 22 | 150 | 180 | 195 | 406 | 8,890 | *39,700 | 819 | 3,440 | 236 | 203 | 182 | 111 |
| 23 | 150 | 180 | 192 | 538 | 7,980 | *10,000 | 721 | 4,890 | 226 | 194 | 194 | 111 |
| 24 | 150 | 180 | 189 | 478 | 2,810 | 2,870 | 842 | 1,950 | 284 | 194 | 182 | 126 |
| 25 | 153 | 180 | 186 | 422 | 1,610 | 1,950 | 1,060 | *1,270 | 263 | 206 | 167 | 155 |
| 26 | 153 | 180 | 183 | 375 | 1,160 | 1,540 | 900 | 960 | 266 | 197 | 161 | 170 |
| 27 | 159 | 180 | 183 | 341 | 943 | 1,190 | 765 | 810 | 246 | 188 | 152 | 161 |
| 28 | 168 | 198 | 252 | 318 | 835 | 960 | 681 | 681 | 226 | 265 | 146 | 164 |
| 29 | 180 | 213 | 1,050 | 284 | - | 837 | 609 | 1,120 | 210 | *272 | 143 | 176 |
| 30 | 174 | *220 | *1,160 | 274 | ------ | 741 | 549 | 1,450 | 198 | 227 | 143 | 209 |
| 31 | 180 | ---- | 662 | 256 | ------ | 673 | ------ | 934 | ------ | 194 | 143 | ---- |
| Total | 5,294 | 5,617 | 9,256 | 9,287 | 41,559 | 87,090 | 45,346 | 25,151 | 9,843 | 7,062 | 6,031 | 4,001 |
| Mean | 171 | 187 | 299 | 300 | 1,484 | 2,809 | 1,512 | 811 | 328 | 228 | 195 | 133 |
| Cfsm | 0.383 | 0.418 | 0.669 | 0.671 | 3.32 | 6.28 | 3.38 | 1.81 | 0.734 | 0.510 | 0.436 | 0.298 |
| In. | 0.44 | 0.47 | 0.77 | 0.77 | 3.46 | 7.25 | 3.77 | 2.09 | 0.82 | 0.59 | 0.50 | 0.33 |

Calendar year 1954: Max 12,300 Min 112 Mean 542 Cfsm 1.21 In. 16.45
Water year 1954-55: Max 39,700 Min 111 Mean 700 Cfsm 1.57 In. 21.26

Peak discharge (base, 4,500 cfs).--Feb. 22 (7:30 p.m.) 12,000 cfs (16.79 ft); Mar. 22 (6:30 a.m.) 66,300 cfs (30.45 ft); Apr. 7 (11:30 a.m.) 10,300 cfs (15.42 ft); May 23 (1 a.m.) 6,530 cfs (11.98 ft).

* Discharge measurement made on this day.

## Buffalo River near Lobelville, Tenn.

Location.--Lat 35°48'46", long 87°47'51", on right bank 30 ft upstream from Standing Rock Bridge, 1.4 miles downstream from State Highway 13, 3 miles north of Lobelville, Perry County, 13 miles downstream from Cane Creek, and at mile 17.7.

Drainage area.--707 sq mi.

Records available.--November 1927 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 403.15 ft above mean sea level, datum of 1929. Prior to June 1, 1934, staff gage 40 ft downstream on left bank at same datum.

Average discharge.--27 years (1928-55), 1,164 cfs.

Extremes.--Maximum discharge during year, 58,000 cfs Mar. 23 (gage height, 20.43 ft); minimum, 180 cfs Sept. 20-23 (gage height, 1.07 ft).
1927-55: Maximum discharge, 100,000 cfs Feb. 14, 1948 (gage height, 23.76 ft, from high-water mark in gage house), from rating curve extended above 40,000 cfs on basis of slope-area determination of peak flow; minimum, 135 cfs Aug. 18, 1953, caused by regulation upstream at unknown location; minimum discharge unaffected by regulation, 142 cfs Oct. 1-8, 1931 (gage height, 0.35 ft).

Remarks.--Records good.

Revisions (water years).--WSP 803: 1935. WSP 853: 1928-37.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 30 to Jan. 2)

| | | | |
|---|---|---|---|
| 1.0 | 165 | 12.0 | 8,000 |
| 1.5 | 277 | 13.0 | 9,950 |
| 2.0 | 405 | 14.0 | 13,000 |
| 3.0 | 790 | 15.0 | 17,700 |
| 7.0 | 2,950 | 17.0 | 29,500 |
| 10.0 | 5,370 | 19.0 | 44,300 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 268 | 259 | 328 | 1,020 | 411 | *1,540 | 1,190 | 1,000 | 1,440 | 325 | 302 | 222 |
| 2 | 295 | 263 | 328 | 781 | 448 | 1,390 | 1,110 | 905 | 1,190 | 315 | 282 | 220 |
| 3 | 338 | 263 | 320 | 655 | 502 | 1,280 | 1,070 | 815 | 1,010 | 308 | 268 | 218 |
| 4 | 328 | 266 | 312 | 566 | 624 | 1,160 | 1,090 | 745 | 870 | 300 | 259 | 213 |
| 5 | 305 | 275 | 353 | 492 | 682 | 1,060 | 1,100 | 686 | 758 | 298 | 249 | 209 |
| 6 | 279 | 277 | 394 | *451 | 1,140 | 1,290 | 2,390 | 628 | 678 | 295 | 247 | 205 |
| 7 | 263 | 282 | 442 | 430 | 2,320 | 1,790 | 5,240 | 590 | 628 | 315 | 249 | 202 |
| 8 | 254 | 286 | 534 | 405 | 3,640 | 2,540 | 9,150 | 550 | 598 | 364 | 261 | 200 |
| 9 | 247 | 277 | 498 | 388 | 2,960 | 2,310 | 4,450 | 516 | 606 | 485 | 291 | 198 |
| 10 | 245 | 275 | 442 | 374 | 2,020 | 1,880 | 2,630 | 492 | 628 | 512 | 335 | 198 |
| 11 | 238 | 270 | 408 | 369 | 1,610 | 1,600 | 2,370 | 469 | 624 | 425 | 374 | 196 |
| 12 | 231 | 268 | 397 | 366 | 1,340 | 1,400 | 2,510 | 479 | 602 | 377 | 372 | 194 |
| 13 | 231 | 266 | 388 | 358 | 1,180 | 1,240 | 3,000 | 534 | 566 | 342 | 364 | 191 |
| 14 | 236 | 268 | 380 | 348 | 1,040 | 1,110 | 3,610 | 586 | *526 | 328 | 342 | 189 |
| 15 | 252 | 272 | 374 | 340 | 930 | 1,030 | 3,530 | 598 | 492 | 328 | 318 | *189 |
| 16 | 254 | 288 | 361 | 345 | 850 | 1,060 | 2,700 | 546 | 460 | 340 | 291 | 189 |
| 17 | 254 | 295 | 348 | 353 | 790 | 1,070 | 2,170 | 512 | 433 | 345 | 277 | 187 |
| 18 | 252 | 300 | 335 | 364 | 750 | 1,580 | 1,830 | 526 | 411 | 355 | *279 | 187 |
| 19 | 242 | 302 | 328 | 366 | 704 | 2,140 | 1,580 | 516 | 394 | 342 | 305 | 185 |
| 20 | 236 | 302 | 328 | 372 | 660 | 2,630 | 1,400 | 473 | 377 | 325 | 332 | 183 |
| 21 | *231 | 300 | *320 | 402 | 1,170 | 7,380 | *1,440 | 512 | 346 | 315 | 302 | 180 |
| 22 | 231 | 298 | 312 | 492 | 5,430 | 29,200 | 1,500 | 1,440 | 369 | 310 | 277 | 180 |
| 23 | 231 | 295 | 305 | 590 | 8,520 | *42,600 | 1,540 | 3,620 | 388 | 315 | 268 | 180 |
| 24 | 231 | 293 | 302 | 736 | *10,700 | 13,200 | 1,590 | 5,040 | 391 | 325 | 268 | 198 |
| 25 | 231 | 291 | 300 | 727 | 4,300 | 4,190 | 1,740 | 2,610 | 411 | 312 | 263 | 205 |
| 26 | 231 | 291 | 298 | 655 | 2,520 | 2,880 | 1,770 | *1,860 | 394 | 305 | 252 | 209 |
| 27 | 233 | 298 | 293 | 590 | 2,000 | 2,320 | 1,570 | 1,520 | 383 | 300 | 242 | 227 |
| 28 | 238 | 302 | 328 | 534 | 1,680 | 1,930 | 1,390 | 1,360 | 364 | 291 | 236 | 245 |
| 29 | 245 | 305 | 673 | 492 | - | 1,640 | 1,240 | 1,460 | 345 | *305 | 229 | 242 |
| 30 | 252 | *320 | *1,070 | 457 | ------- | 1,460 | 1,110 | 1,540 | 335 | 340 | 224 | 328 |
| 31 | 254 | ---- | 1,320 | 430 | ------ | 1,310 | ------- | 1,800 | ------- | 332 | 222 | ------- |
| Total | 7,856 | 8,547 | 13,119 | 15,248 | 60,921 | 139,210 | 69,010 | 34,928 | 17,035 | 10,474 | 8,780 | 6,169 |
| Mean | 253 | 285 | 423 | 492 | 2,176 | 4,491 | 2,300 | 1,127 | 568 | 338 | 283 | 206 |
| Cfsm | 0.358 | 0.403 | 0.598 | 0.696 | 3.08 | 6.35 | 3.25 | 1.59 | 0.803 | 0.478 | 0.400 | 0.291 |
| In. | 0.41 | 0.45 | 0.69 | 0.80 | 3.20 | 7.32 | 3.63 | 1.84 | 0.90 | 0.55 | 0.46 | 0.32 |

Calendar year 1954: Max 13,800 Min 176 Mean 870 Cfsm 1.23 In. 16.70
Water year 1954-55: Max 42,600 Min 180 Mean 1,072 Cfsm 1.52 In. 20.57

Peak discharge (base, 5,200 cfs).--Feb. 24 (6:30 a.m.) 12,000 cfs (13.74 ft); Mar. 23 (2 a.m.) 58,000 cfs (20.43 ft); Apr. 8 (1:30 p.m.) 10,000 cfs (13.02 ft); May 24 (6 a.m.) 5,790 cfs (10.38 ft).
* Discharge measurement made on this day.
Note.--Gage heights June 30 to July 10 computed from bihourly radio-gage readings furnished by Tennessee Valley Authority.

## Big Sandy River at Bruceton, Tenn.

Location.--Lat 36°02'19", long 88°13'42", on downstream end of right abutment of county bridge, 700 ft downstream from bridge on U. S. Highway 70, 0.6 mile upstream from Cherry Creek, and 0.9 mile east of Bruceton, Carroll County.

Drainage area.--205 sq mi.

Records available.--July 1929 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 380.76 ft above mean sea level, datum of 1929. Prior to Mar. 1, 1940, chain gage at same site and datum.

Average discharge.--26 years, 295 cfs.

Extremes.--Maximum discharge during year, 5,480 cfs Mar. 22 (gage height, 13.11 ft); minimum, 39 cfs Sept. 20-23 (gage height, 2.19 ft).
1929-55: Maximum discharge, 17,000 cfs Jan. 21, 1935 (gage height, 16.16 ft, from graph based on gage readings), from rating curve extended above 9,000 cfs; minimum, 28 cfs Aug. 17-19, 22, Sept. 1, 1943.

Remarks.--Records fair.

Revisions (water years).--WSP 853: Drainage area. WSP 923: 1929-35.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 27 to Apr. 5, Apr. 10, 17-20)

| Oct. 1 to Feb. 21 | | | | Feb. 22 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 2.2 | 35 | 5.0 | 359 | 2.1 | 33 | 11.0 | 1,670 |
| 2.6 | 65 | 8.0 | 795 | 2.5 | 62 | 11.5 | 1,970 |
| 3.0 | 107 | 10.0 | 1,230 | 3.0 | 114 | 12.0 | 2,700 |
| | | | | 4.0 | 259 | 13.0 | 5,150 |
| | | | | 8.0 | 946 | 13.1 | 5,450 |
| | | | | 10.0 | 1,360 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 49 | 58 | 69 | 127 | 104 | 355 | 142 | 106 | 342 | 52 | 56 | 46 |
| 2 | 72 | 55 | 69 | 116 | 165 | 318 | 192 | a92 | 134 | 51 | 85 | 44 |
| 3 | 55 | 55 | 69 | 103 | 122 | 207 | 219 | a84 | 104 | 50 | 52 | 43 |
| 4 | 45 | 59 | 70 | 98 | 102 | 176 | *158 | a79 | 92 | 30 | 47 | 43 |
| 5 | 43 | 68 | 234 | 96 | 375 | 161 | 134 | a76 | 85 | *100 | a46 | 42 |
| 6 | 43 | 63 | 265 | 98 | *990 | 759 | 1,390 | *75 | *161 | 98 | a50 | 41 |
| 7 | 42 | 60 | 118 | 92 | 781 | *1,010 | 1,220 | 74 | 278 | 91 | a50 | 41 |
| 8 | 41 | 59 | 94 | 87 | 501 | 1,040 | 1,300 | 77 | 93 | 124 | a50 | 41 |
| 9 | 41 | 59 | 118 | 92 | 221 | 543 | 653 | 74 | 78 | 68 | a50 | 40 |
| 10 | 42 | 58 | 102 | *105 | 159 | 236 | 269 | 69 | 254 | 59 | a49 | 40 |
| 11 | 41 | 57 | 85 | 137 | 178 | 190 | 822 | 66 | 267 | 54 | a48 | 40 |
| 12 | *42 | 58 | 114 | 109 | 137 | 168 | 829 | 268 | 183 | 52 | *51 | 42 |
| 13 | 42 | 59 | *190 | 96 | 115 | 152 | 1,320 | 267 | 130 | 50 | 48 | 40 |
| 14 | 61 | 59 | 127 | 89 | 128 | 192 | 1,150 | 127 | 103 | 53 | 46 | *40 |
| 15 | 133 | *60 | 99 | 110 | 134 | 218 | 1,000 | 104 | 90 | 60 | 46 | 40 |
| 16 | 61 | 92 | 87 | 119 | 158 | 440 | 442 | *101 | 80 | 81 | 48 | 40 |
| 17 | 48 | 96 | 85 | 100 | 196 | 521 | 240 | 138 | 72 | 78 | 48 | 40 |
| 18 | 46 | 72 | 81 | 93 | 141 | 1,380 | *183 | 86 | 67 | 60 | 49 | a40 |
| 19 | 44 | 70 | 80 | 112 | 127 | 1,530 | 148 | 74 | 64 | 63 | 48 | a40 |
| 20 | 45 | 68 | 76 | 114 | 164 | 1,620 | 126 | 70 | 61 | 93 | 45 | a39 |
| 21 | 46 | 65 | 76 | 140 | 1,080 | 3,160 | 945 | 205 | 85 | 81 | 44 | a39 |
| 22 | 46 | 63 | 76 | 221 | 1,730 | 5,300 | 842 | 448 | 66 | 69 | 43 | a39 |
| 23 | 46 | 63 | 77 | 134 | 1,570 | 3,500 | 777 | 228 | 61 | 138 | 43 | a39 |
| 24 | 46 | 65 | 75 | 109 | 1,240 | 1,890 | 933 | 124 | 68 | 94 | 42 | a48 |
| 25 | 46 | 65 | 72 | 103 | 432 | 924 | 586 | 115 | 66 | 85 | 41 | a46 |
| 26 | 47 | 63 | 73 | 96 | 238 | 481 | 303 | 93 | 61 | 56 | 41 | 43 |
| 27 | 48 | 73 | 76 | 95 | 352 | 277 | 204 | 226 | 59 | 52 | 41 | 42 |
| 28 | 51 | 85 | 458 | 90 | 314 | 230 | 170 | 662 | 56 | 50 | 41 | 77 |
| 29 | 58 | 75 | 598 | 85 | ------ | 200 | 147 | 1,030 | 55 | 65 | 41 | 74 |
| 30 | 55 | 69 | 393 | 84 | ------ | 169 | 124 | 1,050 | 53 | 57 | 93 | 543 |
| 31 | 54 | ------ | 170 | 83 | ------ | 152 | ------ | 1,200 | ------ | 50 | 70 | ------ |
| Total | 1,579 | 1,971 | 4,377 | 3,333 | 11,954 | 27,499 | 16,968 | 7,488 | 3,368 | 2,164 | 1,552 | 1,812 |
| Mean | 50.9 | 65.7 | 141 | 108 | 427 | 887 | 566 | 242 | 112 | 69.8 | 50.1 | 60.4 |
| Cfsm | 0.248 | 0.320 | 0.688 | 0.527 | 2.08 | 4.33 | 2.76 | 1.18 | 0.546 | 0.340 | 0.244 | 0.295 |
| In. | 0.29 | 0.36 | 0.79 | 0.60 | 2.17 | 4.99 | 3.08 | 1.36 | 0.61 | 0.39 | 0.28 | 0.33 |

Calendar year 1954: Max 2,940 Min 38 Mean 167 Cfsm 0.815 In. 11.07
Water year 1954-55: Max 5,300 Min 39 Mean 230 Cfsm 1.12 In. 15.25

Peak discharge (base, 2,000 cfs).--Mar. 22 (11 a.m.) 5,480 cfs (13.11 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records; recorded range in stage, normal recession, and record for South Fork Obion River near Greenfield.

## Tennessee River near Paducah, Ky.

Location.--Lat 37°01'11", long 88°16'50", on left bank at Gilbertsville, Marshall County, 3,500 ft downstream from Kentucky Dam, 2.3 miles upstream from Shadie Creek, 16 miles east of Paducah, McCracken County, and at mile 21.7.

Drainage area.--40,200 sq mi, approximately (at Gilbertsville).

Records available.--October 1875 to September 1955. Prior to September 1889 (gage heights only) and October 1889 to September 1931, published as "at Johnsonville, Tenn." July 1930 to September 1931, published as "at Aurora Landing, Ky." October 1931 to August 1944, published as "near Johnsonville, Tenn." October 1931 to September 1935, published as "at Shannon dam site near Murray, Ky." October 1935 to December 1942, published as "near Buchanan, Tenn."

Gage.--Water-stage recorder at present site since Feb. 8, 1939. Datum of gage is 286.35 ft above mean sea level, datum of 1929. Feb. 8, 1939, to Sept. 30, 1942, water-stage recorder 16.3 miles downstream at same datum (prior to July 30, 1940, at datum 3.65 ft higher); Oct. 1, 1942, to Jan. 1, 1946, water-stage recorder 500 ft upstream from present site at same datum. Auxiliary water-stage recorder 16.3 miles downstream at same datum. Feb. 15, 1939, to Sept. 30, 1942, water-stage recorder 500 ft upstream from present base gage at same datum (prior to July 30, 1940, at datum 3.65 ft higher). Prior to Oct. 21, 1926, U. S. Weather Bureau staff gages at various sites and datums in the vicinity of old Nashville, Chattanooga, & St. Louis Railway bridge near Johnsonville. Oct. 21, 1926, to Oct. 7, 1931, water-stage recorder at site 3.9 miles downstream from present U. S. Highway 70 bridge, at datum 320.72 ft above mean sea level, datum of 1929. Oct. 1, 1931, to Aug. 20, 1944, water-stage recorder at U. S. Highway 70 bridge at datum 1.21 ft lower. July 15, 1930, to Dec. 12, 1942, staff and wire-weight gages and water-stage recorders used as base and auxiliary gages at five different locations, ranging from Paducah to river mile 66.2, all at different datums.

Average discharge.--66 years (1889-1955), 63,730 cfs.

Extremes.--Maximum discharge during year, 302,000 cfs Mar. 22; maximum gage height, 50.04 ft Mar. 29; minimum daily discharge, 7,200 cfs Oct. 24; minimum gage height, 12.23 ft Dec. 22.

1889-1955: Maximum discharge, 500,000 cfs Feb. 17, 1948; maximum gage height, 62.43 ft (at Gilbertsville, present datum) Feb. 2, 1937; minimum daily discharge, 500 cfs Sept. 7, 1944.

Remarks.--Records good. Backwater from Ohio River and dam 52. Discharge for days of extremely low fall (below 0.40 ft) computed on basis of records for Kentucky Dam. Flow regulated by many reservoirs above station (see p. 242).

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 25,900 | 23,600 | 34,100 | 125,000 | 47,500 | 115,000 | 199,000 | 55,800 | *62,900 | 45,500 | 48,200 | 36,900 |
| 2 | 20,200 | 32,000 | 35,800 | 124,000 | 48,400 | 99,900 | 160,000 | 56,600 | 63,500 | 39,200 | 48,900 | 35,600 |
| 3 | 20,500 | 29,900 | 34,800 | 127,000 | 54,500 | 97,100 | 128,000 | 55,800 | 58,100 | 30,900 | 40,500 | 32,400 |
| 4 | *20,400 | 28,700 | 25,500 | 126,000 | 55,000 | 96,900 | 91,100 | 46,700 | 51,000 | 32,000 | 40,900 | 25,200 |
| 5 | 20,100 | 30,900 | 25,300 | 114,000 | 56,400 | 94,100 | 75,400 | 43,800 | 53,000 | 37,100 | 37,400 | 27,300 |
| 6 | 20,700 | 31,100 | 34,400 | 88,200 | 67,100 | 89,800 | 98,700 | 42,200 | 52,100 | 37,000 | 32,200 | 32,400 |
| 7 | 20,100 | 26,800 | 45,900 | 65,600 | 102,000 | 78,200 | 122,000 | 38,000 | 53,300 | 41,000 | 30,600 | 34,500 |
| 8 | 20,200 | 28,000 | 48,800 | 55,300 | 131,000 | 73,800 | 131,000 | 35,100 | 53,900 | 45,500 | 39,600 | 34,200 |
| 9 | 19,900 | *26,000 | 46,100 | 56,000 | 130,000 | 74,500 | 118,000 | 39,800 | 53,000 | 43,500 | 39,500 | 33,400 |
| 10 | 16,700 | 24,800 | 47,500 | 54,900 | 131,000 | 75,200 | 93,600 | 39,500 | 53,400 | 46,700 | 45,900 | 33,700 |
| 11 | 20,300 | 25,700 | 29,300 | 54,800 | 129,000 | 74,000 | 105,000 | 41,500 | 54,400 | 47,000 | 46,400 | 30,400 |
| 12 | 20,400 | 25,700 | 28,500 | 56,900 | 121,000 | 62,500 | 131,000 | 43,300 | 53,000 | 47,400 | *45,500 | 32,400 |
| 13 | 20,600 | 25,600 | 37,700 | 58,500 | 119,000 | 50,900 | 154,000 | 45,200 | 53,300 | *46,600 | 44,400 | 31,100 |
| 14 | 19,800 | 23,400 | *31,900 | 55,800 | 101,000 | 51,000 | 151,000 | 43,500 | 54,300 | 45,800 | 37,500 | 30,600 |
| 15 | 19,200 | 25,700 | 32,600 | 55,600 | *73,100 | 50,600 | 123,000 | 43,900 | 53,900 | 47,000 | 35,800 | *31,100 |
| 16 | 24,400 | 27,100 | 33,000 | 55,300 | 69,100 | 53,500 | 90,600 | 41,800 | 54,000 | 47,900 | 38,500 | 30,500 |
| 17 | 21,400 | 25,400 | 32,100 | 55,200 | 68,400 | 66,500 | 82,900 | 49,500 | 53,300 | 47,200 | 38,400 | 25,700 |
| 18 | 21,900 | 24,800 | 25,900 | *55,500 | 68,700 | 85,800 | 68,300 | 50,100 | 42,900 | 47,100 | 40,800 | 25,500 |
| 19 | 19,100 | 26,600 | 27,700 | 51,000 | 67,700 | 102,000 | 57,500 | 51,300 | 42,900 | 47,200 | 40,100 | 26,900 |
| 20 | 20,200 | 26,400 | 37,300 | 55,700 | 67,200 | 111,000 | 57,200 | 50,200 | 37,600 | 46,100 | 36,700 | 26,200 |
| 21 | 17,800 | 24,600 | 38,900 | 55,400 | 77,500 | 153,000 | 56,800 | 46,200 | 39,900 | 36,300 | 31,000 | 23,200 |
| 22 | 18,900 | 25,800 | 35,500 | 57,000 | 124,000 | 284,000 | 57,400 | 51,800 | 38,700 | 37,900 | 36,100 | 23,700 |
| 23 | 18,900 | 27,400 | 36,000 | 57,400 | 176,000 | 265,000 | 57,100 | 58,000 | 39,400 | 39,500 | 36,000 | 23,500 |
| 24 | 7,200 | 29,500 | 28,900 | 56,000 | 196,000 | *253,000 | 71,500 | 63,700 | 40,300 | 41,500 | 35,600 | 22,000 |
| 25 | 15,300 | 26,800 | 25,500 | 55,300 | 184,000 | 250,000 | 69,200 | 63,300 | 35,600 | 41,300 | 38,200 | 21,800 |
| 26 | 14,900 | 27,300 | 25,800 | 56,100 | 176,000 | 254,000 | *55,800 | 63,500 | 34,400 | 43,500 | 39,800 | 21,200 |
| 27 | 21,800 | 27,500 | 29,100 | 56,700 | 170,000 | 251,000 | 55,600 | 63,200 | 36,800 | 46,200 | 37,700 | 20,800 |
| 28 | 21,200 | 22,600 | 32,700 | 55,900 | 141,000 | 253,000 | 56,000 | 63,700 | 41,900 | 47,900 | 31,700 | 20,400 |
| 29 | 25,800 | 25,600 | 68,100 | 55,800 | - | 250,000 | 56,700 | 64,400 | 42,200 | 47,900 | 37,200 | 21,000 |
| 30 | 24,900 | 33,100 | 97,700 | 40,300 | ------ | 246,000 | 57,200 | 63,300 | 41,300 | 47,600 | 37,400 | 25,400 |
| 31 | 28,000 | ------ | 123,000 | 44,800 | ------ | 235,000 | ------ | 63,100 | ------ | 48,500 | 35,700 | ------ |
| Total | 620,700 | 808,400 | ‡1,235.4 | ‡2,081 | ‡2,951.6 | ‡4,296.3 | ‡2,830.6 | ‡1,577.8 | ‡1,444.3 | ‡1,345.8 | ‡1,204.2 | 839,000 |
| Mean | 20,020 | 26,950 | 39,850 | 67,130 | 105,400 | 138,600 | 94,350 | 50,900 | 48,140 | 43,410 | 38,850 | 27,970 |
| Cfsm | - | - | - | - | - | - | - | - | - | - | - | - |
| In. | - | - | - | - | - | - | - | - | - | - | - | - |

Calendar year 1954: Max 343,000 Min 7,200 Mean 48,780 Cfsm 1.21 In. 16.47
Water year 1954-55: Max 284,000 Min 7,200 Mean 58,180 Cfsm 1.45 In. 19.65

* Discharge measurement made on this day.
‡ Expressed in thousands.

Note.--Extremely low fall on Oct. 2-15, 19, 21-28, Mar. 7-19, Apr. 4, 5, Sept. 24-29; discharge computed on basis of records for Kentucky Dam.

## East Fork Clarks River at Murray, Ky.

Location.--Lat 36°35'34", long 88°18'00", on downstream side of left pier of Nashville, Chattanooga & St. Louis Railway bridge, 0.1 mile downstream from bridge on State Highway 121, 1 mile south of Murray, Calloway County, and 1½ miles upstream from Clayton Creek.

Drainage area.--89.7 sq mi.

Records available.--October 1951 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 459.88 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 4,000 cfs Mar. 21 (gage height, 10.92 ft); no flow for many days.
1951-55: Maximum discharge, 23,700 cfs Mar. 22, 1952 (gage height, 16.3 ft, from floodmark), from rating curve extended above 10,000 cfs by logarithmic plotting; no flow for many days each year.

Remarks.--Records good.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1 to Dec. 28 | | | | Dec. 29 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.9 | 0 | 1.4 | 7.1 | 0.9 | 0 | 1.6 | 16 | 6.0 | 722 |
| 1.0 | .2 | 1.6 | 15 | 1.0 | .4 | 1.9 | 32 | 8.0 | 1,360 |
| 1.1 | 1.0 | 2.0 | 38 | 1.1 | 1.4 | 2.2 | 55 | 9.0 | 1,780 |
| 1.2 | 2.3 | 2.5 | 84 | 1.2 | 2.9 | 2.5 | 82 | 10.0 | 2,540 |
| 1.3 | 4.3 | 2.9 | 129 | 1.3 | 5.1 | 3.0 | 136 | 11.0 | 4,140 |
| | | | | 1.4 | 8.0 | 4.0 | 282 | | |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 120 | 0 | 0.6 | 5.4 | 3.7 | 1,550 | 14 | 13 | 6.4 | 1.8 | 1.3 | 0 |
| 2 | 39 | 0 | .4 | 3.9 | 4.4 | 175 | 15 | 11 | *5.1 | 1.7 | 1.1 | 0 |
| 3 | 2.6 | 0 | .6 | 3.1 | 3.5 | 72 | 15 | 9.0 | 4.4 | 1.6 | 1.0 | 0 |
| 4 | .4 | 0 | .7 | 3.1 | 3.5 | 45 | 13 | 7.6 | 3.7 | 2.1 | 1.0 | 0 |
| 5 | 0 | 0 | 77 | 2.9 | 863 | 37 | 12 | 6.4 | 3.3 | 6.4 | 1.0 | 0 |
| 6 | 0 | 0 | 25 | 2.9 | 1,020 | 142 | 20 | 5.6 | 112 | 5.4 | 4.0 | 0 |
| 7 | *0 | 0 | 3.2 | 2.6 | 170 | 68 | 20 | 5.1 | 146 | 63 | 1.7 | 0 |
| 8 | 0 | 0 | *1.3 | 2.4 | 58 | 35 | 14 | 4.1 | 20 | 6.1 | .9 | 0 |
| 9 | 0 | 0 | 1.1 | 3.1 | 38 | 25 | 12 | 3.7 | 8.0 | 2.4 | .6 | 0 |
| 10 | 0 | 0 | .7 | 3.9 | 25 | *20 | 11 | *3.1 | 8.0 | 1.6 | .5 | 0 |
| 11 | 0 | 0 | .8 | 5.8 | 20 | 18 | 416 | 3.3 | 32 | 1.3 | .4 | 0 |
| 12 | 0 | 0 | 5.1 | 5.8 | 18 | 162 | 149 | 34 | 31 | 1.2 | .4 | 0 |
| 13 | 0 | 0 | 22 | 5.4 | 16 | 46 | 1,170 | 49 | 11 | 1.0 | .3 | 0 |
| 14 | 0 | 0 | 7.4 | 4.6 | 10 | 31 | 367 | 18 | 6.7 | .9 | .2 | 0 |
| 15 | 0 | 0 | 3.4 | 7.0 | 9.8 | 38 | 87 | 9.4 | 5.4 | *160 | *0 | 0 |
| 16 | 0 | .2 | 1.9 | 7.0 | 74 | 214 | 47 | 10 | 4.1 | 16 | 0 | 0 |
| 17 | 0 | *.2 | *1.6 | 5.6 | 76 | 104 | 31 | 8.0 | 3.7 | 4.1 | 0 | 0 |
| 18 | 0 | .2 | 1.1 | 4.6 | *30 | 1,590 | 22 | 7.3 | 2.9 | 2.2 | 0 | 0 |
| 19 | 0 | .2 | 1.9 | 4.1 | 20 | 297 | 17 | 5.1 | 2.8 | 2.9 | 0 | 0 |
| 20 | 0 | .2 | 1.2 | 3.7 | 402 | 1,220 | 15 | 3.9 | 2.2 | 3.5 | 0 | 0 |
| 21 | 0 | .2 | .6 | 4.6 | 2,030 | *3,440 | *769 | 56 | 2.1 | 2.2 | 0 | 0 |
| 22 | 0 | .3 | .8 | 5.6 | 808 | 963 | 850 | 95 | 2.2 | 1.7 | 0 | 0 |
| 23 | 0 | .5 | 1.2 | 5.4 | 111 | 114 | 1,810 | 24 | *2.1 | 1.7 | 0 | *0 |
| 24 | 0 | 1.3 | 1.1 | 4.6 | 63 | 64 | 1,610 | 18 | 3.1 | 20 | 0 | 0 |
| 25 | *0 | .7 | 1.3 | 3.7 | 40 | 45 | 116 | 14 | 163 | 101 | 0 | 0 |
| 26 | 0 | .6 | 1.3 | 3.5 | 33 | 32 | 57 | 7.0 | 12 | 3.3 | 0 | 0 |
| 27 | 0 | .8 | 1.9 | *3.3 | 481 | 25 | 36 | 13 | 4.8 | 2.0 | 0 | 0 |
| 28 | 0 | 1.2 | 96 | 3.1 | 126 | 22 | 26 | 101 | 2.9 | 2.1 | 0 | 0 |
| 29 | 0 | 1.3 | *66 | 3.3 | - | 20 | 20 | 61 | 2.2 | 5.6 | 0 | 0 |
| 30 | 0 | 1.1 | 20 | 3.5 | ------ | 18 | 16 | 16 | 2.0 | 2.1 | 0 | 39 |
| 31 | 0 | ... | 7.6 | 3.3 | ------ | 16 | ------- | 8.4 | ------- | 1.4 | *0 | ... |
| Total | 162.0 | 9.0 | 354.8 | 130.8 | 6,556.9 | 10,648 | 7,777 | 630.0 | 615.1 | 428.3 | 14.4 | 39 |
| Mean | 5.23 | 0.30 | 11.4 | 4.22 | 234 | 343 | 259 | 20.3 | 20.5 | 13.8 | 0.46 | 1.30 |
| Cfsm | 0.058 | 0.0033 | 0.127 | 0.047 | 2.61 | 3.82 | 2.89 | 0.226 | 0.229 | 0.154 | 0.0051 | 0.014 |
| In. | 0.07 | 0.004 | 0.15 | 0.05 | 2.72 | 4.41 | 3.22 | 0.26 | 0.26 | 0.18 | 0.006 | 0.02 |

Calendar year 1954: Max 1,480 Min 0 Mean 36.4 Cfsm 0.406 In. 5.52
Water year 1954-55: Max 3,440 Min 0 Mean 75.0 Cfsm 0.836 In. 11.35

Peak discharge (base, 3,000 cfs).--Mar. 21 (5 a.m.) 4,000 cfs (10.92 ft); Apr. 22 (12 p.m.) 3,980 cfs (10.91 ft); Apr. 24 (6 a.m.) 3,090 cfs (10.38 ft).
* Discharge measurement or observation of no flow made on this day.

## East Fork Clarks River near Benton, Ky.

Location.--Lat 36°52'24", long 88°20'48", on downstream side of right pier of bridge on U. S. Highway 68 and State Highway 95, 1 mile north of Benton, Marshall County, and 6.8 miles upstream from Middle Fork Creek.

Drainage area.--227 sq mi.

Records available.--May 1938 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 344.53 ft above mean sea level, datum of 1929 (Tennessee Valley Authority benchmark). Prior to Sept. 10, 1951, wire-weight gage at same site and datum.

Average discharge.--17 years, 276 cfs.

Extremes.--Maximum discharge during year, 7,300 cfs Mar. 22 (gage height, 13.90 ft); minimum, 3.4 cfs Sept. 21.
1938-55: Maximum discharge, 27,600 cfs Mar. 22, 1952 (gage height, 16.68 ft), from rating curve extended above 14,000 cfs; minimum observed, 1.8 cfs Aug. 9, 1948.
Maximum stage known, 17.8 ft in February 1937, from floodmarks.

Remarks.--Records good except those for periods of no gage-height record, which are poor.

Revisions (water years).--WSP 923: Drainage area. WSP 1143: 1938-47. WSP 1206: 1949(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 4 to Dec. 5)

| | | | |
|---|---|---|---|
| 2.2 | 3.0 | 5.0 | 190 |
| 2.4 | 7.5 | 10.0 | 755 |
| 2.6 | 14 | 11.5 | 1,140 |
| 3.0 | 32 | 12.0 | 1,480 |
| 3.5 | 56 | 12.5 | 2,500 |
| 4.0 | 93 | 13.8 | 6,900 |

Discharge, in cubic feet per second, water year October 1954 to September 1955

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 201 | a6 | 8.5 | 108 | 32 | 1,480 | 76 | 81 | 46 | 28 | 21 | 5.2 |
| 2 | 504 | a6 | 8.5 | 78 | 43 | 1,660 | 72 | 66 | *38 | 24 | 18 | 5.2 |
| 3 | 92 | a12 | 8.5 | 61 | 40 | 1,180 | 72 | 55 | 34 | 21 | 15 | 5.2 |
| 4 | 38 | 7.2 | 8.8 | 54 | 35 | 338 | 66 | 50 | 30 | 20 | 13 | 5.2 |
| 5 | 23 | 7.0 | 321 | 50 | 310 | 234 | 61 | 45 | 75 | 18 | 12 | 5.2 |
| 6 | 18 | 7.0 | *383 | 46 | 1,410 | 186 | 122 | 42 | 88 | 33 | 11 | 5.2 |
| 7 | *13 | 7.5 | 106 | 42 | 2,600 | 276 | 90 | 37 | 494 | 67 | 11 | 5.2 |
| 8 | 10 | 7.5 | 51 | 39 | 910 | 176 | 74 | 34 | 224 | 95 | 10 | 5.0 |
| 9 | 10 | 7.2 | 42 | 39 | 300 | 125 | 61 | 31 | 81 | 39 | 15 | 5.0 |
| 10 | 9.2 | 7.2 | 34 | 41 | 209 | *101 | 58 | *29 | 61 | 28 | 14 | 4.6 |
| 11 | 8.5 | 7.2 | 29 | 52 | 153 | 88 | 449 | 33 | 147 | 21 | 50 | 4.6 |
| 12 | a8 | 7.0 | 144 | 68 | 109 | 189 | 708 | 115 | 154 | 18 | *37 | 4.6 |
| 13 | a10 | 7.0 | 540 | 80 | 84 | 254 | 1,100 | 385 | 99 | 17 | 17 | 4.6 |
| 14 | a40 | 7.2 | 194 | 60 | 82 | 122 | 2,050 | 205 | 57 | *15 | 11 | 4.6 |
| 15 | a15 | 7.2 | 93 | 72 | 78 | 107 | 903 | 100 | 46 | 15 | 9.2 | 4.6 |
| 16 | a10 | 7.5 | *60 | 98 | 139 | 158 | 310 | 218 | 40 | 112 | 8.5 | 4.6 |
| 17 | a9 | *7.5 | 51 | 66 | 277 | 347 | 205 | 114 | 35 | 50 | 8.8 | 4.4 |
| 18 | a8 | 9.2 | 44 | 54 | *205 | 1,010 | 150 | 65 | 30 | 35 | 8.8 | 4.2 |
| 19 | a7 | 11 | 40 | 48 | 128 | 1,630 | 116 | 51 | 27 | 22 | 8.5 | 3.8 |
| 20 | a7 | 9.2 | 36 | 43 | 223 | 1,890 | 92 | 45 | 25 | 46 | 7.8 | 3.6 |
| 21 | a6 | 8.8 | 33 | 42 | 1,420 | 5,240 | *503 | 102 | 23 | 24 | 7.5 | 3.4 |
| 22 | a6 | 9.5 | 32 | 45 | 3,310 | *6,700 | 931 | 309 | 20 | 48 | 7.2 | *3.8 |
| 23 | a6 | 9.5 | 31 | 44 | 3,440 | 4,030 | 1,930 | 198 | *35 | 50 | 7.0 | 4.6 |
| 24 | a6 | 8.8 | 28 | 41 | 616 | 628 | 6,290 | 100 | 80 | 27 | 6.2 | 12 |
| 25 | a30 | 8.5 | 26 | 38 | 280 | 294 | 4,350 | 72 | 616 | 375 | 6.0 | 9.5 |
| 26 | *15 | 8.2 | 25 | 35 | 214 | 215 | 862 | 58 | 270 | 142 | 5.8 | 7.2 |
| 27 | 8.8 | 9.5 | 27 | *34 | 891 | 157 | 266 | 53 | 67 | 43 | 5.8 | 7.2 |
| 28 | 7.0 | 8.8 | 634 | 32 | 1,520 | 131 | 184 | 58 | 45 | 40 | 5.8 | 6.2 |
| 29 | a7 | 8.5 | *935 | 30 | - | 115 | 137 | 243 | 36 | 106 | 5.8 | 6.0 |
| 30 | a7 | 8.5 | 418 | 29 | ------ | 98 | 103 | 120 | 31 | 30 | 5.5 | 548 |
| 31 | a6 | --- --- | 170 | 28 | ------- | 84 | -------- | 59 | -------- | 25 | *5.5 | . . |
| Total | 1,145.5 | 243.2 | 4,561.3 | 1,597 | 19,058 | 29,243 | 22,391 | 3,153 | 3,054 | 1,634 | 374.7 | 702.5 |
| Mean | 37.0 | 8.11 | 147 | 51.5 | 681 | 943 | 746 | 102 | 102 | 52.7 | 12.1 | 23.4 |
| Cfsm | 0.163 | 0.036 | 0.648 | 0.227 | 3.00 | 4.15 | 3.29 | 0.449 | 0.449 | 0.232 | 0.053 | 0.103 |
| In. | 0.19 | 0.04 | 0.75 | 0.26 | 3.12 | 4.79 | 3.67 | 0.52 | 0.50 | 0.27 | 0.06 | 0.12 |

Calendar year 1954: Max 1,660 Min 2.9 Mean 123 Cfsm 0.542 In. 7.35
Water year 1954-55: Max 6,700 Min 3.4 Mean 239 Cfsm 1.05 In. 14.29

Peak discharge (base, 4,400 cfs).--Mar. 22 (6 to 8 a.m.) 7,300 cfs (13.90 ft); Apr. 24 (6:30 a.m.) 6,980 cfs (13.82 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records.

Reservoirs in Tennessee River basin

Douglas Lake.--Lat 35°57'40", long 83°32'20", at Douglas Dam on French Broad River, 6½ miles north of Sevierville, Sevier County, Tenn., and at mile 32.3. Drainage area, 4,541 sq mi. Records available, February 1943 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 501,700 cfs-days May 2 (elevation, 983.16 ft); minimum, 38,000 cfs-days Feb. 4 (elevation, 916.17 ft). Maximum contents during period 1943-55, 760,000 cfs-days July 25, 1949 (elevation, 1,001.79 ft); minimum (after first filling), 32,900 cfs-days Jan. 14, 1954 (elevation, 913.83 ft).

Reservoir formed by concrete main dam and 10 saddle dams. Spillway equipped with 11 taintor gates, 32 ft high by 40 ft wide and 8 sluice gates 10 ft high by 5.67 ft wide. Closure of dam was made Feb. 19, 1943; water in reservoir first reached minimum pool elevation Feb. 25, 1943. Total capacity at elevation 1,002.00 ft (top of gates) is 763,400 cfs-days, of which 715,800 cfs-days is controlled storage above elevation 920.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Revisions (water years).--WSP 1276: 1948.

South Holston Lake.--Lat 36°31'15", long 82°05'11", 470 ft upstream from South Holston Dam on South Fork Holston River in Sullivan County, Tenn., 7.0 miles southeast of Bristol, Virginia-Tennessee, and at mile 49.8. Drainage area, 703 sq mi. Records available, November 1950 to September 1955. Gage, water-stage recorder. Prior to May 11, 1951, staff gage at same site and datum. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 253,800 cfs-days Apr. 26 (elevation, 1,709.51 ft); minimum, 59,200 cfs-days Dec. 24 (elevation, 1,615.47 ft). Maximum contents during period 1950-55, 293,800 cfs-days Apr. 14, 1952 (elevation, 1,721.40 ft); minimum (after first filling), that of Dec. 24, 1954.

Reservoir is formed by rock and rolled earth-fill dam. Spillway is uncontrolled morning-glory type, 128 ft in diameter with 6 piers 3 ft wide to guide flow spilling into a concrete-lined shaft and tunnel 34 ft in diameter. Closure of dam was made Nov. 20, 1950; water in reservoir first reached minimum pool elevation Jan. 25, 1951. Total capacity at elevation 1,742.00 ft (spillway crest) is 375,100 cfs-days, of which 315,200 cfs-days is controlled storage above elevation 1,616.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Watauga Lake.--Lat 36°19'20", long 82°07'16", at Watauga Dam on Watauga River, 5 miles east of Elizabethton, Carter County, Tenn., and at mile 36.7. Drainage area, 468 sq mi. Records available, December 1948 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 159,800 cfs-days July 25 (elevation, 1,912.38 ft); minimum, 25,800 cfs-days Dec. 22 (elevation, 1,814.68 ft). Maximum contents during period 1948-55, 285,900 cfs-days June 24, 1950 (elevation, 1,958.58 ft); minimum (after first filling), that of Dec. 22, 1954.

Reservoir is formed by rock and rolled earth-fill dam. Spillway is uncontrolled morning-glory type, 128 ft in diameter with 6 piers 3 ft wide to guide flow spilling into a concrete-lined shaft and tunnel 34 ft in diameter. Closure of dam was made Dec. 1, 1948; water in reservoir first reached minimum pool elevation Dec. 31, 1948. Total capacity at elevation 1,975.00 ft (spillway crest) is 342,200 cfs-days, of which 316,200 cfs-days is controlled storage above elevation 1,815.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Boone Lake.--Lat 36°26'26", long 82°26'16", at Boone Dam on South Fork of Holston River in Sullivan County, Tenn., 0.7 mile northeast of Spurgeon, Washington County, Tenn., 1.3 miles downstream from Watauga River, and at mile 18.6. Drainage area, 1,840 sq mi. Records available, December 1952 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 91,700 cfs-days Aug. 11 (elevation, 1,381.58 ft); minimum, 23,500 cfs-days Jan. 28 (elevation, 1,330.02 ft). Maximum contents during period 1952-55, 98,100 cfs-days June 10, 1953 (elevation, 1,384.52 ft); minimum (after first filling), that of Jan. 28, 1955.

Reservoir is formed by gravity nonoverflow type concrete dam. Spillway equipped with 5 radial gates, 35 ft high by 35 ft wide. Storage began Dec. 16, 1952; water in reservoir first reached minimum pool elevation Jan. 5, 1953. Total capacity at elevation 1,385.0 ft (top of gates) is 99,200 cfs-days, of which 75,700 cfs-days is controlled storage above elevation 1,330 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Fort Patrick Henry Lake.--Lat 36°29'53", long 82°30'32", at Fort Patrick Henry Dam on South Fork Holston River, 0.2 mile upstream from bridge on U. S. Highway 23, 4.5 miles southeast of Kingsport, Sullivan County, Tenn., and at mile 8.2. Drainage area, 1,903 sq mi. Records available, October 1953 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 13,600 cfs-days Oct. 19 (elevation, 1,262.93 ft); minimum, 11,400 cfs-days Nov. 15 (elevation, 1,257.67 ft). Maximum contents during period 1953-55, 14,000 cfs-days Feb. 11, 1954 (elevation, 1,263.80 ft); minimum (after first filling), 9,300 cfs-days Mar. 16, 1954 (elevation, 1,252.32 ft).

Reservoir is formed by gravity nonoverflow type concrete dam. Spillway equipped with 5 radial gates, 35 ft high by 35 ft wide. Storage began Oct. 27, 1953; water in reservoir first reached minimum pool elevation Dec. 8, 1953. Total capacity at elevation 1,263 ft (top of gates) is 13,700 cfs-days, of which 1,700 cfs-days is controlled storage above elevation 1,258 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Reservoirs in Tennessee River basin--Continued

Cherokee Lake.--Lat 36°10'00", long 83°29'55", at Cherokee Dam on Holston River, 0.3 mile upstream from bridge on State Highway 92, 2.7 miles upstream from Mill Spring Creek, 2.8 miles north of Jefferson City, Jefferson County, Tenn., and at mile 52.3. Drainage area, 3,429 sq mi. Records available, December 1941 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 581,900 cfs-days May 2 (elevation, 1,060.25 ft); minimum, 51,400 cfs-days Feb. 2 (elevation, 982.00 ft). Maximum contents during period 1941-55, 779,400 cfs-days May 11, 1944 (elevation, 1,074.37 ft); minimum (after first filling) 48,400 cfs-days Jan. 7, 1954 (elevation, 980.77 ft).

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with 9 radial gates 32 ft high by 40 ft wide. Storage began Dec. 5, 1941; water in reservoir first reached minimum pool elevation Jan. 6, 1942. Total capacity at elevation 1,075.0 ft (top of gates) is 789,200 cfs-days, of which 742,700 cfs-days is controlled storage above elevation 980.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Fort Loudoun Lake.--Lat 35°47'30", long 84°14'35", at Fort Loudoun Dam on Tennessee River, 1 mile northeast of Lenoir City, Loudon County, Tenn., and at mile 602.3. Drainage area, 9,550 sq mi. Records available, July 1943 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum 12 p.m. contents during year, 186,000 cfs-days July 11; maximum elevation, 814.39 ft July 12; minimum 12 p.m. contents, 139,000 cfs-days Dec. 7; minimum elevation, 806.58 ft Jan. 3. Maximum elevation during period 1943-55, 815.00 ft Sept. 11, 1943, May 14, 1945; minimum (after first filling), 805.54 ft Jan. 18, 1954. Contents based on backwater profile.

Reservoir formed by concrete dam with earth embankment. Spillway equipped with 14 taintor gates 32 ft high by 40 ft wide. Closure of dam was made Aug. 2, 1943; water in reservoir first reached ordinary minimum pool elevation Sept. 4, 1943. Total level pool capacity at elevation 815.00 ft (top of gates) is 194,900 cfs-days, of which 55,100 cfs-days is controlled flood storage above elevation 807.00 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Nantahala Lake.--Lat 35°11'56", long 83°39'17", at Nantahala Dam on Nantahala River, 4.2 miles southeast of Topton, Cherokee County, N. C., and 5.5 miles upstream from Whiteoak Creek. Drainage area, 91.0 sq mi. Records available, October 1944 to September 1955. Gage, water-stage recorder. Datum of gage is a local datum which is 122.16 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 48,000 cfs-days Aug. 18 (elevation, 2,859.60 ft); minimum, 6,700 cfs-days Jan. 28 (elevation, 2,760.11 ft). Maximum contents during period 1944-55, 70,200 cfs-days Jan. 19, 1950, Mar. 14, 1952 (elevation, 2,890.29 ft); minimum, that of Jan. 28, 1955.

Reservoir is formed by rock-fill dam with side channel gate-controlled spillway supplemented by fuse-plug dam. Dam completed and storage began Jan. 30, 1942; water in reservoir first reached minimum pool elevation Feb. 16, 1942. Total capacity at elevation 2,890.0 ft (top of gates) is 69,900 cfs-days, of which 63,300 cfs-days is controlled storage above 2,760.0 ft (minimum pool). Reservoir is used for flood control and power. Gage-height record furnished by the Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Thorpe Lake.--Lat 35°11'57", long 83°09'15", at Thorpe Dam on West Fork Tuckasegee River, 2.3 miles northwest of Glenville, Jackson County, N. C., and 3.0 miles upstream from Shoal Creek. Drainage area, 36.7 sq mi. Records available, October 1944 to September 1955. Prior to October 1948, published as Glenville Reservoir. Gage, water-stage recorder. Datum of gage is a local datum which is 391.75 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 18,000 cfs-days May 30 (elevation, 3,071.98 ft); minimum, 2,200 cfs-days Feb. 5 (elevation, 3,025.10 ft). Maximum contents during period 1944-55, 35,700 cfs-days Mar. 13, 1950 (elevation, 3,100.01 ft); minimum, that of Feb. 5, 1955.

Reservoir is formed by earth and rock dam and six 40-foot fuse-plug dams. Side channel spillway equipped with 2 taintor gates 12 ft high by 25 ft wide. Dam completed and storage began Feb. 12, 1941. Water in reservoir first reached minimum pool elevation Mar. 15, 1941. Total capacity at elevation 3,100.0 ft (top of gates) is 35,700 cfs-days, of which 33,600 cfs-days is controlled storage above elevation 3,025.0 ft (minimum pool). Reservoir is used for flood control and power. Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Fontana Lake.--Lat 35°27'07", long 83°48'18", at Fontana Dam on Little Tennessee River, 5.7 miles (revised) upstream from Twenty Mile Creek, 9.0 miles north of Robbinsville, Graham County, N. C., 9.5 miles upstream from Cheoah Dam, and at mile 61.0. Drainage area, 1,571 sq mi. Records available, November 1944 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 456,200 cfs-days May 31 (elevation, 1,649.77 ft); minimum, 78,300 cfs-days Jan. 29 (elevation, 1,472.0 ft). Maximum contents during period 1944-55, 722,300 cfs-days July 23, 1949 (elevation, 1,708.91 ft); minimum (after first filling), that of Jan. 29, 1955.

Reservoir is formed by gravity nonoverflow type concrete dam. Spillway equipped with 4 radial gates 35 ft high by 35 ft wide. Storage began Nov. 7, 1944; dam completed March 1945; water in reservoir first reached minimum pool elevation Jan. 16, 1945. Total capacity at elevation 1,710.0 ft (top of gates) is 728,200 cfs-days, of which 583,500 cfs-days is controlled storage above elevation 1,525.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Reservoirs in Tennessee River Basin--Continued

Santeetlah Lake.--Lat 35°22'38", long 83°52'33", at Santeetlah Dam on Cheoah River, 1 mile downstream from Santeetlah Creek, 5.5 miles northwest of Robbinsville, Graham County, N. C., and 9.3 miles upstream from mouth. Drainage area, 176 sq mi. Records available, October 1946 to September 1955. Gage, water-stage recorder. Datum of gage is a local datum which is 122.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 51,200 cfs-days Apr. 17 (elevation, 1,794.21 ft); minimum, 15,700 cfs-days Nov. 27 (elevation, 1,747.12 ft). Maximum contents during period 1946-55, 80,100 cfs-days Feb. 4, 1949 (elevation, 1,817.19 ft); minimum, that of Nov. 27, 1954.

Reservoir is formed by concrete gravity and arch dam with concrete spillway controlled by 6 taintor gates 12 ft high by 25 ft wide. Dam completed and storage began Dec. 7, 1927. Water in reservoir first reached minimum pool elevation December 1927 (corrected). Total capacity at elevation 1,817.00 ft (top of gates) is 79,800 cfs-days of which 67,200 cfs-days is controlled storage above 1,740.08 ft (minimum pool). Reservoir is used for power. Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Norris Lake.--Lat 36°13'29", long 84°05'29", at Norris Dam on Clinch River, 2½ miles northwest of Norris, Anderson County, Tenn., and at mile 79.8. Drainage area, 2,912 sq mi. Records available, June 1935 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, adjustment of 1912, and 0.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Elevations given herein are referred to adjustment of 1912. Maximum contents during year, 939,500 cfs-days May 2 (elevation, 1,014.42 ft); minimum, 219,600 cfs-days Dec. 6 (elevation, 945.51 ft). Maximum contents during period 1935-55, 1,236,700 cfs-days Feb. 11, 1937 (elevation, 1,031.10 ft); minimum (after first filling), 140,700 cfs-days Jan. 15, 1954 (elevation, 929.13 ft).

Reservoir is formed by concrete gravity dam with 3 drum gates 100 ft wide by 14 ft high. Dam was completely closed and placed in operation Mar. 4, 1936; water in reservoir first reached minimum pool elevation Mar. 24, 1936. Total capacity at elevation 1,034.0 ft (top of gates) is 1,294,200 cfs-days, of which 1,150,000 cfs-days is controlled storage above elevation 930.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Watts Bar Lake.--Lat 35°37'13", long 84°47'00", at Watts Bar Dam on Tennessee River, 6.5 miles southeast of Spring City, Rhea County, Tenn., 72.4 miles downstream from Fort Loudoun Dam, and at mile 529.9. Drainage area, 17,310 sq mi. Records available, October 1941 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum 12 p.m. contents during year, 521,000 cfs-days Dec. 30; maximum elevation, 742.75 ft Dec. 30; minimum 12 p.m. contents, 381,000 cfs-days Feb. 4; minimum elevation, 734.95 ft Feb. 5. Maximum elevation during period 1941-55, 745.12 ft Mar. 9, 1942; minimum (after first filling), 733.44 ft Mar. 20, 1945. Contents based on backwater profile.

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with 20 taintor gates 32 ft high by 40 ft wide, also one 2-section leaf trashway gate 16.3 ft high by 24 ft wide. Storage began with partial closure Dec. 12, 1941, and final closure Jan. 1, 1942; water in reservoir first reached minimum navigation pool elevation Feb. 17, 1942. Total level pool capacity at elevation 745.0 ft (top of gates) is 570,700 cfs-days, of which 190,400 cfs-days is controlled flood storage above elevation 735.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Chatuge Lake.--Lat 35°01'01", long 83°47'28", at Chatuge Dam on Hiwassee River, 2.0 miles upstream from Hyatt Mill Creek, 2.5 miles downstream from Georgia-North Carolina State line, 2.5 miles southeast of Hayesville, Clay County, N. C., and at mile 121.0 (revised). Drainage area, 189 sq mi. Records available, February 1942 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 109,100 cfs-days Dec. 6 (elevation, 1,923.39 ft); minimum, 23,000 cfs-days July 9 (elevation, 1,879.29 ft). Maximum contents during period 1942-55, 124,200 cfs-days Apr. 20, 1943 (elevation, 1,927.80 ft); minimum (after first filling), 9,400 cfs-days Sept. 5, 1947 (elevation, 1,860.11 ft).

Reservoir is formed by a rolled earth-fill dam with side channel spillway equipped with flashboards. Storage began Feb. 12, 1942; water in reservoir first reached minimum pool elevation Feb. 26, 1942. Total capacity at elevation 1,928.0 ft (top of flashboards) is 124,900 cfs-days, of which 115,600 cfs-days is controlled storage above elevation 1,860.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Nottely Lake.--Lat 34°57'29", long 84°05'22", at Nottely Dam on Nottely River, 1.3 miles upstream from Dooley Creek, 1.8 miles west of Ivylog, Union County, Ga., 2.5 miles upstream from Georgia-North Carolina State line, and at mile 21.0. Drainage area, 214 sq mi. Records available, January 1942 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 87,100 cfs-days May 23 (elevation, 1,777.22 ft); minimum, 9,400 cfs-days Oct. 1 (elevation, 1,698.58 ft, estimated). Maximum contents during period 1942-55, 94,100 cfs-days Apr. 20, 1943 (elevation, 1,780.50 ft); minimum (after first filling), 200 cfs-days Oct. 6, 1947 (elevation, 1,638.6 ft).

Reservoir is formed by rock and rolled earth-fill dam with side channel spillway equipped with flashboards. Storage began Jan. 24, 1942; water in reservoir first reached minimum pool elevation Jan. 26, 1942. Total capacity at elevation 1,780.00 ft (top of flashboards) is 93,000 cfs-days, of which 92,800 cfs-days is controlled storage above elevation 1,640.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Reservoirs in Tennessee River basin--Continued

Hiwassee Lake.--Lat 35°09'05", long 84°10'40", at Hiwassee Dam on Hiwassee River a third of a mile northwest of village of Hiwassee Dam, Cherokee County, N. C., 3.9 miles upstream from Shoal Creek, and at mile 75.8. Drainage area, 968 sq mi. Records available, October 1939 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, preliminary adjustment of 1929. Subtract 0.63 ft from all elevations to reduce to datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 210,900 cfs-days June 15 (elevation, 1,523.29 ft); minimum, 49,100 cfs-days Dec. 6 (elevation, 1,430.65 ft). Maximum contents during period 1939-55, 220,700 cfs-days Apr. 24, 1944 (elevation, 1,526.48 ft); minimum (after first filling), 35,800 cfs-days Jan. 28, 1948 (elevation, 1,413.41 ft).

Reservoir is formed by gravity overflow concrete dam with 7 taintor gates 23 ft high by 32 ft long. Slight storage began Apr. 13, 1939, during construction; systematic storage operation began Jan. 14, 1940; dam completed February 1940; water in reservoir first reached minimum pool elevation Feb. 23, 1940. Total capacity at elevation 1,526.5 ft (top of gates) is 220,800 cfs-days, of which 183,800 cfs-days is controlled storage above elevation 1,415.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Apalachia Lake.--Lat 35°10'04", long 84°17'49", at Apalachia Dam on Hiwassee River in Cherokee County, N. C., 0.1 mile upstream from North Carolina-Tennessee State line, 1.5 miles northeast of Farner, Polk County, Tenn., 9.8 miles downstream from Hiwassee Dam, and at mile 66.1. Drainage area, 1,018 sq mi. Records available, February 1943 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 29,500 cfs-days Apr. 25 (elevation, 1,279.99 ft); minimum, 15,700 cfs-days Aug. 28 (elevation, 1,251.73 ft). Maximum contents during period 1943-55, 30,300 cfs-days June 13, 1952 (elevation, 1,281.40 ft); minimum (after first filling), that of Aug. 28, 1955.

Reservoir is formed by concrete gravity dam. Spillway equipped with 10 radial gates. Storage began Feb. 14, 1943; water in reservoir first reached minimum pool elevation Feb. 21, 1943. Total capacity at elevation 1,280.00 ft (top of gates) is 29,500 cfs-days, of which 18,000 cfs-days is controlled storage above elevation 1,240.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Blue Ridge Lake.--Lat 34°52'52", long 84°16'49", 400 ft upstream from Blue Ridge Dam on Toccoa River, 2½ miles northeast of Blue Ridge, Fannin County, Ga., and at mile 53.0. Drainage area, 232 sq mi. Records available, December 1930 to September 1955. Gage, water-stage recorder. To convert elevations given herein to datum of 1929, supplementary adjustment of 1936, 0.18 ft should be subtracted. Maximum contents during year, 78,000 cfs-days June 11 (elevation, 1,676.01 ft); minimum, 14,100 cfs-days Feb. 5 (elevation, 1,605.92 ft). Maximum 12 p.m. contents during period 1930-55, 100,900 cfs-days Feb. 11, 1946 (elevation, 1,690.83 ft); minimum (after first filling), 8,900 cfs-days Feb. 6, 1940 (elevation, 1,594.21 ft).

Reservoir is formed by earth dam. Spillway equipped with 5 taintor gates 15 ft high by 22 ft wide. Dam completed and storage began Dec. 6, 1930. Total capacity at elevation 1,690.0 ft (top of gates) is 99,600 cfs-days, of which 92,300 cfs-days is controlled storage above elevation 1,590.0 ft (minimum pool). Reservoir is used for power. Records furnished by Tennessee Valley Authority.

Ocoee No. 3 Lake.--Lat 35°02'25", long 84°28'00", at Ocoee No. 3 Dam on Ocoee River, 5 miles west of Ducktown, Polk County, Tenn., and at mile 29.2. Drainage area, 496 sq mi. Records available, October 1942 to September 1955. Gage, water-stage recorder. Datum of gage is 1,410.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936; gage readings have been adjusted to mean sea level. Maximum contents during year, 4,600 cfs-days Feb. 6 (elevation, 1,435.80 ft); minimum, 1,700 cfs-days Feb. 1 (elevation, 1,417.61 ft). Maximum contents during period 1942-55, 7,800 cfs-days Jan. 8, 1946 (elevation, 1,436.7 ft, estimated); minimum 12 p.m. contents (after first filling), 1,100 cfs-days Apr. 3, 1943 (elevation, 1,394.95 ft).

Reservoir is formed by concrete dam. Spillway with crest at elevation 1,412.00 ft equipped with 7 taintor gates 23 ft high and 32 ft wide. Storage began Aug. 15, 1942; water in reservoir first reached minimum pool elevation Dec. 28, 1942. Capacity of reservoir has been considerably reduced by silting; revised capacity tables used after Sept. 30, 1946, and after Dec. 31, 1953. Total capacity at elevation, 1,435.00 ft (top of gates) is 4,400 cfs-days, of which 3,000 cfs-days is controlled storage above elevation 1,413.00 ft (minimum pool). Reservoir is used for power. Records furnished by Tennessee Valley Authority.

Parksville Lake.--Lat 35°05'44", long 84°38'51", at Parksville Dam on Ocoee River at Parksville, Polk County, Tenn., 13¾ miles east of Cleveland, and at mile 11.9. Drainage area, 595 sq mi. Records available, June 1914 to September 1955. Prior to October 1953, published as Parksville (Ocoee No. 1) Reservoir. Indicator gage. Datum of gage is 7.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Gage readings have been reduced to elevations above mean sea level. Maximum contents during year, 43,700 cfs-days July 24 (elevation, 837.6 ft); minimum, 33,600 cfs-days Feb. 4 (elevation, 826.5 ft). Maximum 12 p.m. contents during period 1914-55, 53,300 cfs-days July 9, 1916; maximum 12 p.m. elevation, 840.3 ft Feb. 10, 1946; minimum contents, 28,100 cfs-days Jan. 11, 30, 1940; minimum 12 p.m. elevation, 814.9 ft Dec. 14, 1934.

Reservoir is formed by concrete dam with 347 ft of spillway. Spillway is equipped with 4 floodgates 7 ft high by 20 ft wide and 265 ft of flashboards about 5 2/3 ft high. Crest of spillway is 1.0 ft lower under gates. Dam completed and storage began in 1911. Capacity of reservoir has been considerably reduced by silting; revised capacity table used after Oct. 31, 1952. Total capacity at elevation 837.66 ft (about top of flashboards) is 43,700 cfs-days, of which 16,900 cfs-days is controlled storage above elevation 817.0 ft (minimum pool). Reservoir is used for power. Records furnished by Tennessee Valley Authority.

Reservoirs in Tennessee River basin--Continued

Chickamauga Lake.--Lat 35°06'07", long 85°13'42", at Chickamauga Dam on Tennessee River, 5¾ miles northeast of Chattanooga, Hamilton County, Tenn., 58.9 miles downstream from Watts Bar Dam, and at mile 471.0. Drainage area, 20,790 sq mi. Records available, October 1939 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 322,000 cfs-days May 24; maximum elevation, 683.75 ft May 27; minimum 12 p.m. contents, 192,000 cfs-days Mar. 6; minimum elevation, 674.74 ft Feb. 16. Maximum elevation during period 1939-55, 685.37 ft May 20, 1950; minimum (after first filling), 673.27 ft Jan. 21, 1942. Contents based on backwater profile.

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with eighteen 2-section lift gates 40.44 ft high by 40 ft wide. Storage began Feb. 6, 1940; water in reservoir first reached minimum navigation pool elevation Mar. 10, 1940. Total level pool capacity at elevation 685.44 ft (top of gates) is 355,600 cfs-days, of which 166,100 cfs-days is controlled flood storage above elevation 675.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Hales Bar Lake.--Lat 35°02'48", long 85°22'19" (revised), at Hales Bar Dam on Tennessee River, 5¼ miles southeast of Jasper, Marion County, Tenn., 8.5 miles upstream from Sequatchie River, 39.9 miles downstream from Chickamauga Dam, and at mile 431.1. Drainage area, 21,790 sq mi. Records available, October 1914 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum 12 p.m. contents during year, 90,000 cfs-days Mar. 23; maximum elevation, 634.75 ft May 23; minimum 12 p.m. contents, 70,000 cfs-days Feb. 27; minimum elevation, 631.47 ft Mar. 28. Maximum elevation during period 1914-55, 642.8 ft Mar. 8, 1917; minimum (after first filling) 619.0 ft Apr. 16, 1918. Contents based on backwater profile.

Reservoir is formed by concrete dam with earth embankments containing concrete core walls. Spillway with crest at 616.0 ft equipped with 17 taintor gates 19 ft high by 40 ft wide, and 1 trash gate 5.5 ft high by 15 ft wide (prior to July 1948 spillway, with crest elevation at 626.25 ft, equipped with flashboards 3 ft high prior to July 1944 and 5 ft high thereafter). Dam completed and storage began Oct. 13, 1913. Capacity of reservoir has been considerably reduced by silting. Total level pool capacity at elevation 634.0 ft (maximum allowable pool) is 77,800 cfs-days, of which 6,600 cfs-days is controlled flood storage above elevation 632.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Guntersville Lake.--Lat 34°25'17", long 86°23'34", in powerhouse at Guntersville Dam on Tennessee River in sec. 14, T. 7 S., R. 2 E., 11 miles northwest of Guntersville, Ala., 82.1 miles downstream from Hales Bar Dam, and at mile 349.0. Drainage area, 24,450 sq mi. Records available, October 1938 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 573,000 cfs-days Aug. 23; maximum elevation, 595.38 ft July 11; minimum 12 p.m. contents, 432,000 cfs-days Sept. 16; minimum elevation, 592.55 ft Sept. 16. Maximum elevation during period 1939-55, 596.29 ft Mar. 2, 1944; minimum (after start of operation plan in April 1940), 591.65 ft Sept. 8, 1953. Contents based on backwater profile.

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with eighteen 2-section lift gates 40.44 ft high by 50 ft wide. Dam completed and storage began Jan. 16, 1939; water in reservoir first reached minimum navigation pool elevation Jan. 27, 1939. Total level pool capacity at elevation 595.44 ft (top of gates) is 513,600 cfs-days, of which 82,100 cfs-days is controlled flood storage above elevation 593.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Woods Reservoir.--Lat 35°17'54", long 86°05'48", at Elk River Dam on Elk River, 1.2 miles upstream from Spring Creek, 2½ miles northeast of Estill Springs, Franklin County, Tenn., and 6.8 miles upstream from bridge on U. S. Highway 41A. Drainage area, 263 sq mi. Records available, May 1952 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 40,800 cfs-days June 6 (elevation, 960.26 ft); minimum, 29,000 cfs-days Sept. 27-30 (elevation, 953.70 ft). Maximum contents during period 1952-55, 41,900 cfs-days Jan. 22, 1954 (elevation, 960.82 ft); minimum (after first filling), 26,300 cfs-days Nov. 8-11, 1953 (elevation, 951.93 ft).

Reservoir is formed by concrete gravity and earth-fill type dam with riprapped embankments. Spillway equipped with 3 taintor gates, 25 ft high by 50 ft wide and 2 sluice gates 6 ft high by 4 ft wide. Closure of dam was made May 1, 1952; water in reservoir first reached minimum pool elevation Feb. 6, 1953. Total capacity at elevation 962.0 ft (surcharge pool) is 44,400 cfs-days, of which 9,900 cfs-days is controlled storage above elevation 957.0 ft (minimum pool). Reservoir is used for cooling water, flood control, and recreational purposes. Records furnished by United States Air Force.

Wheeler Lake.--Lat 34°47'52", long 87°22'51", at Wheeler Dam on Tennessee River, in SW¼ sec. 9, T. 3 S., R. 8 W., 0.9 mile upstream from Big Nance Creek, 29.5 miles downstream from Decatur, Ala., 74.1 miles downstream from Guntersville Dam, and at mile 274.9. Drainage area, 29,590 sq mi. Records available, October 1936 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 646,000 cfs-days Mar. 24; maximum elevation, 556.39 ft May 29; minimum 12 p.m. contents, 410,000 cfs-days Dec. 10; minimum elevation, 549.72 ft Dec. 10. Maximum elevation during period 1936-55, 557.32 ft Mar. 1, 1944; minimum (after start of operation plan in August 1937), 548.92 ft Nov. 1, 1937. Contents based on backwater profile.

Reservoir is formed by concrete dam with 60 taintor gates 15 ft high by 40 ft wide and 2 trashway gates 6 ft high by 37.5 ft wide. Storage began Oct. 3, 1936; water in reservoir first reached minimum pool elevation Dec. 10, 1936. Total level pool capacity at elevation 556.28 ft (top of gates) is 580,000 cfs-days of which 175,200 cfs-days is controlled flood storage above elevation 550.0 ft (ordinary minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Reservoirs in Tennessee River basin--Continued

Wilson Lake.--Lat 34°47'46", long 87°37'27", in SE¼ sec. 18, T. 3 S., R. 10 W., at cooling-water intake at Wilson Dam on Tennessee River, 2.9 miles southeast of Florence, Ala., 4.1 miles upstream from Cypress Creek, 15.5 miles downstream from Wheeler Dam, and at mile 259.4. Drainage area, 30,750 sq mi. Records available, August 1926 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum contents during year, 328,500 cfs-days May 21 (elevation, 507.98 ft); minimum, 300,500 cfs-days Jan. 30 (elevation, 504.43 ft). Maximum contents during period 1926-55, 329,200 cfs-days Apr. 20, 1954 (elevation, 508.27 ft); maximum elevation, 508.35 ft Feb. 11, 1948; minimum contents, 233,200 cfs-days, Apr. 6, 1927 (elevation, 501.3 ft).

Reservoir is formed by concrete gravity dam with fixed ogee crest. Spillway equipped with 58 Stoney gates 20.54 ft (18.77 ft prior to June 1941) high by 38 ft wide. Storage began Apr. 14, 1924. Revised capacity table used after Dec. 31, 1953. Total capacity at elevation 507.88 ft (top of gates) is 327,700 cfs-days of which 26,700 cfs-days is controlled flood storage above elevation 504.50 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Pickwick Lake.--Lat 35°04'16", long 88°15'04", at Pickwick Landing Dam on Tennessee River, 1⅔ miles north of town of Pickwick Dam, Hardin County, Tenn., 6.1 miles upstream from Lick Creek, 52 miles downstream from Wilson Dam, and at mile 206.7. Drainage area, 32,820 sq mi. Records available, October 1937 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 570,000 cfs-days Mar. 22; maximum elevation, 417.82 ft Mar. 22; minimum 12 p.m. contents, 340,000 cfs-days Dec. 22; minimum elevation, 407.74 ft Dec. 21. Maximum elevation during period 1937-55, 419.49 ft Mar. 30, 1944; minimum (after first filling), 407.12 ft Dec. 18, 1944. Contents based on backwater profile.

Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with twenty-two 2-section lift gates 40 ft high by 40 ft wide, 1 of which is used as a trash gate. Dam completed and storage began Feb. 7, 1938; water in reservoir first reached minimum pool elevation Feb. 18, 1938. Total level pool capacity at elevation 418.0 ft (top of gates) is 550,200 cfs-days, of which 210,900 cfs-days is controlled flood storage above elevation 408.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Kentucky Lake.--Lat 37°00'45", long 88°16'12", at Kentucky Dam on Tennessee River at Gilbertsville, Marshall County, Ky., and at mile 22.4. Drainage area, 40,200 sq mi. Records available, July 1944 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 1,979,000 cfs-days Mar. 26; maximum elevation, 361.85 ft Mar. 28; minimum 12 p.m. contents, 985,000 cfs-days Jan. 18; minimum elevation, 353.28 ft Jan. 18. Maximum elevation during period 1944-55, 368.81 ft Jan. 24, 1950; minimum (after first filling), 349.20 ft Jan. 22, 1947. Contents based on backwater profile.

Reservoir is formed by concrete dam with 24 lift gates 50 ft high by 40 ft wide. Storage began Aug. 16, 1944, and final closure was made Aug. 30, 1944. Water in reservoir reached minimum pool elevation Apr. 7, 1945. Total level pool capacity at elevation 375.0 ft (top of gates) is 3,026,300 cfs-days, of which 2,022,100 cfs-days is controlled storage above 354.0 ft (ordinary minimum pool). Reservoir is used for navigation, flood control, and power. Records furnished by Tennessee Valley Authority.

Other reservoirs.--The following smaller reservoirs in the Tennessee River basin are described below, but records of contents are not published herein:

Burnett Lake on North Fork Swannanoa River near Black Mountain, N. C., with total capacity of 11,600 cfs-days, of which 8,900 cfs-days is controlled storage.

Lake Walters on Pigeon River near Waterville, N. C., with total capacity of 12,700 cfs-days, of which 10,300 cfs-days is controlled storage.

Davy Crockett Lake on Nolichucky River at Nolichucky Dam, Tenn., with total capacity of 8,070 cfs-days of which 4,060 cfs-days is controlled storage.

Tennessee Creek project lakes, Wolf Creek Lake on Wolf Creek and East Fork Lake on Tuckasegee River near Tuckasegee, N. C., capacity of 5,750 cfs-days, of which 4,480 cfs-days is controlled storage. Storage began Mar. 22, 1955.

Bear Creek Lake on Tuckasegee River near Tuckasegee, N. C., with total capacity of 17,500 cfs-days, of which 2,290 cfs-days is controlled storage. Storage began Oct. 9, 1953.

Cedar Cliff Lake on Tuckasegee River near Tuckasegee, N. C., with total capacity of 3,200 cfs-days, of which 400 cfs-days is controlled storage. Storage began Apr. 26, 1952.

Cheoah Lake on Little Tennessee River at Cheoah, N. C., with total capacity of 17,700 cfs-days, of which 3,700 cfs-days is controlled storage.

Calderwood Lake on Little Tennessee River at Calderwood, Tenn., with total capacity of 20,800 cfs-days of which 2,060 cfs-days is controlled storage.

Reservoirs in Tennessee River basin--Continued

Monthly elevation and contents, water year October 1954 to September 1955

| Date | Douglas Lake | | | South Holston Lake | | | Watauga Lake | | |
|---|---|---|---|---|---|---|---|---|---|
| | Elevation (feet)† | Contents (cfs-days) | Change in contents during month (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents during month (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents during month (cfs-days) |
| Sept.30..... | 939.36 | 124,000 | - | 1,649.24 | 108,800 | - | 1,884.82 | 102,400 | - |
| Oct. 31..... | 933.27 | 94,400 | -29,600 | 1,634.01 | 84,100 | -24,700 | 1,863.97 | 69,100 | -33,300 |
| Nov. 30..... | 929.41 | 78,500 | -15,900 | 1,618.71 | 63,200 | -20,900 | 1,830.69 | 36,600 | -32,500 |
| Dec. 31..... | 928.08 | 73,400 | -5,100 | 1,618.21 | 62,600 | -600 | 1,819.00 | 28,600 | -8,000 |
| Calendar year 1954..... | - | - | +100 | - | - | -37,200 | - | - | -72,900 |
| Jan. 31..... | 917.67 | 41,600 | -31,800 | 1,617.07 | 61,200 | -1,400 | 1,817.46 | 27,600 | -1,000 |
| Feb. 28..... | 952.85 | 209,400 | +167,800 | 1,643.00 | 98,200 | +37,000 | 1,841.80 | 45,300 | +17,700 |
| Mar. 31..... | 970.43 | 361,900 | +152,500 | 1,702.69 | 232,800 | +134,600 | 1,890.56 | 113,000 | +67,700 |
| Apr. 30..... | 983.05 | 500,400 | +138,500 | 1,708.31 | 250,000 | +17,200 | 1,905.22 | 142,900 | +29,900 |
| May 31..... | 982.44 | 493,100 | -7,300 | 1,705.28 | 240,600 | -9,400 | 1,908.85 | 150,900 | +8,000 |
| June 30..... | 976.67 | 427,300 | -65,800 | 1,704.82 | 239,200 | -1,400 | 1,909.91 | 153,200 | +2,300 |
| July 31..... | 969.37 | 351,400 | -75,900 | 1,696.60 | 215,200 | -24,000 | 1,911.35 | 156,500 | +3,300 |
| Aug. 31..... | 954.48 | 221,600 | -129,800 | 1,677.50 | 166,200 | -49,000 | 1,903.47 | 139,100 | -17,400 |
| Sept.30..... | 936.74 | 110,600 | -111,000 | 1,655.42 | 120,000 | -46,200 | 1,890.48 | 112,900 | -26,200 |
| Water year 1954-55..... | - | - | -13,400 | - | - | +11,200 | - | - | +10,500 |

| Date | Boone Lake | | | Fort Patrick Henry Lake | | | Cherokee Lake | | |
|---|---|---|---|---|---|---|---|---|---|
| Sept.30..... | 1,374.40 | 77,800 | - | 1,260.64 | 12,600 | - | 1,007.54 | 143,500 | - |
| Oct. 31..... | 1,371.18 | 72,200 | -5,600 | 1,258.43 | 11,700 | -900 | 1,004.32 | 128,600 | -14,900 |
| Nov. 30..... | 1,356.87 | 50,800 | -21,400 | 1,261.44 | 13,000 | +1,300 | 996.87 | 97,800 | -30,800 |
| Dec. 31..... | 1,331.10 | 24,400 | -26,400 | 1,259.38 | 12,100 | -900 | 1,002.76 | 121,700 | +23,900 |
| Calendar year 1954..... | - | - | -22,800 | - | - | -800 | - | - | +64,900 |
| Jan. 31..... | 1,332.60 | 25,600 | +1,200 | 1,260.48 | 12,600 | +500 | 982.20 | 51,900 | -69,800 |
| Feb. 28..... | 1,359.41 | 54,200 | +28,600 | 1,258.97 | 11,900 | -700 | 1,014.56 | 179,700 | +127,800 |
| Mar. 31..... | 1,371.00 | 71,900 | +17,700 | 1,260.75 | 12,700 | +800 | 1,052.03 | 484,900 | +305,200 |
| Apr. 30..... | 1,379.30 | 87,100 | +15,200 | 1,259.37 | 12,100 | -600 | 1,059.95 | 578,200 | +93,300 |
| May 31..... | 1,378.06 | 84,700 | -2,400 | 1,259.25 | 12,000 | -100 | 1,059.15 | 568,200 | -10,000 |
| June 30..... | 1,380.23 | 89,000 | +4,300 | 1,261.06 | 12,800 | +800 | 1,053.29 | 499,000 | -69,200 |
| July 31..... | 1,380.65 | 89,800 | +800 | 1,259.09 | 12,000 | -800 | 1,046.83 | 429,600 | -69,400 |
| Aug. 31..... | 1,380.52 | 89,500 | -300 | 1,259.55 | 12,200 | +200 | 1,029.34 | 275,300 | -154,300 |
| Sept.30..... | 1,376.42 | 81,600 | -7,900 | 1,261.82 | 13,100 | +900 | 1,017.62 | 197,100 | -78,200 |
| Water year 1954-55..... | - | - | +3,800 | - | - | +500 | - | - | +53,600 |

| Date | Fort Loudon Lake‡ | | | Nantahala Lake** | | | Thorpe Lake** | | |
|---|---|---|---|---|---|---|---|---|---|
| Sept.30..... | 812.07 | 173,000 | - | 2,828.33 | 30,400 | - | 3,049.34 | 8,100 | - |
| Oct. 31..... | 810.28 | 161,000 | -12,000 | 2,805.74 | 20,400 | -10,000 | 3,039.90 | 5,200 | -2,900 |
| Nov. 30..... | 808.90 | 152,000 | -9,000 | 2,778.18 | 11,100 | -9,300 | 3,032.90 | 3,600 | -1,600 |
| Dec. 31..... | 808.47 | 149,000 | -3,000 | 2,771.21 | 9,200 | -1,900 | 3,033.77 | 3,800 | +200 |
| Calendar year 1954..... | - | - | +6,000 | - | - | -13,200 | - | - | -6,500 |
| Jan. 31..... | 807.18 | 141,000 | -8,000 | 2,760.72 | 6,800 | -2,400 | 3,025.74 | 2,300 | -1,500 |
| Feb. 28..... | 808.32 | 148,000 | +7,000 | 2,792.30 | 15,500 | +8,700 | 3,031.82 | 3,400 | +1,100 |
| Mar. 31..... | 809.76 | 158,000 | +10,000 | 2,822.00 | 27,400 | +11,900 | 3,045.10 | 6,700 | +3,300 |
| Apr. 30..... | 813.05 | 180,000 | +22,000 | 2,845.85 | 39,700 | +12,300 | 3,060.24 | 12,300 | +5,600 |
| May 31..... | 812.99 | 180,000 | 0 | 2,849.69 | 42,000 | +2,300 | 3,071.83 | 17,900 | +5,600 |
| June 30..... | 812.25 | 174,000 | -6,000 | 2,839.80 | 36,400 | -5,600 | 3,071.21 | 17,600 | -300 |
| July 31..... | 812.95 | 179,000 | +5,000 | 2,851.38 | 43,000 | +6,600 | 3,068.06 | 16,000 | -1,600 |
| Aug. 31..... | 812.53 | 177,000 | -2,000 | 2,852.65 | 43,700 | +700 | 3,066.48 | 15,200 | -800 |
| Sept.30..... | 811.32 | 168,000 | -9,000 | 2,831.04 | 31,800 | -11,900 | 3,063.70 | 13,900 | -1,300 |
| Water year 1954-55..... | - | - | -5,000 | - | - | +1,400 | - | - | +5,800 |

| Date | Fontana Lake | | | Santeetlah Lake** | | | Norris Lake | | |
|---|---|---|---|---|---|---|---|---|---|
| Sept.30..... | 1,596.78 | 288,600 | - | 1,771.16 | 30,300 | - | 957.84 | 298,800 | - |
| Oct. 31..... | 1,567.23 | 219,900 | -68,700 | 1,759.17 | 22,200 | -8,100 | 950.83 | 251,800 | -47,000 |
| Nov. 30..... | 1,533.88 | 158,600 | -61,300 | 1,748.55 | 16,400 | -5,800 | 946.01 | 222,400 | -29,400 |
| Dec. 31..... | *1,500.1 | 110,200 | -48,400 | 1,757.45 | 21,100 | +4,700 | 954.78 | 277,600 | +55,200 |
| Calendar year 1954..... | - | - | -83,000 | - | - | +1,200 | - | - | +82,500 |
| Jan. 31..... | *1,472.5 | 78,800 | -31,400 | 1,758.50 | 21,800 | +700 | 947.83 | 233,400 | -44,200 |
| Feb. 28..... | *1,519.9 | 137,100 | +58,300 | 1,775.32 | 33,600 | +11,800 | 977.19 | 462,100 | +228,700 |
| Mar. 31..... | 1,581.97 | 252,200 | +115,100 | 1,786.29 | 43,200 | +9,600 | 1,011.24 | 889,100 | +427,000 |
| Apr. 30..... | 1,630.19 | 387,000 | +134,800 | 1,790.87 | 47,700 | +4,500 | 1,014.31 | 937,700 | +48,600 |
| May 31..... | 1,649.48 | 455,100 | +68,100 | 1,782.97 | 40,100 | -7,600 | 1,012.00 | 901,000 | -36,700 |
| June 30..... | 1,642.36 | 428,900 | -26,200 | 1,781.48 | 38,800 | -1,300 | 1,005.78 | 807,000 | -94,000 |
| July 31..... | 1,630.92 | 389,400 | -39,500 | 1,770.96 | 30,200 | -8,600 | 999.40 | 718,100 | -88,900 |
| Aug. 31..... | 1,621.60 | 359,400 | -30,000 | 1,755.89 | 20,200 | -10,000 | 992.25 | 626,700 | -91,400 |
| Sept.30..... | 1,608.49 | 320,400 | -39,000 | 1,748.99 | 16,600 | -3,600 | 975.98 | 450,500 | -176,200 |
| Water year 1954-55..... | - | - | +31,800 | - | - | -13,700 | - | - | +151,700 |

* Estimated. † Elevation at 12 p.m. ‡ Contents based on backwater profile.
** Elevation is above a local datum; see text for adjustment to datum of 1929, supplementary adjustment of 1936.

Reservoirs in Tennessee River basin--Continued

Monthly elevation and contents, of reservoirs in Tennessee River basin, water year October 1954 to September 1955--Continued

| Date | Watts Bar Lake‡ | | | Chatuge Lake | | | Nottely Lake | | |
|---|---|---|---|---|---|---|---|---|---|
| | Elevation (feet)† | Contents (cfs-days) | Change in contents during month (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents during month (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents during month (cfs-days) |
| Sept.30..... | 738.44 | 440,000 | - | 1,923.18 | 108,500 | - | 1,698.58 | 9,400 | - |
| Oct. 31..... | 737.30 | 420,000 | -20,000 | 1,923.17 | 108,400 | -100 | 1,706.00 | 12,300 | +2,900 |
| Nov. 30..... | 735.92 | 396,000 | -24,000 | 1,923.37 | 109,100 | +700 | 1,715.04 | 16,700 | +4,400 |
| Dec. 31..... | 742.02 | 508,000 | +112,000 | *1,914.90 | 84,100 | -25,000 | 1,728.38 | 25,200 | +8,500 |
| Calendar year 1954..... | - | - | +123,000 | - | - | +30,100 | - | - | +15,100 |
| Jan. 31..... | 735.40 | 387,000 | -121,000 | 1,902.16 | 55,000 | -29,100 | 1,737.50 | 32,400 | +7,200 |
| Feb. 28..... | 736.91 | 413,000 | +26,000 | 1,906.28 | 63,400 | +8,400 | 1,752.30 | 47,600 | +15,200 |
| Mar. 31..... | 737.54 | 428,000 | +15,000 | 1,907.59 | 66,300 | +2,900 | 1,764.04 | 63,700 | +16,100 |
| Apr. 30..... | 741.43 | 497,000 | +69,000 | 1,903.80 | 58,300 | -8,000 | 1,773.05 | 78,000 | +15,300 |
| May 31..... | 741.94 | 507,000 | +10,000 | 1,898.44 | 48,300 | -10,000 | 1,775.67 | 84,000 | +5,000 |
| June 30..... | 740.74 | 483,000 | -24,000 | 1,885.75 | 30,000 | -18,300 | 1,775.39 | 83,500 | -500 |
| July 31..... | 740.13 | 472,000 | -11,000 | 1,885.63 | 29,800 | -200 | 1,775.47 | 83,600 | +100 |
| Aug. 31..... | 739.40 | 459,000 | -13,000 | 1,890.65 | 36,200 | +6,400 | 1,776.17 | 85,000 | +1,400 |
| Sept.30..... | 738.63 | 444,000 | -15,000 | 1,890.49 | 36,000 | -200 | 1,775.59 | 83,900 | -1,100 |
| Water year 1954-55..... | - | - | +4,000 | - | - | -72,500 | - | - | +74,500 |

| Date | Hiwassee Lake | | | Apalachia Lake | | | Blue Ridge Lake | | |
|---|---|---|---|---|---|---|---|---|---|
| Sept.30..... | 1,477.77 | 106,400 | - | 1,273.70 | 26,000 | - | 1,656.04 | 52,600 | - |
| Oct. 31..... | 1,448.41 | 66,300 | -40,100 | 1,273.49 | 25,900 | -100 | 1,634.35 | 31,900 | -20,700 |
| Nov. 30..... | 1,434.87 | 52,800 | -13,500 | 1,274.35 | 26,400 | +500 | 1,615.06 | 18,900 | -13,000 |
| Dec. 31..... | 1,450.00 | 68,200 | +15,400 | 1,274.82 | 26,600 | +200 | 1,622.71 | 23,600 | +4,700 |
| Calendar year 1954..... | - | - | +900 | - | - | -1,200 | - | - | +8,900 |
| Jan. 31..... | 1,453.84 | 72,700 | +4,500 | 1,274.19 | 26,300 | -300 | 1,609.74 | 16,000 | -7,600 |
| Feb. 28..... | 1,461.28 | 82,000 | +9,300 | 1,274.47 | 26,500 | +200 | 1,630.96 | 29,300 | +13,300 |
| Mar. 31..... | 1,479.15 | 108,800 | +26,800 | 1,276.54 | 27,600 | +1,100 | 1,649.64 | 45,800 | +16,500 |
| Apr. 30..... | 1,508.65 | 170,200 | +61,400 | 1,277.55 | 28,200 | +600 | 1,664.73 | 62,900 | +17,100 |
| May 31..... | 1,519.27 | 198,900 | +28,700 | 1,277.51 | 28,100 | -100 | 1,674.77 | 76,300 | +13,400 |
| June 30..... | 1,520.79 | 203,300 | +4,400 | 1,277.88 | 28,300 | +200 | 1,673.36 | 74,300 | -2,000 |
| July 31..... | 1,510.07 | 173,800 | -29,500 | 1,277.75 | 28,300 | 0 | 1,670.82 | 70,700 | -3,600 |
| Aug. 31..... | 1,500.02 | 149,600 | -24,200 | 1,252.22 | 15,900 | -12,400 | 1,663.08 | 60,900 | -9,800 |
| Sept.30..... | 1,502.92 | 156,300 | +6,700 | 1,267.85 | 23,000 | +7,100 | 1,648.40 | 44,600 | -16,300 |
| Water year 1954-55..... | - | - | +49,900 | - | - | -3,000 | - | - | -8,000 |

| Date | Ocoee No. 3 Lake | | | Parksville Lake | | | Chickamauga Lake‡ | | |
|---|---|---|---|---|---|---|---|---|---|
| Sept.30..... | 1,431.98 | 3,600 | - | 835.1 | 41,200 | - | 679.37 | 250,000 | - |
| Oct. 31..... | 1,430.46 | 3,200 | -400 | 836.2 | 42,300 | +1,100 | 678.11 | 231,000 | -19,000 |
| Nov. 30..... | 1,433.42 | 3,900 | +700 | 829.7 | 36,300 | -6,000 | 675.91 | 201,000 | -30,000 |
| Dec. 31..... | 1,426.62 | 2,600 | -1,300 | 829.5 | 36,200 | -100 | 677.65 | 232,000 | +31,000 |
| Calendar year 1954..... | - | - | -1,100 | - | - | +1,900 | - | - | +38,000 |
| Jan. 31..... | 1,421.14 | 2,000 | -600 | 828.3 | 35,100 | -1,100 | 675.28 | 193,000 | -39,000 |
| Feb. 28..... | 1,425.20 | 2,400 | +400 | 832.3 | 38,600 | +3,500 | 676.00 | 204,000 | +11,000 |
| Mar. 31..... | 1,430.38 | 3,200 | +800 | 835.1 | 41,200 | +2,600 | 676.30 | 215,000 | +11,000 |
| Apr. 30..... | 1,430.48 | 3,200 | 0 | 834.9 | 41,000 | -200 | 682.75 | 305,000 | +90,000 |
| May 31..... | 1,427.55 | 2,700 | -500 | 836.2 | 42,300 | +1,300 | 683.60 | 320,000 | +15,000 |
| June 30..... | 1,431.48 | 3,500 | +800 | 834.9 | 41,000 | -1,300 | 682.08 | 294,000 | -26,000 |
| July 31..... | 1,432.08 | 3,600 | +100 | 836.6 | 42,700 | +1,700 | 681.76 | 291,000 | -3,000 |
| Aug. 31..... | 1,432.75 | 3,800 | +200 | 835.4 | 41,500 | -1,200 | 680.07 | 261,000 | -30,000 |
| Sept.30..... | 1,432.83 | 3,800 | 0 | 834.4 | 40,600 | -900 | 679.66 | 254,000 | -7,000 |
| Water year 1954-55..... | - | - | +200 | - | - | -600 | - | - | +4,000 |

| Date | Hales Bar Lake‡ | | | Guntersville Lake‡ | | | Woods Reservoir | | |
|---|---|---|---|---|---|---|---|---|---|
| Sept.30..... | 633.41 | 72,000 | - | 593.89 | 463,000 | - | 958.57 | 37,500 | - |
| Oct. 31..... | 633.50 | 74,000 | +2,000 | 593.29 | 445,000 | -18,000 | 957.94 | 36,300 | -1,200 |
| Nov. 30..... | 633.34 | 72,000 | -2,000 | 593.19 | 445,000 | 0 | 957.08 | 34,700 | -1,600 |
| Dec. 31..... | 632.07 | 78,000 | -6,000 | 594.37 | 503,000 | +58,000 | 957.94 | 36,300 | +1,600 |
| Calendar year 1954..... | - | - | +5,000 | - | - | +61,000 | - | - | +6,700 |
| Jan. 31..... | 632.61 | 70,000 | -8,000 | 593.27 | 445,000 | -58,000 | 957.08 | 34,700 | 11,600 |
| Feb. 28..... | 631.80 | 72,000 | +2,000 | 592.88 | 443,000 | -2,000 | 957.02 | 34,600 | -100 |
| Mar. 31..... | 632.12 | 73,000 | +1,000 | 593.14 | 453,000 | +10,000 | 957.27 | 35,100 | +500 |
| Apr. 30..... | 633.10 | 73,000 | 0 | 594.72 | 492,000 | +39,000 | 959.78 | 39,800 | +4,700 |
| May 31..... | 633.68 | 74,000 | +1,000 | 595.15 | 506,000 | +14,000 | 960.02 | 40,300 | +500 |
| June 30..... | 634.05 | 76,000 | +2,000 | 594.05 | 474,000 | -32,000 | 959.17 | 38,600 | -1,700 |
| July 31..... | 632.95 | 72,000 | -4,000 | 594.14 | 474,000 | 0 | 956.07 | 32,900 | -5,700 |
| Aug. 31..... | 633.70 | 76,000 | +4,000 | 593.53 | 457,000 | -17,000 | 954.04 | 29,600 | -3,300 |
| Sept.30..... | 633.09 | 73,000 | -3,000 | 593.41 | 451,000 | -6,000 | 953.75 | 29,100 | -500 |
| Water year 1954-55..... | - | - | +1,000 | - | - | -12,000 | - | - | -8,400 |

* Estimated.
† Elevation at 12 p.m.
‡ Contents based on backwater profile.

Reservoirs in Tennessee River basin--Continued

Monthly elevation and contents, of reservoirs in Tennessee River basin, water year October 1954 to September 1955--Continued

| Date | Wheeler Lake‡ | | | Wilson Lake | | | Pickwick Lake‡ | | |
|---|---|---|---|---|---|---|---|---|---|
| | Elevation (feet)† | Contents (cfs-days) | Change in contents during month (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents during month (cfs-days) | Elevation (feet)† | Contents (cfs-days) | Change in contents during month (cfs-days) |
| Sept.30..... | 552.22 | 458,000 | - | 506.40 | 315,800 | - | 411.18 | 402,000 | - |
| Oct. 31..... | 552.10 | 454,000 | -4,000 | 506.63 | 317,600 | +1,800 | 410.14 | 380,800 | -22,000 |
| Nov. 30..... | 550.57 | 420,000 | -34,000 | 506.96 | 320,200 | +2,600 | 408.78 | 354,000 | -26,000 |
| Dec. 31..... | 553.38 | 514,000 | +94,000 | 505.59 | 309,400 | -10,800 | 409.28 | 384,000 | +30,000 |
| Calendar year 1954..... | - | - | +96,000 | - | - | +45,300 | - | - | +24,000 |
| Jan. 31..... | 550.15 | 413,000 | -101,000 | 505.27 | 307,000 | -2,400 | 409.00 | 359,000 | -25,000 |
| Feb. 28..... | 552.24 | 470,000 | +57,000 | 505.78 | 310,900 | +3,900 | 410.03 | 386,000 | +27,000 |
| Mar. 31..... | 553.67 | 510,000 | +40,000 | 506.43 | 316,000 | +5,100 | 414.54 | 475,000 | +89,000 |
| Apr. 30..... | 555.95 | 571,000 | +61,000 | 507.26 | 322,600 | +6,600 | 413.85 | 457,000 | -18,000 |
| May 31..... | 556.08 | 574,000 | +3,000 | 507.54 | 324,900 | +2,300 | 417.09 | 530,000 | +73,000 |
| June 30..... | 555.78 | 567,000 | -7,000 | 505.87 | 311,600 | -13,300 | 414.06 | 461,000 | -69,000 |
| July 31..... | 553.96 | 507,000 | -60,000 | 507.25 | 322,600 | +11,000 | 412.35 | 425,000 | -36,000 |
| Aug. 31..... | 552.95 | 482,000 | -25,000 | 507.22 | 322,300 | -300 | 411.73 | 413,000 | -12,000 |
| Sept.30..... | 552.43 | 463,000 | -19,000 | 506.84 | 319,300 | -3,000 | 410.78 | 393,000 | -20,000 |
| Water year 1954-55..... | - | - | +5,000 | - | - | +3,500 | - | - | -9,000 |

| Date | Kentucky Lake‡ | | |
|---|---|---|---|
| Sept.30..... | 355.90 | 1,107,000 | - |
| Oct. 31..... | 356.04 | 1,117,000 | +10,000 |
| Nov. 30..... | 354.76 | 1,035,000 | -82,000 |
| Dec. 31..... | 354.18 | 1,094,000 | +59,000 |
| Calendar year 1954..... | - | - | +104,000 |
| Jan. 31..... | 354.47 | 1,026,000 | -68,000 |
| Feb. 28..... | 353.90 | 1,042,000 | +16,000 |
| Mar. 31..... | 359.30 | 1,472,000 | +430,000 |
| Apr. 30..... | 359.70 | 1,417,000 | -55,000 |
| May 31..... | 359.06 | 1,365,000 | -52,000 |
| June 30..... | 358.16 | 1,281,000 | -84,000 |
| July 31..... | 356.77 | 1,189,000 | -92,000 |
| Aug. 31..... | 355.92 | 1,119,000 | -70,000 |
| Sept.30..... | 355.78 | 1,113,000 | -6,000 |
| Water year 1954-55..... | - | - | +6,000 |

† Elevation at 12 p.m.
‡ Contents based on backwater profile.

In 1931, a minor drought year, a study was made of large springs in East Tennessee and the results published in WSP 713. From 1950 to 1954, a more detailed study, including some of those springs, was carried on in cooperation with the Ground Water Branch in connection with an investigation of the ground-water resources of the region. This study was made on a roving basis, the discharge of one group of springs being measured monthly for one year and then measurements made on another group for a year. During a round of measurements in June 1954, measurements were made at many springs where regular monthly measurements had previously been discontinued. The results of measurements made were published annually in WSP 1173, 1206, 1236, 1276, and 1336. As some of the springs were measured during the drought year 1931, comparisons might be made to determine probable minimum flow of springs which were not measured in 1931. Many of these springs are used for municipal or industrial water supplies. Others do not have well sustained flow during the dry season. Results of these discharge measurements show the characteristics of the springs and give good indication of the variation of the flow.

During the water year October 1954 to September 1955, measurements were made at several springs, most of which were measured during the 1950-54 study. The results, showing the yield and in most instances the water temperature, are given in the following table:

Discharge measurements, water year October 1954 to September 1955

| Spring | Location | Tributary to-- | Date | Discharge (gallons per minute) | Temperature (degrees Fahrenheit) | | Remarks |
|---|---|---|---|---|---|---|---|
| | | | | | Air | Water | |
| **Lawrence County** | | | | | | | |
| Beuerlein.... | About 2.1 miles east of courthouse at Lawrenceburg. | Big Dry Branch to Shoal Creek. | Sept.16 | 1,270 | 86 | 58 | |
| **McMinn County** | | | | | | | |
| Arnwine..... | At Barton Mill, 3.4 miles west of Niota and 5 miles north of Athens. | Lathan Spring Branch to North Mouse Creek. | Oct. 6 | 844 | 87 | 60 | |
| Cave..... | At Athens on U. S. Highway 11, 0.1 mile north of Ingleside Spring. | Unnamed tributary to Oostanaula Creek. | Oct. 6 | 250 | 88 | 60 | |
| **Sumner County** | | | | | | | |
| Soper..... | On access road to Tennessee Valley Authority Gallatin steam plant, 2½ miles southeast of Gallatin. | Unnamed stream in closed basin. | Jan. 5 | 108 | 74 | 60 | |
| | | | Jan. 5 | 145 | - | - | |
| | | | Jan. 6 | 72 | - | - | Weir measurement. |
| | | | Jan. 6 | 90 | 55 | 60 | |
| | | | Jan. 6 | 94 | - | - | Weir measurement. |
| | | | Jan. 24 | 166 | 42 | 59 | Clear. |
| | | | Jan. 24 | 166 | - | - | Weir measurement. |
| | | | Feb. 7 | 1,118 | 38 | 59 | Clear. |
| | | | June 22 | 6 | - | 59 | Do. |
| | | | June 22 | 7 | 88 | 59 | Weir measurement. |
| | | | July 14 | 8 | 90 | 59 | |
| | | | July 14 | 10 | 90 | 59 | |
| | | | Sept.12 | †2 | - | - | |
| **Unicoi County** | | | | | | | |
| United States Fisheries. | 2½ miles northeast of Erwin. | North Indian Creek.. | May 3 | 1,019 | 73 | - | |

† Estimated.

## Pigeon River near Mount Sterling, N. C.

Location.--Lat 35°43'25", long 83°01'42", 600 ft upstream from Hurricane Creek and 5 miles southeast of Mount Sterling, Haywood County.
Drainage area.--460 sq mi (revised).
Records available.--September 1924 to April 1930 (discontinued).
Gage.--Water-stage recorder. Datum of gage is 1,879.5 ft (revised) above mean sea level, datum of 1929, supplementary adjustment of 1936.
Average discharge.--5 years (1924-29), 837 cfs.
Extremes.--1924-30: Maximum discharge, 21,500 cfs (revised) Aug. 16, 1928 (gage height, 11.85 ft), from rating curve extended above 2,800 cfs by logarithmic plotting; minimum, 24 cfs Apr. 18, 1930 (gage height, 0.30 ft), result of regulation; minimum prior to Oct. 27, 1929, 41 cfs Sept. 8, 1925 (gage height, 0.62 ft).
Revisions.--The figures of maximum discharge for some water years have been revised as shown in the following table. They supersede figures published in the water-supply papers indicated.

| WSP | Water year | Date | Discharge (cfs) | Gage height (feet) |
|---|---|---|---|---|
| 663 | 1928 | Aug. 16, 1928 | 21,500 | 11.85 |
| 683 | 1929 | Mar. 5, 1929 | 9,640 | 8.14 |
| 698 | 1930 | Nov. 19, 1929 | 8,770 | 7.78 |

Remarks.--Slight regulation and diurnal fluctuation by Lake Junaluska and Hepco powerplant at low flow. Gates closed at Waterville Dam Oct. 27, 1929; excessive regulation and diversion thereafter.
Revisions.--Revised figures of discharge, in cubic feet per second, for high-water period in the water year 1928, superseding those published in WSP 663, are given herewith:

| 1928 | |
|---|---|
| Aug. 15 | 3,410 |
| 16 | 12,200 |
| 17 | 3,990 |
| 18 | 2,750 |

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| August 1928 | 12,200 | 765 | 1,730 | 3.76 | 4.33 |
| Water year 1927-28 | 12,200 | 240 | 1,150 | 2.50 | 34.10 |
| Calendar year 1928 | 12,200 | 426 | 1,110 | 2.41 | 32.89 |

## Little Tennessee River at Iotla, N. C.

Location.--Lat 35°13'59", long 83°23'32", 1,000 ft upstream from bridge on State Highway 28 at Iotla, Macon County, and 1,100 ft upstream from Iotla Creek.
Drainage area.--323 sq mi.
Records available.--June 1929 to September 1945 (discontinued).
Gage.--Water-stage recorder. Datum of gage is 1,958.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.
Average discharge.--16 years, 736 cfs.
Extremes.--1929-45: Maximum discharge, 19,600 cfs Aug. 30, 1940 (gage height, 13.5 ft, from floodmarks), from rating curve extended above 7,400 cfs on basis of computation of peak flow over dam; minimum and minimum daily, 31 cfs Nov. 26, 1933.
Flood of October 1898 reached a stage of 13 ft, from survey by Tennessee Valley Authority. Flood of June 16, 1949, reached a stage of 13.0 ft, from floodmarks.
Remarks.--Considerable diurnal fluctuation caused by Porters Bend powerplant at Lake Emory, 2.6 miles above station.
Revisions.--WSP 823: Drainage area. Revised figures of discharge, in cubic feet per second, for the water year 1929, superseding those published in WSP 683, are given herewith:

| 1929 | |
|---|---|
| Sept. 25 | 1,960 |
| 26 | 8,360 |
| 27 | 4,500 |
| 28 | 2,050 |
| 29 | 1,400 |
| 30 | 1,200 |

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| September 1929 | 8,360 | 294 | 1,020 | 3.16 | 3.52 |

Little Tennessee River at Etna, N. C.

Location.--Lat 35°16'42", long 83°26'55", on State Highway 28 at Etna Post Office, Macon County, 0.3 mile (revised) downstream from Lakey Creek.

Drainage area.--374 sq mi (revised).

Records available.--October 1925 to December 1929 (discontinued).

Gage.--Staff gage. Datum of gage is 1,917.72 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--1925-29: Maximum discharge, 11,800 cfs Sept. 26, 1929 (gage height, 11.3 ft, from graph based on gage readings), from rating curve extended above 7,200 cfs, minimum observed, 191 cfs Oct. 2, 1927 (gage height, 1.00 ft).

Remarks.--Considerable diurnal fluctuation caused by Porters Bend powerplant at Lake Emory, 9.8 miles upstream.

Revisions.--Revised figures of discharge in cubic feet per second, for the water year 1929, superseding those published in WSP 683, are given herewith:

| 1929 | |
|---|---|
| Sept.25 | 2,270 |
| 26 | 9,700 |
| 27 | 5,220 |
| 28 | 2,380 |
| 29 | 1,620 |
| 30 | 1,390 |

| Month | Maximum | Minimum | Mean | Per square mile | Runoff in inches |
|---|---|---|---|---|---|
| September 1929 | 9,700 | 319 | 1,140 | 3.05 | 3.39 |
| Water year 1928-29 | 9,700 | 319 | 1,240 | 3.32 | 44.98 |
| Calendar year 1929 | 9,700 | 319 | 1,380 | 3.69 | 49.99 |

Measurements of streamflow in the Cumberland and Tennessee River basins made at points other than regular gaging stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from groundwater storage. Measurements believed to have been made under base flow conditions are identified by an asterisk (*) to the left of the discharge figure. These measurements when correlated with the simultaneous discharge of a nearby stream where continuous records are available will give a picture of the low-flow potentiality of stream. The column headed, "Measured previously" shows the water years for which measurements were made at the same, or practically the same, site.

Determinations of peak flow at points other than regular gaging stations are given in a separate table on page 265.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955

Cumberland River basin

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Yellow Creek bypass. | Cumberland River. | Lat 36°37'52", long 83°43'45", 1,800 ft upstream from Four Mile Run and 1,600 ft downstream from Lick Fork, at Middlesboro, Ky. | 35.1 | 1940-41, 1944-50, 1952-54 | Feb. 28 | 291 |
| Big South Fork Cumberland River. | ....do..... | Lat 36°27'13", long 84°37'04", 150 ft above Oneida and Western Ry. bridge, 6.2 miles west of Helenwood, Scott County, Tenn. | - | 1923,1925, 1953-54 | July 20 | a174 |
| Big Hickory Creek. | Barren Fork.. | Lat 35°39'30", long 84°48'10", at bridge on State Highway 55, 2 miles southwest of McMinnville, Warren County, Tenn. | 113 | 1950-52, 1954 | Sept.26 | 9.37 |
| Charles Creek | Collins River | Lat 35°43'00", long 85°46'05", at county highway bridge at Faulkner Springs, 2.7 miles north of McMinnville, Warren County, Tenn. | 32.0 | 1951-53 | Sept.26 | 12.3 |
| Station Camp Creek. | Cumberland River. | Lat 36°22'58", long 86°33'32", at bridge on Long Hollow Pike, at Ocana, 6½ miles west of Gallatin, Sumner County, Tenn. | - | 1953 | Sept.12 | 0 |
| East Camp Creek b/ | Station Camp Creek. | Lat 36°23'11", long 86°28'57", 200 ft below bridge on Long Hollow Pike and 1.8 miles west of Gallatin, Sumner County, Tenn. | - | 1953 | Sept.12 | 0 |
| Liberty Branch. | East Camp Creek b/ | Lat 36°23'14", long 86°30'21", at bridge on Long Hollow Pike, 3.1 miles west of Gallatin, Sumner County, Tenn. | - | 1953 | Sept.12 | 0 |
| Drake Creek.. | Cumberland River. | Lat 36°18'20", long 86°36'49", at bridge on U. S. Highway 31E, at east edge of Hendersonville, Sumner County, Tenn. | 38.0 | 1953 | Sept.12 | 0 |
| Mansker Creek | ....do..... | Lat 36°19'38", long 86°42'41", at bridge on Long Hollow Pike, 0.6 mile east of Goodlettsville, Davidson County, Tenn. | - | 1953 | July 14<br>Sept.12 | 0<br>0 |
| ....do..... | ....do..... | Lat 36°18'34", long 86°40'20", at bridge on U. S. Highway 31E, 3.0 miles west of Hendersonville, Sumner County, Tenn. | - | 1953 | Sept.12 | 0 |
| Pond Creek,.. | ....do..... | Lat 36°12'05", long 86°59'48", at first bridge above mouth, 3 miles west of Scottsboro, Davidson County, Tenn. | - | | Aug. 24 | 0 |
| Big Marrowbone Creek. | ....do..... | At bridge on State Highway 12, 3.2 miles southeast of Ashland City, Cheatham County, Tenn. | - | 1954 | Nov. 14<br>June 30 | 0<br>0 |

Tennessee River basin

| | | | | | | |
|---|---|---|---|---|---|---|
| West Fork French Broad River | French Broad River. | Lat 35°08'28", long 82°50'20", at county road bridge, 0.1 mile above North Fork at Rosman, N. C. | 29.4 | 1900,1901, 1953 | Oct. 26†<br>Oct. 13 | 28.1<br>*1.59 |
| Middle Fork French Broad River. | ....do..... | Lat 35°08'00", long 82°48'48", at county road bridge, 0.2 mile above mouth and 1 mile southeast of Rosman, N. C. | 5.63 | 1900,1953 | Oct. 26†<br>Oct. 13 | 6.66<br>*3.70 |
| East Fork French Broad River. | ....do..... | Lat 35°08'13", long 82°48'13", at county road bridge, 1 mile above mouth and 1.4 miles southeast of Rosman, N. C. | 25.9 | 1901,1953 | Oct. 26†<br>Oct. 13 | 31.3<br>*17.0 |
| Nicholson Creek. | ....do..... | Lat 35°13'17", long 82°44'41", 90 ft below U. S. Highway 64 and 1.0 mile southwest of Brevard, N. C. | 3.02 | | Aug. 18‡<br>Aug. 19‡<br>Sept. 1‡<br>Oct. 5<br>Nov. 5<br>Dec. 3 | 3.47<br>31.5<br>2.86<br>*1.97<br>*2.75<br>*2.67 |
| Tucker Creek. | Nicholson Creek. | Lat 35°13'59", long 82°44'32", at Southern Ry. bridge in Brevard, N. C., 0.6 mile upstream from U. S. Highway 64. | 1.20 | | Aug. 19‡<br>Aug. 19‡<br>Sept. 1‡<br>Oct. 5<br>Nov. 5<br>Dec. 3 | .96<br>2.37<br>1.00<br>*.54<br>*82<br>*.99 |

* Base flow.
† 1953.
‡ 1954.
a Furnished by Corps of Engineers.
b Published in WSP 1276 as East Fork Station Camp Creek.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Tucker Creek. | Nicholson Creek. | Lat 35°13'29", long 82°44'24", at U. S. Highway 64, 0.3 mile above Nicholson Creek and 0.7 mile southwest of Brevard, N. C. | 1.48 | | Aug. 19‡<br>Aug. 19‡<br>Sept. 1‡<br>Sept.15‡<br>Oct. 5<br>Nov. 5<br>Dec. 3 | 1.65<br>12.7<br>1.80<br>.77<br>*.81<br>*1.36<br>*1.41 |
| King Creek... | French Broad River. | Lat 35°14'04", long 82°43'13", at Neely Road bridge, 0.6 mile above mouth and 0.8 mile east of Brevard, N. C. | 4.17 | | Aug. 19‡<br>Sept. 1‡<br>Oct. 5<br>Nov. 5<br>Dec. 3<br>Oct. 23† | 17.4<br>3.45<br>*1.93<br>*3.26<br>*3.39<br>4.69 |
| Turkey Creek. | Davidson River. | Lat 35°16'25", long 82°41'06", 0.1 mile above mouth and 1.3 miles north of Pisgah Forest, N. C. | 5.55 | 1953 | Oct. 13 | *3.14 |
| Big Willow Creek. | French Broad River. | Lat 35°17'55", long 82°33'46", at county road bridge, 0.2 mile above mouth and 3.6 miles east of Blantyre, N. C. | 9.11 | 1953 | Oct. 23†<br>Oct. 13 | 6.69<br>*4.12 |
| South Fork Mills River | Mills River.. | Lat 35°21'58", long 82°44'22", at former gaging station at The Pink Beds, 9 miles north of Brevard, N. C. | 9.99 | 1926,1950, 1953 | Oct. 23†<br>Oct. 14 | 5.20<br>*1.99 |
| North Fork Mills River | ....do..... | Lat 35°23'38", long 82°37'00", 0.4 mile above mouth and 2.8 miles west of Mills River, N. C. | 24.1 | 1953 | Oct. 23†<br>Oct. 14 | 13.6<br>*7.21 |
| Mud Creek.... | French Broad River. | Lat 35°18'31", long 82°27'32", at U. S. Highway 25, 20 ft downstream from Wash Creek at Hendersonville, N. C. | 20.8 | | Oct. 28†<br>Oct. 14 | 16.2<br>*10.3 |
| Johnson drainage ditch. | Mud Creek.... | Lat 35°19'36", long 82°27'09", at U. S. Highway 64, below Devils Fork at Hendersonville, N. C. 1 mile above mouth. | 24.7 | 1953 | Oct. 23†<br>Oct. 14 | 12.9<br>*4.37 |
| Laurel Branch | Clear Creek.. | Lat 35°22'15", long 82°24'10", at U. S. Highway 64, 0.5 mile above mouth and 4 miles southwest of Edneyville, N. C. | .57 | | Nov. 9 | *.26 |
| Cane Creek... | French Broad River. | Lat 35°29'40", long 82°25'43", 50 ft below unnamed branch, 0.3 mile below Gap Creek, and 2.2 miles southwest of Fairview, N. C. | 40.8 | | Oct. 14 | *9.23 |
| Hooper Creek. | Cane Creek... | Lat 35°25'54", long 82°28'54", at Asheville-Hendersonville Airport, 1.2 miles above mouth near Fletcher, N. C. | 15.5 | 1953 | Oct. 23†<br>Oct. 14 | 3.04<br>*1.99 |
| Avery Creek.. | French Broad River. | Lat 35°27'06", long 82°33'25", at mouth, 3.4 miles northwest of Fletcher, N. C. | 8.59 | 1953 | Oct. 22†<br>Oct. 13 | 2.09<br>*2.85 |
| North Hominy Creek. | Hominy Creek. | At U. S. Highway 19 at mouth, 1.2 miles east of Canton, N. C. | 7.82 | | Oct. 21†<br>Oct. 22† | 1.83<br>6.35 |
| Hominy Creek. | ....do..... | Lat 35°32'08", long 82°41'40", at State Highway 112, 0.1 mile above South Hominy Creek at Candler, N. C. | 30.2 | 1953 | Oct. 14 | *4.30 |
| Pole Creek... | ....do..... | Lat 35°32'40", long 82°40'55", at U. S. Highway 19, 0.3 mile above mouth and 0.8 mile northeast of Candler, N. C. | 9.58 | 1953 | Oct. 22†<br>Oct. 14 | 2.58<br>*1.83 |
| Hominy Creek. | French Broad River. | Lat 35°32'41", long 82°38'05", at Sand Hill Road bridge, 1.1 miles east of Enka, N. C. | 91.1 | 1949 | July 28‡<br>Aug. 18‡<br>Aug. 19‡<br>Sept. 9‡<br>Oct. 20<br>Nov. 23 | 29.0<br>22.9<br>25.4<br>29.6<br>*26.2<br>30.2 |
| ....do..... | ....do..... | Lat 35°33'46", long 82°35'52", 270 ft above State Highway 191, 1.1 miles south of West Asheville, N. C. | 104 | 1900-1901, 1925,1940, 1949 | July 28‡<br>Aug. 18‡<br>Sept. 9‡<br>Oct. 20<br>Nov. 23 | 31.5<br>30.0<br>32.7<br>*40.5<br>*35.5 |
| Swannanoa River. | ....do..... | Lat 35°36'11", long 82°21'55", at Southern Ry. bridge, 0.2 mile above North Fork near Black Mountain, N. C. | 21.2 | 1953 | Oct. 23†<br>Oct. 13 | 7.01<br>*3.22 |
| North Fork Swannanoa River. | Swannanoa River. | Lat 35°39'42", long 82°20'42", at Burnett Dam near Black Mountain, N. C. | 21.9 | | June 10<br>July 20<br>Aug. 17<br>Sept.16 | 9.20<br>22.8<br>56.8<br>1.28 |

* Base flow.
† 1953.
‡ 1954.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Gashes Creek. | Swannanoa River. | Lat 35°34'02", long 82°30'03", at U. S. Highway 74 at Oakley, N. C., 0.8 mile above mouth. | 6.15 | 1953 | Oct. 23†<br>Oct. 14 | 1.45<br>*1.00 |
| Haw Creek.... | ....do..... | Lat 35°34'35", long 82°31'29", at State Highway 81 at mouth, 1.2 miles northeast of Biltmore, N. C. | 4.57 | 1953 | Oct. 23†<br>Oct. 14 | .57<br>*.33 |
| Sweeten Creek | ....do..... | At mouth, in Biltmore, N. C..... | 5.46 | | Oct. 23† | .95 |
| Mill Creek... | French Broad River. | At mouth, 1.6 miles northeast of post office in West Asheville, N. C. | 6.85 | | Oct. 22† | 1.87 |
| Beaverdam Creek. | ....do..... | At State Highway 191, at mouth at Elk Mountain, N. C. | 12.4 | | Oct. 22† | .74 |
| Newfound Creek. | ....do..... | At county bridge, 1 mile above mouth and 2.6 miles southwest of Alexander, N. C. | 34.2 | | Oct. 21†<br>Oct. 22† | 6.92<br>6.61 |
| Reems Creek.. | ....do..... | Lat 35°41'22", long 82°35'43", 700 ft below New Stock Road, 800 ft above Wagner Branch, and 2.1 miles west of Weaverville, N. C. | 33.4 | | Oct. 22†<br>Sept.14†<br>Nov. 23 | 7.74<br>2.14<br>*5.58 |
| ....do..... | ....do..... | At U. S. Highway 25 at mouth, 0.5 mile south of Alexander, N. C. | 36.3 | | Oct. 21† | 2.97 |
| Flat Creek... | ....do..... | At U. S. Highway 25 at mouth, 1.2 miles northeast of Alexander, N. C. | 24.7 | | Oct. 21† | 2.26 |
| Ivy River.... | ....do..... | At U. S. Highway 19 above Little Ivy River, at Forks of Ivy, 2.5 miles south of Mars Hill, N. C. | 60.0 | | Oct. 21† | 7.92 |
| Little Ivy River. | Ivy River.... | At mouth at Forks of Ivy, 2.5 miles south of Mars Hill, N. C. | 46.5 | | Oct. 21† | 4.93 |
| Bull Creek... | ....do..... | At mouth at Sexton, 4 miles southwest of Mars Hill, N. C. | 22.9 | | Oct. 21† | 2.26 |
| Big Pine Creek. | French Broad River. | At mouth, at Barnard, N. C..... | 16.6 | | Oct. 22† | 1.77 |
| Brush Creek.. | ....do..... | Lat 35°50'40", long 82°44'30", at county road bridge, 0.7 mile southwest of Walnut, N. C. and 0.8 mile above mouth. | 7.99 | | Nov. 22 | *1.27 |
| Shelton Laurel Creek. | Big Laurel Creek. | Lat 35°55'24", long 82°45'08", at mouth at State Highway 208, 3.2 miles northeast of Stackhouse, N. C. | 54.7 | 1953 | Oct. 22†<br>Oct. 19 | 8.06<br>*10.7 |
| Spring Creek. | French Broad River. | At State Highway 209, 0.5 mile southwest of Hot Spring, N. C. | c70.8 | | Oct. 22† | 7.88 |
| ....do..... | ....do..... | Lat 35°53'26", long 82°49'33", at pumping plant, 1,000 ft above U. S. Highway 70 at Hot Springs, N. C. | 71.8 | 1945,1947 | July 28‡<br>Aug. 11‡<br>Sept.13‡<br>Sept.13‡<br>Oct. 21<br>Nov. 22 | 14.8<br>14.1<br>8.14<br>9.11<br>9.18<br>27.3 |
| ....do..... | ....do..... | Lat 35°53'48", long 82°49'38", 500 ft above mouth and 1,500 ft above U. S. Highway 70 at Hot Springs, N. C. | 72.0 | 1900,1901 | July 28‡<br>Sept.13‡<br>Oct. 21<br>Nov. 22 | 17.0<br>10.6<br>*10.6<br>27.1 |
| West Fork Pigeon River. | Pigeon River. | 0.1 mile below Hickory Flat Cove and 6.5 miles southeast of Hazelwood, N. C. | 31.3 | | Nov. 5† | 13.5 |
| ....do..... | ....do..... | 0.3 mile above East Fork at Woodrow, N. C. | 64.8 | | Oct. 22† | d36.2 |
| East Fork Pigeon River. | ....do..... | 0.2 mile above West Fork at Silver Bluff, N. C. | 52.8 | | Oct. 21† | 16.2 |
| Beaverdam Creek. | ....do..... | At mouth at Fiberville, 0.7 mile northeast of Canton, N. C. | 11.2 | | Oct. 21† | 1.39 |
| Richland Creek. | ....do..... | Lat 35°27'57", long 83°00'41", 20 ft below Hyatt Creek and 0.3 mile above Allen Creek at Hazelwood, N. C. | 13.2 | 1941 | Nov. 17<br>Dec. 13<br>Jan. 5<br>Feb. 7<br>Mar. 10<br>May 11<br>June 7<br>July 13<br>Aug. 11<br>Sept.12 | *7.60<br>14.3<br>*17.5<br>79.4<br>*31.6<br>*19.6<br>*21.0<br>19.5<br>*15.2<br>*8.36 |
| ....do..... | ....do..... | Lat 35°28'10", long 83°00'35", 100 ft above Allen Creek at Hazelwood, N. C. | 13.3 | 1939, 1950-53 | Oct. 6†<br>Nov. 13†<br>Dec. 9†<br>Feb. 9‡<br>Mar. 15‡<br>Apr. 14‡<br>May 17‡ | e13.4<br>e11.6<br>e204<br>e34.3<br>e48.8<br>e43.2<br>e33.8 |

* Base flow.
† 1953.
‡ 1954.
c Corrected; supersedes figure published in WSP 1236.
d Affected by regulation at Lake Logan.
e Includes flow diverted from Allen Creek by Dayton Rubber Co. at Hazelwood, N. C.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Richland Creek. | Pigeon River. | Lat 35°28'10", long 83°00'35", 100 ft above Allen Creek at Hazelwood, N. C. | 13.3 | 1939, 1950-53 | June 15‡<br>July 16‡<br>Aug. 4‡<br>Sept.10‡<br>Oct. 12<br>Apr. 6 | e24.9<br>e18.1<br>e16.2<br>e15.0<br>*e12.0<br>e113 |
| ....do..... | ....do..... | Lat 35°30'30", long 82°58'19", at county road bridge, 150 ft above Southern Ry. and 1.6 miles northeast of Waynesville, N. C. | 48.0 | 1941, 1953 | Oct. 21†<br>July 28‡<br>Aug. 4‡<br>Sept.10‡<br>Oct. 12<br>Nov. 17 | 15.0<br>32.8<br>26.4<br>19.5<br>*14.0<br>21.1 |
| ....do..... | ....do..... | Lat 35°32'51", long 82°56'44", at county road, 0.2 mile above mouth and 2.2 miles northeast of Clyde, N. C. | 68.4 | | July 28‡<br>Aug. 4‡<br>Sept.10‡<br>Oct. 12<br>Nov. 18 | f34.8<br>f29.2<br>f19.0<br>*f16.8<br>*f25.2 |
| Crabtree Creek. | ....do..... | 0.2 mile above mouth and 0.6 mile west of Crabtree, N. C. | 25.3 | | Oct. 21† | 3.52 |
| North Toe River. | Nolichucky River. | Lat 36°05'01", long 81°55'45", at State Highway 194, at Newland, N. C. | 9.24 | | Aug. 23†<br>Sept.15‡<br>Oct. 13<br>Nov. 18<br>Aug. 15<br>Aug. 15 | 2.93<br>2.37<br>*2.30<br>*8.06<br>158<br>166 |
| Crabtree Creek. | North Toe River. | At U. S. Highway 19E, 1.7 miles east of Newdale, N. C. and 3.7 miles above mouth. | 16.6 | | Oct. 21† | 6.91 |
| South Toe River. | ....do..... | At site of former gaging station on U. S. Highway 19E at Newdale, N. C. | 60.8 | | Oct. 9†<br>Dec. 8†<br>Jan. 23‡<br>Feb. 9‡<br>Mar. 10‡<br>Apr. 15‡<br>May 12‡<br>June 8‡<br>July 1‡ | 31.7<br>132<br>869<br>100<br>185<br>144<br>100<br>94.1<br>51.7 |
| Mitchell Branch. | Little Crabtree Creek. | Lat 35°55'02", long 82°17'45", at Azalea Lane in Burnsville, N. C., 800 ft above mouth. | .80 | | Aug. 26‡<br>Sept.15‡<br>Oct. 13<br>Nov. 17 | .35<br>.21<br>*.24<br>*.33 |
| Little Crabtree Creek. | South Toe Creek. | Lat 35°54'54", long 82°15'56", at Allen Branch Road bridge, 2.0 miles east of Burnsville, N. C. | 4.59 | | Aug. 26‡<br>Sept.15‡<br>Oct. 13<br>Nov. 17 | 2.69<br>1.92<br>*1.81<br>*2.69 |
| ....do..... | ....do..... | U. S. Highway 19E, 0.3 mile west of Micaville, N. C., and 0.8 mile above mouth. | 16.7 | | Oct. 21† | 5.04 |
| Jacks Creek.. | North Toe River. | At mouth on State Highway 197, 2.9 miles southeast of Huntdale, N. C. | 20.7 | | Oct. 22† | 4.54 |
| Pigeon Roost Creek. | ....do..... | At mouth on State Highway 26, 1.7 miles northeast of Huntdale, N. C. | 14.1 | | Oct. 22† | 2.76 |
| Pine Swamp Branch. | Cane River... | Lat 35°54'41", long 82°19'18", at Pine Swamp Branch Road, 0.9 mile above mouth and 1.2 miles west of Burnsville, N. C. | 1.57 | | Aug. 26‡<br>Sept.15‡<br>Sept.16‡<br>Oct. 13<br>Nov. 17 | 1.01<br>.63<br>.65<br>*.70<br>*.88 |
| Big Creek.... | ....do..... | At mouth on U. S. Highway 19W, at Sioux, N. C. | 7.98 | | Oct. 22† | 1.04 |
| Phipps Creek. | ....do..... | Lat 35°54'40", long 82°22'10", at U. S. Highway 19E, 0.4 mile above mouth and 3.9 miles west of Burnsville, N. C. | 1.60 | | Nov. 17 | *.60 |
| Little Pigeon River. | French Broad River. | Lat 35°51'38", long 83°30'13", at Hadsden Bridge on U. S. Highway 411, 4¼ miles east of Sevierville, Sevier County, Tenn. | 110 | 1952-54 | June 21 | *57.8 |
| East Fork Little Pigeon River. | Little Pigeon River. | Lat 35°51'55", long 83°29'17", at bridge on U. S. Highway 411, 1.3 miles above mouth and 5.2 miles east of Sevierville, Sevier County, Tenn. | 64.1 | 1944, 1952-54 | June 21 | *10.8 |
| Fighting Creek. | West Fork Little Pigeon River. | Lat 35°41'09", long 83°32'27", at bridge on State Highway 73, 3 miles southwest of Gatlinburg, Sevier County. | 4.59 | | June 21. | *1.89 |

* Base flow.
† 1953.
‡ 1954
e Includes flow diverted from Allen Creek by Dayton Rubber Co. at Hazelwood, N. C.
f Affected by regulation at Lake Junaluska.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Horse Branch. | Dudley Creek. | Lat 35°43'27", long 83°29'27", at culvert under State Highway 73, 1.5 miles east of intersection of State Highway 73 and U. S. Highway 441, near Gatlinburg, Sevier County, Tenn. | 0.90 | | June 21 | *0.11 |
| West Fork Little Pigeon River. | Little Pigeon River. | Lat 35°48'21", long 83°34'28", at bridge on old State Highway 71, 1.6 miles northwest of Pigeon Forge and 4.3 miles south of Sevierville, Sevier County, Tenn. | 76.2 | 1946-49, 1953-54 | June 21<br>Sept.22 | *14.8<br>*9.13 |
| Dickey Creek. | South Fork Holston River. | Lat 36°46'26", long 81°25'12", at Sugar Grove, Va. | 7.31 | 1952-54 | Sept.28 | *.62 |
| Laurel Creek. | Beaverdam Creek. | Lat 36°37'47", long 81°48'42", at bridge on State Highway 91, 1 mile south of Damascus, Va. | - | 1952,1954 | Sept.13 | *19.4 |
| Cornett Spring. | Middle Fork Holston River. | Lat 36°51'51", long 81°24'10", 1.5 miles east of Atkins, Va. | - | 1952,1954 | Sept.13 | *1.05 |
| Bear Creek... | ....do..... | Lat 36°52'09", long 81°26'19", at bridge on State Highway 622, near Atkins, Va. | 14.4 | 1953-54 | July 22<br>Sept.13 | *.58<br>*.21 |
| Middle Fork Holston River. | South Fork Holston River. | Lat 36°52'07", long 81°26'29", 300 ft below Bear Creek and 1 mile west of Atkins, Va. | 50.6 | 1950-51<br>1953-54 | Sept.13 | *6.04 |
| Scotts Spring | Middle Fork Holston River. | Lat 36°51'12", long 81°28'35", along U. S. Highway 11, 1.5 miles east of Marion, Va. | - | 1954 | Sept.13 | *4.99 |
| Mount Carmel Mill Spring | ....do..... | Lat 36°51'12", long 81°28'43", along U. S. Highway 11, 1 mile east of Marion, Va. | - | 1954 | Sept.13 | *1.27 |
| Middle Fork Holston River. | South Fork Holston River. | Lat 36°50'20", long 81°30'41", at bridge on U. S. Highway 11, at Marion, Va. | - | 1954 | Sept.13 | *15.4 |
| Staley Creek. | Middle Fork Holston River. | Lat 36°49'22", long 81°29'17", above fish hatchery on State Highway 16, 1 mile south of Marion, Va. | 8.34 | 1952-54 | Sept.13 | *2.17 |
| ....do..... | ....do..... | Lat 36°49'22", long 81°29'17", below fish hatchery on State Highway 16, 1 mile south of Marion, Va. | - | | Sept.13 | *7.85 |
| Hungry Mother Creek. | ....do..... | Lat 36°51'56", long 81°31'30", at bridge on State Highway 16, 2.3 miles north of Marion, Va. | 13.9 | 1928<br>1953-54 | Sept.13 | *.14 |
| Neal Umbarger Spring. | ....do..... | Lat 36°48'10", long 81°33'09", 3 miles southwest of Marion, Va. | - | 1928,1954 | Sept.13 | *1.27 |
| Garlock Creek | ....do..... | Lat 36°48'29", long 81°40'21", at bridge on State Highway 636, 1,000 ft north of U. S. Highway 11 at Chilhowie, Va. | 7.18 | 1953-54 | Sept.13 | *.41 |
| Wolf Creek... | South Fork Holston River. | Lat 36°42'21", long 81°59'30", at bridge on U. S. Highway 11 at Abingdon, Va. | 4.85 | 1951-54 | Sept.14 | *2.95 |
| Mumpower Creek. | Beaver Creek. | Lat 36°37'15", long 81°11'10", along State Highway 641 at Norfolk and Western Ry. underpass, 1.8 miles north of Bristol, Va. | - | 1947,<br>1952-54 | Sept.14 | *.88 |
| Stoffel Creek | ....do..... | Lat 36°36'15", long 82°13'49", along U. S. Highway 58, at Beech Grove Church, 2¾ miles west of Bristol, Va. | 3.14 | 1953-54 | Sept.14 | *1.03 |
| Watauga River | South Holston River. | Lat 36°09'23", long 81°46'14", 0.1 mile below Moodys Mill Creek at Foscoe, N. C. | 10.6 | | Oct. 13 | *2.76 |
| Cove Creek... | Watauga River | Lat 36°15'50", long 81°47'03", at county road bridge at Cove Creek School, 0.2 mile above George Gap Branch and 0.5 mile southwest of Sherwood, N. C. | 23.1 | | Nov. 18 | *6.92 |
| ....do..... | ....do..... | At mouth on State Highway 603, 2.3 miles southwest of Sugar Grove, N. C. | 34.5 | | Oct. 22† | 5.91 |
| Beaverdam Creek. | ....do..... | Lat 36°17'34", long 81°50'57", 0.2 mile upstream from Rube Creek and 4.2 miles northwest of Sugar Grove, N. C. | 13.0 | | Oct. 14 | *.92 |
| Grassy Creek. | Elk River.... | Lat 36°10'20", long 81°54'42", at State Highway 194, 100 ft above mouth and 2.2 miles west of Banner Elk, N. C. | .54 | | Nov. 18 | *.05 |
| Laurel Creek. | North Fork Holston River. | Lat 36°56'05", long 81°40'35", on State Highway 91, 0.6 mile north of Broadford, Va. | 58.6 | 1952-54 | Sept.13 | *3.42 |

* Base flow.
† 1953

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| North Fork Holston River. | Holston River | Lat 36°56'06", long 81°38'24", along State Highway 42, 1.9 miles east of Broadford, Va. | - | 1954 | Sept.13 | *19.4 |
| ....do..... | ....do..... | Lat 36°54'11", long 81°43'52", at McCrady, Va. | - | 1954 | Sept.13 | *32.2 |
| McHenry Creek | North Fork Holston River. | Lat 36°51'15", long 81°46'49", at bridge on State Highway 91, ¼ mile southeast of Plasterco, Va. | 9.27 | 1952-54 | Sept.13 | *.27 |
| North Fork Holston River. | Holston River | Lat 36°52'19", long 81°48'53", 1.5 miles below Henrytown, Va. | - | 1954 | Sept.13 | *35.3 |
| Cove Creek... | North Fork Holston River. | Lat 36°39'26", long 82°20'37", at bridge on U. S. Highway 58, 2 miles north of Shelleys, Va. | 17.0 | 1952-54 | Sept.14 | *1.03 |
| Surgoinsville Creek. | Holston River | Lat 36°28'15", long 82°51'06", at bridge on U. S. Highway 11W, 700 ft above mouth, at Surgoinsville, Hawkins County, Tenn. | 4.7 | 1932 | Sept.23 | *.12 |
| Big Creek.... | ....do..... | Lat 36°25'34", long 82°57'07", at former gaging station site, 2 miles above mouth and 3.0 miles northeast of Rogersville, Hawkins County, Tenn. | 47.3 | 1941-54 | Sept.23 | *1.30 |
| Unnamed tributary. | Big Creek.... | Lat 36°25'30", long 82°57'17", at culvert under county road, 2.8 miles northeast of Rogersville, Hawkins County, Tenn. | 2.00 | | Sept.23 | *.10 |
| Richland Creek. | Holston River | Lat 36°10'57", long 83°40'40", along U. S. Highway 11W, 2.4 miles northeast of Blaine, Grainger County, at Lea Springs Church, Tenn. | - | 1952 | Sept.23 | *.22 |
| Woods Creek.. | ....do..... | Lat 36°01'55", long 83°50'09", at bridge on U. S. Highway 11W, at John Sevier, Knox County, Tenn. | - | 1954 | Sept.23 | *.74 |
| Ellejoy Creek | Little River. | Lat 35°46'24", long 83°51'01", at county highway bridge, 0.1 mile above mouth and 7 miles east of Maryville, Blount County, Tenn. | 38.3 | 1944, 1953-54 | Sept.22 | *3.58 |
| Cartoogechaye Creek. | Little Tennessee River. | Lat 35°09'31", long 83°23'39", at U. S. Highway 23, 1.8 miles south of Franklin, N. C. and 1.9 miles above mouth. | 57.1 | 1947,1953 | Oct. 16 | *30.8 |
| Cullasaja River. | ....do..... | Lat 35°04'10", long 83°13'46", 800 ft below Highlands municipal dam and 2.2 miles northwest of Highlands, N. C. | 14.5 | | Sept. 7 | *8.55 |
| Skitty Creek. | Cullasaja River. | Lat 35°04'25", long 83°14'20", at U. S. Highway 64, 250 ft above mouth and 2.8 miles northwest of Highlands, N. C. | 1.89 | | Nov. 12 | *.65 |
| Ellijoy Creek | ....do..... | 0.5 mile above mouth near Cullasaja, N. C. | 20.4 | | Oct. 24† | 9.40 |
| Buck Creek... | Nantahala River. | On U. S. Highway 64 near Rainbow Springs, N. C. | 6.53 | | Oct. 23† | 5.08 |
| Sols Creek... | Tuckasegee River. | Lat 35°15'34", long 83°01'20", at State Highway 281, 1.2 miles southeast of Argura, N. C. | 3.86 | 1944,1953 | Oct. 26 | *2.11 |
| Caney Fork Creek. | ....do..... | Lat 35°17'50", long 83°08'44", at State Highway 107, 0.1 mile above mouth, at East Laport, N. C. | 51.2 | 1953 | Oct. 26 | *19.4 |
| Savannah Creek. | ....do..... | Lat 35°20'16", long 83°14'12", at State Highway 116, 0.9 mile above mouth and 1.0 mile southwest of Webster, N. C. | 41.2 | 1953 | Oct. 22 | *22.3 |
| Dicks Creek.. | ....do..... | Lat 35°23'14", long 83°16'22", at U. S. Highway 19A, at mouth, 1.8 miles northwest of Dillsboro, N. C. | 8.66 | 1953 | Oct. 22 | *1.66 |
| Connelly Creek. | ....do..... | Lat 35°25'55", long 83°21'42", at Southern Ry. bridge, at mouth at Whittier, N. C. | 13.5 | 1953 | Oct. 15 | *4.84 |
| Cooper Creek. | ....do..... | Lat 35°27'11", long 83°23'33", at U. S. Highway 19 at mouth, 3.5 miles northeast of Bryson City, N. C. | 7.1 | 1953 | Oct. 15 | *3.32 |
| Galbreath Creek. | ....do..... | Lat 35°26'49", long 83°24'03", at Southern Ry. bridge, 150 ft above mouth and 2.9 miles northeast of Bryson City, N. C. | 1.82 | 1952-53 | Nov. 12†<br>Jan. 6$<br>Oct. 15 | .93<br>1.41<br>*.70 |
| Deep Creek... | ....do..... | Lat 35°27'51", long 83°26'03", at ranger station 100 ft below Juney Whank Branch, 2.4 miles above mouth, and 2.6 miles north of Bryson City, N. C. | 40.2 | 1950-53 | Oct. 7†<br>Nov. 12†<br>Jan. 6$<br>Feb. 25$<br>Apr. 27$<br>June 23$<br>July 13$ | 24.6<br>21.4<br>50.4<br>94.7<br>107<br>62.1<br>37.9 |

* Base flow.
† 1953.
$ 1954.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Deep Creek... | Tuckasegee River. | Lat 35°27'51", long 83°26'03", at ranger station 100 ft below Juney Whank Branch, 2.4 miles above mouth, and 2.6 miles north of Bryson City, N. C. | 40.2 | 1950-53 | Sept.27†<br>Oct. 19<br>Dec. 17<br>Apr. 19<br>June 6<br>Aug. 31<br>Sept.26 | 20.7<br>*17.8<br>*44.2<br>*146<br>*70.5<br>53.6<br>*36.9 |
| Lands Creek.. | ....do..... | Lat 35°28'01", long 83°28'01", above diversion dam, 10 ft below Long Branch and 3.8 miles northwest of Bryson City, N. C. | 2.52 | | July 13‡<br>Oct. 19 | 1.65<br>*.39 |
| Tulula Creek. | Cheoah River. | Lat 35°19'15", long 83°48'08", at county road, 0.3 mile southeast of Robbinsville, N. C. and 0.5 mile above confluence with Sweetwater Creek. | 28.6 | 1947,1953 | Oct. 20 | *5.24 |
| Sweetwater Creek. | ....do..... | Lat 35°19'30", long 83°47'36", at county road, 0.5 mile above confluence with Tulula Creek and 0.8 mile east of Robbinsville, N. C. | 13.6 | 1953 | Oct. 20 | *5.15 |
| Long Creek... | ....do..... | Lat 35°19'44", long 83°48'40", at county road bridge at mouth, 0.5 mile north of Robbinsville, N. C. | 11.8 | 1953 | Oct. 20 | *3.19 |
| Snowbird Creek. | ....do..... | Lat 35°18'40", long 83°51'35", at former gaging station, 0.5 mile above Hooper Branch and 3.1 miles west of Robbinsville, N. C. | 42.0 | | Oct. 20 | *19.9 |
| Island Creek. | Little Tennessee River. | Lat 35°35'38", long 84°14'58", at bridge on State Highway 72, ½ mile northwest of Vonore, Monroe County, Tenn. and 2½ miles above mouth. | 11.2 | 1944, 1953-54 | June 23<br>Sept.22 | *4.38<br>*1.30 |
| Bat Creek.... | ....do..... | Lat 35°32'30", long 84°21'43", 0.8 mile above mouth of Craighead Creek and 1.5 miles north of Madisonville, Monroe County, Tenn. | 5.12 | | Dec. 17 | 2.67 |
| Unnamed tributary. | Bat Creek.... | Lat 35°31'49", long 84°21'53", 2,000 ft below bridge on State Highway 68 and 0.7 mile north of Madisonville, Monroe County, Tenn. | 2.62 | | Dec. 17 | 1.20 |
| Bat Creek.... | Little Tennessee River. | Lat 35°33'45", long 84°21'35", at county highway bridge, 0.4 mile northeast of Hiwassee College near Madisonville, Monroe County, Tenn. | 11.8 | | Dec. 17 | 5.69 |
| ....do..... | ....do..... | Lat 35°38'36", long 84°15'12", at bridge on State Highway 72, 2½ miles above mouth and 4½ miles north of Vonore, Monroe County, Tenn. | 30.7 | 1953 | June 23 | *28.4 |
| North Fork Clinch River. | Clinch River. | Lat 37°09'49", long 81°28'27", at Wittens Mill, Va. | 8.56 | 1952-54 | Sept.14 | *2.32 |
| South Fork Clinch River. | ....do..... | Lat 37°07'39", long 81°29'21", at bridge on State Highway 61 at Burkes Garden Siding, Va. | 9.72 | 1942, 1952-54 | Sept.14 | *1.56 |
| Cavitts Creek | ....do..... | Lat 37°07'47", long 81°32'59", at bridge on State Highway 16, at North Tazewell, Va. | 9.63 | 1952-54 | Sept.15 | *1.58 |
| Plum Creek... | ....do..... | Lat 37°05'56", long 81°33'37", at intersection of State Highway 91 and U. S. Highway 19, 2½ miles west of Tazewell, Va. | 6.89 | 1952-54 | Sept.14 | *1.00 |
| Indian Creek. | ....do..... | Lat 37°05'20", long 81°45'49", at bridge on U. S. Highway 460, at Cedar Bluff, Va. | 33.9 | 1944-46, 1952-54 | Sept.15 | *.23 |
| Maiden Spring Creek. | Little River. | Lat 37°03'28", long 81°31'26", at bridge on State Highway 16, 4 miles south of Tazewell, Va. | 17.8 | 1948, 1952-54 | Sept.14 | *4.94 |
| Clinch River. | Tennessee River. | Lat 37°05'23", long 81°40'48", along U. S. Highway 460, 3 miles east of Founding Mill, Va. | - | 1954 | Sept.14 | *7.11 |
| Indian Creek. | Little River. | Lat 37°02'16", long 81°47'52", along U. S. Highway 19, 200 ft above mouth at Wardell, Va. | 19.2 | 1953-54 | Sept.14 | *4.59 |
| Little River. | Clinch River. | Lat 37°02'16", long 81°47'52", 500 ft below Indian Creek at Wardell, Va. | 103 | 1949-54 | Sept.14 | *23.1 |
| Little Cedar Creek, | Cedar Creek.. | Lat 36°53'46", long 82°05'39", at bridge on U. S. Highway 19, 1 mile west of Lebanon, Va. | 7.63 | 1952-54 | Sept.14 | *.93 |
| Weaver Creek. | Clinch River. | Lat 36°56'23", long 82°07'38", at bridge on State Highway 661, at Artrip, Va. | 18.1 | 1953-54 | Sept.14 | *0 |

* Base flow.
† 1953.
‡ 1954.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfa) |
|---|---|---|---|---|---|---|
| Dumps Creek.. | Clinch River. | Lat 36°56'11", long 82°11'30", at bridge on State Highway 616, 0.7 mile north of Carbo, Va. | 31.8 | 1952-54 | Sept.14 | *0 |
| Middle Fork Russell Creek. | ....do..... | Lat 36°55'02", long 82°20'39", at bridge on U. S. Highway 58, at Virginia City, Va. | - | 1953-54 | Sept.15 | *0 |
| Bull Run Creek. | ....do..... | Lat 36°53'36", long 82°22'36", at bridge on U. S. Highway 58, ¼ mile north of Carfax, Va. | 4.93 | 1953-54 | Sept.15 | *0 |
| Guest River.. | ....do..... | Lat 36°57'26", long 82°36'44", at bridge on State Highway 620, 0.9 mile north of Esserville, Va. | - | 1952,1954 | Sept.15 | *.10 |
| ....do..... | ....do..... | Lat 36°56'08", long 82°33'16", 1 mile west of Tocoma, Va. | - | 1954 | Sept.15 | *1.10 |
| Toms Creek... | Guest River.. | Lat 36°56'33", long 82°28'06", at bridge on State Highway 72, at Coeburn, Va. | 10.5 | 1953-54 | Sept.15 | *.78 |
| Stock Creek.. | Clinch River. | Lat 36°42'24", long 82°44'24", along U. S. Highway 58, ½ mile west of Natural Tunnel, Va. | 20.1 | 1952-54 | Sept.14 | *.34 |
| ....do..... | ....do..... | Lat 36°40'33", long 82°45'18", along U. S. Highway 58, ½ mile west of Clinchport, Va. | 26.4 | 1942, 1952-54 | Sept.14 | *1.22 |
| Little Stock Creek. | Stock Creek.. | Lat 36°40'24", long 82°45'25", at bridge on U. S. Highway 58, ¼ mile west of Clinchport, Va. | 4.46 | 1952-54 | Sept.14 | *.74 |
| Powell River. | Clinch River. | Lat 36°55'54", long 82°39'20", at bridge on State Highway 610, 0.6 mile north of U. S. Highway 23, and 1½ miles west of Norton, Va. | 15.7 | 1942, 1952-54 | Sept.15 | *.43 |
| ....do..... | ....do..... | Lat 36°55'32", long 82°41'11", at bridge on U. S. Highway 23, at Blackwood west of Norton, Va. | - | 1954 | Sept.15 | *1.14 |
| Roaring Fork. | Powell River. | Lat 36°55'20", 82°43'28", at bridge on U. S. Highway 23, 4 miles east of Appalachia, Va. | 25.3 | 1952-54 | Sept.15 | *.64 |
| Callahan Creek. | ....do..... | Lat 36°55'28", long 82°47'50", along State Highway 78, 1.1 miles north of Appalachia, Va. | 27.7 | 1952-54 | Sept.15 | *2.37 |
| South Fork Powell River. | ....do..... | Lat 36°51'54", long 82°46'07", at bridge on U. S. Highway 23, at Big Stone Gap, Va. | 40.0 | 1945-47, 1952-54 | Sept.14 | *2.37 |
| North Fork Powell River. | ....do..... | Lat 36°46'26", long 83°01'59", along U. S. Highway 421, 1 mile north of Pennington Gap, Va. | 70.0 | 1942, 1945-51, 1953-54 | Sept.14 | *1.46 |
| Cane Creek... | ....do..... | Lat 36°43'55", long 83°04'37", at Ben Hur, Va. | 3.90 | 1953-54 | Sept.14 | *.15 |
| Station Creek | ....do..... | Lat 36°41'47", long 83°00'51", 200 ft above mouth and 5½ miles east of Jonesville, Va. | 8.51 | 1953-54 | Sept.14 | *.48 |
| Wallen Creek. | ....do..... | Lat 36°42'20", long 82°54'10", at bridge on U. S. Highway 58, at Stickleyville, Va. | 10.4 | 1942, 1953-54 | Sept.14 | *.72 |
| Coal Creek... | Clinch River. | Lat 36°13'14", long 84°09'27", at bridge on U. S. Highway 25W, 0.1 mile below Louisville & Nashville RR. bridge, at Lake City, Anderson County, Tenn. | 24.5 | 1949-52 1954 | June 21 Sept.22 | *6.29 *.99 |
| Buffalo Creek | Hinds Creek.. | Lat 36°11'05", long 84°03'41", at State Highway 71, 1 mile southeast of Norris, Anderson County, Tenn. | 9.45 | 1947-54 | June 21 | *1.12 |
| Bull Run Creek. | Clinch Rivar. | Lat 36°06'52", long 83°59'16", at bridge on State Highway 71, 2.1 miles below Smith Branch and 5.9 miles northwest of Fountain City, Knox County, Tenn. | 68.5 | 1944, 1953-54 | Sept.22 | *3.93 |
| Beaver Creek. | ....do..... | Lat 36°01'07", long 84°03'08", at bridge on U. S. Highway 25W, 800 ft below unnamed branch and 1½ miles southwest of Powell Station, Knox County, Tenn. | 56.1 | 1944, 1953-54 | Sept.22 | *4.75 |
| Brushy Creek. | Poplar Creek. | Lat 36°01'33", long 84°17'16", at bridge on State Highway 61, 2 miles west of Oak Ridge and 4 miles east of Oliver Springs, Anderson County, Tenn. | - | 1954 | Sept.22 | *3.87 |
| Poplar Creek. | Clinch River. | Lat 36°01'20", long 84°18'37", at bridge on State Highway 61, 4 miles above Indian Creek and 2½ miles southeast of Oliver Springs, Anderson County, Tenn. | 55.9 | 1951-54 | June 21 Sept.22 | *18.3 *4.81 |
| Bear Creek... | East Fork Poplar River. | Lat 35°56'41", long 84°21'46", at bridge on Oak Ridge Turnpike, ½ mile above mouth and 8 miles southwest of Oak Ridge, Roane County, Tenn. | - | 1951-52, 1954 | Sept.22 | *.56 |

* Base flow.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Rock Creek... | Emory River.. | Lat 36°11'54", long 84°39'39", at bridge on U. S. Highway 27 at Pilot Mountain, 8 miles north of Wartburg, Morgan County, Tenn. | 5.54 | | June 21 | *3.05 |
| ....do..... | ....do..... | Lat 36°08'02", long 84°37'31", at county highway bridge, 0.7 mile above mouth and 2.6 miles northwest of Wartburg, Morgan County, Tenn. | 31.2 | 1952,1954 | July 13<br>Aug. 17<br>Sept.13 | 19.5<br>9.32<br>*.23 |
| Obed River... | ....do..... | Lat 36°03'44", long 84°57'28", 1,000 ft below Adams Bridge and 9.6 miles northeast of Crossville, Cumberland County, Tenn. | 92.4 | 1954 | Oct. 1<br>July 14<br>Aug. 18<br>Sept.14 | 46.1<br>5.77<br>*1.95<br>*.18 |
| ....do..... | ....do..... | Lat 36°04'22", long 84°54'10", at Potter Ford, 11.1 miles northeast of Crossville, Cumberland County, Tenn. | 108 | | July 14<br>Aug. 18<br>Sept.14 | 6.53<br>*2.75<br>*.15 |
| Otter Creek.. | Obed River... | Lat 36°04'18", long 84°51'59", at county highway bridge, 4.8 miles northwest of Hebbertsburg, Cumberland County, Tenn. | 11.4 | 1954 | July 14<br>Aug. 18<br>Sept.14 | .32<br>*.14<br>0 |
| Obed River... | Emory River.. | Lat 36°04'49", long 84°46'04", 500 ft above mouth of Daddys Creek and 4.6 miles north of Hebbertsburg, Morgan County, Tenn. | 156 | 1944,1954 | July 14<br>Aug. 18<br>Sept.14 | 13.6<br>*5.08<br>*.31 |
| Daddys Creek. | Obed River... | Lat 36°04'41", long 84°46'00", 200 ft above mouth and 4.3 miles north of Hebbertsburg, Morgan County, Tenn. | 175 | 1954 | July 14<br>Aug. 18<br>Sept.14 | 23.7<br>17.9<br>*6.10 |
| Clear Creek.. | ....do..... | Lat 36°06'07", long 84°43'01", at bridge below old Howard Mill, 3.8 miles southwest of Lancing, Morgan County, Tenn. | 170 | | July 13<br>Aug. 18<br>Sept.14 | 32.7<br>*6.79<br>*.21 |
| Emory River.. | Clinch River. | Lat 36°04'09", long 84°39'46", at county highway bridge, 0.6 mile west of Nemo, Morgan County, Tenn. | 612 | | July 13<br>Aug. 17<br>Sept.13 | 177<br>66.9<br>9.86 |
| Crab Orchard Creek. | Emory River.. | Lat 35°58'09", long 84°40'13", at Flat Rock Ford, 1.0 mile west of Pine Orchard, Morgan County, Tenn. | 18.9 | 1938,1941 | July 14<br>Aug. 17<br>Sept.13 | 7.26<br>*.08<br>0 |
| ....do..... | ....do..... | Lat 36°01'18", long 84°34'53", at mouth, 0.4 mile south of Deermont, Morgan County, Tenn. | 47.2 | | July 13<br>Aug. 17<br>Sept.13 | 26.1<br>*2.49<br>*.15 |
| Fall Creek... | Whites Creek. | Lat 35°50'16", long 84°47'56", at county highway bridge, 3.1 miles southeast of Ozone, Cumberland County, Tenn. | 21.1 | | June 21<br>July 20<br>Aug. 17<br>Sept.13 | 6.42<br>4.47<br>*1.43<br>*.28 |
| Piney Creek.. | Fall Creek... | Lat 35°51'14", long 84°44'17", near bridge on U. S. Highway 70 at Cumberland-Roane County Line, Tenn. | 19.0 | 1944,1953 | June 21<br>July 19<br>Aug. 17<br>Sept.13 | 4.54<br>4.10<br>*1.03<br>*.03 |
| Mammys Creek. | Piney Creek.. | Lat 35°52'29", long 84°47'19", at bridge on U. S. Highway 70, 1.3 miles southeast of Ozone, Cumberland County, Tenn. | 9.54 | | June 21<br>July 20<br>Aug. 17<br>Sept.13 | 2.25<br>2.12<br>*.33<br>0 |
| Black Creek.. | Whites Creek. | Lat 35°47'45", long 84°45'25", 100 ft above mouth and 1.0 mile southwest of Glen Alice, Roane County, Tenn. | 11.7 | 1944, 1952-53 | June 21<br>July 19<br>Aug. 16<br>Sept.13 | 6.76<br>5.37<br>*4.94<br>*3.74 |
| Camp Creek... | ....do..... | Lat 35°46'55", long 84°45'48", at bridge on U. S. Highway 27, 1.0 mile northeast of Roddy, Rhea County, Tenn. | 6.25 | | June 21<br>July 19<br>Aug. 16<br>Sept.13 | 3.01<br>1.88<br>*1.17<br>*1.11 |
| Piney River.. | Tennessee River. | Lat 35°41'59", long 84°51'17", at bridge on U. S. Highway 27, at Spring City, Rhea County, Tenn. | 98.3 | 1932,1944, 1952-53 | June 20<br>July 19<br>Aug. 10<br>Aug. 16<br>Sept.12 | 34.7<br>32.1<br>9.20<br>12.0<br>*.10 |
| Town Creek... | Piney River.. | Lat 35°41'24", long 84°51'28", at county highway bridge in Spring City, Rhea County, Tenn. | 6.78 | 1944,1953 | June 20<br>July 19<br>Aug. 16<br>Sept.12 | 3.28<br>3.04<br>*2.00<br>*1.36 |
| Clear Creek.. | Tennessee River. | Lat 35°36'42", long 84°54'49", at bridge on U. S. Highway 27, 6.1 miles southwest of Spring City, Rhea County, Tenn. | 7.47 | 1952 | June 20<br>July 18<br>Aug. 10<br>Aug. 16<br>Sept.12 | 3.06<br>3.41<br>*1.26<br>*1.28<br>*.87 |

* Base flow.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Little Richland Creek. | Tennessee River. | Lat 35°31'02", long 84°59'58", at county road bridge at Walnut Grove School, 2 miles northeast of Dayton, Rhea County, Tenn. | 15.4 | 1952 | June 20<br>July 18<br>Aug. 10<br>Aug. 16<br>Sept.12 | 8.47<br>9.58<br>*4.18<br>*4.00<br>*2.09 |
| Brasstown Creek. | Hiwassee River. | 0.2 mile above Corn Creek at Young Harris, Ga. | 16.2 | | Oct. 22† | 6.40 |
| ....do..... | ....do..... | 1 mile above mouth at Brasstown, N. C. | 83.2 | | Oct. 21† | 41.2 |
| Peachtree Creek. | ....do..... | On U. S. Highway 64, 0.4 mile above mouth, near Brasstown, N. C. | 18.2 | | Oct. 21† | 4.53 |
| Junaluska Creek. | Valley River. | On U. S. Highway 19, 1.0 mile above mouth, near Andrews, N. C. | 8.31 | | Oct. 20† | 2.85 |
| Hyatt Creek.. | ....do..... | Lat 35°11'22", long 83°55'14", at county road bridge, 0.1 mile below Allmon Creek and 0.8 mile north of Marble, N. C. | 6.90 | | Oct. 23 | *2.72 |
| ....do..... | ....do..... | Lat 35°10'48", long 83°55'12", at U. S. Highway 19 at Marble, N. C., 0.5 mile above mouth. | 7.28 | 1951-53 | Oct. 20†<br>Oct. 18 | 3.02<br>*2.51 |
| Colvard Creek | ....do..... | Lat 35°08'47", long 83°58'15", at U. S. Highway 19, 0.1 mile above mouth and 1.1 miles northeast of Tomotla, N. C. | 3.23 | | Oct. 5<br>Oct. 23 | *.72<br>*.64 |
| Town Creek... | Nottely River | Lat 34°48'30", long 83°53'53", at county road bridge, 0.1 mile above mouth and 5.8 miles southeast of Blairsville, Ga. | 17.7 | 1953 | Oct. 18 | *5.84 |
| Wolf Creek... | ....do..... | Lat 34°48'18", long 83°54'08", at county road bridge, 0.3 mile above mouth and 5.8 miles southeast of Blairsville, Ga. | 9.28 | 1953 | Oct. 18 | *4.78 |
| Arkaqua Creek | ....do..... | Lat 34°50'26", long 83°56'02", at U. S. Highway 19 at mouth, 2.8 miles southeast of Blairsville, Ga. | 11.6 | 1953 | Oct. 18 | *4.46 |
| Butternut Creek. | ....do..... | Lat 34°52'34", long 83°58'10", at U. S. Highway 19, 0.6 mile west of Blairsville, Ga. | 11.1 | 1953 | Oct. 22†<br>Oct. 18 | 4.73<br>*4.53 |
| Cocsa Creek.. | ....do..... | Lat 34°51'05", long 83°59'35", at former gaging station, 0.2 miles downstream from Anderson Creek and 2.6 miles southwest of Blairsville, Ga. | 21.1 | 1942 | Oct. 21 | *9.64 |
| Youngcane Creek. | ....do..... | Lat 34°52'41", long 84°03'57", at former gaging station, 0.6 mile below Odon Creek and 3.4 miles north of Youngcane, Ga. | 27.6 | | Oct. 21 | *15.2 |
| Ivylog Creek. | ....do..... | Lat 34°56'26", long 84°01'27", at former gaging station, 30 ft below Barnes Creek and 2.5 miles southeast of Ivylog, Ga. | 16.7 | | Oct. 21 | *7.18 |
| Conley Creek. | ....do..... | Lat 34°57'22", long 84°03'18", at U. S. Highway 19, 0.3 mile southeast of Ivylog, Ga. | 3.20 | 1953 | Oct. 22†<br>Oct. 21 | 1.81<br>*2.36 |
| Moccasin Creek. | ....do..... | Lat 34°59'14", long 84°05'00", at Lance Mill on North Carolina-Georgia state line, 2.3 miles northwest of Ivylog, Ga. | 7.44 | 1953 | Oct. 22†<br>Oct. 21 | 3.62<br>*3.01 |
| Shoal Creek.. | Hiwassee River. | Lat 35°06'40", long 84°14'00", at State Highway 294, 50 ft below Thompson Branch and 4.1 miles southwest of Hiwassee Dam, N. C. | 12.6 | | Oct. 18 | *5.01 |
| Oostanaula Creek. | ....do..... | Lat 35°27'23", long 84°34'47", just above Ingleside Spring No. 2, at Athens, McMinn County, Tenn. | 22.08 | 1951, 1953-54 | Oct. 6<br>Nov. 18 | 5.14<br>4.66 |
| ....do..... | ....do..... | Lat 35°27'22", long 84°34'49", just below Ingleside Spring No. 2, at Athens, McMinn County, Tenn. | 22.10 | 1953-54 | Oct. 6<br>Nov. 18 | 5.68<br>5.46 |
| ....do..... | ....do..... | Lat 35°27'19", long 84°34'53", just below Ingleside Spring No. 1, at Athens, McMinn County, Tenn. | 22.12 | 1953-54 | Oct. 8<br>Nov. 18 | 6.51<br>7.00 |
| Sale Creek... | Tennessee River. | Lat 35°25'35", long 85°05'24", at county highway bridge, 3.5 miles northeast of Sale Creek, Hamilton County, Tenn. | 57.2 | | June 20<br>July 18<br>Aug. 10<br>Aug. 16<br>Sept.12 | 9.06<br>14.4<br>*5.96<br>*3.24<br>0 |
| Possum Creek. | ....do..... | Lat 35°20'19", long 85°07'25", at county highway bridge, 0.7 mile southeast of Bakewell, Hamilton County, Tenn. | 22.7 | | June 20<br>July 18<br>Aug. 10<br>Aug. 16<br>Sept.12 | 10.5<br>13.0<br>*4.13<br>*3.86<br>*.92 |

* Base flow.
† 1953.

Discharge measurements made at points other than gaging stations in the Cumberland and Tennessee River basins during the water year 1955--Continued

Tennessee River basin--Continued

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previosuly (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Soddy Creek.. | Tennessee River. | Lat 35°18'05", long 85°09'56", at county highway bridge, 0.8 mile north of Soddy, Hamilton County, Tenn. | 49.0 | 1932,1944, 1953 | June 20<br>July 18<br>Aug. 10<br>Aug. 16<br>Sept.12 | 10.2<br>46.6<br>10.2<br>*4.57<br>*.08 |
| Falling Water Creek. | North Chickamauga Creek | Lat 35°11'40", long 85°14'40", at bridge on U. S. Highway 27, at Falling Water, Hamilton County, Tenn. | 13.2 | 1944,1953 | June 20<br>July 18<br>Aug. 10<br>Aug. 16<br>Sept.12 | 8.27<br>45.6<br>5.66<br>*3.58<br>*1.80 |
| North Chickamauga Creek | Tennessee River. | Lat 35°10'30", long 85°13'40", at county highway bridge, 2.3 miles north of Hixon, Hamilton County, Tenn. | 99.5 | 1925,1953 | June 20<br>July 18<br>Aug. 10<br>Aug. 16<br>Sept.12 | 56.9<br>105<br>36.3<br>*24.4<br>*11.6 |
| Boiling Fork Creek. | Elk River.... | Lat 35°09'28", long 87°00'57", at bridge near pumping station at Cowan, Franklin County, Tenn. | 20.2 | 1932-33, 1948, 1940-54 | Oct. 25 | *.24 |
| Wagner Creek. | Boiling Fork Creek. | Lat 35°12'04", long 86°05'41", at bridge on old State Highway 50, 1.0 mile southwest of Dechard, Franklin County, Tenn. | 15.0 | 1950-54 | Oct. 25 | 0 |
| Pigeon Roost Creek. | Richland Creek. | Lat 35°14'00", long 87°05'04", at county highway bridge, 0.8 mile above mouth and 1.0 mile south of Wales, Giles County, Tenn. | 22.9 | 1950-54 | Oct. 6<br>Nov. 17<br>Dec. 8<br>Jan. 11<br>Feb. 10<br>Mar. 9<br>Apr. 20<br>May 10<br>June 15<br>July 27<br>Aug. 9<br>Sept.14 | *.12<br>*.12<br>2.60<br>5.99<br>41.5<br>49.9<br>21.9<br>4.45<br>10.4<br>2.28<br>3.00<br>*2.14 |
| Bear Creek... | Tennessee River. | Sec. 7, T. 9 S., R. 10 W., at bridge on county road, 5 miles north of Haleyville, Ala. | - | 1952-53 | Oct. 14 | *2.61 |
| ....do..... | ....do..... | Sec. 22, T. 7 S., R. 15 W., at bridge on county road, 2½ miles east of Red Bay, Ala. | 262 | 1913-20 | Oct. 13 | *24.4 |
| Dunkin Creek. | Cedar Creek.. | Sec. 29, T. 6 S., R. 12 W., 3,500 ft below mouth of Spring Branch and 4½ miles west of Russelville, Ala. | - | | Oct. 13 | *.59 |
| Little Duck River. | Duck River... | Lat 35°29'10", long 86°05'27", at bridge on U. S. Highway 41, northwest of Manchester, Coffee County, Tenn. | 36.4 | 1948, 1950-54 | Oct. 27 | *5.10 |
| Fountain Creek. | ....do..... | Lat 35°28'18", long 86°57'22", at bridge on State Highway 50A, 1.6 miles southeast of Culleoka, Maury County, Tenn. and 1.8 miles above Globe Creek. | 26.9 | 1953-54 | Oct. 26 | *1.00 |
| Tumbling Creek. | ....do..... | Lat 35°55'46", long 87°44'05", at Taylortown, ½ mile above mouth and 4 miles southeast of Hurricane Mills, Humphreys County, Tenn. | 51.2 | 1953-54 | Oct. 21<br>Aug. 31 | *12.2<br>*15.8 |
| Trace Creek.. | Tennessee River. | Lat 36°04'58", long 87°46'32", 300 ft below U. S. Highway 70 and 0.3 mile east of Waverly, Humphreys County, Tenn. | 17.4 | 1953-54 | Aug. 31 | *.72 |
| Cypress Creek | ....do..... | Lat 36°02'30", long 88°05'04", at bridge on U. S. Highway 70, 1½ miles southeast of Camden, Benton County, Tenn. | - | 1950-54 | Aug. 25 | *0 |
| Big Beaver Creek. | Big Sandy River. | Lat 35°45'47", long 88°23'39", at bridge on State Highway 22, 2¼ miles southwest of Wildersville, Henderson County, Tenn. | - | | July 12 | *.28 |

* Base flow.

The following table contains determinations of peak discharge made at crest stage by indirect methods or by current meter or computed from rating curve at points other than regular gaging stations.

Determinations of peak discharge during water year October 1954 to September 1955

| Stream | Tributary to | Location | Drainage area (sq mi) | Measured previously (water years) | Date | Discharge (cfs) |
|---|---|---|---|---|---|---|
| Brush Creek.. | French Broad River. | Lat 35°50'40", long 82°44'30", at highway bridge 0.8 mile upstream from mouth and 5 miles northwest of Marshall, N. C. | 7.99 | | July 23‡ | 1,190 |
| Second Creek. | Tennessee River. | Sec. 15, T. 2 S., R. 8 W., at bridge on county road, 2½ miles northeast of Elgin, Ala. | - | | Mar. 21 | 21,500 |
| Cypress Creek | ....do..... | Sec. 9, T. 3 S., R. 11 W., at bridge on Alabama Highway 2, 2 miles west of Florence, Ala. | 209 | 1934-53 | Mar. 21 | 50,000 |
| Big Rock Creek. | Duck River... | Lat 35°26'37", long 86°47'31", at bridge on U. S. Highway 31A at Lewisburg, Marshall County, Tenn. | 19.0 | | Mar. 21 | 13,800 |

‡ 1954.

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