Surface Water Supply of the United States 1960

Part 3-B. Cumberland and Tennessee River Basins

Prepared under the direction of E. L. HENDRICKS, *Chief, Surface Water Branch*

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1706

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

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PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, and Virginia, and with other agencies, by personnel of the Water Resources Division, L. B. Leopold, chief, under the general direction of E. L. Hendricks, chief, Surface Water Branch, and F. J. Flynn, chief, Basic Records Section.

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F. F. Schrader..... Louisville, Ky.
M. T. Thomson..... Atlanta, Ga.

CALENDAR FOR WATER YEAR 1960

OCTOBER 1959

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER 1959

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER 1959

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

JANUARY 1960

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FEBRUARY 1960

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29					

MARCH 1960

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

APRIL 1960

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

MAY 1960

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JUNE 1960

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

JULY 1960

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

AUGUST 1960

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

SEPTEMBER 1960

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

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SURFACE WATER SUPPLY OF CUMBERLAND AND TENNESSEE RIVER BASINS, 1960

SCOPE OF WORK

This volume is one of a series of 20 reports presenting records of stage, discharge, and content, of streams, lakes, and reservoirs in the United States during the 1960 water year. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar records have been obtained at more than 15,500 gaging stations in the 50 States. On September 30, 1960, the Geological Survey and cooperating organizations were maintaining 7,300 gaging stations. Partial-record stations for low flow or for floodflow have been operated at many other points. In addition, discharge measurements are made at miscellaneous sites. The records for the 1960 water year at gaging stations, partial-record stations, and miscellaneous sites in the Cumberland and Tennessee River basins are given in this report.

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.

Georgia: State Highway Department, J. L. Gillis, chairman.

Kentucky: University of Kentucky, F. G. Dickey, president, through State Geological Survey, W. W. Hagan, director and State geologist.

Mississippi: State Board of Water Commissioners, S. A. Thompson, chairman.

North Carolina: State Department of Water Resources, H. E. Brown, director; State Highway Commission, W. F. Babcock, director; city of Asheville, Weldon Weir, city manager; city of Waynesville, W. H. Way, mayor.

Tennessee: State Department of Conservation and Commerce, J. B. McBride, commissioner, through Division of Water Resources, R. W. Robinson, water engineer; State Department of Public Health, R. H. Hutcheson, commissioner, through Stream Pollution Control, S. L. Jones, director; State Department of Highways, D. W. Moulton, commissioner, through H. D. Long, highway engineer, and F. Greve, bridge engineer; city of Chattanooga, P. R. Olgiati, mayor, and M. J. Hensley, city coordinator.

Virginia: State Department of Highways, S. D. May, commissioner, succeeded by H. H. Harris.

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 90 gaging stations, of which 6 were in Alabama, 6 in Georgia, 1 in Kentucky, 19 in North Carolina, 49 in Tennessee, and 9 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 15 gaging stations in Kentucky and 16 in Tennessee.

Assistance was also furnished by the Arnold Engineering Development Center, Department of the Air Force, Atomic Energy Commission, 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.; Olin Mathieson Chemical Corp.; and the Mead Corp., Sylva Division.

Tennessee: Aluminum Co. of America; Tennessee Copper Co; Bowaters Southern Paper Corp.

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	Montgomery	507 New Post Office Building.
Georgia a/	Atlanta	805 Peachtree St. Building.
Kentucky b/	Louisville	522 West Jefferson St.
Mississippi	Jackson	402 High St.
North Carolina c/	Raleigh	Federal Building.
Tennessee d/	Chattanooga	823 Edney Building.
Virginia	Charlottesville	Natural Resources Building, University of Virginia.

a/ Gaging stations in Tennessee River basin in Georgia operated by Chattanooga and Raleigh district offices; partial-record stations operated by Atlanta district office.
b/ Except for Tennessee River near Paducah.
c/ Including Hiwassee River at Presley, Ga., Nottely River near Blairsville, Ga., and Nottely River at Nottely Dam, near Ivylog, Ga.
d/ Including stations in the Ocoee River basin in Georgia and Bear Creek at Bishop, Ala., Chattanooga Creek near Flintstone, Ga., Paint Rock River near Woodville, Ala., Tennessee River at Florence and at Whitesburg, Ala., and 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. All gaging-station records for Kentucky, North Carolina, and Virginia, and some for Tennessee have been analyzed by electronic computer to give: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); and (2) the lowest mean discharge for selected numbers of consecutive days in each year. In addition, the records for Kentucky and North Carolina give the highest mean discharge for selected numbers of consecutive days in each year. The records for North Carolina have also been analyzed to give the lowest daily discharge not exceeded during selected numbers of consecutive days in each year. Provisional records of discharge, information on the availability of electronic computer results, and other unpublished data concerning the gaging-station records may generally be obtained from the district offices.

DEFINITION OF TERMS AND ABBREVIATIONS

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

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied herein only to those gaging stations where a continuous record of discharge is obtained.

Partial-record station is a particular site where limited streamflow data are collected systematically over a period of years for use in hydrologic analyses.

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 (in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Acre-foot (ac-ft) is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet.

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 amourt 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 AND STATION NUMBERS

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.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and regular gaging stations, so that the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive. The complete number for each station includes the part number, but the station number as shown in this report, just to the left of the station name, consists of only the essential digits of the complete number. For example, for a station with the complete number 3B-4515.00, the station number shown in this report is 4515. The notation to the left of the hyphen is the part number; it is 3B for all stations in this report and is therefore omitted.

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.

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 measurements of peak discharge (such as slope-area or contracted-opening measurements, 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 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 of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the 1960 water year 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 Tennessee Valley Authority or the Corps of Engineers. 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. The reference to "datum of 1929" and adjustments of other years are to the datum of the U. S. Coast and Geodetic Survey. 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 gage, 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 discnarge 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 generally 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. Discharge 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 published each year for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

At many gaging stations water samples are collected from the streams for the purpose of making chemical analyses, computing dissolved solids, suspended sediment loads, and particle-size distribution, or measuring water temperatures. For most of these samples the results are published in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States" which is issued in four volumes. In this report under "Remarks" a reference is made to quality-of-water records collected at gaging stations on a regular basis and published in the quality-of-water reports. At many other gaging stations quality-of-water data are obtained at irregular intervals and published as "miscellaneous analyses" in quality-of-water reports; such records are not referred to in "Remarks" paragraph in this report. At many gaging stations water temperature is obtained also at the time a discharge measurement is made; such temperature readings are not reported in the quality-of-water annual reports.

Data collected at partial-record stations and at miscellaneous sites are given at the end of each report. Partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements at miscellaneous sites are given in a third table. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are given in special tables after the list of measurements at miscellaneous sites.

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.

Discharge 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 of runoff in inches are not published unless satisfactory adjustments can be made for diversions, 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

Basic data for gaging stations are published in an annual series of reports consisting of 20 volumes, including one each for the States of Alaska and Hawaii. The area of the other 48 States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the annual series of reports on surface-water supply consisted of 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records for the 48 States were 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 1.

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.

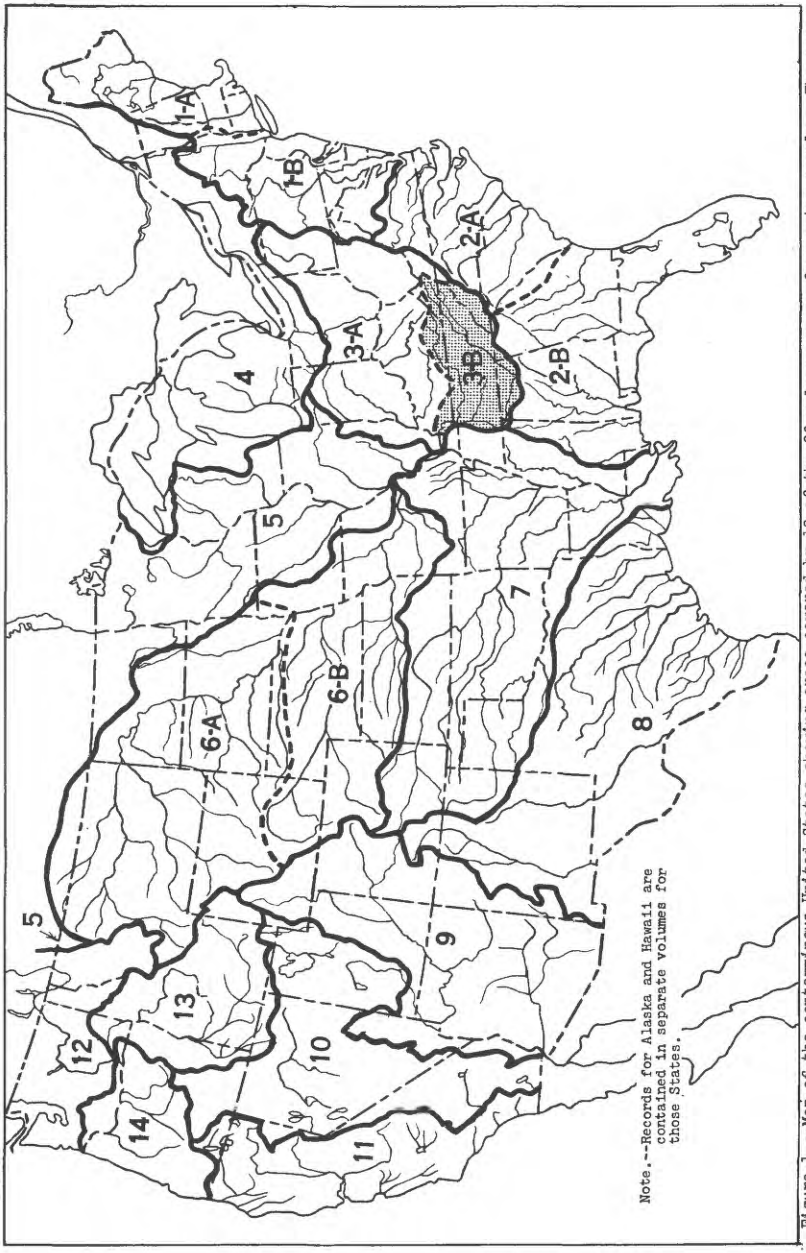

Figure 1.--Map of the conterminous United States showing areas covered by 18 of the 20 volumes on surface water supply. The area covered by this report is shaded.

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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.

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	1886-93.
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 streams of the Ohio River basin.

Numbers of water-supply papers containing results of stream measurements in Cumberland and Tennessee River basins, 1899-1960

Year	WSP	Year	WSP	Year	WSP	Year	WSP	Year	WSP
1899	36	1912	323	1925	603	1937	823	1949	1143
1900	48	1913	353	1926	623	1938	853	1950	1173
1901	65, 75	1914	383	1927	643	1939	873	1951	1206
1902	83	1915	403	1928	663	1940	893	1952	1236
1903	98	1916	433	1929	683	1941	923	1953	1276
1904	128	1917	453	1930	698	1942	953	1954	1336
1905	169	1918	473	1931	713	1943	973	1955	1386
1906	205	1919-20	503	1932	728	1944	1003	1956	1436
1907-8	243	1921	523	1933	743	1945	1033	1957	1506
1909	263	1922	543	1934	758	1946	1053	1958	1556
1910	283	1923	563	1935	783	1947	1083	1959	1626
1911	303	1924	583	1936	803	1948	1113	1960	1706

A compilation of records for the area covered by this report through September 1950 has been published as Water-Supply Paper 1306. That report contains a summary of monthly and annual discharges for all previously published records as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical.

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. A list of these reports follows:

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.
WSP 1227-D: Summary of floods in the United States during 1951.
WSP 1260-F: Summary of floods in the United States during 1952.
WSP 1320-E: Summary of floods in the United States during 1953.
WSP 1370-C: Summary of floods in the United States during 1954.
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 1960 water year 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, except as noted in footnotes to the table.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by
Beech River	Near Chesterfield, Tenn.	1960	Tennessee Valley Authority.
Do.	Near Darden, Tenn.	1954-60	Do.
Do.	Near Lexington, Tenn.	1953-60	Do.
Berea Creek	At State Highway 365, near Leedy, Miss.	1959-60	Do.
Birdsong Creek	Near Holladay, Tenn.	1940-60	Do.
Browns Creek	Near Chesterfield, Tenn.	1953-60	Do.
Cane Creek	Near Shady Hill, Tenn.	1953-60	Do.
Caney Creek	Near Grissom Chapel, Miss.	1959-60	Do.
Chambers Creek	Opposite Kendrick, Miss.	1939-60a/	Do.
Chestuee Creek	Zion Hill, Tenn.	1944-60	Do.
Do.	Dentville, Tenn.	1944-60	Do.
Clear Creek	Near Garth, Ala., at County Road.	1959-60	Do.
Do.	At State Highway 65, near Garth, Ala.	1959-60	Do.
Coke Creek	Near Chapel Hill, Miss.	1959-60	Do.
Cold Mill Creek	Near Cross Roads, Miss.	1959-60	Do.
Coweeta Creek basin b/	Coweeta Hydrologic Laboratory near Franklin, N. C.	1934-60	U. S. Forest Service.
Cypress Swamp drainage ditch.	Near Gilbertsville, Ky.	1943-60c/	Tennessee Valley Authority.
Harmon Creek	Near Lexington, Tenn.	1953-60	Do.
Horse Creek	Near Savannah, Tenn.	1939-60	Do.
Indian Creek	Near Cerro Gordo, Tenn.	1939-60	Do.
Limestone Creek	U. S. Highway 72, near Athens, Ala.	1939-60	Do.
Little Dry Creek	Near Garth, Ala.	1959-60	Do.
Little Yellow Creek	At U. S. Highway 72, near Burnsville, Miss.	1959-60	Do.
Middle Creek	Below Highway 39, near Englewood, Tenn.	1944-60	Do.
Middleton Creek	Near Milledgeville, Tenn.	1939-60	Do.
Millican Creek	Near Douglas Dam, Tenn.	1942-60	Do.
Parker Branch	Near Leicester, N. C.	1952-60	Do.
Persimmon Creek	At Persimmon Creek Dam, near Letitia, N. C.	1942-60	Do.
Pigeon River basin d/	Near Waynesville, N. C.	1949-60	Do.
Pine Tree Branch	Near Lexington, Tenn.	1941-60	Do.
Piney Creek	At Highway 104, near Lexington, Tenn.	1953-60	Do.
Pond Creek No. 1	Near Wilson Dam, Ala.	1949-60	Do.
Pond Creek No. 2	....do	1948-60	Do.
Poor Valley Creek e/	Near Mooresburg, Tenn.	1959-60	Do.
Do. e/	Near Spruce Pine School, Tenn.	1958-60	Do.
Snake Creek	Near Adamsville, Tenn.	1939-60	Do.
Turkey Creek (Beech River tributary).	Near Decaturville, Tenn.	1953-60	Do.
Turkey Creek (Tennessee River tributary).	Near Savannah, Tenn.	1939-60	Do.
Walker Switch Creek	At U. S. Highway 72, near Burnsville, Miss.	1959-60	Do.
White Creek	Near Sharps Chapel, Tenn.	1934-60	Do.
White Oak Creek	Near Milledgeville, Tenn.	1939-60	Do.
Yellow Creek	Near Burnsville, Miss.	1959-60	Do.
Do.	Near Cairo, Miss.	1959-60	Do.

a/ Records observed near Kendrick from November 1939 to May 1942 and opposite Kendrick from May 1942 to 1960.
b/ The Southeastern Forest Experiment Station of the U. S. Forest Service operates 17 stations in Coweeta Creek basin in order to obtain records of runoff from small areas.
c/ Records for 1943-54 published in compilation report No. 1 by Tennessee Valley Authority; those for 1954-57 published in compilation report No. 2.
d/ The Tennessee Valley Authority operates stations on six small watersheds ranging in area from 3.5 to 5.6 acres in the Pigeon River basin.
e/ The Poor Valley Creek gage location alternates between the Spruce Pine and Mooresburg sites depending on the elevation of Cherokee Lake backwater.

HYDROLOGIC CONDITIONS

Streamflow was above median during most of the year and was excessive in part of the area during nearly every month. In October the mean discharge of French Broad River at Asheville, N. C., was the highest for the month since 1936. Frequent local flooding occurred during the year but was generally limited to bankfull stages.

Figure 2, on page 13, for which records of three long-term representative gaging stations were used, shows a comparison of the monthly and yearly mean discharge for the 1960 water year with the median discharge for the period 1931-60.

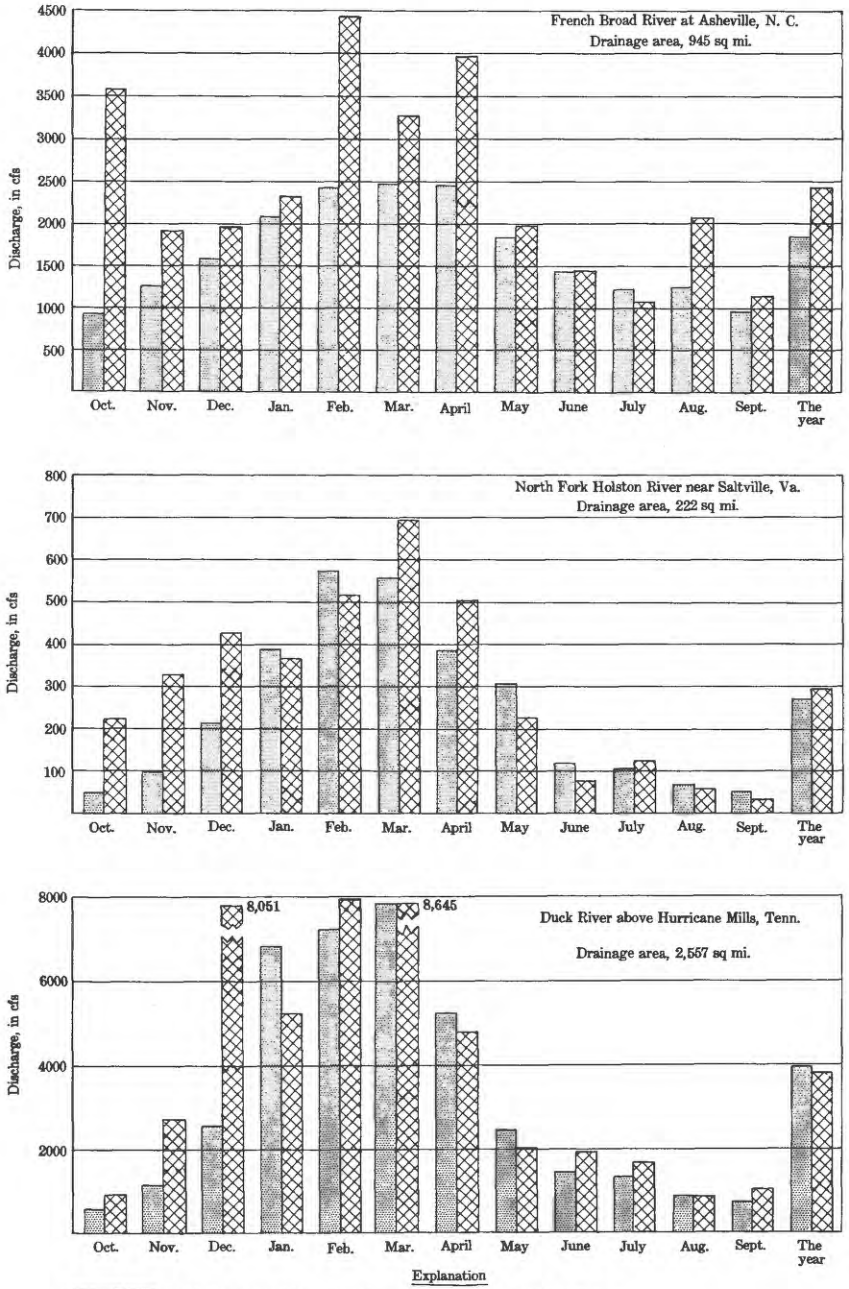

Figure 2. Comparison of discharge at three long-term representative gaging stations during 1960 water year with median discharge for period 1931–60.

CUMBERLAND RIVER BASIN

4005. Poor Fork at Cumberland, Ky.

Location.--Lat 36°58'26", 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.--82.3 sq mi.

Records available.--March 1940 to September 1960.

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.--20 years, 140 cfs.

Extremes.--Maximum discharge during year, 3,200 cfs Nov. 28 (gage height, 5.48 ft); minimum, 16 cfs Sept. 8.

1940-60: Maximum discharge, 11,800 cfs Jan. 29, 1957 (gage height, 11.50 ft), from rating curve extended above 3,500 cfs on basis of slope-area measurement of peak flow; no flow for part of Oct. 28, 1952.

Flood in January 1927 reached a stage of about 10.2 ft (discharge, 12,000 cfs, estimated by Corps of Engineers).

Remarks.--Records poor.

Revisions (water years).--WSP 923: 1940(M). WSP 1336: 1949-51, 1953(P). WSP 1506: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

-1.1	12	1.0	360
-.8	31	2.0	740
-.4	70	3.0	1,230
0.0	132	4.0	1,820
.5	232	5.0	2,720

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	80	220	178	90	188	405	62	51	90	22	*37
2	50	68	210	162	84	182	325	58	a43	237	20	28
3	34	58	239	487	77	237	295	55	a38	192	19	20
4	27	53	230	464	77	188	372	53	a35	248	27	19
5	24	49	196	312	216	154	375	51	a32	160	20	19
6	23	44	202	246	660	b135	318	51	a29	99	19	17
7	42	40	184	241	378	b120	268	56	28	71	21	17
8	52	37	156	218	268	b115	218	84	27	56	46	16
9	48	36	160	220	214	b110	186	101	25	54	54	19
10	52	34	*182	232	243	b105	160	98	25	537	43	42
11	43	32	198	308	516	b100	138	92	25	768	63	299
12	34	31	491	295	348	b96	124	86	31	325	39	166
13	34	31	648	268	278	b92	110	80	30	180	35	96
14	176	32	429	*234	222	b100	98	78	27	118	a31	59
15	194	41	295	295	172	154	88	73	27	86	28	45
16	104	51	226	280	160	355	83	65	24	66	a24	37
17	68	115	190	234	178	*512	77	59	37	56	a28	33
18	52	172	290	208	302	508	77	56	27	56	20	32
19	42	134	740	174	255	328	68	51	24	53	19	25
20	35	101	492	142	212	248	62	47	22	45	19	25
21	31	93	325	124	204	204	60	50	22	42	53	23
22	29	65	241	107	202	180	60	46	32	35	99	23
23	29	65	200	b93	204	170	56	40	81	36	93	21
24	50	778	186	b84	210	208	53	41	116	33	57	20
25	68	596	186	b80	320	265	53	68	160	*31	37	20
26	84	172	192	b77	*676	246	51	50	92	36	33	19
27	*206	500	186	84	*372	354	65	63	59	37	28	18
28	194	2,110	246	92	272	640	64	83	47	28	25	26
29	130	540	308	90	224	*1,080	58	84	*41	25	23	62
30	105	300	260	92	-------	1,140	58	74	44	24	21	37
31	88	-------	216	94	-------	672	-------	60	-------	23	*35	-------
Total	2,249	6,458	8,526	6,235	7,634	9,186	4,425	2,015	1,321	3,847	1,101	1,320
Mean	72.5	215	275	201	263	296	148	65.0	44.0	124	35.5	44.0
Cfsm	0.881	2.61	3.34	2.44	3.20	3.60	1.80	0.790	0.535	1.51	0.431	0.535
In.	1.02	2.92	3.85	2.82	3.45	4.15	2.00	0.91	0.60	1.74	0.50	0.60

Calendar year 1959: Max 2,350 Min 9.5 Mean 138 Cfsm 1.68 In. 22.81
Water year 1959-60: Max 2,110 Min 16 Mean 148 Cfsm 1.80 In. 24.56

Peak discharge(base, 1,600 cfs).--Nov. 28 (3:30 a.m.) 3,200 cfs (5.48 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.
b Stage-discharge relation affected by ice.
Note.--Discharge for periods Oct. 5, 6, June 7-16, 18-22, July 22, 24-26, July 28 to Aug. 8, 15, 18-20, 26-31, Sept. 2-9, 17-28, computed from twice-daily wire-weight-gage readings.

4010. Cumberland River near Harlan, Ky.

Location.--Lat 36°50'48", long 83°21'21", 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 1960.

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 Nov. 4, 1941, staff gage at same site and datum.

Average discharge.--20 years, 654 cfs.

Extremes.--Maximum discharge during year, 13,900 cfs Nov. 28 (gage height, 11.65 ft); minimum, 48 cfs Oct. 6 (gage height, 0.29 ft).
1940-60: 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 ice effect, doubtful or no gage-height record, which are fair.

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

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 29				Mar. 30 to Sept. 30			
0.3	50	2.5	960	0.4	68	2.5	960
.6	107	3.0	1,380	.6	113	3.0	1,380
1.0	210	5.0	3,550	1.0	230	5.0	3,550
1.5	385	8.0	7,750	1.5	415	7.0	6,250
2.0	640	10.0	11,000	2.0	645		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	188	834	760	408	784	2,110	280	182	2,240	115	234
2	145	166	760	646	377	724	1,600	265	158	2,430	105	133
3	90	145	1,330	1,750	353	1,140	1,380	234	146	1,230	100	106
4	69	132	1,100	2,240	341	904	1,820	227	135	1,160	94	89
5	57	123	848	1,470	515	740	1,840	215	121	802	90	85
6	50	116	808	1,110	2,400	650	1,560	212	111	545	86	78
7	82	107	827	1,160	1,910	600	1,300	244	101	407	130	74
8	148	96	712	1,270	1,320	550	1,040	391	91	324	170	70
9	142	90	*634	1,240	1,000	b520	862	460	87	275	160	76
10	125	86	682	1,130	1,300	b500	730	430	83	3,740	400	160
11	116	84	754	1,210	3,840	b470	635	375	83	4,860	700	3,540
12	101	80	2,740	1,200	1,980	b450	540	347	99	2,270	620	1,240
13	90	76	3,810	*1,350	1,440	b380	490	318	140	1,180	300	595
14	200	80	2,030	1,550	1,120	b420	440	296	135	760	230	383
15	485	92	1,320	1,740	b750	640	410	275	143	550	270	275
16	274	123	925	1,780	b700	1,510	385	251	118	439	230	218
17	182	264	730	1,320	766	2,400	370	230	216	375	185	194
18	138	434	873	1,040	1,560	2,680	355	218	276	335	150	176
19	112	369	3,860	820	1,590	1,660	325	200	164	314	130	158
20	94	277	2,500	664	b1,150	1,220	300	185	113	276	110	137
21	82	225	1,560	b540	b1,000	960	285	173	162	254	250	121
22	73	190	1,070	b470	b920	841	295	164	230	224	450	111
23	71	171	808	b420	b880	827	280	146	1,600	264	600	103
24	150	2,220	700	b370	b880	1,030	260	140	1,780	300	400	101
25	280	2,400	628	b350	1,140	1,380	245	200	2,920	210	300	91
26	294	992	610	b340	2,730	1,230	240	176	1,080	*170	190	87
27	*530	2,470	604	357	1,720	1,780	260	218	586	359	150	83
28	575	9,920	1,080	403	1,220	3,060	300	300	*419	209	120	85
29	365	2,460	1,910	416	984	4,920	270	293	351	164	110	536
30	274	1,230	2,300	426	-------	5,420	255	254	395	140	105	300
31	222	-------	984	426	-------	3,720	-----	212	-------	125	*100	-------
Total	5,804	25,406	40,331	29,968	36,294	44,110	21,182	7,929	12,225	26,931	7,150	9,639
Mean	187	847	1,301	967	1,251	1,423	706	256	408	869	231	321
Cfsm	0.500	2.26	3.48	2.59	3.34	3.80	1.89	0.684	1.09	2.32	0.618	0.858
In.	0.58	2.53	4.01	2.98	3.61	4.39	2.11	0.79	1.22	2.68	0.71	0.96

Calendar year 1959: Max 15,300 Min 19 Mean 640 Cfsm 1.71 In. 23.23
Water year 1959-60: Max 9,920 Min 50 Mean 729 Cfsm 1.95 In. 26.57

Peak discharge (base, 8,200 cfs).--Nov. 28 (6 a.m.) 13,900 cfs (11.65 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Mar. 4-8, July 31 to Aug. 31; discharge estimated on basis of 1 discharge measurement, recorded range in stage, weather records, and records for stations on nearby streams. Doubtful gage-height record Apr. 12 to May 2, May 9, 10, July 25; discharge computed on basis of recorder graph, 1 discharge measurement, weather records, and records for stations on nearby streams.

4020. Yellow Creek near Middlesboro, Ky.

Location.--Lat 36°39'02", long 83°42'04", on right bank on U. S. Highway 25E, 0.4 mile upstream from Low Ash Hollow, 3 miles north of Middlesboro, Bell County, and 6.0 miles upstream from Clear Fork.

Drainage area.--58.2 sq mi.

Records available.--August 1940 to September 1960.

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.--20 years, 105 cfs.

Extremes.--Maximum discharge during year, 2,980 cfs June 23 (gage height, 13.33 ft); minimum, 2.7 cfs Oct. 4-6 (gage height, 0.99 ft).
1940-60: 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 for periods of ice effect, which are fair.

Revisions (water years).--WSP 953: 1941(M). WSP 973: 1942(M). WSP 1433: Drainage area.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 23				June 24 to Sept. 30			
1.0	3.0	3.0	281	1.08	6.8	2.0	119
1.1	6.3	6.0	750	1.1	7.7	3.0	281
1.2	13	9.0	1,450	1.2	13	5.0	580
1.5	44	10.0	1,720	1.3	20	7.0	950
2.0	119			1.5	42		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	11	76	98	70	119	299	45	20	234	14	13
2	3.9	9.0	95	87	64	119	204	38	18	377	13	9.2
3	3.3	7.8	129	348	60	274	192	37	18	201	12	8.7
4	3.0	7.8	109	269	57	189	189	34	20	128	12	7.7
5	3.0	25	87	177	117	139	201	32	20	89	11	7.2
6	3.0	24	98	148	251	b110	180	32	14	65	20	7.2
7	11	16	90	226	212	b96	162	201	13	50	15	6.8
8	5.9	13	72	236	162	b83	134	430	10	42	17	6.8
9	25	12	*69	215	136	b80	114	222	10	36	18	24
10	7.8	10	69	182	210	b76	97	131	10	822	49	82
11	21	9.7	80	175	280	b72	87	101	16	718	40	269
12	10	9.0	537	158	182	b70	78	82	66	236	18	56
13	6.8	8.4	492	*194	b150	b66	72	72	32	129	15	28
14	22	11	234	178	b120	*b80	66	63	30	93	15	18
15	14	14	136	214	b105	129	62	53	47	68	15	15
16	8.4	22	106	178	103	455	57	45	34	56	14	*13
17	6.8	38	86	153	167	464	54	42	340	48	18	20
18	5.9	32	167	141	333	468	52	38	172	41	14	18
19	5.5	26	1,390	119	270	287	*45	35	80	40	12	15
20	5.1	22	402	103	182	197	43	30	50	34	12	13
21	5.5	20	212	93	160	151	48	30	44	28	28	11
22	5.1	16	136	82	146	138	44	28	69	25	28	10
23	8.4	16	106	72	135	141	41	24	1,720	29	20	9.7
24	37	292	95	b65	130	172	38	24	688	29	15	9.2
25	54	122	80	b60	225	185	37	32	389	23	12	8.7
26	32	62	70	b55	350	173	36	22	204	20	10	8.2
27	76	442	64	76	236	244	52	39	119	*18	10	8.2
28	34	922	226	81	170	400	43	36	*109	18	9.2	9.7
29	22	214	245	78	143	600	38	34	93	17	9.2	51
30	16	106	168	76	-------	883	36	36	76	16	*9.2	*18
31	13	-------	121	75	-------	542	-------	26	-------	15	14	-------
Total	479.9	2,539.7	6,049	4,412	4,926	7,202	2,801	2,094	4,531	3,745	518.6	781.3
Mean	15.5	84.7	195	142	170	232	93.4	67.5	151	121	16.7	26.0
Cfsm	0.266	1.46	3.35	2.44	2.92	3.99	1.60	1.16	2.59	2.08	0.287	0.447
In.	0.31	1.62	3.87	2.82	3.15	4.60	1.79	1.34	2.90	2.39	0.33	0.50

Calendar year 1959: Max 2,400 Min 2.5 Mean 96.3 Cfsm 1.65 In. 22.45
Water year 1959-60: Max 1,720 Min 3.0 Mean 110 Cfsm 1.89 In. 25.62

Peak discharge (base, 1,800 cfs).--Dec. 19 (6:30 a.m.) 2,230 cfs (11.53 ft); June 23 (1:30 a.m.) 2,980 cfs (13.33 ft); July 10 (7:30 p.m.) 2,140 cfs (11.29 ft).

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

4030. Cumberland River near Pineville, Ky.

Location.--Lat 36°48'48", long 83°45'58", on downstream side 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.--809 sq mi.

Records available.--August 1938 to September 1960.

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 bridge 200 ft upstream at same datum. June 23, 1939, to Mar. 19, 1956, water-stage recorder at bridge 200 ft upstream at same datum. Since May 26, 1943, auxillary staff gage read twice daily, 1.9 miles upstream from base gage.

Average discharge.--22 years, 1,322 cfs.

Extremes.--Maximum discharge during year, 18,900 cfs Nov. 28; maximum gage height, 30.53 ft Nov. 28; minimum discharge not determined.
1938-60: 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 measurements at gage heights 44.34, 47.3, 47.35 and 49.31 ft; minimum, 5.6 cfs Aug. 14, 1957.
Flood in March 1929 reached a stage of 47.3 ft (discharge, 51,000 cfs).

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

Revisions (water years).--WSP 1053: 1939. WSP 1436: Drainage area.

Rating table, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Fall used as a factor Nov. 25 to Dec. 1, Dec. 3, 4, 12-15, 19-23, Dec. 29 to Jan. 1, Jan. 4, 5, 12-18, Feb. 8, 11, 12, 18-21, 25-29, Mar. 16-21, Mar 27 to Apr. 3, Apr. 5-9, June 12, 17, 18, 23-26, July 2, 3, 11-13, Sept. 11, 12)

5.0	23	7.0	450
5.2	39	9.0	1,380
5.4	63	13.0	3,800
5.6	94	15.0	5,300
6.0	176		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a23	320	1,760	1,650	885	1,880	4,710	526	320	3,200	235	161
2	a24	278	1,470	1,440	826	1,640	3,140	526	280	7,490	222	248
3	a23	245	2,340	2,890	763	2,710	2,550	498	250	3,190	213	196
4	a30	220	2,190	4,620	718	2,730	2,800	470	235	2,200	194	156
5	a94	213	1,840	3,210	758	a2,400	2,900	443	216	1,690	189	134
6	a80	235	1,570	2,560	2,320	a1,800	2,690	422	194	1,180	180	122
7	a70	218	1,720	2,550	3,780	a1,500	2,470	538	174	853	211	110
8	a59	194	*1,480	3,120	2,780	a1,400	2,120	2,080	154	660	341	103
9	a80	176	1,350	3,060	2,260	b1,260	1,810	1,560	141	534	315	101
10	a140	163	1,340	2,750	2,060	b1,300	1,530	1,230	130	4,630	606	161
11	a150	150	1,450	2,560	5,220	b1,200	1,300	1,040	143	13,000	1,300	3,640
12	a170	141	3,320	*2,440	4,160	b1,140	1,170	880	1,620	6,300	920	3,030
13	a150	134	8,140	2,430	3,010	a1,100	1,050	772	781	2,830	558	1,290
14	a145	132	4,570	2,820	2,510	a1,050	930	682	494	1,730	429	a740
15	a150	143	2,910	2,810	a2,100	1,420	835	598	696	1,200	526	a450
16	a180	174	2,130	3,060	a1,700	4,450	772	526	490	900	454	a350
17	a300	305	1,610	2,550	1,610	6,470	718	470	3,800	722	341	a300
18	a240	542	1,760	2,190	2,740	6,540	*696	422	2,490	598	275	a330
19	a190	678	11,600	1,840	2,930	4,220	632	377	1,110	554	242	a290
20	a150	550	6,650	1,410	2,550	2,700	570	347	632	474	211	a255
21	a120	426	3,440	1,250	2,340	2,290	538	318	458	401	222	a210
22	a105	350	2,410	1,100	2,260	2,060	554	302	606	356	764	a180
23	a100	308	1,810	a980	2,180	1,930	522	275	8,500	320	1,140	a160
24	a115	3,380	1,530	a880	2,170	2,060	478	252	9,780	398	826	a140
25	a300	5,270	1,340	a800	2,410	2,550	450	268	12,500	415	526	a125
26	*a500	2,200	1,180	a740	4,810	2,600	440	300	4,120	335	365	a115
27	799	2,330	1,140	736	3,990	2,700	522	368	*2,170	295	282	a105
28	990	15,900	1,580	844	2,670	3,930	632	478	1,340	*422	238	a100
29	750	6,990	3,330	890	2,290	7,040	570	490	1,080	332	*205	a100
30	510	2,870	2,830	915	-------	8,340	510	458	1,060	275	183	a150
31	387	-------	2,120	915	-------	8,300	-------	380	-------	260	165	-------
Total	7,124	45,235	83,910	62,010	70,800	92,710	40,609	18,296	55,964	57,764	12,878	13,552
Mean	230	1,508	2,707	2,000	2,441	2,991	1,354	590	1,865	1,863	415	452
Cfsm	0.284	1.86	3.35	2.47	3.02	3.70	1.67	0.729	2.31	2.30	0.513	0.559
In.	0.33	2.08	3.86	2.85	3.25	4.26	1.87	0.84	2.57	2.66	0.59	0.62

Calendar year 1959: Max 32,400 Min 18 Mean 1,302 Cfsm 1.61 In. 21.84
Water year 1959-60: Max 15,900 Min 23 Mean 1,532 Cfsm 1.89 In. 25.78

Peak discharge (base, 16,000 cfs).--Nov. 28 (3 p.m.) 18,900 cfs (30.53 ft at 6 p.m.); July 11 (1:30 a.m.) 18,100 cfs (29.31 ft at 4 a.m.).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 1 discharge measurement, recorded range in stage when available, weather records, and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

4035. 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.--960 sq mi.

Records available.--October 1922 to September 1931, April 1948 to September 1960. Monthly discharge only April to June 1948, published in WSP 1306.

Gage.--Wire-weight gage and crest-stage gage; gage read twice daily. Datum of gage is 942.97 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1931, staff or chain gage at same site and at datum 1.0 ft higher. Since Oct. 1, 1957, auxiliary water-stage recorder 11.7 miles upstream from base gage.

Average discharge.--21 years, 1,716 cfs.

Extremes.--Maximum discharge during year, 17,900 cfs Nov. 28; maximum gage height, 27.1 ft Nov. 29; minimum daily discharge, 58 cfs Oct. 1.
1922-31, 1948-60: Maximum discharge, 47,900 cfs May 31, 1927, from rating curve extended above 30,000 cfs on basis of runoff comparisons with nearby stations; maximum gage height, 42.28 ft Jan. 30, 1957; 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 fair except those for periods of ice effect, which are poor. Diversion above station by city of Barbourville for municipal water supply. Records of water temperatures for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 603: 1923-24. WSP 1336: 1923(M), 1925(M), 1927, 1929, 1950-51. WSP 1436: Drainage area.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Fall used as a factor for most days above 2,500 cfs)

Oct. 1 to July 11				July 12 to Sept. 30			
1.5	54	3.0	830	1.7	95	2.5	485
1.7	95	4.0	1,620	1.8	125	3.0	830
2.0	195	7.0	4,000	2.0	215	5.0	2,520

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	338	2,190	1,890	1,060	2,110	5,920	620	314	2,310	230	195
2	61	270	1,630	1,940	996	1,900	3,760	613	270	7,460	195	255
3	156	240	2,470	3,110	916	2,880	2,930	564	250	4,970	175	235
4	133	187	2,860	5,670	858	3,170	3,020	529	222	2,700	157	165
5	106	187	2,110	4,330	844	b2,300	3,500	466	204	1,980	149	145
6	79	208	1,780	2,940	2,040	b1,850	3,400	438	187	1,400	157	125
7	81	213	1,980	2,660	3,840	b1,700	2,920	592	164	904	165	107
8	72	191	*1,730	3,480	3,080	b1,550	2,430	1,740	146	788	377	107
9	106	187	1,610	3,590	2,360	b1,500	2,050	1,980	136	634	401	98
10	204	156	1,590	3,180	2,180	b1,550	1,730	1,530	123	4,230	620	809
11	168	149	1,620	2,820	5,590	b1,400	1,480	1,250	117	*15,700	1,310	3,380
12	143	143	3,430	*2,770	5,950	b1,300	1,330	1,070	2,390	9,940	1,120	3,740
13	143	130	8,410	2,760	3,380	b1,200	1,200	924	1,400	5,280	641	1,480
14	149	130	6,720	3,430	b2,150	b1,200	1,120	795	788	1,940	498	844
15	191	143	3,960	3,620	b1,950	1,660	1,050	690	851	1,400	537	498
16	536	164	2,270	3,720	b1,700	4,800	886	606	690	1,070	524	*425
17	362	311	1,850	3,110	b1,800	7,960	830	508	3,560	814	335	355
18	245	606	2,140	2,480	2,920	7,780	*802	438	4,620	704	320	335
19	187	788	10,900	2,090	4,400	6,080	732	392	1,560	655	285	305
20	149	620	10,000	1,690	3,400	3,860	662	350	872	578	240	265
21	130	487	5,930	b1,400	2,740	2,800	606	326	599	425	240	240
22	102	380	2,890	b1,200	2,600	2,320	613	302	704	407	425	180
23	106	326	2,070	b1,050	2,600	2,200	557	285	6,860	355	1,220	175
24	143	3,840	1,750	b960	2,480	2,250	529	250	12,400	377	1,170	165
25	461	7,130	1,520	b900	3,130	2,750	494	231	15,800	455	669	149
26	753	3,620	1,360	b850	5,900	2,650	480	280	9,050	365	413	137
27	872	2,060	1,300	b860	5,490	3,020	606	380	*4,710	325	320	141
28	*1,110	13,700	1,250	980	3,500	4,400	816	536	1,650	*407	265	125
29	858	12,800	3,290	1,040	2,710	6,870	732	508	1,350	355	*210	205
30	585	5,870	3,490	1,090	-------	8,370	641	480	1,080	275	205	*676
31	417	-------	2,410	1,100	-------	9,010	-------	398	-------	245	195	-------
Total	8,866	55,574	98,510	72,710	82,564	104,590	47,826	20,071	73,067	69,448	13,768	16,061
Mean	286	1,852	3,178	2,345	2,847	3,374	1,594	647	2,436	2,240	444	535
Cfsm	0.298	1.93	3.31	2.44	2.97	3.51	1.66	0.674	2.54	2.33	0.462	0.557
In.	0.34	2.15	3.82	2.82	3.20	4.05	1.85	0.78	2.83	2.69	0.53	0.62

Calendar year 1959: Max 26,400 Min 20 Mean 1,508 Cfsm 1.57 In. 21.29
Water year 1959-60: Max 15,800 Min 58 Mean 1,812 Cfsm 1.89 In. 25.68

Peak discharge (base, 18,000 cfs).--No peak above base.

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

4040. 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.--1,607 sq mi.

Records available.--October 1950 to September 1960. 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.--10 years, 2,694 cfs.

Extremes.--Maximum discharge during year, 21,200 cfs Dec. 20 (gage height, 20.84 ft); minimum, 42 cfs Oct. 1 (gage height, 1.98 ft).
1950-60: Maximum discharge, 49,700 cfs Jan. 31, 1957 (gage height, 33.73 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 except those for period of ice effect, which are fair. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1960 are given in WSP 1721.

Revisions.--WSP 1436: Drainage area.

Rating tables, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 20				Dec. 21 to Sept. 30			
1.9	32	4.0	900	2.5	145	4.0	810
2.0	45	6.0	2,250	3.0	310	6.0	2,250
2.3	108	10.0	6,400	Note.--Same as preceding table above 6.0 ft.			
2.5	168	15.0	12,600				
3.0	345	21.0	21,500				

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	708	8,140	3,210	1,510	4,260	12,200	1,460	635	2,290	505	372
2	45	570	3,330	2,580	1,460	3,390	7,890	1,580	440	4,970	490	372
3	45	475	3,610	3,240	1,370	4,160	5,310	1,330	400	8,360	480	303
4	55	405	4,880	6,900	1,270	6,090	4,760	1,130	346	5,680	470	310
5	180	376	4,040	7,840	1,230	5,340	5,260	965	310	3,420	450	240
6	156	*390	3,180	5,780	1,480	4,010	5,650	852	282	2,500	431	199
7	126	465	3,260	5,190	3,390	b3,100	5,230	1,080	254	1,770	418	175
8	108	445	3,090	6,020	4,640	b2,850	3,350	4,210	226	1,350	413	157
9	141	386	2,830	6,640	3,720	b2,600	3,570	5,580	202	1,060	520	148
10	285	341	2,730	6,120	3,220	b2,500	2,920	3,540	184	4,080	665	148
11	285	309	2,700	5,330	5,340	b2,500	2,460	2,470	187	16,200	1,270	924
12	329	285	4,220	4,800	8,680	b2,300	2,080	1,940	320	18,400	1,740	5,120
13	289	262	10,300	4,420	7,540	b2,100	1,880	1,640	2,390	14,400	1,290	3,870
14	281	251	11,800	4,660	5,230	b2,000	1,690	1,420	1,510	7,670	840	1,700
15	301	248	8,540	4,940	3,850	2,300	1,520	1,220	924	3,040	708	1,030
16	345	285	4,860	5,920	2,980	6,270	1,390	1,040	1,060	2,050	804	702
17	606	445	3,330	5,610	2,870	13,600	1,290	900	1,760	1,600	665	570
18	510	876	3,230	4,550	4,850	14,600	1,220	792	6,870	1,350	495	550
19	363	1,130	13,500	3,700	7,070	12,500	1,150	696	5,080	1,200	400	590
20	285	1,140	20,800	2,980	6,660	9,170	1,040	635	2,060	1,110	382	540
21	234	954	16,000	2,430	5,230	5,680	930	575	1,180	965	426	450
22	198	768	*8,080	2,090	4,620	4,350	894	515	*852	828	418	377
23	192	696	4,330	1,830	4,630	3,800	894	470	6,540	720	980	318
24	248	3,960	3,100	1,620	4,730	3,640	834	445	16,700	645	1,560	286
25	654	10,300	2,650	*1,480	5,180	*3,990	774	422	17,600	645	1,130	254
26	1,040	8,820	2,250	1,380	8,220	4,450	798	427	17,100	738	750	230
27	1,400	4,960	2,000	1,350	10,300	4,370	1,060	460	14,400	696	540	208
28	1,710	13,600	1,990	1,420	8,250	5,240	1,790	670	6,410	640	413	193
29	1,530	18,100	3,040	1,510	5,560	7,430	1,730	738	3,130	665	334	193
30	1,200	15,400	4,860	1,520	-------	10,200	1,430	685	2,510	655	282	268
31	900	-------	4,270	1,530	-------	14,000	-------	635	-------	555	258	-------
Total	14,085	87,350	174,940	118,590	135,080	172,790	82,994	40,522	111,862	110,252	20,527	20,797
Mean	454	2,912	5,643	3,825	4,658	5,574	2,766	1,307	3,729	3,557	662	693
Cfsm	0.283	1.81	3.51	2.38	2.90	3.47	1.72	0.813	2.32	2.21	0.412	0.431
In.	0.33	2.02	4.05	2.74	3.13	4.00	1.92	0.94	2.59	2.55	0.48	0.48

Calendar year 1959: Max 26,400 Min 32 Mean 2,433 Cfsm 1.51 In. 20.55
Water year 1959-60: Max 20,800 Min 44 Mean 2,978 Cfsm 1.85 In. 25.23

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

4045. 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.--1,977 sq mi.

Records available.--August 1907 to December 1911, October 1914 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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 at same datum.

Average discharge.--50 years, 3,134 cfs.

Extremes.--Maximum discharge during year, 21,800 cfs Dec. 20 (gage height, 8.67 ft); minimum, 38 cfs Oct. 3-6 (gage height, 1.12 ft).
1907-11, 1914-60: 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 ice effect or no gage-height record, which are fair.

Revisions (water years).--WSP 1386: 1919. WSP 1436: Drainage area.

Rating table, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	32	3.0	2,430
1.2	70	4.5	6,120
1.4	200	6.0	11,000
1.8	580	8.0	18,800
2.5	1,520	9.0	23,400

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	880	11,000	3,950	1,850	5,340	13,200	1,800	796	2,910	470	325
2	41	724	4,940	3,220	1,800	4,530	9,290	2,200	688	4,180	400	a450
3	41	616	4,630	4,200	1,690	5,400	6,320	1,890	592	8,460	370	a440
4	38	*503	5,480	7,300	1,590	7,180	5,670	1,600	536	6,790	343	a370
5	38	503	5,120	8,690	1,550	6,240	6,040	1,390	481	4,180	316	a380
6	*94	492	4,150	6,760	1,780	4,860	6,410	1,220	430	3,020	289	a300
7	172	492	3,980	5,780	3,020	b3,800	*6,060	3,320	380	2,220	307	a240
8	144	547	3,880	6,910	5,020	b3,550	5,260	8,110	352	1,670	352	a210
9	172	514	3,620	7,820	4,480	b3,350	4,400	7,300	316	1,300	352	200
10	172	460	3,430	7,240	4,180	b3,300	3,660	5,100	289	6,070	640	186
11	316	410	*3,380	6,320	6,580	b3,100	3,060	3,540	272	17,000	927	256
12	307	380	5,130	5,640	9,190	b2,900	2,650	2,780	370	17,900	1,660	3,500
13	361	352	10,600	5,210	8,790	b2,600	2,370	2,320	1,720	14,700	1,670	4,630
14	361	334	12,800	5,260	6,120	b2,500	2,160	1,980	2,050	8,790	1,150	*2,300
15	352	334	10,100	6,470	4,760	2,740	1,940	1,730	1,280	5,760	892	1,380
16	352	361	6,150	6,790	3,810	7,820	1,800	1,490	1,150	2,370	880	992
17	420	604	4,250	6,440	3,620	16,100	1,660	1,300	2,430	1,820	880	820
18	652	880	5,560	5,450	6,260	16,700	1,570	1,150	5,950	1,500	736	736
19	503	1,220	18,000	4,530	8,430	14,400	1,490	1,040	6,260	1,320	592	736
20	380	1,340	21,600	*3,760	7,890	10,600	1,380	940	3,040	1,210	503	760
21	298	1,210	17,700	3,130	6,410	7,120	1,260	928	*1,670	1,110	525	676
22	256	1,000	10,200	2,690	5,640	5,560	1,200	820	1,360	940	525	580
23	224	904	5,560	2,370	5,590	4,890	1,200	736	7,390	832	569	492
24	272	5,400	4,020	2,110	5,760	4,730	1,140	676	16,400	736	1,660	430
25	460	10,100	3,310	1,890	*7,060	4,920	1,070	616	19,500	664	1,260	380
26	979	10,000	2,840	1,780	11,500	5,260	1,030	604	17,200	676	1,040	343
27	1,410	6,380	2,510	1,710	11,900	5,420	1,380	616	14,900	748	784	298
28	1,910	12,300	2,490	1,740	9,630	6,040	2,200	700	8,690	676	616	280
29	1,740	18,000	3,020	1,830	6,790	7,980	2,320	904	4,680	592	503	272
30	1,490	16,100	4,860	1,850	-------	10,700	1,960	928	3,690	616	420	264
31	1,110	-------	4,940	1,850	-------	14,300	-------	880	-------	558	361	-------
Total	15,106	93,340	209,250	140,690	162,690	203,930	101,150	60,608	124,862	119,318	21,992	23,226
Mean	487	3,111	6,750	4,538	5,610	6,578	3,372	1,955	4,162	3,849	709	774
Cfsm	0.246	1.57	3.41	2.30	2.84	3.33	1.71	0.989	2.11	1.95	0.359	0.392
In.	0.28	1.76	3.94	2.65	3.06	3.84	1.90	1.14	2.35	2.24	0.41	0.44

Calendar year 1959: Max 25,400 Min 38 Mean 2,839 Cfsm 1.44 In. 19.51
Water year 1959-60: Max 21,600 Min 38 Mean 3,487 Cfsm 1.76 In. 24.01

Peak discharge (base, 20,000 cfs).--Dec. 20 (2:30 p.m.) 21,800 cfs (8.67 ft); June 25 (5:30 a.m.) 20,200 cfs (8.31 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.
b Stage-discharge relation affected by ice.

4050. 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 city limits of Corbin, Whitley County, and 1.0 mile downstream from Lynn Camp Creek.

Drainage area.--201 sq mi.

Records available.--October 1922 to September 1924, July 1942 to September 1960. Prior to October 1953, published as "near Otas."

Gage.--Water-stage recorder. Datum of gage is 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.--20 years, 344 cfs.

Extremes.--Maximum discharge during year, 7,820 cfs June 23 (gage height, 12.85 ft); minimum, 0.5 cfs Oct. 6.

1922-24, 1942-60: Maximum discharge, 16,200 cfs Jan. 29, 1957 (gage height, 19.30 ft), from rating curve extended above 9,000 cfs on basis of contracted-opening measurement of peak flow; no flow at times in some years.

Floods in 1911, 1913, and 1922, reached a stage of 19 ft, present datum, from information by Corps of Engineers.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Some regulation at low flow by city water-supply reservoir.

Revisions (water years).--WSP 1436: Drainage area. WSP 1506: 1946, 1948(M), 1951-52(M).

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.05	0.6	2.5	102
1.1	1.4	3.0	213
1.3	5.2	4.0	540
1.5	10	6.0	1,500
1.7	18	8.0	2,700
2.0	42	11.0	5,490

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	26	520	333	153	588	710	113	23	1,080	17	9.0
2	1.0	27	604	306	140	496	532	96	20	1,220	18	6.8
3	.8	23	870	1,120	130	638	468	79	29	737	16	6.3
4	.6	21	678	1,180	124	536	629	67	22	596	12	5.0
5	.6	49	472	710	160	b400	665	57	16	357	12	3.8
6	1.1	98	472	532	482	b350	576	50	13	205	8.4	3.4
7	5.0	82	584	564	504	b300	465	664	9.0	132	8.1	3.0
8	2.4	62	462	706	406	b280	367	2,030	7.0	94	14	2.6
9	8.6	48	479	742	351	b280	a280	1,120	5.4	83	37	2.8
10	5.2	40	462	678	790	b290	a230	479	4.4	1,670	94	4.5
11	3.8	33	437	564	2,310	b270	*200	315	7.0	2,670	120	25
12	3.4	29	1,150	454	1,550	b255	181	337	49	1,440	109	*34
13	3.6	26	1,460	512	764	b250	160	189	158	508	58	33
14	10	26	920	512	560	b260	140	151	75	300	44	17
15	7.5	32	568	660	b410	360	128	122	48	186	42	10
16	8.4	75	416	592	b390	1,780	118	96	34	130	31	7.3
17	5.9	232	333	465	476	3,130	107	82	892	98	22	15
18	4.6	229	2,010	440	1,240	2,600	102	69	1,360	80	16	36
19	3.2	164	2,810	*378	1,220	1,670	92	58	548	92	83	54
20	3.0	126	1,720	303	880	1,040	82	53	*191	88	90	31
21	2.6	99	810	258	755	830	80	136	118	60	62	20
22	2.6	80	516	b210	688	768	83	112	169	44	124	13
23	6.2	276	392	b165	642	800	75	60	5,160	36	160	10
24	23	2,010	336	b145	*652	820	70	42	5,100	33	102	8.1
25	50	1,500	312	b130	1,330	786	67	35	1,770	70	58	8.1
26	46	647	261	b130	2,540	647	68	35	556	77	38	6.3
27	35	996	232	167	1,730	608	176	50	315	132	26	5.0
28	*28	2,350	367	252	955	608	197	77	235	94	19	4.5
29	23	1,550	*512	224	764	592	124	67	339	*46	15	7.0
30	21	796	454	186	-------	890	94	46	430	32	12	5.4
31	22	-------	398	169	-------	1,040	-------	32	-------	22	12	-------
Total	340.5	11,752	22,017	13,787	23,096	24,162	7,266	6,919	17,702.8	12,412	1,479.5	396.9
Mean	11.0	392	710	445	796	779	242	223	590	400	47.7	13.2
Cfsm	0.055	1.95	3.53	2.21	3.96	3.88	1.20	1.11	2.94	1.99	0.237	.0.066
In.	0.06	2.17	4.07	2.55	4.27	4.47	1.34	1.28	3.28	2.30	0.27	0.07

Calendar year 1959: Max 3,010 Min 0 Mean 273 Cfsm 1.36 In. 18.46
Water year 1959-60: Max 5,160 Min 0.6 Mean 386 Cfsm 1.92 In. 26.13

Peak discharge (base, 3,600 cfs).--June 23 (9 p.m.) 7,820 cfs (12.85 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 stations on nearby streams.
b Stage-discharge relation affected by ice.
Note.--Discharge computed from twice-daily staff-gage readings Oct. 1-6, 8, 11-13, 19-23, Sept. 5-10.

4060. Wood Creek near London, Ky.

Location.--Lat 37°09'40", long 84°06'43", 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.--3.89 sq mi.

Records available.--September 1953 to September 1960.

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

Average discharge.--7 years, 5.43 cfs.

Extremes.--Maximum discharge during year, 418 cfs June 22 (gage height, 5.72 ft), from rating curve extended above 160 cfs by logarithmic plotting; minimum, 0.3 cfs Oct. 3-6, 7, 8, 12.
1953-60: Maximum discharge, 506 cfs Feb. 17, 1956 (gage height, 6.23 ft), from rating curve extended above 160 cfs by logarithmic plotting; minimum, 0.2 cfs at times during several years; minimum gage height, 1.09 ft Aug. 22, 1954.

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

Revisions.--WSP 1436: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.15	0.3	1.7	12
1.2	.5	2.0	29
1.3	1.4	3.0	100
1.4	3.1	4.1	195
1.5	5.1		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.7	4.5	6.6	a3.5	12	17	2.3	1.1	29	1.1	1.0
2	.4	.5	8.1	6.9	a3.3	10	13	1.8	1.4	22	1.1	1.8
3	.3	.5	7.5	14	a3.2	10	12	1.6	1.2	17	1.0	1.4
4	.3	1.2	5.1	11	a3.1	8.2	11	1.4	1.1	a13	1.0	1.1
5	.3	3.1	4.1	8.6	a3.7	7.2	9.5	1.4	.9	a9.5	1.0	.5
6	.4	1.8	5.7	7.8	a6.6	b6.2	8.2	1.3	.9	a8.0	.9	.9
7	.3	1.3	4.7	8.2	a9.0	b5.6	7.2	19	.8	a5.4	1.7	.8
8	12	1.1	4.5	7.8	a7.0	b5.2	6.0	11	.8	a5.0	2.3	.8
9	.5	1.0	4.5	7.8	a6.0	b5.0	5.4	6.3	.8	a10	2.6	.8
10	.4	.8	4.1	7.5	a15	b4.8	4.9	5.1	.7	a25	9.0	1.3
11	.4	.7	5.7	6.9	a30	b4.6	4.5	4.7	2.5	a17	3.9	10
12	.4	.7	20	*6.3	a18	b4.5	4.1	4.3	6.3	12	2.3	*1.5
13	.8	.7	12	8.6	a11	b4.5	3.9	4.1	2.5	7.8	1.8	1.0
14	1.0	1.1	8.2	9.5	a8.0	b4.7	3.5	3.5	1.8	6.3	1.4	.9
15	.5	.9	6.9	14	a7.0	6.8	3.3	3.1	1.4	5.1	1.3	.7
16	.4	3.3	5.7	a12	a6.6	42	3.1	2.7	2.2	4.7	1.2	.7
17	a.4	2.7	5.4	a10	*a11	36	2.9	2.3	*48	5.9	1.0	5.3
18	a.4	1.8	a25	9.1	15	28	2.9	2.0	a20	4.5	.9	3.1
19	.4	1.4	a18	a8.0	12	20	2.5	1.8	a8.0	4.7	2.6	1.8
20	.4	1.2	12	a7.0	11	17	2.1	1.8	*5.1	3.7	2.0	1.4
21	a.3	1.0	*10	a6.0	11	15	2.1	1.6	9.8	3.3	1.5	1.2
22	a.3	.9	7.8	5.1	10	14	2.0	1.4	37	2.7	6.8	1.1
23	a1.5	7.7	6.9	a4.5	9.9	*14	1.8	1.3	194	2.5	4.6	.9
24	1.8	6.3	6.6	a4.3	9.1	14	1.8	2.0	46	2.1	3.1	.9
25	1.3	3.9	5.7	b4.0	41	13	1.6	1.6	21	1.8	2.1	.8
26	a1.0	2.7	5.1	b3.8	33	13	2.0	1.5	14	1.6	1.6	.8
27	.7	12	4.9	4.5	20	14	2.9	2.2	9.9	1.5	1.4	.8
28	.5	11	10	5.7	17	16	2.0	2.0	12	1.4	1.5	.8
29	*.9	6.0	9.1	4.7	14	16	1.6	1.5	8.6	*1.2	1.5	1.2
30	1.1	4.7	8.2	4.1	-------	35	2.2	1.3	35	1.2	1.2	.9
31	.9	-------	7.5	a3.7	-------	24	-------	1.2	-------	1.1	1.2	-------
Total	30.7	82.7	253.5	228.0	355.0	430.3	147.0	99.1	494.8	233.0	66.6	46.2
Mean	0.99	2.76	8.18	7.35	12.2	13.9	4.90	3.20	16.5	7.52	2.15	1.54
Cfsm	0.254	0.710	2.10	1.89	3.14	3.57	1.26	0.823	4.24	1.93	0.553	0.396
In.	0.29	0.79	2.42	2.18	3.39	4.11	1.41	0.95	4.73	2.23	0.64	0.44

Calendar year 1959: Max 41 Min 0.3 Mean 3.95 Cfsm 1.02 In. 13.78
Water year 1959-60: Max 194 Min 0.3 Mean 6.74 Cfsm 1.73 In. 23.58

Peak discharge (base, 100 cfs).--June 17 (6 a.m.) 126 cfs (3.32 ft); June 22 (11:30 p.m.) 418 cfs (5.72 ft); June 30 (10:30 a.m.) 140 cfs (3.50 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 3 discharge measurements, recorded range in stage, weather records, and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

4065. Rockcastle River at Billows, Ky.

Location.--Lat 37°10'16", long 84°17'46", 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.--604 sq mi.

Records available.--July 1936 to September 1960.

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.--24 years, 895 cfs.

Extremes.--Maximum discharge during year, 28,000 cfs June 24 (gage height, 34.10 ft); minimum, 8.0 cfs Oct. 5 (gage height, 0.81 ft).
1936-60: Maximum discharge, 46,800 cfs June 29, 1947 (gage height, 45.48 ft); minimum, 0.8 cfs Sept. 9, 1957 (gage height, 0.56 ft).
Flood in January 1913 reached a stage of about 40 ft, from information by Corps of Engineers.

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

Revisions.--WSP 1436: Drainage area.

Rating tables, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 7				May 8 to Sept. 30			
0.8	7.5	3.0	340	1.09	26	3.0	350
1.0	20	4.0	710	1.1	27	4.0	710
1.4	55	10.0	3,580	1.4	57	10.0	3,580
2.0	128	17.0	8,500	2.0	144	18.0	9,400
2.5	220			2.5	235	32.0	25,100

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	113	719	1,090	710	1,860	2,340	688	330	4,720	168	110
2	9.5	101	690	904	594	1,610	1,800	670	251	4,740	168	108
3	8.5	91	1,710	1,350	506	1,540	1,550	503	215	2,370	112	79
4	8.5	82	1,560	2,020	447	1,250	1,480	415	191	2,840	80	59
5	8.5	69	1,020	1,540	578	935	1,370	343	152	1,870	76	51
6	9.0	140	773	1,240	2,260	b760	1,220	302	131	1,150	136	45
7	10	214	899	1,070	2,660	b720	1,200	1,520	112	755	115	37
8	12	164	*764	1,090	1,870	b640	926	6,320	*97	558	112	33
9	27	131	690	1,070	1,500	b660	764	2,870	84	428	583	29
10	38	110	686	1,090	1,670	b660	638	1,600	73	404	582	26
11	30	96	642	1,020	8,240	b680	558	1,150	79	1,700	414	30
12	25	88	2,250	*976	4,020	b600	510	876	297	1,360	308	37
13	28	78	3,800	894	2,080	b560	440	674	1,880	782	227	*38
14	34	75	2,180	1,060	1,680	670	405	550	971	550	170	42
15	38	83	1,450	4,160	1,240	930	367	459	590	410	141	42
16	38	121	1,020	4,000	1,040	3,340	343	389	407	310	117	33
17	34	240	786	2,150	*980	8,140	325	332	3,210	280	96	45
18	35	405	1,420	1,740	2,120	5,240	312	295	4,460	398	79	182
19	34	312	3,040	1,510	2,370	3,400	290	261	1,620	392	70	300
20	29	240	1,970	1,180	1,840	2,520	248	233	922	401	282	195
21	25	196	1,350	994	1,680	2,040	242	209	850	300	231	131
22	22	164	976	845	1,560	1,960	230	193	1,460	241	165	100
23	23	168	732	670	1,420	*2,130	220	172	15,900	197	209	79
24	36	820	606	566	1,450	2,350	204	152	24,400	209	227	65
25	87	912	562	500	2,070	2,560	192	308	5,720	249	154	56
26	170	522	472	461	6,880	2,240	188	340	1,740	181	115	47
27	155	461	426	454	4,190	2,680	690	392	1,350	165	90	41
28	127	1,900	1,400	710	2,610	3,210	666	706	1,420	190	73	38
29	*107	1,600	2,780	886	2,220	3,420	436	594	1,350	*139	63	36
30	96	994	1,900	832	-------	3,040	340	452	2,520	123	56	35
31	96	-------	1,430	773	-------	3,260	-------	368	-------	117	72	-------
Total	1,410.0	10,690	40,703	38,845	62,485	65,605	20,494	24,336	72,782	28,529	5,491	2,147
Mean	45.5	356	1,313	1,253	2,155	2,116	683	785	2,426	920	177	71.6
Cfsm	0.075	0.589	2.17	2.07	3.57	3.50	1.13	1.30	4.02	1.52	0.293	0.119
In.	0.09	0.66	2.51	2.39	3.85	4.04	1.26	1.50	4.48	1.76	0.34	0.13

Calendar year 1959: Max 9,810 Min 8.5 Mean 689 Cfsm 1.14 In. 15.48
Water year 1959-60: Max 24,400 Min 8.5 Mean 1,021 Cfsm 1.69 In. 23.01

Peak discharge (base, 10,000 cfs).--Feb. 11 (3:15 p.m.) 10,100 cfs (18.75 ft); June 24 (5:30 a.m.) 28,000 cfs (34.10 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Discharge computed from bihourly radio-gage readings Nov. 29, 30, Jan. 14 to Feb. 6, Apr. 4-22, May 9 to June 8, June 29 to Aug. 10.

4071. Cane Branch near Parkers Lake, Ky.

Location.--Lat 36°52'04", long 84°26'57", on left bank 2,100 ft upstream from West Fork, 2.5 miles northeast of Parkers Lake, McCreary County, and 2.6 miles east of Greenwood.

Drainage area.--0.67 sq mi.

Records available.--February 1956 to September 1960.

Gage.--Water-stage recorder and concrete control. Datum of gage is 979.4 ft above mean sea level, datum of 1929 (levels by U. S. Forest Service).

Extremes.--Maximum discharge during year, 71 cfs July 10 (gage height, 1.425 ft); minimum, 0.054 cfs Sept. 8, 9, 10 (gage height, 0.42 ft).
1956-60: Maximum discharge, 198 cfs Jan. 29, 1957 (gage height, 2.43 ft, backwater from ice); minimum, 0.005 cfs Sept. 7, 8, 1957 (gage height, 0.43 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height records, which are poor. Flow affected slightly by pumping of water from coal mine above station. Records of chemical analyses, suspended sediment loads, and water temperatures for the water year 1960 are given in WSP 1721.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 22				June 23 to Sept. 30			
0.45	0.075	0.8	4.4	0.42	0.054	0.9	8.9
.5	.20	.9	7.8	.5	.26	1.0	15.3
.6	.86	1.0	13.0	.6	.95	1.1	23.4
.7	2.18	1.1	20.9	.7	2.55	1.2	34.1
				.8	4.95		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.085	a0.2	0.96	0.86	*0.39	*1.94	2.4	1.02	0.10	2.4	0.15	0.076
2	.085	a.16	1.50	1.10	.39	b2.0	1.80	.67	.15	1.89	*.13	.076
3	.085	a.15	1.59	2.3	.36	b2.0	1.73	.55	.12	2.5	.13	.076
4	.085	a.25	1.20	1.73	*.39	b1.4	1.53	.48	.10	1.98	.15	.076
5	.10	a1.1	.91	1.53	1.13	b1.1	1.59	.39	.10	1.06	.15	.076
6	.14	a.5	1.33	1.40	1.47	b.9	1.40	.34	.10	.63	.12	.076
7	.10	a.25	.96	1.66	1.33	b.8	1.20	17.0	.085	.42	.13	.076
8	.93	a.17	.86	1.73	1.20	b.7	.96	5.1	.085	.32	.15	*.065
9	.29	*.14	.86	1.80	1.08	b1.7	.81	2.4	*.075	.28	.18	.054
10	.13	.14	.86	1.66	10.0	b1.1	.63	*1.47	.075	25.0	.79	.25
11	.12	.14	1.45	*1.53	5.1	b.8	.55	1.08	.34	5.7	.20	.32
12	*.10	.14	7.2	1.40	2.6	b.7	*.52	.81	1.95	*2.07	.15	.11
13	.22	.13	3.9	1.94	b1.8	b.7	.45	.67	.21	1.12	.16	.076
14	.34	.31	2.3	1.98	b1.3	b.7	.42	.52	.16	.67	.15	.076
15	.18	.20	1.59	2.02	b1.1	b1.2	.39	.42	.12	.45	.13	.076
16	.14	1.45	1.20	1.66	b1.1	7.7	.36	.34	.24	.34	.12	.087
17	.13	1.11	1.08	1.47	2.3	6.0	.39	.29	*9.8	.32	.11	.66
18	.13	.59	19.5	1.40	5.2	4.0	.39	.25	1.28	.42	.11	.15
19	.12	.42	8.5	1.08	3.0	3.0	.31	.20	.52	1.75	*.11	.11
20	.10	.34	3.2	.86	b2.0	2.4	.29	.18	.31	.34	.11	.087
21	.10	.29	*2.10	.71	b1.8	2.02	.31	.16	.29	.28	.10	.076
22	.10	.23	1.59	.59	b1.6	*2.18	.29	.14	.37	.22	.13	.076
23	.30	2.6	1.26	b.54	b1.6	2.5	.25	.13	*15.5	.34	.20	.076
24	.79	4.4	1.02	.52	1.87	3.0	.23	.16	4.0	.26	.10	.076
25	.74	1.60	.81	.48	6.8	2.8	.23	.14	1.89	.20	.087	.065
26	.43	.91	.71	.52	5.4	2.8	.68	.31	1.00	.22	.087	.065
27	.39	3.0	.76	.71	3.0	3.5	.88	.72	1.88	.20	.076	.076
28	a.3	3.2	1.64	.55	2.6	4.2	.52	.23	6.4	.17	.10	.076
29	a.2	1.66	1.20	.48	2.4	3.3	.45	.18	3.6	.17	.10	.20
30	a.2	*1.14	1.14	.45	------	*5.1	.96	.13	2.5	.17	.087	.087
31	a.25	------	.96	.42	------	3.0	------	.12	------	.16	.076	------
Total	7.410	26.92	74.14	37.08	70.31	75.24	22.92	36.60	53.350	52.05	4.573	3.526
Mean	0.239	0.897	2.39	1.20	2.42	2.43	0.764	1.18	1.78	1.68	0.148	0.118
Cfsm	0.357	1.34	3.57	1.79	3.61	3.63	1.14	1.76	2.66	2.51	0.221	0.176
In.	0.41	1.49	4.12	2.06	3.90	4.18	1.27	2.03	2.96	2.89	0.25	0.20

Calendar year 1959: Max 19.5 Min 0.050 Mean 0.764 Cfsm 1.14 In. 15.48
Water year 1959-60: Max 25.0 Min 0.054 Mean 1.27 Cfsm 1.90 In. 25.76

Peak discharge (base, 40 cfs).--May 7 (2:45 p.m.) 60 cfs (1.385 ft); June 17 (4:30 a.m.) 43 cfs (1.285 ft); June 23 (4:20 a.m.) 61 cfs (1.375 ft); July 10 (4:15 p.m.) 71 cfs (1.425 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 Helton Branch near Greenwood.
b Stage-discharge relation affected by ice.

4073. Helton Branch at Greenwood, Ky.

Location.--Lat 36°53'08", long 84°28'56", on left bank 250 ft upstream from mouth and 1 mile northeast of Greenwood, McCreary County.

Drainage area.--0.85 sq mi.

Records available.--January 1956 to September 1960.

Gage.--Water-stage recorder and concrete control. Datum of gage is 993.8 ft above mean sea level (levels by U. S. Forest Service).

Extremes.--Maximum discharge during year, 65 cfs July 10 (gage height, 1.18 ft); minimum, 0.16 cfs on many days (gage height, 0.48 ft).
1956-60: Maximum discharge, 136 cfs Jan. 29, 1957 (gage height, 1.35 ft); maximum gage height, 1.46 ft Jan. 30, 1956 (backwater from debris); minimum discharge, 0.05 cfs Oct. 2, 1956.

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

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 21				Mar. 22 to Sept. 30			
0.49	0.20	0.8	5.4	0.48	0.16	0.8	5.8
.5	.24	.9	11.2	.5	.24	.9	11.6
.6	.92	1.0	20.5	.6	1.12	1.0	22.0
.7	2.4	1.1	36	.7	2.7		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.20	0.31	1.01	1.16	*0.68	*2.1	3.2	0.55	0.24	2.5	0.22	0.18
2	.20	.29	1.45	1.10	.64	2.1	2.5	.47	.24	2.15	*.20	.18
3	.20	.29	1.65	2.2	a.6	2.2	2.3	.43	.24	1.95	.18	.16
4	.20	.35	1.22	1.95	.61	1.65	2.3	.40	.22	1.92	.18	.16
5	.20	.68	.96	1.50	.88	a1.3	2.22	.34	.20	1.32	.18	.16
6	.30	.46	1.16	1.35	1.06	a1.1	2.15	.31	.20	.88	.18	.16
7	.24	.37	.96	1.50	.96	a.9	1.92	10.1	.18	.60	.18	.16
8	.34	.31	.88	1.60	.92	a.8	1.62	5.5	.18	.47	.20	*.16
9	.33	*.27	.88	1.65	.88	a2.0	1.40	2.5	*.16	.40	.22	.16
10	.24	.26	.88	1.85	8.3	a1.4	1.18	*1.70	.16	17.1	.29	.24
11	.22	.26	1.21	*1.60	6.3	a1.1	1.06	1.32	.18	7.4	.26	.37
12	*.20	.26	5.9	1.50	2.7	a.9	*.94	1.06	1.11	*2.7	.22	.20
13	.26	.24	4.0	1.95	2.0	a.8	.88	.94	.34	1.85	.22	.18
14	.34	.40	2.2	2.2	1.60	a.9	.82	.76	.26	1.25	.22	.18
15	.26	.40	1.45	2.6	1.30	a1.5	.70	.60	.22	.88	.20	.18
16	.26	.76	1.16	1.95	1.22	a8	.60	.51	.24	.65	.18	.18
17	.24	.88	1.01	1.60	1.70	a7	.60	.43	*8.1	.55	.18	.48
18	.24	.64	25	1.50	4.6	a5	.55	.40	2.20	.51	.22	.31
19	.24	.54	12.6	1.22	3.2	a3.5	.51	.37	1.06	.65	*.22	.24
20	.26	.46	4.1	1.06	2.3	a2.5	.51	.34	.65	.43	.20	.20
21	.26	.40	*2.4	.96	2.1	a2.2	.47	.31	.65	.37	.20	.18
22	.26	.37	1.75	.84	1.95	*2.4	.43	.29	.76	.31	.29	.16
23	.40	1.50	1.35	a.75	1.75	2.7	.43	.29	*17.2	.37	.33	.16
24	.63	4.1	1.10	a.70	1.95	3.4	.40	.29	5.8	.34	.24	.16
25	.64	1.60	.96	a.65	9.4	3.7	.40	.34	2.6	.29	.20	.16
26	.43	.96	.88	.72	8.6	3.4	.51	.31	1.70	.29	.20	.16
27	.44	2.5	.88	.84	3.9	5.2	.70	1.04	1.43	.29	.20	.18
28	.34	3.1	2.1	.80	3.2	6.0	.47	.55	4.7	.26	.20	.18
29	.31	1.65	1.95	.76	2.6	4.6	.47	.40	3.8	.24	.20	.22
30	.31	*1.10	1.60	.76	-------	*6.9	.47	.34	2.8	.24	.20	.18
31	.34	-------	1.30	.72	-------	4.6	-------	.26	-------	.24	.20	-------
Total	9.33	25.71	85.95	41.54	77.90	91.85	32.71	33.45	57.82	49.40	6.61	5.98
Mean	0.301	0.857	2.77	1.34	2.69	2.96	1.09	1.08	1.93	1.59	0.213	0.199
Cfsm	0.354	1.01	3.26	1.58	3.16	3.48	1.28	1.27	2.27	1.87	0.251	0.234
In.	0.41	1.12	3.76	1.82	3.41	4.02	1.43	1.46	2.53	2.16	0.29	0.26

Calendar year 1959: Max 25 Min 0.14 Mean 0.947 Cfsm 1.11 In. 15.12
Water year 1959-60: Max 25 Min 0.16 Mean 1.42 Cfsm 1.67 In. 22.67

Peak discharge (base, 50 cfs).--Dec. 18 (7 a.m.) 54 cfs (1.155 ft); July 10 (1:15 p.m.) 65 cfs (1.18 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 Cane Branch near Parkers Lake.

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4075. 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, Pulaski County, and 11.5 miles northeast of Somerset.

Drainage area.--165 sq mi.

Records available.--December 1952 to September 1960.

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 and crest-stage gages at same site and datum.

Average discharge.--7 years (1953-60), 229 cfs.

Extremes.--Maximum discharge during year, 13,600 cfs June 23 (gage height, 18.51 ft), from rating curve extended above 6,700 cfs as explained below; no flow Oct. 1-7.
1952-60: Maximum discharge, 14,900 cfs Nov. 19, 1957 (gage height, 19.55 ft), from rating curve extended above 6,700 cfs on basis of contracted-opening measurement of peak flow; no flow at times in most years.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor.

Revisions.--WSP 1436: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	0	1.9	2.7	2.3	17	4.0	560
1.6	.2	2.0	4.5	2.5	37	5.0	1,090
1.7	.6	2.1	7.2	2.7	75	8.0	3,200
1.8	1.3	2.2	11	3.0	155	15.0	9,500

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	4.3	88	256	143	484	461	211	37	1,680	8.3	18
2	0	3.5	127	228	131	430	380	98	31	1,190	8.3	9.1
3	0	3.2	225	389	118	420	546	71	26	533	7.2	5.8
4	0	3.2	155	311	112	a320	497	59	23	506	6.0	4.3
5	0	4.3	118	256	236	a280	416	50	20	299	5.0	3.5
6	0	5.0	134	239	994	a265	335	42	17	194	5.8	2.6
7	0	6.3	155	246	650	a250	281	316	15	143	5.5	2.1
8	.6	5.5	122	292	425	a240	239	353	*a12	110	6.8	1.6
9	3.5	5.0	*110	246	340	a230	200	190	9.9	90	7.6	1.2
10	1.8	4.8	98	225	1,890	b220	172	134	8.3	118	*198	1.0
11	1.0	4.5	105	204	2,520	b200	152	108	75	246	59	1.1
12	.6	4.3	1,040	176	755	b185	137	92	348	110	30	1.1
13	.6	4.1	844	*211	510	a180	125	85	296	75	22	*1.1
14	.8	5.2	416	404	b410	a190	115	69	108	63	18	.9
15	.8	7.2	281	1,710	b300	225	108	59	78	50	15	.8
16	.6	13	214	822	b285	1,400	100	50	55	42	12	.7
17	.6	16	180	484	380	1,890	92	42	1,530	37	9.9	6.7
18	.5	16	425	528	705	1,120	88	36	510	35	8.0	51
19	.4	16	362	434	582	916	75	31	225	32	7.2	31
20	.4	14	253	319	b430	680	71	30	134	29	7.6	21
21	.3	13	204	a260	b400	680	69	25	1,980	24	6.6	16
22	.3	12	162	a210	b380	760	67	22	1,020	21	9.9	12
23	.4	14	134	a155	*376	899	63	18	9,050	19	14	9.1
24	2.4	24	122	a145	380	*958	55	89	2,920	18	11	7.2
25	3.9	39	112	a120	1,000	940	53	84	828	17	9.9	5.8
26	4.1	36	102	a115	1,760	730	95	42	452	16	6.9	4.8
27	4.3	198	98	137	877	822	197	138	295	14	5.5	3.9
28	4.3	288	1,270	270	700	720	102	169	827	13	4.5	3.3
29	4.8	158	780	222	623	610	73	105	936	12	3.7	2.8
30	*5.2	108	466	186	-------	745	63	71	1,720	10	3.0	2.4
31	5.0	-------	331	162	-------	614	-------	50	-------	9.1	15	-------
Total	47.2	1,035.4	9,233	9,962	18,412	18,603	5,427	2,939	23,586.2	5,758.1	537.3	231.9
Mean	1.52	34.5	298	321	635	600	181	94.8	786	186	17.3	7.73
Cfsm	0.0092	0.209	1.81	1.95	3.85	3.64	1.10	0.575	4.76	1.13	0.105	0.047
In.	0.01	0.23	2.08	2.25	4.15	4.19	1.22	0.66	5.32	1.30	0.12	0.05

Calendar year 1959: Max 2,960 Min 0 Mean 167 Cfsm 1.01 In. 13.71
Water year 1959-60: Max 9,050 Min 0 Mean 262 Cfsm 1.59 In. 21.58

Peak discharge (base, 3,500 cfs).--Feb. 10 (9:45 p.m.) 4,860 cfs (10.08 ft); June 23 (11:15 a.m.) 13,600 cfs (18.51 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 stations on nearby streams.
b Stage-discharge relation affected by ice.

4085. 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.--382 sq mi.

Records available.--August 1934 to September 1960. 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.--26 years, 710 cfs.

Extremes.--Maximum discharge during year, 23,100 cfs Dec. 19 (gage height, 22.85 ft); minimum, 9.4 cfs Oct. 2, 3 (gage height, 1.57 ft).
1934-60: Maximum discharge, 44,300 cfs Feb. 3, 1939 (gage height, 33.58 ft); no flow 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 (discharge, 74,700 cfs).

Remarks.--Records good. Time zone changed at 2 a.m. Apr. 3; records on eastern standard time after that time.

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

Revisions.--WSP 1436: Drainage area.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 28				Nov. 29 to Sept. 30			
1.5	8.0	3.0	247	1.6	14	3.5	420
1.6	12	4.0	660	1.7	19	4.0	670
1.8	24	5.0	1,180	2.0	46	7.0	2,630
2.0	43	7.0	2,630	2.3	89	12.0	7,100
2.3	82	11.0	6,100	2.6	145	19.0	16,600
2.6	142	15.0	10,900	3.0	240		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	244	856	676	444	814	1,900	892	75	586	26	45
2	10	215	766	562	408	784	1,270	748	64	396	23	45
3	9.4	188	1,350	3,040	376	3,210	1,020	580	61	300	21	53
4	10	166	1,150	2,610	352	2,180	1,160	464	57	428	21	41
5	10	169	862	1,530	360	1,340	1,130	384	52	416	20	34
6	13	1,190	790	1,200	892	970	1,030	328	45	270	21	29
7	17	675	778	1,440	1,070	886	898	1,150	40	190	18	26
8	13	446	634	1,890	916	688	718	5,060	35	153	18	22
9	83	326	682	1,900	814	682	574	1,960	32	125	21	*19
10	87	257	742	1,720	977	628	472	1,130	28	330	106	21
11	63	210	802	1,700	4,040	610	408	790	27	1,800	*152	681
12	47	178	6,390	1,410	1,810	556	368	*586	32	970	143	751
13	42	155	5,600	1,300	1,280	480	332	460	42	472	84	291
14	62	142	2,230	1,350	1,060	515	*300	384	41	308	61	175
15	155	140	1,330	*1,350	706	676	270	320	47	219	69	125
16	132	151	940	1,270	676	3,630	258	267	66	169	91	96
17	87	390	*718	1,070	*872	4,240	240	234	302	143	65	122
18	66	620	3,240	1,020	2,800	3,250	246	208	413	123	46	1,190
19	50	*506	16,000	940	2,680	2,080	228	183	173	127	40	634
20	41	394	3,950	802	1,660	1,430	202	163	116	109	94	376
21	*36	322	2,040	676	1,350	1,080	190	147	90	89	149	252
22	31	267	1,310	550	1,240	922	222	129	*496	72	298	179
23	29	234	982	452	1,240	856	213	114	1,640	62	829	145
24	43	1,070	802	404	1,270	916	198	105	1,830	57	316	116
25	290	1,660	634	360	2,110	*1,030	190	105	2,060	57	185	100
26	290	865	530	328	3,580	964	198	100	868	58	133	84
27	484	2,130	472	336	1,960	1,080	380	96	472	*57	100	72
28	560	10,200	1,080	440	1,340	1,520	592	98	1,030	45	79	66
29	350	2,540	2,140	456	1,070	2,300	510	96	2,550	38	65	72
30	284	1,260	1,250	464	-------	6,550	460	105	1,070	34	54	165
31	264	-------	898	468	-------	3,930	-------	103	-------	30	46	-------
Total	3,668.4	27,310	61,948	33,714	39,353	50,797	16,177	17,489	13,854	8,233	3,394	6,027
Mean	118	910	1,998	1,088	1,357	1,639	539	564	462	266	109	201
Cfsm	0.309	2.38	5.23	2.85	3.55	4.29	1.41	1.48	1.21	0.696	0.285	0.526
In.	0.36	2.66	6.03	3.28	3.83	4.95	1.57	1.70	1.35	0.80	0.33	0.59

Calendar year 1959: Max 18,200 Min 9.4 Mean 743 Cfsm 1.95 In. 26.42
Water year 1959-60: Max 16,000 Min 9.4 Mean 770 Cfsm 2.02 In. 27.45

Peak discharge (base, 16,000 cfs).--Dec. 19 (9:30 a.m.) 23,100 cfs (22.85 ft).

* Discharge measurement made on this day.

4095. Clear Fork near Robbins, Tenn.

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.--272 sq mi.

Records available.--October 1930 to September 1960. 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.--30 years, 459 cfs.

Extremes.--Maximum discharge during year, 14,100 cfs Dec. 19 (gage height, 12.54 ft); minimum, 3.6 cfs Oct. 5, 6 (gage height, 0.94 ft).

1930-60: 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 measurement 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.

Maximum stage known, 22.1 ft Mar. 23, 1929, former site and datum, from information by local residents.

Remarks.--Records fair. Time zone changed at 2 a.m. Apr. 3; records after that time on eastern standard time.

Revisions (water years).--WSP 1306: 1931(M), 1935-37(M), 1943-44(M). WSP 1436: Drainage area.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-23		Oct. 24 to Sept. 30			
0.9	3.0	1.2	14	3.0	455
1.0	5.0	1.3	21	4.0	1,030
1.1	8.9	1.6	52	6.0	2,700
1.2	15	1.8	81	8.0	5,360
1.4	31	2.0	120	11.0	10,600
1.5	40	2.5	260		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.4	74	545	378	338	862	1,130	437	55	565	49	40
2	4.2	68	500	350	309	800	818	382	51	464	42	43
3	4.0	60	585	682	278	2,090	694	312	51	306	36	43
4	3.8	55	520	869	260	1,690	728	260	49	674	30	34
5	3.6	82	424	660	281	1,170	677	221	44	560	25	28
6	3.8	95	410	590	677	900	590	191	38	326	25	23
7	4.7	118	442	818	660	716	525	3,700	33	221	24	20
8	5.7	97	386	1,230	560	565	446	5,860	28	160	22	19
9	24	81	414	1,260	505	570	378	1,880	24	125	22	*18
10	36	70	446	1,240	555	540	323	1,100	21	132	26	52
11	35	65	494	1,210	947	510	284	740	20	737	*32	418
12	28	59	3,400	981	740	486	260	*565	20	545	33	472
13	26	53	2,980	895	650	432	236	464	28	295	36	194
14	29	51	1,500	869	590	455	*212	378	27	206	31	110
15	29	52	921	*947	428	510	197	316	32	154	27	74
16	37	74	655	600	460	2,530	182	267	21	118	25	58
17	35	206	*510	716	*562	3,460	173	236	115	97	21	300
18	28	233	2,680	716	1,980	3,750	185	206	353	86	18	700
19	23	*182	10,400	606	1,940	1,780	185	176	137	224	17	473
20	*19	147	3,200	505	1,300	1,340	157	152	80	251	49	295
21	17	125	1,570	437	1,040	1,070	149	132	58	157	63	191
22	15	107	1,020	382	914	921	160	114	*247	114	49	132
23	18	99	734	323	850	876	152	97	1,380	85	126	101
24	43	984	580	302	882	895	139	86	1,820	194	118	81
25	62	981	478	264	1,570	*895	130	101	1,360	185	72	68
26	66	525	406	267	2,730	764	137	105	728	114	50	59
27	86	702	362	288	1,660	710	641	90	525	101	41	53
28	122	2,510	449	398	1,160	688	600	116	1,200	*101	35	51
29	99	1,360	600	374	1,040	672	419	101	2,720	81	31	66
30	81	752	500	374	-------	1,580	330	85	1,010	65	29	116
31	76	-------	442	374	-------	1,860	-------	68	-------	56	34	-------
Total	1,068.2	10,047	38,553	19,905	25,866	36,087	11,237	18,938	12,275	7,499	1,238	4,332
Mean	34.5	335	1,244	642	892	1,164	375	611	409	242	39.9	144
Cfsm	0.127	1.23	4.57	2.36	3.28	4.28	1.38	2.25	1.50	0.890	0.147	0.529
In.	0.15	1.37	5.27	2.72	3.54	4.93	1.54	2.59	1.68	1.03	0.17	0.59

Calendar year 1959: Max 10,400 Min 3.6 Mean 473 Cfsm 1.74 In. 23.60
Water year 1959-60: Max 10,400 Min 3.6 Mean 511 Cfsm 1.88 In. 25.58

Peak discharge (base, 6,500 cfs).--Dec. 19 (5 a.m.) 14,100 cfs (12.54 ft); May 7 (10:30 p.m.) 11,400 cfs (11.40 ft).

*** Discharge measurement made on this day.**

4105. South Fork Cumberland River near Stearns, Ky.

Location.--Lat 36°37'37", long 84°32'00", on right bank at mouth of Bear Creek, 1,400 ft upstream from Salt Branch and 5.5 miles southwest of Stearns, McCreary County. Records include flow of Bear Creek.

Drainage area.--954 sq mi, includes that of Bear Creek.

Records available.--September 1942 to September 1960.

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

Average discharge.--18 years, 1,738 cfs.

Extremes.--Maximum discharge during year, 40,400 cfs Dec. 19 (gage height, 28.92 ft); minimum, 36 cfs Oct. 5, 6 (gage height, 1.81 ft).
1942-60: 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 for periods of ice effect, which are fair.

Revisions (water years).--WSP 1113: 1946(M). WSP 1436: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.8	35	10.0	5,500
2.0	62	15.0	12,000
2.2	93	19.0	18,500
2.5	165	24.0	28,500
4.0	800	26.0	33,200
6.0	2,000		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	440	2,360	1,640	1,160	2,840	4,580	2,090	284	2,440	156	123
2	43	412	1,940	1,420	1,060	2,520	3,300	2,140	252	1,720	138	138
3	47	372	1,680	2,820	970	5,620	2,720	1,580	372	1,230	123	125
4	38	348	2,580	5,070	910	5,830	2,800	1,300	296	1,440	113	125
5	36	444	2,020	3,320	925	3,820	2,830	1,070	236	1,710	107	118
6	40	998	1,780	2,670	1,600	2,830	2,570	910	200	1,170	91	106
7	64	1,220	1,840	2,870	2,460	b2,400	2,260	4,930	168	730	102	95
8	74	805	1,600	4,180	2,180	b1,950	1,870	17,200	165	576	102	95
9	168	584	1,550	4,320	1,890	b1,800	1,560	6,580	133	476	*104	124
10	165	484	1,700	4,120	2,020	b1,700	1,340	3,740	121	492	109	116
11	220	412	1,800	4,000	5,820	b1,650	1,150	2,660	121	2,470	204	280
12	196	364	8,150	3,590	4,140	b1,600	1,020	1,970	165	2,840	280	1,690
13	156	328	19,000	3,360	2,980	b1,410	940	1,600	133	1,450	288	1,180
14	212	308	5,880	3,620	2,590	b1,390	855	1,340	128	935	216	500
15	212	316	3,630	3,520	b1,750	1,630	780	1,110	150	675	168	356
16	264	364	2,620	3,420	b1,550	6,560	725	930	141	524	141	268
17	256	640	2,020	2,830	1,800	9,800	690	800	749	444	147	344
18	196	1,130	3,700	2,630	5,370	8,360	670	700	1,330	400	147	1,430
19	153	1,100	32,400	2,380	6,680	5,790	670	610	750	472	125	1,660
20	130	830	12,500	2,000	4,500	4,320	600	544	456	600	133	1,000
21	*116	670	5,510	1,730	3,560	3,420	564	496	336	476	159	655
22	107	564	3,660	1,510	3,220	2,980	560	440	432	376	316	484
23	113	564	2,730	1,280	3,040	2,810	592	392	2,340	316	714	388
24	232	5,090	2,180	1,110	3,100	2,900	548	356	8,960	284	805	320
25	332	5,020	1,810	b930	4,440	3,080	520	356	8,140	400	468	268
26	532	2,780	1,520	b920	8,810	2,920	568	372	3,560	356	332	264
27	572	2,710	1,350	965	5,730	2,950	1,560	380	2,010	356	244	193
28	930	14,700	1,430	1,150	3,940	3,380	2,120	392	3,160	284	190	179
29	740	6,650	3,220	1,240	3,390	3,950	1,650	376	9,300	252	162	190
30	544	3,450	2,710	1,210	--------	7,340	1,360	336	4,270	208	147	*200
31	480	--------	2,040	1,220	--------	7,680	--------	316	--------	176	128	--------
Total	7,413	54,097	138,910	77,045	91,585	117,230	43,972	58,016	48,858	26,278	6,659	13,014
Mean	239	1,803	4,481	2,485	3,158	3,782	1,466	1,871	1,629	848	215	434
Cfsm	0.251	1.89	4.70	2.60	3.31	3.96	1.54	1.96	1.71	0.889	0.225	0.455
In.	0.29	2.11	5.42	3.00	3.57	4.57	1.71	2.26	1.90	1.02	0.26	0.51

Calendar year 1959: Max 32,400 Min 36 Mean 1,688 Cfsm 1.77 In. 24.02
Water year 1959-60: Max 32,400 Min 36 Mean 1,866 Cfsm 1.96 In. 26.62

Peak discharge (base, 22,000 cfs).--Dec. 19 (2 p.m.) 40,400 cfs (28.92 ft).

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

4125. Pitman Creek at Somerset, Ky.

Location.--Lat 37°07'01", long 84°35'31", on right bank 0.1 mile downstream from Dry Branch, 0.5 mile upstream from Caney Fork, and 1.9 miles northeast of Somerset, Pulaski County.

Drainage area.--31.3 sq mi.

Records available.--October 1953 to September 1960.

Gage.--Water-stage recorder and concrete control. Datum of gage is 867.24 ft above mean sea level, datum of 1929. Prior to Oct. 28, 1953, staff gage at same site and datum.

Average discharge.--7 years, 44.2 cfs.

Extremes.--Maximum discharge during year, 2,530 cfs June 23 (gage height, 8.03 ft), from rating curve extended above 1,500 cfs; minimum, 0.3 cfs Oct. 4-6 (gage height, 0.70 ft).
1953-60: Maximum discharge, 2,850 cfs Aug. 4, 1959 (gage height, 8.74 ft), from rating curve extended above 1,500 cfs; minimum, 0.1 cfs Sept. 2-7, 11-19, 20, 1954, Sept. 19, 1955, Sept. 3, 4-9, 1957; minimum gage height, 0.60 ft Sept. 12-19, 20, 1954.

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

Revisions.--WSP 1436: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	0.3	1.5	22
.8	.8	1.7	41
.9	1.7	2.0	82
1.0	3.2	2.5	230
1.1	5.2	3.0	420
1.2	7.7	5.0	1,220
1.3	11		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	2.8	27	55	26	89	74	9.7	4.6	145	2.4	3.8
2	.4	2.6	51	53	26	82	64	8.7	4.0	89	2.2	1.8
3	.4	2.1	57	109	23	82	122	8.4	4.2	117	2.1	1.3
4	.3	2.1	43	70	22	61	102	7.7	3.6	82	1.7	.8
5	.3	4.4	34	58	65	a54	86	7.2	2.8	52	1.8	.7
6	.3	4.6	43	55	136	a50	68	7.0	2.4	37	2.0	.6
7	.5	3.2	40	61	86	a45	57	33	2.0	28	2.2	.5
8	8.4	3.0	*33	62	67	a42	48	21	1.8	22	6.9	.4
9	11	2.7	33	a54	57	a40	40	14	1.7	19	6.9	.4
10	2.1	2.6	29	a47	557	a38	35	11	1.6	20	*60	.5
11	1.3	2.2	41	a44	276	a37	31	10	3.0	19	12	.8
12	1.1	2.1	293	a42	130	a36	28	10	124	15	6.7	.8
13	1.3	2.0	154	*a70	b90	a35	26	9.4	29	13	5.7	*1.0
14	1.6	2.6	89	112	b70	a36	23	8.4	17	12	4.6	.7
15	1.7	6.4	62	248	b53	a45	21	7.2	12	10	3.8	.7
16	1.5	5.4	51	120	b47	a70	20	6.4	9.4	8.7	3.0	.6
17	1.2	6.7	45	82	114	328	19	6.2	294	11	2.6	17
18	1.2	8.7	157	104	184	226	17	5.2	66	9.4	2.1	14
19	1.1	6.0	104	75	b130	188	15	4.8	37	8.7	1.8	6.0
20	.9	5.0	72	58	b92	148	15	4.6	24	7.4	2.1	4.2
21	.9	4.8	56	51	93	148	14	4.0	*225	6.4	2.0	2.8
22	.8	4.2	44	b40	91	184	14	3.4	77	5.7	2.4	2.4
23	.9	13	37	b32	*82	206	14	3.0	1,190	6.7	2.8	2.0
24	7.2	24	35	b27	84	*202	13	4.2	258	6.4	2.2	1.7
25	5.4	16	30	b25	317	154	12	14	104	4.8	1.7	1.4
26	4.4	12	26	b24	290	117	13	5.2	64	4.2	1.4	1.2
27	4.6	120	27	36	167	104	15	20	46	4.4	1.3	1.1
28	4.0	72	340	48	142	86	12	13	167	4.0	1.2	1.0
29	3.2	45	154	38	120	79	10	10	100	3.2	1.1	1.0
30	*3.6	34	95	34	------	135	10	7.2	287	3.0	.8	.9
31	3.2	------	67	30	------	100	------	5.4	------	2.7	7.6	------
Total	75.2	420.2	2,369	1,964	3,637	3,247	1,038	289.3	3,162.1	776.7	157.1	72.1
Mean	2.43	14.0	76.4	63.4	125	105	34.6	9.33	105	25.1	5.07	2.40
Cfsm	0.078	0.447	2.44	2.03	3.99	3.35	1.11	0.298	3.35	0.802	0.162	0.077
In.	0.09	0.50	2.81	2.33	4.32	3.86	1.23	0.34	3.76	0.92	0.19	0.09

Calendar year 1959: Max 628 Min 0.3 Mean 37.1 Cfsm 1.19 In. 16.10
Water year 1959-60: Max 1,190 Min 0.3 Mean 47.0 Cfsm 1.50 In. 20.44

Peak discharge (base, 850 cfs).--Feb. 10 (4:30 p.m.) 1,680 cfs (6.13 ft); June 23 (7 a.m.) 2,530 cfs (8.03 ft); June 30 (11:45 a.m.) 924 cfs (4.26 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 1 discharge measuremert, recorded range in stage, weather records, and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

4140. 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, 1.9 miles upstream from Blackfish Creek, 1.9 miles west of Rowera, Russell County, and at mile 459.4.

Drainage area.--5,790 sq mi.

Records available.--October 1939 to September 1960. Monthly discharge only for October 1939, published in WSP 1306.

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. Oct. 1, 1943, to Sept. 30, 1948, auxiliary staff gage at Rowena Ferry, 2.9 miles upstream.

Average discharge.--21 years, 8,714 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 25,400 cfs June 28 (gage height, 20.25 ft); minimum daily, 117 cfs June 18.
1939-60: 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. Flow regulated by Lake Cumberland (see p. 60).

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

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,280	6,780	13,700	17,100	14,300	15,000	24,200	5,790	4,640	24,100	14,100	10,700
2	1,870	11,400	14,800	13,800	13,700	10,600	24,700	12,800	3,940	24,100	9,520	12,100
3	5,200	10,700	11,800	13,100	9,160	16,700	24,700	10,500	4,600	24,200	7,560	7,520
4	3,920	9,100	9,460	*15,300	5,100	14,200	25,300	8,870	3,220	23,300	11,500	*426
5	7,250	*8,340	6,410	22,600	*6,900	14,800	*25,000	7,120	1,520	23,100	*10,200	6,530
6	6,960	7,910	5,970	19,200	3,960	18,500	21,000	7,020	3,640	*10,100	10,200	8,060
7	*7,080	7,880	9,090	16,500	5,840	19,300	5,320	7,040	3,090	9,500	10,300	6,280
8	7,140	3,570	13,100	16,400	5,860	*20,800	4,500	6,320	3,440	15,400	14,300	4,440
9	710	7,190	16,100	15,900	2,400	16,200	12,900	*5,920	1,150	17,700	11,600	10,700
10	1,710	7,310	*13,100	17,000	1,200	15,400	14,100	1,220	1,130	17,100	8,350	5,730
11	2,420	8,360	13,500	16,500	1,690	17,400	18,300	2,010	3,150	19,000	10,700	290
12	4,520	8,740	11,600	15,000	2,070	18,300	21,600	9,540	1,270	25,100	9,210	6,540
13	4,060	7,890	10,200	14,500	8,240	18,800	20,200	12,900	4,120	22,600	10,600	6,780
14	5,400	8,960	11,500	18,300	5,400	19,000	14,400	9,900	4,100	12,600	9,980	8,320
15	6,040	3,960	16,300	15,800	5,040	16,800	11,600	3,820	5,280	12,600	12,900	14,800
16	2,880	5,770	16,800	16,500	9,160	16,400	6,160	7,160	3,860	11,800	13,100	10,500
17	2,880	6,070	21,500	13,500	5,180	12,800	2,480	5,460	2,740	12,900	11,200	5,350
18	2,060	6,270	18,800	17,400	5,700	13,300	9,400	4,920	117	15,200	12,500	133
19	4,640	5,680	14,900	18,200	1,240	9,980	12,200	5,110	1,580	16,800	6,740	10,200
20	11,600	5,690	10,300	18,200	1,480	11,100	10,600	7,910	8,490	6,970	3,840	13,600
21	11,400	3,710	14,400	17,600	4,960	14,100	9,040	6,770	9,480	4,820	1,780	8,360
22	7,000	2,280	19,200	19,000	3,230	15,400	9,740	5,290	9,050	15,200	12,000	8,670
23	5,990	9,360	20,800	19,600	2,500	15,200	2,600	11,200	9,050	16,300	13,400	6,410
24	5,520	11,600	21,000	18,500	2,540	15,600	640	8,990	20,000	10,100	12,600	3,740
25	4,620	10,600	19,900	21,200	2,760	22,800	5,870	7,340	24,000	14,500	12,200	3,480
26	12,100	540	19,100	21,400	9,360	15,600	8,460	10,900	24,200	15,200	13,400	4,570
27	13,200	870	19,200	21,400	14,900	3,360	8,830	10,400	24,100	14,600	13,800	2,050
28	12,500	10,200	21,600	18,200	14,800	15,100	4,350	11,300	22,600	15,200	7,940	1,620
29	13,200	10,600	13,200	16,600	10,400	23,300	5,270	5,460	20,400	14,700	13,200	877
30	12,500	12,100	13,500	13,800	--------	21,300	4,040	5,680	24,100	14,400	*14,400	429
31	6,800	--------	18,600	13,400	--------	18,400	--------	6,800	--------	11,500	11,200	--------
Total	195,450	219,430	459,430	531,500	179,070	495,540	367,500	231,460	252,057	490,690	334,320	189,205
Mean	6,305	7,314	14,820	17,150	6,175	15,990	12,250	7,466	8,402	15,830	10,780	6,307

	Observed			Adjusted†		
Calendar year 1959:	Max 25,100	Min 60	Mean 6,348	Mean 7,777	Cfsm 1.34	In. 18.23
Water year 1959-60:	Max 25,300	Min 117	Mean 10,780	Mean 10,220	Cfsm 1.77	In. 24.02

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

4145. East Fork Obey River near Jamestown, Tenn.

Location.--Lat 36°24'58", long 85°01'35", on right bank 200 ft upstream from bridge on State Highway 52, 0.5 mile upstream from Poplar Cove Creek, 5.3 miles west of Jamestown, Fentress County, and 12.8 miles upstream from confluence with West Fork.

Drainage area.--202 sq mi (includes 6 sq mi without surface drainage).

Records available.--October 1942 to September 1960. Prior to February 1943 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 680.30 ft above mean sea level, Sandy Hook datum. Feb. 24 to Apr. 7, 1943, staff gage 200 ft upstream at same datum.

Average discharge.--18 years, 388 cfs.

Extremes.--Maximum discharge during year, 15,000 cfs Dec. 19 (gage height, 18.20 ft); minimum, 8.0 cfs Oct. 6 (gage height, 1.00 ft).
1942-60: 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.
Maximum stage known, about 30.7 ft in March 1929, from flood profile by Corps of Engineers.

Remarks.--Records good.

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

Revisions (water years).--WSP 1276: 1944, 1946(M). WSP 1506: Drainage area.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.0	8.0	3.0	478
1.1	14	4.0	910
1.2	22	6.0	2,180
1.3	31	10.0	5,350
1.5	62	11.0	6,300
2.0	182	13.0	8,450
2.5	320		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	93	444	454	309	609	820	219	49	384	71	28
2	11	84	397	404	281	605	671	203	44	236	57	28
3	10	75	397	489	261	1,320	614	177	49	233	48	26
4	9.8	69	366	564	244	990	618	161	66	905	41	26
5	9.2	119	323	503	281	756	580	146	49	522	39	26
6	9.2	198	312	478	529	605	518	131	40	326	36	25
7	11	164	312	596	576	541	461	2,920	32	211	34	22
8	12	126	272	770	518	461	413	2,740	29	156	31	26
9	21	102	272	784	468	437	360	1,050	26	121	31	*27
10	26	89	289	842	518	420	314	716	24	305	34	40
11	30	75	331	970	756	397	278	522	25	1,090	*43	94
12	29	66	2,250	824	592	372	256	*427	24	707	41	185
13	30	58	2,120	815	518	348	236	363	24	410	38	114
14	34	57	1,090	*885	475	366	*214	306	25	234	35	69
15	55	55	756	870	391	407	198	261	25	205	32	48
16	64	89	*552	770	381	1,700	190	222	24	154	31	38
17	46	174	441	635	471	2,200	177	192	184	154	28	164
18	35	192	1,830	609	1,560	1,580	179	169	198	538	26	564
19	29	*164	7,600	537	1,310	1,160	190	146	117	1,930	40	345
20	*26	146	1,800	454	905	900	166	131	73	870	89	222
21	24	126	998	400	774	761	159	114	53	514	49	138
22	21	112	725	360	720	694	159	96	*44	393	70	96
23	20	102	552	314	684	694	154	84	245	275	161	73
24	26	1,420	447	281	702	761	141	73	228	427	107	60
25	48	905	384	256	1,490	*784	136	69	303	309	64	53
26	62	507	337	239	1,890	707	166	64	242	220	48	43
27	69	1,060	300	253	1,080	716	400	80	169	170	38	38
28	102	1,960	661	334	824	752	323	100	1,240	*138	34	39
29	114	935	905	340	730	707	258	77	970	107	30	64
30	98	601	698	334	-------	1,040	225	73	468	93	30	84
31	96	-------	552	331	-------	1,070	-------	66	-------	82	29	-------
Total	1,189.2	9,923	28,713	16,695	20,238	24,860	9,574	12,098	5,089	12,489	1,485	2,805
Mean	38.4	331	926	539	698	802	319	390	170	403	47.9	93.5
Cfsm	0.190	1.64	4.58	2.67	3.46	3.97	1.58	1.93	0.842	2.00	0.237	0.463
In.	0.22	1.83	5.29	3.07	3.73	4.58	1.76	2.23	0.94	2.30	0.27	0.52

Calendar year 1959: Max 7,600 Min 9.2 Mean 352 Cfsm 1.74 In. 23.63
Water year 1959-60: Max 7,600 Min 9.2 Mean 397 Cfsm 1.97 In. 26.74

Peak discharge (base, 8,000 cfs).--Dec. 19 (2 a.m.) 15,000 cfs (18.20 ft).

* Discharge measurement made on this day.

4150. West Fork Obey River near Alpine, Tenn.

Location.--Lat 36°23'49", long 85°10'28", on upstream end of left pier of bridge on State Highway 52, 0.3 mile upstream from Nettlecarrier Creek, 2.4 miles east of Alpine, Overton County, and 7.8 miles upstream from confluence with East Fork.

Drainage area.--115 sq mi (includes 34 sq mi without surface drainage).

Records available.--October 1942 to September 1960. Prior to December 1942 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 684.28 ft above mean sea level, unadjusted.

Average discharge.--18 years, 165 cfs.

Extremes.--Maximum discharge during year, 8,280 cfs Dec. 18 (gage height, 11.75 ft); minimum, 5.2 cfs Oct. 5, 6 (gage height, 0.40 ft).
1942-60: Maximum discharge, 15,100 cfs Mar. 21, 1955 (gage height, 16.30 ft); minimum, 2.6 cfs Sept. 13-19, 1954; minimum gage height, 0.38 ft Sept. 15, 16, 1958.
Maximum stage known, that of Mar. 21, 1955. Flood in March 1929 reached a stage about 2 ft lower than that of Mar. 21, 1955.

Remarks.--Records good.

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

Revisions (water years).--WSP 1386: 1943-45(P), 1946, 1948, 1952(P). WSP 1506: Drainage area.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 18				Dec. 19 to Sept. 30			
0.4	5.2	1.6	118	0.5	7.6	2.0	205
.6	10	2.0	230	.7	14	2.5	365
.8	20	4.0	1,050	.9	23	3.0	575
1.0	34	6.0	2,160	1.2	49	5.0	1,580
1.3	68	7.0	2,910	1.5	90	7.0	2,910
				1.7	125		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	25	140	187	103	254	282	56	18	112	22	12
2	5.6	23	116	162	95	304	247	50	20	86	20	12
3	5.4	20	112	328	90	810	260	46	22	74	19	11
4	5.4	19	98	294	86	508	250	42	20	285	18	11
5	5.2	138	87	241	88	369	229	38	18	130	18	10
6	6.8	102	87	214	153	314	202	36	16	81	18	10
7	8.2	62	87	307	153	263	184	824	15	56	17	9.9
8	13	45	82	385	143	217	156	746	14	43	22	*10
9	27	34	100	397	143	202	136	348	14	34	24	11
10	18	29	106	441	229	181	117	232	14	117	24	11
11	13	25	126	413	385	167	104	170	14	867	34	14
12	11	22	905	320	254	156	100	*132	14	288	*20	17
13	14	19	658	351	226	162	*92	112	13	141	18	14
14	34	19	370	*362	193	175	86	95	14	95	18	12
15	42	18	251	381	151	211	80	81	14	68	16	10
16	25	34	*191	307	153	1,100	75	68	13	53	15	10
17	18	153	153	257	290	1,120	74	61	74	192	14	33
18	14	98	2,470	247	1,140	714	71	54	48	388	13	54
19	12	*68	2,830	214	724	521	62	47	24	860	17	29
20	*10	53	782	184	457	409	60	42	18	308	26	21
21	9.6	43	413	162	373	320	60	36	*16	170	19	17
22	9.1	36	269	141	358	272	60	34	14	112	49	15
23	9.1	50	202	119	393	241	55	30	52	88	74	13
24	24	1,090	159	110	401	*244	51	27	57	88	33	13
25	33	352	130	100	920	235	48	25	112	65	22	12
26	27	173	112	92	875	217	46	23	57	51	19	11
27	28	905	100	101	512	214	60	29	43	44	16	11
28	32	682	689	127	377	232	68	29	559	*37	15	11
29	29	310	521	117	310	226	59	23	365	32	14	12
30	26	188	323	114	-------	393	55	21	132	28	13	13
31	27	-------	238	110	-------	365	-------	20	-------	25	13	-------
Total	547.0	4,835	12,907	7,285	9,775	11,116	3,429	3,577	1,824	5,018	680	449.9
Mean	17.6	161	416	235	337	359	114	115	60.8	162	21.9	15.0
Cfsm	0.153	1.40	3.62	2.04	2.93	3.12	0.991	1.00	0.529	1.41	0.190	0.130
In.	0.18	1.56	4.17	2.36	3.16	3.59	1.11	1.16	0.59	1.62	0.22	0.15

Calendar year 1959: Max 2,830 Min 5.2 Mean 144 Cfsm 1.25 In. 17.04
Water year 1959-60: Max 2,830 Min 5.2 Mean 168 Cfsm 1.46 In. 19.87

Peak discharge (base, 3,400 cfs).--Dec. 18 (10:30 p.m.) 8,280 cfs (11.75 ft).

* Discharge measurement made on this day.

4160. Wolf River near Byrdstown, Tenn.

Location (revised).--Lat 36°33'40", long 85°04'30", on right bank a quarter of a mile upstream from bridge on county road, half a mile upstream from Widow Creek, 1.6 miles north of Moodyville, 3 miles east of Byrdstown, Pickett County, and 5 miles upstream from Lick Creek.

Drainage area.--105 sq mi.

Records available.--October 1942 to September 1960. Prior to June 1943 monthly discharge only, published in WSP 1306.

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

Average discharge.--18 years, 178 cfs.

Extremes.--Maximum discharge during year, 5,670 cfs Dec. 19 (gage height, 6.96 ft); minimum, 11 cfs Oct. 3-6, Sept. 8-10; minimum gage height, 0.87 ft Oct. 5, 6.
1942-60: Maximum discharge, 22,600 cfs Jan. 29, 1957 (gage height, 10.84 ft), from rating curve extended above 7,300 cfs on basis of velocity-area study; minimum, 2.0 cfs Sept. 17, 1954 (gage height, 0.50 ft).
Flood in March 1929 reached a stage about equal to that of Jan. 29, 1957, from information by local resident.

Remarks.--Records fair. Some regulation at low flow caused by small mills above station.

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

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

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 18				Dec. 19 to Sept. 30			
0.8	9.0	2.2	165	0.9	8.4	2.5	228
.9	12	2.5	250	1.0	12	3.0	433
1.0	14	3.0	440	1.2	21	4.0	1,060
1.2	22	3.5	680	1.5	46	5.0	2,040
1.5	47	4.0	1,040	1.8	88	6.0	3,490
1.8	88	5.0	2,040	2.2	163		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	41	241	203	117	*302	423	177	32	314	27	14
2	12	39	211	187	110	302	334	152	30	218	25	13
3	11	37	208	319	102	633	314	131	29	177	24	12
4	11	36	185	306	99	455	326	112	30	161	23	12
5	11	82	159	255	124	338	306	80	27	131	23	13
6	13	110	155	226	243	270	258	86	25	104	21	13
7	14	84	151	302	226	240	226	1,540	24	85	22	12
8	26	67	137	374	203	206	195	1,110	23	74	22	*12
9	102	57	153	370	195	203	175	526	21	64	24	11
10	48	49	161	360	327	185	155	318	20	125	30	13
11	38	43	200	338	499	163	142	*228	21	294	31	29
12	31	40	1,340	278	318	173	133	189	21	157	*25	29
13	36	37	888	413	262	169	*121	167	20	112	24	20
14	90	37	526	488	223	177	114	144	20	88	26	16
15	93	40	376	*751	183	206	104	125	20	73	21	14
16	62	75	282	510	181	1,280	101	108	20	62	20	15
17	44	178	*226	370	245	1,130	95	95	210	111	18	29
18	36	145	1,720	330	713	770	93	85	116	218	17	41
19	32	110	2,700	266	603	585	85	78	62	183	49	29
20	29	*88	810	226	428	444	82	68	42	119	32	22
21	*27	74	488	197	370	365	82	61	*32	85	21	18
22	26	65	326	177	338	338	80	54	28	68	26	16
23	26	216	243	157	347	322	74	50	278	60	26	15
24	42	1,740	201	144	378	*352	70	46	774	54	23	15
25	66	592	175	133	1,250	360	68	43	1,040	47	18	14
26	79	336	155	123	1,140	314	68	41	318	41	17	14
27	70	874	142	131	651	356	119	51	213	*39	16	13
28	70	838	481	140	466	428	144	54	2,350	37	18	14
29	60	476	444	134	378	408	123	44	1,500	33	20	15
30	52	320	314	129	-------	628	116	38	543	31	15	14
31	46	-------	243	123	-------	567	-------	34	-------	28	15	-------
Total	1,315	6,926	14,014	8,460	10,719	12,689	4,726	6,035	7,889	3,393	719	517
Mean	42.4	231	453	273	370	409	158	195	263	109	23.2	17.2
Cfsm	0.404	2.20	4.31	2.60	3.52	3.90	1.50	1.86	2.50	1.04	0.221	0.164
In.	0.47	2.45	4.97	3.00	3.80	4.49	1.67	2.14	2.79	1.20	0.25	0.18

Calendar year 1959: Max 2,700 Min 11 Mean 162 Cfsm 1.54 In. 20.99
Water year 1959-60: Max 2,700 Min 11 Mean 212 Cfsm 2.02 In. 27.41

Peak discharge (base, 3,600 cfs).--Dec. 19 (2:30 a.m.) 5,670 cfs (6.96 ft); June 28 (7:30 p.m.) 5,460 cfs (6.88 ft).

* Discharge measurement made on this day.

4175. 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 1960. Gage-height records collected at same site 1903-54 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.--38 years, 11,280 cfs (unadjusted).

Extremes.--Maximum discharge during year, 43,400 cfs June 28; maximum gage height, 24.25 ft June 28; minimum discharge, 1,080 cfs Oct. 11; minimum gage height, 2.11 ft June 20.
1922-60: 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 since at least 1793, 59.2 ft in March 1826, from Cumberland River profile.

Remarks.--Records good except those below 4,000 cfs, which are fair. Flow regulated by Lake Cumberland and Dale Hollow Reservoir (see p. 60).

Revisions (water years).--WSP 893: 1923-38. WSP 1276: 1924. WSP 1306: 1943 (monthly runoff).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Oct. 21, 22, 26, 27, 31, Nov. 1, 7, 16, 24, 27-29, Dec. 2, 9, 12, 13, 20, 28-31, Jan. 5, 12, 24, 25, 28, 29, Feb. 4, 14, 17, 25, 27, Mar. 7, 12, 16, 17, 19, Mar. 27 to Apr. 1, Apr. 7-10, 12, 17, 19, 26, May 2, 13, 14, 16, 17, 30, June 21, 25, 28, 29, July 6, 7, 9, 12, 14, 21-23, 25, 26, Aug. 3, 15, 19, 23, 30, Sept. 4, 6, 11, 13, 15, 18, 20, 26)

Oct. 1 to Apr. 4				Apr. 5 to Sept. 30			
2.5	1,320	10.0	11,800	2.9	2,270	15.0	21,500
3.0	1,890	20.0	31,600	3.0	2,400	22.0	35,800
4.0	3,050			9.0	10,500		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,910	8,240	17,100	21,700	13,900	15,500	23,500	5,440	8,470	25,800	14,400	15,600
2	2,370	9,960	16,600	20,300	15,300	17,200	27,600	9,140	7,160	25,400	15,900	15,000
3	2,280	13,100	15,500	18,900	15,200	17,200	29,400	13,200	6,900	25,000	12,300	15,600
4	4,000	12,200	12,700	18,000	10,300	19,900	30,400	11,700	5,770	25,200	10,400	12,700
5	4,930	12,000	9,820	22,200	7,080	18,900	30,500	9,780	5,400	24,300	12,800	4,700
6	6,940	12,800	7,320	28,000	8,920	19,600	29,600	9,900	*4,280	20,800	13,300	7,310
7	7,680	8,930	7,560	25,200	7,290	23,400	18,600	10,400	5,290	11,600	13,000	9,870
8	8,200	8,340	9,760	22,700	6,990	26,700	8,440	8,710	6,050	11,000	13,000	7,660
9	8,080	7,100	14,100	19,900	7,360	24,000	8,820	9,810	5,420	16,900	16,300	7,330
10	3,460	7,530	15,800	17,000	6,300	20,400	15,300	7,570	4,920	18,900	15,300	9,570
11	1,410	9,270	13,700	20,400	9,340	19,100	16,000	5,010	3,580	19,300	11,900	7,730
12	3,680	9,820	17,700	17,700	4,730	23,600	20,600	4,610	3,700	22,400	13,600	g5,300
13	5,760	11,000	15,600	16,600	3,960	24,400	22,400	11,200	5,490	25,800	12,100	7,120
14	6,760	8,200	12,400	17,300	7,380	23,300	20,600	13,300	6,180	20,600	10,600	g9,000
15	6,660	9,060	*12,900	21,000	7,940	22,100	16,300	10,800	7,960	14,400	13,700	g11,200
16	7,720	7,480	16,800	18,800	6,630	27,100	12,300	6,520	8,080	13,200	*16,300	g15,900
17	4,220	6,640	18,000	17,900	*9,670	26,300	7,610	7,080	8,030	12,200	16,400	g14,200
18	2,710	7,720	22,600	19,000	9,990	21,900	*4,830	7,370	5,840	15,700	15,100	g7,790
19	3,940	8,490	22,400	22,000	9,180	18,400	10,100	6,090	2,280	18,600	14,000	g5,580
20	5,520	7,590	15,900	22,700	5,080	15,800	12,600	6,790	3,230	18,400	8,820	12,200
21	11,700	7,650	14,400	22,700	3,050	17,400	11,800	8,060	8,860	10,500	5,740	g17,200
22	11,700	4,120	18,100	22,000	7,840	20,200	10,400	7,600	11,700	6,650	6,870	14,500
23	8,720	4,900	21,500	22,500	8,970	21,500	9,960	8,680	12,600	17,900	15,400	g14,300
24	6,560	10,600	22,800	19,900	7,160	21,700	4,970	13,600	12,600	18,900	17,900	g10,900
25	5,460	13,500	22,600	23,600	9,270	22,500	4,830	13,100	21,200	13,500	17,300	g5,510
26	*10,200	12,600	21,200	25,800	13,300	24,800	7,760	11,100	24,300	17,000	17,000	g7,940
27	15,700	6,400	20,800	26,400	17,600	16,000	11,300	14,300	24,800	17,900	14,800	9,600
28	18,100	7,990	28,300	24,700	20,300	6,810	9,450	11,200	35,000	16,600	13,600	g8,080
29	18,000	14,400	25,400	19,900	19,600	18,800	7,110	11,800	30,900	16,200	13,100	g6,010
30	18,100	16,700	16,900	16,900	---------	28,800	7,540	7,870	25,500	15,700	18,400	g5,040
31	16,200	--------	18,300	14,800	--------	23,400	--------	6,760	--------	14,700	17,700	--------
Total	242,670	284,330	524,560	646,500	279,630	646,710	450,620	288,490	321,490	551,050	427,030	300,440
Mean	7,828	9,478	16,920	20,850	9,642	20,860	15,020	9,306	10,720	17,780	13,780	10,010

	Observed						Adjusted†					
Calendar year 1959:	Max	28,300	Min	186	Mean	7,763	Mean	9,578	Cfsm	1.31	In.	17.76
Water year 1959-60:	Max	35,000	Min	1,410	Mean	13,560	Mean	12,860	Cfsm	1.76	In.	23.91

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland and Dale Hollow Reservoir.
g Computed from hourly radio-gage readings furnished by Corps of Engineers.

4180. Roaring River near Hilham, Tenn.

Location (revised).--Lat 36°20'27", long 85°25'35", on left bank 700 ft upstream from Cleek Branch, 0.2 mile downstream from bridge on State Highway 136, 1.4 miles upstream from Flat Creek, 2.7 miles west of Windle, 5.0 miles south of Hilham, Overton County, and 13 miles north of courthouse in Cookeville.

Drainage area.--78.7 sq mi (includes 27.1 sq mi without surface drainage).

Records available.--October 1931 to September 1960. Prior to June 1932 monthly discharge only, published in WSP 1306.

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.--29 years, 108 cfs.

Extremes.--Maximum discharge during year, 2,540 cfs Dec. 19 (gage height, 6.30 ft); minimum, 4.3 cfs Oct. 4-6 (gage height, 0.77 ft).
1931-60: Maximum discharge, 5,550 cfs Mar. 22, 1955 (gage height, 9.39 ft); minimum, 1.9 cfs Oct. 19, 24, 26, 28, Nov. 9, 1940; minimum daily, 2.4 cfs Sept. 12, 13, 15-19, 1954; minimum gage height, 0.16 ft Oct. 5, 1936.

Remarks.--Records good. Some diurnal fluctuation at low flows caused by mills above station prior to 1951.

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

Revisions (water years).--WSP 1033: 1939(M). WSP 1143: 1948. WSP 1276: 1942. WSP 1436: Drainage area.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 27				Nov. 28 to Sept. 30			
0.7	2.8	1.7	84	1.0	14	2.4	229
.8	5.2	2.0	135	1.2	24	3.0	500
.9	9.0	3.0	500	1.5	50	4.0	950
1.1	20	4.0	950	2.0	128	6.0	2,270
1.3	35						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.6	25	138	148	62	176	121	32	21	158	36	17
2	4.6	23	117	130	59	198	112	30	24	110	33	16
3	4.6	21	100	254	56	484	123	30	24	84	30	15
4	4.3	21	86	206	54	347	123	28	22	185	29	16
5	4.3	60	76	178	59	280	117	28	20	97	30	15
6	5.6	53	80	164	75	222	105	26	19	70	28	14
7	9.5	38	75	209	69	191	99	387	18	55	28	14
8	13	33	70	260	66	166	88	254	17	47	41	*35
9	42	29	76	265	68	164	81	142	17	42	42	31
10	19	27	76	265	124	146	74	104	16	190	*46	51
11	12	25	93	234	146	146	68	*86	18	1,030	48	82
12	10	23	444	188	114	138	66	74	17	280	30	37
13	13	21	395	203	110	140	*62	63	16	155	27	27
14	35	21	260	*203	105	157	59	56	17	108	25	22
15	32	22	*184	216	92	178	56	49	17	84	24	20
16	24	38	144	178	94	845	54	44	16	70	22	20
17	18	87	123	160	141	738	53	41	139	707	21	68
18	15	77	1,190	157	652	436	50	38	37	630	20	64
19	14	*62	1,620	136	476	334	46	36	25	580	27	47
20	*12	52	576	119	329	270	45	33	22	476	30	37
21	12	44	347	108	291	209	46	30	*20	157	22	31
22	11	38	239	100	280	184	45	28	20	115	79	28
23	10	88	181	91	280	157	42	28	36	122	48	25
24	27	602	148	84	*280	*140	40	26	87	109	31	23
25	23	305	121	78	568	123	38	25	109	80	25	22
26	19	160	105	74	480	114	37	24	54	68	23	20
27	18	762	97	80	338	100	37	36	48	59	21	20
28	18	532	594	78	275	96	36	28	557	53	20	20
29	18	285	360	72	222	94	33	24	347	*47	20	25
30	28	178	244	69	-------	158	32	23	156	43	18	21
31	26	-------	184	66	-------	140	-------	22	-------	39	17	-------
Total	506.5	3,752	8,543	4,773	5,965	7,271	1,988	1,875	1,956	6,050	941	883
Mean	16.3	125	276	154	206	235	66.3	60.5	65.2	195	30.4	29.4
Cfsm	0.207	1.59	3.51	1.96	2.62	2.99	0.842	0.769	0.828	2.48	0.386	0.374
In.	0.24	1.77	4.04	2.26	2.82	3.44	0.94	0.89	0.92	2.86	0.44	0.42

Calendar year 1959: Max 1,620 Min 4.3 Mean 101 Cfsm 1.28 In. 17.39
Water year 1959-60: Max 1,620 Min 4.3 Mean 122 Cfsm 1.55 In. 21.04

Peak discharge (base, 1,200 cfs).--Dec. 19 (2:30 a.m.) 2,540 cfs (6.30 ft); June 28 (5 p.m.) 1,270 cfs (4.56 ft); July 11 (4 a.m.) 1,870 cfs (5.50 ft); July 17 (11 a.m.) 1,760 cfs (5.34 ft); July 18 (8 p.m.) 1,390 cfs (4.76 ft).

* Discharge measurement made on this day.

4200. Calfkiller River below Sparta, Tenn.

Location.--Lat 35°54'31", long 85°28'46", 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 at mile 11.5.

Drainage area.--178 sq mi.

Records available.--August 1940 to September 1960.

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

Average discharge.--20 years, 368 cfs.

Extremes.--Maximum discharge during year, 7,410 cfs Dec. 19 (gage height, 15.76 ft); minimum, 42 cfs Sept. 8 (gage height, 1.23 ft).
1940-60: Maximum discharge, 14,600 cfs Jan. 5, 1949 (gage height, 25.80 ft); minimum, 11 cfs Oct. 18, 1953.
Flood in March 1929 reached a discharge of 25,000 cfs (estimated) in this vicinity.

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

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.2	35	7.0	2,620
1.5	104	10.0	4,140
2.0	280	12.0	5,240
4.0	1,160	14.0	6,370

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	150	571	562	376	600	805	174	92	90	75	87
2	50	142	472	490	344	650	643	164	92	80	68	99
3	50	129	432	733	320	2,500	553	160	92	73	64	71
4	48	118	384	818	308	2,000	540	146	99	80	59	62
5	46	153	336	674	300	1,500	508	139	94	115	59	53
6	48	356	324	602	432	1,000	458	136	87	110	57	48
7	57	268	316	774	476	800	414	1,020	80	87	55	46
8	66	213	296	967	440	650	368	2,140	75	75	53	44
9	71	181	288	958	418	600	332	994	73	66	53	48
10	71	170	312	1,010	400	650	296	630	71	64	62	62
11	71	150	360	1,050	494	600	272	454	71	140	64	280
12	62	132	2,120	913	450	550	*260	364	68	260	62	380
13	62	121	2,280	859	404	500	244	312	66	181	59	195
14	82	115	*1,270	1,020	388	450	229	272	71	178	55	124
15	126	110	882	972	340	450	217	240	71	126	53	102
16	*121	121	670	882	332	1,000	210	213	71	94	50	92
17	99	296	544	724	432	1,700	202	195	204	268	*48	311
18	87	418	1,460	702	*1,670	*1,420	210	192	217	463	48	828
19	75	*324	6,370	630	2,000	1,120	213	174	181	580	59	458
20	68	260	2,540	540	1,500	904	198	160	121	372	73	260
21	64	221	1,340	*472	1,000	742	198	146	97	236	64	174
22	59	195	962	414	850	656	202	129	*80	184	66	126
23	57	195	738	368	750	607	195	124	71	139	112	107
24	73	890	589	340	700	598	188	*118	68	450	150	94
25	110	931	490	316	800	580	181	112	71	260	104	85
26	118	571	422	292	950	526	184	110	80	*188	75	*78
27	142	1,230	384	316	850	476	192	110	85	153	64	73
28	195	2,130	1,160	463	750	458	202	110	78	121	57	71
29	184	1,200	1,260	458	670	440	188	110	82	110	53	71
30	156	764	882	440	-------	1,010	181	104	104	94	50	75
31	156	-------	688	409	-------	1,110	-------	102	-------	85	48	-------
Total	2,727	12,254	31,142	20,168	19,144	26,847	9,083	9,554	2,812	5,522	2,019	4,604
Mean	88.0	408	1,005	651	660	866	303	308	93.7	178	65.1	153
Cfsm	0.494	2.29	5.65	3.66	3.71	4.87	1.70	1.73	0.526	1.00	0.366	0.860
In.	0.57	2.56	6.51	4.21	4.00	5.61	1.90	2.00	0.59	1.15	0.42	0.96

Calendar year 1959: Max 6,370 Min 35 Mean 387 Cfsm 2.17 In. 29.53
Water year 1959-60: Max 6,370 Min 44 Mean 399 Cfsm 2.24 In. 30.48

Peak discharge (base, 4,400 cfs).--Dec. 19 (11 a.m.) 7,410 cfs (15.76 ft).

* Discharge measurement made on this day.
Note.--No gage-height record Feb. 19 to Mar. 17; discharge estimated on basis of weather records and records for stations on nearby streams.

4210. 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, 2½ miles northeast of McMinnville, Warren County, and at mile 19.3.

Drainage area.--624 sq mi.

Records available.--October 1924 to September 1960. Prior to April 1925 monthly discharge only, published in WSP 1306.

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.--36 years, 1,126 cfs.

Extremes.--Maximum discharge during year, 21,700 cfs Dec. 19 (gage height, 21.50 ft); minimum, 114 cfs Sept. 9 (gage height, 1.50 ft).

1924-60: 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 measurement of peak flow; minimum, 35 cfs Sept. 21, 1930; minimum gage height, 0.70 ft Oct. 16, 1931.

Flood in 1854 is believed to have been approximately equal to that of Mar. 23, 1929, from information by local residents.

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 tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 19				Dec. 20 to Sept. 30			
1.7	156	5.0	1,790	1.4	106	5.0	1,820
2.0	220	8.0	4,060	1.6	140	8.0	4,060
2.5	366	12.0	8,510	2.0	235	12.0	8,510
3.0	560	18.0	16,500	3.0	655	15.0	12,300
4.0	1,110	20.0	19,400				

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	178	235	1,370	1,580	2,140	1,790	3,060	611	244	259	200	154
2	172	222	1,110	1,410	1,720	1,900	2,290	575	238	238	190	146
3	168	213	1,040	2,170	1,440	8,080	1,920	520	238	227	181	136
4	164	211	1,010	2,470	1,260	5,950	1,700	472	232	330	172	131
5	160	216	860	2,090	1,240	3,680	1,540	430	230	312	167	127
6	162	284	794	1,940	2,060	2,760	1,370	404	224	345	156	122
7	166	544	822	2,320	2,540	2,340	1,240	2,620	219	296	150	119
8	168	500	750	2,850	2,090	2,030	1,120	5,220	213	250	144	116
9	178	425	675	2,800	1,700	1,910	1,020	2,610	208	222	150	116
10	196	381	650	2,710	1,500	2,140	924	1,820	206	211	178	161
11	198	335	646	2,570	1,600	2,000	853	1,390	198	405	232	368
12	191	310	2,800	2,270	1,400	1,940	792	1,140	196	353	232	946
13	189	284	5,460	1,980	1,280	1,800	*738	996	190	312	211	914
14	200	273	3,700	1,810	1,250	1,740	688	870	200	268	200	491
15	232	262	*2,460	1,820	1,140	1,770	644	765	200	230	268	353
16	*301	287	1,850	1,730	1,110	3,220	611	682	196	208	280	286
17	267	496	1,480	1,520	1,520	4,170	590	606	219	213	227	1,000
18	235	655	5,470	1,710	4,020	*3,430	660	550	306	224	*193	2,890
19	218	614	18,100	1,630	*5,100	2,820	660	515	298	244	208	1,870
20	207	*569	11,200	1,430	3,570	2,480	585	462	271	224	190	1,080
21	200	512	4,900	1,280	2,850	2,130	575	422	241	216	183	716
22	189	464	3,090	*1,150	2,770	1,880	666	384	222	203	188	520
23	187	425	2,400	1,030	2,590	1,670	638	353	*213	322	203	408
24	183	623	1,940	946	2,390	1,560	580	330	208	353	222	334
25	180	884	1,640	886	2,570	1,460	535	*312	324	253	211	286
26	185	805	1,440	826	3,180	1,360	510	302	396	268	196	259
27	191	1,290	1,290	930	2,820	1,230	510	306	298	*312	178	*253
28	191	3,340	3,510	1,530	2,280	1,130	804	292	265	256	167	244
29	230	2,720	3,350	1,540	2,130	1,110	809	280	244	241	158	292
30	230	1,890	2,340	1,920	-------	4,570	677	271	259	235	150	330
31	225	-------	1,890	2,570	-------	4,640	-------	259	-------	213	154	-------
Total	6,141	20,269	91,037	55,418	63,260	80,690	29,309	26,769	7,196	8,233	5,939	15,168
Mean	198	676	2,937	1,788	2,181	2,603	977	864	240	266	192	506
Cfsm	0.317	1.08	4.71	2.87	3.50	4.17	1.57	1.38	0.385	0.426	0.308	0.811
In.	0.37	1.21	5.43	3.30	3.77	4.81	1.75	1.60	0.43	0.49	0.35	0.90

Calendar year 1959: Max 19,100 Min 144 Mean 1,100 Cfsm 1.76 In. 23.94
Water year 1959-60: Max 19,100 Min 116 Mean 1,119 Cfsm 1.79 In. 24.41

Peak discharge (base, 11,000 cfs).--Dec. 19 (3:30 p.m.) 21,700 cfs (21.50 ft).

* Discharge measurement made on this day.

4225. 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, approximately.

Records available.--November 1911 to April 1913, July 1913 to May 1914, August 1914 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--46 years (1914-60), 3,188 cfs (unadjusted).

Extremes.--Maximum discharge during year, 57,400 cfs Dec. 19 (gage height, 21.35 ft); minimum, 30 cfs Oct. 24-26 (gage height, -1.03 ft).

1911-60: 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 several days in August to October 1951.

Flood of Mar. 23, 1929, reached a stage about 10 ft higher than that of March 1902 at a point 8 miles downstream, from profile by Corps of Engineers.

Remarks.--Records good. Flow regulated by Great Falls Lake beginning Dec. 8, 1916 (see p. 60).

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

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

-1.1	27	3.0	1,170
-.8	43	5.0	2,610
-.4	72	7.0	4,500
0.0	133	10.0	9,180
.5	225	13.0	17,200
1.0	338	17.0	32,100
2.0	654	21.0	55,000

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	737	511	4,040	3,920	3,480	4,620	7,810	1,020	800	392	1,190	376
2	710	526	3,720	3,530	3,490	5,590	5,700	1,470	596	45	1,340	391
3	375	868	3,600	5,420	3,480	17,500	4,830	1,860	602	47	1,660	48
4	392	829	3,520	6,670	3,470	13,900	4,280	2,000	50	2,150	392	48
5	375	860	3,500	5,480	3,460	9,000	4,100	2,290	50	2,840	345	470
6	313	886	3,480	4,880	3,450	6,940	3,880	2,280	650	496	202	458
7	324	798	3,460	5,450	4,380	5,390	3,620	2,660	718	566	220	498
8	400	912	3,390	7,030	4,740	4,840	3,460	5,400	896	541	318	57
9	420	910	3,400	7,250	4,210	4,620	3,440	6,800	944	694	249	54
10	36	1,240	3,400	8,080	3,900	4,510	3,430	5,630	49	699	784	253
11	36	1,430	3,400	7,350	4,010	4,390	3,420	4,060	50	2,250	300	1,690
12	564	1,380	4,920	6,400	3,970	3,820	3,410	3,460	48	938	450	1,280
13	627	1,403	16,100	5,490	3,710	3,700	3,390	3,450	559	365	443	51
14	615	45	9,310	5,560	3,580	3,800	3,360	3,390	332	862	640	52
15	788	45	7,140	5,270	3,500	3,980	3,330	3,400	384	302	465	1,670
16	968	880	4,180	5,150	3,490	10,500	2,340	3,400	468	48	428	1,000
17	35	1,000	3,990	4,740	3,480	14,700	64	3,360	2,050	49	*446	2,380
18	35	1,420	14,600	4,090	11,700	*10,500	2,170	3,330	1,270	858	488	3,350
19	656	2,690	49,400	4,300	15,300	9,030	3,270	3,310	48	1,670	562	3,380
20	666	*3,290	23,900	4,100	9,260	6,830	2,130	2,860	526	1,120	548	3,410
21	732	1,730	12,100	3,800	6,940	4,960	2,610	2,650	607	830	542	1,910
22	705	45	8,360	*3,500	6,960	4,750	2,910	2,420	1,750	888	1,440	2,280
23	816	1,220	5,860	3,480	6,690	4,450	2,170	1,380	520	2,170	589	1,720
24	31	1,350	4,740	3,470	5,520	4,130	52	1,330	568	2,170	554	803
25	30	3,240	4,280	3,450	7,690	4,070	2,070	*896	287	898	515	674
26	388	3,250	3,640	3,420	9,910	3,820	2,150	886	51	48	671	626
27	574	3,260	3,480	3,400	8,060	3,570	1,150	886	280	48	681	*816
28	708	3,400	6,370	3,400	6,370	3,430	2,160	50	315	50	48	1,020
29	1,000	8,200	8,500	3,400	4,720	3,430	2,270	50	286	748	1,090	953
30	1,420	5,760	5,310	3,410	-------	11,600	2,410	831	358	581	354	950
31	978	-------	4,760	3,440	-------	12,400	-------	977	-------	50	387	-------
Total	16,454	53,378	239,850	148,330	162,920	208,770	91,386	77,786	16,112	25,413	18,341	32,668
Mean	531	1,779	7,737	4,785	5,618	6,735	3,046	2,509	537	820	592	1,089

	Observed				Adjusted†			
Calendar year 1959:	Max 49,400	Min 30	Mean 3,049		Mean 3,095	Cfsm 1.89	In. 25.62	
Water year 1959-60:	Max 49,400	Min 30	Mean 2,982		Mean 3,003	Cfsm 1.83	In. 24.93	

* Discharge measurement made on this day.
† Adjusted for change in contents in Great Falls Lake.

4250. 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, at Carthage, Smith County, 1 mile downstream from Caney Fork and at mile 308.2.

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

Records available.--October 1922 to September 1960. 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. Since Oct. 1, 1957, auxiliary water-stage recorder 15.8 miles downstream.

Average discharge.--38 years, 17,070 cfs (unadjusted).

Extremes.--Maximum discharge during year, 58,000 cfs Dec. 19; maximum gage height, 23.50 ft Dec. 19; minimum daily discharge, 4,420 cfs Oct. 12; minimum gage height, 5.56 ft June 20.

1922-60: Maximum discharge, 210,000 cfs Dec. 30, 1926; maximum gage height, 59.8 ft Dec. 30, 1926; minimum daily discharge, 366 cfs Oct. 29, 1940.

Maximum stage known since at least 1793, that of Dec. 30, 1926.

Remarks.--Records good. Flow regulated by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir (see p. 60).

Revisions (water years).--WSP 893: 1923-39. WSP 1276: 1927, 1929(M), 1937(M). WSP 1306: 1943 (monthly runoff).

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,310	15,800	26,900	33,100	18,000	24,900	29,300	11,400	7,910	28,000	14,000	19,700
2	8,780	12,400	25,600	35,700	16,500	25,000	32,300	9,700	9,940	27,000	17,200	16,400
3	6,080	15,700	20,200	35,900	19,700	33,800	39,600	12,800	8,940	25,800	17,500	14,900
4	5,870	15,500	18,400	34,600	17,300	32,600	39,400	16,300	8,230	26,500	12,600	18,300
5	7,720	14,400	14,900	33,500	12,100	35,900	41,900	12,800	7,370	25,600	12,000	12,700
6	7,620	15,100	12,100	39,200	10,600	35,500	40,700	10,100	6,030	23,800	14,400	4,730
7	9,480	15,700	13,000	42,600	11,300	34,900	35,500	11,300	6,070	18,600	13,200	7,770
8	9,470	11,300	16,300	40,600	11,000	37,700	18,700	18,600	7,980	11,300	16,200	9,360
9	9,340	10,000	18,900	38,600	12,400	41,200	10,700	14,100	6,740	11,400	17,200	7,210
10	8,410	10,800	23,100	35,300	14,600	38,700	16,400	*13,300	6,590	16,400	20,100	7,370
11	4,870	11,500	24,500	33,600	17,100	31,800	20,400	11,600	6,410	21,700	17,600	9,680
12	4,420	13,000	32,300	35,300	13,100	31,400	21,000	9,420	5,070	21,200	14,300	6,800
13	6,670	13,000	28,000	33,100	9,580	35,600	26,200	10,600	4,650	23,400	13,600	5,510
14	9,970	12,400	22,400	33,100	9,160	35,600	26,700	15,100	6,780	25,600	12,400	7,950
15	10,500	9,680	27,100	35,300	11,600	33,200	24,800	13,000	7,090	19,200	12,200	8,290
16	9,480	11,700	27,700	34,200	12,400	*36,800	18,600	11,400	8,890	13,900	17,700	11,200
17	8,150	12,500	31,000	26,600	11,200	39,600	13,300	11,300	22,300	12,500	19,100	17,700
18	5,230	*12,300	41,500	26,600	19,200	31,600	10,200	11,200	12,000	13,700	17,900	13,700
19	5,300	12,800	55,300	30,800	19,500	29,200	12,500	11,900	6,980	18,200	15,700	10,200
20	7,290	13,300	39,800	32,400	22,400	25,800	12,200	11,400	4,840	19,600	13,000	*10,600
21	9,610	11,500	30,400	33,100	21,100	28,300	12,900	10,400	7,000	16,800	8,640	18,200
22	14,700	8,640	*30,200	32,400	19,000	30,400	12,600	9,400	13,100	8,570	7,820	20,100
23	13,200	8,640	33,500	29,800	18,600	32,500	10,600	8,140	14,200	8,680	*10,900	19,200
24	10,800	16,900	35,700	27,900	*19,300	32,200	9,820	10,800	*15,800	18,300	17,900	15,400
25	7,550	20,900	36,600	25,600	20,100	30,300	7,780	15,800	16,700	17,500	16,700	9,580
26	8,830	19,400	35,800	*29,100	26,400	29,400	*11,800	14,900	21,600	*14,700	17,100	5,900
27	*15,700	24,500	34,600	31,300	26,300	26,100	16,500	13,500	24,000	19,100	16,400	10,300
28	21,000	20,600	46,200	28,200	26,500	17,000	18,400	13,700	33,300	19,100	18,200	10,200
29	22,800	21,800	42,600	28,100	27,600	13,200	13,900	10,900	51,700	16,600	13,600	8,500
30	22,300	27,700	38,900	25,000	--------	33,900	11,800	11,300	34,500	15,500	17,600	6,370
31	21,300	--------	31,400	19,500	--------	36,700	--------	8,040	--------	14,500	20,700	--------
Total	321,750	439,460	914,900	‡1,000.1	493,640	980,800	616,500	374,200	392,710	572,750	473,460	343,820
Mean	10,380	14,650	29,510	32,260	17,020	31,640	20,550	12,070	13,090	18,480	15,270	11,460

	Observed			Adjusted†		
Calendar year 1959:	Max 55,300	Min 2,000	Mean 13,000	Mean 15,230	Cfsm 1.42	In. 19.32
Water year 1959-60:	Max 55,300	Min 4,420	Mean 18,920	Mean 18,160	Cfsm 1.70	In. 23.10

* Discharge measurement made on this day.

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

‡ Expressed in thousands.

4255. Spring Creek near Lebanon, Tenn.

Location.--Lat 36°10'49", long 86°14'29", on downstream end of middle pier of bridge on Eastover Road, 0.6 mile downstream from Black Branch and 2.5 miles (revised) southeast of city limits of Lebanon, Wilson County.

Drainage area.--35.3 sq mi.

Records available.--October 1954 to September 1960.

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

Average discharge.--6 years, 59.6 cfs.

Extremes.--Maximum discharge during year, 5,020 cfs June 17 (gage height, 8.48 ft); minimum, 0.03 cfs Sept. 6-9 (gage height, 0.18 ft).
1954-60: Maximum discharge, 7,980 cfs Mar. 21, 1955 (gage height, 10.13 ft), from rating curve extended above 4,200 cfs on basis of slope-area measurement of peak flow; no flow many days in 1956 and 1957.

Remarks.--Records poor.

Revisions.--WSP 1626: Drainage area.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 17-25, Apr. 28 to May 17, May 19, 20, 27-30, June 3-5)

0.15	0.02	0.9	29
.2	.04	1.2	67
.3	.3	1.4	102
.4	1.5	1.6	160
.5	3.4	2.0	336
.6	7.5	4.0	1,300
.7	13	5.0	1,880

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	19	43	45	35	57	78	5.1	a0.7	52	1.3	0.05
2	.2	14	37	44	32	264	59	4.3	5.0	33	.9	.04
3	.2	11	32	162	29	312	108	4.3	12	22	.6	.04
4	.2	20	28	70	26	134	85	3.9	2.3	17	.3	.04
5	.2	118	23	57	298	87	64	3.6	1.3	13	.2	.04
6	1.7	43	48	57	159	75	49	3.4	a1.0	9.5	.2	.04
7	2.7	26	44	124	85	66	40	4.3	a.7	7.0	21	.03
8	166	20	35	180	59	56	32	5.1	a.6	5.1	4.0	.03
9	78	15	30	154	49	72	27	4.3	a.5	4.3	1.8	.03
10	29	13	26	124	295	112	23	3.6	a.4	9.6	1.8	1.4
11	17	.10	290	83	130	107	21	3.1	a.3	30	2.0	.2
12	10	8.9	682	63	72	110	*19	3.4	a.2	12	1.3	.09
13	8.4	8.4	178	168	61	133	17	3.4	a.1	6.5	.9	.05
14	43	8.4	92	92	53	128	16	2.9	a.09	41	.6	.04
15	36	8.4	63	201	49	128	15	2.7	*.07	13	.4	.04
16	21	43	49	83	77	*641	15	2.2	18	7.0	.3	a.06
17	14	72	46	86	173	194	13	*1.8	1,430	14	.2	a110
18	10	*41	1,200	127	300	110	12	23	80	242	.2	a35
19	8.0	30	318	80	194	91	9.5	12	41	109	.5	a15
20	6.5	22	130	61	127	78	8.9	4.3	23	42	.4	*6.5
21	*4.7	18	80	48	110	61	10	a1.8	15	23	.2	3.1
22	4.3	15	*56	38	167	53	10	a1.2	11	15	.5	2.3
23	3.6	551	45	34	164	45	8.0	a1.0	7.5	11	.6	1.5
24	11	264	36	30	*257	38	7.5	a.9	96	8.4	.3	1.0
25	10	96	32	26	573	34	7.0	a.7	77	6.5	.2	.7
26	7.0	61	30	*22	190	32	15	.9	34	*7.2	*.2	.7
27	5.1	885	236	86	107	28	19	6.5	33	5.6	.1	.6
28	4.3	152	872	64	87	26	8.9	3.9	494	3.6	.09	.5
29	20	78	132	52	78	213	7.0	1.8	250	2.7	.07	.4
30	54	54	78	46	-------	592	5.1	1.3	86	2.2	.06	.4
31	26	-------	54	41	-------	130	-------	a1.0	-------	1.6	.05	-------
Total	602.4	2,725.1	5,045	2,548	4,036	4,207	808.9	121.7	2,720.76	775.8	41.27	179.92
Mean	19.4	90.8	163	82.2	139	136	27.0	3.93	90.7	25.0	1.33	6.00
Cfsm	0.550	2.57	4.62	2.33	3.94	3.85	0.765	0.111	2.57	0.708	0.038	0.170
In.	0.63	2.87	5.32	2.68	4.25	4.43	0.85	0.13	2.87	0.82	0.04	0.19

Calendar year 1959: Max 1,200 Min 0.1 Mean 53.9 Cfsm 1.53 In. 20.72
Water year 1959-60: Max 1,430 Min 0.03 Mean 65.1 Cfsm 1.84 In. 25.08

Peak discharge (base, 2,700 cfs).--Nov. 27 (6 a.m.) 2,970 cfs (6.47 ft); Dec. 28 (2 a.m.) 4,270 cfs (7.88 ft); June 17 (5 a.m.) 5,020 cfs (8.48 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 stations on nearby small streams.

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4260. Drakes Creek above Hendersonville, Tenn.

Location.--Lat 36°22'14", long 86°37'00", on downstream wingwall of left abutment on Long Hollow Pike Bridge, at Shackle Island, 2 miles downstream from Hogan Branch and 4.5 miles north of Hendersonville, Sumner County.

Drainage area--19.2 sq mi.

Records available.--October 1954 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 503.06 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 24.8 cfs.

Extremes.--Maximum discharge during year, 2,940 cfs Dec. 27 (gage height, 9.77 ft); minimum, 0.07 cfs Sept. 3-8 (gage height, 0.95 ft).
1954-60: Maximum discharge, 3,370 cfs Nov. 18, 1957 (gage height, 10.56 ft); minimum, 0.02 cfs many days in September 1955 and Sept. 8, 1956; minimum gage height, 0.90 ft Sept. 12, 14, 1955.

Remarks.--Records fair.

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

Revisions (water years).--WSP 1626: 1958.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.97	0.07	1.5	25
1.00	.1	1.8	55
1.03	.3	2.0	90
1.07	.6	2.4	175
1.1	1.2	3.0	360
1.2	3.8	3.5	513
1.3	8.5		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	2.5	19	29	21	35	26	6.5	2.2	12	0.4	0.1
2	.3	2.5	17	25	18	48	24	6.0	2.2	8.5	.4	.1
3	.3	2.8	13	25	17	67	60	5.6	2.2	6.5	.3	.08
4	.2	4.1	11	21	16	50	65	5.2	1.7	5.2	.6	.07
5	.2	35	10	21	*466	40	49	4.8	1.7	4.4	2.1	.07
6	5.2	18	10	20	*191	37	38	6.0	1.2	3.8	.8	.07
7	2.5	12	8.5	23	76	34	34	35	1.0	3.3	.5	.07
8	19	8.5	7.1	26	49	*30	26	15	1.0	2.8	.4	.9
9	8.3	6.0	6.0	28	41	34	22	11	1.0	3.0	.3	.1
10	4.1	5.2	5.6	29	*70	32	18	9.2	1.0	3.3	.4	.3
11	4.1	4.4	67	27	55	34	16	7.8	1.4	3.5	.5	1.8
12	3.0	4.1	226	25	40	32	*14	7.1	1.2	3.0	.4	.6
13	3.3	3.5	58	31	38	37	14	6.0	1.2	12	.3	.4
14	4.8	3.5	38	41	33	43	13	5.2	5.0	12	.3	.3
15	3.5	3.8	28	54	28	45	17	4.4	*2.0	5.2	.3	a.3
16	3.0	4.1	23	40	31	251	17	4.1	2.4	3.5	.2	a.3
17	2.5	5.2	26	39	37	180	16	3.8	36	3.3	.2	a30
18	2.5	4.4	31	49	52	114	13	3.8	6.5	3.0	.2	a6.0
19	2.2	4.1	26	40	45	88	12	3.8	3.8	2.8	.2	a2.5
20	1.7	4.1	23	33	40	67	12	3.8	3.0	2.5	.2	*1.7
21	1.7	3.8	20	26	39	55	21	3.8	2.5	2.2	.1	1.2
22	1.4	3.8	18	23	37	53	18	3.5	2.2	2.0	*.5	.8
23	1.4	12	14	18	37	48	15	3.0	1.7	1.7	.6	.6
24	6.8	18	14	17	45	39	14	*2.5	1.7	1.4	.4	.5
25	3.5	14	12	14	221	32	13	2.8	2.0	1.4	.3	.5
26	2.8	41	14	*14	118	25	14	4.0	1.7	*1.2	.3	.4
27	*2.5	222	377	36	67	22	13	9.8	2.7	1.2	.3	.4
28	2.5	49	*452	37	51	20	9.2	4.1	52	1.0	.3	.4
29	2.5	31	*102	32	41	18	8.5	3.5	44	.6	.2	.4
30	2.8	*24	53	28	-------	45	7.8	3.0	21	.6	.2	.5
31	2.8	-------	37	25	-------	32	-------	2.5	-------	.5	.2	-------
Total	101.8	556.4	1,766.2	896	2,021	1,687	639.5	196.6	209.2	117.4	12.4	51.46
Mean	3.28	18.5	57.0	28.9	69.7	54.4	21.3	6.34	6.97	3.79	0.40	1.72
Cfsm	0.171	0.964	2.97	1.51	3.63	2.83	1.11	0.330	0.363	0.197	0.021	0.090
In.	0.20	1.08	3.42	1.74	3.91	3.27	1.24	0.38	0.41	0.23	0.02	0.10

Calendar year 1959: Max 610 Min 0.2 Mean 19.9 Cfsm 1.04 In. 14.05
Water year 1959-60: Max 466 Min 0.07 Mean 22.6 Cfsm 1.18 In. 16.00

Peak discharge (base, 1,000 cfs).--Dec. 27 (10 p.m.) 2,940 cfs (9.77 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and recorded range in stage.

4265. Cumberland River below Old Hickory, Tenn.

Location.--Lat 36°15'39", long 86°40'30", on downstream end of left pier of bridge on State Highway 45, 1.5 miles west of Old Hickory, Davidson County, 2.1 miles east of Madison, 3.3 miles downstream from Mansker Creek, 4.1 miles downstream from Old Hickory Dam, and at mile 212.1.

Drainage area.--11,700 sq mi, approximately.

Records available.--October 1931 to September 1942, October 1947 to September 1960. Prior to July 1953, published as "at dam 3, near Old Hickory."

Gage.--Water-stage recorder. Datum of gage is 380.00 ft above mean sea level, datum of 1929. Prior to Nov. 16, 1933, Oct. 1-16, 1947, and July 1, 1953, to June 10, 1954, staff gage at site 6.1 miles upstream; Nov. 16, 1933, to Sept. 30, 1942, and Oct. 17, 1947, to June 30, 1953, water-stage recorder at site 6.3 miles upstream; both gages at datum 10.67 ft higher. June 11, 1954, to Sept. 30, 1956, headwater and tailwater staff gages at Old Hickory Dam. Since Apr. 1, 1957, auxiliary long-distance water-stage recorder in Old Hickory powerhouse connected to the lower-pool well in the powerhouse service bay at Old Hickory Dam; Oct. 1, 1956, to Mar. 31, 1957, auxiliary staff gage on lower lock wall.

Average discharge.--24 years, 18,220 cfs (unadjusted).

Extremes.--Maximum discharge during year, 65,000 cfs Dec. 19 (gage height, 28.38 ft); minimum daily, 3,690 cfs Sept. 11.

1931-42, 1947-60: Maximum discharge, 173,000 cfs Jan. 29, 1937; maximum gage height, 47.40 ft Jan. 29, 1937 (site and datum then in use); minimum daily discharge, 86 cfs Aug. 15, 1936.

Maximum stage known, 57.4 ft Dec. 31, 1926, present site and datum, from profile by Corps of Engineers (discharge, 200,000 cfs).

Remarks.--Records fair. Flow regulated by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, Center Hill Reservoir, and Old Hickory Lake (see p. 60).

Cooperation.--Auxiliary gage-height record furnished by Corps of Engineers.

Revisions (water years).--WSP 923: 1932-39. WSP 1113: 1940(m).

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,280	16,200	25,000	39,800	19,600	31,400	40,700	12,700	8,220	32,700	16,700	19,200
2	8,950	7,210	22,800	39,600	23,800	35,100	40,500	13,300	7,900	28,600	16,500	16,100
3	8,550	10,100	13,200	40,600	26,500	36,200	40,200	13,400	8,230	31,000	18,800	19,000
4	8,470	15,000	23,300	40,700	25,400	38,100	40,900	13,700	6,460	28,100	18,800	19,000
5	8,130	18,400	13,100	39,600	26,100	38,700	41,100	12,500	6,590	26,300	13,200	15,100
6	7,760	13,500	13,500	39,400	20,500	41,100	41,100	13,400	8,070	19,500	17,700	16,800
7	8,280	11,300	13,600	37,800	19,000	39,800	34,100	11,900	7,920	27,400	11,300	9,580
8	10,200	4,790	20,800	41,300	10,500	38,900	23,300	13,900	7,210	14,000	16,700	9,110
9	12,000	8,610	20,600	41,400	14,400	39,400	15,300	12,500	9,180	14,500	16,100	6,000
10	9,830	12,100	28,100	41,200	14,900	39,500	18,500	12,800	11,600	14,600	17,200	4,400
11	6,480	13,300	23,000	31,700	20,900	38,800	18,300	13,200	4,950	21,000	20,900	3,690
12	7,490	13,500	40,500	39,700	20,300	33,400	27,000	14,700	4,500	26,500	16,000	5,570
13	7,100	11,600	41,300	40,500	16,000	35,400	30,200	15,600	7,180	25,100	15,200	5,680
14	7,020	12,500	25,700	32,200	23,800	39,700	27,100	15,500	8,090	26,500	13,600	8,350
15	9,790	9,360	28,500	31,800	13,500	34,900	26,500	14,400	7,210	23,900	17,800	6,630
16	8,180	8,050	30,600	37,800	12,400	44,000	18,500	12,400	7,730	14,400	19,300	8,720
17	9,200	14,900	32,100	38,300	9,990	42,000	12,600	14,700	27,000	14,200	18,400	24,400
18	7,110	15,200	37,400	32,500	19,700	42,200	13,100	10,100	31,200	15,100	15,600	22,100
19	7,760	15,800	59,100	32,300	33,200	40,900	13,900	9,740	8,990	17,000	18,000	12,100
20	7,900	13,600	55,800	36,200	25,900	40,900	13,200	8,870	7,550	18,300	10,300	13,200
21	9,970	11,000	35,600	37,000	22,300	37,600	13,100	11,500	5,810	20,000	9,410	13,500
22	15,900	10,100	29,000	37,500	20,100	33,100	13,500	11,500	12,300	16,300	7,240	17,600
23	12,500	11,600	38,000	33,500	26,700	32,900	13,000	11,500	8,590	16,000	*10,500	19,600
24	7,660	24,400	39,100	29,600	23,100	32,600	13,800	*11,900	*12,600	16,000	16,800	15,300
25	7,450	22,500	39,200	27,900	22,500	*25,600	14,400	11,600	13,400	15,800	16,800	8,770
26	7,640	21,900	39,600	27,600	*30,400	28,200	*12,200	11,600	15,600	17,300	19,100	10,700
27	15,100	39,900	41,100	*31,900	29,500	29,800	13,500	12,600	15,500	16,100	19,300	8,630
28	19,000	34,600	*49,400	32,100	27,400	27,900	13,800	11,500	31,400	15,900	17,700	8,320
29	*22,300	31,800	53,900	29,600	30,500	14,800	13,200	11,700	59,300	15,800	13,600	8,760
30	25,600	*28,000	45,600	21,600	---------	31,100	12,600	12,300	47,100	16,400	16,000	8,410
31	22,700	--------	40,800	23,500	--------	41,800	--------	9,700	--------	13,700	17,700	--------
Total	335,300	480,820	‡1,019.3	‡1,086.2	628,890	‡1,105.8	669,200	386,710	417,380	618,000	492,250	364,320
Mean	10,820	16,030	32,880	35,040	21,690	35,670	22,310	12,470	13,910	19,940	15,880	12,140

	Observed			Adjusted†			
Calendar year 1959:	Max 59,100	Min 3,310	Mean 14,250	Mean 16,480	Cfsm 1.41	In. 19.12
Water year 1959-60:	Max 59,300	Min 3,690	Mean 20,780	Mean 20,010	Cfsm 1.71	In. 23.28

* Discharge measurement made on this day.

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

‡ Expressed in thousands.

4270. Bradley Creek at Lascassas, Tenn.

Location.--Lat 35°55'39", long 86°17'25", on downstream end of county road bridge pier near midstream, 900 ft south of Lascassas, Rutherford County, 0.4 mile downstream from Jarman Branch, 2.0 miles upstream from mouth, and 8.0 miles northeast of the courthouse in Murfreesboro.

Drainage area.--38 sq mi, approximately.

Records available.--October 1954 to September 1960.

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

Average discharge.--6 years, 63.2 cfs.

Extremes.--Maximum discharge during year, 4,750 cfs June 17 (gage height, 7.5 ft); minimum daily, 0.1 cfs many days in October, June, August, and September.
1954-60: Maximum discharge, 12,800 cfs Mar. 21, 1955 (gage height, 10.66 ft), from rating curve extended above 4,700 cfs on basis of slope-area measurement of peak flow; minimum, 0.01 cfs Aug. 22 to Sept. 9, 1957; minimum gage height, 0.50 ft Sept. 7-10, 1955.

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

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 27

0.6	0.09	0.9	11
.7	.6	1.0	21
.8	4.1	1.2	51

Note.--Same as following table above 1.2 ft.

Dec. 28 to Sept. 30

0.62	0.1	1.4	90
.7	.3	1.7	170
.8	1.4	2.0	275
.9	9.0	2.5	485
1.0	20	3.0	785
1.2	51	4.0	1,510

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	9.2	35	38	30	60	80	4.6	0.6	60	0.4	0.3
2	.2	7.8	37	38	26	383	60	3.6	.5	33	.3	.2
3	.2	6.4	*32	231	22	368	56	2.8	.4	20	.2	.1
4	.1	9.5	27	86	20	148	56	2.0	.3	12	*.4	.1
5	.1	154	24	64	221	90	47	1.4	.3	8	.7	.1
6	1.7	45	53	64	140	71	38	2.0	.2	6	.4	.1
7	*.8	25	48	172	80	62	32	4.0	.2	4	.3	.1
8	1.8	15	37	205	56	55	*26	4.6	.2	3	15	.1
9	4.4	13	27	152	50	82	22	*3.7	*.2	2.5	27	.1
10	6.4	10	22	110	500	135	18	3.0	.2	6	7.2	80
11	3.6	7.8	211	75	200	125	17	1.8	.2	150	3.0	240
12	3.6	6.4	622	56	100	130	15	1.8	.2	33	1.4	30
13	5.2	5.8	158	89	60	144	14	1.4	.2	12	.8	12
14	19	6.4	86	67	45	120	13	1.0	.1	12	.5	7
15	21	6.4	58	75	35	134	12	.7	.1	7	.4	3
16	12	109	45	55	70	542	12	.6	125	5	.3	*1.1
17	7.8	116	37	65	120	151	11	2.4	1,500	3	.2	300
18	5.2	55	857	84	250	90	10	1.1	140	5	.1	25
19	4.1	35	305	62	160	77	8.1	.8	65	3	.1	7
20	3.1	24	128	47	130	67	8.1	.6	35	2	.5	2.5
21	2.3	18	77	38	110	55	9.0	.5	20	1.5	.2	1.0
22	1.8	13	53	*30	100	45	9.0	.4	11	*1.1	.5	.7
23	2.2	29	40	25	*95	*38	7.2	.4	6	16	.7	.5
24	34	*143	34	22	100	32	7.2	.3	160	11	.3	.5
25	16	60	27	18	308	26	6.3	1.0	90	1.8	.1	.4
26	9.2	41	25	16	130	23	6.3	4.6	20	.8	.1	.4
27	7.1	951	32	47	84	20	9.0	3.7	5	.8	.1	.5
28	5.2	143	780	64	77	18	7.2	1.8	400	1.0	.1	.9
29	5.2	73	118	49	80	297	6.3	1.0	600	.8	.1	.8
30	17	45	71	42	-------	620	5.5	.6	120	.7	.1	.5
31	13	-------	51	35	-------	131	-------	.5	-------	.5	.1	-------
Total	213.5	2,182.7	4,157	2,221	3,399	4,339	628.2	58.7	3,300.9	422.5	61.6	715.0
Mean	6.89	72.8	134	71.6	117	140	20.9	1.89	110	13.6	1.99	23.8
Cfsm	0.181	1.92	3.53	1.88	3.08	3.68	0.550	0.050	2.89	0.359	0.052	0.626
In.	0.21	2.14	4.07	2.17	3.33	4.25	0.61	0.06	3.23	0.41	0.06	0.70

Calendar year 1959: Max 1,160 Min 0.1 Mean 57.2 Cfsm 1.51 In. 20.42
Water year 1959-60: Max 1,500 Min 0.1 Mean 59.3 Cfsm 1.56 In. 21.24

Peak discharge (base, 3,000 cfs).--Nov. 27 (5 a.m.) 3,160 cfs (6.19 ft); Dec. 28 (2 a.m.) 3,950 cfs (6.96 ft); Mar. 30 (5 a.m.) 3,110 cfs (6.13 ft); June 17 (about 5 a.m.) 4,750 cfs (7.5 ft).

* Discharge measurement made on this day.
Note.--No gage-height record Feb. 9-22, May 2-8, June 6-8, June 13 to July 21, Aug. 13 to Sept. 15, Sept. 17-30; discharge extimated on basis of weather records, recorded range in stage when available, and records for Spring Creek near Lebanon and other nearby small streams.

4280. 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 the courthouse in Murfreesboro, Rutherford County.

Drainage area.--128 sq mi (includes 3 sq mi without surface drainage).

Records available.--October 1931 to September 1960. Prior to June 1932 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 567.02 ft above mean sea level, datum of 1929. June 30, 1932, to June 30, 1934, staff gage at same site and datum.

Average discharge.--29 years, 212 cfs.

Extremes.--Maximum discharge during year, 6,880 cfs Dec. 28 (gage height, 12.98 ft); minimum, 0.7 cfs Sept. 15, 16; minimum gage height, 0.98 ft Oct. 7, Sept. 15, 16.
1931-60: 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 measurements at gage heights 21.23 and 22.73 ft; no flow Sept. 18-20, 1954, Aug. 7-10, Sept. 4-10, 1957; minimum gage height, 0.56 ft Oct. 9, 1935, Oct. 6, 7, 1940, Sept. 8, 1957.
Maximum stage known, 25.0 ft in March 1902 (discharge, about 50,000 cfs, from report of Tennessee Valley Authority).

Remarks.--Records fair. Some diversion for irrigation.

Revisions (water years).--WSP 783: 1932-34. WSP 1306: 1934(M), 1937-41(M). WSP 1556: Drainage area.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 4-6, May 11 to June 16, June 19-28, June 30 to July 17, July 21, 22, Aug. 17 to Sept. 16)

0.7	0.5	2.0	64
.9	1.8	2.4	133
1.0	2.9	3.0	286
1.1	4.4	4.0	674
1.3	9.0	6.0	1,660
1.5	18	8.0	2,800
1.7	32		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.7	24	169	208	178	208	359	36	12	43	11	1.4
2	5.0	24	154	181	152	1,150	283	32	17	30	9.8	1.3
3	4.6	19	*133	429	133	1,850	267	29	13	22	8.8	1.3
4	4	22	110	267	122	674	264	25	11	22	*8.2	1.2
5	3.5	253	98	229	1,040	441	216	23	9.8	17	8.0	1.0
6	3	120	146	246	865	348	181	23	9.0	14	6.8	1.0
7	*2.8	76	154	530	445	310	158	1,300	8.2	11	6.3	1.0
8	3.5	53	122	670	313	252	*135	369	7.8	9.8	7.2	.8
9	3.5	43	103	570	249	812	118	*144	*7.0	8.5	8.5	.8
10	10	34	91	445	769	816	103	96	6.3	8.2	7.0	2.3
11	13	28	314	338	473	587	94	73	6.1	7.5	7.0	1.9
12	12	24	2,240	264	296	497	86	62	5.9	7.2	8.0	1.4
13	13	23	649	277	261	391	80	53	5.7	6.5	8.0	1.3
14	111	24	380	255	232	330	73	44	5.2	6.1	7.0	1.0
15	50	23	270	229	226	313	68	38	5.0	5.2	5.9	.8
16	34	143	213	183	268	1,090	62	33	5.2	4.2	4.2	*1.5
17	26	466	181	220	640	521	57	28	179	5.0	3.5	248
18	21	181	1,070	303	1,590	359	54	24	92	612	2.9	125
19	18	118	1,800	223	850	300	48	23	44	595	3.5	58
20	16	88	603	183	579	270	44	21	28	118	2.9	38
21	14	72	391	156	513	218	43	18	22	58	2.2	27
22	12	58	286	*133	575	190	41	16	18	*35	2.4	21
23	12	56	226	116	*465	*167	36	15	16	81	1.9	16
24	13	*1,170	186	107	387	152	32	14	17	90	1.6	14
25	20	267	161	96	864	133	29	12	19	40	1.4	12
26	22	158	144	90	521	125	51	21	15	28	1.3	9.4
27	19	1,970	156	192	359	112	135	43	13	23	1.0	11
28	18	588	2,560	243	296	105	70	25	45	19	1.3	9.4
29	18	310	579	193	267	402	52	19	108	16	1.3	8.8
30	16	216	359	249	------	1,790	44	16	74	14	1.6	8.5
31	16	------	261	216	------	566	------	14	------	12	1.6	------
Total	539.6	6,651	14,309	8,041	13,928	15,479	3,283	2,689	824.2	1,968.2	152.1	626.1
Mean	17.4	222	462	259	480	499	109	86.7	27.5	63.5	4.91	20.9
Cfsm	0.136	1.73	3.61	2.02	3.75	3.90	0.852	0.677	0.215	0.496	0.038	0.163
In.	0.16	1.93	4.16	2.34	4.05	4.50	0.95	0.78	0.24	0.57	0.04	0.18

Calendar year 1959: Max 3,320 Min 2.8 Mean 200 Cfsm 1.56 In. 21.23
Water year 1959-60: Max 2,560 Min 0.8 Mean 187 Cfsm 1.46 In. 19.90

Peak discharge (base, 7,000 cfs).--No peak above base.

* Discharge measurement made on this day.

4290. 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, 1.1 miles north of Old Jefferson, 1.5 miles downstream from confluence of East and West Forks, 3.5 miles northeast of Smyrna, Rutherford County, 4.1 miles upstream from Falls Creek, and at mile 37.2.

Drainage area.--552 sq mi.

Records available.--July 1925 to September 1960.

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.--35 years, 945 cfs.

Extremes.--Maximum discharge during year, 15,200 cfs Dec. 19 (gage height, 18.78 ft); minimum, 19 cfs Sept. 7, 8 (gage height, 1.01 ft).

1925-60: 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 measurement 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 (discharge, 60,000 cfs).

Remarks.--Records good except those for periods of backwater from ice or aquatic vegetation, which are fair, and those for periods of no gage-height record, which are poor.

Revisions (water years).--WSP 853: 1929(M). WSP 953: 1928(M), 1929, 1934-37. WSP 1276: 1942. WSP 1436: 1948-49(P), 1950-52, 1953(P), 1954-55.

Rating table, water year 1959-60, except periods of backwater from ice or aquatic vegetation (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Dec. 12, 18, 19, 28, Mar. 3, 20, May 7, June 17)

1.0	18	2.5	460
1.1	30	3.0	730
1.3	63	5.0	2,120
1.6	133	10.0	6,400
2.0	255	12.0	8,400

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	140	1,100	1,250	820	1,330	2,090	171	95	366	63	34
2	35	125	850	1,030	700	1,230	1,590	156	88	262	63	54
3	30	105	*700	1,810	660	8,950	1,470	148	105	210	61	42
4	27	95	593	1,830	640	4,200	1,460	142	100	195	*50	45
5	25	500	510	1,340	2,000	2,530	1,260	130	90	262	45	32
6	35	880	530	1,240	4,470	1,960	1,030	128	83	193	65	24
7	*50	450	810	1,500	2,250	1,590	881	2,730	77	153	59	20
8	250	280	670	2,970	1,630	1,360	*754	2,300	75	128	49	22
9	600	210	555	2,900	1,330	1,790	654	*760	*71	107	267	23
10	250	170	480	2,340	2,670	3,300	566	456	73	100	125	105
11	160	145	470	1,950	3,260	2,560	510	342	75	100	85	126
12	110	130	7,370	1,560	1,740	2,280	465	286	69	171	71	150
13	85	115	4,370	1,310	1,410	2,150	402	252	65	125	63	88
14	110	105	2,200	1,340	1,270	1,960	370	222	67	97	58	75
15	350	95	1,540	1,260	1,160	1,800	346	195	69	85	49	58
16	250	150	1,190	1,140	1,190	5,280	330	177	84	75	45	*47
17	170	1,500	985	946	2,180	3,480	310	165	6,330	73	71	1,940
18	125	780	4,390	1,280	5,930	2,300	290	153	1,610	82	77	1,320
19	100	480	11,400	1,150	4,650	1,780	276	148	829	2,440	49	582
20	85	350	3,690	950	2,940	1,590	242	142	555	467	47	350
21	75	300	2,290	840	2,290	1,340	235	130	424	232	44	255
22	65	260	1,670	*690	2,360	1,150	235	123	346	*150	64	204
23	60	900	1,310	580	*2,180	*998	219	115	283	117	63	165
24	70	*3,300	1,080	520	1,900	874	207	107	286	325	65	115
25	105	1,520	900	470	3,480	766	189	105	397	174	63	97
26	130	848	784	440	3,040	676	180	100	294	115	58	88
27	95	8,400	700	520	2,060	610	242	133	255	102	45	85
28	85	5,000	8,360	1,100	1,680	555	266	150	290	97	42	102
29	70	2,300	4,490	950	1,560	845	213	133	972	83	36	71
30	95	1,500	2,220	930	-------	8,480	186	115	582	71	33	83
31	150	-------	1,590	1,020	-------	3,470	-------	105	-------	65	32	-------
Total	3,892	31,133	69,797	39,156	63,450	73,184	17,468	10,519	14,739	7,227	2,007	6,402
Mean	126	1,038	2,252	1,263	2,188	2,361	582	339	491	233	64.7	213
Cfsm	0.228	1.88	4.08	2.29	3.96	4.28	1.05	0.614	0.889	0.422	0.117	0.386
In.	0.26	2.10	4.70	2.64	4.27	4.93	1.18	0.71	0.99	0.49	0.14	0.43

Calendar year 1959: Max 13,100 Min 25 Mean 962 Cfsm 1.74 In. 23.66
Water year 1959-60: Max 11,400 Min 20 Mean 926 Cfsm 1.68 In. 22.84

Peak discharge (base, 17,000 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-6, Oct. 8 to Nov. 23, Nov. 27 to Dec. 2; discharge estimated on basis of weather records, recorded range in stage, and records for station above Donelson. Stage-discharge relation affected by ice Jan. 18 to Feb. 5, and by aquatic vegetation Mar. 31 to Aug. 1, Aug. 6, 9-12, 17, 18, 22, 24, 25, Sept. 10-14, 17-30.

4300. Stones River above Donelson, Tenn.

Location.--Lat 36°04'23", long 86°33'30", on left bank 0.5 mile downstream from Hurricane Creek, 3.3 miles upstream from county highway bridge at Couchville, 8.8 miles southeast of Donelson, Davidson County, and at mile 17.7.

Drainage area.--834 sq mi.

Records available.--October 1938 to September 1960. Published as "near Donelson" 1939-40. Records published for both sites April to September 1940. Prior to January 1939 monthly discharge only, published in WSP 1306.

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. Jan. 14, 1939, to Sept. 30, 1940, wire-weight gage at site 10.5 miles downstream at datum 18.00 ft lower.

Average discharge.--22 years, 1,377 cfs.

Extremes.--Maximum discharge during year, 17,900 cfs Dec. 19 (gage height, 34.87 ft); minimum, 25 cfs Sept. 9 (gage height, 10.83 ft).

1938-60: 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. Some regulation at low flow.

Cooperation.--Two discharge measurements and Telemark readings furnished by Corps of Engineers.

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

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 16; rate of change in stage used as a factor Nov. 27, 28, Dec. 12, 13, 18-20, 28, 29, Feb. 5, 6, 10, 11, 18, 19, 25, 26, Mar. 3, 4, 16, 17, 30, 31, May 7, 8, June 17,18)

10.89	25	13.0	465
11.0	34	14.0	890
11.4	80	16.0	2,040
12.0	184	20.0	4,750

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	178	1,320	1,760	1,220	1,970	3,310	259	109	845	83	40
2	47	156	1,070	1,430	1,040	1,920	2,360	236	101	580	77	38
3	35	135	955	2,390	920	11,300	2,120	224	101	434	68	50
4	33	132	814	2,690	840	6,470	2,220	210	109	367	66	51
5	32	678	696	1,870	3,380	3,730	1,890	197	98	476	*63	45
6	41	1,330	665	1,680	7,780	2,810	1,570	190	89	388	55	47
7	*59	701	1,000	2,010	3,800	2,370	1,320	7,180	79	290	59	34
8	316	465	935	4,110	2,560	2,010	*1,140	4,200	70	234	62	28
9	1,110	358	764	4,270	1,980	1,960	975	1,110	*66	197	106	25
10	378	284	647	3,480	2,920	4,220	850	647	61	171	305	64
11	217	234	776	2,810	5,860	3,790	755	476	70	199	142	152
12	152	197	9,540	2,180	2,770	3,380	678	391	62	212	116	161
13	126	174	7,940	1,910	2,070	3,330	616	343	53	232	94	152
14	178	157	3,440	1,980	1,800	3,160	556	304	52	184	75	108
15	426	150	2,270	2,330	1,610	2,790	512	268	52	157	70	92
16	406	178	1,670	1,870	1,620	7,600	490	239	52	132	63	*71
17	270	1,820	1,340	1,520	2,790	6,370	458	*215	12,400	113	86	2,150
18	192	1,710	6,100	2,020	6,100	3,700	427	197	4,830	118	239	2,810
19	154	925	g15,800	1,990	7,710	2,720	400	186	1,500	2,700	125	980
20	128	652	g6,320	1,580	4,440	2,350	373	180	955	940	83	560
21	109	500	g3,400	1,310	3,340	1,940	364	163	710	444	75	358
22	95	406	g2,400	1,120	3,290	1,630	361	148	580	281	166	257
23	84	945	g1,830	955	3,380	*1,410	346	133	472	415	203	192
24	88	4,140	g1,480	836	3,140	1,230	313	128	1,080	536	114	157
25	100	2,980	g1,220	*755	6,350	1,080	293	128	1,630	370	101	130
26	139	1,360	g1,040	678	*5,430	950	287	113	786	*210	90	111
27	132	7,370	g975	822	3,370	854	290	146	665	184	75	97
28	121	8,560	g11,500	1,650	2,580	773	409	171	1,180	163	65	94
29	105	3,000	7,670	1,480	2,350	876	340	178	3,390	132	56	94
30	128	*1,820	*3,330	1,330	-------	10,900	293	146	1,450	109	*48	82
31	180	-------	2,310	1,390	-------	6,690	-------	125	-------	95	41	-------
Total	5,638	41,695	101,217	58,206	96,440	106,283	26,316	18,833	32,852	11,908	3,071	9,230
Mean	182	1,390	3,265	1,878	3,326	3,428	877	608	1,095	384	99.1	308
Cfsm	0.218	1.67	3.91	2.25	3.99	4.11	1.05	0.729	1.31	0.460	0.119	0.369
In.	0.25	1.86	4.51	2.60	4.30	4.74	1.17	0.84	1.46	0.53	0.14	0.41

Calendar year 1959: Max 15,800 Min 32 Mean 1,323 Cfsm 1.59 In. 21.52
Water year 1959-60: Max 15,800 Min 25 Mean 1,398 Cfsm 1.68 In. 22.81

Peak discharge (base, 16,000 cfs).--Dec. 19 (10 a.m.) 17,900 cfs (34.87 ft); Dec. 28 (8 p.m.) 16,900 cfs (33.90 ft); June 17 (3:30 p.m.) 17,100 cfs (34.07 ft).

* Discharge measurement made on this day.
g Computed from bihourly Telemark readings, partial record, and recorded range in stage.

4310. 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 Louisville & Nashville Railroad spur track bridge, 1.6 miles north of Antioch, Davidson County, 3.1 miles downstream from Whittemore Branch, and 8.2 miles southeast of the State capitol in Nashville.

Drainage area.--64.0 sq mi.

Records available.--October 1953 to September 1960.

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

Average discharge.--7 years, 95.3 cfs.

Extremes.--Maximum discharge during year, 15,600 cfs June 17 (gage height, 19.15 ft); minimum, 0.08 cfs Sept. 9 (gage height, 2.82 ft).
1953-60: Maximum discharge, 17,000 cfs Mar. 21, 1955 (gage height, 19.73 ft); no flow for many days each year 1953-56.
Maximum stage known since at least 1920, that of Mar. 21, 1955.

Remarks.--Records fair except those for periods of shifting control, which are poor. Minor diversion from gage pool for industrial use.

Rating table, water year 1959-60, except periods of shifting control or ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.9	2.4	5.0	400
3.0	6.2	6.0	820
3.2	26	8.0	1,850
3.5	67	12.0	4,300
4.0	140	15.0	7,500
4.5	245		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	16	81	99	86	120	161	23	5.2	67	1.2	1.2
2	2.4	13	81	92	74	399	132	20	4.4	52	1.0	1.2
3	2.1	12	*70	136	70	494	299	19	4.4	42	.8	.4
4	1.8	15	61	103	67	238	185	18	3.0	46	.4	.3
5	1.5	62	55	93	1,800	173	143	16	2.7	49	*.4	.2
6	3.7	38	55	96	512	145	119	16	1.8	30	.4	.1
7	*5.6	28	49	125	252	134	104	17	1.5	24	.4	.1
8	919	24	45	200	175	118	88	16	1.0	18	.3	.09
9	131	19	41	198	142	183	78	*14	*.8	16	.1	35
10	56	16	37	181	537	245	70	13	219	15	23	67
11	37	14	287	147	218	212	61	13	135	16	11	41
12	26	13	1,160	122	152	210	*56	13	19	11	4.4	11
13	23	12	270	145	136	212	52	12	12	9.0	2.4	6.2
14	36	12	162	137	120	187	48	10	12	7.6	2.1	4.4
15	37	12	124	250	109	179	49	9.0	8.3	6.9	2.4	3.3
16	28	31	103	147	132	723	62	8.3	419	6.2	3.0	4.0
17	24	68	106	155	212	294	46	8.3	6,600	5.2	2.1	864
18	20	42	849	166	365	191	42	7.6	157	14	.8	77
19	17	34	365	132	265	161	36	8.3	86	11	.4	41
20	15	28	191	113	205	137	34	8.3	56	5.2	.4	*28
21	13	25	138	97	185	116	39	8.3	39	4.8	16	22
22	12	23	112	81	228	104	37	6.2	28	*4.8	135	17
23	12	726	94	65	215	*92	33	7.6	22	9.3	26	15
24	13	*258	80	55	301	84	31	6.2	874	4.8	7.6	13
25	15	125	70	*48	1,010	75	28	5.7	283	4.0	4.4	11
26	13	93	64	44	*324	70	53	11	94	3.3	4.4	10
27	11	1,040	381	120	208	64	58	71	67	9.4	3.3	9.0
28	11	202	1,130	110	170	60	33	19	148	7.6	2.4	9.0
29	13	130	237	94	150	627	28	11	136	4.0	2.1	9.0
30	24	99	154	103	-------	1,140	25	7.6	96	2.4	2.1	8.3
31	17	-------	119	99	-------	246	-------	5.7	-------	1.8	2.1	-------
Total	1,542.8	3,230	6,771	3,753	8,420	7,433	2,230	429.1	9,535.1	507.3	262.4	1,308.79
Mean	49.8	108	218	121	290	240	74.3	13.8	318	16.4	8.46	43.6
Cfsm	0.778	1.69	3.41	1.89	4.53	3.75	1.16	0.216	4.97	0.256	0.132	0.681
In.	0.90	1.88	3.93	2.18	4.89	4.32	1.30	0.25	5.54	0.29	0.15	0.76

Calendar year 1959: Max 1,520 Min 1.0 Mean 79.6 Cfsm 1.24 In. 16.88
Water year 1959-60: Max 6,600 Min 0.09 Mean 124 Cfsm 1.94 In. 26.39

Peak discharge (base, 3,000 cfs).--Oct. 8 (2:30 p.m.) 3,700 cfs (11.14 ft); Dec. 28 (1:30 a.m.) 4,260 cfs (11.95 ft); Feb. 5 (2:30 p.m.) 3,240 cfs (10.43 ft); Mar. 30 (6 a.m.) 3,740 cfs (11.20 ft); June 17 (5 a.m.) 15,600 cfs (19.15 ft); June 24 (7 p.m.) 4,100 cfs (11.72 ft); Sept. 17 (6 a.m.) 3,240 cfs (10.44 ft).

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Jan. 22-26. Shifting-control method used Oct. 1-8, June 2-10, July 24 to Aug. 10, Aug. 12-22, Aug. 25 to Sept. 9, Sept. 14-30.

4325. West Harpeth River near Leipers Fork, Tenn.

Location.--Lat 35°53'56", long 86°58'01", on downstream end of center pier of 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 5.8 miles (revised) west of the square in Franklin.

Drainage area.--66.9 sq mi.

Records available.--October 1954 to September 1960.

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

Average discharge.--6 years, 98.0 cfs.

Extremes.--Maximum discharge during year, 25,000 cfs June 17 (gage height, 15.23 ft), from rating curve extended above 3,000 cfs on basis of contracted-opening and flow-over-road measurement at gage height 14.8 ft; minimum, 0.2 cfs Oct. 3-6; minimum gage height, 0.49 ft Oct. 5, 6.
1954-60: Maximum discharge, that of June 17, 1960; no flow Sept. 20-23, 26, 27, 1955.

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

Revisions (water years).--WSP 1436: 1955(P). WSP 1556: Drainage area.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 16				June 17 to Sept. 30			
0.5	0.2	1.2	22	0.8	3.4	10.0	1,570
.6	.7	1.6	54	.9	6.1	11.0	1,910
.7	1.6	2.0	100	1.0	9.6	12.0	2,500
.8	3.6	3.0	267	1.2	18	12.5	3,130
.9	6.8	9.0	1,360	1.5	38	13.0	4,600
1.0	11			2.0	84	13.5	7,200
				3.0	220		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.1	15	102	152	104	155	166	27	12	90	5.8	16
2	.6	13	97	137	99	341	141	25	*11	70	5.2	11
3	.3	12	80	160	90	429	323	22	12	55	4.7	8.8
4	.2	18	71	126	86	287	218	*20	10	70	4.7	7.8
5	.2	60	63	120	963	231	176	19	9.6	*63	4.4	7.0
6	.7	39	58	120	544	203	*147	25	9.2	45	4.4	6.1
7	*3.9	31	52	129	339	181	125	26	8.4	35	3.9	6.1
8	284	26	47	169	251	160	108	23	8.0	25	3.9	5.8
9	52	21	*43	201	204	366	95	22	7.6	20	41	5.5
10	26	19	40	204	440	346	85	21	7.2	18	*58	25
11	17	17	337	186	260	312	75	21	6.8	17	11	18
12	14	15	1,020	165	199	267	65	21	6.2	15	8.1	9.6
13	14	14	366	176	181	244	60	20	6.2	14	7.0	*7.4
14	17	14	236	176	158	224	55	19	10	*14	6.1	6.4
15	15	13	176	262	139	222	55	19	8.4	12	5.8	5.8
16	14	28	144	177	*155	479	70	18	82	10	6.7	7.4
17	12	*39	150	193	188	323	55	17	7,000	9.6	6.7	265
18	11	32	517	215	287	*247	50	17	500	8.8	4.4	53
19	10	29	343	*174	256	206	45	18	85	8.1	4.2	34
20	10	26	233	150	224	169	45	17	40	7.4	7.2	25
21	9.2	22	176	131	213	145	50	15	25	6.7	113	20
22	9.2	20	141	110	213	129	45	15	20	6.1	*302	17
23	10	442	120	96	206	115	42	14	16	92	54	15
24	13	272	103	89	266	104	40	14	400	30	34	13
25	12	149	89	81	632	93	40	13	100	11	24	12
26	10	110	85	75	350	85	60	41	60	21	22	11
27	9.2	701	520	125	256	78	65	43	50	18	17	11
28	9.2	244	1,210	115	227	74	50	19	1,000	9.6	15	12
29	21	160	366	110	188	93	38	15	400	7.8	13	10
30	27	123	245	114	-------	638	30	13	120	6.7	11	9.6
31	17	-------	186	112	-------	213	-------	12	-------	6.1	48	-------
Total	649.8	2,724	7,416	4,550	7,718	7,159	2,619	631	10,030.6	821.9	856.2	661.3
Mean	21.0	90.8	239	147	266	231	87.3	20.4	334	26.5	27.6	22.0
Cfsm	0.314	1.36	3.57	2.20	3.98	3.45	1.30	0.305	4.99	0.396	0.413	0.329
In.	0.36	1.51	4.12	2.53	4.29	3.98	1.46	0.35	5.58	0.46	0.48	0.37

Calendar year 1959: Max 1,210 Min 0.2 Mean 73.9 Cfsm 1.10 In. 15.00
Water year 1959-60: Max 7,000 Min 0.2 Mean 125 Cfsm 1.87 In. 25.49

Peak discharge (base, 1,900 cfs).--Dec. 28 (1:30 a.m.) 3,280 cfs (12.57 ft); June 17 (about 2 a.m.) 25,000 cfs (15.23 ft).

* Discharge measurement made on this day.
Note.--No gage-height record Apr. 9 to May 3, June 17 to July 4, July 6-10; discharge estimated on basis of weather records and records for Mill Creek near Antioch.

4335. Harpeth River at Belleview, Tenn.

Location.--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.--408 sq mi.

Records available.--April 1920 to September 1960. Monthly discharge only November 1929 to December 1931, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 541.04 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Apr. 11, 1920, to Oct. 31, 1929, Jan. 1, 1932, to Sept. 30, 1933, staff or chain gage at site 2½ miles downstream at datum 7.85 ft lower.

Average discharge.--40 years, 558 cfs.

Extremes.--Maximum discharge during year, 16,000 cfs June 17 (gage height, 18.74 ft); minimum, 11 cfs Oct. 5, 6 (gage height, 1.00 ft).
1920-60: Maximum discharge, 40,000 cfs Feb. 13, 1948 (gage height, 24.34 ft, from floodmarks); no flow Oct. 5-10, 1922.
Maximum stage known since at least 1902, that of Feb. 13, 1948.

Remarks.--Records good. Minor diversion for irrigation.

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

Revisions (water years).--WSP 953: 1920-30, 1932-35. WSP 1386: 1948. WSP 1556: Drainage area.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
0.9	4.1	2.0	255	1.0	14	3.4	1,070
1.0	14	2.5	470	1.2	36	4.0	1,400
1.2	42	3.0	755	1.4	73	10.0	5,100
1.4	76	5.0	1,950	2.0	253	16.0	9,800
1.7	150	8.0	3,800	2.6	485	18.0	14,000
				3.0	730		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	102	652	989	498	1,050	1,350	170	36	331	29	68
2	20	93	624	838	445	1,140	1,090	158	*185	253	28	46
3	15	84	555	1,080	417	2,930	1,440	146	56	203	25	34
4	13	97	470	931	397	2,050	1,540	137	47	370	23	29
5	12	317	411	712	3,100	1,500	1,180	128	39	587	21	28
6	20	440	367	685	4,500	1,270	*1,010	122	35	285	20	24
7	*20	282	*341	721	2,160	1,170	838	152	32	203	21	24
8	1,430	206	313	1,080	1,540	1,050	634	134	29	170	48	22
9	948	166	278	1,310	1,240	1,230	550	119	25	149	46	19
10	301	144	255	1,290	1,700	2,050	477	110	23	134	104	101
11	200	127	585	1,180	1,950	1,750	421	104	33	122	126	336
12	144	114	5,180	1,030	1,230	1,570	385	98	21	110	52	96
13	121	104	3,100	1,030	1,100	1,520	350	93	20	98	36	*56
14	136	97	1,590	1,040	1,000	1,410	323	88	24	93	31	42
15	182	93	1,180	1,610	814	1,320	370	80	22	83	28	35
16	156	102	968	1,140	802	2,640	401	*73	118	73	26	32
17	121	*196	886	1,090	1,160	2,360	323	69	11,800	69	31	1,210
18	102	301	2,310	1,230	1,540	1,650	297	65	5,820	62	44	830
19	89	232	3,640	1,080	1,640	1,350	267	65	742	58	32	308
20	80	192	1,860	904	1,440	1,200	253	69	437	52	24	212
21	72	166	1,340	*694	1,290	1,030	267	65	331	*49	204	161
22	67	150	1,080	570	1,290	850	282	54	257	44	841	125
23	65	787	922	485	1,320	640	248	49	209	44	284	96
24	65	2,110	703	441	1,370	*565	225	44	322	140	143	80
25	65	1,030	586	409	3,390	503	212	42	437	71	*93	67
26	65	733	540	377	*2,430	469	257	39	297	49	73	60
27	62	3,260	1,210	503	1,690	429	300	108	225	69	62	52
28	58	2,380	6,970	850	1,380	397	222	101	275	78	52	50
29	63	1,130	2,860	616	1,250	829	197	82	437	44	44	52
30	111	815	1,630	575	-------	4,200	185	47	457	36	39	49
31	121	-------	1,210	550	-------	2,560	-------	39	-------	32	35	-------
Total	4,937	16,050	44,616	27,040	44,083	44,682	15,892	2,828	22,791	4,181	2,665	4,344
Mean	159	535	1,439	872	1,520	1,441	530	91.2	760	134	86.0	145
Cfsm	0.390	1.31	3.53	2.14	3.73	3.53	1.30	0.224	1.86	0.328	0.211	0.355
In.	0.45	1.46	4.07	2.46	4.02	4.07	1.45	0.26	2.08	0.38	0.24	0.40

Calendar year 1959: Max 6,970 Min 12 Mean 465 Cfsm 1.14 In. 15.48
Water year 1959-60: Max 11,800 Min 12 Mean 640 Cfsm 1.57 In. 21.34

Peak discharge (base, 7,500 cfs).--Dec. 28 (4 p.m.) 8,080 cfs (14.26 ft); June 17 (7 p.m.) 16,000 cfs (18.74 ft).

* Discharge measurement made on this day.

4345. 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.--October 1924 to September 1960. Prior to July 1925 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 448.04 ft above mean sea level, datum of 1929. July 8, 1925, to Jan. 22, 1939, staff gage at site 150 ft downstream at same datum.

Average discharge.--36 years, 934 cfs.

Extremes.--Maximum discharge during year, 13,300 cfs June 18 (gage height, 16.57 ft); minimum, 44 cfs Oct. 2-4 (gage height, 1.12 ft).

1924-60: Maximum discharge, 60,000 cfs Jan. 7, 1946 (gage height, 32.20 ft, from high-water mark in gage house); minimum, 12 cfs Sept. 18, 1939; minimum gage height observed, 0.26 ft Sept. 24, 1931.

Maximum stage known, that of Jan. 7, 1946. Flood in March 1902 reached a stage about 3 ft lower than that of Jan. 7, 1946.

Remarks.--Records good.

Cooperation.--Four 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). A supplemental peak discharge for the water year 1945 has been revised as shown below, superseding figure published in WSP 1033:

Revised peak discharge.--1944-45: Feb. 22 (9:30 a.m.) 20,900 cfs.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-8		Oct. 9 to June 17				June 18 to Sept. 30			
1.1	41	1.4	94	3.0	645	1.2	64	3.0	570
1.5	107	1.7	148	5.0	1,910	1.6	128	7.0	3,430
1.7	144	2.0	230	9.0	5,250	2.0	212	11.0	7,250
		2.5	405	13.0	9,250	2.5	355	15.0	11,400

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	194	972	1,460	918	1,510	2,040	340	136	660	97	104
2	46	170	882	1,260	822	1,490	1,560	309	*130	550	92	114
3	44	155	834	1,300	750	3,580	3,070	292	276	409	84	110
4	47	153	733	1,350	711	3,070	3,240	275	158	405	80	88
5	*51	314	650	1,140	2,660	2,190	2,140	259	132	676	83	78
6	73	570	580	1,110	7,120	1,830	1,670	275	123	560	81	*72
7	118	490	525	1,090	3,450	1,640	1,410	1,460	114	370	81	71
8	139	361	490	1,250	2,320	1,480	1,200	722	108	300	88	65
9	2,150	302	*445	1,670	1,880	1,520	1,040	490	105	270	88	89
10	575	265	405	1,770	1,980	2,480	900	401	102	241	137	172
11	365	240	520	1,700	2,880	2,440	782	347	97	228	158	433
12	275	221	5,330	1,490	1,980	2,220	706	315	100	207	181	320
13	246	202	5,570	1,490	1,620	2,240	640	288	97	190	124	179
14	269	199	2,410	*1,500	1,480	2,110	585	265	136	207	104	133
15	256	196	1,700	2,160	1,290	1,940	*540	246	114	173	94	112
16	278	199	1,360	1,940	1,240	3,340	645	*227	108	162	88	104
17	243	249	1,200	1,610	1,460	4,100	580	211	5,420	144	84	584
18	202	350	1,720	1,830	1,940	2,600	510	199	10,800	141	83	1,380
19	177	377	4,440	1,700	*2,230	2,100	458	259	1,360	135	92	575
20	160	322	2,680	1,410	2,040	1,830	429	218	760	128	99	344
21	148	288	1,780	1,200	1,830	1,550	433	202	550	*123	96	*270
22	142	262	1,410	1,050	1,740	*1,330	468	183	437	115	592	217
23	134	449	1,170	894	1,750	1,160	429	167	355	114	786	184
24	134	*2,570	996	804	1,710	1,020	389	155	330	195	295	160
25	134	1,510	870	733	3,650	912	365	148	575	205	*200	146
26	132	990	788	678	4,100	822	429	170	580	154	158	133
27	126	3,400	922	852	2,530	760	728	312	385	154	137	128
28	121	3,700	9,070	1,240	2,020	700	535	249	585	137	123	126
29	123	1,820	6,080	1,150	1,790	694	421	211	797	150	114	121
30	144	1,230	2,530	1,040	-------	3,620	381	172	860	115	105	121
31	191	-------	1,850	990	-------	4,510	-------	150	-------	100	97	-------
Total	7,290	21,748	60,912	40,861	61,891	62,788	28,723	9,517	25,830	7,718	4,721	6,733
Mean	235	725	1,965	1,318	2,134	2,025	957	307	861	249	152	224
Cfsm	0.342	1.06	2.86	1.92	3.11	2.95	1.39	0.447	1.25	0.362	0.221	0.326
In.	0.39	1.18	3.30	2.21	3.35	3.40	1.55	0.52	1.40	0.42	0.26	0.36

Calendar year 1959: Max 9,070 Min 44 Mean 741 Cfsm 1.08 In. 14.64
Water year 1959-60: Max 10,800 Min 44 Mean 925 Cfsm 1.35 In. 18.34

Peak discharge (base, 10,000 cfs).--Dec. 28 (11 a.m.) 10,900 cfs (14.62 ft); June 18 (1:30 p.m.) 13,300 cfs (16.57 ft).

* Discharge measurement made on this day.

4350. Cumberland River below Cheatham Dam, Tenn.

Location.--Lat 36°19'26", long 87°13'32", on downstream end of lower lock wall at Cheatham Dam, 2.0 miles southwest of Neptune, Cheatham County, 3.0 miles upstream from Half Pone Creek, 9.7 miles west of Ashland City, and at mile 148.4.

Drainage area.--14,200 sq mi, approximately.

Records available.--October 1954 to September 1960.

Gage (revised).--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929; gage readings have been reduced to 350.00 ft above mean sea level. Auxiliary gage used during periods when crest wickets were raised on dam B. Auxiliary water-stage recorder and staff gage read four times daily on upper lock wall at dam B. 8.1 miles downstream from base gage.

Average discharge.--6 years, 22,840 cfs, unadjusted.

Extremes.--Maximum discharge during year, 87,400 cfs Dec. 29; maximum gage height, 27.12 ft Dec. 29; minimum daily discharge, 1,360 cfs Sept. 11; minimum gage height, 8.11 ft Sept. 11 (base gage).

1954-60: Maximum discharge, 176,000 cfs Mar. 23, 1955; maximum gage height, 45.93 ft Mar. 24, 1955; minimum daily discharge, 783 cfs July 22, 1956; minimum gage height, 7.00 ft Aug. 16, 1957.

Maximum stage known, 53.5 ft Jan. 25, 1937, from profile by Corps of Engineers (discharge, about 200,000 cfs on Jan. 24, 1937). Flood of Jan. 1, 1927, reached a stage of 51.7 ft from profile (discharge, about 205,000 cfs).

Remarks.--Records fair. Some regulation by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, Center Hill Reservoir, and Old Hickory Lake (see p. 60), and by Cheatham Dam.

Cooperation.--Seven discharge measurements, lock B Staff-gage readings, and record of wicket manipulation furnished by Corps of Engineers.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	e7,780	18,800	25,900	43,600	23,800	37,100	50,800	15,000	e8,930	40,500	e16,800	e17,600
2	e7,830	13,700	25,100	42,300	23,100	36,300	45,400	15,500	e8,830	26,400	e18,000	e17,500
3	e8,080	12,300	18,000	43,100	25,800	47,500	49,200	e13,100	e8,830	27,400	e17,200	e17,600
4	e8,030	14,700	20,600	44,800	25,800	55,400	49,700	e13,600	e5,870	24,800	e18,000	e17,500
5	e7,860	20,800	17,300	42,600	34,700	48,300	47,400	e13,900	e7,820	22,500	e17,300	e17,200
6	e7,860	21,000	15,700	41,600	38,500	47,700	47,000	e13,300	e10,500	22,200	e17,300	e17,400
7	e7,800	16,800	15,100	40,700	35,200	45,600	41,200	e13,400	*e8,280	21,800	e11,900	e8,930
8	e9,030	14,400	17,300	44,600	21,800	44,300	30,600	15,700	e6,480	19,400	e16,800	eg8,700
9	e17,300	11,600	21,600	46,900	17,100	43,000	16,800	18,200	e9,490	e16,200	e17,700	eg9,540
10	e10,700	11,500	24,200	47,000	23,500	48,600	20,900	17,400	e9,770	e15,100	e17,200	eg8,610
11	e8,370	11,200	27,000	41,700	29,800	48,600	20,200	16,000	e6,520	e16,000	e18,500	eg1,360
12	e7,710	15,300	44,400	39,700	31,400	42,500	24,300	15,400	e4,440	23,800	e18,500	eg6,590
13	e7,680	11,600	61,900	44,400	20,200	40,500	31,000	e14,600	e7,820	21,400	e18,000	*eg7,560
14	e7,680	12,900	52,500	40,000	29,600	47,300	29,400	15,900	e8,610	23,000	e15,200	eg8,440
15	e8,780	13,000	28,300	36,500	18,500	42,500	28,200	16,500	e8,140	24,800	e15,800	eg7,590
16	e9,140	10,400	35,100	41,300	14,700	45,800	23,000	e12,800	e8,050	e18,300	e18,100	eg9,060
17	e8,380	10,700	33,400	42,400	16,400	60,200	15,000	e12,600	30,300	e17,000	e17,800	eg19,000
18	e8,160	14,600	38,800	g38,900	20,800	*52,600	15,000	*e11,500	55,200	e13,600	e18,000	eg28,200
19	e7,680	16,000	g66,900	37,000	43,400	49,300	*15,200	e10,900	26,100	*e17,500	e17,600	eg16,500
20	e7,800	15,000	75,600	g37,900	38,200	46,100	15,100	*e12,400	e11,300	*e17,800	e12,500	eg16,000
21	e7,950	14,300	53,200	g40,200	30,500	44,200	15,200	e11,100	e9,540	e21,000	e9,210	eg15,700
22	e10,200	9,800	35,100	g39,800	27,500	39,400	15,400	e11,600	e12,700	e17,800	e9,910	eg16,700
23	e14,200	10,900	g37,600	g36,700	*27,900	35,400	15,000	e11,500	e10,600	e17,600	e10,600	eg15,600
24	e8,910	21,900	42,700	g31,000	30,900	35,600	14,900	e11,500	e14,600	e17,400	e17,400	eg16,400
25	e7,600	*29,700	40,600	g30,000	32,400	29,600	14,800	e11,500	e17,000	e17,400	e17,600	eg10,500
26	e8,820	24,000	40,600	g28,600	46,400	29,900	14,600	e11,700	e17,100	e17,400	e18,100	eg10,600
27	e11,500	46,500	42,100	g33,300	39,100	31,600	14,900	e12,200	e18,100	*e17,600	e17,800	eg10,700
28	*e14,600	55,700	68,500	*35,100	36,300	30,100	14,400	e12,200	25,200	e17,400	e17,000	eg12,100
29	21,900	40,200	*82,000	31,800	32,100	22,800	14,700	e11,500	54,300	e17,400	e12,600	eg7,760
30	23,200	35,400	58,200	25,300	--------	31,300	14,900	e11,600	53,800	e16,200	e18,400	eg8,240
31	24,300	--------	48,000	24,800	--------	60,100	--------	e10,600	--------	e10,300	e17,200	--------
Total	326,830	574,700	‡1,213.3	‡1,193.6	835,400	‡1,319.2	764,200	414,700	484,220	617,000	504,120	385,180
Mean	10,540	19,160	39,140	38,500	28,810	42,550	25,470	13,380	16,140	19,900	16,260	12,840

	Observed				Adjusted†			
Calendar year 1959:	Max 96,800	Min 964	Mean 16,880		Mean 19,110	Cfsm 1.35	In. 18.27	
Water year 1959-60:	Max 82,000	Min 1,360	Mean 23,590		Mean 22,820	Cfsm 1.61	In. 21.87	

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, Center Hill Reservoir, and Old Hickory Lake.
‡ Expressed in thousands.
e Crest-wickets raised at dam B; discharge computed from auxiliary gage record by weir formulas plus leakage.
g Auxiliary gage-height record computed from four-times-daily staff-gage readings and by comparison with base gage and one other recorder record in dam B pool.

4355. Red River near Adams, Tenn.

Location.--Lat 36°35'19", long 87°05'21", on downstream end of right bank pier of bridge on U. S. Highway 41, 0.5 mile downstream from Elk Fork, 1.3 miles (revised) northwest of Adams, Robertson County, and at mile 33.0.

Drainage area (revised).--706 sq mi (includes 395 sq mi without surface drainage). At site used prior to Nov. 14, 1939, 707 sq mi (includes 395 sq mi without surface drainage).

Records available.--June 1920 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 398.34 ft above mean sea level, Sandy Hook datum (Corps of Engineers bench mark). 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.--40 years, 963 cfs.

Extremes.--Maximum discharge during year, 6,540 cfs Dec. 28 (gage height, 13.06 ft); minimum, 71 cfs Oct. 5, 6 (gage height, 1.80 ft).

1920-60: 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).

Flood in January 1913 reached a stage about equal to that of Jan. 23, 1937, from profile by Corps of Engineers.

Remarks.--Records good.

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

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 27, Feb. 7 to Mar. 17				Nov. 28 to Feb. 6, Mar. 18 to Sept. 30			
1.8	71	4.0	740	1.8	71	4.0	823
2.0	104	6.0	1,850	2.0	102	6.0	1,900
2.5	215	10.0	4,410	2.5	204	10.0	4,410
3.0	340			3.0	350		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*76	106	*642	1,240	*657	1,170	1,360	350	207	1,340	*156	89
2	84	102	534	1,080	573	1,070	1,220	330	194	1,170	146	86
3	84	104	456	1,000	549	1,140	1,190	317	185	963	140	84
4	77	106	388	943	563	1,130	1,540	308	176	922	167	83
5	72	108	350	828	772	990	1,470	289	165	693	167	80
6	76	102	317	761	3,600	880	1,300	289	160	563	187	80
7	78	183	292	724	2,510	830	1,200	286	152	474	160	78
8	229	155	272	735	1,890	794	1,100	314	144	405	150	102
9	470	135	249	761	1,640	830	995	311	138	358	136	237
10	289	126	230	755	1,720	850	901	283	138	373	146	148
11	220	122	235	735	2,450	840	823	266	148	479	136	169
12	174	114	1,140	703	1,720	821	781	257	154	488	132	132
13	164	112	2,370	698	1,440	780	729	249	142	369	121	127
14	155	114	1,370	875	1,340	790	683	244	158	868	119	110
15	148	110	1,070	2,290	1,170	830	662	233	230	714	116	92
16	153	112	896	1,890	1,060	1,520	797	227	187	443	112	88
17	146	112	807	1,470	1,090	4,080	771	222	202	350	107	158
18	133	108	917	1,420	1,240	3,520	667	212	630	361	102	308
19	124	106	1,050	1,370	1,290	3,340	607	212	305	317	123	235
20	118	106	839	1,160	1,120	3,140	554	249	227	280	119	162
21	112	108	750	1,040	1,050	2,950	568	274	192	252	105	130
22	108	108	677	937	1,050	2,800	802	350	171	230	121	112
23	112	106	597	844	980	2,580	642	260	158	214	123	100
24	124	110	549	771	935	2,240	549	222	148	340	114	96
25	135	108	497	719	1,220	1,920	502	204	140	269	105	89
26	164	126	456	667	2,240	1,680	474	306	136	227	100	84
27	142	1,570	465	672	1,680	1,520	452	502	182	214	99	82
28	124	1,980	3,270	859	1,430	1,370	417	465	1,920	204	94	80
29	112	1,120	3,450	854	*1,340	1,290	*380	330	4,340	190	91	78
30	*112	813	1,920	771	-------	1,360	375	266	*2,580	173	89	77
31	110	-------	*1,500	719	-------	*1,580	-------	*230	-------	162	*89	-------
Total	4,425	8,488	28,555	30,291	40,319	50,635	24,509	8,857	14,009	14,405	3,872	3,576
Mean	143	283	921	977	1,390	1,633	817	286	467	465	125	119
Cfsm	0.203	0.401	1.30	1.38	1.97	2.31	1.16	0.405	0.661	0.659	0.177	0.169
In.	0.23	0.45	1.50	1.60	2.12	2.67	1.29	0.47	0.74	0.76	0.20	0.19

Calendar year 1959: Max 8,190 Min 72 Mean 541 Cfsm 0.766 In. 10.38
Water year 1959-60: Max 4,340 Min 72 Mean 634 Cfsm 0.898 In. 12.22

Peak discharge (base, 8,000 cfs).--No peak above base.

* Discharge measurement made on this day.

4360. Sulphur Fork Red River near Adams, Tenn.

Location.--Lat 36°30'55", long 87°03'32", on left bank 600 ft downstream from county highway bridge, 2.8 miles downstream from Millers Creek, 4.1 miles southwest of Cedar Hill, 4.6 miles south of Adams, Robertson County, and 10.2 miles upstream from mouth.

Drainage area.--185 sq mi.

Records available.--October 1938 to September 1960. Prior to January 1939 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 424.36 ft above mean sea level, Sandy Hook datum. Jan. 20, 1939, to Nov. 25, 1940, wire-weight gage at site 600 ft upstream at same datum.

Average discharge.--22 years, 233 cfs.

Extremes.--Maximum discharge during year, 3,340 cfs Dec. 28 (gage height, 10.46 ft); minimum, 9.0 cfs Sept. 7, 8 (gage height, 3.17 ft).

1938-60: Maximum discharge, 13,200 cfs Mar. 22, 1952 (gage height, 22.75 ft); minimum, 1.8 cfs Sept. 27, 1948; minimum gage height, 3.15 ft Sept. 21-23, 1955.

Maximum stage known, 25.1 ft in June 1934, from floodmarks. Flood in January 1937 reached a stage about 2.5 ft lower than that in June 1934.

Remarks.--Records fair.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 26				Nov. 27 to Sept. 30			
3.4	13	4.0	90	3.15	9.0	4.2	184
3.5	21	4.5	254	3.2	14	4.5	310
3.7	41	5.0	450	3.5	44	5.0	535
				3.7	68	9.0	2,450
				4.0	123		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*19	31	*212	310	*192	319	224	76	52	216	*29	12
2	16	28	181	267	177	310	204	71	51	170	29	12
3	15	28	157	263	167	422	324	68	50	110	28	11
4	14	31	139	228	164	378	472	67	47	91	34	10
5	14	32	128	204	760	324	386	64	44	73	29	10
6	20	49	123	200	1,270	293	319	67	42	62	30	10
7	38	42	115	200	720	284	288	95	40	53	24	9.0
8	401	36	104	220	522	263	246	100	37	50	25	32
9	139	34	98	233	445	293	212	76	37	46	25	34
10	82	32	91	241	686	310	181	71	36	46	29	46
11	80	31	114	233	706	310	164	67	40	83	25	73
12	65	30	1,090	216	463	293	150	65	44	53	21	30
13	54	28	594	346	400	288	145	63	40	56	20	19
14	70	32	373	409	364	310	134	62	151	482	19	15
15	64	36	297	638	297	324	128	59	63	104	17	14
16	50	36	250	476	288	1,270	170	56	50	64	16	13
17	44	37	237	409	337	1,660	142	54	466	53	15	151
18	40	36	280	445	418	1,160	136	53	148	54	15	68
19	36	32	254	368	382	1,000	119	68	78	45	17	31
20	32	31	224	310	332	796	112	73	62	42	15	23
21	28	32	204	271	324	634	128	93	52	37	15	20
22	27	31	184	241	324	535	128	64	47	35	17	18
23	28	34	167	212	293	445	110	56	43	40	29	16
24	88	36	157	196	288	391	104	53	42	50	17	15
25	72	36	145	181	679	332	102	66	41	36	14	15
26	50	78	136	167	684	288	104	64	40	48	14	14
27	41	1,610	223	212	486	250	100	216	57	90	17	14
28	36	616	2,100	271	418	228	89	120	613	43	15	14
29	32	364	810	241	*386	216	*82	76	661	35	14	14
30	*34	267	508	220	-------	297	79	63	*342	32	13	14
31	32	-------	*378	208	-------	*267	-------	*56	-------	31	*12	-------
Total	1,761	3,776	10,073	8,636	12,972	14,490	5,282	2,302	3,516	2,430	639	777.0
Mean	56.8	126	325	279	447	467	176	74.3	117	78.4	20.6	25.9
Cfsm	0.307	0.681	1.76	1.51	2.42	2.52	0.951	0.402	0.632	0.424	0.111	0.140
In.	0.35	0.76	2.02	1.74	2.61	2.91	1.06	0.46	0.71	0.49	0.13	0.16

Calendar year 1959: Max 3,740 Min 12 Mean 166 Cfsm 0.897 In. 12.21
Water year 1959-60: Max 2,100 Min 9.0 Mean 182 Cfsm 0.984 In. 13.40

Peak discharge (base, 3,400 cfs).--No peak above base.

* Discharge measurement made on this day.

4367. Yellow Creek near Shiloh, Tenn.

Location.--Lat 36°20'55", long 87°32'15", on downstream end of left bank pier of bridge on State Highway 13, 2½ miles downstream from Leatherwood Creek, 3 miles west of Shiloh, Montgomery County, 7 miles upstream from mouth, and 9 miles east of Erin.

Drainage area.--124 sq mi (revised).

Records available.--October 1957 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 390 ft (from topographic map). Prior to Oct. 15, 1957, wire-weight gage at same site and datum.

Extremes.--Maximum discharge during year, 2,240 cfs July 2 (gage height, 8.90 ft); minimum, 22 cfs Oct. 5, 6, Aug. 27-31, Sept. 2-8; minimum gage height, 2.76 ft Oct. 5, 6. 1957-60: Maximum discharge, 4,040 cfs Nov. 17, 1957 (gage height, 11.42 ft); minimum, 18 cfs Sept. 13-16, 1958 (gage height, 2.72 ft).

Remarks.--Records fair except those for Oct. 11 to Dec. 27, which are poor.

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

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 17 to Nov. 26, Dec. 1-11, July 7-20)

2.7	17	4.0	205
3.0	38	5.0	450
3.4	97	7.0	1,270

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	32	124	185	129	191	173	131	48	331	35	24
2	24	32	107	163	121	197	179	117	47	944	34	22
3	24	32	92	151	117	262	193	112	47	342	34	22
4	23	32	80	136	116	258	237	104	44	233	33	22
5	23	32	69	124	121	237	255	99	43	175	64	22
6	24	31	63	119	167	221	237	104	41	134	44	22
7	25	29	58	116	193	213	225	104	*41	107	38	22
8	151	28	53	114	191	201	203	97	40	*87	36	34
9	67	28	50	117	191	217	183	94	39	72	38	70
10	43	28	46	129	246	231	165	90	40	63	51	47
11	38	28	60	134	375	239	155	87	39	57	76	70
12	32	28	280	134	294	233	146	83	39	51	48	47
13	30	28	308	145	258	241	140	80	41	48	40	38
14	32	28	233	160	227	282	*133	75	53	53	37	34
15	30	28	191	177	197	296	a126	72	50	46	35	32
16	27	27	162	171	185	450	a119	69	43	42	34	32
17	26	27	155	169	187	702	a114	*67	69	41	37	40
18	25	27	207	191	193	*552	a109	66	67	40	*33	41
19	24	27	245	191	185	471	a106	67	53	40	a32	37
20	25	28	225	177	169	393	a104	67	44	38	a32	33
21	28	27	193	163	165	335	141	64	41	37	32	30
22	32	28	165	151	163	302	181	61	38	37	34	29
23	36	30	148	136	*153	274	175	60	35	56	33	*28
24	48	32	133	128	148	250	163	56	35	67	28	28
25	40	*30	119	119	187	223	153	54	38	46	27	28
26	38	35	111	114	245	203	150	57	37	42	25	28
27	35	345	128	121	235	183	189	60	43	40	24	29
28	*33	258	375	*129	225	171	167	54	125	40	22	30
29	33	185	*348	133	213	163	151	51	175	37	22	30
30	33	146	268	134	-------	183	143	48	151	36	*22	29
31	33	-------	217	133	-------	181	-------	48	-------	36	24	-------
Total	1,107	1,696	5,013	4,464	5,596	8,555	4,915	2,398	1,646	3,418	1,104	1,000
Mean	35.7	56.5	162	144	193	276	164	77.4	54.9	110	35.6	33.3
Cfsm	0.288	0.456	1.31	1.16	1.56	2.23	1.32	0.624	0.443	0.887	0.287	0.269
In.	0.33	0.51	1.50	1.34	1.68	2.57	1.47	0.72	0.49	1.03	0.33	0.30

Calendar year 1959: Max 2,010 Min 23 Mean 131 Cfsm 1.06 In. 14.34
Water year 1959-60: Max 944 Min 22 Mean 112 Cfsm 0.903 In. 12.27

Peak discharge (base, 2,200 cfs).--July 2 (1 a.m.) 2,240 cfs (8.90 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and normal recession.

4370. 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 Dyers Creek, 0.8 mile upstream from lock and dam D, and at mile 88.8.
Drainage area.--16,437 sq mi (revised), at lock and dam D.
Records available.--October 1937 to September 1960. Gage-height records collected in this vicinity 1917-22 are contained in reports of U. S. Weather Bureau.
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, at lower lock C, read four times daily.
Average discharge.--23 years, 24,360 cfs (unadjusted).
Extremes.--Maximum discharge during year, 77,300 cfs Dec. 30 (gage height, 25.89 ft); minimum daily, 5,250 cfs Sept. 11; minimum gage height, 10.20 ft Nov. 17.
1937-60: 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, at upper lock D, from unpublished records of Corps of Engineers: Maximum gage height observed, 56.8 ft Jan. 25, 1937 (discharge, about 280,000 cfs); minimum observed, 6.8 ft in September 1925.
Maximum stage known, that of Jan. 25, 1937.
Remarks.--Records fair. Some regulation by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, Center Hill Reservoir, and Old Hickory Lake (see p. 60), and by Cheatham and navigation dams B and C on Cumberland River.
Cooperation.--Lock gage readings, records of wicket manipulation, and one discharge measurement furnished by Corps of Engineers.
Revisions (water years).--WSP 1276: 1942. WSP 1306: 1943-48 (monthly runoff).

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	e8,160	c21,600	c30,800	48,600	c26,100	40,300	55,200	16,700	e10,700	c51,500	e14,500	e19,100
2	e8,280	16,600	28,100	44,400	24,300	39,800	49,800	16,800	e9,670	c41,100	e18,700	e19,100
3	e8,420	12,600	c23,000	43,600	c26,000	43,300	48,400	16,200	e9,710	c36,500	e19,300	e19,400
4	e8,560	13,300	18,900	44,600	c27,200	51,600	51,000	e13,500	e7,850	c36,300	e18,600	e19,300
5	e8,480	18,800	c22,000	44,500	29,900	51,400	51,000	e15,700	e5,360	c34,000	e19,100	e19,000
6	e8,310	*22,100	18,500	43,000	42,900	47,900	50,000	e14,600	e9,450	c30,600	e18,500	e19,400
7	e8,280	18,200	17,000	42,200	43,200	47,300	c47,500	e15,200	e9,290	c26,700	e16,300	e14,000
8	e10,200	16,100	16,900	43,000	c30,300	44,900	c40,100	e15,900	e7,200	*c28,200	e14,100	e8,400
9	e17,300	12,200	21,000	45,500	c23,000	44,500	c23,800	e18,300	e8,060	c20,000	e18,100	e9,690
10	e14,900	11,600	24,600	46,700	25,200	46,000	22,800	e18,100	e11,500	e18,400	e18,600	e9,330
11	e11,200	11,600	28,600	45,900	35,300	48,000	c22,600	e17,300	e8,710	e17,400	e18,500	e5,250
12	e8,840	13,300	37,000	41,100	38,700	46,800	*23,700	e16,900	e5,810	e23,900	c22,200	e5,730
13	e8,760	14,100	54,600	43,300	c27,000	42,400	31,900	e16,300	e6,130	c29,400	e19,300	e8,040
14	e8,670	12,000	55,900	44,700	29,800	*44,900	c33,400	e16,400	e8,070	c30,200	e16,300	*e8,280
15	e9,150	13,800	c36,700	42,200	c25,600	46,700	c30,400	e17,200	e8,310	c30,700	e17,200	e8,410
16	e10,900	11,300	37,100	43,300	c20,400	46,800	c28,000	e16,600	e8,030	c26,100	e19,100	e8,040
17	e8,650	10,700	37,800	45,200	c19,400	59,500	c19,200	*e13,400	c26,200	c20,300	e19,300	e13,100
18	e9,730	13,400	39,700	44,600	20,000	c63,200	17,900	e14,900	c54,600	e16,700	*e19,300	c30,000
19	e8,500	16,600	49,200	41,600	39,800	c59,100	17,600	e10,700	c42,800	e17,700	e19,100	c23,900
20	e8,520	17,400	66,300	40,500	45,100	55,500	17,400	e13,300	c15,300	c20,000	e15,400	e16,900
21	e8,520	15,400	c62,700	41,600	c36,800	52,900	17,600	e14,200	e9,920	c23,600	e11,400	e16,300
22	e10,800	12,400	c45,300	42,000	c32,000	48,200	18,200	e13,000	e10,500	c22,300	e9,850	e16,700
23	e16,500	11,000	38,800	41,100	c29,000	43,700	18,100	e13,500	e12,200	e19,500	e9,650	e16,700
24	e11,600	15,600	42,200	c35,800	35,000	41,600	17,900	e12,900	e12,800	e19,300	e15,800	e16,300
25	e8,840	c28,900	42,100	33,100	33,500	c39,400	17,800	e13,000	e17,400	e19,100	e18,500	e14,200
26	e9,140	c25,500	42,200	32,300	44,200	34,200	17,500	e12,900	e18,000	e19,300	e19,100	e11,000
27	e12,600	37,200	42,000	32,200	45,400	35,500	17,300	e13,400	e18,400	e19,100	e19,700	e10,200
28	e13,800	51,500	53,400	37,500	41,800	c35,500	17,100	e14,200	c24,600	e19,100	e19,000	e11,800
29	20,500	48,600	70,600	37,300	38,100	c31,200	16,800	e13,200	c52,200	e18,500	e13,000	e11,200
30	c22,400	40,400	c69,700	c29,100	---------	24,100	16,900	e12,700	c61,900	e18,500	e20,300	e8,380
31	c24,300	--------	c56,200	c26,000	--------	49,300	--------	e12,400	--------	e13,700	e19,300	--------
Total	352,810	583,800	‡1,228.9	‡1,266.5	935,000	‡1,405.5	856,900	459,400	510,670	767,700	537,100	417,150
Mean	11,380	19,460	39,640	40,850	32,240	45,340	28,560	14,820	17,020	24,760	17,330	13,900

	Observed						Adjusted†					
Calendar year 1959:	Max	91,800	Min	4,030	Mean	18,660	Mean	20,890	Cfsm	1.27	In.	17.25
Water year 1959-60:	Max	70,600	Min	5,250	Mean	25,470	Mean	24,700	Cfsm	1.50	In.	20.46

* Discharge measurement made on this day.
† Adjusted for change in contents in Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, Center Hill Reservoir, and Old Hickory Lake.
‡ 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.--Discharge for Mar. 15-24, May 16, July 20-22, July 27 to Aug. 17, computed from four-times-daily upper lock D Staff-gage readings.

4375. 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.--46.5 sq mi, of which about 11 sq mi does not contribute directly to surface runoff.

Records available.--October 1949 to September 1960.

Gage.--Water-stage recorder. Concrete control since Dec. 6, 1949. Datum of gage is 499.71 ft above mean sea level, datum of 1929. Prior to Dec. 22, 1949, wire-weight gage, Dec. 22, 1949, to Dec. 30, 1955, water-stage recorder, Dec. 31, 1955, to July 30, 1956, staff gage, and July 31 to Oct. 17, 1956, wire-weight gage, all at present site and datum.

Average discharge.--11 years, 71.3 cfs.

Extremes.--Maximum discharge during year, 1,010 cfs June 28 (gage height, 7.05 ft); minimum, 1.7 cfs Oct. 4, 5.
1949-60: Maximum discharge, 9,320 cfs Nov. 18, 1957 (gage height, 21.51 ft); minimum observed, 0.1 cfs Oct. 22, 1949.
Maximum stage known prior to November 1957, 20.4 ft in January 1937, from floodmark.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Some regulation at low flow by Western State Hospital, 2 miles above station.

Revisions.--WSP 1626: Drainage area.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.27	1.9	1.7	18
1.3	2.6	1.9	35
1.4	5.1	2.4	102
1.5	8.6	5.0	575
1.6	13		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	1.9	7.4	44	35	62	90	a24	8.6	82	7.4	3.1
2	1.9	1.9	6.8	41	31	57	78	a22	9.0	103	7.1	3.1
3	1.9	2.4	6.0	43	30	52	69	a21	8.6	50	6.8	3.1
4	1.9	4.4	5.7	42	30	49	84	a20	8.2	38	6.4	2.8
5	3.3	3.8	5.1	38	40	45	65	a19	7.8	30	6.8	2.6
6	3.8	2.8	5.1	37	122	a40	*58	a18	7.1	24	6.8	2.6
7	2.4	2.4	5.1	37	75	a37	55	a18	6.4	21	6.4	2.6
8	3.1	2.4	5.1	37	62	a36	52	a19	6.0	18	5.7	2.4
9	2.6	2.4	5.1	35	61	a36	49	a18	5.7	16	40	2.4
10	2.1	2.4	5.1	34	153	a35	44	a17	5.4	14	23	51
11	5.4	2.1	17	31	109	a35	43	a16	7.2	40	16	21
12	3.3	2.1	160	30	82	a35	42	*15	8.2	16	12	7.4
13	5.4	1.9	69	30	69	a40	38	15	8.6	41	10	5.4
14	5.4	4.8	41	206	66	*42	37	15	12	164	8.6	4.8
15	*3.3	4.0	31	a180	61	43	36	14	10	28	7.4	3.1
16	2.8	3.8	25	a150	58	146	38	14	4.3	18	6.4	2.8
17	2.6	3.6	52	a100	57	207	37	13	5.1	14	5.4	4.4
18	2.4	3.3	*139	a90	52	184	36	13	4.6	12	5.1	3.6
19	2.1	3.1	69	a90	44	196	34	13	4.3	11	*6.4	3.1
20	2.1	*2.8	53	a75	38	187	31	18	4.0	9.8	23	2.8
21	1.9	2.8	42	*62	37	196	105	24	*3.8	*9.4	15	2.8
22	1.9	2.8	37	57	36	197	76	14	3.8	9.4	9.8	a2.6
23	2.1	3.8	34	49	34	173	52	12	3.6	54	7.4	a2.6
24	2.8	3.6	30	44	34	150	44	11	3.3	42	6.0	a2.5
25	2.4	3.3	24	42	131	122	41	11	3.1	14	5.4	a2.5
26	1.9	6.0	24	37	114	104	36	11	3.1	31	5.1	a2.4
27	1.9	21	31	44	82	84	31	11	19	13	4.8	a2.4
28	1.9	15	175	59	75	71	29	11	*525	11	4.6	a2.1
29	1.9	9.8	82	44	69	64	25	9.8	209	9.8	4.3	a2.1
30	1.9	7.8	61	42	-------	126	28	9.0	99	9.0	3.8	a1.9
31	1.9	-------	53	37	-------	114	-------	8.6	-------	8.2	3.6	-------
Total	82.2	134.0	1,305.5	1,887	1,887	2,965	1,483	474.4	1,013.8	960.6	286.5	158.0
Mean	2.65	4.47	42.1	60.9	65.1	95.6	49.4	15.3	33.8	31.0	9.24	5.27
Cfsm	0.057	0.096	0.905	1.31	1.40	2.06	1.06	0.329	0.727	0.667	0.199	0.113
In.	0.07	0.11	1.04	1.51	1.51	2.37	1.19	0.38	0.81	0.77	0.23	0.13

Calendar year 1959: Max 1,300 Min 1.7 Mean 38.4 Cfsm 0.826 In. 11.22
Water year 1959-60: Max 525 Min 1.9 Mean 34.5 Cfsm 0.742 In. 10.12

Peak discharge (base, 1,600 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 Little River near Cadiz.

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4380. 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.--244 sq mi, of which about 94 sq mi does not contribute directly to surface runoff.

Records available.--February 1940 to September 1960.

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.--20 years, 338 cfs.

Extremes.--Maximum discharge during year, 4,460 cfs June 29 (gage height, 13.13 ft); minimum recorded, 27 cfs Nov. 13, 14.
1940-60: Maximum discharge, 14,200 cfs Jan. 14, 1951 (gage height, 21.00 ft); minimum observed, 1.0 cfs Oct. 3, 1941.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. 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. WSP 1306: 1940(M). WSP 1626: Drainage area.

Rating tables, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 15				Jan. 16 to Sept. 30			
2.7	25	3.5	176	2.7	25	5.0	790
2.8	37	4.0	356	2.8	38	8.0	1,820
3.0	69	7.0	1,520	3.0	74	11.0	3,120
				3.5	190		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	a30	78	258	200	b300	722	140	64	653	72	33
2	44	a30	69	237	187	b270	598	135	64	766	68	32
3	41	a30	62	230	179	b240	534	128	63	518	66	29
4	40	a50	58	247	173	b230	514	122	61	390	63	29
5	44	a45	55	220	179	b220	506	115	61	714	59	30
6	60	a40	53	200	342	b210	438	113	55	653	59	30
7	41	a34	48	176	422	b200	398	113	53	208	57	29
8	60	a31	48	171	318	b190	362	115	50	182	53	29
9	45	a31	47	168	296	a190	330	113	50	162	546	50
10	38	31	44	163	370	a180	296	104	48	150	154	212
11	40	31	122	158	706	a180	270	102	46	137	98	204
12	40	30	794	153	426	a180	253	96	46	150	82	130
13	50	30	790	150	358	a190	*237	*94	46	152	68	86
14	50	33	365	417	330	*210	218	92	50	454	63	68
15	51	33	262	1,280	292	245	208	90	52	310	57	55
16	*50	37	213	786	265	526	204	86	53	176	52	48
17	45	47	299	598	261	1,260	204	84	52	147	50	46
18	41	44	*778	554	249	1,150	187	82	46	126	45	43
19	38	41	614	522	225	1,200	182	82	45	115	*43	43
20	35	*40	387	442	204	1,160	170	92	41	104	48	40
21	32	41	314	390	187	1,170	288	115	*40	98	92	37
22	32	40	262	*358	182	1,190	490	122	40	*90	104	35
23	32	40	230	322	176	1,080	338	107	38	100	68	32
24	33	38	206	292	165	882	257	92	38	202	61	32
25	32	37	188	274	294	734	214	84	37	173	57	30
26	a30	44	173	249	682	626	190	80	37	119	46	29
27	a28	98	229	222	446	558	176	80	134	119	43	28
28	a28	158	642	257	378	498	162	76	1,360	104	41	28
29	a28	126	598	288	b350	458	154	74	*2,630	88	38	30
30	a29	94	374	245	-------	846	144	72	982	82	35	29
31	a29	-------	303	218	-------	1,000	-------	66	-------	78	33	-------
Total	1,227	1,434	8,705	10,245	8,842	17,573	9,244	3,066	6,382	6,920	2,421	1,576
Mean	39.6	47.8	281	330	305	567	308	98.9	213	223	78.1	52.5
Cfsm	0.162	0.196	1.15	1.35	1.25	2.32	1.26	0.405	0.873	0.914	0.320	0.215
In.	0.19	0.22	1.33	1.56	1.35	2.68	1.41	0.47	0.97	1.05	0.37	0.24

Calendar year 1959: Max 4,530 Min 28 Mean 223 Cfsm 0.914 In. 12.41
Water year 1959-60: Max 2,630 Min 28 Mean 212 Cfsm 0.869 In. 11.84

Peak discharge (base, 3,500 cfs).--June 29 (8 a.m.) 4,460 cfs (13.13 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for South Fork Little River at Hopkinsville.
b Stage-discharge relation affected by ice.

4385. 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 1960 (fragmentary prior to March 1940). Monthly discharge only for some periods, published in WSP 1306.

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.--20 years (1940-60), 27,350 cfs (unadjusted).

Extremes.--Maximum discharge during year, 77,900 cfs Dec. 30; maximum gage height, 24.71 ft Apr. 8; minimum daily discharge, 5,480 cfs June 5.
1939-60: Maximum discharge, 201,000 cfs Feb. 18, 1950; maximum gage height, 43.10 ft Feb. 13, 1950; minimum daily discharge, 1941-60, 453 cfs June 23, 1944.
Maximum stage known, 51.1 ft January to February 1937.

Remarks.--Records good above 20,000 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 and Center Hill Reservoirs, and Old Hickory Lake. Records of chemical analyses and water temperatures for the water year 1960 are given in WSP 1721.

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 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,450	25,300	37,600	58,100	30,700	*40,100	57,500	20,200	15,200	67,300	14,400	20,200
2	*8,450	22,800	31,100	49,800	28,700	41,200	56,800	19,600	11,300	57,300	18,300	20,400
3	8,450	16,700	29,300	47,800	28,200	43,000	52,100	19,500	10,900	41,600	20,200	20,200
4	8,800	15,000	23,600	47,200	30,000	50,800	54,900	18,300	10,700	37,500	19,200	20,200
5	8,800	17,700	29,400	47,900	30,500	56,600	55,800	17,000	5,480	35,000	20,000	19,900
6	8,800	22,000	23,800	46,500	39,700	53,400	55,000	18,900	8,040	33,600	19,600	19,400
7	8,800	22,100	21,600	45,000	45,500	52,200	53,800	18,600	11,800	29,300	19,500	19,500
8	9,930	19,400	*20,600	43,700	40,900	50,000	50,500	18,200	9,460	29,800	16,900	11,000
9	15,400	14,400	21,800	46,200	29,800	48,800	41,000	20,000	8,410	26,500	18,800	10,200
10	18,000	*12,400	25,200	48,500	29,800	48,500	31,000	21,000	12,200	25,200	20,500	11,400
11	11,700	12,400	28,700	49,100	34,900	51,700	31,300	20,400	11,800	22,200	19,800	10,200
12	9,640	12,900	36,300	46,300	39,800	52,700	30,600	*19,800	8,750	22,700	20,900	6,060
13	9,640	15,400	51,500	44,400	36,900	48,100	35,100	19,700	7,050	26,800	21,500	8,510
14	10,400	12,900	61,300	50,000	30,800	46,100	39,900	19,300	8,410	28,000	19,600	8,510
15	9,850	13,900	51,000	53,400	34,200	50,000	39,700	19,700	9,850	29,000	18,900	9,340
16	11,000	12,900	36,900	48,800	28,900	50,800	39,700	20,900	9,850	28,600	18,800	8,680
17	9,460	11,400	40,600	48,100	26,800	61,200	35,000	18,400	11,400	23,400	20,100	11,700
18	10,100	12,400	44,800	48,300	27,300	70,000	29,400	17,900	33,500	20,400	20,100	21,000
19	9,280	16,400	47,700	46,200	35,100	69,900	27,100	17,100	50,800	17,800	20,200	27,900
20	8,500	18,500	61,900	44,000	48,700	66,000	25,100	18,000	31,600	20,700	19,400	21,200
21	8,500	16,900	69,600	45,300	47,700	61,400	28,500	20,500	12,600	21,200	16,300	18,600
22	9,850	15,400	62,600	47,400	42,300	57,400	27,100	19,400	*11,000	23,100	12,600	18,300
23	15,900	11,900	49,300	47,500	38,400	51,600	24,500	18,300	13,100	21,300	11,800	19,000
24	14,100	12,900	47,400	46,200	38,400	47,800	23,400	18,300	12,600	21,200	13,500	17,500
25	9,230	23,500	47,800	*41,300	41,000	45,700	22,300	17,400	14,600	20,400	19,300	18,800
26	9,030	29,300	46,800	39,100	43,900	41,000	23,200	17,200	15,700	*20,700	19,500	11,300
27	11,700	29,600	46,200	37,900	51,100	38,600	21,500	17,100	18,900	20,200	20,100	11,100
28	13,600	45,900	52,500	39,000	47,500	*39,300	20,400	17,100	31,900	20,100	20,000	12,300
29	16,800	54,400	67,600	40,400	43,100	38,000	19,200	17,200	47,600	20,200	17,900	13,000
30	22,200	46,000	76,800	38,000	--------	33,200	21,400	16,500	66,400	19,600	*16,800	8,650
31	23,600	--------	71,100	32,000	--------	41,800	--------	15,600	--------	18,100	20,800	--------
Total	357,960	612,700	‡1,362.4	‡1,413.4	‡1,070.6	‡1,546.9	‡1,072.8	577,100	530,900	848,800	575,300	454,050
Mean	11,550	20,420	43,950	45,590	36,920	49,900	35,760	18,620	17,700	27,380	18,560	15,140

	Observed				Adjusted†			
Calendar year 1959:	Max 89,400	Min 4,160	Mean 21,580		Mean 23,810	Cfsm 1.32	In. 17.88	
Water year 1959-60:	Max 76,800	Min 5,480	Mean 28,480		Mean 27,710	Cfsm 1.53	In. 20.86	

* Discharge measurement made on this day.
† Adjusted for change in contents in Great Falls Lake, Lake Cumberland, Dale Hollow and Center Hill Reservoirs, and Old Hickory Lake; records furnished by Corps of Engineers and Tennessee Valley Authority.
‡ Expressed in thousands.

Reservoirs in Cumberland River basin

4135. 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, 5,789 sq mi. Records available, July 1950 to September 1960 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, 3,037,100 cfs-days June 29 (elevation, 723.91 ft); minimum contents, 1,399,300 cfs-days Sept. 30 (elevation, 696.64 ft). Maximum contents during period 1950-60, 3,505,800 cfs-days Dec. 23, 1951 (elevation, 741.32 ft); minimum (after first filling), 934,400 cfs-days Jan. 1, 1956 (elevation, 673.01 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.

Revisions.--WSP 1556: Drainage area.

4165. Dale Hollow Reservoir.--Lat 36°33'13", 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 1960. 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, 674,400 cfs-days July 22 (elevation, 650.43 ft); minimum, 502,700 cfs-days Nov. 21, 22 (elevation, 637.14 ft). Maximum contents during period 1943-60, 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 six 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 177,700 cfs-days between elevations 663.0 ft (top of gates) and 651.0 ft (crest of spillway) is reserved for flood control, and 250,200 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.

Revisions (water years).--WSP 1306: 1944.

4220. 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, 0.9 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, approximately. Records available, January 1917 to September 1960. Remote indicator gage. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 28,700 cfs-days May 9 (elevation, 805.96 ft); minimum, 10,400 cfs-days Nov. 21 (elevation, 784.28 ft). Maximum 12 p.m. elevation during period 1916-60, 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.

4240. 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, Tenn., and mile 26.6. Drainage area, 2,195 sq mi. Records available, October 1948 to September 1960. 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, 645,700 cfs-days Apr. 2 (elevation, 645.30 ft); minimum, 501,600 cfs-days Jan. 26 (elevation, 628.34 ft). Maximum contents during period 1948-60, 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 eight taintor gates, each 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 1,054,900 cfs-days, of which 384,600 cfs-days between elevations 685.0 ft (top of gates) and 648.0 ft (crest of spillway) is reserved for flood control, and 348,000 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.

4263. Old Hickory Lake.--Lat 36°17'50", long 86°39'20", at Old Hickory Dam on Cumberland River, 2.0 miles west of Hendersonville, Sumner County, 10 miles northeast of the State capitol in Nashville, Davidson County, Tenn., and at mile 216.2. Drainage area, 11,700 sq mi, approximately. Records available, June 1954 to September 1960. Water-stage recorder. Datum of gage is 408.5 ft above mean sea level, datum of 1929; gage readings have been reduced to elevations above mean sea level. Prior to Apr. 4, 1957, staff gage at same site and datum. Maximum contents during year, 213,100 cfs-days Dec. 19 (elevation, 445.13 ft); minimum, 181,500 cfs-days June 22 (elevation, 442.17 ft). Maximum contents during period 1954-60, 241,600 cfs-days Jan. 30, 1957 (elevation, 447.5 ft); minimum (after first filling to ordinary minimum pool), 179,400 cfs-days Oct. 22 1957 (elevation, 441.96 ft).

Reservoirs in Cumberland river basin--Continued

4263. Old Hickory Lake.--Continued
Reservoir is formed by concrete gravity dam with earth embankment. Spillway is equipped with six taintor gates, each 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. Water in reservoir first reached ordinary minimum pool elevation Dec. 30, 1956. Total capacity at elevation 450.0 ft (maximum allowable pool) is 274,700 cfs-days of which 63,100 cfs-days between elevations 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 31,800 cfs-days between elevations 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.

4349. Cheatham Lake on Cumberland River, 9.4 miles west of Ashland City, Cheatham County, 16.0 miles southeast of the courthouse in Clarksville, Montgomery County, Tenn., with total capacity of 52,000 cfs-days, of which 10,000 cfs-days is controlled storage. Records of contents not published herein.

Month-end elevation and contents, water year October 1959 to September 1960

Date	Elevation (feet)†	Contents (cfs days)	Change in contents (cfs-days)	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)
	Lake Cumberland			Dale Hollow Reservoir		
Sept.30	705.96	1,604,800	-	642.43	567,900	-
Oct. 31	698.55	1,440,400	-164,400	639.17	527,300	-40,600
Nov. 30	698.47	1,438,600	-1,800	638.20	515,500	-11,800
Dec. 31	704.56	1,573,100	+134,500	644.25	591,300	+75,800
Calendar year 1959	-	-	+521,900	-	-	+140,900
Jan. 31	698.74	1,444,400	-128,700	643.56	582,400	-8,900
Feb. 29	715.03	1,817,000	+372,600	648.08	642,200	+59,800
Mar. 31	721.83	1,984,400	+167,400	649.88	666,800	+24,600
Apr. 30	717.20	1,869,600	-114,800	649.22	657,700	-9,100
May 31	716.41	1,850,400	-19,200	648.72	650,900	-6,800
June 30	723.88	2,036,300	+185,900	649.17	657,000	+6,100
July 31	715.61	1,831,000	-205,300	649.46	661,000	+4,000
Aug. 31	703.37	1,546,400	-284,600	644.28	591,700	-69,300
Sept.30	696.64	1,399,300	-147,100	638.22	515,700	-76,000
Water year 1959-60	-	-	-205,500	-	-	-52,200
	Great Falls Lake			Center Hill Reservoir		
Sept.30	786.52	11,800	-	640.99	607,400	-
Oct. 31	785.56	11,200	-600	635.50	560,300	-47,100
Nov. 30	805.47	28,100	+16,900	633.39	542,700	-17,600
Dec. 31	805.38	28,000	-100	638.67	587,300	+44,600
Calendar year 1959	-	-	+16,900	-	-	+134,500
Jan. 31	803.20	25,600	-2,400	629.21	508,600	-78,700
Feb. 29	805.75	28,400	+2,800	638.75	588,600	+79,400
Mar. 31	805.45	28,100	-300	644.59	639,300	+51,300
Apr. 30	791.31	15,000	-13,100	641.67	613,400	-25,900
May 31	788.43	13,000	-2,000	643.25	627,400	+14,000
June 30	790.02	14,100	+1,100	640.88	606,500	-20,900
July 31	793.45	16,600	+2,500	643.94	633,500	+27,000
Aug. 31	788.42	13,000	-3,600	638.84	588,700	-44,800
Sept.30	797.08	19,600	+6,600	637.82	580,000	-8,700
Water year 1959-60	-	-	+7,800	-	-	-27,400
	Old Hickory Lake					
Sept.30	444.77	209,000	-			
Oct. 31	444.48	205,800	-3,200			
Nov. 30	443.25	192,600	-13,200			
Dec. 31	444.64	207,600	+15,000			
Calendar year 1959	-	-	-400			
Jan. 31	444.57	206,800	-800			
Feb. 29	444.70	208,300	+1,500			
Mar. 31	444.84	209,800	+1,500			
Apr. 30	443.66	196,900	-12,900			
May 31	443.65	196,800	-100			
June 30	444.66	207,800	+11,000			
July 31	444.94	210,900	+3,100			
Aug. 31	444.55	206,600	-4,300			
Sept.30	444.50	206,000	-600			
Water year 1959-60	-	-	-3,000			

† Elevation at 12 p.m.

4390. 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, October 1935 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--26 years (1907-8, 1935-60), 231 cfs.

Extremes.--Maximum discharge during year, 2,880 cfs Oct. 9 (gage height, 8.10 ft); minimum, 92 cfs July 22, 23 (gage height, 1.86 ft).
1907-9, 1935-60: Maximum discharge, 9,410 cfs Aug. 30, 1940 (gage height, 11.86 ft), from rating curve extended above 4,300 cfs on basis of slope-area measurement 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. Records of chemical analyses for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1938(M), 1939. WSP 1306: 1908(M), 1936(M).

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 8				May 9 to Sept. 30			
1.9	97	4.0	790	1.8	79	3.0	415
2.0	120	5.0	1,200	2.0	124	4.0	790
2.5	256	6.0	1,700	2.5	261		
3.0	415						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	138	316	194	224	377	307	570	253	150	137	107	336
2	122	283	194	262	316	b340	506	227	*147	132	*117	210
3	115	259	194	478	286	b320	952	219	153	124	147	188
4	113	244	183	322	*289	b275	*934	*213	240	119	134	212
5	108	242	180	292	*957	b265	782	210	233	*119	127	166
6	113	298	194	390	632	b260	627	205	249	122	119	147
7	541	244	177	356	462	262	544	294	199	132	140	*147
8	649	233	169	*316	387	*256	484	441	307	119	110	142
9	1,620	224	*169	289	353	271	444	281	246	119	100	134
10	668	216	167	274	822	262	408	255	210	144	98	132
11	585	210	167	259	753	259	387	246	188	168	158	166
12	422	205	403	244	532	250	366	249	174	122	618	132
13	*353	202	286	239	503	244	353	241	164	114	578	119
14	689	205	239	230	426	244	337	226	158	110	332	114
15	477	199	221	242	384	247	328	221	150	105	249	112
16	387	*194	210	224	366	325	316	212	142	124	226	122
17	360	202	207	230	366	316	307	207	137	110	201	332
18	337	183	340	262	508	310	298	199	132	100	204	255
19	298	180	325	244	419	286	286	196	129	98	199	190
20	277	175	271	233	370	268	277	188	132	105	196	164
21	265	172	236	216	360	256	280	185	199	102	188	147
22	265	169	233	210	340	268	271	177	212	100	207	142
23	342	167	219	b200	328	277	259	172	253	100	212	140
24	349	281	213	b195	325	298	250	166	180	127	172	132
25	289	219	216	b190	433	310	244	158	169	114	169	124
26	274	199	205	191	384	316	236	166	212	194	147	122
27	256	194	199	221	346	337	256	225	196	172	142	150
28	236	265	373	213	331	370	239	177	172	129	140	199
29	259	213	298	228	322	551	227	169	161	114	132	226
30	366	196	256	426	-------	*1,110	242	164	145	105	129	174
31	373	-------	239	551	-------	752	-------	155	-------	96	151	-------
Total	11,646	6,589	7,177	8,451	12,677	10,412	12,010	6,697	5,539	3,776	5,949	5,076
Mean	376	220	232	273	437	336	400	216	185	122	192	169
Cfsm	5.54	3.24	3.42	4.02	6.44	4.95	5.89	3.18	2.72	1.80	2.83	2.49
In.	6.38	3.61	3.93	4.63	6.94	5.70	6.58	3.67	3.03	2.07	3.26	2.78

Calendar year 1959: Max 1,620 Min 104 Mean 248 Cfsm 3.65 In. 49.60
Water year 1959-60: Max 1,620 Min 96 Mean 262 Cfsm 3.86 In. 52.58

Peak discharge (base, 2,000 cfs).--Oct. 9 (4:30 a.m.) 2,880 cfs (8.10 ft); Feb. 5 (1:30 p.m.) 2,110 cfs (6.75 ft); Aug. 12 (11 p.m.) 2,280 cfs (7.05 ft).

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

4410. 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.--October 1920 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--40 years, 126 cfs.

Extremes.--Maximum discharge during year, 2,370 cfs Aug. 12 (gage height, 5.43 ft); minimum, 46 cfs July 31, Aug. 1 (gage height, 0.60 ft).
1920-60: Maximum discharge, 8,400 cfs Aug. 15, 1928 (gage height, 11.8 ft), from rating curve extended above 1,300 cfs; minimum, 13 cfs Oct. 11, 1954 (gage height, 0.31 ft).

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 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 18				Dec. 19 to Sept. 30			
0.7	62	2.0	385	0.6	46	2.0	395
1.0	117	3.0	815	1.0	120	2.5	580
1.5	240	3.5	1,080	1.5	248	3.0	815

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	184	109	118	243	172	335	154	76	92	49	92
2	88	167	109	130	200	b175	308	130	*74	85	*51	69
3	81	150	107	234	179	b180	605	125	76	79	56	62
4	77	144	101	169	*169	b155	*558	*118	133	76	71	92
5	74	141	97	154	517	b145	450	116	132	*77	74	64
6	74	172	105	248	350	b140	359	113	120	74	59	59
7	335	144	95	221	265	142	314	159	98	74	60	*60
8	338	135	92	*192	226	*139	276	282	132	69	52	57
9	*1,080	130	*92	172	208	144	254	174	125	67	73	69
10	448	124	88	159	454	139	232	152	111	74	79	69
11	376	119	90	149	417	137	218	142	92	85	150	62
12	262	115	187	139	299	130	208	137	85	67	540	56
13	*221	113	141	137	288	127	198	132	79	62	439	51
14	*358	113	121	127	240	127	187	125	76	59	213	49
15	268	111	113	144	218	130	182	118	74	56	182	49
16	224	*109	107	127	211	156	174	113	70	56	152	56
17	208	113	105	132	208	162	166	109	67	54	122	118
18	192	103	184	166	262	159	164	107	67	54	111	111
19	170	101	203	137	224	144	156	102	65	54	107	76
20	155	99	159	127	203	137	152	102	122	59	96	64
21	153	99	142	120	198	127	154	98	176	51	88	59
22	155	95	130	113	190	137	149	92	125	56	87	56
23	210	93	120	b110	182	144	142	88	205	76	81	56
24	216	154	116	b105	179	159	137	87	134	76	76	52
25	180	117	120	b105	251	174	134	87	132	60	76	51
26	160	107	111	102	224	179	132	85	205	62	69	48
27	148	105	107	120	200	203	149	109	169	67	67	59
28	137	155	179	113	190	237	134	88	134	59	65	81
29	150	119	156	134	182	341	127	87	118	56	65	109
30	224	111	134	270	-------	740	137	83	102	52	65	77
31	221	-------	122	381	-------	442	-------	79	-------	49	65	-------
Total	7,086	3,742	3,842	4,855	7,177	5,823	6,891	3,693	3,374	2,037	3,540	2,033
Mean	229	125	124	157	247	188	230	119	112	65.7	114	67.8
Cfsm	5.67	3.09	3.07	3.89	6.11	4.65	5.69	2.95	2.77	1.63	2.82	1.68
In.	6.52	3.44	3.54	4.47	6.61	5.36	6.34	3.40	3.11	1.88	3.26	1.87

Calendar year 1959: Max 1,080 Min 46 Mean 148 Cfsm 3.66 In. 49.60
Water year 1959-60: Max 1,080 Min 48 Mean 148 Cfsm 3.66 In. 49.80

Peak discharge (base, 1,000 cfs).--Oct. 9 (2 a.m.) 2,130 cfs (5.14 ft); Feb. 5 (1:30 p.m.) 1,220 cfs (3.76 ft); Feb. 10 (7 p.m.) 1,040 cfs (3.44 ft); Mar. 30 (11 a.m.) 1,270 cfs (3.85 ft); Apr. 3 (3 p.m.) 1,290 cfs (3.88 ft); Aug. 12 (10 p.m.) 2,370 cfs (5.43 ft).

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

4430. 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, 3.5 miles downstream from Little River, and at mile 183.7.

Drainage area.--296 sq mi.

Records available.--October 1920 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 2,060.32 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to July 5, 1930, chain gage at same site and datum.

Average discharge.--40 years, 938 cfs.

Extremes.--Maximum discharge during year, 4,660 cfs Oct. 11; maximum gage height, 16.58 ft Oct. 11; minimum discharge, 383 cfs Sept. 26 (gage height, 4.15 ft).
1920-60: Maximum discharge, 26,500 cfs Aug. 16, 1928 (gage height, 22.9 ft), from rating curve extended above 11,500 cfs; minimum, 119 cfs Oct. 11, 1954 (gage height, 2.36 ft).
Maximum stage known, 27.1 ft in July 1916, from floodmarks.

Remarks.--Records excellent. Considerable diurnal fluctuation at low flow caused by powerplant above station. Records of chemical analyses for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 923: 1921-23, 1929, 1932, 1935-36(M), 1938, 1940.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Oct. 1, 7-19, 23-25, Oct. 29 to Nov. 1, Nov. 6, 24, 25, 28, Dec. 12, 13, 18, 19, 28, 29, Jan. 2-5, Jan. 29 to Feb. 1, Feb. 5-7, 10-14, 18-20, 25, 26, Mar. 16-18, Mar. 29 to Apr. 8, May 7-9, June 21, 23, Aug. 12-15, 22, 23, Sept. 17)

4.1	379	8.0	1,360
5.0	560	10.0	2,000
6.0	796	11.0	2,310

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,200	1,680	862	1,000	2,060	1,440	3,370	1,200	634	618	447	724
2	860	1,440	852	1,010	1,610	1,420	2,380	1,040	*613	587	*485	838
3	760	1,300	888	2,040	1,400	1,590	2,860	971	622	560	471	615
4	702	1,210	838	1,670	1,300	1,430	3,930	*931	795	542	503	724
5	662	1,160	815	1,370	2,900	1,270	*4,190	920	865	*588	491	634
6	640	1,230	825	1,630	*4,240	1,210	3,340	908	955	574	489	562
7	1,320	1,170	832	1,610	3,060	1,180	2,530	961	840	576	491	*549
8	1,510	1,070	779	1,440	2,020	1,160	2,180	2,210	798	560	521	551
9	3,370	1,030	765	1,280	1,750	1,170	2,000	1,530	852	521	503	530
10	3,800	988	*758	1,190	*2,280	1,160	1,840	1,230	748	560	669	540
11	4,260	952	748	1,140	3,720	1,170	1,710	1,120	712	767	858	536
12	2,500	928	1,190	*1,080	3,120	1,130	1,630	1,070	657	578	2,350	521
13	1,780	908	1,540	1,040	2,320	1,090	1,540	1,070	620	530	2,990	475
14	2,770	898	1,110	1,010	2,060	1,090	1,480	1,000	594	505	1,710	443
15	2,500	898	1,020	1,020	1,800	1,110	1,420	952	590	473	1,400	437
16	1,920	882	936	1,010	1,680	1,300	1,380	923	560	463	1,120	459
17	1,670	*890	892	952	1,700	1,540	1,340	898	538	483	942	689
18	1,630	848	1,220	1,190	2,420	1,700	1,310	875	513	453	934	875
19	1,410	820	1,830	1,140	2,600	1,450	1,240	868	501	433	993	700
20	1,270	803	1,340	1,010	1,970	1,320	1,210	825	542	445	905	634
21	1,200	794	1,170	958	1,800	1,250	1,190	760	762	417	820	560
22	1,210	789	1,070	912	1,730	1,300	1,210	784	810	457	965	501
23	1,390	777	1,000	862	1,610	1,460	1,130	741	1,160	433	1,340	501
24	2,020	1,290	947	870	1,530	1,510	1,090	760	882	558	947	467
25	1,560	1,240	952	840	1,910	1,630	1,070	700	920	487	803	394
26	1,360	979	918	832	1,930	1,530	1,040	671	1,010	545	726	406
27	1,250	908	880	875	1,710	1,650	1,060	765	1,040	594	671	457
28	1,150	1,090	1,210	958	1,590	1,720	1,100	850	850	576	654	681
29	1,120	993	1,620	941	1,510	2,060	1,000	738	734	560	627	835
30	1,570	898	1,190	1,890	-------	3,320	1,000	736	666	485	618	774
31	1,970	-------	1,080	2,690	-------	4,180	-------	710	-------	437	536	-------
Total	52,334	30,863	32,077	37,460	61,330	47,540	53,770	29,717	22,383	16,375	27,979	17,612
Mean	1,688	1,029	1,035	1,208	2,115	1,534	1,792	959	746	528	903	587
Cfsm	5.70	3.48	3.50	4.08	7.15	5.18	6.05	3.24	2.52	1.78	3.05	1.98
In.	6.58	3.88	4.03	4.71	7.71	5.97	6.76	3.73	2.81	2.06	3.52	2.21

Calendar year 1959: Max 4,260 Min 421 Mean 1,090 Cfsm 3.68 In. 49.99
Water year 1959-60: Max 4,260 Min 394 Mean 1,173 Cfsm 3.96 In. 53.97

Peak discharge (base, 4,300 cfs).--Oct. 11 (6 a.m.) 4,660 cfs (16.58 ft at 8 a.m.); Feb. 6 (6 a.m.) 4,350 cfs (16.17 ft at 8:30 a.m.).

* Discharge measurement made on this day.

4460. Mills River near Mills River, N. C.

Location (revised).--Lat 35°23'56", long 82°35'46", on right bank 1.5 miles downstream from confluence of North and South Forks, 1.8 miles northwest of Mills River, Henderson County, and 4.3 miles northwest of Horseshoe.

Drainage area.--66.7 sq mi.

Records available.--September 1924 to September 1926, October 1933 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 2,088.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1926, staff gage at site 500 ft upstream at datum 2.97 ft higher.

Average discharge.--29 years, 158 cfs.

Extremes.--Maximum discharge during year, 1,570 cfs Aug. 13 (gage height, 4.85 ft); minimum, 56 cfs Aug. 4 (gage height, 1.75 ft); minimum daily, 58 cfs Aug. 2, 4.
1924-26, 1933-60: 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 measurement 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, 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 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.7	49	3.0	450
1.8	62	3.5	725
2.0	100	4.0	1,040
2.5	238	4.5	1,360

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	242	249	146	148	380	249	594	238	116	94	61	123
2	178	225	146	156	299	b250	533	199	116	94	*58	128
3	153	205	148	299	260	b260	814	190	*112	87	59	116
4	138	199	138	231	242	b240	869	184	118	83	58	156
5	126	193	136	212	649	b220	*713	178	143	85	61	107
6	118	242	143	299	555	b210	*577	*175	128	*94	72	94
7	262	212	136	283	408	b205	495	211	114	90	69	90
8	260	199	128	*249	*341	205	436	384	123	81	74	*87
9	918	184	*126	228	307	215	394	245	128	81	95	85
10	643	178	123	215	487	205	367	222	114	90	188	92
11	500	173	121	202	594	205	*341	208	107	105	185	92
12	367	167	209	190	431	196	328	199	105	85	473	87
13	*303	162	187	184	412	190	311	193	98	77	703	74
14	412	164	164	175	358	*187	295	187	94	74	295	69
15	336	164	153	184	319	190	287	181	92	70	238	69
16	291	*156	148	170	303	218	275	175	90	67	190	70
17	271	156	143	164	295	231	264	167	87	67	153	107
18	264	146	205	187	362	245	253	162	83	67	140	133
19	231	143	253	167	315	212	238	156	85	67	136	96
20	215	140	202	156	283	202	238	151	151	72	130	79
21	202	138	184	b145	275	196	238	148	133	61	116	76
22	208	136	170	b130	268	208	235	143	128	59	121	72
23	242	133	162	b125	253	222	218	140	136	91	112	74
24	295	187	156	b125	249	245	215	136	112	100	112	70
25	245	153	159	b130	336	264	208	136	107	69	126	67
26	222	140	148	b130	319	264	205	133	170	83	98	64
27	208	138	143	164	291	299	222	153	156	125	92	67
28	193	199	187	153	275	354	212	140	123	77	90	98
29	196	159	187	164	264	495	196	133	112	77	87	123
30	256	148	167	349	-------	1,070	189	128	100	72	83	94
31	283	-------	159	572	-------	785	-------	123	-------	65	90	-------
Total	8,778	5,188	4,977	6,286	10,130	8,737	10,770	5,518	3,481	2,509	4,565	2,759
Mean	283	173	161	203	349	282	359	178	116	80.9	147	92.0
Cfsm	4.24	2.59	2.41	3.04	5.23	4.23	5.38	2.67	1.74	1.21	2.20	1.38
In.	4.89	2.89	2.78	3.50	5.65	4.87	6.01	3.08	1.94	1.40	2.55	1.54

Calendar year 1959: Max 918 Min 65 Mean 185 Cfsm 2.77 In. 37.72
Water year 1959-60: Max 1,070 Min 58 Mean 201 Cfsm 3.01 In. 41.10

Peak discharge (base, 1,000 cfs).--Oct. 9 (8:30 a.m.) 1,550 cfs (4.81 ft); Feb. 5 (3:30 p.m.) 1,160 cfs (4.18 ft); Mar. 30 (3 p.m.) 1,400 cfs (4.56 ft); Apr. 3 (8 p.m.) 1,280 cfs (4.37 ft); Aug. 13 (2 a.m.) 1,570 cfs (4.85 ft).

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

4480. 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, 6.3 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.--October 1933 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 1,935.91 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--27 years, 1,602 cfs.

Extremes.--Maximum discharge during year, 7,850 cfs Feb. 5 (gage height, 7.08 ft); minimum, 704 cfs Sept. 26, 27 (gage height, 2.77 ft).
1933-60: Maximum discharge, 23,600 cfs Aug. 14, 1940 (gage height, 13.6 ft); minimum, 230 cfs Oct. 4, 5, 10, 11, 12, 1954 (gage height, 2.05 ft).
Maximum stage known, about 27.3 ft July 15, 1916, from floodmarks. A flood in August 1928 reached a stage of about 16.1 ft, from floodmarks.

Remarks.--Records excellent except those for periods of ice effect, which are good. Some diurnal fluctuation caused by powerplant above station. Records of chemical analyses for the water year 1960 are given in WSP 1721.

Revisions.--WSP 823: Drainage area.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 13, Apr. 1 to Sept. 30				Dec. 14 to Mar. 31			
2.7	630	5.0	3,880	3.2	1,300	5.0	3,920
3.0	960	6.0	5,690	3.5	1,680	6.0	5,700
3.5	1,580	7.0	7,680	4.0	2,370	7.0	7,680
4.0	2,300	8.0	9,800				

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,410	2,700	1,360	1,630	4,230	2,440	*6,690	2,100	1,180	1,020	768	1,220
2	2,270	2,300	1,340	1,590	2,920	2,430	5,270	1,890	1,120	994	779	1,400
3	1,540	2,030	1,410	2,720	2,440	2,600	5,260	1,730	1,120	960	902	1,260
4	1,330	1,890	1,360	2,850	2,200	b2,500	7,190	1,650	1,270	902	812	1,240
5	1,210	1,800	1,300	2,270	4,840	b2,150	7,740	1,590	1,410	914	845	1,180
6	1,150	1,860	1,280	2,820	7,450	b2,050	7,030	1,570	1,550	1,030	845	1,020
7	1,580	1,850	1,330	2,850	6,350	2,050	5,490	1,590	1,450	960	948	960
8	2,210	1,680	1,240	2,500	4,240	2,030	4,050	3,380	1,270	960	*960	948
9	5,440	1,610	1,200	2,200	3,040	2,060	3,480	2,880	*1,360	891	948	914
10	6,110	1,550	1,170	2,020	3,480	2,050	3,170	*2,150	1,280	926	1,820	926
11	7,110	1,500	1,160	1,890	5,720	2,060	2,930	1,940	1,200	1,240	2,030	983
12	6,990	1,460	1,440	1,810	5,450	2,020	2,800	1,830	1,150	*1,090	3,820	948
13	3,850	1,420	2,300	1,720	4,410	1,940	2,680	1,800	1,100	937	6,570	856
14	4,440	1,400	1,840	1,670	3,600	*1,950	2,540	1,720	1,040	1,160	5,220	790
15	*4,800	1,410	1,620	*1,680	3,030	2,010	2,450	1,620	1,030	880	2,900	779
16	3,490	1,380	*1,520	1,680	2,790	2,160	2,390	1,550	1,010	823	2,160	790
17	2,810	1,370	1,470	1,590	*2,900	2,580	2,320	1,520	960	823	1,720	902
18	2,660	1,320	1,830	1,770	4,460	3,280	*2,240	1,480	926	823	1,640	1,380
19	2,330	1,270	3,600	1,870	5,400	2,790	2,140	1,440	926	768	2,320	*1,220
20	2,080	1,260	2,540	1,680	3,830	2,580	2,060	1,410	1,010	823	1,960	1,120
21	1,920	1,230	2,060	1,590	3,180	2,400	2,020	1,380	1,180	746	1,480	983
22	1,900	1,220	1,870	1,520	3,020	2,480	2,120	1,360	1,440	746	1,480	891
23	2,030	1,200	1,720	b1,400	2,760	3,000	1,970	1,310	1,550	868	2,020	868
24	3,220	1,790	1,620	1,450	2,620	3,120	1,900	1,310	1,480	1,100	1,620	834
25	2,680	*2,120	1,580	1,380	3,000	3,310	1,850	1,300	1,310	880	1,380	768
26	2,240	1,610	1,560	1,370	3,340	2,960	1,820	1,380	1,550	914	1,210	714
27	2,000	1,450	1,480	1,410	2,960	3,080	1,820	1,300	1,690	1,060	1,110	768
28	1,830	1,580	1,640	1,550	2,720	3,150	1,930	1,460	1,360	1,020	1,080	1,080
29	1,750	1,610	2,500	1,520	2,580	3,540	1,760	1,340	1,220	983	1,020	1,310
30	2,180	1,410	1,990	2,650	-------	5,700	1,710	1,300	1,100	902	983	1,320
31	2,950	-------	1,760	4,780	-------	7,210	-------	1,260	-------	801	937	-------
Total	93,530	48,280	52,090	61,430	108,980	85,680	98,820	51,540	37,242	28,944	54,247	30,372
Mean	3,017	1,609	1,680	1,982	3,757	2,764	3,294	1,663	1,241	934	1,750	1,012
Cfsm	4.46	2.38	2.49	2.93	5.56	4.09	4.87	2.46	1.84	1.38	2.59	1.50
In.	5.15	2.66	2.87	3.38	5.99	4.71	5.44	2.84	2.05	1.59	2.98	1.67

Calendar year 1959: Max 7,160 Min 651 Mean 1,783 Cfsm 2.64 In. 35.83
Water year 1959-60: Max 7,740 Min 714 Mean 2,052 Cfsm 3.04 In. 41.33

Peak discharge (base, 6,000 cfs).--Oct. 11 (10 p.m.) 7,640 cfs (6.98 ft); Feb. 5 (9:30 p.m.) 7,850 cfs (7.08 ft); Mar. 31 (4 p.m.) 7,410 cfs (6.87 ft); Apr. 5 (2:30 a.m.) 7,830 cfs (7.07 ft); Aug. 12 (11 p.m.) 7,430 cfs (6.88 ft).

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

4485. 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 1960.

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.--18 years, 88.2 cfs.

Extremes.--Maximum discharge during year, 1,570 cfs Feb. 5 (gage height, 4.62 ft); minimum, 39 cfs Sept. 26, 27 (gage height, 1.12 ft).
1942-60: 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 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 27				May 28 to Sept. 30			
1.2	51	2.5	425	1.1	37	2.0	239
1.5	110	3.0	665	1.3	64	2.5	425
2.0	238			1.6	129		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	146	106	74	72	210	142	250	144	79	66	47	93
2	103	97	76	72	169	146	232	120	81	75	*45	*61
3	84	92	88	88	*149	b150	392	115	81	61	45	61
4	74	*88	*76	78	134	b140	434	*110	90	61	43	54
5	66	86	76	78	568	b135	*373	110	96	64	44	50
6	72	99	86	211	349	b130	294	108	*87	*64	71	48
7	249	88	80	*164	238	122	257	114	79	61	96	48
8	154	86	76	142	197	*120	230	182	94	56	60	48
9	*244	84	76	124	174	124	207	129	85	61	85	48
10	197	82	74	115	212	127	192	120	75	97	126	47
11	216	80	72	108	216	129	182	117	74	101	178	48
12	159	78	90	101	179	127	172	117	72	72	284	49
13	132	76	88	97	184	b125	166	115	70	62	264	44
14	261	76	82	92	166	b130	159	110	66	60	127	43
15	184	78	80	95	b150	136	156	106	64	56	96	44
16	152	76	78	88	152	166	154	103	62	56	79	47
17	152	76	76	88	174	242	146	99	62	54	68	58
18	142	72	92	92	307	216	142	97	61	55	66	56
19	122	72	115	84	221	182	136	95	60	56	108	48
20	110	70	97	78	179	164	134	95	66	56	79	44
21	106	68	92	76	172	154	139	95	116	50	62	43
22	108	68	88	b70	164	166	134	92	74	49	62	43
23	120	68	84	b70	154	172	129	88	112	68	61	43
24	124	95	82	b70	152	176	124	86	75	56	78	42
25	112	84	80	b75	189	179	122	92	72	50	64	42
26	106	74	78	b70	184	174	124	92	124	56	55	41
27	99	72	76	80	164	179	146	160	98	61	54	44
28	95	90	88	78	154	194	134	96	79	54	54	72
29	92	78	84	98	146	241	122	90	74	54	50	81
30	112	b74	78	182	-------	365	117	87	66	52	49	62
31	112	-------	74	344	-------	313	-------	79	-------	47	49	-------
Total	4,205	2,433	2,556	3,280	5,807	5,266	5,699	3,363	2,394	1,891	2,649	1,552
Mean	136	81.1	82.5	106	200	170	190	108	79.8	61.0	85.5	51.7
Cfsm	1.70	1.02	1.03	1.33	2.51	2.13	2.38	1.35	1.00	0.764	1.07	0.648
In.	1.96	1.13	1.19	1.53	2.71	2.45	2.66	1.57	1.12	0.88	1.23	0.72

Calendar year 1959: Max 562 Min 32 Mean 91.6 Cfsm 1.15 In. 15.58
Water year 1959-60: Max 568 Min 41 Mean 112 Cfsm 1.40 In. 19.15

Peak discharge (base, 900 cfs).--Feb. 5 (1 p.m.) 1,570 cfs (4.62 ft).

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

4500. Beetree Creek near Swannanoa, N. C.

Location.--Lat 35°39'11", long 82°24'00", on left bank 1,000 ft upstream from Beetree Reservoir and 3.6 miles north of Swannanoa, Buncombe County.

Drainage area.--5.46 sq mi.

Records available.--February 1936 to September 1960.

Gage.--Water-stage recorder and modified Parshall flume set in masonry control. Datum of gage is 2,738.39 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--24 years, 10.4 cfs.

Extremes.--Maximum discharge during year, 235 cfs Mar. 30 (gage height, 3.60 ft); minimum, 1.5 cfs Sept. 27 (gage height, 0.51 ft).
1936-60: 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 excellent except those for periods of ice effect, which are good.

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1928, 1936-37(M). WSP 953: 1929(M). WSP 1376: 1932.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Sept. 22						Sept. 23-30	
0.5	1.5	1.3	12	2.5	41	0.5	1.4
.6	2.3	1.6	17	2.8	66	.6	2.1
.8	4.4	1.9	23	3.1	109	.8	4.0
1.0	7.0	2.2	30	3.3	148	1.0	6.6

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	15	10	11	21	13	48	11	7.2	10	3.3	4.3
2	28	14	10	11	18	13	38	*8.9	6.8	20	3.1	3.8
3	20	13	10	15	16	14	47	8.3	*8.5	13	*2.8	3.7
4	16	13	*9.8	13	15	b11	55	8.0	8.3	11	2.8	3.4
5	14	12	9.7	13	39	b11	54	7.7	11	9.4	3.0	3.2
6	12	12	10	19	36	b11	*45	7.6	11	*8.6	2.6	2.9
7	17	11	9.1	25	28	10	41	8.4	9.8	8.0	4.0	2.9
8	18	10	9.1	23	22	10	34	16	9.7	7.2	4.1	*3.0
9	*69	10	9.4	20	*20	10	29	12	9.1	6.7	3.0	3.0
10	*40	9.4	9.8	18	25	10	24	11	8.2	8.9	3.1	2.9
11	49	9.1	10	*16	27	9.5	22	10	7.6	15	7.3	4.4
12	34	8.8	16	15	23	9.2	19	10	7.0	11	26	3.6
13	27	8.4	20	15	22	b9.0	18	10	6.3	9.5	32	2.8
14	41	8.2	17	14	19	b9.0	16	9.4	6.4	8.8	16	2.5
15	*33	8.2	15	15	17	*9.2	15	8.9	5.9	7.6	12	2.5
16	27	7.8	14	13	16	12	14	8.6	5.4	7.0	9.7	2.6
17	24	7.8	13	13	16	12	14	8.2	5.0	6.7	9.4	2.7
18	22	*7.1	17	14	22	14	13	7.7	4.8	6.1	9.2	3.3
19	19	7.0	29	13	19	12	12	7.4	4.4	5.4	7.8	2.9
20	16	6.7	23	12	17	11	11	8.6	7.3	5.0	6.8	2.4
21	15	6.5	20	b11	16	11	11	9.7	12	4.8	6.8	2.2
22	14	6.3	17	b10	15	10	11	8.2	10	4.4	7.0	2.1
23	16	6.3	15	b10	14	10	10	7.6	16	4.8	6.1	*2.0
24	19	13	14	10	14	11	9.7	7.6	12	5.0	7.9	1.9
25	18	11	13	9.7	17	12	9.4	7.2	12	4.6	7.7	1.8
26	16	10	12	9.5	17	13	9.1	6.0	14	5.0	6.3	1.7
27	15	9.7	12	10	16	16	9.5	12	16	4.6	5.9	1.7
28	14	12	14	10	15	24	9.1	10	13	4.2	5.4	4.7
29	13	11	14	11	14	*60	8.3	9.2	12	4.2	4.8	3.8
30	15	10	12	14	-------	*136	8.6	8.4	10	3.8	4.3	5.9
31	17	-------	12	24	-------	74	-------	7.7	-------	3.5	4.3	-------
Total	746	294.3	425.9	437.2	576	596.9	664.7	281.3	276.7	233.6	235.1	90.6
Mean	24.1	9.81	13.7	14.1	19.9	19.3	22.2	9.07	9.22	7.54	7.58	3.02
Cfsm	4.41	1.80	2.51	2.58	3.64	3.53	4.07	1.66	1.69	1.38	1.39	0.553
In.	5.08	2.00	2.90	2.98	3.92	4.07	4.53	1.92	1.88	1.59	1.60	0.62

Calendar year 1959: Max 129 Min 2.3 Mean 13.2 Cfsm 2.42 In. 32.83
Water year 1959-60: Max 136 Min 1.7 Mean 13.3 Cfsm 2.44 In. 33.09

Peak discharge (base, 150 cfs).--Mar. 30 (10:30 a.m.) 235 cfs (3.60 ft).

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

4510. Swannanoa River at Biltmore, N. C.

Location.--Lat 35°34'06", long 82°32'48", 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.--October 1920 to September 1926, May 1934 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--33 years (1920-26, 1933-60), 154 cfs (unadjusted).

Extremes.--Maximum discharge during year, 1,880 cfs Mar. 30 (gage height, 8.39 ft); minimum, 46 cfs Sept. 20 (gage height, 1.46 ft); minimum daily, 51 cfs Sept. 26.
1920-26, 1933-60: Maximum discharge, 12,400 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 2.6 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, 20.7 ft (revised) July 1916 from flood profile by Tennessee Valley Authority. Flood of Aug. 16, 1928, reached a stage of 18.74 ft, from floodmarks (discharge, 17,800 cfs). 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. 210). 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 802: 1921(M), 1923(M), 1925(M). WSP 823: Drainage area. WSP 1306: 1921(M), 1924(M), 1926(M).

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30			
1.7	85	3.0	540	1.4	38	2.5	323
2.0	157	4.0	1,080	1.7	88	3.0	540
2.5	320	5.0	1,650	2.0	163	4.0	1,080

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,060	218	121	147	575	218	782	206	100	121	72	74
2	486	194	121	144	400	225	618	174	95	239	72	72
3	328	171	136	200	320	269	791	158	*95	147	*62	104
4	255	165	121	203	276	b215	1,010	150	118	124	58	95
5	206	157	119	182	838	b190	975	147	144	109	63	74
6	177	157	131	346	848	b185	*755	*144	136	*97	58	63
7	225	157	126	347	540	b180	601	161	131	95	76	65
8	218	152	112	340	409	179	510	329	136	84	78	*62
9	*823	144	107	290	*343	188	431	237	121	82	68	60
10	634	134	*107	255	460	188	381	*206	102	122	72	68
11	728	131	107	*225	623	188	342	188	97	183	116	99
12	496	124	149	203	454	177	316	180	90	141	431	78
13	359	126	248	197	422	177	294	177	86	121	776	68
14	*535	119	215	194	371	*182	270	166	80	111	346	63
15	436	119	179	194	b300	191	260	158	78	88	224	58
16	347	119	163	179	b285	228	247	147	76	82	177	58
17	332	*117	149	177	309	261	237	141	68	88	209	60
18	328	109	195	191	617	320	227	131	68	93	219	72
19	255	103	392	171	495	262	212	126	68	82	152	68
20	222	100	328	157	359	238	203	121	119	93	134	57
21	200	103	266	149	328	222	197	128	163	66	154	55
22	197	98	225	144	309	218	206	124	109	68	152	52
23	209	96	197	b135	272	215	191	111	184	106	121	52
24	313	172	179	b125	258	228	185	106	134	104	109	54
25	290	163	177	b120	290	248	177	111	134	90	102	52
26	248	139	163	121	283	245	169	111	177	114	86	51
27	222	131	152	129	266	262	177	147	177	109	84	52
28	200	154	165	131	255	302	183	150	150	97	84	84
29	185	144	197	131	241	468	163	128	136	88	76	88
30	185	129	171	266	-------	1,380	160	118	116	84	72	86
31	222	-------	157	736	-------	1,300	-------	111	-------	74	74	-------
Total	10,921	4,145	5,375	6,529	11,746	9,369	11,270	4,792	3,488	3,302	4,577	2,044
Mean	352	138	173	211	405	302	376	155	116	107	148	68.1
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 2,860 Min 35 Mean 186 Cfsm - In. -
Water year 1959-60: Max 1,380 Min 51 Mean 212 Cfsm - In. -

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

4515. 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, 3.2 miles downstream from Swannanoa River, and at mile 145.8.

Drainage area.--945 sq mi.

Records available.--October 1895 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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, 1920, chain gage at present site and datum.

Average discharge.--65 years, 2,058 cfs.

Extremes.--Maximum discharge during year, 10,300 cfs Feb. 5 (gage height, 6.22 ft); minimum, 763 cfs Sept. 27 (gage height, 0.98 ft).

1895-1960: 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).

Flood in June 1876 reached a stage of 18 ft, from survey by Tennessee Valley Authority.

Remarks.--Records excellent except those for periods of ice effect or 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. Records of chemical analyses for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 823: Drainage area. WSP 1306: 1895-1909, 1901(M), 1914-15(M), 1917(M), 1920-22(M), 1927(M).

Rating tables, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 5, May 9 to Sept. 30				Feb. 6 to May 8			
1.0	785	3.0	3,590	1.8	1,920	4.0	5,390
1.5	1,380	4.0	5,390	2.0	2,190	5.0	7,470
2.0	2,070	5.0	7,470	2.5	2,910	6.0	9,790
2.5	2,810	6.0	9,790	3.0	3,680		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,010	3,110	1,620	1,900	5,260	2,910	7,740	2,570	1,340	1,230	862	1,350
2	3,200	2,700	1,610	1,830	3,610	2,860	6,310	2,430	1,250	1,380	895	1,610
3	2,110	2,400	1,730	2,800	2,990	3,080	6,190	2,200	1,280	1,200	976	1,540
4	1,760	2,240	1,660	3,270	2,660	b3,000	8,560	2,120	1,440	1,090	918	1,460
5	1,570	2,140	1,550	2,620	5,790	b2,500	9,020	2,050	1,730	1,030	941	1,370
6	1,460	2,180	1,570	3,370	9,020	b2,400	8,150	2,010	1,890	1,170	906	1,150
7	2,100	2,180	1,640	3,450	7,470	b2,370	6,500	2,020	1,780	1,120	1,140	1,070
8	2,700	2,010	1,500	3,060	5,200	2,410	4,910	3,710	1,520	1,030	*1,170	1,060
9	5,970	1,930	1,440	2,700	3,740	2,470	4,240	3,370	*1,640	1,020	1,080	1,010
10	6,940	1,860	1,420	2,460	3,850	2,470	3,860	*2,570	1,480	1,150	1,930	1,020
11	7,940	1,790	1,410	2,320	6,620	2,470	3,580	2,320	1,340	1,550	2,500	1,150
12	7,830	1,750	1,620	2,200	6,180	2,410	3,410	2,180	1,300	*1,350	3,910	1,070
13	4,730	1,710	2,720	2,100	5,200	2,340	3,270	2,150	1,210	1,030	7,830	964
14	5,140	1,680	2,240	2,030	4,280	2,370	3,120	2,070	1,150	1,230	6,100	895
15	5,500	1,680	1,920	*2,000	3,680	*2,460	3,020	1,960	1,140	1,010	3,530	851
16	*4,190	1,660	*1,790	1,990	3,390	2,640	2,940	1,900	1,090	941	2,540	873
17	3,410	1,640	1,710	1,870	*3,440	3,100	2,850	1,830	1,050	918	2,220	976
18	3,270	1,580	1,920	2,080	5,060	3,920	*2,790	1,780	998	952	2,150	1,470
19	2,840	1,510	4,100	2,200	6,220	3,360	2,670	1,720	964	873	2,560	*1,410
20	2,540	1,500	3,130	1,960	4,580	3,100	2,570	1,660	1,110	941	2,450	1,230
21	2,330	1,470	2,510	1,850	3,760	2,920	2,550	1,590	1,410	851	1,820	1,090
22	2,300	1,460	2,240	1,760	3,570	2,910	2,660	1,540	1,650	829	1,730	976
23	2,380	1,440	2,060	1,640	3,280	3,460	2,480	1,500	1,750	998	2,270	952
24	3,620	2,010	1,930	1,640	3,100	3,570	2,390	1,480	1,890	1,200	2,000	930
25	3,210	*2,540	1,870	1,590	3,420	3,730	2,340	1,470	1,550	1,030	1,710	862
26	2,700	1,940	1,850	1,570	3,890	3,540	2,320	1,640	1,820	1,050	1,460	796
27	2,440	1,730	1,750	1,590	3,470	a3,630	2,330	1,660	2,130	1,170	1,300	840
28	2,240	1,890	1,850	1,790	3,180	a3,760	2,440	1,820	1,720	1,140	1,260	1,200
29	2,140	1,920	2,780	1,750	3,060	a4,080	2,250	1,580	1,500	1,110	1,200	1,580
30	2,480	1,710	2,330	2,840	-------	6,830	2,160	1,500	1,320	1,050	1,150	1,620
31	3,300	-------	2,060	5,520	-------	*8,700	-------	1,430	-------	918	1,110	-------
Total	111,350	57,360	61,530	71,750	128,970	101,770	119,620	61,830	43,442	33,761	63,618	34,375
Mean	3,592	1,912	1,985	2,315	4,447	3,283	3,987	1,995	1,448	1,089	2,052	1,146
Cfsm	3.80	2.02	2.10	2.45	4.71	3.47	4.22	2.11	1.53	1.15	2.17	1.21
In.	4.38	2.26	2.42	2.82	5.08	4.01	4.71	2.43	1.71	1.33	2.50	1.35

Calendar year 1959: Max 9,870 Min 796 Mean 2,114 Cfsm 2.24 In. 30.34
Water year 1959-60: Max 9,020 Min 796 Mean 2,430 Cfsm 2.57 In. 35.00

Peak discharge (base, 9,000 cfs).--Feb. 5 (7 p.m.) 10,300 cfs (6.22 ft); Apr. 5 (2 a.m.) 9,450 cfs (5.86 ft); Aug. 13 (2:30 a.m.) 9,410 cfs (5.84 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, once-daily Telemark readings, and records for station at Bent Creek.
b Stage-discharge relation affected by ice.

4530. 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.--October 1933 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--27 years, 148 cfs.

Extremes.--Maximum discharge during year, 1,990 cfs Feb. 5 (gage height, 6.77 ft); minimum, 30 cfs Sept. 27 (gage height, 1.85 ft).
1933-60: Maximum discharge, 8,880 cfs Aug. 30, 1940 (gage height, 13.67 ft), from rating curve extended above 5,400 cfs on basis of slope-area measurement 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 excellent except those for periods of ice effect, which are good.

Revisions (water years).--WSP 803: 1934(M), 1935.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.8	26	3.5	309
2.1	53	4.0	470
2.5	106	5.0	920
3.0	189	6.0	1,440

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	578	140	135	126	287	216	*565	152	78	119	40	76
2	303	127	129	126	238	205	477	129	77	214	39	81
3	213	116	162	183	205	233	623	121	78	121	37	54
4	166	109	146	162	184	201	818	116	86	95	52	47
5	137	105	137	154	795	b170	1,000	112	113	77	48	43
6	118	118	173	386	754	b160	750	108	121	73	47	40
7	331	106	189	590	474	b165	594	109	98	69	50	38
8	227	99	169	517	351	b170	463	260	85	60	*85	45
9	412	95	171	370	287	220	380	185	85	58	61	71
10	292	92	168	289	473	199	315	168	*73	120	49	59
11	260	89	164	243	616	197	*271	*157	72	349	54	47
12	220	86	266	213	415	185	243	151	70	*193	141	*52
13	185	84	442	213	373	b180	220	149	68	126	312	45
14	369	82	324	*203	315	b205	203	139	64	99	159	39
15	318	84	*255	199	265	255	189	127	64	84	96	37
16	245	*84	213	182	273	324	182	118	60	70	74	38
17	211	92	187	173	382	612	173	112	60	68	65	40
18	209	81	221	184	734	*812	168	106	55	61	65	41
19	*173	78	588	169	634	425	152	102	52	57	63	43
20	152	75	389	157	446	339	146	111	52	54	55	38
21	139	75	295	146	376	287	146	134	58	49	58	35
22	129	75	236	b130	324	*263	159	100	89	48	201	34
23	124	73	201	b120	*281	276	142	91	157	63	157	33
24	209	151	178	b120	255	330	135	88	96	71	86	32
25	207	173	168	b115	303	367	129	102	115	77	75	32
26	193	132	152	b115	392	318	127	85	109	65	63	31
27	176	116	142	124	318	345	147	133	134	58	58	31
28	157	205	156	129	271	418	140	126	99	52	54	58
29	142	175	173	126	245	608	123	102	96	51	50	75
30	137	149	147	157	-------	1,060	118	98	78	47	47	89
31	159	-------	137	278	-------	*815	-------	85	-------	43	50	-------
Total	6,891	3,266	6,613	6,399	11,266	10,360	9,298	3,876	2,542	2,791	2,491	1,424
Mean	222	109	213	206	388	334	310	125	84.7	90.0	80.4	47.5
Cfsm	1.41	0.690	1.35	1.30	2.46	2.11	1.96	0.791	0.536	0.570	0.509	0.301
In.	1.62	0.77	1.56	1.51	2.65	2.44	2.19	0.91	0.60	0.66	0.59	0.34

Calendar year 1959: Max 1,420 Min 39 Mean 169 Cfsm 1.07 In. 14.51
Water year 1959-60: Max 1,060 Min 31 Mean 184 Cfsm 1.16 In. 15.84

Peak discharge (base, 2,700 cfs).--No peak above base.

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

4535. French Broad River at Marshall, N. C.

Location.--Lat 35°47'10", long 82°39'39", on right bank 0.7 mile upstream from Hayes Creek, 1.0 mile downstream from Ivy River, 1.5 miles southeast of Marshall, Madison County, and at mile 126.7.

Drainage area.--1,332 sq mi.

Records available.--October 1942 to September 1960.

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.--18 years, 2,274 cfs.

Extremes.--Maximum discharge during year, 12,200 cfs Feb. 5 (gage height, 6.21 ft); minimum, 740 cfs Sept. 25 (gage height, 1.18 ft); minimum daily, 996 cfs Sept. 26, 27.
1942-60: Maximum discharge, 23,100 cfs Apr. 5, 1957 (gage height, 10.48 ft); minimum, 193 cfs Sept. 13, 14, 1954 (gage height, 0.36 ft); minimum daily, 295 cfs Sept. 27, 28, 1954.
Floods of July 1916 and Aug. 20, 1940, reached stages of 22.0 ft and 18.0 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. Records of chemical analyses and water temperatures for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 1436: 1954(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.2	930	4.0	5,790
1.5	1,160	5.0	8,750
2.0	1,850	6.0	12,400
3.0	3,540		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,790	3,580	2,030	2,260	6,180	3,440	9,220	2,850	1,720	1,660	1,090	1,410
2	4,200	3,060	2,020	2,180	4,380	3,420	7,680	2,830	1,590	2,090	1,060	1,940
3	2,810	2,770	2,180	2,830	3,600	3,680	7,240	2,530	1,620	1,640	1,160	1,760
4	2,170	2,550	2,100	3,740	3,190	3,640	10,800	2,410	1,780	1,480	1,100	1,690
5	1,920	2,470	2,000	3,040	6,850	3,210	11,500	2,340	2,040	1,390	1,190	1,600
6	1,760	2,520	2,060	4,140	10,900	2,990	10,100	2,290	2,230	1,480	1,120	1,410
7	2,580	2,520	2,150	4,690	8,920	2,920	8,140	2,290	2,120	1,450	1,500	1,300
8	3,150	2,340	2,020	4,140	6,490	2,900	6,130	3,960	1,900	1,370	*1,690	1,280
9	5,950	2,230	1,940	3,500	4,510	3,020	5,180	4,180	1,960	1,340	1,420	1,290
10	7,740	2,180	1,900	3,100	4,680	2,990	4,650	3,110	1,820	1,490	1,960	1,280
11	8,430	2,080	1,860	2,880	8,050	3,020	*4,270	*2,900	1,690	2,440	2,630	1,370
12	8,650	2,060	2,060	2,700	7,310	2,940	4,010	2,650	1,630	1,960	3,820	*1,340
13	6,620	2,000	3,280	2,600	6,350	2,370	3,840	2,600	*1,550	1,500	3,940	1,240
14	5,620	1,960	2,940	*2,520	5,130	2,970	3,840	2,500	1,490	1,600	6,950	1,120
15	6,460	1,980	*2,470	2,470	4,340	3,110	3,480	2,390	1,430	1,580	4,200	1,060
16	5,060	*1,970	2,280	2,440	4,060	3,440	3,380	2,290	1,420	1,290	2,920	1,080
17	4,010	1,920	2,150	2,340	4,310	4,380	3,280	2,230	1,370	1,250	2,580	1,140
18	3,840	1,880	2,260	2,470	6,800	5,420	3,190	2,150	1,340	*1,290	2,390	1,500
19	*3,360	1,800	4,880	2,600	8,170	4,450	3,040	2,090	1,290	1,190	2,660	1,730
20	2,970	1,780	4,030	2,420	5,950	3,950	2,920	2,080	1,340	1,160	2,720	1,450
21	2,750	1,740	3,130	2,250	4,670	3,660	2,900	2,040	1,700	1,140	2,100	1,320
22	2,660	1,730	2,770	2,150	4,380	*3,460	3,020	1,930	2,040	1,040	2,180	1,220
23	2,720	1,720	2,530	2,000	*3,990	4,100	2,870	1,880	2,100	1,190	2,470	1,120
24	3,910	2,120	2,390	2,020	3,740	4,290	2,720	1,820	2,390	1,150	2,420	1,140
25	3,870	3,020	2,290	2,000	4,100	4,690	2,660	1,860	2,020	1,480	2,090	1,040
26	3,230	2,390	2,260	1,920	4,810	4,270	2,650	1,980	2,150	1,360	1,730	996
27	2,920	2,090	2,150	1,990	4,270	4,310	2,680	2,120	2,630	1,390	1,570	996
28	2,660	2,330	2,210	2,140	3,870	4,490	2,780	2,250	2,170	1,390	1,490	1,380
29	2,500	2,390	3,060	2,120	3,680	5,160	2,600	2,030	1,920	1,370	1,430	1,800
30	2,700	2,140	2,780	2,920	-------	8,190	2,470	1,880	1,690	1,330	1,370	1,960
31	3,580	-------	2,440	5,990	-------	10,300	-------	1,790	-------	1,150	1,340	-------
Total	129,390	67,320	78,620	86,550	157,660	125,680	142,820	74,140	54,130	44,740	73,190	40,962
Mean	4,174	2,244	2,472	2,792	5,437	4,054	4,761	2,392	1,804	1,443	2,361	1,365
Cfsm	3.13	1.68	1.86	2.10	4.08	3.04	3.57	1.80	1.35	1.03	1.77	1.02
In.	3.61	1.88	2.14	2.42	4.40	3.51	3.99	2.07	1.51	1.25	2.04	1.14

Calendar year 1959: Max 10,600 Min 941 Mean 2,550 Cfsm 1.91 In. 25.96
Water year 1959-60: Max 11,500 Min 996 Mean 2,932 Cfsm 2.20 In. 29.96

Peak discharge (base, 10,000 cfs).--Feb. 5 (9 p.m.) 13,200 cfs (6.21 ft); Mar. 31 (2 a.m.) 10,700 cfs (5.57 ft); Apr. 4 (9:30 p.m.) 12,200 cfs (5.95 ft); Aug. 13 (5 a.m.) 10,900 cfs (5.62 ft).

* Discharge measurement made on this day.

4540. Big Laurel Creek near Stackhouse, N. C.

Location.--Lat 35°55'11", long 82°45'48", 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.--October 1932 to September 1960. Monthly discharge only for some periods, published in WSP 1208.

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.--27 years, 181 cfs.

Extremes.--Maximum discharge during year, 2,050 cfs July 2 (gage height, 4.72 ft); minimum, 48 cfs Sept. 27 (gage height, 1.45 ft).
1932-60: Maximum discharge, 7,700 cfs Jan. 21, 1957 (gage height, 8.15 ft); minimum, 11 cfs Jan. 6, 1942 (gage height, 0.92 ft), result of freeze-up; minimum daily, 19 cfs Sept. 2, 16-18, 1953.

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

Revisions.--WSP 933: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.4	46	2.5	315
1.6	70	3.0	580
1.9	127	4.0	1,310
2.2	208	5.0	2,390

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	376	134	230	139	351	264	652	187	120	466	86	192
2	184	129	214	137	295	254	509	159	114	1,270	80	123
3	129	120	258	175	250	268	492	151	109	498	80	88
4	105	116	250	154	221	224	538	146	107	295	81	78
5	90	114	234	151	478	b195	628	139	105	214	126	70
6	178	175	261	211	879	b185	550	137	103	173	96	65
7	965	167	258	291	670	b185	476	137	101	149	140	69
8	443	146	230	356	476	b180	385	224	101	127	*173	90
9	514	132	247	324	365	205	328	175	103	139	109	67
10	365	120	295	295	420	190	283	164	88	384	92	72
11	268	114	333	295	592	184	*254	*154	86	1,020	101	95
12	202	107	626	261	454	175	237	149	86	*556	198	*204
13	167	101	1,100	307	410	b170	221	144	*83	324	314	123
14	286	97	622	*307	333	b190	205	137	80	370	193	92
15	254	99	*395	324	275	227	196	127	78	258	139	78
16	208	*96	295	283	268	237	190	123	84	202	116	73
17	173	127	254	264	295	330	184	116	116	198	99	73
18	151	109	356	264	592	*465	178	116	80	193	99	75
19	*132	105	975	240	628	328	167	112	73	156	97	70
20	118	103	598	221	432	275	162	276	70	137	92	62
21	109	105	400	202	360	237	164	272	129	125	86	57
22	105	101	307	b185	320	224	175	173	109	116	142	56
23	101	96	254	b165	*283	240	154	139	304	116	129	54
24	146	484	221	b165	275	333	149	127	164	127	96	53
25	181	598	199	b155	438	410	144	137	292	109	96	50
26	181	360	184	b145	592	375	149	134	196	132	81	50
27	184	275	173	178	426	532	202	221	167	141	78	50
28	173	504	187	187	338	736	190	175	134	116	76	70
29	156	400	184	193	307	1,070	162	167	144	103	72	76
30	151	287	156	234	-------	1,370	154	146	118	96	67	64
31	139	-------	146	324	-------	975	-------	129	-------	90	70	-------
Total	6,934	5,621	10,442	7,132	12,023	11,233	8,478	4,893	3,644	8,400	3,504	2,439
Mean	224	187	337	230	415	362	283	158	121	271	113	81.3
Cfsm	1.78	1.48	2.67	1.83	3.29	2.87	2.25	1.25	0.960	2.15	0.897	0.645
In.	2.05	1.66	3.08	2.11	3.55	3.32	2.50	1.44	1.08	2.48	1.03	0.72

Calendar year 1959: Max 1,930 Min 45 Mean 197 Cfsm 1.56 In. 21.20
Water year 1959-60: Max 1,370 Min 50 Mean 232 Cfsm 1.84 In. 25.02

Peak discharge (base, 1,500 cfs).--Mar. 30 (1 a.m.) 1,500 cfs (4.20 ft); July 2 (7:30 a.m.) 2,050 cfs (4.72 ft).

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

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4550. French Broad River near Newport, Tenn.

Location.--Lat 35°58'54", long 83°09'40", on left bank 15 ft downstream from bridge on U. S. Highway 411 (corrected) 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 to December 1900, February to August 1901, October to November 1901, November 1902 to December 1905, September to December 1907, October 1920 to September 1960. Monthly discharge only October 1920, published in WSP 1306.

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.--42 years (1903-5, 1920-60), 2,819 cfs.

Extremes.--Maximum discharge during year, 16,800 cfs at 12:01 a.m. Oct. 1, stage falling, peak occurred Sept. 30, 1959; maximum peak discharge during year, 15,100 cfs Feb. 6 (gage height, 7.36 ft); minimum, 880 cfs Sept. 26 (gage height, 1.60 ft); minimum daily, 1,050 cfs Sept. 27.

1900-1901, 1902-5, 1907, 1920-60: Maximum discharge, 76,300 cfs Aug. 30, 1940 (gage height, 19.25 ft); minimum, 208 cfs Oct. 23, 1952 (gage height, 0.97 ft); minimum daily, 240 cfs Sept. 9, 1925.

Maximum stage known about 24 ft in March 1867. Floods in February 1902 and July 1916 reached stages of about 23.0 and 22.5 ft, respectively, from reports of the Tennessee Valley Authority.

Revisions.--The maximum discharge for the periods Oct. 15 to Dec. 22, 1900, and Feb. 24 to Aug. 31, 1901, has been revised to 65,000 cfs May 21, 1901 (gage height, 12.0 ft, from graph based on gage readings, datum then in use), superseding figure published in Tennessee Division of Geology Bulletin 34, WSP 1306.

Remarks.--Records good. Diurnal fluctuation during low flow caused by powerplants above station.

Revisions (water years).--WSP 783: 1933-34. WSP 823: Drainage area. WSP 893: 1928(M). WSP 1306: 1900-1908. WSP 1336: 1903(M), 1921-22(M), 1923, 1925(M), 1927(M), 1928, 1932.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.7	1,000
2.0	1,400
3.0	3,250
5.0	8,500
7.0	14,100

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*12,700	4,250	2,920	2,840	8,750	4,640	11,900	3,210	2,010	1,900	1,260	1,900
2	6,620	3,700	2,740	2,680	*6,480	4,430	10,100	3,620	1,920	3,430	1,210	2,060
3	3,580	3,250	2,920	2,780	5,000	5,030	8,300	3,160	1,810	2,860	*1,200	2,200
4	2,720	2,970	*3,050	4,320	4,270	4,820	12,100	2,970	1,850	2,110	1,370	2,060
5	2,340	2,840	2,860	4,000	4,880	4,320	13,700	2,820	2,080	1,800	1,430	1,880
6	2,100	3,030	2,840	4,300	13,800	3,970	12,700	2,740	2,430	*1,660	1,680	1,780
7	3,840	3,030	3,140	6,250	11,800	3,920	10,800	2,700	2,430	1,710	1,390	1,710
8	4,170	2,880	2,920	6,380	9,260	*3,720	8,530	3,650	2,280	1,580	2,370	*1,480
9	5,020	2,660	2,840	5,340	6,460	3,900	6,900	*5,440	2,190	1,540	1,990	1,460
10	9,450	*2,540	2,840	4,580	5,620	3,870	6,070	4,170	2,130	1,800	1,730	1,440
11	9,030	2,470	2,880	*4,120	9,840	3,820	5,490	3,500	1,950	5,340	2,620	1,460
12	9,760	2,350	3,250	3,800	9,540	3,770	5,080	3,250	1,850	4,200	3,770	1,710
13	7,910	2,340	6,010	3,600	8,610	3,530	4,820	3,140	1,760	2,640	10,400	1,580
14	6,170	2,260	5,570	3,530	7,020	3,700	4,510	3,030	*1,660	2,410	9,170	1,360
15	7,860	2,240	4,120	3,430	5,780	4,040	4,270	2,860	1,600	2,350	6,350	1,280
16	6,640	2,260	3,410	3,340	5,340	4,220	4,120	2,720	1,570	1,900	3,970	1,220
17	5,080	2,340	3,070	3,160	5,390	5,440	3,970	2,600	1,650	1,610	3,210	1,210
18	4,640	2,320	3,210	3,140	7,800	7,860	3,840	2,520	1,490	1,730	2,820	1,320
19	4,140	2,220	10,300	3,300	11,900	6,610	3,670	2,450	1,420	1,580	2,920	1,760
20	3,580	2,130	7,740	3,180	9,170	5,570	3,500	2,370	1,390	1,440	3,410	1,710
21	3,230	2,100	5,340	2,920	6,750	4,970	3,430	2,700	1,710	1,440	2,780	1,490
22	3,010	2,060	4,270	2,760	6,040	4,530	3,580	2,370	2,200	1,300	2,430	1,370
23	3,010	2,040	3,670	2,520	5,570	4,870	3,480	2,220	3,360	1,300	3,030	1,300
24	3,670	2,970	3,300	2,470	5,130	5,470	3,250	2,130	3,160	1,550	3,050	1,200
25	4,790	4,770	3,050	2,520	5,420	6,090	3,140	2,190	3,120	1,710	2,740	1,180
26	4,000	3,940	2,920	2,430	7,240	5,990	3,070	2,150	2,560	1,680	2,350	1,090
27	3,500	3,140	2,820	2,470	6,400	5,700	3,340	2,450	3,050	1,610	1,970	1,050
28	3,250	5,210	2,760	2,620	5,490	6,380	3,500	2,680	2,860	1,660	1,810	1,170
29	2,970	4,220	3,210	2,720	5,050	7,270	3,270	2,560	2,450	1,550	1,760	1,780
30	2,900	3,390	3,770	3,010	-------	10,100	2,990	2,300	2,150	1,550	1,680	1,970
31	3,530	-------	3,100	5,880	-------	*13,200	-------	2,100	-------	1,440	1,600	-------
Total	155,210	87,920	116,840	110,390	209,800	165,750	177,420	88,770	64,090	62,380	89,470	46,160
Mean	5,007	2,931	3,769	3,561	7,234	5,347	5,914	2,864	2,136	2,012	2,886	1,539
Cfsm	2.69	1.58	2.03	1.92	3.89	2.88	3.18	1.54	1.15	1.08	1.55	0.828
In.	3.11	1.76	2.34	2.21	4.20	3.32	3.55	1.78	1.28	1.25	1.79	0.92

Calendar year 1959: Max 14,500 Min 1,060 Mean 3,247 Cfsm 1.75 In. 23.73
Water year 1959-60: Max 13,800 Min 1,050 Mean 3,755 Cfsm 2.02 In. 27.51

Peak discharge (base, 16,000 cfs).--No peak above base.

* Discharge measurement made on this day.

4555. 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 1960.

Gage.--Water-stage recorder. Datum of gage is 2,976.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--6 years, 99.0 cfs.

Extremes.--Maximum discharge during year, 3,870 cfs Oct. 9 (gage height, 6.16 ft), from rating curve extended above 2,000 cfs by logarithmic plotting; minimum, 25 cfs July 21, 22 (gage height, 1.25 ft).
1954-60: Maximum discharge, 5,050 cfs Jan. 21, 1959 (gage height, 6.95 ft), from rating curve extended above 2,000 cfs by logarithmic plotting; minimum, 9.4 cfs Sept. 29, 30, 1954.

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

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	20	2.5	345
1.3	30	3.0	620
1.5	55	3.5	960
1.7	88	4.0	1,370
2.0	162		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	128	b77	77	189	*95	246	118	45	43	32	111
2	75	110	*79	98	*159	126	272	75	43	42	*30	*61
3	67	*101	77	208	143	151	858	*70	*43	37	36	56
4	61	95	75	*110	148	b100	*542	67	46	36	43	46
5	58	101	75	103	607	b95	363	66	54	*36	35	41
6	226	190	79	276	256	b90	268	62	56	45	43	38
7	536	110	b65	208	195	b90	231	102	54	43	47	37
8	*870	101	b60	154	171	90	202	175	114	35	32	36
9	1,040	95	67	132	162	86	180	88	72	34	37	61
10	345	88	67	125	461	84	162	81	54	39	43	46
11	389	84	75	112	249	75	151	77	48	51	141	68
12	221	81	300	106	186	75	138	79	46	36	365	42
13	183	77	148	112	180	b75	130	74	43	31	220	37
14	302	77	112	101	154	b74	120	68	41	30	120	35
15	*192	77	99	152	b140	72	115	66	40	28	83	34
16	162	79	92	110	140	108	110	62	37	28	70	36
17	180	103	92	118	135	95	103	61	36	28	62	137
18	162	75	181	162	140	88	97	58	35	30	58	84
19	135	72	157	115	b120	81	90	55	35	32	62	54
20	122	70	110	101	b115	77	88	54	96	43	54	45
21	112	74	101	b85	115	74	92	52	54	26	47	41
22	118	68	92	b80	110	75	88	48	48	28	52	40
23	198	67	88	b80	103	74	81	48	165	115	52	37
24	174	150	86	b80	103	79	77	46	62	67	45	35
25	143	88	88	b75	151	77	74	46	62	79	41	34
26	122	77	81	75	128	81	70	58	84	121	38	30
27	118	77	77	92	110	95	90	144	66	55	38	46
28	106	145	168	90	106	125	79	62	55	45	37	69
29	132	b82	103	106	99	515	70	54	48	41	43	68
30	235	b80	88	224	-------	722	81	51	45	37	41	47
31	162	-------	81	385	-------	309	-------	47	-------	34	70	-------
Total	7,045	2,822	3,140	4,053	5,075	4,053	5,268	2,214	1,727	1,375	2,117	1,552
Mean	227	94.1	101	131	175	131	176	71.4	57.6	44.4	68.3	51.7
Cfsm	8.22	3.41	3.66	4.75	6.34	4.75	6.38	2.59	2.09	1.61	2.47	1.87
In.	9.49	3.80	4.23	5.46	6.84	5.46	7.10	2.98	2.33	1.85	2.85	2.09

Calendar year 1959: Max 1,040 Min 20 Mean 110 Cfsm 3.99 In. 54.26
Water year 1959-60: Max 1,040 Min 26 Mean 110 Cfsm 3.99 In. 54.48

Peak discharge (base, 1,500 cfs).--Oct. 6 (10:30 p.m.) 2,670 cfs (5.25 ft); Oct. 9 (1 a.m.) 3,870 cfs (6.16 ft); Feb. 5 (12:30 p.m.) 1,800 cfs (4.46 ft); Mar. 30 (9:30 a.m.) 1,590 cfs (4.24 ft); Apr. 3 (2 p.m.) 2,800 cfs (5.36 ft); Aug. 12 (9:30 p.m.) 2,290 cfs (4.93 ft).

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

4560. 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 1960.

Gage.--Water-stage recorder. Datum of gage is 2,725.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--6 years, 158 cfs.

Extremes.--Maximum discharge during year, 3,540 cfs Oct. 9 (gage height, 6.64 ft); minimum, 41 cfs Sept. 27 (gage height, 0.78 ft).
1954-60: Maximum discharge, 5,180 cfs Apr. 15, 1956 (gage height, 7.80 ft), from rating curve extended above 3,300 cfs by logarithmic plotting; minimum, 7.6 cfs Sept. 7, 1954 (gage height, 0.16 ft).

Remarks.--Records excellent. Considerable regulation at times caused by Lake Logan (capacity, 1,050 cfs-days).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.7	35	2.5	324
1.0	60	3.0	498
1.5	125	4.0	1,000
2.0	209	5.0	1,720

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	195	200	128	131	353	*184	612	199	78	71	49	142
2	141	177	*133	149	*290	219	498	144	78	73	*46	*96
3	118	*164	130	304	256	297	730	*131	*77	62	47	84
4	104	152	122	*188	254	215	794	125	81	60	71	70
5	93	157	128	176	860	196	*620	122	91	*62	54	61
6	192	259	138	440	490	191	474	118	104	75	50	56
7	747	172	131	359	363	182	410	137	99	79	77	53
8	*944	159	113	282	305	171	353	284	162	59	51	53
9	1,340	149	113	245	294	172	319	159	139	57	65	76
10	486	141	110	222	590	167	287	*144	96	66	78	76
11	510	136	118	209	464	167	287	136	86	93	182	94
12	324	133	392	196	336	155	294	136	79	64	393	63
13	272	125	249	198	336	149	209	133	76	55	355	53
14	418	125	193	184	287	267	177	127	71	53	182	49
15	297	122	176	232	263	399	213	119	70	49	130	48
16	249	120	162	277	251	338	204	114	66	49	110	49
17	260	159	157	316	247	186	195	110	67	48	93	161
18	247	120	238	271	267	186	184	104	56	49	103	133
19	213	116	243	236	232	182	174	103	58	51	106	79
20	195	112	182	150	218	171	167	100	121	68	90	64
21	182	118	167	119	218	155	174	96	95	45	77	58
22	188	109	157	118	211	154	169	90	72	56	79	55
23	256	110	149	118	272	152	155	87	227	122	83	54
24	258	206	146	118	217	157	149	86	107	124	69	49
25	217	147	151	116	259	157	143	84	102	96	64	46
26	191	131	138	116	249	151	141	94	135	160	60	42
27	181	120	133	130	217	144	167	203	113	87	58	56
28	162	210	225	125	207	166	151	109	92	66	56	103
29	179	139	174	138	196	494	135	95	86	62	59	102
30	313	131	149	338	-------	859	141	90	72	57	64	93
31	247	-------	139	634	-------	680	-------	82	-------	49	90	-------
Total	9,719	4,419	5,084	6,835	9,002	7,463	8,726	3,861	2,855	2,167	3,091	2,218
Mean	314	147	164	220	310	241	291	125	95.2	69.9	99.7	73.9
(†)	0	-3	0	+9	-6	-5	+2	-4	0	0	+4	-2

Adjusted for change in contents in Lake Logan

Mean	314	147	164	221	310	241	291	124	95.2	69.9	99.8	73.9
Cfsm	5.68	2.66	2.97	4.00	5.61	4.36	5.26	2.24	1.72	1.26	1.80	1.34
In.	6.54	2.97	3.42	4.60	6.05	5.02	5.87	2.59	1.92	1.46	2.08	1.49

	Observed			Adjusted		
Calendar year 1959:	Max 1,340	Min 29	Mean 173	Mean 173	Cfsm 3.13	In. 42.40
Water year 1959-60:	Max 1,340	Min 42	Mean 179	Mean 179	Cfsm 3.24	In. 44.01

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Lake Logan.

4565. East Fork Pigeon River near Canton, N. C.

Location.--Lat 35°37'42", long 82°52'12", on right bank 800 ft upstream from U. S. Highway 276, 0.3 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 1960.

Gage.--Water-stage recorder. Datum of gage is 2,674.34 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--6 years, 135 cfs.

Extremes.--Maximum discharge during year, 3,390 cfs Oct. 9 (gage height, 5.88 ft); minimum, 32 cfs Aug. 3, 4, 6 (gage height, 1.01 ft).
1954-60: Maximum discharge, 6,640 cfs Apr. 4, 1957 (gage height, 7.78 ft), from rating curve extended above 3,600 cfs by logarithmic plotting; minimum, 12 cfs Jan. 9, 1956, result of freezeup; minimum gage height, 0.81 ft Dec. 15, 1958, result of freezeup.

Remarks.--Records excellent except those for periods of ice effect, which are good. Records of water temperatures for the water year 1960 are given in WSP 1721.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 12				Dec. 13 to Sept. 30			
1.3	78	3.0	680	1.0	31	2.5	451
1.5	122	3.5	970	1.2	59	3.0	680
2.0	256	4.0	1,330	1.5	127	3.5	970
2.5	440	4.5	1,760	2.0	273	4.0	1,330

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	314	344	113	124	372	*182	526	160	69	71	37	*67
2	219	221	*113	130	*290	191	509	124	69	71	*35	56
3	177	*199	113	238	251	196	1,240	117	69	63	35	59
4	154	186	106	*174	232	b160	*977	114	79	59	35	53
5	136	180	104	165	*742	b140	724	*112	88	63	37	46
6	144	239	117	321	580	b140	586	110	*107	*65	36	43
7	852	191	104	*273	424	138	484	122	97	67	42	43
8	564	177	99	241	350	140	412	238	154	59	39	43
9	*1,430	167	99	217	306	140	361	154	124	56	46	45
10	718	159	97	196	464	138	320	140	97	63	62	46
11	603	151	97	185	472	138	293	135	88	81	97	48
12	440	144	228	171	368	132	267	135	84	65	219	42
13	351	136	188	165	350	130	251	127	75	57	343	38
14	411	134	160	154	299	127	235	117	71	54	146	37
15	*325	132	149	165	267	127	223	112	67	49	102	37
16	275	127	135	143	247	157	208	107	63	49	93	38
17	268	132	130	143	244	162	196	102	61	48	77	118
18	250	117	182	165	290	165	182	100	59	46	71	100
19	224	113	202	168	b240	151	171	95	57	45	73	61
20	207	108	165	130	b220	140	168	93	95	49	67	51
21	191	106	157	b115	217	132	168	90	84	42	57	48
22	196	104	146	b110	208	140	160	84	67	43	56	46
23	253	101	135	b110	196	146	149	79	124	51	54	45
24	265	141	132	b110	194	162	140	77	84	63	53	43
25	227	117	132	b110	247	171	135	77	86	45	54	42
26	205	106	124	b105	247	176	130	75	138	45	48	39
27	191	101	120	127	220	199	146	143	114	49	46	42
28	172	169	168	*117	205	238	132	93	95	43	46	67
29	177	127	151	130	196	464	122	84	86	42	45	83
30	311	b120	132	286	-------	1,070	122	79	75	41	46	56
31	307	-------	127	575	-------	670	-------	73	-------	39	48	-------
Total	10,357	4,449	4,225	5,563	8,938	6,562	9,717	3,468	2,626	1,683	2,245	1,582
Mean	334	148	136	179	308	212	324	112	87.5	54.3	72.4	52.7
Cfsm	6.49	2.87	2.64	3.48	5.98	4.12	6.29	2.17	1.70	1.05	1.41	1.02
In.	7.48	3.21	3.05	4.02	6.45	4.74	7.02	2.50	1.90	1.22	1.62	1.14

Calendar year 1959: Max 1,430 Min 33 Mean 164 Cfsm 3.18 In. 42.23
Water year 1959-60: Max 1,430 Min 35 Mean 168 Cfsm 3.26 In. 44.35

Peak discharge (base, 1,200 cfs).--Oct. 7 (1 a.m.) 1,310 cfs (3.98 ft); Oct. 9 (3 a.m.) 3,390 cfs (5.88 ft); Feb. 5 (3 p.m.) 1,720 cfs (4.45 ft); Mar. 30 (12 m.) 1,980 cfs (4.72 ft); Apr. 3 (4:30 p.m.) 3,270 cfs (5.79 ft).

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

4570. 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 64.1. 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, October 1928 to September 1960. Monthly discharge only for some periods, published in WSP 1306.
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. Dec. 6, 1928, to Jan. 3, 1929, staff gage at present site and datum.
Average discharge.--33 years (1907-8, 1928-60), 311 cfs (unadjusted).
Extremes.--Maximum discharge during year, 6,110 cfs Oct. 9 (gage height, 8.26 ft); minimum, 91 cfs Sept. 27 (gage height, 0.89 ft); minimum daily, 95 cfs Aug. 3, Sept. 26. 1907-9, 1928-60: Maximum discharge, 31,600 cfs Aug. 30, 1940 (gage height, 20.75 ft, from floodmark in gage well); minimum, 15 cfs Jan. 8, 1956 (gage height, 0.04 ft), result of freezeup; minimum daily, 27 cfs Sept. 7, 1954.
Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Occasional diurnal fluctuation and considerable regulation at low flow caused by gristmill and Lake Logan on West Fork (capacity, 1,050 cfs-days). Records for chemical analyses for the water year 1960 are given in WSP 1721.
Revisions (water years).--WSP 823: Drainage area. WSP 853: 1929-37(M). WSP 1306: 1908(M).

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 5, July 12 to Sept. 30				Feb. 6 to July 11			
0.9	93	3.0	1,020	0.9	73	3.0	1,020
1.0	115	4.0	1,760	1.0	93	4.0	1,760
1.5	260	5.0	2,580	1.5	242	5.0	2,580
2.0	450	6.0	3,550	2.0	447		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	585	481	267	267	843	389	1,290	389	154	148	102	216
2	405	430	270	284	628	b430	1,100	287	154	148	102	*207
3	332	393	270	569	550	b550	2,000	264	154	129	*95	162
4	288	370	*250	382	*517	b400	2,060	253	166	121	120	145
5	260	*355	237	359	*1,740	b360	*1,580	*246	191	123	106	125
6	253	536	278	877	1,260	b350	1,170	235	*232	*132	106	115
7	1,560	390	247	*705	888	b330	992	255	207	160	135	113
8	1,490	359	237	565	729	*334	843	579	302	121	118	111
9	2,960	340	237	494	645	343	741	334	307	113	167	113
10	1,340	325	230	446	778	326	645	298	204	a135	201	162
11	1,260	314	234	413	1,150	330	606	283	185	a200	311	156
12	850	295	656	390	772	306	612	283	172	a145	577	125
13	*675	281	481	378	747	298	498	272	157	135	946	106
14	965	278	378	359	634	378	424	280	151	125	378	100
15	705	278	343	409	b580	590	447	242	142	120	267	100
16	580	260	321	425	b530	575	429	232	134	115	230	104
17	555	302	306	485	540	470	406	224	132	118	196	261
18	565	250	401	471	657	416	389	214	121	115	182	268
19	476	244	490	409	545	380	359	204	118	113	244	170
20	430	234	370	314	b480	355	347	201	199	145	190	132
21	409	234	343	b255	475	322	351	191	220	108	162	120
22	417	230	317	b245	461	326	351	181	142	104	156	115
23	518	227	302	b240	502	330	318	172	385	140	162	113
24	585	366	295	b245	351	347	302	169	214	278	143	104
25	476	299	302	b230	535	363	291	169	191	140	140	100
26	421	257	281	b230	550	351	283	178	295	261	128	95
27	397	244	264	264	470	372	326	366	253	167	122	102
28	366	499	398	264	438	420	318	224	197	135	122	196
29	366	295	380	289	416	948	275	188	185	132	115	205
30	645	267	302	669	--------	2,110	268	181	157	125	130	154
31	606	--------	278	1,410	--------	1,530	--------	160	--------	108	134	--------
Total	21,740	9,633	9,945	13,342	19,391	15,329	20,021	7,734	5,821	4,359	6,287	4,295
Mean	701	321	321	430	669	494	667	249	194	141	203	143
(†)	+20.5	+16.7	+17.6	+29.3	+13.2	+13.1	+22.4	+15.9	+22.5	+25.1	+29.0	+20.2

Adjusted for diversion and change in reservoir contents

Mean	702	322	321	431	669	495	668	250	195	141	204	144
Cfsm	5.28	2.42	2.41	3.24	5.03	3.72	5.02	1.88	1.47	1.06	1.53	1.08
In.	6.08	2.70	2.79	3.74	5.43	4.29	5.60	2.17	1.63	1.23	1.77	1.21

	Observed			Adjusted			
Calendar year 1959:	Max 2,960	Min 71	Mean 370	Mean 371	Cfsm 2.79	In. 37.84	
Water year 1959-60:	Max 2,960	Min 95	Mean 377	Mean 377	Cfsm 2.83	In. 38.64	

Peak discharge (base, 4,000 cfs).--Oct. 9 (4:30 a.m.) 6,110 cfs (8.26 ft); Apr. 3 (8 p.m.) 4,620 cfs (7.01 ft).

* Discharge measurement made on this day.
† Diversion by city of Canton, and change in contents in Lake Logan, equivalent in cfs-days. Records of diversion furnished by city of Canton.
a No gage-height record; discharge estimated on basis of weather records and records for West Fork Pigeon River below Lake Logan.
b Stage-discharge relation affected by ice.

4575. 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 1960.

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.--11 years, 35.4 cfs (unadjusted).

Extremes.--Maximum discharge during year, 540 cfs Oct. 9 (gage height, 2.80 ft); minimum, 7.5 cfs Sept. 26; minimum daily, 8.5 cfs Sept. 26.
1949-60: Maximum discharge, 1,470 cfs Jan. 21, 1959 (gage height, 4.07 ft), from rating curve extended above 500 cfs by logarithmic plotting; minimum, 1.0 cfs Sept. 9, 1954 (gage height, 0.75 ft); minimum daily, 5.0 cfs 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 excellent except those for periods of ice effect, which are good. 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 about 3 cfs for water supply at diversion dam 0.4 mile upstream.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.9	6.0	1.5	69
1.0	11	1.8	130
1.1	18	2.2	245
1.3	39		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	32	33	33	77	44	130	57	22	18	12	17
2	26	30	34	38	64	54	128	38	23	18	11	15
3	22	28	33	77	*59	b69	157	34	22	16	12	13
4	20	*28	32	47	59	52	168	33	22	16	*12	12
5	18	35	32	*46	112	b48	137	*33	26	17	12	11
6	23	61	37	108	88	b46	*117	32	25	*21	14	*11
7	*96	39	30	92	73	44	100	44	*22	17	15	11
8	113	36	29	69	66	*43	92	66	47	15	12	11
9	192	33	*28	61	64	44	86	43	32	15	17	16
10	78	32	28	56	114	43	78	*39	25	18	13	12
11	100	31	32	50	98	42	71	38	24	20	41	17
12	61	29	119	48	80	39	67	36	23	16	73	12
13	50	28	73	51	80	39	62	34	21	14	54	11
14	88	28	56	47	69	38	59	33	20	14	29	10
15	59	29	48	61	64	38	57	31	20	14	22	10
16	50	29	44	48	61	51	56	30	18	14	18	11
17	54	37	44	54	61	48	52	28	18	14	17	12
18	50	28	66	61	67	44	51	28	18	13	16	20
19	43	27	56	51	56	42	47	27	17	14	15	14
20	39	27	47	47	52	39	46	26	18	14	15	11
21	37	28	44	43	52	39	50	26	17	13	15	10
22	34	27	42	40	51	39	44	25	17	16	15	10
23	37	27	39	b39	48	38	42	24	41	27	14	10
24	50	67	38	38	50	42	39	24	21	23	13	10
25	47	40	38	37	69	42	38	25	22	16	12	10
26	38	36	36	36	57	43	37	34	32	15	12	8.5
27	39	36	34	52	51	50	40	39	24	15	12	13
28	34	50	51	44	50	59	38	28	21	14	12	29
29	37	36	40	51	48	166	36	23	20	13	13	18
30	37	33	37	71	-------	220	39	24	18	13	14	14
31	34	-------	34	110	-------	144	-------	23	-------	12	22	-------
Total	1,642	1,027	1,334	1,706	1,940	1,789	2,164	1,025	696	495	584	389.5
Mean	53.0	34.2	43.0	55.0	66.9	57.7	72.1	33.1	23.2	16.0	18.8	13.0
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 209 Min 10 Mean 39.7 Cfsm - In. -
Water year 1959-60: Max 220 Min 8.5 Mean 40.4 Cfsm - In. -

Peak discharge (base, 400 cfs).--Oct. 9 (12:30 a.m.) 540 cfs (2.80 ft).

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

4590. 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.--October 1939 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 2,383.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years, 156 cfs.

Extremes.--Maximum discharge during year, 1,110 cfs Aug. 12 (gage height, 4.48 ft); minimum, 45 cfs Sept. 26 (gage height, 1.04 ft).
1939-60: Maximum discharge, 3,200 cfs Aug. 30, 1940, Jan. 21, 1959 (gage height, 7.51 ft); minimum, 18 cfs Jan. 5, 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, which are good. Slight diurnal fluctuation at low flow caused by small gristmill above station.

Revisions.--WSP 823: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	42	2.5	301
1.2	58	3.0	450
1.6	105	3.5	623
2.0	180	4.0	843

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90	91	170	128	235	180	444	149	78	70	49	106
2	72	86	165	137	207	191	417	123	79	72	51	92
3	65	83	153	249	*189	b220	529	116	81	65	53	70
4	62	*81	*139	174	184	b170	539	113	84	63	*54	65
5	59	86	132	*163	351	b150	479	*110	84	68	49	60
6	59	214	151	391	327	b150	*402	110	83	72	71	*59
7	*136	118	130	366	269	b140	357	132	*81	*68	65	64
8	120	107	b118	288	242	b140	316	199	124	60	80	60
9	242	101	118	247	225	b145	285	130	104	60	139	62
10	126	95	113	225	446	b140	259	119	84	100	104	60
11	139	91	116	204	399	b140	239	116	78	159	246	61
12	104	87	449	191	307	b130	225	115	75	85	431	61
13	*91	85	330	198	301	b130	214	110	72	71	364	54
14	250	84	249	180	b250	*b135	202	105	69	71	176	51
15	149	85	214	204	b220	145	195	102	68	83	138	51
16	123	81	191	172	b215	184	187	99	66	62	111	54
17	128	99	182	178	b245	209	180	97	67	73	94	62
18	123	83	299	193	293	198	170	92	63	63	89	67
19	105	79	334	172	239	172	159	91	60	72	84	67
20	97	78	249	159	b210	161	157	89	78	64	85	54
21	94	78	220	b145	b205	153	161	89	76	56	85	52
22	91	76	200	b135	200	172	155	85	66	59	116	50
23	92	76	184	b130	187	182	145	84	169	78	89	49
24	108	254	172	b130	182	207	139	83	85	70	78	46
25	116	159	163	b125	294	200	134	92	79	60	72	48
26	99	134	153	b125	249	202	130	108	131	59	69	48
27	102	156	145	167	216	214	167	116	104	57	68	53
28	95	399	191	151	204	247	139	91	84	54	68	119
29	101	225	167	176	193	434	128	86	79	55	71	87
30	102	189	145	227	-------	731	125	83	70	54	68	67
31	97	-------	134	298	-------	563	-------	79	-------	52	72	-------
Total	3,437	3,660	5,876	6,026	7,284	6,535	7,378	3,313	2,521	2,135	3,389	1,901
Mean	111	122	190	194	251	211	246	107	84.0	68.9	109	63.4
Cfsm	1.70	1.87	2.91	2.97	3.84	3.23	3.77	1.64	1.29	1.06	1.67	0.971
In.	1.96	2.08	3.35	3.43	4.15	3.72	4.20	1.89	1.44	1.22	1.93	1.08

Calendar year 1959: Max 828 Min 50 Mean 140 Cfsm 2.14 In. 29.17
Water year 1959-60: Max 731 Min 48 Mean 146 Cfsm 2.24 In. 30.45

Peak discharge (base, 1,100 cfs).--Aug. 12 (11 p.m.) 1,110 cfs (4.48 ft).

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

4595. Pigeon River near Hepco, N. C.

Location.--Lat 35°38'07", long 82°59'22", on left bank 0.6 mile downstream from Jonathan Creek, 2.0 miles south of Hepco, Haywood County, 2.4 miles upstream from Fines Creek, and at mile 45.1.

Drainage area.--350 sq mi.

Records available.--July 1927 to September 1960.

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.--33 years, 653 cfs.

Extremes.--Maximum discharge during year, 6,040 cfs Oct. 9 (gage height, 6.92 ft); minimum, 197 cfs Sept. 26, 27 (gage height, 1.39 ft).

1927-60: 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 measurements 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 (discharge, about 42,000 cfs).

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 2,300 cfs-days). Records of chemical analyses for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 823: Drainage area. WSP 893: 1928-31, 1932(M), 1933-36, 1937-39(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.3	200	4.0	1,890
1.5	265	5.0	3,000
2.0	470	6.0	4,440
3.0	1,020		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,120	736	605	585	1,650	883	2,460	676	391	353	222	466
2	786	659	600	585	1,270	895	2,090	565	386	366	225	434
3	615	605	632	1,070	*1,100	1,160	2,690	525	408	333	219	325
4	488	*590	*575	847	1,000	943	3,480	506	425	310	*231	298
5	430	580	565	*764	2,250	859	2,930	*497	434	314	225	272
6	408	971	626	1,730	2,370	818	*2,220	492	479	337	269	*251
7	*1,660	703	590	1,650	1,690	808	1,880	514	*456	*370	299	245
8	1,440	632	535	1,360	1,410	786	1,610	974	540	318	332	248
9	3,490	600	535	1,140	1,250	802	1,410	720	654	295	400	265
10	1,840	565	515	1,020	1,750	780	1,260	642	461	396	493	302
11	1,750	530	525	943	2,440	808	1,160	615	416	605	781	295
12	1,410	488	1,240	871	1,620	774	1,160	600	399	412	1,370	284
13	1,330	530	1,160	835	1,540	752	1,030	595	374	329	2,100	234
14	1,820	470	937	796	1,360	*774	907	585	357	310	813	219
15	1,330	540	883	865	1,180	1,100	913	540	341	284	585	212
16	1,000	492	796	924	1,150	1,140	865	520	329	272	497	219
17	937	555	714	907	1,220	1,250	780	506	322	291	434	323
18	974	484	900	955	1,570	1,150	758	488	314	272	395	448
19	802	456	1,300	847	1,360	1,100	736	479	295	272	408	341
20	725	448	919	736	1,120	889	725	466	382	295	425	269
21	681	443	824	637	1,080	824	736	456	506	262	353	245
22	681	448	752	605	1,020	865	769	438	362	248	395	234
23	686	421	708	575	988	913	698	421	732	295	362	228
24	943	792	676	600	901	968	642	412	540	449	333	219
25	802	776	659	565	1,130	988	620	448	434	310	310	212
26	703	575	632	565	1,260	943	610	447	692	391	291	203
27	670	560	575	632	1,070	1,000	681	659	615	333	287	216
28	615	1,040	704	676	1,000	1,080	659	560	456	287	287	464
29	605	736	857	659	955	1,740	550	448	421	272	284	421
30	818	626	654	1,160	-------	3,590	525	434	374	280	302	353
31	901	-------	615	2,210	-------	3,010	-------	408	-------	245	375	-------
Total	32,460	18,051	22,808	28,214	39,704	34,392	37,554	16,616	13,295	10,106	14,302	8,745
Mean	1,047	602	736	910	1,369	1,109	1,252	536	443	326	461	292
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 5,750 Min 200 Mean 733 Cfsm 2.09 In. 28.43
Water year 1959-60: Max 3,590 Min 203 Mean 755 Cfsm 2.16 In. 29.35

Peak discharge (base, 6,000 cfs).--Oct. 9 (9 a.m.) 6,040 cfs (6.92 ft).

* Discharge measurement made on this day.

4615. 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.--September 1900 to September 1929, October 1944 to September 1946, August 1948 to September 1960. Monthly discharge only for some periods, published in WSP 1306. Published as "near Newport" 1945-46.

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.--43 years, 1,227 cfs.

Extremes.--Maximum discharge during year, 7,820 cfs Apr. 4 (gage height, 5.96 ft); minimum, 84 cfs Sept. 26 (gage height, 0.01 ft); minimum daily, 92 cfs Sept. 25.
1900-1929, 1944-46, 1948-60: Maximum discharge, 50,000 cfs Feb. 28, 1902 (gage-height, 21.4 ft), from reports of Tennessee Valley Authority; minimum, 38 cfs Oct. 5, 1952, Sept. 13, 1954; minimum daily, 48 cfs Sept. 21, 28, 1953; minimum gage height, -0.32 ft Sept. 13, 1954.
Floods of Mar. 7, 1867, and June 17, 1876, reached a stage of 21.0 ft (discharge, 48,000 cfs) and flood of Aug. 30, 1940, reached a stage of 17.3 ft (discharge, 36,000 cfs), from reports of the Tennessee Valley Authority.

Remarks.--Records good. Considerable regulation by Lakes Junaluska, Logar, and Walters for periods of low flow (combined usable capacity of reservoirs about 12,500 cfs-days). The largest of these, Lake Walters (usable capacity, 10,300 cfs-days) was completed in 1929.

Revisions (water years).--WSP 1143: Drainage area. WSP 1306: 1901, 1904-5, 1906-10, 1945-46 (monthly runoff). WSP 1336: 1903, 1917(M), 1919-20(M), 1921, 1924(M), 1927-29(M), 1948-52 (monthly runoff).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.0	82	2.0	1,400
.3	156	3.0	2,580
.6	265	5.0	5,940
1.0	500		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*3,170	959	1,700	1,160	2,430	1,710	4,160	720	922	944	264	765
2	2,040	931	1,780	928	*2,250	1,580	3,650	813	770	838	680	680
3	1,740	1,030	1,810	977	2,200	1,590	3,880	686	850	634	*720	526
4	1,280	962	*1,720	1,590	2,160	2,550	5,910	660	572	534	682	368
5	1,190	998	1,480	1,640	2,240	1,830	4,990	784	486	700	630	190
6	1,040	1,480	1,130	1,980	2,850	1,490	3,820	620	692	*858	269	406
7	1,840	1,370	1,560	2,730	2,720	1,520	3,250	540	682	732	202	637
8	2,250	990	1,510	2,890	2,500	*1,430	2,850	1,420	810	825	926	*653
9	2,970	926	1,540	2,300	2,480	1,340	2,650	1,120	804	703	1,110	612
10	2,980	*1,130	1,410	1,970	2,520	1,450	2,530	978	841	662	1,560	1,020
11	2,540	1,090	1,370	*2,160	3,070	1,590	2,440	1,140	664	1,570	1,870	1,510
12	2,480	1,070	1,980	2,200	2,780	1,530	2,360	1,030	440	1,490	3,080	1,870
13	2,290	1,010	3,100	2,090	2,720	1,280	2,250	966	476	1,240	4,300	840
14	2,580	825	2,360	2,140	2,610	1,450	2,270	734	*636	1,350	2,940	734
15	2,710	576	2,210	1,860	2,500	1,480	2,120	504	656	1,170	2,790	1,060
16	2,450	882	2,000	1,380	2,480	2,070	1,990	773	668	588	2,480	1,100
17	1,530	1,090	2,130	1,180	2,540	2,160	1,350	908	674	438	1,240	385
18	1,160	1,160	2,250	1,820	2,790	2,310	1,810	864	440	578	843	193
19	1,420	1,100	5,120	1,960	3,060	1,940	1,840	780	394	764	487	454
20	1,320	1,060	2,960	1,610	2,750	1,710	1,400	798	606	780	1,090	512
21	1,190	700	2,590	1,480	2,650	1,720	1,360	681	692	736	323	426
22	1,130	506	2,310	1,290	2,610	1,660	1,350	472	674	664	872	460
23	1,080	892	2,100	1,080	1,980	1,370	1,020	714	1,390	432	1,580	297
24	1,010	1,580	1,800	868	1,710	1,500	852	734	1,410	322	1,270	238
25	1,490	1,730	1,600	890	2,210	1,680	1,330	740	1,430	311	1,040	92
26	1,340	1,220	1,500	911	2,660	1,830	1,000	633	1,150	680	562	126
27	1,230	1,460	1,440	948	2,290	1,700	776	883	1,520	413	597	368
28	1,260	4,790	1,350	1,140	1,920	2,120	1,050	960	1,040	471	473	406
29	1,390	2,760	1,590	1,260	2,100	2,650	782	694	1,040	438	645	460
30	1,750	1,990	1,500	1,830	-------	4,080	612	754	952	122	752	489
31	1,260	-------	1,370	2,270	-------	*3,500	-------	908	-------	112	720	-------
Total	55,110	38,267	60,270	50,532	71,780	57,820	67,652	25,011	24,381	22,239	36,997	17,877
Mean	1,778	1,276	1,944	1,630	2,475	1,865	2,255	807	813	717	1,193	596
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 6,630 Min 250 Mean 1,414 Cfsm 2.12 In. 28.82
Water year 1959-60: Max 5,910 Min 92 Mean 1,442 Cfsm 2.17 In. 29.48

Peak discharge (base, 7,500 cfs).--Apr. 4 (6 a.m.) 7,820 cfs (5.96 ft).

* Discharge measurement made on this day.

4633. South Toe River near Celo, N. C.

Location.--Lat 35°49'52", long 82°11'04", on right bank 800 ft upstream from county road bridge, 0.3 mile downstream from Whiteoak Creek, 1.9 miles southeast of Celo, Yancey County, and at mile 20.1.

Drainage area.--43.4 sq mi.

Records available.--July 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 2,658 ft above mean sea level.

Extremes.--Maximum discharge during year, 2,610 cfs Mar. 30 (gage height, 3.67 ft); minimum, 45 cfs July 22 (gage height, 0.71 ft).
1957-60: Maximum discharge, 10,600 cfs Sept. 30, 1959 (gage height, 8.64 ft), from rating curve extended above 1,700 cfs on basis of slope-area measurement at gage height 8.64 ft; minimum, 14 cfs Dec. 26, 1958; minimum gage height, 0.44 ft Sept. 8, 9, 1958.

Remarks.--Records excellent except those for periods of ice effect, which are good. Records of water temperatures for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 1626: 1958(M).

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 8				May 9 to Sept. 30			
0.9	86	2.0	645	0.7	43	1.5	325
1.1	143	2.5	1,100	.9	83	2.0	645
1.4	270	3.0	1,700	1.2	177		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	524	270	99	121	397	154	516	131	72	83	88	137
2	343	230	102	128	286	150	516	107	70	112	79	101
3	270	199	102	301	240	b150	896	99	79	79	72	86
4	230	182	96	182	216	b140	842	99	81	68	70	88
5	216	168	96	164	851	b130	624	94	121	63	68	76
6	178	178	102	250	497	b125	452	91	96	59	63	72
7	203	157	94	292	349	b120	415	96	81	59	61	70
8	230	143	91	245	292	b120	361	241	76	56	61	68
9	568	137	89	203	260	b115	308	134	74	57	56	65
10	337	128	86	191	366	118	270	115	70	91	*52	73
11	320	121	91	178	448	115	240	106	65	131	61	231
12	250	118	279	*168	320	112	225	104	61	83	203	121
13	225	112	212	191	303	b105	230	101	*61	70	514	93
14	331	107	*150	178	255	b105	220	96	57	63	211	*81
15	250	107	137	160	b235	107	203	91	57	57	155	76
16	207	104	131	150	216	109	191	*88	52	54	137	74
17	199	104	124	150	*207	121	178	83	52	54	254	83
18	186	96	175	157	230	124	*171	79	48	56	177	123
19	160	94	381	143	b190	109	150	76	48	*52	173	128
20	154	94	220	131	b185	107	140	79	61	52	134	93
21	143	91	182	128	174	104	140	79	132	48	128	81
22	174	86	160	b125	168	104	143	70	99	60	151	79
23	402	*89	150	b120	160	*107	128	68	101	72	128	76
24	409	169	140	b105	157	121	124	65	104	61	104	70
25	298	131	137	b100	195	128	118	70	106	72	96	68
26	*240	109	131	b95	195	134	112	72	109	403	91	63
27	216	104	121	107	171	157	124	158	134	225	86	61
28	186	143	174	104	164	207	118	115	96	137	81	88
29	174	112	164	124	160	445	107	91	88	118	79	92
30	397	b104	140	337	-------	*1,390	104	83	74	104	76	140
31	415	-------	131	787	-------	709	-------	74	---------	96	129	---------
Total	8,435	3,987	4,487	5,815	7,887	6,042	8,366	3,055	2,425	2,795	3,838	2,757
Mean	272	133	145	188	272	195	279	98.5	80.8	90.2	124	91.9
Cfsm	6.27	3.06	3.34	4.33	6.27	4.49	6.43	2.27	1.86	2.08	2.86	2.12
In.	7.23	3.42	3.84	4.98	6.76	5.18	7.17	2.62	2.08	2.40	3.29	2.36

Calendar year 1959: Max 3,640 Min 51 Mean 175 Cfsm 4.03 In. 54.82
Water year 1959-60: Max 1,390 Min 48 Mean 164 Cfsm 3.78 In. 51.33

Peak discharge (base, 2,800 cfs).--No peak above base.

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

4640. Cane River near Sioux, N. C.

Location.--Lat 36°00'52", long 82°19'40", on right bank on State Highway 56, 1.3 miles upstream from confluence with North Toe River and 1.5 miles east of Sioux, Yancey County.

Drainage area.--157 sq mi.

Records available.--October 1933 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--27 years, 344 cfs.

Extremes.--Maximum discharge during year, 2,350 cfs Mar. 30 (gage height, 6.30 ft); minimum, 72 cfs Sept. 27 (gage height, 2.15 ft).
1933-60: Maximum discharge, 31,800 cfs Aug. 13, 1940 (gage height, 17.8 ft), from rating curve extended above 12,000 cfs on basis of slope-area measurement at gage height 15.65 ft; minimum, 18 cfs Jan. 6, 1940 (gage height, 1.14 ft), result of freezeup; minimum daily, 27 cfs Sept. 14, 1952.

Remarks.--Records excellent except those for periods of ice effect, which are good. No regulation at Burnsville powerplant since October 1955. Slight diurnal fluctuation at low flow caused by small mills above gage.

Revisions (water years).--WSP 893: 1934(M). WSP 1143: 1940(M).

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 19				Dec. 20 to July 2				July 3 to Sept. 30			
2.5	156	5.0	1,320	2.2	86	4.0	720	2.1	64	3.0	296
3.0	310	6.0	2,080	2.3	106	5.0	1,320	2.3	99	4.0	720
4.0	725			2.5	152	6.0	2,080	2.5	144		
				3.0	298						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,400	300	262	241	830	339	958	260	155	420	110	120
2	620	262	249	241	575	339	852	238	150	765	105	127
3	443	236	268	403	473	407	1,040	220	152	325	99	103
4	356	228	245	358	415	b340	1,360	215	173	235	99	97
5	296	233	236	315	950	b310	1,420	206	178	184	112	95
6	258	289	282	469	1,190	b300	948	203	170	167	110	90
7	531	245	296	708	736	b290	802	206	147	157	110	88
8	384	220	265	685	580	b280	660	384	145	139	116	91
9	580	214	268	525	505	b300	575	295	147	139	120	122
10	447	202	275	458	746	292	505	250	135	334	*97	127
11	415	194	275	423	1,090	285	454	241	130	548	103	114
12	359	188	673	*380	650	272	426	235	128	384	178	132
13	310	179	952	407	595	b255	399	235	*126	268	399	110
14	516	177	*558	407	501	b260	392	223	117	261	228	*95
15	475	182	447	388	434	295	377	209	126	210	157	91
16	380	177	384	350	415	305	362	*203	115	181	132	91
17	331	202	348	332	430	417	350	198	115	170	125	93
18	331	174	384	354	585	505	*332	189	106	162	154	99
19	282	166	1,060	325	561	396	305	184	102	*154	149	103
20	258	*161	620	298	450	350	288	184	114	144	144	90
21	233	164	473	282	423	322	285	203	256	134	125	82
22	223	161	403	b260	396	312	298	175	223	127	310	80
23	233	159	354	b250	362	339	272	165	235	165	264	80
24	474	490	322	b235	356	*403	257	165	178	162	167	77
25	423	455	301	b220	438	423	254	200	192	132	178	75
26	*362	306	282	b215	517	396	247	162	192	139	137	74
27	331	282	266	260	426	469	272	198	235	190	127	74
28	303	411	292	269	396	570	276	226	175	144	130	101
29	275	348	350	280	380	862	238	189	173	132	120	139
30	278	289	279	362	-------	1,980	229	178	155	120	112	162
31	404	-------	260	1,050	-------	1,540	-------	162	-------	114	105	-------
Total	12,511	7,272	11,829	11,730	16,407	14,153	15,451	6,591	4,745	6,906	4,622	3,022
Mean	404	242	382	378	566	457	515	213	158	223	149	101
Cfsm	2.57	1.54	2.43	2.41	3.61	2.91	3.28	1.36	1.01	1.42	0.949	0.643
In.	2.96	1.72	2.80	2.78	3.89	3.35	3.66	1.56	1.12	1.64	1.09	0.72

Calendar year 1959: Max 5,200 Min 80 Mean 300 Cfsm 1.91 In. 25.97
Water year 1959-60: Max 1,980 Min 74 Mean 315 Cfsm 2.01 In. 27.29

Peak discharge (base, 2,600 cfs).--No peak above base.

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

4655. 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"), October 1919 to September 1960. Monthly discharge only October 1919 to June 1920, published in WSP 1306.

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.--41 years (1919-60), 1,317 cfs.

Extremes.--Maximum discharge during year, 14,100 cfs Mar. 30 (gage height, 6.22 ft); minimum, 431 cfs Sept. 27 (gage height, 1.23 ft).

1900-1901, 1919-60: 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 measurement of peak flow; minimum, 85 cfs Sept. 8, 9, 1925 (gage height, 1.80 ft, site and datum then in use).

A flood in May 1901 exceeded all other known floods at this location. High-water marks for a flood in July 1916 about 9 miles upstream show it to have been about the same elevation as the Aug. 13, 1940, flood, from reports of the Tennessee Valley Authority.

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 table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.2	410	3.0	3,200
1.6	750	4.0	5,580
2.0	1,260	6.0	12,900

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,000	1,680	1,310	1,230	3,840	*2,000	5,780	1,440	*964	1,680	720	827
2	2,800	1,390	*1,230	1,180	*2,710	1,920	4,960	1,440	886	4,050	*710	925
3	1,970	*1,220	1,280	1,610	2,210	2,110	5,110	*1,280	873	2,150	623	783
4	1,560	1,110	1,220	2,040	1,920	1,900	7,270	1,230	886	1,470	587	680
5	1,310	1,060	1,180	*1,640	3,710	1,660	*7,710	1,190	938	1,150	605	650
6	*1,150	1,190	1,260	1,960	7,160	1,550	5,480	1,160	1,190	977	690	*578
7	2,170	1,150	1,450	2,770	4,210	1,590	4,480	1,150	1,020	*912	730	544
8	1,920	1,030	1,260	3,270	3,270	1,560	3,790	1,960	873	827	849	605
9	2,430	977	1,260	2,580	2,770	1,630	3,310	1,980	860	772	670	596
10	2,560	925	1,320	2,210	2,930	1,490	2,920	1,470	805	1,430	587	641
11	2,150	886	1,360	2,090	5,420	1,560	2,800	1,340	750	3,020	578	860
12	1,960	849	2,380	1,980	3,710	1,470	2,390	1,290	720	2,040	740	1,180
13	1,590	816	4,460	2,060	3,240	1,370	2,250	1,280	720	1,450	2,410	805
14	2,090	805	2,960	2,170	2,880	1,470	2,170	1,220	680	1,360	1,850	650
15	2,370	816	2,190	2,000	2,370	1,630	2,060	1,130	720	1,160	1,180	578
16	1,830	816	1,810	1,830	2,310	1,700	1,980	1,070	710	1,000	886	552
17	1,540	899	1,570	1,630	2,250	2,090	1,880	1,040	660	951	838	552
18	1,440	860	1,680	1,720	3,270	2,920	1,830	1,000	623	1,020	1,220	560
19	1,260	794	6,560	1,640	3,750	2,270	1,700	951	578	873	964	650
20	1,130	772	4,150	1,470	2,730	1,940	1,590	951	560	816	1,440	650
21	1,060	761	2,850	1,340	2,500	1,730	1,570	1,060	614	750	990	560
22	1,000	761	2,270	1,260	2,290	1,610	1,660	1,080	1,420	710	1,630	504
23	1,030	740	1,900	1,120	2,090	1,680	1,540	912	1,420	853	1,980	488
24	1,980	1,640	1,660	1,110	2,020	2,060	1,440	860	1,180	1,320	1,290	480
25	2,020	2,580	1,540	1,130	2,560	2,640	1,400	964	1,070	977	1,090	466
26	1,720	1,720	1,440	1,110	3,400	2,290	1,370	925	1,020	1,040	912	452
27	1,500	1,390	1,340	1,000	2,710	2,770	1,500	1,120	1,260	1,730	816	438
28	1,330	1,900	1,320	1,340	2,310	3,710	1,660	990	1,080	1,370	794	466
29	1,260	1,960	1,770	1,290	2,190	5,220	1,440	1,340	990	1,030	761	690
30	1,190	1,520	1,500	1,560	-------	*10,700	1,320	1,230	886	873	690	838
31	1,850	-------	1,360	3,240	-------	10,100	-------	1,060	-------	783	700	-------
Total	57,230	35,017	60,840	54,780	88,730	80,340	86,160	37,113	26,956	40,544	30,530	19,248
Mean	1,846	1,167	1,963	1,767	3,060	2,592	2,872	1,197	899	1,308	985	642
Cfsm	2.29	1.45	2.44	2.20	3.80	3.22	3.57	1.49	1.12	1.62	1.22	0.798
In.	2.64	1.62	2.81	2.53	4.10	3.71	3.98	1.71	1.25	1.87	1.41	0.89

Calendar year 1959: Max 13,200 Min 410 Mean 1,445 Cfsm 1.80 In. 24.37
Water year 1959-60: Max 10,700 Min 438 Mean 1,687 Cfsm 2.10 In. 28.53

Peak discharge (base, 9,500 cfs).--Feb. 5 (11 p.m.) 10,800 cfs (5.50 ft); Mar. 30 (9 p.m.) 14,100 cfs (6.22 ft).

* Discharge measurement made on this day.

4665. 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.--October 1902 to September 1909, October 1918 to October 1925, October 1945 to September 1960. Published as "near Greeneville" 1903-9, 1919-25. Monthly discharge only for some periods, published in WSP 1306. Gage-height records collected in the vicinity of Greeneville from Dec. 1, 1906, to Feb. 3, 1926, are contained in reports of U. S. Weather Bureau.

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.--29 years, 1,851 cfs.

Extremes.--Maximum discharge during year, 19,600 cfs at 12:01 a.m. Oct. 1, stage falling, peak occurred Sept. 30, 1959; maximum peak discharge, 13,700 cfs Mar. 31 (gage height, 9.74 ft); minimum discharge, 27 cfs June 15 (gage height, 0.98 ft); minimum daily, 534 cfs Sept. 8.

1902-9, 1918-25, 1945-60: 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, 20 cfs Sept. 20, 1956 (gage height, 0.84 ft); minimum daily, 22 cfs Oct. 20, 1954.

A flood in May 1901 was the greatest known and reached a stage of about 38 ft, present site and datum, from profiles by the Tennessee Valley Authority. Flood of Aug. 14, 1940, reached a discharge of 73,500 cfs, by computation of flow over dam.

Remarks.--Records good. Low flow regulated by Lake Davy Crockett since 1913 (controlled storage, 4,060 cfs-days).

Revisions.--WSP 1306: Drainage area at site used 1903-9, 1919-25.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

3.1	460
3.5	840
4.0	1,540
6.0	5,150
10.0	14,400

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,000	1,990	2,610	2,000	4,200	*2,660	7,950	1,940	1,010	1,330	883	1,000
2	4,260	1,760	*1,790	1,920	*3,690	2,590	5,920	1,560	1,100	2,490	*749	1,200
3	2,820	1,910	1,620	1,820	2,950	3,040	5,370	*1,470	1,190	3,510	676	1,190
4	2,570	1,240	2,120	1,890	2,640	3,060	7,400	1,490	1,300	2,730	908	977
5	1,540	846	1,420	2,390	2,570	2,680	*8,300	1,560	792	2,190	1,060	807
6	*1,120	1,900	1,990	2,110	7,110	2,550	7,180	1,500	1,270	934	749	*627
7	2,280	1,730	2,050	2,350	5,870	2,550	5,550	1,270	1,320	934	762	688
8	2,770	1,210	2,130	2,930	4,300	2,200	4,690	1,320	1,260	1,490	1,190	534
9	2,660	926	1,530	3,560	3,520	1,920	4,030	2,240	1,270	1,180	919	760
10	2,820	1,190	1,980	3,040	3,090	2,520	3,560	2,250	1,310	1,770	816	749
11	2,730	1,210	2,100	2,770	5,110	2,060	3,200	1,840	1,080	2,590	709	1,060
12	2,640	1,390	1,980	2,660	5,040	1,820	2,930	1,840	851	2,730	872	660
13	2,590	1,070	4,280	2,610	3,940	1,890	2,770	1,530	906	*2,620	1,490	1,320
14	2,180	865	4,620	2,680	3,670	1,840	2,710	1,640	798	2,050	2,280	866
15	2,550	864	3,310	2,750	3,060	2,020	2,660	1,730	882	2,330	1,920	772
16	2,350	838	2,710	2,640	2,750	2,160	2,620	1,500	959	1,240	1,180	635
17	1,980	1,230	2,610	2,570	2,700	2,570	2,590	1,030	1,190	1,240	952	680
18	1,370	1,170	2,570	2,550	3,200	2,770	2,150	1,230	1,080	1,220	974	602
19	1,300	1,180	5,930	2,530	4,730	3,250	1,880	1,280	926	957	1,500	664
20	1,930	1,170	7,160	1,990	3,920	2,770	2,020	1,280	598	1,070	1,070	753
21	1,300	955	4,450	1,830	3,250	2,610	1,770	1,300	806	1,070	1,600	1,080
22	1,360	898	3,470	1,690	3,070	2,530	2,090	1,300	794	848	1,190	721
23	1,160	968	2,890	1,680	2,800	2,160	2,080	1,200	1,980	1,050	1,530	550
24	1,070	1,410	2,640	1,810	2,660	2,080	1,870	1,180	1,960	978	2,340	546
25	2,330	2,620	2,590	1,480	2,610	2,570	1,440	1,220	1,330	1,220	1,500	556
26	2,330	2,770	2,570	1,380	3,780	2,700	1,870	1,300	995	1,170	1,070	551
27	2,020	2,610	2,070	1,640	3,760	2,770	1,760	1,300	1,280	1,780	965	566
28	1,480	2,680	1,850	1,610	3,070	3,450	1,970	1,680	1,470	1,730	982	566
29	1,400	3,020	1,890	2,080	2,790	4,740	2,140	1,950	1,310	1,700	924	554
30	1,720	2,680	2,080	1,990	-------	8,590	2,060	1,500	1,320	946	760	960
31	1,260	-------	2,120	1,880	-------	12,600	-------	1,590	-------	893	686	-------
Total	72,890	46,300	85,130	68,830	105,850	95,720	104,530	47,020	34,337	50,160	35,206	23,194
Mean	2,351	1,543	2,746	2,220	3,650	3,088	3,484	1,517	1,145	1,618	1,136	773
Cfsm	1.99	1.30	2.32	1 88	3.08	2.61	2.94	1.28	0.967	1.37	0.959	0.653
In.	2.29	1.45	2.67	2.16	3.32	3.01	3.28	1.48	1.08	1.58	1.11	0.73

Calendar year 1959: Max 11,300 Min 335 Mean 1,879 Cfsm 1.59 In. 21.53
Water year 1959-60: Max 12,600 Min 534 Mean 2,102 Cfsm 1.78 In. 24.16

Peak discharge (base, 11,500 cfs).--Mar. 31 (8 a.m.) 13,700 cfs (9.74 ft).

* Discharge measurement made on this day.

4670. 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 1960.

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.--14 years, 237 cfs.

Extremes.--Maximum discharge during year, 4,520 cfs Nov. 29 (gage height, 14.16 ft); minimum, 16 cfs Oct. 4-6 (gage height, 1.75 ft).
1946-60: Maximum discharge, 10,700 cfs Jan. 31, 1950 (gage height, 16.24 ft), from rating curve extended above 5,000 cfs; maximum gage height, 16.25 ft May 7, 1958; minimum discharge, 8.4 cfs Sept. 12, 1954 (gage height, 1.56 ft).

Remarks.--Records good.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 15 to Nov. 24)

Oct. 1 to Nov. 28				Nov. 29 to Sept. 30			
1.6	12	10.0	815	1.8	18	11.0	1,090
2.0	34	11.0	1,000	2.0	29	12.0	1,460
2.5	66	12.0	1,440	2.5	62	13.0	2,380
3.0	106	13.0	2,380	3.0	102	14.0	4,220
7.0	505	14.0	4,220	7.0	530		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	44	286	162	236	191	204	100	51	104	41	27
2	26	41	319	152	176	226	179	135	44	284	39	41
3	20	38	694	365	152	1,150	296	92	46	148	*37	42
4	16	*35	420	398	141	1,560	814	84	71	76	37	30
5	16	38	245	215	291	625	*967	79	126	72	40	27
6	*17	246	371	235	705	307	699	74	92	52	38	*25
7	304	328	725	738	436	282	341	72	*83	43	47	25
8	375	100	378	1,050	229	258	250	98	116	39	51	24
9	176	69	*233	878	194	253	207	102	63	36	62	30
10	69	57	203	374	*274	270	181	80	44	658	42	27
11	46	50	180	289	595	296	167	73	38	1,660	37	25
12	38	46	436	*245	285	334	160	*71	37	1,780	38	25
13	45	44	799	356	214	389	151	72	36	*398	43	24
14	459	41	508	448	277	*510	*142	69	35	404	56	23
15	480	39	264	444	287	685	135	64	34	420	92	22
16	120	39	214	374	293	955	131	61	33	120	45	23
17	62	65	188	247	500	1,150	124	59	157	93	35	25
18	47	145	428	274	1,100	1,040	118	56	94	91	32	26
19	39	78	1,690	227	1,460	528	112	54	42	258	31	27
20	33	57	2,250	188	977	409	106	52	34	144	30	26
21	30	50	1,090	168	377	373	104	50	64	88	30	25
22	28	47	350	156	366	309	108	47	104	70	68	25
23	27	45	266	142	307	269	102	45	355	62	154	24
24	67	972	228	138	366	247	96	43	435	63	70	24
25	134	1,780	204	134	260	231	92	43	289	61	48	25
26	197	1,590	188	128	257	221	88	59	97	57	35	26
27	107	543	175	157	215	209	113	118	64	88	31	26
28	111	2,840	336	247	195	197	144	172	76	60	30	28
29	70	3,370	493	210	210	193	96	78	61	50	29	30
30	53	1,160	253	233	-------	*228	84	126	54	46	28	34
31	48	-------	188	240	-------	244	-------	77	-------	43	27	-------
Total	3,287	13,977	14,602	9,612	11,375	14,139	6,511	2,405	2,855	7,568	1,423	811
Mean	106	466	471	310	392	456	217	77.6	95.2	244	45.9	27.0
Cfsm	0.482	2.12	2.14	1.41	1.78	2.07	0.986	0.353	0.433	1.11	0.209	0.123
In.	0.56	2.36	2.47	1.62	1.92	2.39	1.10	0.41	0.48	1.28	0.24	0.14

Calendar year 1959: Max 3,480 Min 10 Mean 239 Cfsm 1.09 In. 14.73
Water year 1959-60: Max 3,370 Min 16 Mean 242 Cfsm 1.10 In. 14.97

Peak discharge (base, 3,000 cfs).--Nov. 29 (2 a.m.) 4,520 cfs (14.16 ft).

* Discharge measurement made on this day.

4690. 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 1960. Published as "at Dandridge" 1918-42. Records published for both sites March to December 1942. 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, 1925, staff gage at Dandridge 13 miles upstream at datum 37.67 ft higher. Oct. 9, 1925, to June 18, 1931, staff gage and June 19, 1931, to Sept. 30, 1942, water-stage recorder, at Dandridge at datum 37.62 ft higher.

Average discharge.--42 years, 6,551 cfs (unadjusted).

Extremes.--Maximum discharge during year, 19,000 cfs Oct. 16 (gage height, 9.27 ft); minimum, 91 cfs Apr. 2 (gage height, 1.50 ft); minimum daily, 98 cfs Apr. 1.
1918-60: Maximum discharge, 95,600 cfs Aug. 31, 1940 (gage height, 20.28 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.
The greatest known flood at Dandridge reached a stage of 25.5 ft in March 1867. A flood in February 1875 reached practically the same stage as the flood in March 1867. A flood in 1901 reached a stage of about 22 ft at Dandridge, from investigations of the Tennessee Valley Authority.

Remarks.--Records good. Flow completely regulated by Douglas Lake (see p. 205).

Revisions (water years).--WSP 1306: 1930(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.5	21	2.0	132	4.0	2,150
1.6	31	2.2	230	5.0	3,940
1.7	46	2.5	440	7.0	9,720
1.8	68	3.0	900	9.0	17,800

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,760	14,600	*5,700	6,620	3,080	11,100	28	7,200	6,770	4,130	7,350	10,800
2	*10,700	13,600	4,230	9,180	3,240	7,570	708	*5,120	6,990	6,560	*8,300	*12,200
3	9,880	14,600	10,300	7,040	*10,300	7,240	500	3,860	6,630	4,790	5,260	10,600
4	11,500	14,900	15,500	*5,600	12,300	9,630	1,180	4,180	3,980	2,840	4,530	10,600
5	15,200	15,100	15,400	9,140	10,000	14,300	3,940	5,180	2,100	5,030	4,170	12,400
6	13,000	15,500	15,200	9,820	9,420	14,200	*10,500	3,310	8,430	5,270	3,460	11,800
7	12,700	13,500	15,100	9,820	12,200	12,200	8,720	3,530	6,460	5,590	2,160	11,300
8	9,280	13,400	15,000	9,480	12,800	6,740	3,190	1,370	3,600	4,760	5,900	10,500
9	9,260	14,300	14,600	5,690	14,000	8,120	2,730	2,780	4,800	6,150	5,840	10,700
10	11,100	13,000	14,300	6,260	13,900	8,040	4,680	5,340	5,760	5,850	1,800	10,400
11	14,000	11,800	14,200	10,900	14,300	5,600	13,400	7,140	6,870	1,710	1,510	7,030
12	15,200	8,650	14,000	11,700	14,400	4,190	12,200	5,260	7,260	538	1,340	11,600
13	13,900	13,600	13,800	11,600	14,400	4,570	11,500	2,640	8,090	1,030	1,480	10,600
14	13,700	10,400	13,800	11,500	14,600	6,880	11,900	1,690	6,390	5,360	1,780	8,990
15	10,500	8,800	13,600	11,500	14,000	4,560	11,300	1,910	7,230	5,740	7,720	9,160
16	14,500	10,100	13,600	11,400	14,000	3,000	7,500	5,540	7,040	5,220	2,510	9,510
17	14,100	9,760	13,400	11,300	13,900	1,170	5,340	5,970	5,750	2,430	4,340	7,660
18	15,000	8,130	13,300	11,200	5,430	1,210	11,600	5,970	1,310	6,450	5,700	3,960
19	16,600	9,150	13,600	7,840	3,530	1,000	12,200	5,500	2,530	6,190	10,200	6,440
20	12,300	9,860	13,500	6,880	14,000	1,050	10,900	5,590	8,660	6,870	9,940	8,840
21	11,700	5,850	14,200	7,870	14,600	7,920	10,700	2,280	8,180	6,120	8,530	7,600
22	13,600	803	14,300	7,530	14,900	4,540	11,800	3,680	5,820	6,820	6,190	7,830
23	14,500	5,260	14,200	10,000	15,300	8,890	6,600	7,160	5,570	6,060	1,500	9,840
24	14,800	3,750	14,100	7,220	15,100	8,970	6,620	7,560	4,400	1,100	1,680	12,900
25	14,300	4,420	13,800	10,000	14,400	10,100	9,770	5,670	372	*6,500	2,500	8,870
26	14,100	973	13,600	8,040	12,200	4,330	9,300	6,840	29	5,660	2,880	13,300
27	14,800	2,900	13,400	3,200	12,200	1,580	6,940	4,470	1,240	5,130	6,910	12,800
28	15,600	92	12,900	2,460	12,500	3,880	8,150	7,590	6,660	6,580	7,360	11,600
29	12,800	31	12,600	4,460	11,500	7,020	8,310	2,970	4,880	6,660	9,030	9,460
30	15,100	3,140	12,300	2,630	-------	5,050	4,640	7,600	4,110	3,300	11,100	4,890
31	13,400	-------	12,200	6,010	-------	119	-------	6,550	-------	3,430	12,400	-------
Total	403,880	269,975	409,730	255,890	346,620	194,709	226,846	151,450	157,951	149,868	165,370	293,980
Mean	13,030	8,993	13,220	8,255	11,950	6,281	7,562	4,885	5,265	4,834	5,335	9,799

	Observed			Adjusted†		
Calendar year 1959:	Max 16,600	Min 21	Mean 7,341	Mean 7,290	Cfsm 1.60	In. 21.78
Water year 1959-60:	Max 16,600	Min 28	Mean 8,268	Mean 8,028	Cfsm 1.77	In. 24.05

* Discharge measurement made on this day.
† Adjusted for change in contents in Douglas Lake.

4700. Little Pigeon River at Sevierville, Tenn.

Location.--Lat 35°52'34", long 83°34'36", on left bank 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.--October 1920 to September 1960. Prior to November 1920 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 881.14 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.--40 years, 552 cfs.

Extremes.--Maximum discharge during year, 18,000 cfs Nov. 28 (gage height, 12.43 ft); minimum, 90 cfs Sept. 26, 27 (gage height, 0.78 ft); minimum daily, 95 cfs Sept. 25-27. 1920-60: 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.

Revisions (water years).--WSP 783: 1921-34. WSP 1336: 1921(M), 1922, 1923(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 27		Nov. 28 to Sept. 30			
1.3	235	0.8	88	4.0	2,340
1.6	385	1.0	141	8.0	6,680
2.0	615	1.3	260	10.0	9,640
3.0	1,300	2.0	660		
4.0	2,230				

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,590	374	*966	415	660	*628	1,160	442	*195	*360	158	320
2	*657	330	950	404	576	870	1,280	*426	187	371	*151	*280
3	440	295	1,290	737	*506	3,000	2,500	376	238	325	148	215
4	325	*271	1,060	*614	464	1,600	*2,620	335	195	285	159	177
5	258	266	860	530	708	1,100	1,740	310	191	242	161	168
6	258	1,380	1,050	808	1,010	898	1,210	285	191	215	442	148
7	1,870	687	1,090	1,540	723	800	990	285	203	183	256	138
8	1,250	519	875	1,640	602	709	860	569	172	161	382	129
9	1,420	440	800	1,210	556	688	730	454	165	148	744	132
10	898	380	758	966	882	730	621	376	138	280	442	161
11	742	330	758	875	1,520	744	536	350	126	2,080	1,050	148
12	639	305	2,260	765	808	695	494	355	126	1,090	1,920	765
13	501	271	2,760	777	765	628	470	350	112	595	2,690	464
14	1,010	258	1,560	793	688	614	476	305	105	543	1,430	275
15	937	253	1,120	737	588	621	464	285	121	448	1,050	224
16	687	240	882	660	647	905	432	260	100	350	702	187
17	555	434	751	595	942	1,250	415	242	180	333	506	187
18	462	484	1,440	602	1,530	1,030	410	233	165	420	410	177
19	385	390	5,620	569	1,600	845	360	224	115	327	388	168
20	330	330	2,240	494	1,180	730	340	207	100	404	420	144
21	285	315	1,400	454	998	628	340	199	143	251	335	126
22	266	285	1,040	420	966	569	404	187	371	203	454	118
23	244	271	838	382	905	530	340	175	1,560	397	737	107
24	390	2,030	716	371	808	506	320	172	1,190	678	506	102
25	555	1,630	628	355	950	476	300	265	2,090	320	382	95
26	456	904	562	335	1,410	459	300	366	1,050	260	315	95
27	627	1,770	518	398	1,010	454	388	500	1,370	310	270	95
28	591	9,520	595	442	808	476	512	454	737	251	256	118
29	478	2,260	660	420	751	1,030	382	366	582	199	246	161
30	468	1,300	518	628	-------	3,410	330	305	448	215	246	211
31	407	-------	459	687	-------	1,790	-------	228	-------	183	246	-------
Total	19,981	28,522	37,024	20,603	25,561	29,413	21,724	9,886	12,666	12,427	17,601	5,835
Mean	645	951	1,194	665	881	949	724	319	422	401	568	194
Cfsm	1.83	2.69	3.38	1.88	2.50	2.69	2.05	0.904	1.20	1.14	1.61	0.550
In.	2.10	3.00	3.90	2.17	2.69	3.10	2.29	1.04	1.33	1.31	1.85	0.61

Calendar year 1959: Max 9,520 Min 77 Mean 671 Cfsm 1.90 In. 25.78
Water year 1959-60: Max 9,520 Min 95 Mean 659 Cfsm 1.87 In. 25.39

Peak discharge (base, 7,000 cfs).--Nov. 28 (5 a.m.) 18,000 cfs (12.43 ft); Dec. 19 (5 a.m.) 7,740 cfs (8.80 ft).

* Discharge measurement made on this day.

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4705. French Broad River near Knoxville, Tenn.

Location.--Lat 35°57'30", long 83°46'26", on left bank 45 ft upstream from Riverdale Ferry, 0.7 mile downstream from Johnson Hollow, 7.5 miles upstream from confluence with Holston River, and 8 miles east of Knoxville, Knox County.

Drainage area.--5,101 sq mi.

Records available.--October 1945 to September 1960. Prior to December 1945, monthly discharge only, published in WSP 1306..

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. December 1945 to September 1957 at site 200 ft upstream at same datum.

Average discharge.--15 years, 7,488 cfs (unadjusted).

Extremes.--Maximum discharge during year, 25,200 cfs Dec. 19 (elevation, 823.75 ft); minimum, 546 cfs June 19 (elevation, 814.76 ft); minimum daily, 1,590 cfs Apr. 1.
1945-60: Maximum discharge, 47,500 cfs Feb. 1, 1957 (elevation, 828.82 ft), from rating curve extended above 33,000 cfs; minimum, 67 cfs Oct. 25, 1953 (elevation, 813.38 ft); minimum daily, 68 cfs Oct. 23-26, 1953.
Maximum stage known, 855.0 ft in March 1867 from floodmarks (discharge, 160,000 cfs, estimated), from investigations by Tennessee Valley Authority.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Douglas Lake (see p. 205), 24.6 miles upstream.

Rating table, water year 1959-60 (elevation, in feet, and discharge, in cubic feet per second)

815.9	1,480	819.0	8,300
816.0	1,600	821.0	14,700
816.5	2,280	824.0	26,200
817.0	3,240		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,800	15,700	7,400	9,740	6,350	13,600	1,590	6,290	7,130	4,770	8,000	*11,000
2	10,200	14,400	5,510	10,200	2,610	8,430	1,880	6,800	7,420	4,990	*8,930	11,900
3	10,600	14,900	9,690	9,200	9,440	12,700	2,180	5,030	7,000	5,340	6,070	11,500
4	10,800	15,300	17,000	7,360	*13,300	10,000	5,320	4,290	5,120	4,400	4,560	11,200
5	15,400	15,500	16,500	8,660	11,700	15,800	4,720	5,310	3,040	5,260	4,320	12,000
6	13,300	16,900	16,500	11,000	10,200	15,400	11,800	5,000	6,490	4,990	4,300	12,600
7	15,000	15,700	16,700	12,300	13,500	15,300	*9,170	4,680	*7,340	*6,000	3,320	11,800
8	12,600	12,800	16,100	*12,800	13,700	7,680	6,320	2,050	4,890	5,500	5,520	10,900
9	11,900	*15,100	15,800	7,420	14,400	8,740	3,620	1,990	4,660	6,500	7,000	11,000
10	10,500	13,300	*15,400	8,220	14,900	8,840	4,450	*5,190	6,310	6,500	3,260	12,100
11	13,900	12,300	15,100	10,900	16,100	7,450	12,000	7,680	6,120	6,000	2,000	8,790
12	16,100	9,960	16,600	12,900	15,500	4,580	13,300	6,630	7,680	3,000	3,230	10,300
13	14,600	13,400	17,400	12,800	15,500	6,430	11,700	3,660	7,940	2,000	4,220	13,000
14	14,600	10,600	15,800	12,800	15,500	7,250	13,100	3,100	7,250	5,500	2,920	8,130
15	13,200	10,700	15,100	12,700	14,900	*7,610	11,700	1,970	7,600	6,000	6,740	10,000
16	12,900	8,780	14,700	12,500	14,800	4,720	9,310	4,500	7,660	5,500	5,300	9,910
17	14,800	10,700	14,400	12,300	15,400	3,020	5,930	6,420	7,270	4,000	4,180	7,210
18	15,700	8,920	15,200	12,200	11,100	2,760	11,000	6,800	2,790	7,000	6,080	7,900
19	17,300	8,920	22,800	9,680	2,970	2,290	12,800	5,970	1,610	6,500	9,050	5,240
20	13,500	10,000	17,400	6,890	15,500	2,180	11,900	6,080	7,110	7,500	10,700	8,620
21	12,100	6,960	16,100	8,690	15,900	6,200	10,900	3,170	9,000	7,000	9,680	8,160
22	13,900	3,100	15,800	8,170	16,200	6,920	12,200	3,830	8,040	7,500	7,730	6,590
23	15,700	3,650	15,400	10,900	16,500	7,450	8,230	6,030	8,010	7,000	5,670	10,400
24	15,500	6,330	15,100	7,820	16,200	10,000	6,200	8,390	5,390	2,500	1,720	12,200
25	15,300	6,670	14,700	10,700	15,800	10,600	9,430	6,750	5,570	7,000	2,730	10,000
26	14,500	3,220	14,500	9,950	13,800	7,660	9,940	6,770	1,620	6,000	3,320	12,800
27	15,100	4,260	14,300	5,100	13,500	2,480	7,600	5,780	2,570	5,500	5,630	13,300
28	17,100	12,800	13,900	3,160	13,700	3,530	8,670	7,990	5,250	7,000	7,770	12,700
29	14,500	3,820	13,800	4,120	12,200	6,170	8,970	5,750	6,470	7,000	9,320	10,300
30	14,900	2,970	13,300	4,490	---------	9,770	5,570	6,100	5,440	4,000	11,700	5,640
31	13,800	--------	13,000	4,720	--------	4,740	--------	7,820	--------	4,000	11,700	--------
Total	431,100	307,860	461,000	290,390	381,170	240,300	251,500	167,600	179,790	171,750	184,670	307,190
Mean	13,910	10,260	14,870	9,367	13,140	7,752	8,383	5,406	5,993	5,540	5,957	10,240

	Observed			Adjusted†		
Calendar year 1959:	Max 22,800	Min 612	Mean 8,228	Mean 8,177	Cfsm 1.60	In. 21.76
Water year 1959-60:	Max 22,800	Min 1,590	Mean 9,219	Mean 8,979	Cfsm 1.76	In. 23.96

* Discharge measurement made on this day.
† Adjusted for change in contents in Douglas Lake.
Note.--No gage-height record July 7 to Aug. 1; discharge estimated on basis of records for station below Douglas Dam and Little Pigeon River at Sevierville.

4715. 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.

Records available.--October 1920 to December 1931, July 1942 to September 1960. Monthly discharge only for some periods, published in WSP 1306. Prior to October 1924, published as "near Chilhowie." June 1907 to December 1909 at site 4½ miles downstream also 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.--29 years, 109 cfs.

Extremes.--Maximum discharge during year, 2,100 cfs Mar. 30 (gage height, 6.20 ft); minimum, 25 cfs Sept. 25-28 (gage height, 1.28 ft).
1920-31, 1942-60: 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 periods of no gage-height record, which are fair.

Revisions (water years).--WSP 1033: 1943-44(m). WSP 1306: Drainage area, 1921-31(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.2	17	3.0	445
1.4	37	4.0	850
1.6	61	5.0	1,360
2.0	146	7.0	2,670

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	200	a70	a130	98	184	173	765	96	60	98	40	34
2	98	a66	a120	90	176	162	685	88	*58	746	38	37
3	69	a62	*108	135	*151	146	645	83	58	257	38	34
4	54	a56	96	173	130	149	725	81	77	181	*37	33
5	47	*52	88	160	355	135	745	75	81	224	35	32
6	44	54	90	146	705	122	*505	74	69	165	35	31
7	64	a56	90	160	386	114	364	74	63	*117	35	31
8	53	a56	81	*186	265	110	299	262	58	94	39	*30
9	52	a54	81	178	224	108	260	296	57	83	40	30
10	52	a50	85	176	246	105	222	219	53	83	40	30
11	52	a48	90	189	745	101	195	176	49	81	52	31
12	52	a47	170	192	410	98	176	*149	49	69	41	34
13	*49	a46	354	203	310	92	157	130	48	63	54	31
14	92	a45	274	200	251	*88	141	114	47	74	48	30
15	143	a44	203	197	200	94	130	103	47	63	42	29
16	114	a45	162	176	173	98	119	94	46	56	45	29
17	90	a56	135	149	165	96	112	88	44	53	39	28
18	77	a56	132	138	192	101	108	85	42	61	38	29
19	67	a54	361	124	184	101	101	81	41	56	37	30
20	60	a50	331	110	151	101	92	75	40	53	36	29
21	53	a48	251	98	154	96	90	72	65	51	36	28
22	52	a48	200	90	149	92	88	71	83	47	63	27
23	51	a50	165	83	135	92	83	67	77	46	69	27
24	57	a300	141	79	130	119	79	66	84	46	51	26
25	71	a400	124	77	186	181	77	75	57	44	44	25
26	74	a300	117	74	243	178	77	66	51	42	40	25
27	a78	a190	117	77	227	246	103	69	48	56	38	25
28	a80	a200	119	85	200	565	103	75	45	48	37	27
29	a80	a190	127	81	192	*1,020	101	72	44	44	38	31
30	a76	a150	119	85	-------	1,840	92	67	44	42	35	32
31	a72	-------	112	-------	-------	1,390	-------	60	-------	40	35	-------
Total	2,273	2,943	4,773	4,121	7,219	8,113	7,439	3,203	1,665	3,183	1,295	895
Mean	73.3	98.1	154	133	249	262	248	103	55.5	103	41.8	29.8
Cfsm	0.963	1.29	2.02	1.75	3.27	3.44	3.26	1.35	0.729	1.35	0.549	0.392
In.	1.11	1.44	2.33	2.01	3.53	3.96	3.64	1.57	0.81	1.56	0.63	0.44

Calendar year 1959: Max 1,000 Min 20 Mean 102 Cfsm 1.34 In. 18.12
Water year 1959-60: Max 1,840 Min 25 Mean 129 Cfsm 1.70 In. 23.03

Peak discharge (base, 650 cfs).--Feb. 5 (10:30 p.m.) 1,020 cfs (4.33 ft); Feb. 11 (6 a.m.) 925 cfs (4.13 ft); Mar. 30 (9 to 10 p.m.) 2,100 cfs (6.20 ft); Apr. 5 (6 to 7 a.m.) 805 cfs (3.90 ft); July 2 (5 a.m.) 1,510 cfs (5.27 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 nearby stations.

4730. 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.--October 1931 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--29 years, 459 cfs.

Extremes.--Maximum discharge during year, 6,480 cfs Mar. 30 (gage height, 10.20 ft); minimum, 86 cfs Sept. 27 (gage height, 2.44 ft); minimum daily, 90 cfs Sept. 25-27.
1931-60: Maximum discharge, 15,100 cfs Jan. 29, 1957 (gage height, 15.35 ft), from rating curve extended above 10,000 cfs on basis of contracted-opening measurement of peak flow; 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 (water years).--WSP 823: Drainage area. WSP 1306: 1932-33(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 1 to May 8)

2.4	80	5.0	1,050
2.6	110	6.0	1,770
3.0	200	8.0	3,630
4.0	545	10.0	6,200

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	665	306	532	397	615	615	2,940	450	*243	1,340	155	144
2	358	279	476	380	615	568	2,580	408	231	1,680	144	150
3	249	246	*460	545	*545	568	2,400	390	228	840	142	138
4	200	225	414	665	492	496	2,490	372	228	615	*146	128
5	170	*212	386	640	805	450	2,760	362	237	545	136	126
6	*155	252	418	590	2,180	425	2,040	348	228	450	132	120
7	557	234	442	690	1,350	400	*1,500	341	205	*366	132	126
8	344	215	394	*790	965	386	1,230	951	192	306	144	*118
9	299	210	390	765	815	369	1,050	1,080	190	267	188	118
10	270	200	432	715	865	376	890	790	178	306	142	114
11	276	192	484	790	2,400	358	765	615	175	334	220	114
12	296	188	1,330	790	1,500	355	690	*532	180	261	168	130
13	252	178	2,400	890	1,170	320	640	480	178	231	313	122
14	615	172	1,420	940	915	*330	590	432	165	344	228	110
15	715	172	965	890	740	355	545	394	162	292	198	106
16	518	172	740	765	640	372	518	362	158	243	175	104
17	400	218	615	640	615	400	492	341	168	215	150	101
18	334	228	640	590	790	456	480	324	152	212	140	102
19	276	212	1,770	532	840	446	450	299	144	210	136	108
20	243	200	1,460	468	690	432	422	285	142	212	132	106
21	218	200	1,050	428	665	404	411	273	215	185	132	100
22	205	200	815	394	615	386	411	261	296	168	444	98
23	198	188	665	369	568	400	386	249	372	165	590	94
24	292	1,180	568	344	540	509	372	246	273	172	334	94
25	432	2,080	514	341	765	715	362	296	273	261	240	90
26	472	1,110	468	327	1,200	715	369	267	212	190	200	90
27	509	765	442	380	965	1,020	492	320	200	320	178	90
28	500	790	456	439	790	2,130	472	330	178	279	170	104
29	428	740	488	425	740	3,630	442	316	180	210	178	124
30	380	615	450	432	-------	5,780	422	282	180	180	155	128
31	338	-------	432	488	-------	4,680	-------	258	-------	168	144	-------
Total	11,164	12,179	22,516	17,839	26,395	28,846	29,611	12,654	6,163	11,567	6,086	3,397
Mean	360	406	726	575	910	931	987	408	205	373	196	113
Cfsm	1.20	1.35	2.41	1.91	3.02	3.09	3.28	1.36	0.681	1.24	0.651	0.375
In.	1.38	1.50	2.78	2.20	3.26	3.56	3.66	1.56	0.76	1.43	0.75	0.42

Calendar year 1959: Max 4,320 Min 75 Mean 430 Cfsm 1.43 In. 19.37
Water year 1959-60: Max 5,780 Min 90 Mean 515 Cfsm 1.71 In. 23.26

Peak discharge (base, 3,000 cfs).--Mar. 30 (11 p.m.) 6,480 cfs (10.20 ft); July 1 (2:30 p.m.) 3,230 cfs (7.62 ft).

* Discharge measurement made on this day.

4740. 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 Mead Creek and 3.3 miles downstream from Walker Creek.

Drainage area.--132 sq mi.

Records available.--July 1942 to September 1960.

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.--18 years, 159 cfs.

Extremes.--Maximum discharge during year, 2,290 cfs Mar. 30 (gage height, 6.30 ft); minimum, 9.2 cfs Sept. 10; minimum gage height, 1.78 ft July 31; minimum daily, 22 cfs Sept. 3, 6.
1942-60: Maximum discharge, 7,680 cfs Jan. 29, 1957 (gage height, 10.75 ft); minimum, 9 cfs Sept. 26, 1944 (gage height, 1.32 ft); minimum daily, 20 cfs Sept. 26, 1944.

Remarks.--Records good prior to June 9, fair thereafter. Some diurnal fluctuation at low flow caused by mill 9 miles above station.

Revisions (water years).--WSP 973: 1942(m). WSP 1306: 1947(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 1 to May 8, June 9 to Aug. 25, Sept. 27-30)

2.1	19	3.0	275
2.3	50	4.0	790
2.5	102	6.0	2,050
2.7	162		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	73	138	120	177	266	790	85	55	105	30	25
2	108	66	126	114	177	248	555	76	*57	398	32	30
3	90	*82	*120	180	*156	239	425	73	55	138	40	22
4	79	62	105	234	144	203	520	71	57	123	*32	23
5	76	59	96	200	522	180	818	66	59	88	32	25
6	73	68	108	180	1,160	159	*550	62	50	62	30	22
7	168	66	120	264	535	147	390	62	48	*50	33	25
8	114	62	114	*335	355	141	284	676	48	45	32	*25
9	117	62	123	284	284	138	226	500	42	42	36	27
10	108	55	147	293	266	135	186	270	38	43	36	30
11	120	55	159	355	735	126	165	189	36	62	48	26
12	123	57	490	325	460	126	150	*168	38	55	36	47
13	*108	48	735	350	365	114	135	147	38	45	73	30
14	355	50	400	350	302	*114	123	132	38	48	57	33
15	302	50	262	311	219	132	114	120	40	40	45	26
16	183	52	200	248	196	153	105	111	36	38	40	30
17	135	59	168	203	203	147	102	108	35	38	33	29
18	82	62	168	189	350	165	99	96	38	40	30	36
19	68	62	570	174	350	168	88	93	35	32	30	38
20	62	59	465	150	262	165	85	85	36	33	33	36
21	79	57	325	138	244	156	79	82	42	38	32	30
22	59	55	239	126	226	153	79	76	90	33	114	33
23	57	57	189	123	215	168	73	73	108	29	99	33
24	120	708	168	111	222	311	71	68	79	40	52	38
25	135	735	150	108	360	530	71	90	62	36	35	36
26	120	306	141	105	465	425	68	71	48	29	29	43
27	129	196	135	108	345	708	88	76	45	43	30	66
28	123	211	138	123	298	1,160	82	90	45	38	26	71
29	99	192	147	120	306	1,520	71	79	43	42	26	68
30	88	156	138	123	-------	1,950	71	73	43	33	26	71
31	79	-------	132	147	-------	1,630	-------	66	-------	25	25	-------
Total	3,727	3,862	6,716	6,191	9,899	11,977	6,663	4,034	1,484	1,911	1,252	1,074
Mean	120	129	217	200	341	386	222	130	49.5	61.6	40.4	35.8
Cfsm	0.909	0.977	1.64	1.52	2.58	2.92	1.68	0.985	0.375	0.467	0.306	0.271
In.	1.05	1.09	1.89	1.74	2.79	3.37	1.88	1.14	0.42	0.54	0.35	0.30

Calendar year 1959: Max 1,460 Min 23 Mean 140 Cfsm 1.06 In. 14.40
Water year 1959-60: Max 1,950 Min 22 Mean 161 Cfsm 1.22 In. 16.56

Peak discharge (base, 2,000 cfs).--Mar. 30 (11:30 p.m.) 2,290 cfs (6.30 ft).

* Discharge measurement made on this day.

4765. 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 mile 49.4.

Drainage area.--703 sq mi.

Records available.--July 1951 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 1,450.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--9 years, 925 cfs (unadjusted).

Extremes.--Maximum discharge during year, 3,280 cfs Sept. 23 (gage height, 37.35 ft); minimum, 5.8 cfs Nov. 14 (gage height, 32.41 ft); minimum daily, 6.1 cfs Oct. 31, Nov. 1, 22.

1951-60: Maximum discharge, 8,270 cfs Feb. 12, 1957 (gage height, 40.45 ft); no flow for part of day Oct. 27, 1954; minimum daily discharge, 0.5 cfs Oct. 26, 1954.

Remarks.--Records good except those below 50 cfs, which are fair. Flow completely regulated by South Holston Lake (see p. 205).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

32.4	5.5	34.0	300
32.5	8.3	34.5	525
32.7	17	35.0	820
32.9	32	36.0	1,700
33.1	57	38.0	4,170
33.4	118		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	152	6.1	119	111	1,020	1,220	309	16	738	952	1,420	2,770
2	7.7	956	7.5	7.5	1,080	*1,170	1,970	1,530	742	572	1,760	2,780
3	6.6	1,650	133	7.2	*820	1,210	1,950	232	1,050	17	*2,150	2,780
4	6.6	*7.2	549	834	106	1,280	2,430	*540	1,220	17	1,660	2,780
5	276	6.9	7.5	476	16	1,320	2,430	730	16	1,590	1,170	2,800
6	268	332	8.0	*436	12	852	*2,430	734	1,270	1,160	2,110	2,800
7	9.8	7.7	818	211	104	743	2,360	818	1,350	1,360	1,230	*2,780
8	472	7.2	424	277	1,590	758	2,420	436	1,350	1,760	1,960	2,840
9	240	13	52	209	902	418	1,880	1,350	1,230	882	1,830	2,860
10	1,420	103	8.3	8.3	1,220	1,020	76	2,390	1,750	531	1,930	2,860
11	6.9	27	9.0	9.0	968	1,420	1,180	1,780	1,300	2,020	1,580	2,890
12	988	27	9.8	8.7	1,510	1,540	1,110	2,190	16	948	1,200	2,900
13	1,240	6.9	9.0	9.0	1,700	1,680	1,040	1,750	960	1,430	20	2,900
14	2,000	288	242	143	1,610	1,740	1,050	46	985	2,070	18	2,900
15	41	6.9	80	218	2,000	836	549	16	1,330	*1,560	1,870	2,940
16	24	6.6	1,250	234	1,290	443	16	1,520	1,320	18	2,080	2,960
17	8.0	978	12	8.3	1,230	912	15	1,560	1,140	17	2,120	3,000
18	7.7	9.3	127	1,390	1,240	1,370	802	1,540	1,990	742	2,000	3,000
19	13	18	115	1,820	1,550	1,000	583	1,550	1,720	679	552	3,040
20	226	6.9	9.8	1,820	1,190	414	606	1,690	2,540	650	18	3,060
21	23	7.2	9.4	1,820	27	1,700	442	860	2,470	698	18	3,000
22	7.7	6.1	160	1,770	1,410	590	607	747	1,840	596	1,780	3,090
23	8.0	7.2	169	398	1,270	292	16	1,940	1,780	18	1,480	2,690
24	607	944	106	199	1,180	18	16	1,710	1,740	1,530	1,960	17
25	770	2,210	8.0	2,000	810	906	692	962	912	1,800	2,610	17
26	12	13	8.0	2,180	1,220	16	2,120	932	17	1,160	2,530	1,090
27	707	1,090	7.7	858	880	16	1,470	871	1,470	1,900	30	1,350
28	256	794	224	236	18	40	1,540	1,260	1,430	1,690	934	1,260
29	578	189	272	1,436	1,810	924	1,730	18	1,890	1,500	2,580	1,530
30	7.7	674	572	10	--------	1,860	17	1,420	1,280	18	2,730	487
31	6.1	--------	411	7.7	--------	1,820	--------	1,070	--------	469	2,190	--------
Total	10,395.8	10,398.2	5,937.0	19,151.7	29,783	29,528	33,856	34,208	38,846	30,354	47,520	72,171
Mean	335	347	192	618	1,027	953	1,129	1,103	1,295	979	1,533	2,406

	Observed			Adjusted†		
Calendar year 1959:	Max 2,780	Min 5.5	Mean 558	Mean 851	Cfsm 1.21	In. 16.43
Water year 1959-60:	Max 3,090	Min 6.1	Mean 989	Mean 1,029	Cfsm 1.46	In. 19.92

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston Lake.

4784. Beaver Creek near Bristol, Va.

Location.--Lat 36°37'54", long 82°08'02", on right bank 50 ft upstream from private bridge, 75 ft downstream from Goose Creek, 0.9 mile downstream from Clear Creek, and 2.1 miles northeast of Bristol, Washington County, Va.

Drainage area.--27.7 sq mi.

Records available.--July 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 1,780.98 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 280 cfs July 1 (gage height, 4.62 ft); minimum, 9.5 cfs Oct. 6 (gage height, 2.64 ft).
1957-60: Maximum discharge, 795 cfs May 6, 1958 (gage height, 6.98 ft); minimum, 9.5 cfs Sept. 28, Oct. 6, 1959.
Flood in 1936 reached a stage about 5 ft higher than that of May 6, 1958.

Remarks.--Records good.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

2.6	8.0	3.0	36
2.7	13	3.5	95
2.8	20	4.0	174

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	18	*46	38	34	41	87	35	*20	88	16	15
2	12	18	45	37	*34	41	78	34	20	50	16	15
3	11	*17	44	43	34	41	82	32	20	30	*16	14
4	11	17	41	*40	34	40	92	30	19	26	17	13
5	11	16	40	39	40	39	96	30	19	*23	18	13
6	*20	30	43	40	47	38	89	31	18	22	19	*13
7	52	24	44	47	43	37	*81	32	18	21	18	12
8	a35	22	43	48	41	36	74	36	18	19	17	12
9	a27	21	42	49	40	38	69	31	18	19	16	12
10	a25	19	42	49	41	36	64	30	17	23	19	14
11	a25	19	42	48	42	35	60	30	17	22	19	14
12	a27	18	68	47	39	34	58	*30	17	19	19	12
13	a25	18	69	52	39	34	54	29	17	18	23	11
14	a35	17	58	49	38	*34	53	27	16	18	18	10
15	30	17	52	49	37	36	50	26	16	17	16	10
16	23	17	47	47	36	40	48	26	16	16	16	10
17	21	20	45	45	40	48	47	26	17	16	16	10
18	19	18	54	44	49	53	45	26	16	16	16	10
19	18	17	88	42	50	52	43	25	15	18	17	10
20	16	16	69	41	47	49	42	25	15	18	18	10
21	16	16	62	40	47	48	41	24	16	16	16	10
22	16	16	56	38	46	50	40	24	16	16	26	10
23	16	16	53	37	44	55	39	23	22	15	20	10
24	22	85	48	36	43	67	38	22	18	15	16	10
25	26	66	46	35	46	78	37	25	18	15	15	10
26	22	50	43	34	47	77	36	24	16	15	14	10
27	24	48	42	37	45	84	39	30	15	17	14	10
28	22	68	44	38	44	88	35	23	15	16	13	10
29	20	56	42	36	43	88	34	23	15	16	13	11
30	20	49	40	34	-------	110	34	22	15	17	13	10
31	19	-------	40	35	-------	104	-------	22	-------	17	12	-------
Total	678	849	1,538	1,294	1,210	1,649	1,685	853	515	672	522	341
Mean	21.9	28.3	49.6	41.7	41.7	53.2	56.2	27.5	17.2	21.7	16.8	11.4
Cfsm	0.791	1.02	1.79	1.51	1.51	1.92	2.03	0.993	0.621	0.783	0.606	0.412
In.	0.91	1.14	2.06	1.74	1.62	2.21	2.26	1.15	0.69	0.90	0.70	0.46

Calendar year 1959: Max 140 Min 10 Mean 29.3 Cfsm 1.06 In. 14.37
Water year 1959-60: Max 110 Min 10 Mean 32.3 Cfsm 1.17 In. 15.84

Peak discharge (base, 300 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 South Fork Holston River at Vestal.

4790. Watauga River near Sugar Grove, N. C.

Location.--Lat 36°14'18", long 81°49'28", on right bank 300 ft downstream from Cove Creek, 2.8 miles southwest of Sugar Grove, Watauga County, and at mile 64.4.

Drainage area.--30.8 sq mi.

Records available.--October 1939 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--21 years, 163 cfs.

Extremes.--Maximum discharge during year, 4,340 cfs Mar. 30 (gage height, 8.75 ft), from rating curve extended above 2,100 cfs as explained below; minimum, 58 cfs Sept. 27 (gage height, 1.74 ft).

1939-60: 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 measurement 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, 22,000 cfs, from rating curve extended above 2,100 cfs as explained above).

Remarks.--Records excellent except those for periods of ice effect, which are good. Slight diurnal fluctuation at low flow caused by small mills above station.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 14, July 2 to Aug. 13				Mar. 15 to July 1, Aug. 14 to Sept. 30			
1.8	62	4.0	790	1.7	52	5.0	1,260
2.0	97	5.0	1,260	2.0	106	6.0	1,880
2.5	220	6.0	1,880	2.5	232	7.0	2,650
3.0	387			3.0	407	8.0	3,590
				4.0	800		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	844	203	b120	152	376	b205	966	142	133	522	93	106
2	395	169	124	154	285	b200	820	124	124	552	84	104
3	286	149	133	284	238	b260	1,260	117	170	239	78	85
4	200	140	124	232	206	b240	1,620	110	196	206	87	81
5	169	130	117	212	1,410	b230	1,610	106	190	161	141	74
6	144	128	133	232	1,140	b220	885	104	177	133	93	71
7	164	119	130	295	561	b210	652	106	152	124	91	83
8	169	112	137	305	406	b200	484	388	135	108	88	80
9	417	106	133	272	336	b230	453	210	126	101	78	76
10	332	101	137	256	448	b220	380	172	110	145	*75	72
11	332	97	144	256	677	b210	314	152	102	147	93	271
12	244	93	331	235	457	b205	280	160	102	106	177	119
13	206	89	449	*256	b390	b200	257	152	98	93	452	89
14	292	91	295	241	b310	b190	238	140	*104	101	343	*76
15	266	93	*232	229	b290	b200	221	126	115	84	212	72
16	220	89	200	203	260	204	212	*119	87	76	162	71
17	192	97	179	187	*272	251	196	115	78	75	157	72
18	174	84	209	198	449	263	193	113	76	70	145	118
19	152	78	784	179	b400	204	*167	106	71	86	164	179
20	135	76	485	b155	b300	182	162	129	67	89	133	106
21	128	80	345	b145	260	170	162	128	174	*37	145	85
22	130	78	272	b145	235	b155	172	102	168	62	293	78
23	162	78	226	b140	217	*b170	147	93	178	144	232	74
24	256	*152	200	b135	226	296	140	87	115	119	177	69
25	209	137	192	b130	318	362	138	91	98	101	170	64
26	176	110	171	b125	357	318	142	108	117	239	210	61
27	*159	101	159	137	276	449	167	598	117	344	196	60
28	142	169	212	147	247	673	152	314	96	184	174	80
29	133	137	235	155	238	1,160	133	215	119	142	119	85
30	147	b125	184	192	-------	3,540	126	177	93	119	98	110
31	266	-------	166	413	-------	1,960	-------	150	-------	104	91	-------
Total	7,221	3,411	6,956	6,377	11,585	13,577	12,849	4,754	3,688	4,913	4,851	2,771
Mean	233	114	224	206	399	438	428	155	123	159	156	92.4
Cfsm	2.57	1.26	2.47	2.27	4.39	4.82	4.71	1.69	1.35	1.75	1.72	1.02
In.	2.96	1.40	2.85	2.61	4.75	5.56	5.26	1.95	1.51	2.02	1.99	1.13

Calendar year 1959: Max 3,390 Min 39 Mean 169 Cfsm 1.86 In. 25.34
Water year 1959-60: Max 3,540 Min 60 Mean 227 Cfsm 2.50 In. 33.99

Peak discharge (base, 2,000 cfs).--Feb. 5 (5:30 p.m.) 3,830 cfs (8.24 ft); Mar. 30 (2:30 p.m.) 4,340 cfs (8.75 ft); Apr. 4 (10 p.m.) 2,600 cfs (6.94 ft).

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

4840. 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.--October 1902 to December 1908 (published as "near Elizabethton"), January 1948 to September 1960. Prior to May 1903 monthly discharge only, published in WSP 1306.

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.--18 years, 713 cfs (unadjusted).

Extremes.--Maximum discharge during year, 6,750 cfs Jan. 19 (gage height, 38.10 ft); minimum, 15 cfs Jan. 20, 21 (gage height, 31.13 ft); minimum daily, 26 cfs Feb. 6.
1902-8, 1948-60: 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 discharge, 2.3 cfs July 11, 1953; minimum daily, 2.4 cfs Aug. 14, 1949; minimum gage height at present site, 30.73 ft July 11, 1953.

Remarks.--Records good. Flow completely regulated by Watauga Lake (see p. 205).

Revisions (water years).--WSP 1276: 1906(M). WSP 1306: 1905(M). WSP 1386: 1950.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

31.3	26	33.0	475
31.5	46	33.5	820
31.7	73	34.0	1,280
32.0	132	36.0	3,700
32.5	265		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	215	61	314	53	147	596	2,140	73	822	1,120	584	3,000
2	646	566	68	52	28	104	2,170	989	*794	548	1,350	3,000
3	684	900	*67	51	*268	94	2,110	73	828	82	*1,580	2,970
4	652	60	146	51	57	394	2,150	*72	370	82	1,550	2,970
5	1,070	52	64	51	38	506	2,750	70	76	604	693	3,000
6	226	176	64	51	26	144	*2,750	70	1,230	*1,020	1,010	3,020
7	*1,220	56	168	51	60	106	2,670	80	1,400	1,070	366	*3,020
8	1,280	54	136	51	158	96	2,740	73	1,220	1,420	1,730	3,060
9	2,210	53	62	51	1,090	66	2,720	1,140	1,180	1,050	1,760	3,080
10	1,470	143	60	51	1,740	460	1,490	1,460	1,380	182	2,090	3,080
11	78	54	60	51	1,130	1,210	2,600	1,760	896	1,920	1,320	3,080
12	1,510	52	60	51	1,470	1,430	1,550	1,700	75	1,330	978	3,090
13	1,620	51	58	51	1,650	1,510	1,390	1,060	992	809	64	3,090
14	2,280	190	228	51	210	1,560	1,460	79	572	1,540	62	3,090
15	2,040	53	57	51	1,360	490	744	73	1,130	1,210	1,760	3,090
16	165	52	53	51	1,010	540	73	904	1,500	78	1,680	3,090
17	75	194	53	50	625	480	73	452	1,290	76	1,880	3,100
18	73	218	76	1,010	1,260	1,300	1,500	76	2,000	76	2,000	3,100
19	73	70	107	1,070	620	336	682	84	1,650	333	1,170	3,100
20	190	61	58	45	727	93	652	76	2,210	414	76	3,090
21	73	58	57	626	76	802	558	73	1,530	408	75	3,100
22	68	57	56	760	1,140	532	642	138	1,930	78	1,810	3,120
23	66	56	60	148	853	212	67	1,780	1,610	78	1,620	2,060
24	513	511	56	122	342	62	68	1,640	756	76	1,770	60
25	470	57	56	728	68	815	701	704	780	955	1,720	60
26	388	54	54	707	306	62	1,620	204	82	562	1,830	1,100
27	367	1,000	54	278	319	60	1,020	1,180	1,600	1,120	101	889
28	133	361	142	39	66	58	1,080	216	1,680	1,110	972	1,120
29	181	214	334	462	645	558	1,570	76	1,370	833	2,560	771
30	64	314	154	30	--------	1,740	76	789	1,630	76	2,950	222
31	61	--------	53	30	--------	2,280	--------	583	--------	76	2,290	--------
Total	20,161	5,818	3,035	6,924	17,489	18,696	41,816	17,747	34,583	20,336	41,401	73,622
Mean	650	194	97.9	223	603	603	1,394	572	1,153	656	1,336	2,454

		Observed			Adjusted†		
Calendar year 1959:	Max	2,910	Min 30	Mean 484	Mean 681	Cfsm 1.45	In. 19.63
Water year 1959-60:	Max	3,120	Min 26	Mean 824	Mean 818	Cfsm 1.74	In. 23.63

* Discharge measurement made on this day.
† Adjusted for change in contents in Watauga Lake.

4855. Doe River at Elizabethton, Tenn.

Location.--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 (gage heights only), October 1911 to September 1916, October 1920 to September 1960. Published as "at Valley Forge" 1911-16, 1920-31. Monthly discharge only for some periods, published in WSP 1306.

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. Dec. 11, 1911, to Sept. 30, 1916, and Nov. 5, 1920, to Sept. 30, 1931, chain gage 3 miles upstream at altitude 1,610 ft (from topographic map). June 19 to Sept. 20, 1932, staff gage at present site at datum 0.50 ft higher. Sept. 20, 1932, to Jan. 31, 1934, staff gage at present site and datum.

Average discharge.--45 years (1911-16, 1920-60), 218 cfs.

Extremes.--Maximum discharge during year, 2,210 cfs Mar. 30 (gage height, 3.93 ft); minimum, 56 cfs Sept. 27 (gage height, 0.61 ft).
1911-16, 1920-60: Maximum discharge, 7,300 cfs July 30, 1940 (gage height, 6.75 ft), from rating curve extended above 4,000 cfs on basis of slope-area measurement at gage height 6.25 ft; minimum, 17 cfs Aug. 31, Sept. 7, 1925 (gage height, 0.60 ft, site and datum then in use).

Remarks.--Records good. Records of water temperatures for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 823: Drainage area. WSP 1306: 1913(M), 1915(M), 1929(M), 1931(M). WSP 1336: 1933(M), 1938.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 5				Feb. 6 to Sept. 30			
0.8	94	2.0	510	0.6	54	2.0	510
1.0	140	3.0	1,140	1.0	136	3.0	1,240
1.5	299	4.0	2,190	1.5	290	4.0	2,300

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	436	140	247	188	335	*298	966	230	*173	423	108	120
2	240	133	233	188	*306	286	835	202	165	661	*98	113
3	173	*123	*254	296	278	374	872	187	162	360	95	100
4	140	116	233	274	254	306	926	*179	154	284	115	91
5	121	114	220	*257	533	269	*1,080	170	157	241	118	87
6	112	140	254	274	782	258	828	165	173	*159	108	*83
7	*274	135	257	339	543	241	664	165	146	176	139	79
8	207	121	230	365	424	244	538	330	139	154	149	79
9	194	114	237	343	362	244	451	272	139	144	113	83
10	173	112	257	321	465	241	392	244	122	335	100	79
11	167	107	278	335	739	224	350	227	118	462	102	129
12	156	105	518	313	521	220	322	227	120	272	154	102
13	133	103	790	365	470	205	302	220	113	220	234	89
14	274	101	545	354	392	217	286	202	113	269	149	79
15	247	105	402	343	322	241	272	187	124	211	122	75
16	197	103	328	306	306	286	262	176	111	179	106	73
17	173	130	285	274	310	397	252	170	127	176	100	75
18	154	128	313	285	485	428	248	162	111	205	100	75
19	135	114	1,190	257	548	346	224	157	100	162	93	77
20	123	109	712	233	406	302	211	154	93	146	206	71
21	116	109	500	214	362	272	208	276	134	131	154	66
22	112	109	386	194	346	248	224	202	168	120	392	62
23	109	105	328	188	310	244	199	170	346	225	342	62
24	156	292	288	182	302	286	190	160	208	258	214	61
25	197	365	264	179	438	350	184	176	165	168	165	59
26	188	271	247	176	664	330	182	162	160	154	136	57
27	176	230	227	207	470	415	266	230	152	184	124	56
28	170	451	240	237	384	625	252	205	129	162	144	68
29	154	373	257	207	350	1,090	208	248	146	179	127	91
30	154	292	220	220	-------	*2,040	199	227	122	127	111	91
31	145	-------	207	299	-------	1,560	-------	190	-------	113	104	-------
Total	5,506	4,950	10,947	8,213	12,407	13,087	12,393	6,272	4,390	6,950	4,522	2,432
Mean	178	165	353	265	428	422	413	202	146	224	146	81.1
Cfsm	1.30	1.20	2.58	1.93	3.12	3.08	3.01	1.47	1.07	1.64	1.07	0.592
In.	1.49	1.34	2.97	2.23	3.37	3.55	3.36	1.70	1.19	1.89	1.23	0.66

Calendar year 1959: Max 3,090 Min 42 Mean 227 Cfsm 1.66 In. 22.46
Water year 1959-60: Max 2,040 Min 56 Mean 252 Cfsm 1.84 In. 24.98

Peak discharge (base, 1,700 cfs).--Dec. 19 (6:30 a.m.) 1,700 cfs (3.59 ft); Mar. 30 (10 p.m.) 2,210 cfs (3.93 ft).

* Discharge measurement made on this day.

4860. 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.--October 1925 to July 1949, July 1953 to September 1960. Monthly discharge only October 1925 to January 1926, published in WSP 1306. 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.--30 years (1925-48, 1953-60), 1,057 cfs (unadjusted).

Extremes.--Maximum discharge during year, 6,510 cfs Mar. 30 (gage height, 7.96 ft); minimum, 153 cfs Sept. 27 (gage height, 2.14 ft); minimum daily, 157 cfs Sept. 25.
1925-49, 1953-60: 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 measurement 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 good. Flow partly regulated by Watauga Lake, 10 miles upstream (see p.

Revisions (water years).--WSP 758: 1932(M). WSP 823: Drainage area. WSP 1336: 1927-28(M), 1930, 1931-32(m).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

2.1	143	6.0	3,280
2.4	225	7.0	4,700
3.0	480	8.0	6,600
4.0	1,200		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	771	271	752	335	589	1,240	3,740	397	983	1,700	714	3,210
2	966	722	430	327	*450	*530	3,530	1,310	*1,080	1,440	1,490	3,200
3	909	1,140	*440	470	648	667	3,440	*379	1,140	554	*1,720	3,140
4	800	*248	539	491	445	864	3,500	331	616	445	1,880	3,140
5	1,300	210	392	*460	750	956	4,300	314	260	922	942	3,150
6	422	385	435	470	1,120	491	*3,990	306	1,390	*1,290	1,160	3,170
7	*1,650	264	502	565	875	435	3,700	318	1,620	1,280	594	*3,160
8	1,350	239	502	640	752	416	3,580	530	1,520	1,640	1,840	3,200
9	2,490	228	397	589	1,650	402	3,450	1,450	1,340	1,350	2,040	3,210
10	2,000	298	430	559	2,380	832	2,370	2,020	1,620	700	2,150	3,210
11	314	222	480	583	2,210	1,490	2,970	2,090	1,140	2,370	1,700	3,270
12	1,670	206	1,080	565	2,250	1,820	2,260	2,190	256	1,750	1,130	3,240
13	1,780	194	1,770	654	2,410	2,060	1,890	1,420	1,050	1,060	488	3,220
14	2,490	339	1,280	681	927	1,970	1,830	496	899	1,920	268	3,220
15	2,610	215	751	647	1,860	991	1,350	335	1,160	1,610	1,780	3,210
16	510	194	583	559	1,550	1,060	440	1,180	1,750	294	1,940	3,200
17	310	411	496	502	1,150	1,160	421	707	1,550	279	2,030	3,210
18	279	445	565	1,490	2,040	2,010	1,800	306	2,040	310	2,330	3,210
19	246	268	2,130	1,510	1,510	1,010	1,070	298	1,730	548	1,480	3,210
20	354	236	1,370	416	1,440	604	926	279	2,520	609	400	3,200
21	216	225	903	940	654	1,340	1,020	402	1,880	570	264	3,200
22	203	222	695	1,120	1,700	1,010	976	318	1,950	219	2,270	3,200
23	200	210	577	440	1,400	616	348	1,950	2,250	331	2,140	2,500
24	665	1,230	496	392	844	502	331	2,100	1,210	392	2,100	189
25	822	1,180	455	1,030	742	1,460	976	992	951	1,120	1,980	157
26	766	614	416	1,050	1,440	602	1,840	464	375	855	2,200	1,130
27	664	1,450	392	651	1,140	737	1,480	1,510	1,670	1,350	460	694
28	490	1,190	503	374	681	1,260	1,410	486	1,950	1,370	1,070	1,230
29	456	872	652	768	1,230	2,350	1,990	435	1,580	1,110	2,640	802
30	314	888	598	402	--------	*4,980	563	1,090	1,850	242	3,100	656
31	283	--------	374	435	--------	4,910	--------	872	--------	210	2,460	--------
Total	28,300	14,816	21,385	20,115	36,837	40,775	61,491	27,275	41,330	29,840	48,760	77,938
Mean	913	494	690	649	1,270	1,315	2,050	880	1,378	963	1,573	2,598

	Observed			Adjusted†		
Calendar year 1959:	Max 6,700	Min 141	Mean 834	Mean 1,032	Cfsm 1.49	In. 20.24
Water year 1959-60:	Max 4,980	Min 157	Mean 1,226	Mean 1,220	Cfsm 1.75	In. 24.00

* Discharge measurement made on this day.
† Adjusted for change in contents in Watauga Lake.

4875. 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, at Kingsport, Sullivan County, 1¼ miles upstream from Reedy Creek, and 3⅝ miles upstream from confluence with North Fork Holston River.

Drainage area.--1,935 sq mi.

Records available.--September 1925 to September 1960.

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.

Average discharge.--35 years, 2,528 cfs (unadjusted).

Extremes.--Maximum discharge during year, 9,490 cfs Aug. 9 (gage height, 4.98 ft); minimum, 291 cfs Jan. 20 (gage height, 0.53 ft); minimum daily, 482 cfs June 25.
1925-60: Maximum discharge, 68,800 cfs Aug. 14, 1940 (gage height, 18.80 ft, site and datum then in use); minimum, 210 cfs Jan. 28, 1940 (gage height, -0.20 ft, site and datum then in use); minimum daily, 301 cfs June 13, 1954.

Remarks.--Records good. Flow regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes (see p. 205). Some diversion upstream by the city of Kingsport, Tennessee Eastman Corporation, and Holston Ordnance Works.

Revisions (water years).--WSP 823: Drainage area. WSP 1033: 1930(M). WSP 1306: 1933(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 21			Jan. 22 to July 14			July 15 to Sept. 30		
0.9	610	2.0 2,330	0.7	420	2.0 2,380	0.8	510	2.0 2,300
1.0	720	4.0 6,920	1.0	720	4.0 7,360	1.0	720	4.0 6,670
1.5	1,420		1.5	1,420	5.0 10,000	1.5	1,420	5.0 9,550

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	g2,900	1,270	2,200	2,530	653	2,850	8,430	689	2,330	3,600	2,040	7,120
2	g875	1,560	2,200	2,410	2,120	1,480	8,580	3,130	*2,170	4,750	3,230	6,520
3	g792	4,210	2,100	1,340	704	*1,560	6,740	708	2,290	786	3,800	6,230
4	g842	1,430	2,660	1,410	674	3,870	6,500	660	2,840	702	*4,100	5,160
5	g1,410	*912	788	1,550	726	3,650	6,840	689	692	*2,200	2,770	4,390
6	g1,580	1,130	1,210	1,530	696	974	6,830	683	3,110	3,440	2,990	7,230
7	g1,420	1,440	2,210	*1,450	1,590	746	*7,020	898	1,930	2,680	1,720	7,610
8	3,550	1,190	2,570	1,720	1,160	681	7,160	983	2,640	2,800	5,490	*6,710
9	3,110	1,280	2,940	1,680	5,960	694	6,580	3,220	4,320	2,620	5,980	6,750
10	3,790	936	2,600	1,460	*5,220	2,100	3,230	3,700	3,960	2,570	2,690	7,810
11	807	1,010	2,720	1,710	2,600	5,700	3,860	5,050	804	4,030	3,400	8,090
12	2,740	966	1,720	1,850	4,910	5,390	3,690	4,640	646	4,730	2,660	6,530
13	2,820	g692	1,570	1,610	4,420	5,870	4,040	3,450	2,560	4,610	2,070	6,600
14	6,350	g1,080	1,550	1,820	3,300	4,380	4,460	1,020	1,740	4,570	788	6,450
15	6,420	g675	3,290	3,700	3,550	3,000	1,790	664	3,520	2,610	4,010	5,470
16	2,000	g679	3,500	1,220	3,000	1,700	708	2,940	3,330	817	3,690	5,300
17	830	g1,110	3,280	1,020	2,990	3,560	720	3,330	5,000	738	3,420	5,090
18	760	g800	3,710	4,230	4,290	4,500	4,640	2,060	1,760	1,710	4,380	5,840
19	1,090	g1,950	3,340	4,010	3,360	1,940	1,800	1,510	1,930	519	3,440	6,320
20	1,260	1,780	3,860	2,620	4,010	1,150	1,030	1,460	5,340	828	1,500	*6,680
21	1,340	727	6,400	3,580	1,950	3,170	831	1,780	6,240	1,120	794	6,620
22	1,460	731	6,140	1,060	3,510	1,580	866	698	6,510	916	2,930	6,410
23	1,390	773	4,130	654	2,880	1,030	721	4,780	4,260	1,300	4,840	5,680
24	2,440	2,390	2,590	702	2,580	3,240	720	2,740	2,320	730	4,750	1,900
25	1,710	5,870	2,330	3,010	2,090	2,870	1,200	1,830	482	2,620	4,880	778
26	1,140	3,970	1,400	3,380	2,570	1,890	5,320	1,610	655	2,120	5,010	2,700
27	1,580	3,970	1,390	2,190	2,690	611	904	1,520	3,480	2,140	1,230	2,850
28	1,160	1,720	2,140	813	2,060	699	2,770	2,430	3,510	4,440	807	2,820
29	2,120	4,080	1,850	2,550	3,460	2,100	3,570	811	2,850	3,790	5,800	2,030
30	1,260	3,270	1,860	650	-------	6,000	712	2,340	4,020	768	6,740	3,310
31	1,310	-------	2,360	651	-------	*8,320	-------	1,560	-------	759	5,400	-------
Total	62,256	53,601	82,608	60,110	79,723	87,305	112,262	63,583	87,239	72,163	107,349	162,998
Mean	2,008	1,787	2,665	1,939	2,749	2,816	3,742	2,051	2,908	2,328	3,463	5,433

	Observed			Adjusted†		
Calendar year 1959:	Max 7,710	Min 672	Mean 2,046	Mean 2,539	Cfsm 1.31	In. 17.81
Water year 1959-60:	Max 8,580	Min 482	Mean 2,817	Mean 2,856	Cfsm 1.48	In. 20.09

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston, Watauga, Boone and Fort Patrick Henry Lakes.
g Discharge computed from bihourly readings of Tennessee Valley Authority telephone gage located in same well.

4880. 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 December 1908 (published as "at Saltville"), October 1920 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--41 years, 294 cfs.

Extremes.--Maximum discharge during year, 4,250 cfs Mar. 31 (gage height, 5.74 ft); minimum, 25 cfs Sept. 25-28 (gage height, 0.47 ft).
1907-8, 1920-60: Maximum discharge, 16,500 cfs Jan. 29, 1957 (gage height, 13.20 ft), from rating curve extended above 7,200 cfs on basis of slope-area measurement of peak flow; 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.

Revisions (water years).--WSP 758: Drainage area. WSP 1113: 1944-47. WSP 1306: 1907(M), 1921-22(M), 1924-30(M), 1932-34(M), drainage area at site used 1907-8.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 25, 26)

0.4	18	2.0	520
.6	40	3.0	1,200
.8	73	4.0	2,170
1.0	118	6.0	4,640
1.5	285		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	334	183	348	226	269	411	*1,740	202	113	154	43	39
2	177	158	298	209	273	384	1,240	199	106	875	43	40
3	104	139	285	321	258	366	1,020	186	106	398	46	44
4	77	124	254	520	239	348	1,420	177	108	316	48	36
5	64	113	236	465	312	308	1,690	167	96	222	46	33
6	55	186	258	406	1,500	285	1,200	158	90	154	49	32
7	106	239	330	430	980	258	875	151	81	118	48	30
8	183	206	290	548	674	232	648	614	73	96	50	29
9	124	183	273	548	531	206	520	875	71	86	50	33
10	111	158	281	515	450	246	435	526	69	94	50	43
11	106	139	298	575	812	229	375	388	66	111	69	48
12	111	124	727	629	721	226	334	316	64	101	57	44
13	99	113	1,460	605	575	206	298	273	64	86	92	43
14	430	106	910	599	505	215	273	239	66	73	121	43
15	694	101	611	564	393	258	250	215	64	66	99	35
16	375	99	470	495	334	316	236	190	62	62	81	32
17	236	111	384	420	330	316	226	177	62	60	62	30
18	174	127	348	384	480	366	219	164	59	59	52	30
19	136	124	784	344	674	375	202	151	54	57	46	30
20	111	121	791	285	480	352	186	139	50	55	44	32
21	99	116	593	246	440	330	180	130	55	52	42	30
22	88	111	465	212	406	321	180	124	94	50	55	29
23	88	106	375	202	366	348	170	113	124	48	84	27
24	360	1,510	326	186	362	510	158	111	113	54	73	26
25	526	2,170	290	180	455	910	154	124	106	52	54	25
26	370	910	266	170	661	735	154	124	96	48	44	25
27	375	548	254	174	553	1,020	177	148	77	49	40	25
28	406	564	250	212	470	1,690	202	222	68	54	38	26
29	303	536	281	*219	*460	2,730	*186	190	64	*60	36	29
30	*246	*425	*269	219	-------	3,340	177	158	*62	49	*35	*32
31	206	-------	250	239	-------	3,800	-------	*133	-------	44	36	-------
Total	6,874	9,850	13,255	11,347	14,963	21,437	15,125	7,084	2,383	3,803	1,733	1,000
Mean	222	328	428	366	516	692	504	229	79.4	123	55.9	33.3
Cfsm	1.00	1.48	1.93	1.65	2.32	3.12	2.27	1.03	0.358	0.554	0.252	0.150
In.	1.15	1.65	2.22	1.90	2.51	3.59	2.53	1.19	0.40	0.64	0.29	0.17

Calendar year 1959: Max 3,340 Min 25 Mean 265 Cfsm 1.19 In. 16.18
Water year 1959-60: Max 3,600 Min 25 Mean 297 Cfsm 1.34 In. 18.24

Peak discharge (base, 3,000 cfs).--Nov. 24 (10 to 11:30 p.m.) 3,470 cfs (5.09 ft); Mar. 31 (7 a.m.) 4,250 cfs (5.74 ft).

* Discharge measurement made on this day.

4900. 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.--October 1931 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--29 years, 854 cfs.

Extremes.--Maximum discharge during year, 8,320 cfs Nov. 25 (gage height, 8.14 ft); minimum, 75 cfs Sept. 10, 27, 28; minimum gage height, 1.34 ft Sept. 27, 28.
1931-60: Maximum discharge, 28,700 cfs Jan. 30, 1957 (gage height, 16.73 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.

Revisions (water years).--WSP 783: 1932(M). WSP 823: Drainage area. WSP 1276: 1932-34.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 30 to July 1, July 4-11)

1.4	75	3.0	940
1.6	120	4.0	1,880
1.8	185	5.0	2,900
2.0	275	6.0	4,240
2.5	570	8.0	8,110

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	110	426	*1,340	836	868	*1,160	5,670	534	384	514	120	112
2	417	354	1,080	732	*940	1,050	3,120	558	319	1,680	105	110
3	414	*302	1,060	892	836	1,090	2,680	a580	286	1,780	*98	126
4	235	265	958	*1,440	748	1,000	3,930	a540	270	935	102	115
5	164	240	828	1,530	1,070	884	6,260	a500	270	*700	112	102
6	*138	372	812	1,340	2,740	756	4,080	a480	260	493	118	*102
7	589	a640	1,120	1,340	3,240	724	*2,900	a460	225	342	154	91
8	940	a600	1,100	1,880	2,230	672	2,230	a1,000	201	259	160	87
9	679	a540	940	2,030	2,740	740	1,730	a1,400	193	197	135	81
10	552	a450	884	1,830	1,440	716	1,390	a1,100	182	279	120	77
11	420	a400	900	1,780	1,440	700	1,160	*a980	178	414	168	87
12	342	a350	1,340	1,780	1,880	708	1,000	860	182	474	178	270
13	366	a330	3,640	1,780	1,530	686	884	732	178	330	213	297
14	713	a310	3,120	1,880	1,390	708	780	644	*171	245	185	235
15	1,830	a300	2,080	1,780	1,160	940	700	576	171	197	250	178
16	1,390	a300	1,530	1,630	1,020	1,340	651	510	178	164	245	157
17	796	a330	1,210	1,390	976	1,930	618	462	205	147	205	144
18	540	a370	1,080	1,210	1,630	2,280	588	420	201	139	171	123
19	402	a360	3,120	1,080	2,430	2,030	558	372	193	201	304	112
20	302	a350	2,900	916	2,080	1,730	522	330	164	279	255	105
21	235	a340	2,180	788	1,630	1,440	498	297	154	185	168	102
22	201	a320	1,680	679	1,440	1,390	492	270	171	159	390	96
23	182	a310	1,300	594	1,260	1,530	468	250	348	219	716	93
24	209	a4,500	1,080	546	1,120	1,880	438	235	432	185	510	91
25	706	a6,000	916	510	1,160	2,530	420	250	450	169	336	85
26	1,050	a2,400	828	498	1,780	2,580	402	286	354	135	250	81
27	796	a1,700	756	492	1,830	2,630	468	432	297	132	193	79
28	820	a4,500	796	558	1,480	3,640	552	558	255	126	160	77
29	804	a3,500	1,120	637	1,300	5,290	558	624	221	120	150	83
30	618	a2,200	1,100	644	-------	6,060	510	588	201	115	132	91
31	504	-------	967	637	-------	7,480	-------	474	-------	112	123	-------
Total	17,464	33,359	43,765	35,659	45,188	58,294	46,257	17,302	7,294	11,393	6,526	3,591
Mean	563	1,112	1,412	1,150	1,558	1,880	1,542	558	243	368	211	120
Cfsm	0.838	1.65	2.10	1.71	2.32	2.80	2.29	0.830	0.362	0.548	0.314	0.179
In.	0.97	1.85	2.42	1.97	2.50	3.23	2.56	0.96	0.40	0.63	0.36	0.20

Calendar year 1959: Max 9,790 Min 50 Mean 832 Cfsm 1.24 In. 16.83
Water year 1959-60: Max 7,480 Min 77 Mean 891 Cfsm 1.33 In. 18.05

Peak discharge (base, 6,000 cfs).--Nov. 25 (time unknown) 8,320 cfs (8.14 ft); Mar. 31 (4 p.m.) 7,900 cfs (7.92 ft); Apr. 5 (7 to 8 a.m.) 6,660 cfs (7.32 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 nearby stations.

4905. 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 118.8. Records include flow of Surgoinsville Creek.

Drainage area.--2,874 sq mi, includes that of Surgoinsville Creek.

Records available.--October 1940 to September 1960. Prior to April 1941, monthly discharge only, published in WSP 1306.

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.--20 years, 3,503 cfs (unadjusted).

Extremes.--Maximum discharge during year, 15,700 cfs Apr. 1 (gage height, 7.27 ft); minimum, 620 cfs Sept. 25; minimum gage height, 1.76 ft Nov. 15, June 12; mirimum daily discharge, 924 cfs July 20.
1940-60: 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 except those for period of no gage-height record, which are fair. Flow partly regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes (see p. 205).

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,820	1,890	4,800	3,510	1,730	4,700	15,000	1,650	2,420	4,540	1,150	7,340
2	1,900	1,540	2,970	3,460	2,770	3,260	12,400	2,700	2,560	5,570	2,360	6,660
3	1,160	3,790	3,840	3,370	2,380	3,090	10,300	2,690	*2,480	4,880	4,020	6,380
4	1,040	3,360	*3,890	2,900	*1,780	4,270	10,900	*1,430	2,820	2,130	*3,660	6,000
5	1,020	*1,650	2,720	3,330	2,090	5,590	14,000	1,410	2,340	*2,080	3,340	4,480
6	1,820	1,480	2,330	3,330	4,190	2,970	11,900	1,350	2,130	3,550	2,290	6,080
7	1,960	2,430	3,560	*3,750	5,700	1,850	*10,600	1,320	2,900	2,930	2,740	7,720
8	*2,350	2,150	3,780	3,940	4,360	1,850	9,770	1,620	2,350	3,140	3,280	*7,030
9	5,670	2,080	3,750	4,550	5,810	1,960	9,050	2,710	3,880	2,720	5,660	6,440
10	3,550	1,840	4,070	4,170	7,860	1,940	6,160	4,620	4,000	3,530	5,280	7,830
11	2,730	1,600	3,750	3,940	6,270	5,840	5,230	5,920	2,620	4,360	2,840	8,030
12	2,600	1,380	3,780	3,820	4,830	6,160	a4,400	6,050	973	4,700	3,550	7,140
13	1,540	1,200	5,280	4,000	7,110	6,920	a4,400	4,850	1,650	4,600	2,560	6,630
14	6,300	1,190	5,860	4,310	5,620	6,240	a4,500	2,400	2,090	4,600	1,050	6,580
15	8,730	1,660	*5,730	5,250	4,870	5,700	a4,000	1,570	2,610	3,250	1,960	6,220
16	5,570	1,190	5,330	4,500	4,850	4,380	a1,900	2,730	4,340	2,240	3,960	5,860
17	1,900	1,320	4,750	2,860	4,460	6,380	a1,200	3,340	3,760	1,080	4,260	4,680
18	1,490	1,780	4,680	4,160	5,600	8,240	a3,500	2,880	4,050	1,590	4,430	5,520
19	1,520	2,460	8,440	5,690	7,920	5,650	a4,600	2,500	1,700	1,370	3,960	6,410
20	1,440	2,080	8,500	4,260	6,580	4,480	a1,500	2,120	3,210	924	2,540	6,720
21	1,520	1,520	7,830	4,020	5,100	5,110	a1,300	1,900	6,130	1,200	1,390	6,800
22	1,660	1,230	10,200	3,370	5,050	4,040	a1,300	1,640	5,970	1,260	1,680	6,470
23	1,620	1,200	5,730	1,650	5,020	3,010	a1,200	3,060	5,840	1,060	5,460	6,050
24	1,550	3,950	4,600	1,620	4,450	4,560	a1,100	4,760	4,030	1,750	4,880	3,740
25	3,010	12,200	3,550	3,120	3,710	6,330	a1,200	2,640	1,520	1,370	5,310	1,010
26	2,820	10,600	3,290	3,940	4,140	4,980	a3,500	1,660	999	2,760	4,620	1,700
27	2,080	5,900	2,360	3,970	4,750	3,840	4,090	2,460	2,260	1,970	4,200	2,700
28	2,640	11,400	2,780	1,520	4,390	4,410	2,280	2,420	3,400	3,570	1,040	2,860
29	2,590	7,660	3,480	2,930	4,640	5,860	3,500	2,950	3,210	4,700	2,830	2,160
30	2,480	6,920	3,350	2,360	--------	10,900	3,350	2,010	3,560	2,460	6,970	2,310
31	1,880	--------	3,070	1,700	--------	*15,200	--------	2,380	--------	948	5,540	--------
Total	82,960	100,650	142,050	109,300	138,030	159,710	168,130	83,740	91,802	86,832	108,810	165,550
Mean	2,676	3,355	4,582	3,526	4,760	5,152	5,604	2,701	3,060	2,801	3,510	5,518

	Observed			Adjusted†		
Calendar year 1959:	Max 15,000	Min 876	Mean 2,996	Mean 3,489	Cfsm 1.21	In. 16.48
Water year 1959-60:	Max 15,200	Min 924	Mean 3,928	Mean 3,966	Cfsm 1.38	In. 18.78

* Discharge measurement made on this day.
† 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 records for South Fork Holston River at Kingsport.

4310. Big Creek near Rogersville, Tenn.

Location.--Lat 36°25'34", long 83°57'07", on left bank 300 ft upstream from county bridge, 2.0 miles upstream from mouth, and 3.0 miles northeast of Rogersville, Hawkins County.

Drainage area.--47.3 sq mi.

Records available.--April 1941 to June 1949, December 1954 to September 1957 (annual maximum only), October 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 1,128.9 ft above mean sea level (city of Rogersville construction plans for pumping station). Dec. 7, 1954, to Sept. 30, 1957, crest-stage gage at same site and datum.

Average discharge.--10 years (1941-48, 1957-60), 56.5 cfs.

Extremes.--Maximum discharge during year, 2,380 cfs July 10 (gage height, 5.90 ft); minimum, 3.4 cfs Oct. 6; minimum gage height, 1.42 ft Sept. 25.
1941-49, 1954-60: Maximum discharge, 3,280 cfs Mar. 19, 1955 (gage height, 6.83 ft), from rating curve extended above 2,000 cfs.
1941-49, 1957-60: Minimum discharge, 2.4 cfs Aug. 15, 1959; minimum gage height, 1.38 ft Sept. 19, Oct. 2, 1941.
Maximum stage known, 7.14 ft Jan. 31, 1950 (discharge, 3,610 cfs) date determined by comparison with other stations, from high-water mark in gage well.

Remarks.--Records good.

Revisions (water years).--WSP 1436: 1945.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 8-11)

1.4	3.6	2.7	123
1.5	6.7	3.0	196
1.6	11	3.5	412
1.9	28	4.0	735
2.3	64	4.5	1,130

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.8	13	84	54	41	54	102	42	16	332	11	6.7
2	6.4	12	81	50	39	53	85	35	13	411	10	7.5
3	5.2	11	118	193	38	*82	127	30	*13	100	10	6.7
4	4.2	10	*87	148	*36	73	304	27	13	80	*9.2	6.4
5	3.9	*9.6	70	109	112	64	214	*24	12	*49	10	6.1
6	3.6	18	72	*92	284	58	150	23	12	36	10	5.8
7	29	20	100	110	133	63	*121	23	11	28	14	5.5
8	*21	15	77	187	94	58	96	40	10	24	13	*5.5
9	23	13	64	195	80	65	82	37	13	21	18	5.2
10	24	12	54	150	80	70	70	30	11	763	12	6.1
11	15	11	49	137	127	64	62	26	9.6	441	13	11
12	26	10	66	112	94	62	57	26	9.6	150	13	13
13	16	9.6	139	110	87	60	52	24	11	90	12	7.1
14	70	9.2	94	112	81	76	48	22	10	64	11	5.8
15	60	9.2	74	109	67	114	46	21	16	48	13	5.2
16	29	9.6	63	86	68	228	43	19	12	41	12	5.2
17	20	19	54	82	85	368	41	18	11	35	9.6	5.5
18	15	29	57	80	359	378	39	16	11	30	8.3	5.8
19	11	22	578	69	334	244	36	15	8.8	28	8.3	5.8
20	10	18	248	60	167	176	34	14	7.5	26	8.3	5.5
21	8.8	16	157	54	135	145	34	13	7.5	24	8.3	5.2
22	7.9	14	114	50	112	135	34	13	22	21	20	4.8
23	8.3	12	92	46	90	133	31	12	158	20	38	4.5
24	13	388	78	43	81	135	29	12	70	24	19	4.5
25	27	183	68	42	86	141	28	13	41	20	12	4.2
26	37	87	60	39	109	118	27	14	27	17	10	4.2
27	27	106	53	41	80	133	30	52	22	16	8.8	4.2
28	26	820	63	48	68	150	32	48	18	15	8.3	4.8
29	21	195	89	44	64	133	27	29	17	14	7.5	5.5
30	18	114	72	43	------	*141	26	23	16	13	7.1	6.1
31	15	------	63	42	------	141	------	18	------	12	6.7	------
Total	610.1	2,215.2	3,138	2,735	3,231	3,915	2,107	759	629.0	2,993	371.4	179.4
Mean	19.7	73.8	101	88.2	111	126	70.2	24.5	21.0	96.5	12.0	5.98
Cfsm	0.416	1.56	2.14	1.86	2.35	2.66	1.48	0.518	0.444	2.04	0.254	0.126
In.	0.48	1.74	2.47	2.15	2.54	3.08	1.66	0.60	0.49	2.35	0.29	0.14

Calendar year 1959: Max 820 Min 2.6 Mean 51.4 Cfsm 1.09 In. 14.76
Water year 1959-60: Max 820 Min 3.6 Mean 62.5 Cfsm 1.32 In. 17.99

Peak discharge (base, 1,500 cfs).--Nov. 28 (5 a.m.) 1,650 cfs (5.09 ft); July 10 (7 p.m.) 2,380 cfs (5.90 ft).

* Discharge measurement made on this day.

4940. 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.--October 1936 to September 1960. Prior to April 1937 monthly discharge only, published in WSP 1306.

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.--24 years, 4,094 cfs (unadjusted).

Extremes.--Maximum discharge during year, 18,000 cfs Oct. 22 (gage height, 29.50 ft); minimum, 34 cfs Jan. 1; minimum daily, 40 cfs Jan. 9-11, 31; minimum gage height, 20.22 ft Oct. 5, Jan. 1.
1936-60: 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 South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes (see p. 205, 206).

Revisions (water years).--WSP 923: 1939-40(m).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 25				Dec. 26 to Sept. 30			
20.2	40	22.0	1,340	20.2	30	21.5	830
20.4	95	23.0	2,740	20.3	50	22.0	1,340
20.7	220	25.0	6,580	20.4	80	23.0	2,650
21.0	420	29.0	16,600	20.7	210	25.0	6,280
21.5	830			21.0	410	28.0	13,800

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*6,060	2,910	65	3,120	44	3,530	74	2,450	5,470	3,920	6,610	10,800
2	5,920	5,720	885	3,520	152	3,380	77	5,600	5,820	5,170	7,700	11,000
3	2,520	11,000	1,140	6,520	42	46	84	1,210	6,090	4,120	*5,710	9,440
4	3,120	6,900	3,040	5,690	50	53	88	2,620	2,790	4,150	4,530	11,300
5	8,450	7,520	3,840	1,690	44	583	80	2,280	2,220	4,050	4,960	9,700
6	8,020	7,680	8,780	561	46	1,280	421	46	5,650	5,520	2,850	*10,900
7	6,560	5,500	7,480	906	46	7,390	2,840	1,930	*4,600	6,580	62	10,000
8	4,750	1,260	5,520	42	48	2,770	400	56	3,200	5,500	*5,860	9,800
9	2,620	5,620	1,270	40	53	2,960	396	71	2,890	6,680	5,680	11,100
10	50	6,710	4,220	40	53	3,270	6,580	1,130	3,440	5,680	71	9,750
11	1,170	9,530	*9,880	40	48	1,060	8,140	62	5,660	3,260	963	9,210
12	6,540	10,600	5,120	*5,100	53	5,030	3,960	*68	1,880	1,060	65	10,800
13	1,850	12,900	52	9,240	120	5,000	2,930	720	7,070	1,080	1,940	9,510
14	1,550	12,200	52	11,700	53	*5,850	*2,680	68	3,720	3,780	71	8,590
15	94	10,700	2,920	4,790	2,630	3,470	4,760	80	7,690	4,150	5,420	9,100
16	984	11,900	9,140	2,890	6,220	1,390	3,920	3,480	7,510	77	2,560	10,400
17	9,950	9,760	10,700	1,720	*2,870	80	429	2,680	5,530	65	1,810	6,220
18	7,990	8,370	10,700	3,890	42	77	8,860	2,390	68	4,620	3,850	2,110
19	9,340	10,000	11,600	8,840	50	77	9,350	2,320	2,630	3,200	6,540	9,780
20	5,050	4,750	13,200	4,620	53	80	8,020	2,420	9,050	3,040	6,800	7,930
21	7,830	52	14,600	4,540	53	4,730	6,270	1,280	8,350	2,930	4,060	6,080
22	10,400	50	16,200	7,290	3,110	1,940	4,620	1,900	7,380	3,180	7,440	6,900
23	4,710	4,340	16,100	7,660	3,280	3,450	4,040	4,940	7,460	2,560	1,000	11,100
24	5,910	4,040	15,900	8,020	2,440	3,160	4,530	5,470	5,280	885	1,930	9,860
25	6,680	3,350	13,500	12,400	2,440	2,920	7,300	5,720	68	4,710	2,160	8,790
26	4,770	55	6,670	13,000	3,020	530	4,550	2,400	68	5,220	3,100	11,700
27	5,900	60	5,890	8,030	3,440	62	7,400	2,870	74	4,540	6,240	12,600
28	3,070	74	3,720	1,720	3,680	789	5,130	1,700	7,390	3,820	6,480	11,000
29	3,040	65	3,670	1,880	3,230	1,790	3,840	306	4,200	2,740	7,330	10,100
30	4,590	65	3,650	42	-------	2,340	2,180	6,580	3,160	56	9,780	5,950
31	5,640	-------	4,060	40	-------	68	-------	4,520	-------	62	10,700	-------
Total	155,128	173,681	213,564	139,581	37,410	69,155	113,949	69,367	136,408	106,405	134,272	281,520
Mean	5,004	5,789	6,889	4,503	1,290	2,231	3,798	2,238	4,547	3,432	4,331	9,384

	Observed			Adjusted†		
Calendar year 1959:	Max 16,200	Min 37	Mean 3,390	Mean 4,120	Cfsm 1.20	In. 16.31
Water year 1959-60:	Max 16,200	Min 40	Mean 4,455	Mean 4,667	Cfsm 1.36	In. 18.53

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston, Watauga, Boone, Fort Patrick Herry, and Cherokee Lakes.

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4955. 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, 1.3 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 1960. Published as "at Strawberry Plains" 1930-48. Records published for both sites June 1945 to September 1948. Gage-height records collected at Strawberry Plains for the months of December, January, February, and March for the years 1885 to 1897 are contained in reports of the U. S. Weather Bureau.

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.--30 years, 4,458 cfs (unadjusted).

Extremes.--Maximum discharge during year, 19,900 cfs Dec. 19 (gage height, 8.45 ft); minimum, 195 cfs Nov. 23 (gage height, 1.23 ft); minimum daily, 210 cfs Nov. 23.
1930-60: Maximum discharge, 62,900 cfs Mar. 28, 1335 (gage height, 20.20 ft, site and datum then in use); minimum, 44 cfs Dec. 12, 21, 22, 1941 (gage height, -0.58 ft, site and datum then in use); minimum daily, 44 cfs Dec. 21, 22, 1941.
Floods in 1867 and 1901 reached gage heights of about 41 and 32 ft, respectively, from profile by Tennessee Valley Authority. Flood in 1867 exceeded all other known floods, including that in 1791, from reports of the Tennessee Valley Authority.

Remarks.--Records good. Flow regulated by South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes (see p. 205, 206).

Revisions (water years).--WSP 893: 1935(M). WSP 1336: 1939.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 13-28, Sept. 2, 3, 9, 14, 17-24, 26, 29-30)

1.2	180	3.0	2,580
1.5	360	4.0	4,920
2.0	890	6.0	11,000
2.5	1,640	8.0	18,200

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,780	5,600	490	3,870	400	4,160	968	2,760	4,260	2,830	750	10,900
2	6,170	3,180	460	3,170	368	4,570	710	4,130	6,120	4,520	*7,190	10,900
3	4,860	*8,650	1,200	6,240	360	3,100	794	3,920	5,860	5,040	7,780	10,300
4	2,890	8,630	2,000	5,990	*384	1,220	1,080	1,460	4,690	4,400	5,140	11,900
5	4,960	7,140	3,770	3,090	408	878	1,020	2,620	2,610	4,680	4,650	11,200
6	8,210	6,940	4,960	2,220	606	1,190	*878	2,420	*3,460	4,810	4,820	10,400
7	8,040	6,440	9,320	1,490	530	3,870	1,730	832	4,890	5,340	2,950	*10,800
8	5,860	3,500	7,540	*1,780	480	6,320	2,340	1,650	4,070	*7,180	*2,040	10,400
9	3,880	*2,910	3,380	1,020	450	3,410	968	400	3,240	5,080	5,800	10,400
10	2,390	5,650	2,150	830	450	3,010	1,520	*297	2,850	7,830	4,700	11,100
11	415	7,660	6,560	722	490	2,710	*7,860	890	3,370	7,390	650	11,000
12	3,250	9,940	11,500	1,430	470	2,550	6,480	490	5,040	2,170	1,050	10,700
13	4,930	11,100	1,600	6,890	490	4,800	3,960	290	3,260	1,400	424	11,600
14	1,560	12,300	734	10,900	500	6,230	2,850	628	5,420	2,100	1,790	8,580
15	1,340	10,900	1,730	9,300	500	5,560	3,490	339	5,400	3,780	1,150	9,590
16	459	10,900	4,850	4,500	4,640	*4,330	4,300	547	8,150	3,760	5,070	10,700
17	3,640	10,500	8,650	3,250	5,840	2,790	3,440	3,100	6,560	549	2,320	7,430
18	9,010	8,710	12,900	3,300	2,720	1,560	*2,750	2,330	3,270	715	2,660	7,320
19	9,150	8,960	11,400	6,190	1,390	1,200	9,080	2,350	909	4,620	4,600	4,170
20	8,850	8,820	14,700	7,480	1,020	1,030	8,900	2,190	4,180	3,490	6,880	9,550
21	4,580	2,090	13,800	5,880	830	2,060	7,390	2,420	7,780	3,400	6,840	8,040
22	8,500	336	16,400	6,940	1,320	4,780	6,000	1,300	9,240	3,020	5,530	7,100
23	7,970	*210	16,300	6,290	3,590	2,790	4,130	2,850	7,180	3,270	6,320	8,200
24	5,010	6,120	16,100	7,670	3,900	2,980	4,110	5,320	7,150	2,500	1,410	10,900
25	6,400	4,020	15,800	11,600	1,880	4,170	6,940	5,580	5,680	1,890	2,140	11,000
26	6,430	2,580	9,980	13,100	3,160	2,140	6,490	3,610	650	5,070	2,250	10,400
27	5,040	1,080	6,650	14,600	3,660	994	5,150	2,740	360	5,580	4,580	13,200
28	5,380	2,800	6,780	2,050	4,220	613	7,190	2,720	1,950	4,400	6,750	12,200
29	2,680	1,260	4,300	2,290	3,500	1,170	4,330	1,950	6,020	3,650	7,870	10,800
30	2,550	686	4,060	2,120	---------	3,020	3,520	1,570	4,870	2,970	10,100	8,800
31	4,660	---------	4,100	573	---------	3,040	---------	5,960	---------	499	10,500	---------
Total	153,644	179,612	224,164	156,775	48,556	92,245	120,368	69,663	138,489	117,933	136,704	299,580
Mean	4,956	5,987	7,231	5,057	1,674	2,976	4,012	2,247	4,616	3,804	4,410	9,986

	Observed			Adjusted†		
Calendar year 1959:	Max 16,400	Min 205	Mean 3,655	Mean 4,384	Cfsm 1.17	In. 15.88
Water year 1959-60:	Max 16,400	Min 210	Mean 4,748	Mean 4,960	Cfsm 1.32	In. 18.02

* Discharge measurement made on this day.
† Adjusted for change in contents in South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes.

4960. 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 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 1960.

Gage.--Water-stage recorder. Datum of gage is 940.87 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--15 years, 23.1 cfs.

Extremes.--Maximum discharge during year, 348 cfs Nov. 28 (gage height, 6.25 ft); minimum, 3.4 cfs Oct. 6 (gage height, 1.76 ft).
1945-60: Maximum discharge, 1,310 cfs Nov. 18, 1957 (gage height, 8.88 ft), from rating curve extended above 850 cfs; minimum, 1.8 cfs Sept. 26, 1948; minimum gage height, 1.32 ft Sept. 21, Oct. 1, 1945.
Flood in September 1944 reached a stage of 10.0 ft, from report by Tennessee Valley Authority.

Remarks.--Records good.

Revisions.--WSP 1276: Drainage area.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 23 to Nov. 12, Nov. 25-27, Mar. 31 to Apr. 4)

Oct. 1-6		Oct. 7 to Sept. 30			
1.7	1.7	1.8	1.8	4.0	48
1.9	4.1	2.0	4.4	5.0	84
2.2	9.7	2.5	13	5.5	137
2.3	12	3.0	24	6.0	265

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	3.3	23	25	*20	20	34	15	6.3	9.1	5.2	4.6
2	2.6	3.3	*35	24	19	40	30	13	6.0	8.2	4.9	4.9
3	2.6	3.0	30	69	18	*99	42	12	6.0	8.1	4.7	4.3
4	2.6	3.3	24	*34	18	49	*52	11	5.7	8.6	4.6	4.0
5	*2.5	*4.2	21	29	32	39	47	10	4.9	*7.5	*8.0	4.0
6	11	4.6	35	33	30	34	*37	10	4.4	6.5	4.7	3.7
7	17	3.7	29	65	23	32	33	16	*5.2	6.0	5.7	3.7
8	4.0	3.8	23	55	21	30	*29	15	5.8	5.7	7.7	*3.7
9	7.0	4.1	21	41	21	30	27	11	5.7	5.5	9.5	3.3
10	3.4	3.6	19	36	22	33	25	9.9	5.4	52	18	7.7
11	3.1	4.0	19	32	22	35	23	*9.7	5.5	*142	18	30
12	2.6	*3.5	96	29	19	34	22	11	5.4	27	12	6.2
13	7.7	3.3	44	40	20	36	21	10	5.0	18	9.3	4.9
14	20	4.1	31	32	23	39	20	9.1	6.3	15	9.0	4.3
15	6.5	4.6	27	*46	22	44	19	8.6	5.8	13	9.1	4.1
16	5.0	7.4	25	32	24	105	18	8.1	4.9	12	7.5	4.6
17	4.1	7.9	25	32	39	76	18	7.7	22	11	7.2	6.3
18	3.7	5.2	62	34	70	62	17	7.4	7.2	10	7.0	4.9
19	3.4	4.7	200	28	49	54	16	7.2	5.7	9.7	7.5	4.3
20	3.3	4.3	56	25	38	49	15	7.0	5.4	9.0	7.9	4.0
21	3.4	4.3	43	23	36	43	16	6.5	5.2	8.4	28	3.7
22	3.3	3.8	37	23	36	39	16	6.2	5.0	8.1	24	3.8
23	6.2	5.9	33	21	30	34	15	5.8	23	7.7	13	3.6
24	7.2	*83	30	20	27	32	14	7.5	35	7.4	8.6	3.7
25	3.8	*20	26	19	29	29	14	8.2	104	6.7	7.2	3.6
26	3.4	12	24	18	26	27	14	7.0	14	6.5	6.2	3.7
27	6.7	106	22	26	23	25	21	14	11	6.5	6.0	4.0
28	3.7	168	72	23	23	24	16	9.3	17	6.0	5.5	5.2
29	3.7	39	42	22	22	39	14	18	14	5.8	5.2	8.8
30	3.7	28	31	27	-------	86	13	10	10	5.7	5.5	5.7
31	3.3	-------	27	22	-------	44	-------	7.2	-------	5.7	4.7	-------
Total	163.2	555.9	1,232	985	802	1,362	698	307.4	366.8	458.4	281.4	183.3
Mean	5.26	18.5	39.7	31.8	27.7	43.9	23.3	9.92	12.2	14.8	9.08	5.44
Cfsm	0.335	1.18	2.53	2.03	1.76	2.80	1.48	0.632	0.777	0.943	0.578	0.346
In.	0.39	1.32	2.92	2.33	1.90	3.23	1.65	0.73	0.87	1.09	0.67	0.39

Calendar year 1959: Max 200 Min 2.5 Mean 16.9 Cfsm 1.08 In. 14.59
Water year 1959-60: Max 200 Min 2.5 Mean 20.2 Cfsm 1.29 In. 17.49

Peak discharge (base, 300 cfs).--Nov. 28 (1 a.m.) 348 cfs (6.25 ft); Dec. 19 (5 a.m.) 302 cfs (6.12 ft).

* Discharge measurement made on this day.

4970. 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.--October 1899 to September 1960. Prior to October 1918 monthly discharge only, published in WSP 1306. 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.--61 years, 12,810 cfs (unadjusted).

Extremes.--Maximum discharge during year, 43,600 cfs Dec. 19; maximum gage height, 17.82 ft Oct. 23; minimum daily discharge, 1,410 cfs June 26; minimum gage height, 9.44 ft Feb. 8.

1899-1960: 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, 45.0 ft Mar. 8, 1867, revised, site and datum of gage at old city pumping plant, 3.2 miles downstream from base gage (discharge, 290,000 cfs, revised, from rating curve extended above 130,000 cfs), from high-water profile by Corps of Engineers and Tennessee Valley Authority.

Remarks.--Records good except those below 10,000 cfs, which are fair. Flow regulated by Douglas, South Holston, Boone, Fort Patrick Henry, Cherokee, and Watauga Lakes (see p. 205).

Revisions (water years).--WSP 583: 1902(M). WSP 823: Drainage area. WSP 1306: 1899-1918.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18,700	23,100	10,100	15,600	8,610	19,200	3,470	9,480	12,300	7,430	7,530	23,700
2	17,600	19,700	6,340	15,200	2,660	15,300	2,970	12,200	15,700	11,900	17,000	23,500
3	18,500	*25,200	12,400	17,300	11,000	18,300	2,700	9,830	15,700	10,500	15,300	23,400
4	16,300	26,200	19,600	11,300	*14,700	13,700	7,200	5,540	10,500	9,180	8,200	24,100
5	21,800	24,700	21,400	13,200	13,400	18,300	7,200	3.090	6,860	9,850	9,620	24,200
6	23,500	26,000	22,900	14,500	12,800	18,100	13,600	8,150	12,500	9,630	8,800	24,300
7	25,100	24,600	28,600	15,400	15,400	20,700	13,000	g7,290	13,500	12,000	4,720	23,900
8	20,300	18,800	25,700	16,200	15,300	15,900	10,200	g4,910	10,700	*15,300	8,400	23,200
9	17,900	19,700	21,400	10,800	16,100	14,400	5,840	g1,460	9,230	11,300	14,700	23,300
10	15,000	20,500	18,500	10,800	16,600	14,200	7,000	g4,220	10,600	15,700	8,660	23,900
11	16,800	22,300	21,900	13,200	18,100	12,400	20,200	g9,740	11,300	16,600	2,620	21,400
12	21,000	22,000	31,000	15,400	17,200	8,620	21,700	g7,290	15,300	3,600	3,830	21,800
13	22,000	27,800	21,700	21,300	17,200	12,900	17,800	g3,890	14,000	3,430	4,540	26,100
14	18,700	25,200	18,200	25,600	17,200	14,600	17,800	g3,960	14,800	8,510	4,140	19,100
15	17,400	24,200	17,700	24,600	16,500	14,800	17,500	g4,000	14,400	10,600	8,830	*19,300
16	15,700	22,500	20,700	19,100	20,000	10,800	15,400	g6,800	17,300	9,440	10,900	22,400
17	20,400	24,000	24,900	16,900	22,800	7,250	11,200	*g10,100	15,300	4,170	6,420	17,800
18	26,400	20,500	30,200	16,800	17,600	4,850	15,400	9,350	7,760	7,470	9,660	18,000
19	27,700	20,300	37,000	16,900	4,980	4,410	*23,000	8,430	3,560	12,800	16,000	11,900
20	24,300	21,300	34,600	17,000	17,600	4,290	21,100	8,590	13,000	12,600	18,800	20,300
21	19,500	13,800	32,800	16,300	18,100	10,500	20,300	6,710	18,400	10,700	18,300	17,900
22	24,300	5,120	34,600	16,000	18,200	14,100	20,000	5,440	19,700	12,100	15,200	16,600
23	25,700	5,100	34,000	18,600	21,300	11,900	14,800	11,000	17,100	9,680	10,800	20,700
24	22,300	14,600	33,600	17,100	21,500	14,900	11,500	16,200	14,600	5,460	2,860	24,200
25	23,500	13,100	32,900	22,100	19,900	16,600	17,400	14,100	13,400	7,150	4,120	22,700
26	23,000	7,400	27,700	25,200	18,500	12,400	17,800	11,400	1,410	12,200	5,730	24,500
27	22,600	7,970	23,100	22,200	18,600	3,680	14,900	10,000	2,790	12,000	11,100	28,400
28	24,100	19,300	23,000	6,750	19,100	4,600	16,800	11,300	9,780	11,900	15,500	26,500
29	19,400	22,200	20,500	7,800	17,800	9,000	15,100	7,960	14,500	8,480	18,000	23,500
30	19,300	4,150	18,800	8,880	-------	41,600	10,300	7,530	11,200	6,780	22,000	16,600
31	20,700	-------	18,700	6,890	-------	10,300	-------	15,500	-------	2,850	22,900	-------
Total	649,500	571,340	744,540	494,920	468,750	385,600	413,180	260,260	366,990	300,250	334,980	657,200
Mean	20,950	19,040	24,020	15,970	16,160	12,440	13,770	8,395	12,230	9,685	10,810	21,910
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 37,000 Min 1,440 Mean 13,270 Cfsm 1.49 In. 20.16
Water year 1959-60: Max 37,000 Min 1,410 Mean 15,430 Cfsm 1.73 In. 23.51

* Discharge measurement made on this day.
g Discharge computed from bihourly readings of Tennessee Valley Authority Telemark gage located in same well at auxiliary gage.

4985. 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 1960.

Gage.--Water-stage recorder. Datum of gage is 850.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--9 years, 503 cfs.

Extremes.--Maximum discharge during year, 11,600 cfs Nov. 28 (gage height, 17.87 ft); minimum, 75 cfs Aug. 5 (gage height, 7.20 ft).

1951-60: Maximum discharge, 19,600 cfs Feb. 1, 1957 (gage height, 21.18 ft); minimum, 32 cfs Aug. 27, 1956 (gage height, 6.35 ft); minimum gage height, 6.72 ft Sept. 16, 18, Oct. 7, 1954.

Floods in March 1875 and April 1920 reached stages of 31.0 and 24.0 ft, respectively, present datum. Flood of Mar. 29, 1951, reached a stage of 21.05 ft (discharge, 19,200 cfs) present datum, from floodmarks.

Remarks.--Records good. Diurnal fluctuation at low flow caused by small mills above station. The town of Maryville diverted an average of about 1.7 cfs for municipal supply, 300 ft above gage.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

7.2	85	8.5	740
7.3	114	9.0	1,180
7.6	210	12.0	4,200
8.0	380	15.0	7,700

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	520	335	991	386	531	580	1,140	340	197	231	111	380
2	*253	*308	*973	375	*475	723	1,040	*303	*194	249	*105	*285
3	197	290	1,200	676	434	*3,170	1,590	281	197	214	102	234
4	171	265	928	*566	404	1,800	*2,000	265	180	203	102	207
5	151	253	780	503	489	1,200	1,430	253	177	*190	102	194
6	155	861	831	780	724	946	1,060	245	177	184	151	177
7	1,170	573	874	1,400	559	820	865	245	180	171	145	164
8	804	468	700	1,500	496	716	724	350	161	158	171	161
9	982	398	660	1,120	475	684	620	303	167	155	566	174
10	708	345	636	901	530	684	538	281	158	180	330	180
11	596	312	660	788	1,130	724	468	269	151	860	1,020	210
12	538	285	1,830	684	708	620	428	273	174	496	1,570	269
13	434	265	2,550	676	700	559	404	281	148	298	1,980	242
14	937	253	1,560	628	644	545	380	257	155	360	1,070	190
15	812	245	1,130	684	538	559	365	245	184	290	684	174
16	604	234	874	620	538	856	350	231	151	241	475	164
17	475	360	740	566	788	1,170	335	224	257	214	360	161
18	398	365	1,190	604	1,590	1,040	326	217	217	200	303	167
19	330	316	4,150	531	1,700	838	303	210	161	187	277	161
20	290	285	1,950	475	1,090	708	290	207	145	187	360	145
21	261	269	1,270	434	910	596	298	203	174	164	265	136
22	242	253	973	410	919	538	350	190	253	151	321	130
23	231	238	796	365	820	496	290	184	774	174	447	126
24	335	1,630	676	355	732	468	273	180	716	184	303	123
25	428	1,540	588	340	892	447	261	228	1,070	158	245	120
26	398	937	524	326	1,200	422	249	210	538	142	220	111
27	510	1,280	482	416	910	422	269	350	468	145	207	114
28	468	7,490	573	482	756	454	303	340	345	155	203	142
29	416	2,430	596	428	700	870	261	265	312	133	228	228
30	422	1,370	475	660	-------	2,610	249	238	261	126	228	200
31	360	-------	428	588	-------	1,720	-------	210	-------	123	203	-------
Total	14,596	24,513	32,649	19,267	22,382	27,985	17,459	7,878	8,442	6,924	12,854	5,469
Mean	471	817	1,053	622	772	903	582	254	281	223	415	182
Cfsm	1.75	3.04	3.91	2.31	2.87	3.36	2.16	0.944	1.04	0.829	1.54	0.677
In.	2.02	3.39	4.51	2.66	3.09	3.87	2.41	1.09	1.17	0.96	1.78	0.76

Calendar year 1959: Max 7,490 Min 102 Mean 571 Cfsm 2.12 In. 28.79
Water year 1959-60: Max 7,490 Min 102 Mean 548 Cfsm 2.04 In. 27.71

Peak discharge (base, 4,800 cfs).--Nov. 28 (6 a.m.) 11,600 cfs (17.87 ft); Dec. 19 (6 a.m.) 5,550 cfs (13.21 ft).

* Discharge measurement made on this day.

5000. Little Tennessee River near Prentiss, N. C.

Location.--Lat 35°08'57", long 83°22'46", on left bank 600 ft upstream from Owenby Branch, 0.5 mile upstream from Cartoogechaye Creek, 2 miles north of Prentiss, Macon County, and at mile 119.5.

Drainage area.--140 sq mi.

Records available.--October 1943 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 2,008.39 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Since Oct. 1, 1954, auxiliary water-stage recorder 0.5 mile downstream.

Average discharge.--17 years, 370 cfs.

Extremes.--Maximum discharge during year, 1,900 cfs Feb. 11; maximum gage height, 5.36 ft Feb. 11, Mar. 31; minimum discharge, 132 cfs Oct. 5, 6 (gage height, 1.65 ft).
1943-60: Maximum discharge, 5,900 cfs June 16, 1949 (gage height, 12.85 ft); minimum, 65 cfs Oct. 16, 17, 1954 (gage height, 1.21 ft).
Flood in October 1898 reached a stage of about 15 ft, from profiles by Tennessee Valley Authority.

Remarks.--Records excellent.

Revisions (water years).--WSP 1236: 1949(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Fall used as a factor Feb. 5, 6, 10, 11, Mar. 30, 31, Apr. 3-5, Aug. 12, 13)

Oct. 1 to May 22				May 23 to Sept. 30			
1.6	122	3.0	600	1.8	150	3.0	565
2.0	212	4.0	1,200	2.0	194	4.0	1,200
2.5	374	5.0	1,750	2.5	342	5.0	1,750

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	149	434	264	341	610	530	997	442	236	250	218	239
2	*141	390	264	341	*515	575	876	413	236	241	204	250
3	137	356	280	614	464	828	1,120	394	247	226	*194	234
4	135	337	258	496	447	620	1,650	386	247	213	185	226
5	133	*323	252	434	968	550	1,550	378	267	211	187	218
6	139	397	267	620	1,310	520	1,150	374	283	211	192	206
7	575	337	264	595	810	505	972	394	258	350	280	206
8	473	316	246	*540	680	*486	870	550	276	267	216	206
9	1,210	302	*240	482	620	496	804	417	264	234	290	201
10	842	289	234	447	936	486	744	397	259	250	290	194
11	964	283	234	421	1,720	505	706	374	228	296	310	196
12	665	276	492	401	1,010	473	675	367	226	231	797	189
13	491	267	473	386	906	464	645	363	216	211	1,380	176
14	902	264	370	374	876	473	615	344	211	211	999	*171
15	760	264	334	413	750	486	595	334	211	199	626	171
16	590	261	309	386	706	675	575	323	201	189	473	182
17	510	276	299	374	680	700	555	316	199	187	395	709
18	545	258	546	535	954	711	545	302	196	*185	346	446
19	451	252	777	455	1,050	645	515	296	192	178	328	306
20	405	243	525	413	788	575	*505	292	194	194	299	256
21	378	243	442	386	722	535	510	286	328	171	310	231
22	367	240	394	370	695	515	530	280	442	169	407	218
23	356	237	367	344	650	525	482	*267	*437	213	464	211
24	390	309	344	341	615	520	468	261	293	216	358	204
25	367	302	334	326	695	535	460	261	476	192	335	194
26	348	270	320	320	665	520	447	261	457	213	296	189
27	326	255	309	390	610	540	468	324	530	530	276	247
28	309	356	425	405	585	550	455	273	358	338	264	450
29	312	296	500	386	560	733	434	258	310	258	253	433
30	460	273	394	535	-------	1,360	421	253	273	382	244	328
31	505	-------	359	755	-------	*1,620	-------	241	-------	253	239	-------
Total	14,335	8,906	11,116	13,626	22,597	19,256	21,339	10,421	8,531	7,469	11,655	7,687
Mean	462	297	359	440	779	621	711	336	284	241	376	256
Cfsm	3.30	2.12	2.56	3.14	5.56	4.44	5.08	2.40	2.03	1.72	2.69	1.83
In.	3.81	2.37	2.95	3.62	6.00	5.12	5.67	2.77	2.27	1.98	3.10	2.04

Calendar year 1959: Max 2,270 Min 128 Mean 351 Cfsm 2.51 In. 34.05
Water year 1959-60: Max 1,720 Min 133 Mean 429 Cfsm 3.06 In. 41.70

Peak discharge (base, 1,500 cfs).--Feb. 6 (6 a.m.) 1,600 cfs (4.79 ft at 4:30 a.m.); Feb. 11 (1:30 p.m.) 1,900 cfs (5.36 ft); Mar. 31 (7:30 a.m.)1,840 cfs (5.36 ft); Apr. 4 (8:30 to 10 a.m.) 1,780 cfs (5.35 ft at 8:30 a.m.); Aug. 12 (10 p.m.) 1,540 cfs (4.82 ft at 12:30 a.m. Aug. 13).

* Discharge measurement made on this day.

5005. Cullasaja River at Highlands, N. C.

Location.--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 1960. Prior to October 1949, published as Cullasaja Creek at Highlands. 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 230.32 ft higher.

Average discharge.--29 years (1931-60), 59.0 cfs.

Extremes.--Maximum discharge during year, 1,230 cfs Oct. 9 (gage height, 3.82 ft); minimum, 11 cfs June 19 (gage height, 0.49 ft); minimum daily, 22 cfs Oct. 5, July 22.
1927-60: Maximum discharge, 5,100 cfs Aug. 30, 1940 (gage height, 3.35 ft), from rating curve extended above 800 cfs on basis of computation of peak flow over dam; minimum, 0.3 cfs Oct. 13, 14, 1947; minimum daily, 0.8 cfs Oct. 13, 1947.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Some diurnal fluctuation caused by powerplant at Highlands municipal dam.

Revisions (water years).--WSP 728: 1931. WSP 823: Drainage area. WSP 953: 1941(M). WSP 1306: 1950(m). See also Records available.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.6	17	2.0	222
.8	30	2.5	410
1.0	44	3.0	700
1.3	73	3.5	1,020
1.7	144		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	95	52	60	86	69	228	50	32	40	25	40
2	*24	*83	52	72	*73	77	214	45	30	35	25	36
3	a24	76	50	166	65	84	358	41	30	33	*25	34
4	a23	72	48	98	67	63	351	40	32	32	24	32
5	a22	73	46	86	271	60	268	37	35	30	45	32
6	a45	126	50	109	173	57	200	36	43	34	36	31
7	a200	86	44	101	118	56	168	70	44	48	27	31
8	a280	76	41	*90	100	*53	144	109	*74	33	27	31
9	*710	69	*41	81	93	55	124	*60	51	31	29	30
10	387	65	41	74	279	52	112	52	40	34	27	30
11	318	61	42	71	252	53	103	51	35	50	33	30
12	202	59	178	65	156	50	*97	50	33	35	121	28
13	161	56	114	62	140	48	92	48	31	31	145	26
14	289	58	83	59	118	47	87	44	29	30	187	*24
15	189	56	72	66	105	46	83	41	28	28	84	27
16	146	55	63	57	98	79	79	40	27	27	61	26
17	137	56	61	63	95	63	74	38	28	26	53	81
18	124	52	130	84	122	58	71	36	26	25	53	67
19	105	48	120	65	98	54	65	35	23	*27	50	42
20	97	46	86	57	87	50	61	34	25	27	44	33
21	92	46	73	54	86	48	63	34	112	24	56	29
22	89	44	68	50	80	48	61	32	83	22	117	28
23	103	44	63	48	73	50	56	32	45	23	97	28
24	112	81	59	48	73	56	53	28	48	23	67	26
25	93	58	62	46	111	56	54	33	70	24	56	26
26	83	50	57	46	97	66	46	34	84	26	50	25
27	84	51	56	58	83	79	48	69	76	54	46	33
28	80	90	130	55	77	90	45	42	55	36	43	48
29	86	59	98	61	73	256	41	35	50	34	40	54
30	142	56	74	98	------	624	45	34	44	34	39	40
31	116	------	67	120	------	*330	------	32	------	26	40	------
Total	4,571	1,947	2,221	2,270	3,349	2,877	3,491	1,362	1,363	982	1,772	1,048
Mean	147	64.9	71.6	73.2	115	92.8	116	43.9	45.4	31.7	57.2	34.9
Cfsm	9.87	4.36	4.81	4.91	7.72	6.23	7.79	2.95	3.05	2.13	3.84	2.34
In.	11.41	4.86	5.54	5.67	8.36	7.18	8.71	3.40	3.40	2.45	4.42	2.62

Calendar year 1959: Max 710 Min 22 Mean 73.6 Cfsm 4.94 In. 67.03
Water year 1959-60: Max 710 Min 22 Mean 74.5 Cfsm 5.00 In. 68.02

Peak discharge (base, 550 cfs).--Oct. 9 (about 2:30 a.m.) 1,230 cfs (3.82 ft); Feb. 10 (6:30 p.m.) 592 cfs (2.82 ft); Mar. 30 (11 a.m.) 856 cfs (3.24 ft); Apr. 3 (7 p.m.) 634 cfs (2.89 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 at Cullasaja.

8010. Cullasaja River at Cullasaja, N. C.

Location.--Lat 35°04'53", long 83°13'55", on right bank at Cullasaja, Macon County, 1.4 miles downstream from Ellijay Creek and 4.1 miles upstream from mouth.

Drainage area.--56.5 sq mi.

Records available.--June 1907 to December 1909, October 1950 to September 1960. Monthly discharge only for some periods, published in WSP 1306. Prior to October 1949, published as Cullasaja Creek at Cullasaja.

Gage.--Water-stage recorder. Datum of gage is 2,023.87 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 23, 1924, staff gages at same site and datum.

Average discharge.--48 years, 222 cfs.

Extremes.--Maximum discharge during year, 2,660 cfs Oct. 9 (gage height, 9.40 ft); minimum, 72 cfs Oct. 5, 6 (gage height, 1.08 ft).

1907-9, 1950-60: 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 measurement of peak flow; minimum, 19 cfs Sept. 18-22, 1925, Jan. 5, 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 periods of ice effect or no gage-height record, which are good. Slight regulation at low flow by Sequoyah Lake and mill on Buck Creek.

Revisions (water years).--WSP 823: Drainage area. WCP 1143: 1907-10, 1921-31, 1932(M), 1933-38, 1939(M), 1940-43, 1944(M), 1946, 1947(M).

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 10				Feb. 11 to Sept. 30			
1.0	69	4.0	780	1.1	76	4.0	780
1.5	134	5.0	1,080	1.5	130	5.0	1,080
2.0	226	6.0	1,430	2.0	222	6.0	1,430
3.0	487	7.0	1,780	3.0	487		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	250	155	199	308	282	700	209	122	135	91	128
2	*80	*230	160	207	269	340	650	187	124	127	102	122
3	77	216	160	397	246	426	1,000	177	130	120	*107	107
4	76	205	152	283	*246	b305	1,100	172	149	112	107	102
5	74	201	147	255	870	b275	820	168	174	109	105	100
6	124	300	164	409	676	b270	600	163	154	116	115	98
7	860	226	150	362	484	257	540	200	189	156	108	100
8	687	207	142	*312	401	*247	500	323	*264	120	96	97
9	1,640	195	*139	281	362	252	460	*212	205	111	115	96
10	950	185	137	262	667	247	430	193	167	144	100	92
11	800	178	137	246	770	252	400	185	151	187	140	93
12	500	171	382	233	676	234	380	185	141	130	516	92
13	420	165	341	222	528	222	360	183	133	118	545	83
14	720	167	250	213	452	227	340	170	126	109	456	*81
15	490	164	220	228	395	231	330	161	122	104	259	82
16	380	160	201	205	376	354	320	158	116	101	203	88
17	360	171	195	216	368	336	310	153	118	100	185	212
18	340	152	425	269	556	315	300	148	111	94	172	172
19	290	148	426	226	484	286	270	143	107	*93	174	121
20	270	142	300	209	395	262	*252	143	112	120	154	101
21	260	142	260	195	373	247	264	138	234	91	154	91
22	250	137	235	b180	346	240	257	133	256	87	246	87
23	280	137	218	b175	317	238	234	127	151	93	278	84
24	310	195	205	b170	307	270	222	126	144	97	197	82
25	260	167	203	b165	398	280	216	122	212	93	177	78
26	230	148	193	b160	376	330	203	128	234	97	153	77
27	230	144	187	205	330	400	218	241	227	140	143	111
28	220	241	301	203	312	450	201	163	174	115	133	156
29	230	176	281	211	299	800	191	144	161	137	126	165
30	340	164	228	312	-------	1,300	193	140	144	132	116	122
31	280	-------	209	390	-------	900	-------	128	-------	93	115	-------
Total	12,116	5,484	6,903	7,600	12,587	11,075	12,261	5,223	4,852	3,594	5,688	3,220
Mean	391	183	223	245	434	357	409	168	162	116	183	107
Cfsm	4.52	2.12	2.58	2.83	5.02	4.13	4.73	1.94	1.87	1.34	2.12	1.24
In.	5.21	2.36	2.97	3.27	5.41	4.76	5.27	2.25	2.09	1.55	2.45	1.38

Calendar year 1959: Max 1,640 Min 70 Mean 222 Cfsm 2.57 In. 34.90
Water year 1959-60: Max 1,640 Min 74 Mean 248 Cfsm 2.87 In. 38.97

Peak discharge (base, 2,000 cfs).--Oct. 9 (5:30 a.m.) 2,660 cfs (9.40 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 10 to Nov. 1, Mar. 24 to Apr. 19; discharge estimated on basis of weather records, recorded range in stage, and records for station at Highlands and for Little Tennessee River near Prentiss.

5030. 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, 6.3 miles downstream from Tellico Creek, and at mile 98.3.

Drainage area.--486 sq mi.

Records available.--October 1948 to September 1960. Monthly discharge only for some periods, published in WSP 1308.

Gage.--Water-stage recorder. Datum of gage is 1,761.19 ft above mean sea level, datum of 1929, supplementary adjustment of 1956.

Average discharge.--17 years, 1,011 cfs.

Extremes.--Maximum discharge during year, 4,890 cfs Apr. 4 (gage height, 5.67 ft); minimum, 280 cfs Oct. 5 (gage height, 1.90 ft); minimum daily, 322 cfs Oct. 5.
1944-60: Maximum discharge, 20,200 cfs June 16, 1949 (gage height, 11.10 ft), from rating curve extended above 13,000 cfs by logarithmic plotting; minimum, 52 cfs Nov. 7, 8, 1954 (gage height, 1.10 ft); minimum daily, 71 cfs 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. Considerable diurnal fluctuation caused by Porters Bend powerplant at Lake Emory.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.9	280	3.0	1,080
2.0	333	4.0	2,240
2.5	518	5.0	3,740
2.6	735	6.0	5,500

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	379	988	740	840	1,530	1,340	2,980	1,200	639	626	*490	554
2	379	911	701	815	1,270	1,470	2,410	1,060	616	614	465	578
3	333	800	771	1,350	1,160	2,690	2,840	1,020	674	550	485	510
4	328	*750	688	1,310	1,110	1,880	4,580	985	730	528	459	478
5	322	772	675	1,120	2,200	1,560	4,020	960	724	532	433	500
6	339	1,120	690	2,130	3,650	1,430	3,170	951	728	532	472	465
7	1,450	965	709	1,970	2,360	*1,370	2,650	960	728	728	566	478
8	1,200	827	662	1,640	1,860	1,310	2,300	1,380	839	652	584	478
9	2,950	766	634	1,380	1,630	1,370	2,100	1,030	874	570	690	459
10	2,350	744	585	1,240	1,900	1,310	1,880	1,010	706	522	744	478
11	2,150	704	624	1,130	3,870	1,370	1,690	968	636	900	752	452
12	1,630	678	1,050	1,070	2,790	1,270	1,640	942	626	654	1,150	461
13	1,160	654	1,610	1,030	2,270	1,230	1,570	942	615	540	3,010	415
14	1,940	620	1,120	985	2,300	1,270	*1,530	917	572	532	2,020	390
15	1,920	644	*986	1,060	1,880	1,330	1,490	866	522	511	1,320	*384
16	*1,350	634	903	1,060	1,760	1,840	1,440	849	538	485	994	409
17	1,160	660	840	1,010	1,700	2,140	1,400	824	553	459	874	998
18	1,200	631	1,060	1,270	2,250	2,030	1,350	799	532	459	824	1,060
19	1,020	588	2,100	1,190	*2,820	1,790	1,310	780	498	440	759	694
20	908	592	1,440	1,080	2,090	1,600	1,250	770	498	485	705	568
21	840	560	1,200	1,020	1,850	1,440	1,240	768	739	465	660	507
22	832	590	1,050	960	*1,740	1,360	1,350	738	1,100	*427	854	480
23	783	554	985	874	1,600	1,350	1,210	*718	849	433	1,020	442
24	926	758	934	883	1,490	1,350	1,180	689	799	518	824	454
25	917	890	874	840	1,770	1,400	1,130	698	909	505	827	427
26	832	697	840	832	1,820	1,390	1,120	683	894	492	705	415
27	753	*658	807	874	1,610	1,450	1,240	922	*1,170	632	624	459
28	768	969	854	1,080	1,490	1,550	1,170	880	883	840	590	832
29	758	918	1,250	994	1,420	1,940	1,090	714	775	566	579	958
30	976	754	976	1,260	-------	3,610	1,050	753	696	726	518	775
31	1,140	-------	917	1,570	-------	*4,230	-------	672	-------	536	514	-------
Total	33,993	22,376	29,275	35,867	57,190	52,670	55,380	27,508	21,662	17,459	25,509	16,558
Mean	1,097	746	944	1,157	1,972	1,699	1,846	887	722	563	823	552
Cfsm	2.52	1.71	2.17	2.65	4.52	3.90	4.23	2.03	1.66	1.29	1.89	1.27
In.	2.90	1.91	2.50	3.06	4.88	4.49	4.72	2.35	1.85	1.49	2.18	1.41

Calendar year 1959: Max 6,610 Min 322 Mean 940 Cfsm 2.16 In. 29.27
Water year 1959-60: Max 4,580 Min 322 Mean 1,080 Cfsm 2.48 In. 33.74

Peak discharge (base, 5,000 cfs).--No peak above base.

* Discharge measurement made on this day.

5040. 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, 0.2 mile downstream from Buck Creek, 5 miles downstream from town of Rainbow Springs, Macon County, and at mile 34.3.

Drainage area.--51.9 sq mi.

Records available.--October 1940 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 3,072.97 ft above mean sea level, datum of 1929.

Average discharge.--20 years, 194 cfs.

Extremes.--Maximum discharge during year, 1,400 cfs Apr. 3 (gage height, 3.79 ft); minimum, 64 cfs July 31, Aug. 1 (gage height, 0.78 ft).
1940-60: 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 measurement of peak flow; minimum, 33 cfs Nov. 18, 19, 1953 (gage height, 0.60 ft).

Remarks.--Records excellent except those for periods of ice effect, which are good. Occasional slight diurnal fluctuation at low flow caused by small ponds on tributaries above station. Fishtrap removed September 1958.

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

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.8	67	2.0	424
1.0	105	2.5	642
1.3	177	3.0	910
1.6	272		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	189	167	177	316	225	469	174	105	103	71	127
2	71	177	174	203	283	342	457	161	109	109	71	118
3	69	169	169	323	*265	380	732	154	112	91	87	101
4	69	164	164	238	269	b270	706	151	118	89	74	97
5	67	212	161	225	477	b245	590	149	125	95	74	93
6	100	294	174	400	428	b235	503	144	114	107	71	93
7	294	209	159	388	376	228	444	182	125	127	76	95
8	300	194	b155	338	338	219	396	194	127	93	172	89
9	438	*186	151	297	316	219	365	167	116	87	205	93
10	248	177	151	272	476	212	331	159	105	109	144	89
11	290	169	161	255	432	209	308	156	105	137	237	99
12	*216	164	417	238	376	197	286	159	103	101	392	83
13	189	159	338	*238	384	192	258	151	95	91	370	80
14	389	154	265	225	335	189	248	144	93	99	245	78
15	272	154	238	308	308	189	238	141	91	85	189	78
16	232	156	222	241	290	252	228	137	87	83	161	81
17	228	206	*209	262	283	222	222	134	*91	81	151	219
18	206	159	364	290	357	219	216	129	85	78	139	129
19	186	154	338	255	294	209	203	125	83	76	129	103
20	172	149	276	238	272	200	194	123	97	80	123	93
21	167	154	255	225	269	192	209	123	105	74	141	*89
22	161	144	235	b210	255	189	194	118	107	72	192	87
23	169	144	222	b205	241	189	180	114	167	76	*180	83
24	206	232	209	b195	238	194	174	112	107	78	146	81
25	200	180	200	b190	304	*200	169	127	132	78	139	80
26	177	164	192	189	272	206	169	*125	161	80	125	78
27	186	164	189	241	248	225	212	192	154	*105	120	151
28	167	238	255	216	245	252	*180	127	129	78	114	164
29	180	183	206	255	238	482	167	120	116	72	109	144
30	228	b170	192	335	-------	*802	172	114	103	76	105	118
31	200	-------	183	388	-------	590	-------	109	-------	67	118	-------
Total	6,153	5,368	6,791	8,060	9,185	8,174	9,220	4,415	3,367	2,777	4,670	3,113
Mean	198	179	219	260	317	264	307	142	112	89.6	151	104
Cfsm	3.82	3.45	4.22	5.01	6.11	5.09	5.92	2.74	2.16	1.73	2.91	2.00
In.	4.41	3.85	4.87	5.78	6.58	5.86	6.61	3.16	2.41	1.99	3.35	2.23

Calendar year 1959: Max 764 Min 67 Mean 195 Cfsm 3.76 In. 51.09
Water year 1959-60: Max 802 Min 67 Mean 195 Cfsm 3.76 In. 51.10

Peak discharge (base, 1,500 cfs).--No peak above base.

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

5055. Nantahala River at Nantahala, N. C.

Location.--Lat 35°17'55", long 83°39'22", on left bank on U. S. Highway 19, 1.0 mile northeast of Nantahala, Swain County, 2.3 miles downstream from Rowlin Creek, 2.8 miles downstream from Nantahala Dam powerhouse, and at mile 10.8.

Drainage area.--144 sq mi.

Records available.--May 1942 to September 1960.

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.--18 years, 478 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 1,110 cfs Nov. 28 (gage height, 3.82 ft); minimum, 29 cfs July 31, Aug. 1 (gage height, 1.39 ft); minimum daily, 30 cfs July 30, 31. 1942-60: Maximum discharge, 7,510 cfs Feb. 10, 1946 (gage height, 8.15 ft); minimum, 16 cfs Nov. 9, 1953, Dec. 16, 1958; minimum gage height, 1.19 ft Nov. 9, 1953; minimum daily discharge, 17 cfs Nov. 8, 16, 1952, Oct. 25, 1953.

Remarks.--Records excellent. Flow regulated by Nantahala Lake (see p. 206) and Queens Creek Lake (capacity, about 300 cfs-days).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.4	30	2.5	295
1.6	54	3.0	535
1.8	89	3.5	865
2.0	134	4.0	1,260

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	46	660	500	351	746	604	298	545	562	380	713
2	186	410	666	104	508	795	397	596	581	230	583	692
3	32	414	654	127	*547	865	315	479	604	45	589	680
4	31	162	647	496	507	802	787	514	527	44	583	673
5	290	392	540	438	520	568	880	620	278	427	595	673
6	294	412	128	630	544	531	830	514	482	430	589	686
7	204	91	498	602	204	*538	809	426	436	385	500	706
8	272	67	498	532	471	535	795	720	645	446	595	706
9	378	335	499	155	498	586	788	589	557	46	602	712
10	348	372	*524	139	609	588	774	502	508	272	608	712
11	318	362	544	552	644	611	760	580	487	456	608	699
12	464	380	660	707	322	572	760	712	78	441	673	706
13	602	354	625	732	656	588	753	699	510	458	138	706
14	654	204	604	725	494	562	746	523	516	534	54	699
15	621	202	556	760	573	732	746	72	536	454	450	654
16	*238	388	548	614	580	795	732	520	666	64	595	660
17	56	*296	451	132	753	788	160	528	686	38	595	692
18	48	392	566	*709	802	788	*684	516	634	44	534	660
19	100	379	574	767	788	781	725	340	610	51	358	666
20	48	320	130	760	404	767	725	570	621	48	39	666
21	45	51	539	760	150	760	725	538	621	37	40	660
22	44	44	518	753	139	760	324	201	614	*37	572	666
23	50	51	503	558	566	753	100	502	607	40	608	632
24	328	546	497	206	562	753	97	580	431	36	602	48
25	351	502	115	502	606	746	492	680	238	44	602	44
26	67	647	462	676	650	694	505	573	64	44	602	536
27	215	686	102	760	590	129	512	556	238	37	230	470
28	206	880	502	746	368	548	511	420	310	33	515	464
29	120	490	511	753	708	506	522	192	621	41	640	466
30	56	601	476	170	-------	808	520	238	517	30	673	452
31	48	-------	500	115	-------	726	-------	335	-------	30	553	-------
Total	6,984	10,476	15,297	16,180	15,114	20,721	18,078	15,133	14,768	5,884	15,305	18,199
Mean	225	349	493	522	521	668	603	488	492	190	494	607
(†)	+4,198	+1,506	+728	+3,664	+6,109	+1,346	+4,028	-3,803	-6,260	+577	-5,787	-11,239

Adjusted for change in contents in Nantahala and Queens Creek Lakes

Mean	361	399	517	640	732	712	737	365	284	208	307	232
Cfsm	2.51	2.77	3.59	4.44	5.08	4.94	5.12	2.53	1.97	1.44	2.13	1.61
In.	2.89	3.09	4.14	5.12	5.48	5.70	5.71	2.93	2.20	1.67	2.46	1.80

	Observed			Adjusted		
Calendar year 1959:	Max 1,050	Min 31	Mean 371	Mean 436	Cfsm 3.03	In. 41.09
Water year 1959-60:	Max 880	Min 30	Mean 470	Mean 457	Cfsm 3.17	In. 43.19

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Nantahala and Queens Creek Lakes; furnished by Tennessee Valley Authority and Nantahala Power and Light Co.

5080. 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, 1.1 miles downstream from West Fork Tuckasegee River, and at mile 48.5.

Drainage area.--143 sq mi.

Records available.--June 1934 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 2,135.16 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--26 years, 388 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 2,300 cfs Apr. 4 (gage height, 4.75 ft); minimum, 19 cfs Sept. 25 (gage height, 0.69 ft); minimum daily, 18 cfs Oct. 2.
1934-60: 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 measurements at gage heights 14.3 and 21.1 ft; minimum, 5.2 cfs Sept. 3, 1956 (gage height, 0.54 ft); minimum daily, 6.4 cfs Oct. 7, 1956.

Remarks.--Records excellent. Flow regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, and Tennessee Creek project lakes (see p. 206, 211).

Revisions (water years).--WSP 823: Drainage area. WSP 1052: 1943.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 29				Jan. 30 to Sept. 30			
0.7	12	2.0	317	0.8	21	2.0	516
.8	21	2.5	585	1.0	44	2.5	550
1.0	44	3.0	920	1.3	93	3.0	860
1.3	93	3.5	1,310	1.6	173	4.0	1,640
1.6	173						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	395	472	558	*452	529	937	150	395	538	294	387
2	119	530	494	240	548	504	784	395	420	190	*578	502
3	18	*534	535	354	483	728	795	378	394	417	369	290
4	44	394	545	462	496	414	1,430	354	216	482	381	278
5	208	496	506	353	604	590	1,410	568	291	260	496	275
6	282	468	53	752	696	350	1,150	529	503	234	256	414
7	614	410	486	615	596	441	1,060	174	306	170	198	354
8	676	330	371	618	747	302	1,000	578	352	194	324	607
9	1,180	481	562	406	640	442	979	570	494	56	330	*547
10	1,010	432	442	258	668	460	944	488	530	59	280	339
11	1,060	302	530	520	894	600	944	498	269	188	300	308
12	838	520	549	540	608	425	826	615	62	158	373	454
13	864	561	134	546	802	130	828	691	310	185	462	380
14	1,010	250	462	545	760	440	895	233	350	230	56	380
15	969	100	540	570	509	638	808	74	359	186	256	557
16	739	217	511	132	494	600	802	290	372	62	371	348
17	546	269	416	157	454	596	128	334	512	28	416	296
18	551	442	586	604	634	556	602	338	229	158	471	293
19	481	516	434	546	668	381	796	514	204	201	450	382
20	408	424	336	531	622	232	550	557	412	312	334	382
21	408	218	435	528	460	416	698	274	380	304	292	384
22	284	34	408	558	410	420	432	124	488	332	316	406
23	420	250	392	347	461	414	420	*324	598	110	268	406
24	603	445	364	180	418	458	112	354	469	38	122	25
25	501	524	372	422	406	507	555	400	112	322	128	24
26	338	514	74	450	464	746	660	412	47	338	115	334
27	430	497	48	544	452	96	586	596	330	366	30	268
28	387	411	573	*522	490	646	536	506	431	400	36	293
29	368	257	608	616	527	*856	*541	105	586	368	144	239
30	392	468	579	390	--------	1,040	471	87	414	66	271	322
31	408	--------	552	414	--------	1,000	--------	296	--------	32	408	--------
Total	16,334	11,659	13,439	14,278	16,523	15,958	22,739	11,806	10,737	6,984	8,925	10,912
Mean	527	389	434	461	570	515	758	381	358	225	288	364
(†)	+4,788	-853	-1,330	+242	+4,415	+3,244	-25	-1,994	-3,710	-1,946	-1,405	-5,002

Adjusted for change in lake contents

Mean	681	360	391	468	722	619	757	317	234	163	243	197
Cfsm	4.76	2.52	2.73	3.27	5.05	4.33	5.29	2.22	1.64	1.14	1.70	1.38
In.	5.49	2.81	3.15	3.78	5.45	4.99	5.91	2.55	1.83	1.31	1.96	1.54

	Observed			Adjusted		
Calendar year 1959:	Max 1,230	Min 18	Mean 377	Mean 412	Cfsm 2.88	In. 39.12
Water year 1959-60:	Max 1,430	Min 18	Mean 438	Mean 428	Cfsm 2.99	In. 40.77

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Thorpe, Cedar Cliff, Bear Creek, and Tennessee Creek project lakes; furnished by Tennessee Valley Authority and Nantahala Power and Light Co.

5090. Scott Creek above Sylva, N. C.

Location.--Lat 35°23'05", long 83°12'51", on right bank 300 ft downstream from Allens Branch, 0.7 mile 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 1960.

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.--19 years, 107 cfs.

Extremes.--Maximum discharge during year, 1,040 cfs Aug. 12 (gage height, 5.19 ft); minimum, 36 cfs Sept. 26, 27 (gage height, 2.25 ft).

1941-60: Maximum discharge, 3,320 cfs Jan. 31, 1957 (gage height, 7.39 ft); minimum, 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, 3,800 cfs, from rating curve extended above 1,800 cfs by logarithmic plotting).

Remarks.--Records good.

Revisions (water years).--WSP 1053: 1942-44(M).

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	104	113	113	*187	*151	318	156	74	76	50	94
2	61	98	118	127	172	189	296	127	79	69	*45	72
3	54	*30	*116	229	161	260	380	121	*89	65	58	56
4	49	98	113	156	*161	179	416	117	93	62	58	51
5	48	117	111	*156	303	157	373	*113	86	62	49	49
6	62	214	129	393	239	157	320	111	100	82	52	46
7	198	125	111	295	209	151	292	123	98	74	53	55
8	*202	113	102	236	190	148	264	170	108	63	50	59
9	419	109	105	209	184	151	244	130	104	59	66	*58
10	201	102	105	190	375	154	228	123	87	66	63	55
11	376	96	107	175	305	154	216	119	82	86	152	55
12	182	94	369	164	245	140	205	119	77	68	300	49
13	147	90	250	172	252	137	196	117	74	59	228	45
14	399	90	198	159	220	140	188	110	71	58	121	43
15	215	88	172	219	198	148	180	108	69	*55	91	42
16	170	90	156	169	195	209	178	106	*66	56	77	44
17	170	118	146	184	195	192	170	104	65	58	69	52
18	150	88	272	216	256	189	161	100	63	56	66	63
19	123	86	264	187	212	169	154	95	62	51	98	51
20	111	82	202	169	192	154	149	95	60	50	77	44
21	104	92	181	159	189	145	161	93	66	48	66	41
22	*100	80	164	151	182	143	154	89	65	55	74	40
23	102	90	153	141	169	*137	140	86	181	63	66	40
24	131	198	143	141	166	143	136	84	91	60	60	38
25	123	129	136	136	230	143	132	84	95	58	59	38
26	111	111	129	*132	198	132	130	131	168	58	55	37
27	113	111	125	164	176	137	145	123	111	52	63	50
28	106	187	166	153	173	146	136	95	98	51	63	107
29	118	129	138	159	163	*308	*127	89	93	50	65	79
30	111	118	125	178	-------	461	125	87	82	48	53	55
31	106	-------	118	236	-------	384	-------	77	-------	45	53	-------
Total	4,648	3,307	4,835	5,668	6,097	5,611	6,320	3,402	2,657	1,863	2,500	1,608
Mean	150	110	156	183	210	181	211	110	88.6	60.1	80.6	53.6
Cfsm	2.96	2.17	3.08	3.61	4.14	3.57	4.16	2.17	1.75	1.19	1.59	1.06
In.	3.41	2.43	3.55	4.16	4.47	4.12	4.64	2.50	1.95	1.37	1.83	1.18

Calendar year 1959: Max 467 Min 39 Mean 125 Cfsm 2.47 In. 33.57
Water year 1959-60: Max 461 Min 37 Mean 133 Cfsm 2.62 In. 35.61

Peak discharge (base, 900 cfs).--Aug. 12 (10 p.m.) 1,040 cfs (5.19 ft).

* Discharge measurement made on this day.

5105. 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, 0.5 mile downstream from U. S. Highway 23 at Dillsboro, Jackson County, and at mile 31.1.

Drainage area.--347 sq mi.

Records available.--June 1928 to September 1960 (prior to October 1933 monthly discharge only, published in WSP 1306; figures of daily discharge published in WSP 663, 683, 698, 713, 728, 743, are unreliable).

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.--32 years, 755 cfs (unadjusted).

Extremes.--Maximum discharge during year, 3,410 cfs Apr. 4 (gage height, 6.30 ft); minimum, 91 cfs July 18 (gage height, 1.35 ft); minimum daily, 170 cfs Sept. 25.
1928-60: 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 measurement 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 except those for period of no gage-height record, which are good. 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. 206,211). Records of chemical analyses for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 823: Drainage area. WSP 923: 1940(M). WSP 1306: 1929-33. See also Records available.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

2.2	145	4.0	1,120
2.5	235	5.0	2,000
3.0	445	6.0	3,050
3.5	745		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a700	698	777	872	*1,010	1,070	1,930	753	646	700	379	608
2	a400	738	806	786	1,030	1,140	1,760	794	727	597	552	575
3	a250	820	*920	880	998	1,620	1,870	804	*734	568	572	461
4	a230	695	890	696	965	1,080	2,370	787	554	741	620	450
5	a250	725	786	888	1,510	1,200	2,650	852	498	567	668	445
6	a500	930	580	1,750	1,550	1,040	2,230	1,090	960	472	544	564
7	a1,100	782	598	1,450	1,290	878	2,040	641	656	538	393	565
8	a1,200	653	*713	1,300	1,280	876	1,890	1,220	750	403	496	693
9	2,050	696	765	1,060	1,310	940	1,830	906	780	368	548	796
10	1,550	757	744	932	1,470	1,000	1,760	989	812	280	486	548
11	1,700	604	780	864	1,870	1,180	1,670	926	692	446	694	954
12	1,320	625	1,330	1,000	1,380	1,090	1,580	1,010	426	394	1,100	793
13	1,240	824	889	1,040	1,520	599	1,520	1,160	490	404	1,270	534
14	1,780	646	724	998	1,500	779	1,560	714	615	442	466	529
15	1,500	402	988	1,160	1,200	1,260	1,520	518	618	383	458	575
16	1,270	399	928	808	1,100	1,370	1,430	592	627	353	618	647
17	1,020	486	742	559	1,090	1,250	900	692	694	231	665	500
18	989	676	1,270	1,150	1,500	1,390	997	690	535	*275	662	516
19	879	750	1,150	1,060	1,500	1,070	1,370	730	433	374	760	566
20	746	656	1,010	1,050	1,310	830	1,110	900	673	516	656	549
21	728	659	754	985	1,130	948	1,270	745	644	470	522	540
22	646	309	859	996	1,040	964	1,120	455	708	534	598	566
23	655	398	820	843	1,030	960	948	602	1,030	385	583	558
24	959	840	742	658	982	956	731	656	878	328	404	300
25	890	798	745	675	1,090	1,060	863	700	588	421	340	170
26	730	874	636	822	1,120	1,420	1,210	768	526	564	313	372
27	680	718	370	922	1,030	806	1,030	949	568	556	245	481
28	750	988	797	988	1,040	1,110	1,030	993	559	592	256	615
29	688	536	999	1,060	1,050	1,860	1,050	478	990	576	342	564
30	694	717	940	1,040	-------	2,400	1,050	426	662	357	381	516
31	724	-------	862	1,030	-------	2,170	-------	516	-------	200	603	-------
Total	28,818	20,399	25,914	30,322	35,895	36,316	44,289	24,036	20,073	14,035	17,194	16,550
Mean	930	680	836	978	1,238	1,171	1,476	775	669	453	555	552
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 2,740 Min 218 Mean 770 Cfsm 2.22 In. 30.12
Water year 1959-60: Max 2,620 Min 170 Mean 857 Cfsm 2.47 In. 33.64

Peak discharge (base, 4,500 cfs).--No peak above base.

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations at Tuckasegee and Bryson City.

5120. Oconaluftee River at Birdtown, N. C.

Location.--Lat 35°27'42", long 83°21'13", on left bank (relocated) 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, 2.2 miles southwest of Cherokee, and at mile 3.1.

Drainage area.--184 sq mi.

Records available.--July 1945 to September 1946, July 1948 to September 1960.

Gage (revised).--Water-stage recorder. Datum of gage is 1,843.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1946, staff gage at same site and datum.

Average discharge.--13 years, 502 cfs.

Extremes.--Maximum discharge during year, 6,930 cfs Nov. 28 (gage height, 7.30 ft); minimum, 152 cfs Sept. 26, 27 (gage height, 0.98 ft).
1945-46, 1948-60: 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, 80 cfs Oct. 19, 1954 (gage height, 0.66 ft).

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

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 3, July 28 to Sept. 30				Apr. 4 to July 27			
1.0	159	3.0	1,420	1.1	180	3.0	1,420
1.5	364	4.0	2,400	1.5	350	4.0	2,400
2.0	660	5.0	3,580	2.0	655	5.0	3,580

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	530	364	772	454	709	536	1,640	495	243	291	202	331
2	299	331	702	454	634	608	1,600	405	243	315	202	336
3	244	313	621	1,130	595	772	2,800	378	247	264	190	273
4	217	*295	550	737	569	b560	2,660	366	275	243	190	265
5	194	439	524	*660	962	b520	1,920	356	260	239	*255	248
6	194	1,490	550	*1,020	1,040	b500	1,440	350	286	243	382	236
7	848	688	488	1,120	838	*494	1,230	372	273	231	277	240
8	667	556	448	980	751	476	1,100	616	268	208	730	240
9	1,230	482	437	845	702	494	972	435	*264	204	916	326
10	695	432	*432	758	1,160	482	860	394	231	273	584	374
11	744	400	454	716	1,310	476	778	383	227	603	1,120	291
12	562	369	2,200	667	958	448	725	372	223	388	1,370	459
13	464	345	1,610	758	920	426	683	356	212	296	1,590	326
14	852	331	1,100	709	793	437	*669	340	208	310	1,020	261
15	621	326	905	786	702	448	648	330	204	260	779	*240
16	518	317	772	688	660	536	610	320	194	235	602	236
17	470	410	709	674	647	530	577	310	227	235	512	257
18	437	326	1,170	737	765	536	551	300	201	231	454	265
19	*384	304	1,970	660	681	500	507	296	187	208	415	236
20	355	295	1,190	602	608	470	483	291	204	*243	432	217
21	331	291	988	556	608	448	489	286	239	201	379	202
22	317	282	845	518	*582	426	489	282	251	194	640	194
23	308	273	744	b480	536	426	447	268	631	243	614	184
24	415	1,160	667	b470	524	442	423	268	423	235	442	176
25	464	800	614	454	737	459	417	310	477	223	384	173
26	384	595	569	437	744	464	405	*273	459	235	364	166
27	415	1,090	524	482	647	524	507	429	525	352	331	205
28	379	3,260	660	494	614	654	441	325	383	252	317	336
29	384	1,280	628	500	588	1,280	394	291	361	221	326	295
30	405	942	524	621	-------	*3,430	388	278	305	224	282	236
31	379	-------	482	800	-------	2,260	-------	251	-------	202	295	-------
Total	14,706	18,786	24,849	20,967	21,584	21,062	26,853	10,726	8,729	8,102	16,596	7,824
Mean	474	626	802	676	744	679	895	346	291	261	535	261
Cfsm	2.58	3.40	4.36	3.67	4.04	3.69	4.86	1.88	1.58	1.42	2.91	1.42
In.	2.97	3.80	5.02	4.24	4.36	4.26	5.43	2.17	1.76	1.64	3.35	1.58

Calendar year 1959: Max 3,260 Min 146 Mean 533 Cfsm 2.90 In. 39.34
Water year 1959-60: Max 3,430 Min 166 Mean 549 Cfsm 2.98 In. 40.56

Peak discharge (base, 4,000 cfs).--Nov. 28 (1:30 a.m.) 6,930 cfs (7.30 ft); Dec. 12 (11:30 a.m.) 4,780 cfs (5.88 ft); Mar. 30 (1 p.m.) 4,530 cfs (5.70 ft); Apr. 3 (7 p.m.) 6,380 cfs (6.95 ft).

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

5130. 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, 0.6 mile downstream from Deep Creek, and at mile 12.6.

Drainage area.--655 sq mi.

Records available.--October 1897 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--63 years, 1,564 cfs (unadjusted).

Extremes.--Maximum discharge during year, 9,770 cfs Apr. 3 (gage height, 5.58 ft); minimum, 438 cfs Oct. 4 (gage height, 0.93 ft); minimum daily, 482 cfs Oct. 5.

1897-1960: Maximum discharge, 61,600 cfs Aug. 20, 1940 (gage height, 15.96 ft), from rating curve extended above 25,000 cfs on basis of logarithmic plotting and slope-area measurement of peak flow; minimum, 27 cfs Sept. 10, 1925; minimum gage height, 0.47 ft Oct. 26, 1952; minimum daily discharge, 21 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 about 20 ft (revised), as reported by Tennessee Valley Authority.

Remarks.--Records excellent prior to May 26, and good thereafter. Considerable diurnal fluctuation caused by powerplants above station. Flow regulated by Thorpe Lake, Cedar Cliff Lake, Bear Creek Lake, Tennessee Creek project lakes (see p. 206,211), and two small reservoirs with combined capacity of 250 cfs-days. Records of chemical analyses for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 523: 1916, 1918-20. WSP 823: Drainage area. WSP 1306: 1898-1913. WSP 1336: 1907, 1915(M), 1916-20, 1921-23(M), 1933-34(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 26				May 27 to July 13		July 14 to Sept. 30			
0.9	415	3.0	3,590	0.9	580	0.9	500	2.0	1,720
1.0	490	4.0	5,710	1.0	650	1.0	545	3.0	3,400
1.5	1,000	5.0	8,180	1.5	1,150	1.5	1,000		
2.0	1,780			2.0	1,850				
				3.0	3,590				

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,120	1,140	1,880	1,530	2,000	1,840	4,320	1,460	*972	1,100	540	962
2	712	1,070	1,770	1,570	1,850	1,990	4,070	1,340	1,100	1,280	761	1,050
3	606	1,190	1,710	2,510	1,890	2,870	5,620	1,290	1,160	813	752	875
4	490	1,120	1,660	1,740	1,750	2,030	6,080	1,290	1,030	1,130	822	791
5	482	1,220	1,500	1,800	2,760	2,010	5,570	1,280	890	1,020	789	780
6	691	2,950	1,450	3,160	3,130	1,880	4,360	1,580	1,240	775	1,100	812
7	2,220	1,730	1,120	3,130	2,580	1,590	3,870	1,250	1,170	931	716	884
8	1,930	1,420	1,380	2,740	2,330	1,660	3,480	2,030	1,130	698	1,130	900
9	3,480	1,290	1,280	2,320	2,340	1,640	3,250	1,470	*1,140	722	1,620	1,280
10	2,510	1,330	1,380	2,070	2,960	*1,730	2,980	1,590	1,170	601	1,130	1,000
11	2,650	1,200	1,310	1,790	3,830	1,950	2,760	1,400	1,170	1,180	1,940	1,140
12	2,100	1,020	3,990	1,920	2,870	1,850	2,650	1,520	811	986	2,300	1,380
13	1,810	1,340	3,270	2,070	2,810	1,300	2,490	1,850	667	793	3,230	912
14	2,790	1,070	2,150	1,980	2,760	1,400	2,470	1,320	887	875	1,820	854
15	2,310	880	*2,160	2,250	2,280	1,990	2,420	1,050	908	780	1,330	*844
16	1,980	793	1,970	1,940	2,120	2,160	2,290	939	915	734	1,340	1,030
17	1,580	1,030	1,770	1,540	2,060	2,110	1,900	1,120	986	593	1,240	875
18	1,560	1,050	2,700	*2,160	2,600	2,330	1,610	1,100	980	612	1,170	864
19	1,400	1,090	3,870	2,040	2,690	1,900	2,070	1,060	722	689	1,290	854
20	1,070	1,070	2,750	1,910	2,330	1,650	1,860	1,300	854	803	*1,300	822
21	1,110	1,100	2,120	1,790	2,100	1,670	1,820	1,240	1,040	*776	1,030	802
22	1,070	694	2,030	1,760	*2,000	1,660	1,870	909	1,020	786	1,400	822
23	940	689	1,850	1,570	1,860	1,580	1,580	866	2,090	844	1,400	802
24	1,400	2,320	1,680	1,440	1,790	1,570	1,440	1,060	1,670	770	1,090	698
25	1,460	1,930	1,610	1,280	2,210	1,790	1,250	1,240	1,540	633	833	509
26	1,210	1,670	1,500	1,460	2,290	2,090	1,760	*1,570	1,180	899	780	*518
27	1,150	2,090	1,130	1,560	2,040	1,850	1,730	2,880	*1,230	938	752	761
28	1,230	5,460	1,500	1,820	1,960	1,930	1,670	2,480	1,150	880	698	1,090
29	1,140	2,430	1,910	1,700	1,950	3,480	1,560	1,440	1,560	886	665	988
30	1,220	*1,970	1,700	2,020	-------	6,900	1,660	1,200	1,140	802	716	826
31	1,190	-------	1,550	2,060	-------	*5,480	-------	1,030	-------	536	938	-------
Total	46,611	45,356	59,680	60,430	68,120	67,880	82,420	42,794	33,522	25,871	36,622	26,705
Mean	1,504	1,512	1,925	1,949	2,349	2,190	2,747	1,380	1,117	835	1,181	890
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 8,040 Min 462 Mean 1,532 Cfsm 2.34 In. 31.75
Water year 1959-60: Max 6,900 Min 482 Mean 1,628 Cfsm 2.49 In. 33.84

Peak discharge (base, 9,000 cfs).--Apr. 3 (8:30 p.m.) 9,770 cfs (5.58 ft).

* Discharge measurement made on this day.

Note.--Discharge for July 14 to Sept. 30 computed from record at temporary gage at site 0.6 mile upstream.

5135. 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 1960.

Gage.--Water-stage recorder. Altitude of gage is 2,280 ft (from topographic map).

Average discharge.--25 years, 44.1 cfs.

Extremes.--Maximum discharge during year, 729 cfs Apr. 3 (gage height, 3.78 ft), from rating curve extended as explained below; minimum, 10 cfs Oct. 5, 6 (gage height, 0.97 ft).
1935-60: 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 measurement 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 tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Aug. 12				Aug. 13 to Sept. 30			
1.0	11	2.5	175	1.1	12	1.5	33
1.3	23	3.0	345	1.2	16	1.9	69
1.6	40	3.5	585				
2.0	81						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	37	81	39	45	47	168	37	21	26	13	26
2	13	34	71	40	43	50	175	33	21	25	13	22
3	12	32	62	90	42	58	324	31	a22	22	12	20
4	11	30	56	55	41	b45	302	30	a23	21	11	19
5	11	112	52	52	84	b40	207	29	21	20	11	18
6	16	*125	51	88	68	b40	150	29	21	20	13	*16
7	109	69	46	101	59	41	125	34	20	19	12	16
8	66	57	43	87	*54	39	106	42	22	18	19	17
9	99	48	41	75	51	40	91	32	24	17	35	17
10	43	43	40	67	131	39	80	31	20	27	25	15
11	69	39	43	*64	91	37	71	30	20	44	48	16
12	46	37	162	59	73	35	67	30	20	26	91	21
13	38	34	106	69	73	35	65	29	19	22	69	16
14	64	32	81	60	62	34	62	28	18	22	44	15
15	44	31	71	77	b55	35	59	27	18	19	34	14
16	38	33	64	62	b52	39	56	26	16	19	27	15
17	35	46	62	62	52	39	54	25	a19	18	26	23
18	32	34	107	66	64	39	49	24	a17	17	24	20
19	29	32	115	59	57	38	45	24	a15	17	21	17
20	*26	31	87	55	51	36	43	23	a17	17	20	15
21	25	30	76	50	50	35	46	23	a19	15	20	14
22	24	29	*68	b46	48	34	43	22	a21	15	48	14
23	26	29	61	b45	45	34	39	21	a60	19	34	*19
24	43	147	56	43	44	36	38	22	a35	19	27	13
25	42	79	51	41	65	39	36	23	a40	17	24	a12
26	35	61	48	39	64	40	35	21	a37	17	22	a12
27	41	225	45	44	56	48	*38	*35	a45	20	22	a17
28	35	309	64	43	53	*66	34	26	a33	16	23	a30
29	40	146	49	44	50	183	32	24	*31	*15	20	a25
30	44	101	44	46	------	372	33	23	27	14	19	a20
31	40	------	41	48	------	226	------	21	------	14	23	------
Total	1,214	2,092	2,044	1,816	1,723	1,919	2,673	855	742	617	850	534
Mean	39.2	69.7	65.9	58.6	59.4	61.9	89.1	27.6	24.7	19.9	27.4	17.8
Cfsm	2.84	5.05	4.78	4.25	4.30	4.49	6.46	2.00	1.79	1.44	1.99	1.29
In.	3.27	5.64	5.51	4.89	4.64	5.17	7.20	2.30	2.00	1.66	2.29	1.44

Calendar year 1959: Max 309 Min 10 Mean 44.9 Cfsm 3.25 In. 44.19
Water year 1959-60: Max 372 Min 11 Mean 46.7 Cfsm 3.38 In. 46.01

Peak discharge (base, 600 cfs).--Nov. 27 (11 p.m.) 685 cfs (3.70 ft); Apr. 3 (3:30 p.m.) 729 cfs (3.78 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.
b Stage-discharge relation affected by ice.

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5183. Little Tennessee River below Chilhowee Dam, Tenn.

Location.--Lat 35°32'48", long 84°03'50", on right bank on U. S. Highway 129, at Tallassee, 100 ft upstream from Cochran Creek, 0.8 mile downstream from Chilhowee Dam, 20 miles south of Maryville, Blount County, and at mile 32.8. Records include flow of Cochran Creek.

Drainage area.--1,987 sq mi, including Cochran Creek.

Records available.--July 1958 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 799.58 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 12,400 cfs May 11 (gage height, 11.29 ft); minimum, 960 cfs Mar. 29 (gage height, 6.70 ft); minimum daily, 1,360 cfs Apr. 17.
1958-60: Maximum discharge, 13,400 cfs Jan. 16, 1959 (gage height, 11.52 ft); minimum, 45 cfs July 19, 1958 (gage height, 5.60 ft); minimum daily, 1,350 cfs Feb. 26, May 19, June 7, 8, 1959.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by many reservoirs above station (see p. 205).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

7.0	1,360	10.0	7,970
8.0	3,180	11.0	11,300

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,330	7,800	4,800	5,130	4,650	3,990	1,420	2,400	3,920	4,100	*4,370	7,670
2	3,210	8,200	6,100	5,680	4,570	5,040	2,350	4,740	4,040	3,430	5,140	7,670
3	1,380	7,200	6,000	4,870	4,660	8,110	2,060	2,130	3,320	2,380	5,730	7,610
4	2,540	7,000	8,100	6,780	4,150	4,090	3,110	3,080	4,040	1,400	5,530	7,420
5	4,990	8,300	7,500	6,720	3,740	3,450	*6,080	3,060	2,440	2,810	5,620	8,010
6	*4,940	8,000	7,400	7,180	3,740	4,960	5,400	2,470	*4,670	*2,740	4,930	6,760
7	4,850	6,800	7,700	7,180	2,350	4,950	2,770	2,850	4,280	2,690	4,060	*7,500
8	6,360	6,900	*7,300	*5,490	3,480	8,090	4,560	4,240	5,940	5,460	5,120	7,520
9	5,250	8,100	6,870	4,330	2,640	7,100	6,760	*5,020	4,900	2,770	5,090	7,700
10	2,870	*6,400	7,820	3,030	3,010	6,090	6,300	3,460	4,520	2,980	3,640	7,670
11	1,750	5,890	8,120	4,720	4,430	5,180	7,250	6,220	3,940	4,970	3,980	7,670
12	3,560	4,890	8,870	5,560	4,500	5,480	2,980	4,500	2,540	4,750	3,660	6,650
13	5,160	5,000	7,080	5,150	4,260	4,010	4,570	3,200	3,190	4,440	3,060	5,610
14	5,700	5,810	6,240	4,220	2,660	*4,740	3,150	2,020	4,410	6,100	2,220	7,210
15	5,390	5,960	7,700	7,170	3,740	4,040	3,050	1,740	3,470	4,420	5,430	7,610
16	3,620	6,440	5,800	6,270	3,120	3,650	2,470	2,630	4,800	2,080	4,240	7,580
17	1,920	6,570	6,780	5,930	2,230	3,710	1,360	2,340	5,070	1,630	4,860	7,580
18	1,860	6,210	8,490	6,940	*4,800	4,090	5,600	3,070	3,160	3,860	5,380	7,790
19	3,760	5,610	8,610	7,150	3,940	3,580	5,050	2,320	3,220	2,860	5,220	7,730
20	5,650	5,430	8,360	7,320	3,360	1,460	3,740	3,170	4,340	3,900	3,390	8,150
21	4,940	3,870	8,390	7,610	5,160	4,450	4,950	3,020	6,520	3,620	2,990	8,150
22	4,000	3,130	8,090	7,700	4,710	3,840	3,930	1,970	5,660	3,280	5,150	6,620
23	7,530	3,740	7,910	7,060	4,180	2,700	1,590	3,920	5,430	3,510	4,980	6,890
24	8,630	7,580	7,940	5,290	2,740	2,900	1,480	4,260	4,590	1,670	4,190	3,490
25	7,510	7,200	8,060	5,780	1,540	5,560	4,100	2,550	3,240	4,150	6,510	3,260
26	7,400	6,700	6,780	6,870	4,100	1,840	3,900	3,040	1,880	4,590	5,960	6,260
27	7,800	8,100	5,960	9,450	4,590	1,390	4,830	3,580	4,480	3,880	4,830	5,060
28	7,800	9,500	6,600	5,840	4,590	1,450	5,280	2,790	5,260	4,910	6,640	7,760
29	8,400	7,100	5,900	5,390	6,140	2,260	6,240	3,440	5,720	4,310	7,140	4,970
30	7,800	7,800	5,350	4,020	-------	3,540	2,540	3,400	5,930	1,750	6,580	3,560
31	7,000	-------	4,870	1,720	-------	1,770	-------	3,120	-------	2,880	7,040	-------
Total	156,900	197,230	221,490	183,550	111,780	127,510	118,870	99,750	128,920	108,320	152,680	205,130
Mean	5,061	6,574	7,145	5,921	3,854	4,113	3,962	3,218	4,297	3,494	4,925	6,838

	Observed				Adjusted†			
Calendar year 1959:	Max 9,500	Min 1,350	Mean 4,043		Mean 4,614	Cfsm 2.32	In. 31.52	
Water year 1959-60:	Max 9,500	Min 1,360	Mean 4,951		Mean 4,890	Cfsm 2.46	In. 33.50	

* Discharge measurement made on this day.
† Adjusted for change in contents in Santeetlah, Fontana, Thorpe, Cheoah, Nantahala, Calderwood, and Chilhowee Lakes.
Note.--No gage-height record Oct. 26 to Nov. 10, Nov. 25 to Dec. 8; discharge estimated on basis of recorded range in stage, records for station at McGhee, and Chilhowee powerplant records.

5185. 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 1960. 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.--35 years, 278 cfs.

Extremes.--Maximum discharge during year, 8,780 cfs Nov. 27 (gage height, 10.65 ft); minimum, 43 cfs Aug. 2 (gage height, 1.16 ft).
1925-60: Maximum discharge, 17,500 cfs Jan. 31, 1957 (gage height, 13.60 ft), from rating curve extended above 9,600 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 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.1	35	2.5	452
1.4	84	4.0	1,210
1.7	159	7.0	3,050

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	171	490	258	305	360	507	328	103	86	49	223
2	*71	*159	*473	254	*283	621	465	*258	*101	118	*46	*130
3	63	150	473	368	265	1,760	545	234	105	88	57	101
4	60	139	432	*305	258	776	*567	216	105	92	54	88
5	59	371	400	302	340	580	507	203	94	*84	48	84
6	63	750	436	735	432	498	452	190	92	78	45	78
7	469	400	404	755	384	452	416	223	86	74	49	74
8	304	313	368	602	336	412	376	305	88	71	80	110
9	380	265	360	481	317	412	348	237	110	86	365	142
10	234	234	372	420	460	384	317	216	88	123	262	94
11	305	213	384	380	638	384	302	206	92	309	321	147
12	234	197	1,450	344	469	356	287	206	103	139	434	315
13	178	184	1,140	328	448	328	272	197	88	99	444	139
14	416	174	685	313	392	332	258	181	86	118	237	103
15	340	174	545	348	336	340	248	171	92	90	159	90
16	258	165	473	302	344	460	240	162	78	78	120	84
17	234	283	432	294	412	515	230	156	168	74	110	101
18	230	240	610	324	913	460	237	147	105	71	165	99
19	187	213	1,090	287	730	416	213	142	84	67	125	86
20	162	197	643	269	532	372	206	136	80	71	184	78
21	147	184	523	251	486	336	272	130	130	62	130	73
22	139	174	452	240	481	317	308	122	105	60	206	69
23	162	165	408	223	460	305	234	118	86	62	190	71
24	372	1,200	372	226	436	294	223	118	88	62	136	67
25	321	625	340	216	571	290	213	112	136	59	112	62
26	258	420	313	210	589	280	206	110	103	62	103	62
27	248	1,710	298	290	481	290	248	230	101	65	94	143
28	210	3,030	380	280	432	317	230	171	90	57	92	187
29	197	886	332	265	404	532	203	125	112	76	88	287
30	200	593	294	384	-------	946	200	115	101	59	90	206
31	181	-------	276	332	-------	638	-------	110	-------	52	106	-------
Total	6,783	13,979	15,648	10,586	12,934	14,763	9,330	5,575	3,000	2,692	4,701	3,593
Mean	219	466	505	341	446	476	311	180	100	86.8	152	120
Cfsm	1.86	3.95	4.28	2.89	3.78	4.03	2.64	1.53	0.847	0.736	1.29	1.02
In.	2.14	4.41	4.93	3.34	4.08	4.65	2.94	1.76	0.95	0.85	1.48	1.13

Calendar year 1959: Max 3,030 Min 57 Mean 274 Cfsm 2.32 In. 31.54
Water year 1959-60: Max 3,030 Min 45 Mean 283 Cfsm 2.40 In. 32.66

Peak discharge (base, 2,800 cfs).--Nov. 27 (11 p.m.) 8,780 cfs (10.65 ft).

* Discharge measurement made on this day.

5195. Little Tennessee River at McGhee, Tenn.

Location.--Lat 35°36'16", long 84°12'48", 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, includes that of Tellico River.

Records available.--October 1904 to September 1960. October 1904 monthly discharge only, published in WSP 1306.

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 at various sites and datums within 0.4 mile of present site.

Average discharge.--56 years, 5,610 cfs (unadjusted).

Extremes.--Maximum discharge during year, 20,900 cfs Nov. 28 (gage height, 11.60 ft); minimum, 1,420 cfs Oct. 5 (gage height, 3.55 ft); minimum daily, 1,610 cfs July 4.
1904-60: Maximum discharge, 104,000 cfs Nov. 19, 1906 (gage height, 30.8 ft, at site used December 1905 to September 1925, to datum used October 1918 to September 1925), from rating curve extended above 66,000 cfs; minimum, 273 cfs Oct. 27, 1941; minimum daily, 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 (see p. 205).

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, 1930-41 (monthly runoff).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

3.6	1,490
4.0	2,150
6.0	6,580
11.0	19,400

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,580	8,290	6,200	5,840	5,240	4,690	2,630	2,630	3,790	5,100	*4,130	8,490
2	3,060	8,960	7,280	6,080	7,420	5,980	3,280	5,000	4,160	3,160	4,970	8,420
3	1,930	8,460	7,690	6,120	5,790	14,500	2,940	2,890	3,460	2,840	5,930	8,260
4	2,180	7,320	9,190	7,920	5,080	8,240	4,300	2,990	4,050	1,610	5,840	8,390
5	4,380	8,720	9,120	7,180	4,370	5,550	*6,580	3,180	2,820	2,370	5,980	7,420
6	*5,840	9,820	8,920	9,340	5,240	6,100	6,750	2,970	*4,100	*2,690	4,740	7,840
7	5,010	8,560	9,220	9,840	3,500	5,600	3,980	2,360	4,230	2,280	4,690	8,240
8	6,960	7,160	*8,290	*8,540	4,410	9,360	5,430	4,920	5,080	5,080	5,360	*7,820
9	6,360	9,120	8,160	6,220	3,610	8,620	7,080	*5,080	5,520	3,090	6,580	8,320
10	3,300	*8,090	8,790	4,550	3,530	7,440	7,660	3,920	4,340	3,120	4,210	8,220
11	2,550	6,150	9,090	5,570	6,270	6,360	8,060	5,520	4,100	5,380	5,670	8,390
12	3,400	5,380	10,900	6,080	5,260	6,560	4,500	5,750	2,880	5,910	4,120	7,660
13	5,290	5,450	11,000	6,290	5,620	5,290	4,460	3,440	2,890	3,960	3,970	6,100
14	6,600	6,220	8,820	5,360	4,230	*5,290	4,210	2,340	5,930	6,990	3,120	7,420
15	6,770	6,510	9,320	7,790	3,880	5,150	2,880	1,690	3,260	4,740	4,940	8,140
16	4,640	6,750	6,440	7,350	4,010	4,920	3,420	2,830	5,100	2,490	4,690	8,040
17	2,210	7,350	7,740	7,110	3,920	5,380	1,900	1,740	5,310	1,800	4,920	8,090
18	2,400	7,180	9,890	7,760	6,680	5,290	5,120	3,750	3,770	3,470	5,760	8,290
19	3,650	6,390	13,700	8,490	7,890	4,740	6,270	2,280	3,070	3,130	5,010	8,240
20	5,500	6,530	11,600	8,220	4,530	2,830	3,830	2,840	3,850	3,800	3,920	8,540
21	5,400	4,250	10,200	8,540	6,800	4,460	5,130	3,120	6,580	3,510	3,180	8,590
22	4,410	3,350	9,590	8,620	7,250	4,690	4,900	2,110	6,000	3,180	5,010	6,940
23	6,890	4,100	9,120	8,340	5,380	3,720	2,470	3,520	5,740	3,990	5,640	7,490
24	9,690	8,440	9,020	7,400	4,460	3,270	1,880	4,230	5,080	1,720	4,600	3,610
25	8,890	10,300	9,090	7,760	2,730	5,670	3,690	2,740	3,680	3,460	6,560	3,240
26	8,340	8,420	7,890	7,320	5,080	3,240	4,340	2,920	2,230	4,920	8,530	5,910
27	8,760	8,890	6,960	10,200	5,860	1,920	4,800	3,460	4,000	3,880	5,570	5,260
28	8,790	18,200	7,300	7,420	5,520	1,950	5,980	3,240	5,240	4,900	6,360	7,540
29	9,120	14,000	7,010	6,560	7,790	2,560	6,200	3,020	6,050	4,690	7,620	5,860
30	8,860	9,860	6,220	6,170	---------	5,860	4,080	3,880	6,220	2,060	7,060	3,900
31	7,860	---------	5,720	3,040	---------	3,570	---------	3,060	---------	2,630	7,440	---------
Total	172,620	238,020	269,480	223,020	151,350	168,800	138,750	103,420	132,530	111,950	164,120	218,670
Mean	5,568	7,934	8,693	7,194	5,219	5,445	4,625	3,336	4,418	3,611	5,294	7,289

	Observed			Adjusted†		
Calendar year 1959:	Max 18,200	Min 1,620	Mean 4,835	Mean 5,406	Cfsm 2.21	In. 30.04
Water year 1959-60:	Max 18,200	Min 1,610	Mean 5,718	Mean 5,656	Cfsm 2.32	In. 31.52

* Discharge measurement made on this day.
† Adjusted for change in contents in Santeetlah, Fontana, Thorpe, Cheoah, Nantahala, Calderwood, and Chilhowee Lakes.

5215. 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.--October 1945 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--15 years, 190 cfs.

Extremes.--Maximum discharge during year, 1,860 cfs Nov. 24 (gage height, 6.68 ft); minimum, 8.5 cfs Sept. 27 (gage height, 0.57 ft); minimum daily, 18 cfs Sept. 25-27.
1945-60: Maximum discharge, 9,640 cfs Jan. 29, 1957 (gage height, 19.3 ft, from floodmark), from rating curve extended above 4,800 cfs on basis of contracted-opening measurement of peak flow; minimum, 3.2 cfs Sept. 8, 1955; minimum gage height, 0.45 ft July 2, 3, 1951; minimum daily discharge, 9.0 cfs Sept. 5, 1955.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Diurnal fluctuation at low flow caused by mill above station.

Revisions (water years).--WSP 1306: 1946(M), 1948-50(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 24				Nov. 25 to Sept. 30			
0.8	29	3.0	468	0.7	18	3.0	465
1.0	55	4.0	780	1.0	55	4.0	735
1.5	126	5.0	1,150	2.0	242	5.0	1,130
2.0	220						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	87	264	216	*157	260	752	130	90	149	32	46
2	63	79	*224	192	148	*235	540	122	76	478	*30	38
3	43	69	218	297	140	231	478	112	67	214	29	33
4	36	61	202	385	135	222	810	103	64	176	32	30
5	*30	*58	188	*319	271	190	1,090	97	62	128	40	27
6	29	82	202	286	615	176	*685	94	58	*90	40	26
7	117	98	238	286	440	160	528	92	50	69	83	*24
8	105	83	208	341	341	153	407	178	44	58	268	26
9	103	76	200	352	286	142	341	218	44	52	260	27
10	84	69	212	363	a270	151	286	186	40	64	115	27
11	72	65	216	440	a260	139	249	*164	38	76	112	52
12	79	59	470	407	a250	137	216	149	38	67	85	48
13	66	56	850	374	a240	130	198	140	48	54	72	49
14	310	54	565	330	a230	139	178	128	43	43	79	36
15	360	54	407	319	a210	188	167	115	50	38	79	32
16	168	56	319	286	a200	275	158	104	*43	37	64	27
17	110	100	262	255	a200	297	149	99	52	32	50	25
18	86	164	231	240	a350	407	149	94	40	33	44	26
19	70	129	490	214	a500	352	140	85	33	38	38	27
20	59	104	452	184	a400	297	128	77	31	81	33	26
21	52	91	352	167	a350	260	121	76	37	54	36	24
22	48	80	286	155	a320	233	126	70	85	42	65	20
23	50	75	233	148	a300	231	117	64	95	43	77	22
24	94	960	206	144	297	341	112	58	97	50	55	20
25	186	1,050	192	133	490	490	108	76	162	50	40	18
26	162	452	180	121	565	429	110	69	95	30	34	18
27	194	311	173	122	398	590	153	175	64	67	32	18
28	208	1,090	192	157	341	890	160	224	50	104	29	22
29	146	565	297	157	308	a1,000	137	169	48	50	42	22
30	117	352	297	153	-------	a1,050	126	144	54	40	65	24
31	98	-------	264	157	-------	a1,100	-------	112	-------	36	43	-------
Total	3,446	6,629	9,090	7,700	9,010	10,895	8,919	3,724	1,798	2,543	2,103	860
Mean	111	221	293	248	311	351	297	120	59.9	82.0	67.8	28.7
Cfsm	0.799	1.59	2.11	1.78	2.24	2.53	2.14	0.863	0.431	0.590	0.488	0.206
In.	0.92	1.77	2.43	2.06	2.41	2.92	2.39	1.00	0.48	0.68	0.56	0.23

Calendar year 1959: Max 1,780 Min 14 Mean 168 Cfsm 1.21 In. 16.40
Water year 1959-60: Max 1,100 Min 18 Mean 182 Cfsm 1.31 In. 17.85

Peak discharge (base, 1,300 cfs).--Nov. 24 (9:30 p.m.) 1,860 cfs (6.68 ft); Nov. 28 (8 a.m.) 1,330 cfs (5.51 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

5240. 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 1960. Monthly discharge only for some periods, published in WSP 1306.

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 datum 1.0 ft lower.

Average discharge.--40 years, 698 cfs.

Extremes.--Maximum discharge during year, 6,170 cfs Nov. 25, 28; maximum gage height, 9.71 ft Nov. 25; minimum discharge, 66 cfs Sept. 27-28 (gage height, 1.35 ft).
1920-60: Maximum discharge, 31,000 cfs Jan. 30, 1957 (gage height, 24.40 ft), from rating curve extended above 13,000 cfs on basis of contracted-opening measurement of peak flow; minimum, 36 cfs Nov. 30, 1955; minimum gage height, 0.96 ft Feb. 10, 1934.
Revisions.--The maximum gage height and discharge for the water year 1927 have been revised to 20,400 cfs Dec. 22, 1926 (gage height, 20.1 ft, from graph based on gage readings), superseding figures published in WSP 643 and 1306.

Remarks.--Records good.

Revisions (water years).--WSP 823: Drainage area. WSP 1306: 1921-23(M), 1929-31(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Mar. 6)

1.3	57	3.0	575
1.6	115	5.0	1,775
2.0	200	7.0	3,350
2.5	350	9.0	5,400

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	422	378	1,260	870	*675	1,080	3,150	434	297	308	141	133
2	382	332	1,020	758	620	930	2,120	418	255	1,480	*127	129
3	240	294	*930	1,020	575	960	1,780	374	225	1,140	129	123
4	178	264	870	1,520	535	870	2,630	343	210	735	133	113
5	*143	*243	812	1,350	732	785	3,950	318	202	595	125	101
6	127	285	812	1,170	2,050	660	*2,970	300	180	398	143	93
7	830	362	990	1,170	1,980	610	2,050	291	173	*303	137	87
8	900	378	900	*1,420	1,480	605	1,610	472	161	248	266	*85
9	625	329	840	1,520	1,230	595	1,320	758	149	215	1,140	101
10	560	300	840	1,450	1,050	565	1,080	702	141	235	540	135
11	414	273	870	1,550	1,050	545	930	600	135	358	448	336
12	426	252	1,230	1,580	990	555	812	*535	139	231	346	303
13	374	237	2,970	1,450	900	510	730	475	*149	210	267	198
14	1,500	218	2,400	1,350	930	*525	650	430	159	205	225	171
15	2,050	212	1,710	1,290	785	675	605	386	163	180	243	145
16	1,170	210	1,290	1,230	758	1,020	560	343	169	163	237	125
17	702	261	1,050	1,080	758	1,380	520	315	169	155	200	111
18	505	462	930	990	1,450	1,780	510	297	180	143	173	105
19	378	535	1,910	900	1,980	1,610	475	279	151	171	153	97
20	306	439	2,050	785	1,580	1,290	430	261	131	210	141	95
21	261	370	1,580	675	1,350	1,110	402	243	127	215	129	93
22	228	322	1,260	610	1,230	960	398	231	147	185	149	91
23	210	291	1,020	540	1,140	900	386	218	328	157	205	83
24	270	2,140	900	485	1,110	1,110	358	210	332	145	208	75
25	530	5,180	812	485	1,260	1,710	340	237	434	157	167	77
26	675	2,190	758	452	2,330	1,640	332	246	402	147	143	70
27	650	1,420	730	434	1,980	1,910	406	273	270	147	125	68
28	812	4,960	785	500	1,450	2,630	555	675	208	175	115	73
29	675	3,350	1,230	605	1,260	3,850	480	570	182	228	113	75
30	545	1,780	1,200	565	---- ---	4,350	414	457	173	169	115	81
31	439	-------	1,080	565	--------	4,750	--------	362	--------	145	137	--------
Total	17,507	28,267	37,039	30,369	35,218	42,470	32,953	12,053	6,141	9,699	6,920	3,572
Mean	565	942	1,195	980	1,214	1,370	1,098	389	205	313	223	119
Cfsm	1.07	1.78	2.26	1.86	2.30	2.59	2.08	0.737	0.388	0.593	0.422	0.225
In.	1.23	1.99	2.61	2.14	2.48	2.99	2.32	0.85	0.43	0.68	0.49	0.25

Calendar year 1959: Max 7,160 Min 52 Mean 678 Cfsm 1.28 In. 17.41
Water year 1959-60: Max 5,180 Min 68 Mean 716 Cfsm 1.36 In. 18.46

Peak discharge (base, 5,000 cfs).--Nov. 25 (3 a.m.) 6,170 cfs (9.71 ft); Nov. 28 (2 p.m.) 6,170 cfs (9.67 ft).

* Discharge measurement made on this day.

5260. Copper Creek near Gate City, Va.

Location.--Lat 36°40'26", long 82°33'57", on right bank at upstream side of highway bridge, 0.2 mile upstream from Plank Camp Creek, 1.1 miles downstream from Obeys Creek, and 2.6 miles northeast of Gate City, Scott County.

Drainage area.--106 sq mi.

Records available.--September 1947 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 1,290 ft (from topographic map). Prior to Aug. 30, 1953, wire-weight gage on highway bridge at same site and datum.

Average discharge.--13 years, 144 cfs.

Extremes.--Maximum discharge during year, 2,060 cfs Nov. 28 (gage height, 8.33 ft); minimum, 22 cfs Oct. 6; minimum gage height, 2.27 ft Sept. 26.
1947-60: Maximum discharge, 6,800 cfs Jan. 30, 1950 (gage height, 13.0 ft, from graph based on gage readings), from rating curve extended above 3,200 cfs by logarithmic plotting; minimum, 3.6 cfs Jan. 15, 1958 (gage height, 1.98 ft), result of freezeup.

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

Revisions (water years).--WSP 1143: 1948. WSP 1306: 1948-50(M). WSP 1556: 1951(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 28				Nov. 29 to Sept. 30			
2.3	24	4.0	332	2.2	20	4.0	342
2.5	44	6.0	810	2.5	47	6.0	810
3.0	120	8.0	1,880	3.0	130		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	43	*210	162	120	*178	a500	76	44	128	33	35
2	39	41	182	150	*114	166	a350	73	43	267	30	36
3	28	*39	208	217	105	176	a300	66	42	122	*31	35
4	25	37	184	*258	97	164	a400	65	41	79	41	34
5	25	36	156	206	188	142	a540	60	43	*63	40	33
6	*24	45	158	192	596	130	*a350	59	42	51	35	*32
7	188	86	206	225	386	124	320	60	39	44	42	32
8	166	67	188	331	276	116	261	78	38	41	43	32
9	94	53	170	331	236	134	223	87	38	40	42	31
10	72	47	166	287	206	128	194	74	37	73	40	31
11	53	42	162	274	254	118	174	*70	38	138	48	38
12	42	41	309	245	228	118	160	68	40	92	51	40
13	43	38	584	254	194	120	150	66	38	62	45	40
14	209	37	353	263	196	a115	138	63	*38	50	43	33
15	266	36	250	261	170	a150	132	60	38	44	39	32
16	106	36	198	258	158	a190	124	57	37	41	36	31
17	67	49	168	219	258	a250	116	56	40	39	34	31
18	53	77	160	204	507	a310	114	54	40	39	33	31
19	44	67	668	182	386	a300	105	52	36	47	46	31
20	39	54	463	156	298	a250	97	50	34	62	56	30
21	37	48	331	140	263	a210	96	48	34	42	45	28
22	35	44	254	128	225	a190	94	47	46	38	79	27
23	36	41	204	118	202	a180	89	45	70	47	138	27
24	56	608	178	108	194	a250	86	44	79	62	79	27
25	71	768	158	105	256	a330	82	48	55	43	52	26
26	63	262	142	97	364	a310	81	50	48	38	42	26
27	64	231	132	97	267	a300	87	63	43	36	39	26
28	68	1,580	156	106	236	a320	84	76	40	35	38	27
29	61	599	276	103	210	a350	76	50	38	34	38	30
30	53	309	214	99	-------	a450	71	52	37	33	36	30
31	48	-------	186	97	-------	a540	-------	48	---- ---	32	36	-------
Total	2,224	5,461	7,374	5,873	7,190	6,809	5,594	1,875	1,276	1,962	1,430	942
Mean	71.7	182	238	189	248	220	186	60.5	42.5	63.3	46.1	31.4
Cfsm	0.676	1.72	2.25	1.78	2.34	2.08	1.75	0.571	0.401	0.597	0.435	0.296
In.	0.78	1.92	2.59	2.06	2.52	2.39	1.96	0.66	0.45	0.69	0.50	0.33

Calendar year 1959: Max 1,880 Min 18 Mean 135 Cfsm 1.27 In. 17.35
Water year 1959-60: Max 1,580 Min 24 Mean 131 Cfsm 1.24 In. 16.85

Peak discharge (base, 1,200 cfs).--Nov. 25 (2 a.m.) 1,220 cfs (6.92 ft); Nov. 28 (4 p.m.) 2,060 cfs (8.33 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 nearby stations.

5270. Clinch River at Speers Ferry, Va.

Location.--Lat 36°38'55", long 82°45'02", on right bank 100 ft downstream from highway 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.--1,106 sq mi.

Records available.--October 1930 to September 1960. 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 1926. Prior to Nov. 22, 1926, staff gage at site 400 ft upstream at datum 1.50 ft higher. Nov. 23, 1926, to Nov. 6, 1931, chain gage at present site and datum.

Average discharge.--40 years, 1,578 cfs.

Extremes.--Maximum discharge during year, 14,600 cfs Nov. 28 (gage height, 15.04 ft); minimum, 148 cfs Sept. 28; minimum gage height, 1.45 ft Oct. 1.
1930-60: Maximum discharge, 45,300 cfs Jan. 30, 1957 (gage height, 28.30 ft); 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.

Revisions (water years).--WSP 803: Drainage area. WSP 1270: 1925(M), 1927, 1928-31(M), 1933, 1935(M). WSP 1208: 1928(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30			
1.7	205	4.0	1,400	1.5	150	4.0	1,320
2.0	295	6.0	3,200	2.0	270	6.0	3,200
2.5	455	10.0	7,760	3.0	680	10.0	7,760
3.0	680	14.0	13,000				

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	211	794	*3,000	2,200	1,320	*2,420	6,560	832	633	953	268	410
2	526	669	2,420	1,920	*1,400	2,150	4,450	815	538	2,250	252	402
3	502	*580	2,420	2,510	1,320	2,100	3,700	771	474	2,600	*242	310
4	399	518	2,280	*3,400	1,240	2,020	5,480	715	430	1,820	242	273
5	316	476	2,100	3,300	1,760	1,800	6,800	665	398	*1,320	262	242
6	*265	658	1,970	2,800	5,000	1,560	*6,560	628	394	937	248	*220
7	630	812	2,240	2,700	5,240	1,560	4,670	606	356	685	352	205
8	1,720	818	2,200	3,000	3,800	1,480	3,600	760	314	542	332	188
9	1,680	764	2,020	3,400	3,000	1,520	2,900	1,080	304	446	466	178
10	1,280	647	1,880	3,200	2,510	1,520	2,400	1,320	285	960	1,440	261
11	1,000	562	1,880	3,200	2,800	1,480	2,050	*1,240	270	3,000	1,120	1,090
12	728	514	2,670	3,400	2,700	1,440	1,820	1,080	276	1,910	979	1,520
13	692	472	5,480	3,300	2,420	1,400	1,640	958	268	1,200	705	815
14	1,440	441	5,480	3,300	2,330	1,440	1,520	870	*265	793	546	530
15	3,400	416	3,800	3,200	2,060	1,680	1,400	788	291	597	466	394
16	2,700	410	2,900	3,200	1,840	2,200	1,280	730	310	474	414	324
17	1,680	518	2,330	2,800	1,800	3,300	1,200	665	321	402	402	282
18	1,160	a900	2,100	2,510	2,760	5,000	1,120	610	310	406	349	258
19	818	a1,100	5,020	2,240	4,340	4,450	1,040	570	288	406	304	238
20	625	a900	5,600	2,020	3,900	3,400	951	530	270	390	418	220
21	514	a800	4,120	1,720	3,100	2,900	888	494	245	426	438	202
22	444	a700	3,100	1,560	2,800	2,600	854	458	262	378	734	190
23	410	a600	2,510	1,360	2,510	2,510	815	430	514	731	1,560	182
24	754	a5,000	2,200	1,200	2,330	2,800	776	410	725	646	951	178
25	1,200	a9,000	1,970	1,120	2,330	3,600	740	442	798	482	651	164
26	1,280	a4,500	1,880	1,120	3,800	3,800	710	494	804	349	486	154
27	1,400	a3,000	1,800	1,080	4,450	3,900	782	570	700	314	374	150
28	1,400	a12,000	1,880	1,160	3,400	5,360	837	735	514	304	318	150
29	1,480	a6,000	2,700	1,240	2,800	7,400	918	1,080	410	282	442	154
30	1,240	a3,500	2,900	1,280	-------	8,480	837	944	352	324	346	162
31	965	-------	2,510	1,240	-------	8,600	-------	755	-------	314	285	-------
Total	32,659	58,069	87,360	71,680	81,060	95,870	69,298	23,045	12,319	26,641	16,386	10,046
Mean	1,060	1,936	2,818	2,312	2,795	3,093	2,310	743	411	859	529	335
Cfsm	0.941	1.72	2.50	2.05	2.48	2.75	2.05	0.660	0.365	0.763	0.470	0.298
In.	1.09	1.92	2.89	2.37	2.68	3.17	2.29	0.76	0.41	0.88	0.54	0.33

Calendar year 1959: Max 15,000 Min 120 Mean 1,529 Cfsm 1.36 In. 18.44
Water year 1959-60: Max 12,000 Min 150 Mean 1,597 Cfsm 1.42 In. 19.33

Peak discharge (base, 10,000 cfs).--Nov. 25 (time unknown) 13,300 cfs (14.20 ft); Nov. 28 (time unknown) 14,600 cfs (15.04 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 nearby stations.

5280. Clinch River above Tazewell, Tenn.

Location.--Lat 36°25'20", 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 153.8.

Drainage area.--1,474 sq mi.

Records available.--October 1918 to September 1960. Published as "near Lone Mountain" October 1918 to September 1927 and as "near Tazewell" August 1927 to December 1936. Records published for sites "near Lone Mountain" and "near Tazewell" August and September 1927; for sites "near Tazewell" and "above Tazewell" July 1935 to December 1936. Prior to April 1919 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder at present site and datum since July 29, 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 28.3 miles downstream at datum 102.7 ft lower. Aug. 8, 1927, to Dec. 31, 1936, water-stage recorder at site 8.0 miles downstream at datum 47.2 ft lower.

Average discharge.--42 years, 2,078 cfs.

Extremes.--Maximum discharge during year, 16,100 cfs Nov. 29 (gage height, 10.62 ft); minimum, 205 cfs Oct. 2 (gage height, 0.66 ft).
1918-60: Maximum discharge, 51,100 cfs Jan. 31, 1957 (gage height, 21.00 ft); minimum observed, 108 cfs Sept. 11, 1925.
Maximum stage known, about 24 ft in 1862, present site and datum, from information by local resident.

Remarks.--Records good.

Revisions (water years).--WSP 1336: 1928.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Oct. 15				Oct. 16 to Sept. 30			
0.6	182	2.0	1,030	0.7	214	3.0	1,990
1.0	350	3.0	1,990	1.0	340	5.0	4,800
1.5	650	4.0	3,270	1.5	620	8.0	10,200
				2.0	1,000	11.0	17,100

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	220	968	4,520	2,760	1,370	2,910	8,770	1,030	816	738	*423	*396
2	209	832	3,220	2,340	1,440	2,520	6,470	984	*697	3,580	370	445
3	524	725	*5,020	3,090	*1,440	2,850	4,940	944	608	3,280	345	484
4	582	648	2,850	4,400	1,370	2,630	*6,010	880	554	2,720	331	406
5	*466	*602	2,540	4,430	1,520	2,320	7,600	816	512	*1,790	326	355
6	383	602	2,300	3,820	4,540	1,980	8,180	*768	484	1,380	355	326
7	538	760	2,520	*5,470	6,920	*1,760	6,790	746	467	1,050	355	299
8	854	864	2,640	4,010	5,570	1,740	5,040	792	440	816	506	277
9	1,800	856	2,400	4,430	4,100	1,720	3,900	944	412	662	518	260
10	1,630	808	2,140	4,400	3,340	1,770	3,160	1,220	380	2,720	642	244
11	1,240	711	2,020	4,070	3,480	1,730	2,630	1,330	370	6,160	1,420	502
12	1,040	641	2,720	4,040	3,500	1,640	2,280	1,220	380	4,430	1,190	1,360
13	822	596	5,480	4,100	3,190	1,600	2,030	1,110	396	2,330	1,020	*1,300
14	1,160	560	6,900	4,210	2,880	1,610	1,840	1,010	390	1,530	800	840
15	2,480	548	5,600	4,100	2,580	1,890	1,670	936	401	1,120	711	602
16	3,540	542	3,920	4,020	2,290	3,200	1,540	864	390	856	578	484
17	2,300	746	3,000	3,740	2,240	4,800	1,430	808	440	697	518	428
18	1,470	888	2,510	3,240	3,480	6,720	1,350	739	440	614	500	375
19	1,060	864	5,790	2,820	6,110	6,630	1,250	690	412	584	472	345
20	824	984	8,110	2,440	5,800	5,140	1,170	648	370	590	434	322
21	676	992	6,360	2,070	4,530	4,010	1,120	614	440	548	512	294
22	578	872	4,540	1,810	3,770	3,420	1,070	566	484	554	697	277
23	518	784	3,400	1,610	3,240	3,260	1,000	536	1,640	518	1,440	260
24	548	1,990	2,730	1,450	2,860	3,330	952	512	1,490	936	1,580	244
25	1,040	6,250	2,330	1,300	2,760	3,940	912	518	1,280	800	1,040	241
26	1,340	8,440	2,080	1,220	3,310	4,610	864	530	1,140	614	760	225
27	1,360	5,680	1,950	1,240	5,180	4,640	880	883	1,000	500	602	222
28	1,430	10,000	2,470	1,310	4,610	5,410	944	832	840	450	500	222
29	1,410	15,100	3,480	1,330	3,520	7,240	960	936	689	423	434	241
30	1,380	8,880	3,760	1,410	-------	9,040	1,000	1,160	566	406	512	233
31	1,150	-------	3,310	1,400	-------	10,300	-------	984	-------	406	456	-------
Total	34,532	73,733	110,590	90,080	100,940	116,360	87,752	26,340	18,888	43,783	20,347	12,509
Mean	1,114	2,458	3,567	2,906	3,481	3,754	2,925	850	630	1,412	656	417
Cfsm	0.756	1.67	2.42	1.97	2.36	2.55	1.98	0.577	0.427	0.958	0.445	0.283
In.	0.87	1.86	2.79	2.27	2.55	2.94	2.21	0.66	0.48	1.10	0.51	0.32

Calendar year 1959: Max 16,500 Min 146 Mean 1,884 Cfsm 1.28 In. 17.34
Water year 1959-60: Max 15,100 Min 209 Mean 2,011 Cfsm 1.36 In. 18.56

Peak discharge (base, 14,000 cfs).--Nov. 29 (9 a.m.) 16,100 cfs (10.62 ft).

* Discharge measurement made on this day.

5315. 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.--October 1931 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--29 years, 508 cfs.

Extremes.--Maximum discharge during year, 9,220 cfs Nov. 28 (gage height, 16.47 ft); minimum, 51 cfs Oct. 6 (gage height, 1.19 ft).
1931-60: Maximum discharge, 30,000 cfs Jan. 8, 1946 (gage height, 30.8 ft), from rating curve extended above 20,000 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. WSP 1436: 1946(M), 1948(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Mar. 7)

Oct. 1 to Nov. 28				Nov. 29 to Sept. 30			
1.2	52	6.0	2,220	1.3	66	3.0	555
1.6	112	10.0	4,820	1.5	96	6.0	2,320
2.0	195	14.0	7,470	2.0	190	8.0	3,520
3.0	565			2.5	337		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90	210	*830	748	337	*599	1,680	195	132	850	142	221
2	123	182	692	621	*322	525	1,210	190	120	1,540	150	229
3	88	158	940	1,560	310	638	1,060	171	114	885	*122	152
4	67	*144	830	*1,780	298	588	2,020	166	107	692	107	133
5	56	133	692	1,270	441	460	1,960	162	101	*515	102	114
6	*55	128	632	1,000	2,260	390	*1,480	156	93	390	98	*99
7	196	132	720	940	1,840	350	1,150	154	86	268	99	91
8	419	123	582	1,060	1,240	370	912	190	80	206	125	83
9	269	117	510	1,030	940	406	748	238	76	166	643	96
10	252	110	475	940	802	414	626	244	74	1,390	307	125
11	177	107	475	970	1,480	419	525	*235	72	2,920	394	1,510
12	148	102	1,210	1,030	1,360	390	465	217	73	1,600	354	940
13	137	99	2,650	1,180	1,060	360	414	206	82	912	259	485
14	357	98	1,660	1,420	912	370	370	190	*83	594	204	319
15	750	109	1,090	1,480	665	480	344	176	104	406	241	235
16	435	142	802	1,600	588	830	325	160	142	322	198	183
17	280	370	638	1,210	560	1,270	310	152	106	268	168	158
18	201	439	621	970	1,060	2,020	301	144	104	256	142	148
19	153	367	2,380	802	1,600	1,420	277	139	90	247	125	135
20	128	294	2,080	621	1,150	1,060	256	132	74	206	279	123
21	110	237	1,360	515	970	858	247	125	82	178	334	114
22	99	201	1,000	442	858	775	244	122	88	152	1,030	104
23	94	174	748	378	720	775	232	117	612	146	1,240	96
24	166	1,350	632	344	648	1,000	212	110	495	363	748	90
25	443	2,480	555	322	665	1,300	204	114	588	232	446	85
26	388	1,020	525	304	1,300	1,180	198	137	455	171	316	80
27	451	923	555	301	1,210	1,480	201	133	298	176	241	76
28	565	6,980	1,150	340	912	2,140	214	195	209	206	195	76
29	407	2,800	2,380	354	748	3,100	193	195	166	144	166	136
30	314	1,270	1,480	344	-------	3,340	178	188	150	130	148	141
31	246	-------	1,030	340	-------	2,920	-------	156	-------	125	130	-------
Total	7,664	20,999	31,924	26,216	27,256	32,227	18,556	5,209	5,056	16,556	9,253	6,577
Mean	247	700	1,030	846	940	1,040	619	168	169	534	298	219
Cfsm	0.774	2.19	3.23	2.65	2.95	3.26	1.94	0.527	0.530	1.67	0.934	0.687
In.	0.89	2.45	3.72	3.06	3.18	3.76	2.16	0.61	0.59	1.93	1.08	0.77

Calendar year 1959: Max 8,520 Min 37 Mean 506 Cfsm 1.59 In. 21.52
Water year 1959-60: Max 6,980 Min 55 Mean 567 Cfsm 1.78 In. 24.20

Peak discharge (base, 5,000 cfs).--Nov. 28 (2:30 p.m.) 9,220 cfs (16.47 ft).

* Discharge measurement made on this day.

5320. Powell River near Arthur, Tenn.

Location.--Lat 36°32'30", long 83°37'49", on left bank 500 ft upstream 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 1960. Gage-height records collected at same site December 1892 to August 1893, September 1904 to March 1925 are contained in reports of U. S. Weather Bureau (published as "near Tazewell").

Gage.--Water-stage recorder. Datum of gage is 1,045.84 ft above mean sea level (Tennessee River Survey datum). Prior to July 23, 1927, chain gage at same site and datum.

Average discharge.--41 years, 1,133 cfs.

Extremes.--Maximum discharge during year, 10,800 cfs Dec. 29 (gage height, 13.05 ft); minimum, 120 cfs Oct. 1 (gage height, -0.02 ft).
1919-60: Maximum discharge, 33,000 cfs Jan. 9, 1946 (gage height, 27.15 ft, from floodmark), from rating curve extended above 23,000 cfs on basis of slope-area measurement of peak flow; minimum, 47 cfs Jan. 6, 1940, result of freezeup; minimum gage height, -0.38 ft Sept. 8, 9, 1957; minimum daily discharge, 60 cfs Sept. 23, 1955.
Maximum stage known, 27.2 ft Jan. 29, 1918 (discharge, 33,000 cfs).

Remarks.--Records good.

Revisions (water years).--WSP 1336: 1920, 1921(M), 1923.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 24)

0.3	177	4.0	2,210
.5	244	8.0	5,700
1.0	432	13.0	10,700
2.0	910		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	470	2,320	1,790	700	1,300	4,450	478	322	814	*311	*276
2	136	393	1,650	1,430	680	1,140	2,820	440	*286	2,960	297	248
3	140	339	*1,700	1,710	*641	1,540	2,150	432	268	2,990	308	330
4	196	306	1,760	2,650	610	1,540	*2,240	403	248	1,710	297	297
5	*161	*281	1,540	2,940	650	1,360	3,270	398	237	*1,220	272	251
6	138	256	1,370	2,210	1,430	1,140	3,160	*367	224	958	251	227
7	174	239	1,430	*2,010	3,220	*1,020	2,540	412	213	730	251	210
8	383	222	1,410	2,350	2,700	964	2,030	508	203	582	286	197
9	576	219	1,170	2,460	1,970	982	1,670	436	200	491	315	187
10	460	210	1,030	2,270	1,740	1,010	1,410	457	190	1,670	619	225
11	420	202	964	2,040	2,820	964	1,210	466	197	*5,500	600	1,210
12	384	193	1,640	1,900	2,850	976	1,070	453	345	5,420	556	1,780
13	298	188	3,510	1,960	2,420	899	964	428	311	2,960	582	1,360
14	344	182	4,370	2,220	1,980	882	877	407	254	1,760	474	760
15	614	196	2,830	2,530	1,650	994	806	390	254	1,220	474	538
16	1,150	222	1,960	2,660	1,350	2,180	745	367	237	910	470	419
17	769	428	1,530	2,580	1,280	3,250	705	348	431	735	424	367
18	500	733	1,410	2,100	2,080	4,190	670	330	521	628	360	326
19	366	781	4,020	1,760	3,320	4,300	628	315	337	578	330	293
20	295	649	5,120	1,470	3,310	3,050	596	297	276	556	297	279
21	246	520	3,990	1,220	2,440	2,230	564	290	248	491	272	254
22	216	434	2,650	1,070	2,040	1,870	551	279	319	440	492	237
23	202	380	1,930	946	1,760	1,720	530	262	2,190	415	952	224
24	236	752	1,530	844	1,540	1,740	513	258	2,130	403	1,390	210
25	434	2,610	1,280	785	1,480	1,970	483	276	1,690	534	976	197
26	793	3,630	1,130	735	1,600	2,250	466	254	1,260	521	646	190
27	979	2,260	1,030	710	1,980	2,100	474	297	1,010	407	491	187
28	1,030	6,090	1,550	730	1,900	2,380	466	363	715	371	394	187
29	992	9,690	2,970	775	1,540	3,160	470	334	578	371	345	213
30	763	5,170	3,750	765	-------	4,670	449	403	491	367	308	286
31	576	-------	2,490	725	-------	5,260	-------	360	-------	330	286	-------
Total	14,093	38,245	67,034	52,345	53,681	63,031	38,977	11,508	16,185	39,042	14,326	11,965
Mean	455	1,275	2,162	1,689	1,851	2,033	1,299	371	540	1,259	462	399
Cfsm	0.664	1.86	3.16	2.47	2.70	2.97	1.90	0.542	0.788	1.84	0.674	0.582
In.	0.77	2.08	3.64	2.84	2.91	3.42	2.12	0.62	0.88	2.12	0.78	0.65

Calendar year 1959: Max 11,900 Min 93 Mean 1,015 Cfsm 1.48 In. 20.13
Water year 1959-60: Max 9,690 Min 122 Mean 1,149 Cfsm 1.68 In. 22.83

Peak discharge (base, 9,000 cfs).--Dec. 29 (2 p.m.) 10,800 cfs (13.05 ft).

* Discharge measurement made on this day.

5330. Clinch River below Norris Dam, Tenn.

Location.--Lat 36°12'56", long 84°04'58", 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 1903 to September 1960. Published as "at Clinton" October 1903 to September 1927, and "near Coal Creek" May 1927 to September 1937. Records published for sites "at Clinton" and "near Coal Creek" May to September 1927; for sites "near Coal Creek" and "below Norris Dam" April 1936 to September 1937. Gage-height records collected in vicinity of Clinton from 1884 to 1948 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, 1930, 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.--57 years, 4,320 cfs (unadjusted).

Extremes.--Maximum discharge during year, 9,160 cfs Apr. 19 (gage height, 5.84 ft); minimum, 65 cfs Feb. 14 (gage height, 1.25 ft); minimum daily, 68 cfs Feb. 5, 20.

1903-60: 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); minimum daily, 1.3 cfs May 17, 18, 24-26, May 29 to June 4, 1936.

Flood of Mar. 11, 1826, reached a stage of 43.5 ft (discharge, 130,000 cfs); floods of Feb. 24, 1862, and May. 31, 1886, reached a stage of 41.3 ft (discharge, 117,000 cfs, revised); at railroad bridge at Clinton, from reports by Tennessee Valley Authority.

Remarks.--Records good. Flow completely regulated by Norris Lake (see p. 307).

Revisions (water years).--WSP 1306: 1936-40 (adjusted monthly runoff). WSP 1336: 1917-18, 1928.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.2	52	2.0	840
1.3	85	3.0	2,360
1.4	150	4.0	4,200
1.6	350	6.0	9,640

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,350	5,210	76	7,190	324	7,480	80	2,630	4,840	3,260	7,310	7,030
2	4,950	5,140	798	7,160	1,830	5,620	80	3,230	5,710	5,640	7,050	7,160
3	2,440	5,020	2,390	7,190	1,790	1,140	85	2,010	5,300	4,540	6,960	5,450
4	2,240	5,160	6,580	*7,220	2,250	2,610	85	2,330	5,160	3,270	6,990	5,540
5	*5,360	*5,080	7,100	7,270	68	4,200	85	1,800	2,640	*3,880	*7,020	5,410
6	5,890	5,300	7,100	7,220	2,160	3,110	2,150	80	5,420	6,120	7,020	6,250
7	4,510	4,240	7,100	7,220	1,450	2,740	3,470	500	*4,440	3,460	4,380	5,620
8	3,540	1,320	7,160	6,750	5,190	1,520	950	76	4,520	5,460	7,130	5,640
9	1,440	4,190	7,190	5,520	4,700	1,800	1,080	1,160	4,660	3,930	7,300	*5,630
10	76	4,520	7,240	5,680	3,040	2,140	879	3,440	4,700	4,460	3,020	4,200
11	504	4,930	7,190	7,220	2,480	908	5,290	*2,520	4,700	5,980	2,110	4,370
12	3,940	4,880	90	7,520	1,830	3,560	5,000	2,360	2,240	3,780	3,580	3,960
13	1,110	5,600	76	7,830	2,650	3,500	4,680	2,780	5,480	3,620	4,800	4,190
14	1,050	6,030	76	7,890	78	4,820	3,040	90	5,000	3,900	3,610	2,990
15	348	6,090	3,360	7,890	4,780	1,720	4,390	90	5,410	5,100	5,240	2,460
16	1,210	5,740	4,320	7,890	7,250	*5,110	275	3,150	5,230	4,980	6,630	5,560
17	4,850	6,600	6,820	7,920	4,340	2,450	72	3,110	4,230	3,020	5,020	2,450
18	6,670	4,940	*7,240	7,920	460	85	6,240	2,650	1,040	3,830	4,760	2,090
19	6,400	6,320	7,160	7,920	72	85	5,960	1,440	2,070	4,810	6,630	4,490
20	7,800	6,360	7,050	7,920	68	368	*5,790	2,380	5,680	5,540	6,100	4,720
21	8,150	6,280	6,990	7,920	5,550	3,750	4,900	2,150	6,050	5,490	3,560	4,510
22	8,090	6,280	6,960	7,890	7,360	1,130	6,300	1,330	6,220	5,790	4,760	4,420
23	7,380	6,000	6,960	7,860	7,380	3,480	2,680	6,020	5,950	*134	6,200	5,120
24	7,380	5,730	6,960	7,860	6,470	4,100	3,150	5,960	5,830	134	4,980	4,460
25	7,440	3,540	6,960	7,830	3,180	5,210	5,020	4,060	470	134	3,820	3,750
26	7,270	3,340	6,990	7,780	3,340	1,310	2,740	2,980	76	6,260	5,990	3,610
27	6,180	3,440	7,020	7,690	4,890	423	3,030	2,970	76	6,800	6,550	3,540
28	6,060	76	7,100	5,880	4,380	1,750	3,230	2,570	5,100	6,820	6,550	3,920
29	6,190	76	7,160	5,120	3,690	2,500	2,920	1,830	3,880	6,850	6,570	4,020
30	7,510	76	7,190	2,010	---	2,320	243	4,480	2,300	5,210	7,050	3,090
31	3,240	---	7,190	108	---	85	---	4,700	---	5,960	6,620	---
Total	143,568	137,508	173,596	214,288	93,050	75,024	83,694	77,476	122,422	139,162	175,310	135,650
Mean	4,631	4,584	5,600	6,913	3,209	2,420	2,790	2,499	4,081	4,489	5,655	4,522

	Observed			Adjusted†		
Calendar year 1959:	Max 8,150	Min 54	Mean 2,895	Mean 3,641	Cfsm 1.25	In. 16.97
Water year 1959-60:	Max 8,150	Min 68	Mean 4,292	Mean 4,061	Cfsm 1.39	In. 18.97

* Discharge measurement made on this day.
† Adjusted for change in contents in Norris Lake.

5350. Bullrun Creek near Halls Crossroads, Tenn.

Location.--Lat 36°06'52", long 83°59'16", on left bank on downstream side of bridge on U. S. Highway 441, 3.1 miles downstream from Smith Branch and 4.0 miles northwest of Halls Crossroads, Knox County.

Drainage area.--68.5 sq mi.

Records available.--October 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 854.91 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 1,380 cfs Dec. 19 (gage height, 7.92 ft); minimum, 6.0 cfs Oct. 1; minimum gage height, 1.37 ft Oct. 6.
1957-60: Maximum discharge, 3,360 cfs Nov. 18, 1957 (gage height, 10.26 ft); minimum, that of Oct. 1, 1959; minimum gage height, 1.37 ft Sept. 5, Oct. 6, 1959.

Remarks.--Records good.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-5, Nov. 24)

1.3	5.0	2.5	76
1.4	7.0	3.0	145
1.5	9.0	5.0	461
1.7	17	7.0	950
2.0	36	8.0	1,430

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.6	13	68	77	*63	73	200	118	18	31	9.7	18
2	6.6	12	*96	88	58	126	157	64	17	24	9.0	13
3	6.6	11	112	236	55	*516	175	53	17	20	8.6	12
4	6.4	10	76	*165	54	289	204	46	16	23	9.0	11
5	*6.4	*11	61	121	101	204	*186	42	15	*43	*11	11
6	6.6	12	104	114	170	158	158	40	14	17	11	10
7	24	11	126	230	126	139	138	43	*13	13	132	9.7
8	16	10	80	280	102	115	112	51	12	12	69	10
9	11	9.4	64	260	93	115	96	40	14	11	120	*9.4
10	16	9.0	55	216	259	102	82	36	13	121	292	10
11	9.0	9.0	50	192	281	100	73	*35	12	342	343	278
12	*8.4	9.0	440	151	156	92	68	34	14	111	83	65
13	8.4	8.8	285	150	138	91	63	32	12	63	54	36
14	33	8.8	142	127	121	109	59	30	18	46	45	24
15	26	13	98	120	96	154	57	28	38	35	37	20
16	12	31	76	97	96	648	53	27	15	28	28	18
17	9.4	49	64	89	183	551	51	26	45	24	22	28
18	8.6	30	164	108	568	430	50	24	32	22	20	22
19	8.0	20	1,080	89	446	232	46	22	17	*20	19	19
20	7.6	16	291	80	258	223	44	22	13	20	33	16
21	7.8	14	172	71	208	181	46	21	12	17	33	14
22	7.8	12	114	65	180	157	46	20	14	23	43	12
23	8.2	12	84	60	145	139	41	19	83	25	38	12
24	34	*250	69	56	126	128	40	18	129	15	26	12
25	25	*109	58	54	140	116	37	20	161	14	20	11
26	15	54	51	50	145	105	37	19	52	12	17	11
27	23	290	47	60	111	96	52	27	34	12	16	11
28	22	856	414	84	96	89	46	34	68	11	15	12
29	15	179	270	71	87	114	40	26	90	11	20	19
30	15	98	152	71	------	482	40	23	45	10	22	16
31	13	------	105	67	------	298	------	20	------	10	14	------
Total	422.0	2,177.0	5,048	3,675	4,662	6,432	2,497	1,060	1,054	1,186	1,619.3	770.1
Mean	13.6	72.6	163	119	161	207	83.2	34.2	35.1	38.3	52.2	25.7
Cfsm	0.199	1.06	2.38	1.74	2.35	3.02	1.21	0.499	0.512	0.559	0.762	0.375
In.	0.23	1.18	2.74	2.00	2.53	3.49	1.36	0.58	0.57	0.64	0.88	0.42

Calendar year 1959: Max 1,180 Min 6.4 Mean 73.7 Cfsm 1.08 In. 14.62
Water year 1959-60: Max 1,080 Min 6.4 Mean 83.6 Cfsm 1.22 In. 16.62

Peak discharge (base, 1,000 cfs).--Nov. 28 (6 a.m.) 1,300 cfs (7.79 ft); Dec. 19 (7 a.m.) 1,380 cfs (7.92 ft); Aug. 11 (1 a.m.) 1,070 cfs (7.30 ft).

* Discharge measurement made on this day.

5355. 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 1960. 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.--24 years, 4,564 cfs (unadjusted).

Extremes.--Maximum discharge during year, 14,000 cfs Dec. 19 (gage height, 8.61 ft); minimum, 190 cfs Oct. 12 (gage height, 1.13 ft); minimum daily, 240 cfs July 25.
1936-60: 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, 111 cfs Oct. 27, 28, 1947; minimum daily, 131 cfs Jan. 23, 1941.

Remarks.--Records good. Flow regulated by Norris Lake, 41 miles upstream (see p. 207). The town of Oak Ridge diverts an average of about 25 cfs for municipal supply, 2½ miles above station.

Revisions (water years).--WSP 1306: 1938-39 (adjusted monthly runoff). WSP 1386: 1937.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.2	225	2.0	1,120
1.4	380	4.0	4,800
1.7	710	8.0	12,800

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*2,820	3,490	*614	7,770	*648	5,070	1,480	807	*4,330	*2,760	*7,030	6,570
2	6,250	*5,830	590	7,670	839	4,290	1,110	3,660	5,310	4,400	7,330	*7,090
3	2,560	4,520	1,500	8,470	2,230	4,310	980	*4,320	5,490	5,070	6,850	6,230
4	2,600	5,090	5,010	8,370	2,380	3,110	1,120	2,400	4,760	3,590	6,850	5,570
5	2,990	5,450	7,510	*8,130	2,360	6,030	1,120	2,700	3,120	4,360	6,890	5,050
6	5,770	5,330	7,630	8,070	1,490	3,410	1,690	2,040	3,510	4,080	6,930	5,710
7	5,310	4,900	7,850	8,530	2,950	4,230	3,010	546	5,170	5,330	5,870	5,990
8	4,840	3,630	7,670	9,110	2,770	3,180	3,280	1,110	4,610	4,090	6,290	6,050
9	2,910	1,940	7,570	6,750	5,430	2,500	1,750	698	4,380	4,740	7,930	5,650
10	1,550	4,420	7,570	6,830	5,210	2,200	1,690	1,790	4,690	4,000	6,410	5,690
11	302	4,690	7,790	8,110	5,190	2,900	2,510	4,080	4,630	7,270	4,470	4,970
12	798	4,800	5,950	8,090	3,180	2,000	5,630	2,780	4,230	6,190	3,650	4,290
13	3,520	5,470	2,730	8,810	2,900	4,700	5,110	2,900	2,730	3,570	3,540	4,720
14	1,420	6,150	1,400	8,750	2,930	4,190	4,420	2,800	5,530	4,460	5,230	3,970
15	1,140	6,050	1,400	8,850	1,600	4,950	3,960	451	5,350	4,950	4,060	2,880
16	649	6,130	4,740	8,690	7,010	4,390	4,060	702	5,790	4,820	6,370	4,330
17	1,760	6,730	5,730	8,590	8,070	8,030	638	3,470	5,670	4,500	5,690	5,030
18	6,430	5,110	7,890	8,670	3,850	4,020	2,030	3,220	2,410	3,510	4,780	1,950
19	6,150	6,270	12,600	8,590	3,240	2,180	6,750	2,690	1,210	3,760	6,190	2,890
20	7,370	6,310	10,500	8,490	1,910	1,670	5,870	1,680	2,780	6,270	6,250	4,700
21	8,090	6,410	8,690	8,410	2,250	2,150	6,390	2,790	5,990	4,690	4,530	4,650
22	8,090	6,650	7,970	8,330	8,370	4,320	5,750	2,430	6,350	6,170	4,100	4,670
23	7,770	5,870	7,690	8,270	8,270	3,160	5,270	3,240	6,350	3,320	6,230	5,890
24	7,450	7,130	7,590	8,230	8,190	3,600	3,260	6,490	6,490	364	5,290	3,940
25	7,530	5,550	7,490	8,190	4,800	5,670	4,930	5,810	5,930	240	5,030	4,290
26	7,430	3,510	7,430	8,130	4,100	4,380	3,890	3,390	1,190	2,170	4,830	4,250
27	7,430	4,280	7,410	8,190	4,250	1,670	3,510	3,200	420	6,590	6,410	3,770
28	4,900	6,230	8,230	6,210	5,290	983	3,760	3,890	831	6,610	6,450	3,640
29	6,110	2,250	8,950	5,210	4,970	2,610	3,450	2,140	4,900	6,690	6,470	4,210
30	7,730	1,050	8,270	4,180	---------	4,820	3,220	2,390	4,520	5,350	6,710	4,290
31	5,290	--------	7,950	2,450	--------	3,740	--------	4,740	--------	5,310	6,550	--------
Total	144,959	151,240	201,914	241,140	116,677	114,463	101,638	85,354	128,671	139,224	181,010	142,930
Mean	4,676	5,041	6,513	7,779	4,023	3,692	3,388	2,753	4,289	4,491	5,839	4,764

	Observed			Adjusted†		
Calendar year 1959:	Max 12,600	Min 193	Mean 3,380	Mean 4,126	Cfsm 1.25	In. 16.97
Water year 1959-60:	Max 12,600	Min 240	Mean 4,779	Mean 4,548	Cfsm 1.38	In. 18.76

* Discharge measurement made on this day.
† Adjusted for change in contents in Norris Lake.

5370. Whiteoak Creek below Oak Ridge National Laboratory, near Oak Ridge, Tenn.

Location.--Lat 35°54'44", long 84°18'59", on right bank 0.1 mile upstream from Melton Branch, 1 mile south of Oak Ridge National Laboratory, Roane County, and 7 miles south of Oak Ridge.

Drainage area.--3.62 sq mi.

Records available.--June 1950 to July 1953, July 1955 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 750.37 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--7 years (1950-52, 1955-60), 9.25 cfs.

Extremes.--Maximum discharge during year, 587 cfs July 11 (gage height, 5.37 ft), from rating curve extended above 230 cfs; minimum, 2.8 cfs May 22; minimum gage height, 0.90 ft Nov. 22.
1950-53, 1955-60: Maximum discharge recorded, 642 cfs Aug. 30, 1950 (gage height, 5.18 ft), from rating curve extended above 230 cfs, but may have been higher Aug. 2, 1950; minimum, 1.9 cfs Oct. 2, 1950; minimum gage height, 0.64 ft July 2, 9-11, 1950, Oct. 28, Nov. 4, 1952.

Remarks.--Records good. Natural flow of stream affected by operations of Oak Ridge National Laboratory.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*5.6	5.8	*6.6	5.8	*6.8	5.8	*14	5.6	*3.8	*6.2	*4.4	5.2
2	6.0	*5.2	11	7.3	6.6	22	11	4.8	3.8	5.4	4.8	*5.2
3	5.8	4.8	6.8	25	6.2	29	14	*4.6	4.6	5.6	4.8	5.4
4	5.8	4.4	5.8	12	6.4	*17	13	4.6	4.2	5.0	6.0	5.4
5	6.2	5.8	5.0	*9.5	16	13	11	4.6	3.7	5.2	5.6	5.2
6	8.7	4.4	11	13	14	11	9.8	4.6	5.9	4.8	5.0	5.0
7	9.8	3.8	7.0	21	11	9.5	9.0	5.2	4.4	5.0	6.4	4.0
8	6.2	3.8	6.0	17	9.2	8.5	7.8	4.4	4.2	5.0	14	5.2
9	7.2	4.2	5.6	14	9.0	9.0	7.0	4.2	4.2	4.8	9.9	4.6
10	5.6	4.2	5.2	12	28	9.2	6.4	4.2	4.2	22	5.4	9.9
11	6.6	4.2	6.6	10	18	9.0	6.4	4.0	4.2	110	4.8	6.5
12	5.2	4.6	35	8.8	13	8.5	*6.0	3.8	3.7	16	4.8	4.8
13	10	4.6	15	9.0	13	10	5.8	3.8	4.0	11	4.6	3.8
14	9.5	4.4	10	8.0	12	12	5.8	4.0	6.8	8.2	5.3	3.8
15	6.0	4.0	7.4	11	10	*14	5.6	4.2	4.2	7.0	4.8	4.4
16	5.8	6.4	6.8	8.0	11	36	6.0	4.0	4.9	6.0	4.4	7.3
17	5.2	5.2	6.9	9.7	18	27	5.6	3.7	26	5.6	5.0	10
18	5.0	5.0	37	10	45	22	5.0	4.0	6.2	5.0	4.2	5.6
19	5.0	4.8	46	8.5	*25	18	4.6	4.0	5.0	*5.0	4.2	5.0
20	5.0	4.4	17	7.4	17	14	5.0	4.2	5.2	5.0	4.0	4.2
21	5.0	3.5	12	7.0	14	11	5.8	4.0	6.4	5.0	5.2	4.4
22	5.2	3.0	8.8	6.4	12	9.8	5.4	3.7	5.6	4.6	5.4	4.8
23	5.8	5.1	7.4	5.8	9.8	9.0	5.2	4.0	17	4.6	4.2	4.6
24	9.9	27	6.4	5.8	9.0	8.0	5.0	4.2	36	4.4	4.0	4.4
25	5.2	7.8	5.8	5.8	9.2	7.2	5.0	*4.6	19	5.0	4.4	3.8
26	5.6	5.8	5.6	5.4	7.8	6.6	6.3	4.2	9.8	4.6	4.6	*4.6
27	7.5	59	5.0	8.8	6.6	6.2	6.0	6.7	7.4	4.6	4.4	4.8
28	5.6	27	19	7.2	6.4	6.4	5.0	3.7	10	4.8	4.6	5.5
29	6.2	12	10	7.3	6.2	15	5.0	7.3	7.0	4.8	4.4	5.2
30	5.8	7.6	7.8	8.8	-------	*32	5.6	3.8	6.6	4.2	4.6	4.8
31	5.8	-------	6.6	7.0	-------	18	-------	3.7	-------	4.4	5.0	-------
Total	197.8	251.8	352.1	302.3	376.2	433.7	213.1	136.4	238.0	298.8	163.2	157.4
Mean	6.38	8.39	11.4	9.75	13.0	14.0	7.10	4.40	7.93	9.64	5.26	5.25
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 121 Min 3.0 Mean 8.91 Cfsm - In. -
Water year 1959-60: Max 110 Min 3.0 Mean 8.53 Cfsm - In. -

Peak discharge (base, 280 cfs).--June 24 (10 p.m.) 318 cfs (4.69 ft); July 11 (5 a.m.) 587 cfs (5.37 ft).

* Discharge measurement made on this day.

5375. Melton Branch near Oak Ridge, Tenn.

Location.--Lat 35°54'36", long 84°18'54", on right bank 0.1 mile upstream from mouth, 1 mile south of Oak Ridge National Laboratory, Roane County, and 7 miles south of Oak Ridge, Anderson County.

Drainage area.--1.48 sq mi.

Records available.--August 1955 to September 1960.

Gage.--Water-stage recorder and concrete control. Datum of gage is 751.90 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--5 years (1956-60), 2.24 cfs.

Extremes.--Maximum discharge during year, 152 cfs July 11 (gage height, 5.45 ft), from rating curve extended above 70 cfs; minimum, 0.1 cfs Aug. 5.
1955-60: Maximum discharge that of July 11, 1960; no flow for many days during August, September, October, and November 1955.

Remarks.--Records good. Natural flow affected by operations of Oak Ridge National Laboratory.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 27				Nov. 28 to Sept. 30			
1.0	0.4	1.4	7.8	0.9	0.2	1.3	5.0
1.1	.8	1.5	12	1.0	.4	1.4	8.5
1.2	2.2	2.0	26	1.1	.9	1.5	12
1.3	4.7			1.2	2.2	1.8	25

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*0.5	0.4	*1.3	1.7	*2.2	1.9	*3.4	1.4	*0.2	*C.6	*0.2	0.3
2	.4	*.4	1.9	1.9	2.2	9.0	2.5	.8	.2	.6	.2	*.3
3	.4	.4	2.1	15	2.1	14	3.6	*.7	.2	.3	.2	.3
4	.4	.4	1.7	4.4	1.9	*6.0	4.4	.7	.2	.3	.4	.3
5	.5	.6	1.4	*3.0	6.0	3.9	3.6	.6	.2	.3	.2	.3
6	.6	.7	2.2	3.0	6.8	3.3	2.5	.5	.3	.2	.2	.2
7	.7	.7	2.2	7.4	4.2	2.8	2.5	.6	.3	.2	.2	.3
8	.7	.6	1.8	7.4	3.0	2.5	1.9	.6	.2	.2	1.7	.3
9	.7	.8	1.5	6.0	2.8	2.5	1.8	.5	.2	.2	1.8	.3
10	.7	.5	1.3	4.2	17	2.2	1.7	.5	.2	3.6	.4	.7
11	.6	.5	1.3	3.3	9.4	2.2	1.5	.4	.2	3.5	.3	1.1
12	.6	.5	15	2.5	4.7	2.2	1.5	.4	.2	3.0	.4	1.0
13	.7	.5	5.0	2.8	3.9	2.2	1.4	.4	.2	1.5	.5	.3
14	.8	.6	2.5	2.1	3.0	2.8	1.4	.4	.4	1.0	.7	.4
15	.6	.5	1.8	3.6	2.8	3.3	1.4	.4	.2	.5	.5	.3
16	.5	.7	1.5	2.8	2.8	15	1.4	.3	.2	.3	.4	5.6
17	.5	.7	1.7	2.8	5.8	11	1.3	.3	4.9	.3	.4	1.9
18	.5	.7	15	3.6	22	8.5	1.3	.3	.6	.3	.3	1.1
19	.4	.7	23	2.5	*8.9	5.7	1.3	.3	.3	*.3	.3	.5
20	.4	.7	4.7	2.1	5.4	5.0	1.3	.3	.3	.2	.3	.4
21	.4	.6	2.8	1.8	4.2	3.9	1.5	.3	.3	.2	.4	.4
22	.4	.6	1.9	1.7	4.2	3.6	1.4	.3	.4	.3	.7	.4
23	.4	.7	1.7	1.5	3.6	2.8	1.1	.3	4.7	.3	.5	.3
24	.5	4.3	1.7	1.4	3.0	2.8	1.1	.2	11	.3	.4	.2
25	.4	1.2	1.5	1.4	3.6	2.1	1.0	*.2	11	.3	.3	.2
26	.4	.8	1.4	1.4	2.8	1.9	1.0	.2	1.8	.3	.3	*.2
27	.4	19	1.3	2.2	2.2	1.8	1.4	.3	1.0	.3	.3	.3
28	.4	8.5	8.8	2.8	2.1	1.8	1.0	.3	1.9	.3	.3	.4
29	.4	2.2	4.7	2.8	2.1	5.5	.7	.5	1.5	.3	.3	.5
30	.4	1.5	2.8	3.9	------	*16	.8	.4	.8	.3	.3	.5
31	.4	------	2.1	3.0	------	5.4	------	.2	------	.3	.3	------
Total	15.7	51.0	119.6	108.0	144.7	153.6	52.7	13.6	44.1	20.6	13.7	19.3
Mean	0.51	1.70	3.86	3.42	4.99	4.95	1.76	0.44	1.47	0.66	0.44	0.64
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 53 Min 0.3 Mean 2.04 Cfsm - In. -
Water year 1959-60: Max 23 Min 0.2 Mean 2.06 Cfsm - In. -

Peak discharge (base, 86 cfs).--Dec. 18 (12 p.m.) 86 cfs (3.80 ft); June 24 (11 p.m.) 113 cfs (4.48 ft); July 11 (4 a.m.) 152 cfs (5.45 ft).

* Discharge measurement made on this day.

5396. Daddys Creek near Hebbertsburg, Tenn.

Location.--Lat 35°59'53", long 84°49'34", on upstream end of left abutment of Antioch Bridge, 3.1 miles southwest of Hebbertsburg, 6.9 miles northeast of Crab Orchard, Cumberland County, and at mile 9.1.

Drainage area.--139 sq mi.

Records available.--May 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 1,445.1 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 7,560 cfs Dec. 19 (gage height, 11.10 ft); minimum, 1.9 cfs Aug. 6 (gage height, 2.08 ft).
1957-60: Maximum discharge, 11,100 cfs Nov. 18, 1957 (gage height, 13.15 ft), from rating curve extended above 6,600 cfs; minimum, 0.2 cfs Sept. 6-9, 1957; minimum gage height, 1.75 ft Sept. 8, 9, 1957.

Remarks.--Records good.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 9-20)

2.1	2.0	2.6	18	5.0	670
2.2	3.6	2.7	24	6.0	1,290
2.3	5.8	3.0	54	7.0	2,200
2.4	9.9	3.5	125	9.0	4,420
2.5	13	4.0	268	10.0	5,880

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.5	106	400	311	328	432	846	255	19	14	3.6	7.7
2	4.5	94	372	276	280	440	593	228	17	12	3.1	8.3
3	4.0	83	432	700	243	1,230	434	188	14	11	2.5	8.0
4	3.8	70	364	690	213	940	516	159	14	17	2.3	6.7
5	3.4	89	300	530	255	645	458	137	15	20	2.0	5.4
6	3.6	210	294	476	512	516	388	120	13	26	2.2	4.9
7	4.5	190	297	534	516	420	332	656	11	19	2.3	6.4
8	5.8	150	262	645	428	360	276	1,430	9.3	14	2.6	5.1
9	15	125	262	660	356	342	231	753	8.0	11	48	7.4
10	14	110	255	685	424	314	198	494	7.0	8.9	30	16
11	14	100	280	685	655	290	172	360	6.4	13	16	757
12	12	90	2,190	584	498	269	*152	286	6.4	13	11	512
13	12	83	1,750	557	436	258	131	240	5.8	16	8.3	204
14	14	73	*918	566	384	276	114	198	7.7	12	9.5	119
15	*42	67	616	521	332	300	106	160	8.3	9.7	8.9	84
16	39	80	467	449	311	885	101	137	10	8.0	9.3	69
17	26	170	380	392	*376	*1,520	94	120	14	6.4	*12	1,320
18	21	195	1,730	462	1,090	1,210	96	106	34	5.4	8.6	1,270
19	18	*170	4,740	424	1,160	880	85	94	28	4.7	11	570
20	15	143	1,810	356	786	715	86	83	19	4.0	11	308
21	14	125	994	*304	611	598	83	72	*16	3.6	23	185
22	12	113	705	255	539	526	100	61	12	3.3	79	127
23	11	104	544	219	512	490	94	52	14	3.3	82	100
24	13	282	428	190	516	458	84	*44	12	5.4	59	80
25	34	508	356	170	802	428	80	39	13	12	37	64
26	62	368	308	158	1,080	368	89	37	16	*13	25	*53
27	98	403	269	180	758	336	175	37	18	9.7	18	48
28	120	1,310	376	266	575	300	228	35	16	8.0	15	62
29	107	358	508	272	508	314	188	30	15	6.7	12	110
30	116	530	449	342	-------	2,430	168	26	14	5.4	9.7	160
31	118	-------	376	380	-------	1,570	-------	22	-------	4.3	10	-------
Total	979.1	6,999	23,432	13,239	15,484	20,060	6,768	6,656	408.9	319.8	574.3	6,276.9
Mean	31.6	233	756	427	534	647	226	215	13.6	10.3	18.5	209
Cfsm	0.227	1.68	5.44	3.07	3.84	4.65	1.63	1.55	0.098	0.074	0.133	1.50
In.	0.26	1.87	6.27	3.54	4.14	5.37	1.81	1.78	0.11	0.09	0.15	1.68

Calendar year 1959: Max 4,740 Min 2.5 Mean 263 Cfsm 1.89 In. 25.72
Water year 1959-60: Max 4,740 Min 2.0 Mean 276 Cfsm 1.99 In. 27.07

Peak discharge (base, 3,500 cfs).--Dec. 19 (3:30 a.m.) 7,560 cfs (11.10 ft).

* Discharge measurement made on this day.

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5398. Obed River near Lancing, Tenn.

Location.--Lat 36°04'53", long 84°40'15", on left bank at Alley Ford, 1.4 miles upstream from mouth, 2.9 miles southwest of Lancing, Morgan County, 3.0 miles downstream from Clear Creek.

Drainage area.--518 sq mi.

Records available.--May 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 891.91 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 34,300 cfs Dec. 19 (gage height, 17.58 ft), from rating curve extended above 20,000 cfs; minimum, 14 cfs Oct. 6 (gage height, 0.96 ft).
1957-60: Maximum discharge, 40,600 cfs Nov. 18, 1957 (gage height, 18.95 ft), from rating curve extended above 30,000 cfs; minimum, 1.2 cfs Sept. 8-10, 1957 (gage height, 0.71 ft).
Flood of Mar. 23, 1929, reached a stage of 33.9 ft, 35 ft downstream from gage, from high-water marks by Tennessee Valley Authority.

Remarks.--Records good.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 28				Nov. 29 to Sept. 30			
0.9	9	2.5	640	1.0	16	3.0	1,070
1.0	17	3.0	1,020	1.1	25	4.0	1,880
1.2	44	4.0	1,880	1.2	38	6.0	4,180
1.5	110	5.0	2,930	1.4	75	9.0	9,130
1.8	215	7.0	5,630	1.7	165	13.0	18,500
2.1	380			2.0	300	15.0	24,500
				2.5	670		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	380	1,430	1,080	1,120	1,740	3,180	774	106	214	35	48
2	18	338	*1,270	966	998	1,680	2,210	742	88	162	32	90
3	17	298	1,400	1,830	894	4,570	1,790	630	75	134	29	59
4	16	260	1,240	*2,180	806	3,740	1,860	542	78	742	24	57
5	15	255	1,050	1,750	814	2,490	1,710	454	73	758	23	48
6	14	490	1,010	1,600	1,710	1,860	1,500	388	63	409	25	38
7	15	575	1,070	1,810	1,860	1,650	1,330	2,220	57	263	25	34
8	16	478	934	2,370	1,610	1,420	1,130	7,370	48	185	20	29
9	16	400	902	2,420	1,410	1,350	974	3,460	41	140	25	34
10	19	338	910	2,530	1,370	1,270	830	2,090	35	118	47	265
11	74	309	894	2,740	2,030	1,170	710	1,550	32	804	90	2,280
12	71	260	5,650	2,390	1,660	1,100	638	1,260	29	894	82	2,110
13	62	235	6,300	2,220	1,510	1,020	566	1,060	25	479	61	974
14	67	215	3,410	2,410	1,400	1,050	486	878	25	309	59	534
15	69	203	2,190	2,260	1,150	1,130	430	726	25	218	59	330
16	161	220	1,630	2,030	1,130	3,220	388	614	26	165	55	250
17	140	362	1,350	1,690	1,250	6,060	360	518	97	130	46	3,800
18	108	575	6,730	1,770	3,420	5,230	360	430	454	103	41	5,170
19	90	510	22,300	1,640	4,170	3,740	381	367	275	121	37	2,470
20	78	458	7,200	1,410	2,840	2,900	330	312	169	193	92	1,430
21	71	400	3,860	1,210	2,230	2,340	306	275	121	148	115	934
22	62	356	3,370	1,050	1,960	2,070	342	228	90	103	100	638
23	57	320	1,880	902	1,840	2,010	354	197	95	93	181	454
24	62	580	1,530	774	1,820	2,000	312	169	193	115	218	348
25	64	1,600	1,290	694	2,680	1,910	290	154	232	90	151	275
26	174	1,190	1,110	630	4,450	1,690	493	148	223	73	106	228
27	225	1,120	974	654	3,070	1,600	846	144	185	75	80	193
28	471	4,630	1,140	1,010	2,270	1,500	958	137	177	73	63	205
29	426	3,060	1,590	*1,030	*2,010	1,430	*806	148	388	*63	52	454
30	*386	1,850	1,420	1,120	-------	7,080	686	148	*312	48	46	598
31	432	-------	1,250	1,230	-------	*5,580	-------	*127	-------	41	*38	-------
Total	3,515	22,265	88,284	49,400	55,482	77,580	26,556	28,260	3,837	7,463	2,057	24,377
Mean	113	742	2,848	1,594	1,913	2,503	885	912	128	241	66.4	813
Cfsm	0.218	1.43	5.50	3.08	3.69	4.83	1.71	1.76	0.247	0.465	0.128	1.57
In.	0.25	1.60	6.34	3.55	3.98	5.57	1.91	2.03	0.28	0.54	0.15	1.75

Calendar year 1959: Max 22,300 Min 7.0 Mean 932 Cfsm 1.80 In. 24.42
Water year 1959-60: Max 22,300 Min 14 Mean 1,063 Cfsm 2.05 In. 27.95

Peak discharge (base, 13,000 cfs).--Dec. 19 (3 a.m.) 34,300 cfs (17.58 ft).

* Discharge measurement made on this day.

5405. 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 1960. 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.--33 years, 1,404 cfs.

Extremes.--Maximum discharge during year, 56,300 cfs Dec. 19 (gage height, 23.40 ft); minimum, 12 cfs Oct. 6 (gage height, 1.20 ft).
1927-60: Maximum discharge, 195,000 cfs Mar. 23, 1929 (gage height, about 42.3 ft, present site and datum, and 61.1 ft, site and datum then in use, from floodmarks), from rating curve extended above 85,000 cfs by logarithmic plotting; no flow at times in 1944, 1952-53.
Flood of Mar. 23, 1929, is the greatest flood since at least 1857, from report of Tennessee Valley Authority.

Remarks.--Records good.

Revisions (water years).--WSP 823: Drainage area. WSP 923: 1940. WSP 1386: 1928-30(M), 1932, 1943, 1945(P).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 30				Mar. 31 to Sept. 30			
1.2	12	4.0	1,330	1.4	26	3.0	525
1.3	18	7.0	4,460	1.6	49	4.0	1,280
1.6	47	10.0	9,320	1.9	98	7.0	4,460
1.9	90	13.0	15,500	2.3	205	10.0	9,320
2.3	180	16.0	23,400	2.6	315	11.0	11,300
2.6	310	20.0	38,900				
3.0	560						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	525	2,090	1,610	1,710	2,410	4,510	1,150	148	501	55	56
2	21	438	*1,820	1,440	1,530	2,270	3,220	1,150	120	351	45	83
3	18	371	2,020	2,800	1,370	6,130	2,620	988	102	275	41	96
4	17	316	1,880	*3,460	1,230	5,070	2,650	830	94	692	53	71
5	15	360	1,600	2,690	1,260	3,540	2,480	702	92	996	44	68
6	13	872	1,540	2,440	2,360	2,720	2,170	604	83	585	35	56
7	20	944	1,670	2,680	2,640	2,390	1,920	2,450	73	390	36	45
8	20	728	1,470	3,490	2,330	2,030	1,620	9,980	65	279	47	39
9	26	581	1,380	3,660	2,040	1,930	1,390	4,670	57	219	218	34
10	25	477	1,330	3,640	2,140	1,820	1,180	2,980	50	181	228	111
11	24	395	1,380	3,830	3,720	1,690	1,020	2,170	47	1,050	154	2,550
12	52	338	9,900	3,400	2,790	1,600	908	1,710	44	1,340	175	2,840
13	71	300	9,420	3,100	2,400	1,490	815	1,420	38	743	128	1,300
14	82	270	4,770	3,330	2,170	1,560	722	1,170	41	477	111	722
15	92	251	3,220	3,140	1,770	1,720	644	964	49	338	208	465
16	142	270	2,400	2,870	1,670	4,380	579	800	47	258	128	342
17	177	588	1,960	2,450	1,820	8,200	543	682	190	205	102	4,650
18	136	1,000	7,440	2,530	5,360	7,330	531	585	637	169	79	6,820
19	108	880	34,600	2,420	6,290	5,170	531	489	426	160	66	3,340
20	90	742	9,940	2,080	4,170	4,020	483	426	272	226	65	1,960
21	79	630	5,210	1,810	3,310	3,290	443	365	216	205	159	1,250
22	71	539	3,570	1,560	2,870	2,880	489	311	172	157	196	852
23	66	470	2,720	1,330	2,700	2,770	507	264	310	132	295	618
24	76	786	2,190	1,160	2,670	2,770	454	236	822	169	324	477
25	110	2,360	1,830	1,050	3,410	2,680	421	212	771	169	254	375
26	174	1,820	1,570	936	5,880	2,400	472	196	611	130	178	307
27	326	1,910	1,380	960	4,210	2,260	1,240	202	471	113	128	264
28	595	8,040	1,680	1,400	*3,170	2,260	1,350	193	410	98	98	268
29	602	4,620	2,500	*1,500	2,770	2,410	*1,140	199	1,130	*100	83	567
30	*525	2,820	2,180	1,660	------	*11,900	996	202	*792	81	71	*838
31	581	------	1,870	1,830	------	*8,210	------	*184	------	63	*60	------
Total	4,378	34,641	128,580	72,256	81,760	111,300	38,048	38,484	8,380	10,852	3,866	31,464
Mean	141	1,155	4,148	2,331	2,819	3,590	1,268	1,241	279	350	125	1,049
Cfsm	0.185	1.51	5.43	3.05	3.69	4.70	1.66	1.62	0.365	0.458	0.164	1.37
In.	0.21	1.69	6.26	3.52	3.98	5.42	1.85	1.87	0.41	0.53	0.19	1.53

Calendar year 1959: Max 34,600 Min 13 Mean 1,391 Cfsm 1.82 In. 24.72
Water year 1959-60: Max 34,600 Min 13 Mean 1,541 Cfsm 2.02 In. 27.46

Peak discharge (base, 19,000 cfs).--Dec. 19 (4 a.m.) 56,300 cfs (23.40 ft).

* Discharge measurement made on this day.
Note.--Discharge for Nov. 30 to Dec. 1, Dec. 11-20, Jan. 3, 5, 6, computed from bihourly readings of Tennessee Valley Authority radio gage located in same well.

5435. 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, 5 miles north of Decatur, Meigs County, and at mile 5.7.

Drainage area.--117 sq mi.

Records available.--May 1934 to September 1960. 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.--26 years, 188 cfs.

Extremes.--Maximum discharge during year, 2,520 cfs Dec. 19 (gage height, 6.97 ft); minimum, 21 cfs Aug. 1-4, 6, 7, Sept. 7-10 (gage height, 0.20 ft).
1934-60: Maximum discharge, 29,000 cfs Jan. 7, 1946 (gage height, 23.37 ft, from floodmarks), from rating curve extended above 6,700 cfs on basis of contracted-opening measurement 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 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 19				Dec. 20 to Sept. 30	
0.28	30	2.0	605	0.2	21
.4	63	3.0	890	.3	40
.6	166	5.0	1,580	.4	66
1.0	345	7.0	2,540	.6	166

Note.--Same as preceding table above 0.6 ft.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	60	198	149	258	185	375	104	40	37	22	24
2	30	56	185	137	230	348	306	81	40	40	21	24
3	30	52	*179	440	204	1,170	331	72	40	35	21	24
4	30	*46	137	262	185	642	415	69	40	52	21	24
5	30	49	120	234	383	478	378	69	37	42	24	24
6	34	52	172	282	502	393	314	66	*35	35	22	24
7	115	46	179	515	351	348	278	72	35	33	21	22
8	52	44	143	559	282	298	*250	81	35	33	26	*21
9	44	41	125	432	258	286	234	69	35	31	96	21
10	44	41	114	354	321	270	204	*63	35	84	*192	24
11	38	41	130	290	*351	*266	185	60	33	108	60	225
12	36	41	1,180	*254	242	262	172	60	35	*54	35	47
13	41	38	869	238	238	302	160	60	33	40	44	33
14	160	36	405	217	230	360	149	57	33	37	35	29
15	94	36	306	258	217	360	143	54	33	33	29	26
16	68	38	258	204	224	595	131	54	31	31	28	28
17	60	46	238	192	374	575	125	54	152	29	26	306
18	56	41	695	234	1,350	498	120	52	57	29	37	140
19	*49	38	2,060	198	1,120	405	108	52	44	29	28	63
20	46	38	716	179	585	338	104	49	40	29	28	52
21	41	38	480	166	480	282	104	49	37	28	26	42
22	41	36	351	149	442	254	108	47	37	28	37	37
23	44	36	274	137	351	238	94	44	35	33	69	37
24	56	49	238	125	306	217	90	44	37	37	33	35
25	52	56	198	120	302	198	90	44	85	28	28	33
26	46	46	179	108	266	185	85	44	52	26	26	33
27	63	271	154	224	234	166	99	47	44	26	26	33
28	60	1,210	301	246	217	160	94	44	42	26	24	44
29	56	354	242	234	204	269	81	44	44	26	22	85
30	68	246	192	396	-------	881	81	42	40	24	22	72
31	63	-------	166	306	-------	512	-------	40	-------	24	22	-------
Total	1,677	3,222	10,984	7,838	10,707	11,741	5,408	1,787	1,316	1,145	1,151	1,632
Mean	54.1	107	354	253	369	379	180	57.6	43.9	36.9	37.1	54.4
Cfsm	0.462	0.915	3.03	2.16	3.15	3.24	1.54	0.492	0.375	0.315	0.317	0.465
In.	0.53	1.02	3.49	2.49	3.40	3.73	1.72	0.57	0.42	0.36	0.37	0.52

Calendar year 1959: Max 2,830 Min 27 Mean 160 Cfsm 1.37 In. 18.57
Water year 1959-60: Max 2,060 Min 21 Mean 160 Cfsm 1.37 In. 18.62

Peak discharge (base, 2,000 cfs).--Dec. 19 (9 a.m.) 2,520 cfs (6.97 ft); Feb. 18 (10 p.m.) 2,140 cfs (6.23 ft).

* Discharge measurement made on this day.

5450. 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, 1.4 miles upstream from Hightower Creek, and at mile 133.9.

Drainage area.--45.5 sq mi.

Records available.--October 1941 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--19 years, 128 cfs.

Extremes.--Maximum discharge during year, 935 cfs Apr. 3 (gage height, 5.36 ft); minimum, 41 cfs July 18, 19 (gage height, 1.76 ft).
1941-60: 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 measurements at gage heights 13.80 and 15.24 ft, respectively; minimum, 15 cfs Dec. 16, 1958 (gage height, 1.48 ft), result of freezeup; minimum daily, 23 cfs Sept. 29, Oct. 5, 6, 8, 10-13, 1954, Sept. 7, 1957.

Remarks.--Records excellent.

Revisions (water years).--WSP 973: 1942.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 3				Apr. 4 to Aug. 12				Aug. 13 to Sept. 30			
1.8	43	3.0	247	1.8	45	3.0	247	1.8	49	3.0	247
2.0	64	4.0	545	2.0	68	4.0	545	2.0	72	3.5	385
2.5	139	5.0	845	2.5	144	5.0	845	2.5	149		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	160	104	130	281	194	325	142	78	56	46	85
2	52	147	107	139	236	215	303	136	81	58	64	80
3	51	135	107	190	208	206	567	130	81	53	68	75
4	50	126	100	171	206	181	*821	127	81	52	60	72
5	49	135	98	162	531	173	500	124	84	50	57	73
6	90	168	107	206	439	166	403	121	77	63	52	68
7	197	141	99	208	325	162	346	139	74	61	55	67
8	266	134	96	192	276	158	305	151	100	58	62	66
9	486	126	93	175	254	164	276	134	85	52	72	64
10	249	121	92	162	477	158	257	*132	78	53	72	66
11	259	115	90	152	*482	158	240	127	74	73	95	66
12	*201	111	200	*145	358	150	226	124	72	56	361	62
13	168	*108	188	141	334	148	217	122	68	52	289	60
14	395	107	158	135	289	150	206	117	66	52	245	59
15	274	107	141	160	259	*154	200	114	64	47	175	59
16	219	104	130	145	245	197	194	109	64	47	140	72
17	229	107	*126	158	238	201	187	108	*86	46	119	294
18	210	100	254	179	460	206	179	103	60	45	114	158
19	179	98	252	168	385	192	172	100	58	52	113	119
20	156	96	206	158	303	179	166	98	62	54	97	100
21	141	96	181	148	279	166	172	97	78	46	92	*88
22	139	93	164	139	264	166	166	92	76	46	*168	81
23	143	93	150	132	242	168	158	91	63	54	*161	77
24	145	118	137	128	231	177	153	89	62	52	127	73
25	135	108	132	123	252	188	151	87	67	52	116	70
26	126	102	125	121	238	186	148	87	71	50	102	68
27	119	102	121	168	222	203	157	103	66	*94	94	124
28	113	126	175	152	212	222	148	88	61	64	88	161
29	128	119	162	181	203	325	141	87	58	55	85	151
30	179	107	148	247	-------	*615	142	87	56	52	81	127
31	175	-------	137	370	-------	445	-------	81	-------	47	78	-------
Total	5,378	3,510	4,380	5,185	8,729	6,373	7,426	3,447	2,131	1,692	3,548	2,785
Mean	173	117	141	167	301	206	248	111	71.0	54.6	114	92.8
Cfsm	3.80	2.57	3.10	3.67	6.62	4.53	5.45	2.44	1.56	1.20	2.51	2.04
In.	4.40	2.87	3.58	4.24	7.13	5.21	6.07	2.82	1.74	1.38	2.90	2.28

Calendar year 1959: Max 1,240 Min 45 Mean 132 Cfsm 2.90 In. 39.32
Water year 1959-60: Max 621 Min 45 Mean 149 Cfsm 3.27 In. 44.62

Peak discharge (base, 800 cfs).--Feb. 5 (12:30 p.m.) 845 cfs (5.00 ft); Feb. 10 (4 p.m.) 892 cfs (5.19 ft); Apr. 3 (4:30 p.m.) 935 cfs (5.36 ft); Aug. 12 (8 p.m.) 878 cfs (5.13 ft).

* Discharge measurement made on this day.

5470. 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 southeast of Hayesville, Clay County, 1.7 miles downstream from Chatuge Dam, 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 1960. 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.--18 years (1942-60), 427 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 1,570 cfs May 11 (gage height, 5.63 ft); minimum, 3.1 cfs July 7 (gage height, 0.53 ft).
1907-9, 1922-23, 1942-60: 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 (see p. 207).

Revisions (water years).--WSP 973: 1942.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 7				Mar. 8 to Sept. 30			
0.7	6.0	1.5	95	0.5	2.7	1.5	93
.8	8.2	2.0	211	.6	4.1	2.0	201
.9	11	3.0	505	.8	8.2	3.0	479
1.0	16	4.0	865	.9	11	4.0	810
1.1	24	5.0	1,320	1.0	16	5.0	1,250
1.2	38			1.2	38	6.0	1,770

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.0	15	16	10	17	795	12	399	952	533	1,040	1,020
2	8.8	15	16	11	15	784	12	360	946	840	1,160	1,040
3	8.5	92	15	11	14	580	16	368	958	726	1,160	1,100
4	8.2	15	15	10	38	878	14	354	670	694	1,210	70
5	8.0	16	15	10	22	586	960	574	117	400	1,080	684
6	65	15	14	14	20	719	862	390	1,130	4.0	797	686
7	15	15	14	11	782	678	976	464	910	12	630	729
8	15	15	13	13	916	26	1,100	1,220	1,050	1,080	1,020	18
9	14	14	13	16	1,030	24	1,130	702	1,140	39	771	145
10	14	14	12	15	516	716	864	*395	1,080	354	968	17
11	14	14	12	13	428	786	1,470	455	1,090	802	222	17
12	*30	15	14	12	833	788	660	774	894	949	73	17
13	163	16	12	12	671	29	708	776	518	899	20	1,200
14	20	16	12	11	25	781	390	220	480	896	792	1,410
15	14	16	11	228	557	*442	376	26	495	932	52	708
16	288	16	11	232	696	31	26	676	562	22	1,010	915
17	16	16	*10	17	665	26	25	670	*464	20	1,080	1,040
18	14	15	11	578	428	112	1,010	652	26	808	934	102
19	14	15	15	966	449	28	934	668	25	464	1,070	862
20	13	15	17	1,010	932	26	492	674	752	870	1,090	1,100
21	13	15	238	803	956	24	100	28	784	631	43	486
22	13	15	18	812	648	22	514	425	770	465	1,040	398
23	16	15	17	20	*540	20	28	673	788	452	604	890
24	16	18	16	18	510	20	28	748	754	20	213	984
25	16	18	15	28	340	17	708	742	34	1,010	1,020	112
26	16	17	14	572	330	16	310	570	26	906	1,020	548
27	32	17	13	486	335	16	335	798	441	*1,050	604	240
28	15	17	13	20	23	15	*306	31	724	1,060	17	16
29	15	65	11	496	829	15	602	26	529	1,140	966	14
30	15	16	11	21	--------	16	744	818	66	509	1,120	13
31	15	--------	11	19	--------	14	--------	778	--------	18	1,090	--------
Total	933.5	593	645	6,495	13,565	9,030	15,712	16,452	19,175	18,605.0	23,916	16,561
Mean	30.1	19.8	20.8	210	468	291	524	531	639	600	771	552
(†)	+11,700	+7,600	+10,400	+7,900	+9,700	+11,500	+5,500	-6,400	-11,800	-12,700	-12,600	-9,200
Adjusted for change in contents in Chatuge Lake												
Mean	408	273	356	464	802	662	707	324	246	190	365	245
Cfsm	2.15	1.44	1.87	2.44	4.22	3.48	3.72	1.71	1.29	1.00	1.92	1.29
In.	2.47	1.60	2.16	2.82	4.55	4.02	4.15	1.97	1.44	1.16	2.21	1.44

	Observed			Adjusted			
Calendar year 1959:	Max 1,440	Min 1.9	Mean 311	Mean 372	Cfsm 1.96	In. 26.61	
Water year 1959-60:	Max 1,470	Min 4.0	Mean 387	Mean 419	Cfsm 2.21	In. 29.99	

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Chatuge Lake; furnished by Tennessee Valley Authority.

5485. 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, 2.0 miles southeast 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 September 1960. Published as "at Murphy" prior to April 1940. Monthly discharge only for some periods, published in WSP 1306.

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.--63 years (1897-1960), 904 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 4,680 cfs Mar. 3 (gage height, 6.92 ft); minimum, 60 cfs Oct. 6 (gage height, 1.91 ft); minimum daily, 101 cfs Oct. 3, 5.
1897-1960: Maximum discharge, 23,100 cfs Mar. 19, 1899 (gage height, 18.4 ft, from graph based on gage readings, 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 Lake; 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 regulated by Chatuge Lake (see. p

Revisions (water years).--WSP 583: 1899(M). WSP 973: Drainage area. WSP 1003: 1943. WSP 1306: 1901-2, 1904-17, 1919(M), 1922(M), 1924-26(M). Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1899 and 1907, superseding those published in Tennessee Division of Geology Bulletin 34 and WSP 1306, are given herewith:

1899		1906	
Mar. 18.....	4,000	Nov. 18.....	5,580
19.....	18,200	19.....	13,300
20.....	5,660	20.....	4,220

Month	Maximum	Minimum	Mean	Per square mile	Runoff in inches
March 1899.....	18,200	1,230	3,313	7.87	9.07
Water year 1898-99.....	18,200	-	1,277	3.03	41.18
Calendar year 1899.....	18,200	268	1,018	2.42	32.82
November 1906.....	13,300	655	1,758	4.18	4.66
Calendar year 1906.....	13,300	340	1,344	3.19	43.34
Water year 1906-7.....	13,300	425	1,259	2.99	40.62

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

2.0	80	4.0	1,270
2.3	174	5.0	2,200
2.6	308	6.0	3,440
3.0	535		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	204	421	262	629	1,280	783	1,120	1,260	539	741	1,240
2	110	200	393	242	548	1,660	689	752	1,090	818	1,280	1,270
3	101	260	439	466	499	3,090	1,280	730	1,220	1,120	1,320	1,310
4	108	193	366	439	463	1,810	1,490	686	942	922	1,350	678
5	101	308	339	388	596	1,550	1,840	910	776	843	1,270	585
6	104	887	382	1,170	621	1,400	1,860	722	956	230	988	906
7	522	452	360	966	1,100	1,440	1,550	712	1,160	243	924	900
8	313	360	309	782	1,390	784	1,780	1,420	1,310	839	951	444
9	602	308	316	642	1,410	666	1,720	1,260	1,410	614	1,170	299
10	362	277	292	543	1,560	1,120	1,410	947	1,300	555	1,260	188
11	505	249	280	477	1,230	1,350	1,970	761	1,270	890	1,360	166
12	382	236	768	*439	1,340	1,350	1,410	846	1,230	1,260	908	177
13	*422	222	918	433	1,510	855	1,140	1,070	1,010	1,090	951	931
14	709	216	660	404	1,020	994	1,020	762	652	1,070	1,020	1,560
15	468	219	514	764	1,130	1,290	812	316	694	1,110	578	1,250
16	606	217	445	681	1,140	831	464	800	*740	526	822	798
17	373	*304	398	518	1,270	821	445	956	756	176	1,360	1,240
18	357	252	459	1,120	1,570	850	1,100	840	236	600	1,330	624
19	281	228	575	1,210	1,440	720	1,420	938	206	923	1,200	676
20	248	232	481	1,500	1,340	651	1,100	922	772	685	1,340	1,420
21	226	230	618	1,410	1,630	612	528	479	1,080	1,020	754	792
22	226	222	399	1,170	1,490	549	931	644	1,020	770	*1,160	529
23	204	218	368	615	1,210	542	402	677	817	542	1,260	714
24	270	457	329	382	1,220	517	384	960	963	268	636	1,130
25	254	428	334	350	1,030	505	826	976	763	742	1,050	638
26	242	362	298	817	1,020	493	904	1,070	288	1,060	1,290	556
27	225	384	290	880	926	487	798	834	622	1,230	1,080	362
28	240	1,160	324	594	607	499	738	640	920	1,200	407	608
29	220	740	342	855	1,090	638	705	263	889	1,300	788	276
30	212	496	283	753	--------	*1,130	1,050	642	279	1,050	1,340	208
31	219	--------	284	721	--------	958	--------	985	--------	194	1,270	--------
Total	9,334	10,521	12,984	21,993	32,029	31,442	32,549	25,640	26,631	24,429	33,158	22,475
Mean	301	351	419	709	1,104	1,014	1,085	827	888	788	1,070	749

	Observed			Adjusted†		
Calendar year 1959:	Max 3,020	Min 101	Mean 668	Mean 730	Cfsm 1.80	In. 24.40
Water year 1959-60:	Max 3,090	Min 101	Mean 774	Mean 805	Cfsm 1.98	In. 27.00

* Discharge measurement made on this day.
† Adjusted for change in contents in Chatuge Lake.

5500. 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 Rogers Creek, 4.7 miles northeast of Murphy, and at mile 6.4.

Drainage area.--104 sq mi.

Records available.--June 1904 to December 1909, January 1914 to April 1917, October 1918 to September 1960.

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.--48 years (1904-9, 1914-16, 1919-60), 250 cfs.

Extremes.--Maximum discharge during year, 2,520 cfs Nov. 28 (gage height, 8.57 ft); minimum, 43 cfs Oct. 6 (gage height, 1.74 ft).

1904-9, 1914-17, 1918-60: Maximum discharge, 18,000 cfs Nov. 19, 1906 (gage height, 20.5 ft, from flood profile by Tennessee Valley Authority), from rating curve extended above 5,800 cfs on basis of slope-conveyance study; minimum, 12 cfs several times in August and September 1925 (gage height, 0.52 ft).

Flood in September 1898 reached a stage approximately 0.7 ft higher than that of Nov. 19, 1906, based on information from Tennessee Valley Authority (discharge, 20,000 cfs).

Remarks.--Records excellent. Records of water temperatures for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 503: 1905-9, 1915-17. WSP 823: Drainage area. WSP 1306: 1917(M), 1920(M), 1922(M), 1925(M), 1930(M), 1933(M). WSP 1626: 1907(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 20				June 21 to Sept. 30			
1.7	38	3.5	609	1.8	48	2.6	248
2.0	85	4.0	793	2.0	81	3.0	396
2.3	158	5.0	1,140	2.3	153	3.5	609
2.6	250	6.0	1,490				
3.0	396	7.0	1,890				

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*51	104	341	190	323	319	454	237	102	96	52	131
2	47	98	345	193	298	535	412	199	100	100	50	126
3	46	93	326	341	274	1,180	664	190	114	89	57	92
4	44	89	288	294	264	740	*824	181	114	89	56	81
5	44	250	264	274	326	584	644	178	118	94	57	76
6	59	604	291	834	360	489	525	172	106	104	56	70
7	231	291	264	708	352	433	454	187	109	100	77	68
8	144	218	240	568	323	392	396	215	204	83	92	81
9	212	184	224	446	305	388	360	184	150	81	220	100
10	128	161	215	376	465	372	330	*175	116	87	121	77
11	155	144	212	338	588	372	308	170	111	137	129	74
12	126	134	677	*305	458	341	291	172	111	101	453	67
13	104	126	640	298	484	326	277	167	102	85	441	63
14	244	118	458	274	437	*323	264	158	100	96	209	60
15	187	118	384	388	380	334	257	153	98	73	150	60
16	144	118	*316	338	364	446	247	147	*104	73	124	63
17	131	*187	291	349	360	467	240	142	131	76	107	94
18	131	144	352	404	580	437	234	136	102	70	102	72
19	111	134	416	360	632	404	221	131	91	74	119	65
20	100	126	349	323	507	364	215	126	121	93	104	*60
21	96	126	312	294	450	341	237	124	107	72	94	58
22	89	121	281	274	425	323	231	118	107	67	196	57
23	89	121	257	247	*384	305	209	116	121	67	*142	56
24	134	694	240	240	360	298	202	114	116	74	114	54
25	131	454	224	228	480	291	196	121	192	67	100	52
26	124	302	212	218	471	281	206	116	121	*62	92	51
27	116	516	202	294	408	284	231	170	114	63	85	110
28	106	1,580	247	291	376	298	212	126	104	60	83	159
29	118	663	231	291	352	412	196	116	112	59	79	121
30	118	437	209	345	------	671	193	111	100	54	74	89
31	111	------	196	352	------	588	------	106	------	55	74	------
Total	3,671	8,455	9,484	10,675	11,786	13,338	9,730	4,758	3,498	2,514	3,911	2,387
Mean	118	282	306	344	406	430	324	153	117	81.1	126	79.6
Cfsm	1.13	2.71	2.94	3.31	3.90	4.13	3.12	1.47	1.12	0.780	1.21	0.765
In.	1.31	3.02	3.39	3.82	4.21	4.77	3.48	1.70	1.25	0.90	1.40	0.85

Calendar year 1959: Max 1,600 Min 44 Mean 223 Cfsm 2.14 In. 29.15
Water year 1959-60: Max 1,580 Min 44 Mean 230 Cfsm 2.21 In. 30.10

Peak discharge (base, 1,700 cfs).--Nov. 28 (3:30 a.m.) 2,520 cfs (8.57 ft).

* Discharge measurement made on this day.

5505. 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, 0.8 mile upstream from Akins Creek, 2.7 miles southeast of Blairsville, Union County, and at mile 44.3.

Drainage area.--74.8 sq mi.

Records available.--January 1942 to September 1960.

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.--18 years, 170 cfs.

Extremes.--Maximum discharge during year, 2,120 cfs Feb. 10 (gage height, 7.15 ft); minimum, 48 cfs Oct. 5, 6 (gage height, 1.96 ft).
1942-60: 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 measurement 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 table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.9	43	3.0	362
2.0	52	3.5	440
2.3	92	4.0	670
2.6	152	4.5	960

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	141	120	152	342	235	396	190	90	68	58	92
2	52	130	124	157	284	278	363	174	97	71	67	84
3	51	122	128	253	247	356	927	169	105	63	94	72
4	51	116	118	212	241	285	840	164	103	61	79	71
5	50	141	114	195	507	244	650	159	99	61	93	68
6	85	190	130	284	444	229	494	157	94	82	76	66
7	290	150	116	268	352	223	424	184	92	82	71	68
8	279	139	110	241	301	218	374	203	97	68	84	63
9	557	*132	108	218	275	226	338	176	94	61	94	61
10	275	126	106	198	880	220	311	166	86	108	87	60
11	328	120	105	184	*714	226	294	162	84	148	105	73
12	223	116	323	174	464	212	278	162	87	87	301	67
13	*188	112	265	*166	444	206	262	159	81	75	318	58
14	656	110	209	162	382	*218	250	150	78	71	291	56
15	356	108	176	195	332	226	241	145	76	66	187	56
16	259	106	*162	169	314	338	235	141	73	63	141	61
17	301	112	157	184	301	325	229	137	*78	61	120	306
18	259	105	298	209	598	308	226	134	75	60	105	154
19	203	101	311	190	476	281	212	130	71	59	112	110
20	174	99	244	176	385	259	206	126	72	62	99	*94
21	162	99	215	166	356	238	212	124	84	56	101	84
22	150	97	190	157	335	232	206	122	106	58	*225	78
23	148	97	171	152	304	235	195	118	82	63	162	73
24	157	134	162	145	284	238	187	*116	78	61	*132	70
25	145	114	152	141	318	253	184	116	79	56	122	67
26	134	106	145	137	294	247	181	116	94	*58	105	64
27	126	108	141	239	272	268	220	122	87	120	97	157
28	118	184	215	198	262	291	*190	116	76	92	90	226
29	126	137	195	242	247	378	179	112	75	72	86	174
30	141	124	171	328	-------	*746	181	152	68	63	82	141
31	150	-------	159	452	-------	516	-------	94	-------	59	82	-------
Total	6,249	3,676	5,340	6,344	10,955	8,735	9,465	4,496	2,561	2,235	3,866	2,874
Mean	202	123	172	205	378	282	316	145	85.4	72.1	125	95.8
Cfsm	2.70	1.64	2.30	2.74	5.05	3.77	4.22	1.94	1.14	0.964	1.67	1.28
In.	3.11	1.83	2.66	3.15	5.45	4.34	4.71	2.24	1.27	1.11	1.92	1.43

Calendar year 1959: Max 1,760 Min 50 Mean 153 Cfsm 2.05 In. 27.76
Water year 1959-60: Max 927 Min 50 Mean 183 Cfsm 2.45 In. 33.22

Peak discharge (base, 1,500 cfs).--Feb. 10 (4 p.m.) 2,120 cfs (7.15 ft); Apr. 3 (3 p.m.) 1,770 cfs (6.19 ft).

* Discharge measurement made on this day.

5535. 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, 1.8 miles northwest of Ivylog, Union County, and at mile 20.4.

Drainage area.--315 sq mi.

Records available.--July 1942 to September 1960.

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.--18 years, 396 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 1,870 cfs Feb. 4 (gage height, 5.05 ft); minimum, 9.6 cfs Oct. 1-6 (gage height, 0.62 ft).
1942-60: Maximum discharge, 3,130 cfs May 23, 1955 (gage height, 6.54 ft); 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. 208).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.6	8.7	2.0	251
.7	13	3.0	640
.8	20	4.0	1,170
1.0	41	5.0	1,830
1.5	126		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	13	14	463	15	524	20	354	642	916	809	1,040
2	9.6	13	14	15	15	422	20	312	763	953	902	1,050
3	9.6	110	14	15	14	584	22	280	736	17	1,240	1,100
4	9.6	13	14	446	144	746	22	298	731	17	1,370	14
5	9.6	14	14	1,090	15	478	316	511	19	760	1,180	713
6	70	14	14	1,120	15	482	20	278	1,090	1,080	869	1,040
7	11	13	14	580	15	487	20	494	1,160	1,060	459	862
8	10	13	14	360	15	114	19	1,050	1,020	969	1,260	14
9	11	13	14	15	451	356	19	507	850	17	871	196
10	10	13	14	15	442	871	20	332	888	462	1,080	13
11	10	13	14	304	252	866	20	286	916	806	104	13
12	32	13	15	327	932	862	20	480	688	330	56	14
13	407	13	15	104	926	866	20	466	196	362	16	1,340
14	12	13	15	298	16	*921	20	212	532	372	16	1,730
15	11	13	15	488	438	418	20	19	546	716	16	887
16	371	14	*14	310	470	19	20	570	*541	16	722	1,240
17	12	20	15	15	480	18	21	644	534	16	924	1,480
18	12	14	15	648	445	134	892	642	19	732	727	90
19	12	14	21	752	443	18	1,080	651	19	432	924	862
20	12	14	16	752	780	18	452	631	736	716	528	*948
21	11	14	260	755	362	231	128	20	774	703	15	434
22	11	14	16	742	424	19	332	19	772	454	873	419
23	12	14	15	14	*353	19	20	400	969	434	364	893
24	12	109	368	14	260	45	20	*547	979	16	222	797
25	12	14	15	14	477	19	388	577	71	*732	736	95
26	12	13	376	591	498	19	252	440	19	748	838	469
27	12	14	15	647	263	19	246	579	906	782	488	304
28	34	14	624	319	16	19	366	19	1,090	1,280	15	14
29	12	14	463	642	246	19	445	19	942	1,140	844	14
30	12	14	462	15	---	21	662	558	624	552	1,120	13
31	12	---	526	15	---	20	---	780	---	16	1,150	---
Total	1,203.0	604	3,435	11,885	9,222	9,654	5,922	12,975	19,772	17,656	20,738	18,098
Mean	38.8	20.1	111	383	318	311	197	419	659	570	669	603
(†)	+10,200	+7,200	+6,600	+420	+10,400	+9,250	+11,700	-3,610	-12,960	-10,840	-9,880	-11,380
Adjusted for change in contents in Nottely Lake												
Mean	368	260	324	397	677	610	587	302	227	220	350	224
Cfsm	1.71	1.21	1.51	1.85	3.15	2.84	2.73	1.40	1.06	1.02	1.63	1.04
In.	1.97	1.35	1.74	2.13	3.39	3.27	3.05	1.62	1.18	1.18	1.88	1.16

	Observed			Adjusted		
Calendar year 1959:	Max 1,590	Min 9.1	Mean 270	Mean 322	Cfsm 1.50	In. 20.37
Water year 1959-60:	Max 1,730	Min 9.6	Mean 358	Mean 378	Cfsm 1.76	In. 23.92

* Discharge measurement made on this day.
† Change in contents, in cfs-days, in Nottely Lake; furnished by Tennessee Valley Authority.

5560. Turtletown Creek at Turtletown, Tenn.

Location.--Lat 35°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.--October 1933 to September 1960. Prior to May 1934 monthly discharge only, published in WSP 1306.

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.--27 years, 49.2 cfs.

Extremes.--Maximum discharge during year, 615 cfs Nov. 28 (gage height, 5.12 ft); minimum, 17 cfs Sept. 6, 7, 10, 11, 14, 15 (gage height, 0.98 ft).
1933-60: 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 except those for periods of no gage-height record, which are fair. 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 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Nov. 27, 28, Mar. 3)

1.0	18	2.0	138
1.2	34	3.0	304
1.5	70	3.5	374

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	35	85	62	74	73	84	75	42	35	24	24
2	24	34	75	60	69	113	82	66	41	40	23	22
3	24	34	70	70	67	253	104	61	42	35	23	19
4	24	34	*69	66	67	*126	102	58	46	40	*24	19
5	24	*77	66	64	80	106	92	56	42	44	26	19
6	25	108	73	84	78	97	87	55	41	35	22	18
7	102	62	67	80	70	93	83	58	*38	32	30	18
8	*46	52	62	76	67	88	*79	70	64	*31	28	19
9	42	49	60	72	66	90	76	58	66	30	51	19
10	40	45	58	68	90	88	74	55	47	35	40	18
11	70	43	61	66	91	88	73	53	45	60	55	24
12	43	41	83	64	*78	86	73	55	44	45	142	20
13	41	40	80	*64	78	86	71	*57	42	35	82	18
14	91	40	76	60	76	84	69	55	42	32	45	18
15	57	40	74	69	73	86	67	55	40	30	35	18
16	47	40	72	62	76	100	67	53	40	30	30	19
17	50	43	74	67	83	96	67	53	55	29	28	31
18	45	38	86	74	112	91	69	51	43	29	26	26
19	42	37	88	64	101	87	65	50	38	29	27	22
20	38	36	82	61	88	84	64	49	44	31	29	20
21	36	36	78	58	86	80	73	47	52	29	25	19
22	35	35	74	57	88	79	76	47	40	30	34	19
23	55	35	70	55	86	76	66	46	37	31	30	19
24	66	193	68	55	82	75	65	45	42	32	25	18
25	52	88	66	53	91	74	62	45	62	30	24	18
26	46	66	64	52	87	74	62	45	45	29	22	18
27	42	159	62	75	80	73	74	51	43	28	22	44
28	41	345	74	70	78	73	70	49	40	27	22	*47
29	40	123	68	67	76	84	62	45	40	26	21	42
30	37	95	66	79	-------	116	65	44	36	25	21	31
31	35	-------	64	80	-------	92	-------	43	-------	24	23	-------
Total	1,385	2,103	2,215	2,054	2,338	2,911	2,223	1,650	1,339	1,018	1,059	686
Mean	44.7	70.1	71.5	66.3	80.6	93.9	74.1	53.2	44.6	32.8	34.2	22.9
Cfsm	1.66	2.61	2.66	2.46	3.00	3.49	2.75	1.98	1.66	1.22	1.27	0.851
In.	1.91	2.91	3.06	2.84	3.23	4.02	3.07	2.28	1.85	1.41	1.46	0.95

Calendar year 1959: Max 345 Min 23 Mean 52.6 Cfsm 1.96 In. 26.54
Water year 1959-60: Max 345 Min 18 Mean 57.3 Cfsm 2.13 In. 28.99

Peak discharge (base, 300 cfs).--Nov. 24 (10 a.m.) 325 cfs (3.14 ft); Nov. 28 (3 a.m.) 615 cfs (5.12 ft); Mar. 3 (4 to 5 a.m.) 388 cfs (3.61 ft).

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 1-3; Dec. 13 to Jan. 12; July 9 to Aug. 3; discharge estimated on basis of weather records and records for stations on nearby streams.

5565. 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 1960.

Gage.--Water-stage recorder. Datum of gage is 830.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--18 years, 2,327 cfs (unadjusted).

Extremes.--Maximum discharge during year, 7,830 cfs Nov. 28 (gage height, 6.01 ft); minimum, 72 cfs July 31, Aug. 1, Sept. 25 (gage height, 1.27 ft); minimum daily, 74 cfs July 31.
1942-60: Maximum discharge, 22,500 cfs June 13, 1952 (gage height, 10.42 ft), from rating curve extended above 15,000 cfs; minimum daily, 30 cfs (estimated) Sept. 18-20, 1955.

Remarks.--Records good except those below 500 cfs, which are fair. Flow regulated by Chatuge, Nottely, Hiwassee, and Apalachia Lakes (see p. 208).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.2	58	4.0	2,900
1.4	103	5.0	5,090
1.8	240	6.0	7,800
3.0	1,200		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,490	2,740	2,960	2,840	1,960	2,940	814	808	848	2,230	1,790	*2,660
2	1,060	2,720	2,940	2,860	*2,230	3,560	380	1,530	127	2,390	2,650	2,680
3	96	2,800	2,960	2,880	2,580	3,290	452	718	816	738	2,680	2,670
4	1,360	2,700	*2,900	2,620	2,780	3,940	1,540	1,010	312	630	2,680	2,710
5	2,620	2,740	2,880	2,210	2,010	3,680	*1,270	1,120	442	2,070	2,650	2,660
6	*2,630	3,270	2,920	2,860	2,210	3,600	1,240	690	1,710	1,840	2,630	2,790
7	2,280	2,900	2,940	3,280	975	3,580	1,830	1,350	*474	2,230	2,460	2,730
8	2,800	2,860	2,880	2,820	2,210	3,540	2,110	280	431	2,500	2,700	2,700
9	1,730	2,840	2,900	1,990	1,920	3,560	2,100	1,770	930	201	3,060	2,660
10	1,840	2,800	3,000	2,010	1,960	3,540	1,620	1,640	432	1,070	2,860	2,640
11	1,250	2,800	3,280	1,950	2,570	3,540	3,060	2,180	121	2,000	3,160	2,710
12	2,600	2,780	3,880	2,140	2,630	3,500	1,080	2,520	124	1,380	3,100	2,720
13	2,750	2,780	3,790	1,960	3,020	3,480	904	1,340	1,640	1,420	2,540	2,670
14	2,920	2,780	3,500	1,380	2,980	3,490	690	846	1,880	1,680	1,860	2,410
15	2,110	2,760	3,420	2,700	2,920	3,390	569	182	1,700	1,130	2,720	2,670
16	1,890	2,760	3,380	2,060	2,940	2,640	516	936	1,400	1,280	2,720	2,710
17	444	2,800	3,360	332	3,000	1,490	232	1,700	1,840	88	2,700	2,520
18	627	2,780	3,380	2,320	3,380	1,470	2,300	1,070	1,190	1,140	2,680	2,680
19	2,110	2,780	3,400	2,430	3,360	956	1,160	376	252	920	2,700	2,660
20	2,210	2,760	3,380	1,910	2,940	410	681	1,860	2,250	1,570	2,450	2,740
21	2,740	2,780	3,360	2,100	3,520	1,500	1,300	645	2,700	1,690	1,310	2,660
22	2,280	2,780	3,340	2,260	3,580	1,430	1,180	149	2,660	1,770	2,730	2,630
23	2,780	2,760	3,320	2,150	3,580	1,520	240	1,270	2,420	1,680	2,760	2,670
24	3,120	3,560	3,320	2,330	3,540	728	228	2,360	1,520	238	2,700	2,350
25	2,900	3,240	3,300	2,230	3,620	2,350	892	1,150	1,090	1,910	2,700	1,820
26	2,800	2,980	3,300	2,800	3,640	429	852	1,630	2,120	2,150	2,660	2,680
27	2,600	3,390	3,300	2,840	3,080	290	674	462	2,410	1,930	2,680	2,430
28	2,780	3,390	3,300	1,690	3,000	984	1,430	1,400	2,200	2,000	2,700	2,730
29	2,740	3,320	3,300	2,000	2,980	450	2,220	1,820	2,250	2,430	3,040	2,800
30	2,760	3,080	2,900	911	-------	1,410	1,550	926	2,320	92	3,200	2,660
31	2,740	-------	2,900	549	-------	826	-------	749	-------	74	2,600	-------
Total	67,057	89,430	99,690	67,612	81,135	73,513	35,114	36,287	40,609	44,982	81,870	78,820
Mean	2,163	2,981	3,216	2,181	2,798	2,371	1,170	1,171	1,354	1,451	2,641	2,627

	Observed			Adjusted†		
Calendar year 1960:	Max 5,390	Min 96	Mean 1,914	Mean 2,063	Cfsm 1.82	In. 24.66
Water year 1959-60:	Max 5,390	Min 74	Mean 2,175	Mean 2,253	Cfsm 1.98	In. 27.00

* Discharge measurement made on this day.
† Adjusted for change in contents in Chatuge, Nottely, Hiwassee, and Apalachia Lakes.

5580. 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, 2.5 miles northwest of Dial, Fannin County, and at mile 69.1.

Drainage area.--177 sq mi.

Records available.--October 1912 to September 1960. Prior to January 1913 monthly discharge only, published in WSP 1306.

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.--48 years, 482 cfs.

Extremes.--Maximum discharge during year, 3,100 cfs July 27 (gage height, 5.46 ft); minimum, 167 cfs Sept. 15 (gage height, 0.96 ft).

1912-60: 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 measurement 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.

Remarks.--Records excellent.

Revisions (water years).--WSP 823: Drainage area. WSP 1386: 1923(M), 1924, 1927(M), 1929-32(M), 1933, 1934(M), 1944(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.9	153
1.5	320
2.0	535
3.0	1,050
4.0	1,720

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	195	352	360	388	690	638	990	715	310	252	237	243
2	190	336	384	409	612	1,020	874	589	310	255	*237	255
3	186	316	*392	648	566	951	1,460	562	316	240	246	222
4	186	313	352	517	566	*710	1,450	548	320	249	279	212
5	183	*416	340	476	792	661	1,210	530	313	255	231	205
6	234	553	380	652	780	634	1,060	508	*332	*286	246	208
7	782	404	360	616	675	620	*990	553	320	388	428	237
8	494	372	336	558	625	612	896	625	368	285	264	*202
9	*984	352	328	517	602	643	852	544	313	252	270	193
10	584	336	320	494	1,290	616	808	517	288	292	264	188
11	634	328	324	476	*1,460	630	770	504	282	562	276	186
12	463	320	812	*454	978	594	748	*499	276	332	438	183
13	404	313	661	445	956	580	726	490	270	276	450	176
14	1,050	310	530	436	863	589	705	472	261	255	376	171
15	675	310	472	544	758	612	695	458	255	240	296	169
16	535	316	436	472	742	841	680	450	252	231	267	176
17	548	336	422	481	748	775	666	436	255	228	252	915
18	517	306	566	571	1,110	770	666	422	249	220	246	491
19	440	299	616	508	1,060	710	634	414	246	215	252	306
20	400	292	517	481	868	670	620	396	261	276	240	264
21	384	296	476	458	824	638	670	392	299	222	306	243
22	376	292	445	440	792	625	648	384	426	222	404	231
23	380	292	436	418	748	643	607	372	306	218	384	222
24	418	468	418	422	720	652	594	368	302	222	299	215
25	380	384	409	409	814	680	584	372	324	215	279	208
26	356	336	396	400	753	661	576	372	299	215	252	202
27	344	360	388	580	700	695	630	409	296	1,160	243	433
28	328	580	512	535	680	710	580	368	276	414	234	612
29	328	422	468	540	666	874	558	344	267	316	222	476
30	364	376	418	666	-------	1,590	553	332	255	270	215	372
31	368	-------	400	846	-------	1,220	-------	320	-------	246	222	-------
Total	13,710	10,686	13,674	15,857	23,438	22,864	23,500	14,265	8,847	9,309	8,855	8,406
Mean	442	356	441	512	808	738	783	460	295	300	286	280
Cfsm	2.50	2.01	2.49	2.89	4.56	4.17	4.42	2.60	1.67	1.69	1.62	1.58
In.	2.88	2.25	2.87	3.33	4.92	4.80	4.94	3.00	1.86	1.96	1.86	1.77

Calendar year 1959: Max 1,880 Min 170 Mean 417 Cfsm 2.36 In. 32.03
Water year 1959-60: Max 1,590 Min 169 Mean 474 Cfsm 2.68 In. 36.44

Peak discharge (base, 2,400 cfs).--Feb. 10 (11 p.m.) 2,760 cfs (5.12 ft); July 27 (9 a.m.) 3,100 cfs (5.46 ft).

* Discharge measurement made on this day.

5590. 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, 2½ miles northeast of Blue Ridge, Fannin County, and at mile 52.5.

Drainage area.--233 sq mi.

Records available.--October 1898 to March 1903, October 1912 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

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.--52 years (1898-1902, 1912-60), 614 cfs (unadjusted).

Extremes.--Maximum discharge during year, 1,900 cfs May 26 (gage height, 5.14 ft); minimum, 11 cfs Sept. 26, 29, 30 (gage height, 1.00 ft); minimum daily, 12 cfs several days in October and February.
1898-1903, 1912-60: Maximum daily discharge, 15,500 cfs Aug. 22, 1901 (gage height, 14.0 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).

Remarks.--Records good. Flow regulated by Blue Ridge Lake beginning Dec. 6, 1930 (see p. 208).

Revisions (water years).--WSP 783: 1934 (adjusted monthly mean and runoff). WSP 823: Drainage area. WSP 1386: 1901-2, 1927, 1928(M), 1929, 1931-33.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.0	11	2.0	216
1.2	27	3.0	640
1.4	52	4.0	1,170
1.6	90	5.0	1,800
1.8	146		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	781	652	494	416	12	795	772	372	462	663	836	1,710
2	814	635	494	470	12	432	884	482	552	616	867	1,310
3	501	601	*375	519	12	16	430	377	356	596	*984	1,230
4	787	630	326	565	12	*14	78	431	628	728	1,040	1,180
5	14	620	13	998	12	394	576	16	386	776	694	1,220
6	12	13	498	187	238	485	627	441	*602	837	463	1,170
7	13	215	433	196	217	578	*540	401	553	860	815	1,160
8	13	145	440	328	587	286	606	420	602	844	872	1,350
9	*12	332	357	271	481	482	594	429	499	832	195	981
10	12	376	373	254	194	477	864	473	17	806	714	1,280
11	12	486	222	387	15	453	864	183	752	17	16	1,240
12	12	500	42	319	171	549	976	540	644	318	18	812
13	13	561	13	922	800	514	960	604	562	928	16	1,160
14	14	601	248	940	565	476	908	616	574	1,020	365	1,290
15	14	623	306	1,020	538	400	768	620	568	888	401	839
16	14	584	179	968	1,150	807	458	510	753	1,080	803	1,280
17	14	572	13	761	1,040	167	812	541	504	928	835	930
18	16	510	13	979	1,070	198	934	488	1,020	916	439	1,240
19	13	432	483	668	222	765	977	126	908	466	311	502
20	13	500	439	660	12	658	982	549	694	732	960	1,030
21	13	530	462	979	12	749	857	420	576	664	642	1,420
22	13	582	332	1,410	12	659	657	546	348	898	670	1,460
23	264	543	344	900	13	655	514	550	467	894	652	1,090
24	560	160	296	762	13	791	610	620	720	302	745	879
25	566	530	305	882	43	717	590	748	812	731	856	861
26	564	393	545	1,100	352	795	226	1,370	668	919	876	936
27	576	182	561	579	401	777	184	440	661	986	799	*15
28	500	13	572	875	546	709	428	536	798	15	677	105
29	584	13	468	336	777	581	251	401	691	776	715	26
30	562	13	322	185	--------	66	193	504	861	710	1,130	141
31	638	--------	310	242	--------	858	--------	140	--------	646	1,190	--------
Total	7,934	12,547	10,278	20,078	9,529	16,303	19,120	14,894	18,238	22,392	20,596	29,847
Mean	256	418	332	648	329	526	637	480	608	722	664	995

		Observed				Adjusted†				
Calendar year 1959	Max	1,020	Min	6.7	Mean	410	Mean	517	Cfsm	2.22	In.	30.10
Water year 1959-60	Max	1,710	Min	12	Mean	551	Mean	576	Cfsm	2.47	In.	33.67

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge Lake.

5595. Ocoee River at Copperhill, Tenn.

Location.--Lat 34°59'29", long 84°22'36", on right bank 0.2 mile upstream from Fightingtown Creek, 0.4 mile downstream from Copperhill, Polk County, and at mile 37.5.

Drainage area.--352 sq mi.

Records available.--October 1902 to October 1906, December 1906 to December 1913, October 1918 to August 1925 (gage heights only), October 1942 to September 1960. November 1914 to September 1918 (gage heights only) in Tennessee Division of Geology Bulletin 34. Monthly discharge only for some periods, published in WSP 1306.

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.--28 years (1902-6, 1907-13, 1942-60), 838 cfs (unadjusted).

Extremes.--Maximum discharge during year, 3,460 cfs July 10 (gage height, 4.78 ft); minimum, 99 cfs Oct. 6 (gage height, 1.75 ft); minimum daily, 120 cfs Oct. 6.
1902-13, 1918-25, 1942-60: Maximum gage height observed, 18.5 ft Nov. 19, 1906, site and datum then in use (discharge, about 35,000 cfs, from reports of Tennessee Valley Authority); 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. 208). Record includes diversion from this stream by Tennessee Copper Co.

Revisions (water years).--WSP 973: Drainage area. WSP 1386: 1945.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.8	110	3.0	900
2.0	182	3.5	1,410
2.2	290	4.0	2,110
2.6	570		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	659	614	718	560	339	1,140	1,170	594	586	942	819	1,960
2	923	901	708	597	284	1,170	1,190	559	714	728	1,010	1,510
3	596	704	592	695	260	1,590	1,030	756	538	751	1,050	1,390
4	852	740	*363	662	248	*602	602	690	769	790	*1,140	1,320
5	366	1,230	206	1,100	304	855	1,020	216	544	911	914	1,460
6	120	*486	705	886	468	928	1,010	654	776	877	630	1,240
7	386	505	660	517	556	1,010	941	623	691	*997	906	1,310
8	177	358	605	549	730	650	628	708	811	1,000	916	1,460
9	182	506	560	520	804	850	925	652	642	993	552	1,440
10	174	547	555	497	624	854	1,090	679	162	1,050	955	1,110
11	266	652	393	534	514	860	1,130	393	834	424	595	1,520
12	169	559	378	444	494	886	1,330	774	859	148	732	1,140
13	165	763	325	*1,240	1,120	886	1,330	*567	706	1,220	726	1,060
14	388	774	490	1,120	933	848	1,250	825	666	1,180	434	1,370
15	260	776	499	1,190	876	786	806	678	692	902	800	1,320
16	192	634	380	1,200	1,200	1,390	1,020	826	760	1,460	904	1,050
17	196	797	206	1,130	1,550	634	1,090	735	552	1,040	916	1,120
18	230	630	260	1,120	740	589	1,150	662	1,210	957	795	1,630
19	174	566	690	1,080	675	1,130	1,300	292	1,180	821	454	730
20	161	622	666	857	374	903	1,270	701	980	804	933	866
21	153	632	651	941	360	1,250	1,190	632	772	825	1,020	1,580
22	153	682	541	1,720	360	898	827	738	471	855	928	1,600
23	414	701	514	1,000	332	1,020	1,000	712	588	1,130	846	1,370
24	711	428	448	1,100	304	1,230	807	786	805	563	920	964
25	702	718	454	1,110	444	987	748	512	929	800	864	1,070
26	724	540	688	1,220	692	1,110	608	1,570	918	883	1,140	962
27	696	494	700	968	738	1,120	463	938	805	1,220	919	*599
28	630	943	755	1,220	896	989	517	778	906	392	914	548
29	690	367	632	703	1,040	1,030	650	608	890	784	860	305
30	719	260	511	526	--------	486	441	663	799	858	924	328
31	751	--------	492	664	--------	1,160	--------	296	--------	783	1,380	--------
Total	12,979	19,129	16,346	27,670	18,259	29,841	28,533	20,817	22,555	27,088	26,896	35,332
Mean	419	638	527	893	630	963	951	672	752	874	868	1,178

	Observed			Adjusted†		
Calendar year 1959:	Max 1,230	Min 120	Mean 628	Mean 735	Cfsm 2.09	In. 28.34
Water year 1959-60:	Max 1,960	Min 120	Mean 780	Mean 805	Cfsm 2.29	In. 31.13

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge Lake.

5600. 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.--October 1942 to September 1960. Prior to November 1942 monthly discharge only, published in WSP 1306.

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.--18 years, 135 cfs.

Extremes.--Maximum discharge during year, 1,330 cfs Nov. 28 (gage height, 5.18 ft); minimum, 55 cfs Aug. 2 (gage height, 1.46 ft).
1942-60: 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 except those for periods of no gage-height record, which are fair. Diurnal fluctuation at low flows caused by small mills above station prior to November 1948; occasional fluctuation thereafter.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 2		Mar. 3 to Sept. 30	
1.5	52	1.5	58
2.0	140	1.9	120
2.5	272	2.5	272
3.0	430	3.0	430
4.0	830	4.5	1,060

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	126	a270	178	292	255	316	213	120	a92	62	69
2	62	120	a245	178	258	497	301	202	120	a80	59	76
3	62	116	*236	219	244	866	406	194	136	a78	63	66
4	61	112	219	194	236	*476	384	188	134	a78	*63	63
5	61	399	208	191	304	395	336	183	126	a84	65	62
6	64	*556	224	357	295	351	313	180	120	a90	64	60
7	188	284	208	290	264	333	298	196	*112	*80	65	82
8	112	227	194	258	250	318	*284	208	126	76	73	88
9	*116	199	188	236	244	324	275	186	134	76	95	66
10	132	180	180	224	330	307	266	180	112	80	88	63
11	227	168	180	213	357	313	258	176	106	152	272	100
12	140	158	383	208	*295	292	252	*176	106	92	415	71
13	126	152	348	*202	295	292	247	170	100	82	194	65
14	238	147	278	196	281	292	241	168	98	79	122	62
15	178	149	250	252	261	295	236	163	97	76	98	62
16	147	145	233	222	264	416	233	158	92	74	86	63
17	154	147	230	227	281	360	227	158	98	73	80	136
18	156	138	272	266	351	333	227	152	98	73	83	108
19	134	136	278	238	336	316	219	149	85	73	78	80
20	124	128	244	224	298	307	213	145	102	78	76	74
21	118	132	233	213	292	289	261	142	92	71	80	68
22	114	128	222	202	292	278	247	140	a110	73	100	65
23	182	126	213	196	275	269	222	136	a105	79	102	65
24	222	322	202	194	264	264	213	134	a100	83	83	64
25	183	364	199	188	336	258	208	132	a95	74	76	63
26	158	178	191	183	318	255	202	130	a92	74	73	63
27	142	357	186	250	292	252	238	147	a90	73	71	185
28	134	808	222	227	281	250	216	136	a88	70	70	*219
29	136	378	205	230	269	316	202	130	a86	68	68	176
30	140	a300	191	278	-------	437	199	126	a84	64	65	130
31	132	-------	180	345	-------	354	-------	122	-------	64	65	-------
Total	4,207	6,880	7,112	7,081	8,355	10,560	7,740	5,020	3,164	2,449	3,054	2,614
Mean	136	229	229	228	288	341	258	162	105	79.0	98.5	87.1
Cfsm	1.92	3.23	3.23	3.22	4.06	4.81	3.64	2.28	1.48	1.11	1.39	1.23
In.	2.21	3.61	3.73	3.71	4.38	5.54	4.06	2.63	1.66	1.28	1.60	1.37

Calendar year 1959: Max 900 Min 61 Mean 175 Cfsm 2.47 In. 33.50
Water year 1959-60: Max 866 Min 59 Mean 186 Cfsm 2.62 In. 35.78

Peak discharge (base, 1,200 cfs).--Nov. 5 (11 p.m.) 1,280 cfs (5.02 ft); Nov. 28 (1:30 a.m.) 1,330 cfs (5.18 ft); Mar. 3 (1 a.m.) 1,320 cfs (5.13 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.

5605. Davis Mill Creek at Copperhill, Tenn.

Location.--Lat 34°59'43", long 84°22'56", on right bank 0.1 mile upstream from mouth, 0.4 mile northwest of Louisville and Nashville Railroad station, and 0.8 mile northwest of post office at Copperhill, Polk County.

Drainage area.--5.16 sq mi.

Records available.--July 1940 to September 1941 (published as Mill Creek at Copperhill), December 1948 to September 1960.

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.--11 years (1949-60), 36.9 cfs.

Extremes.--Maximum discharge during year, 1,390 cfs June 3 (gage height, 4.25 ft), from rating curve extended above 150 cfs on basis of critical-depth measurement of peak flow; minimum daily, 28 cfs Dec. 29.
1940-41, 1948-60: 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 measurement of peak flow; minimum daily, 3.1 cfs July 30, 1940.

Remarks.--Records fair except those for periods of doubtful or 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 tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 10		Apr. 11 to Sept. 30	
1.6	28	1.7	26
2.0	53	1.8	31
2.4	89	2.2	61
2.7	121	2.7	117

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	46	40	32	34	37	37	41	35	42	37	54
2	40	44	38	35	30	72	39	37	35	40	38	46
3	40	44	39	36	31	50	48	37	62	39	44	42
4	42	44	*40	29	35	*47	43	37	40	40	*42	42
5	45	81	37	32	37	45	42	38	40	36	43	40
6	112	*49	40	46	36	45	40	39	38	40	55	40
7	61	38	37	32	38	42	38	40	*38	*38	46	59
8	*47	38	38	35	36	41	*36	33	112	39	44	43
9	47	37	32	30	33	45	35	34	50	39	54	43
10	54	37	33	30	45	47	34	35	44	51	60	43
11	40	40	35	32	40	41	34	35	40	60	54	48
12	44	41	41	34	*37	40	36	35	39	46	69	38
13	94	42	34	*39	41	38	36	*34	40	44	48	37
14	51	42	34	35	46	43	36	34	42	42	45	37
15	45	43	33	39	41	40	36	34	42	40	48	38
16	44	45	34	35	43	41	35	33	39	36	42	40
17	50	43	36	41	42	39	35	33	43	36	43	47
18	46	38	42	37	47	43	38	35	40	34	43	39
19	44	38	38	32	42	38	35	35	40	32	44	39
20	45	39	36	32	44	37	35	40	51	30	42	40
21	44	40	34	37	44	37	42	37	42	30	43	35
22	44	40	32	34	41	34	38	35	42	35	46	34
23	51	43	31	31	*39	36	37	34	41	40	43	35
24	44	65	31	32	38	35	36	36	69	40	43	35
25	41	43	35	30	43	35	35	36	44	42	41	34
26	43	42	33	30	41	37	37	35	40	43	42	33
27	41	89	32	45	37	39	43	34	40	43	40	54
28	42	45	32	34	40	35	38	31	42	43	40	*61
29	47	43	28	38	40	42	39	32	45	44	43	43
30	40	41	29	38	-------	42	41	33	42	40	45	44
31	45	-------	29	41	-------	39	-------	33	-------	37	46	-------
Total	1,513	1,360	1,083	1,081	1,141	1,282	1,134	1,095	1,357	1,241	1,413	1,263
Mean	48.8	45.3	34.9	34.9	39.3	41.4	37.8	35.3	45.2	40.0	45.6	42.1
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 112 Min 26 Mean 41.2 Cfsm - In. -
Water year 1959-60: Max 112 Min 28 Mean 40.9 Cfsm - In. -

* Discharge measurement made on this day.
Note.--Doubtful or no gage-height record Nov. 28 to Dec. 3, Dec. 14-20, Mar. 26, 31, Apr. 7-10, June 9, Aug. 14, Sept. 24, 25; discharge estimated on basis of recorder graph, weather records, and records for stations on nearby streams.

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5610. 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 1960. 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, 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.--26 years, 29.3 cfs.

Extremes.--Maximum discharge during year, 1,500 cfs June 8 (gage height, 5.78 ft), from rating curve extended above 700 cfs on basis of computation of peak flow over dam at gage height 7.86 ft; minimum daily, 15 cfs July 15-17, 28-30, Aug. 2, 5.
1934-60: Maximum discharge, 7,080 cfs Apr. 6, 1936 (gage height, 7.2 ft), from rating curve extended above 1,100 cfs; minimum daily, 2.8 cfs June 16, 17, 1941.

Remarks.--Records fair except those for period of doubtful or no gage-height record, which are poor. Discharge includes diversion from Brush Creek and from Ocoee River. This diversion was small prior to June 1941. Some fluctuations caused by Tennessee Copper Co. plant's irregular pumpage from mines.

Revisions (water years).--WSP 823: Drainage area. WSP 1386: 1935.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.0	14	2.5	89
1.5	30	3.0	140
2.0	52	3.5	220

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	27	35	31	42	36	46	35	22	23	18	30
2	18	27	36	33	38	152	46	36	23	24	15	21
3	17	24	30	40	38	*89	70	30	69	22	17	19
4	17	23	*34	36	39	61	55	30	31	38	*17	19
5	20	149	31	45	51	50	47	30	27	25	15	19
6	26	*57	37	82	42	48	42	30	31	23	47	19
7	121	37	33	49	39	50	40	39	*21	*19	31	21
8	*36	36	28	41	37	45	*39	31	169	18	20	18
9	29	34	29	39	35	47	38	32	42	18	76	18
10	71	29	30	38	82	52	35	29	31	28	85	18
11	50	27	37	38	42	50	38	30	30	46	45	31
12	36	28	59	33	*38	46	36	30	28	17	198	21
13	78	27	42	*34	50	44	33	*28	27	17	59	17
14	64	29	40	34	44	46	33	26	25	16	41	17
15	38	28	37	40	43	48	35	27	24	15	32	19
16	33	32	36	34	42	60	34	30	23	15	24	20
17	39	30	41	44	42	50	35	26	29	15	24	39
18	29	25	52	43	64	46	37	27	22	19	21	24
19	30	25	40	36	50	48	32	26	22	18	23	25
20	27	24	38	33	44	44	32	25	53	16	21	18
21	26	25	36	31	51	44	50	25	30	17	24	18
22	25	26	35	29	49	38	39	25	24	17	38	20
23	52	29	34	31	43	38	36	27	23	18	25	18
24	38	136	34	32	41	38	34	25	80	17	22	17
25	30	42	34	33	56	38	37	25	35	20	20	18
26	32	34	33	31	44	37	36	25	28	20	20	19
27	25	178	32	50	41	36	47	26	28	18	20	49
28	22	87	44	36	40	39	35	24	25	15	19	*49
29	23	58	33	46	40	57	33	26	34	15	22	34
30	24	49	33	47	------	58	38	25	23	15	19	23
31	27	------	32	50	------	49	------	22	------	16	28	------
Total	1,121	1,382	1,125	1,219	1,307	1,584	1,188	872	1,079	622	1,086	698
Mean	36.2	46.1	36.3	39.3	45.1	51.1	39.6	28.1	36.0	20.1	35.0	23.3
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 178 Min 17 Mean 35.2 Cfsm - In. -
Water year 1959-60: Max 198 Min 15 Mean 36.3 Cfsm - In. -

* Discharge measurement made on this day.
Note.--Doubtful or no gage-height record Nov. 7 to Dec. 9; discharge estimated on basis of recorder graph, weather records, and records for stations on nearby streams.

5630. 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, 2 miles downstream from Goforth Creek, and at mile 19.6.

Drainage area.--524 sq mi.

Records available.--October 1912 to September 1960. Prior to January 1913, monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 837.88 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--48 years, 1,225 cfs (unadjusted).

Extremes.--Maximum discharge during year, 14,600 cfs Nov. 28 (gage height, 9.90 ft); minimum, 7.4 cfs Oct. 6 (gage height, 2.28 ft); minimum daily, 9.0 cfs Oct. 6.
1912-60: 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. 208) 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 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

2.3	8.0	4.0	760
2.4	15	4.5	1,230
2.5	30	5.0	1,850
2.7	75	6.0	3,590
3.0	162	7.0	5,250
3.5	404		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	913	1,090	1,020	993	1,100	1,620	1,680	1,000	608	1,000	1,000	*1,480
2	966	993	1,000	1,000	1,020	1,890	1,660	1,000	966	1,000	1,000	1,540
3	966	993	1,000	1,010	1,010	3,590	1,710	993	966	993	1,040	1,540
4	818	966	993	1,010	1,010	2,460	1,760	*993	975	1,000	1,010	1,530
5	428	1,000	993	*1,470	1,060	*1,670	1,690	975	966	1,000	1,020	1,520
6	9.0	2,390	1,000	1,890	1,120	1,450	1,660	993	966	1,030	1,010	1,540
7	*441	1,020	1,000	1,430	1,040	1,090	1,640	993	975	1,010	1,000	1,530
8	881	993	984	1,060	1,030	1,630	1,630	1,000	984	*1,020	1,010	1,550
9	1,250	975	975	1,020	1,210	1,630	1,620	993	993	1,020	1,100	1,530
10	422	993	975	1,020	1,080	1,620	1,600	984	993	1,020	1,060	1,490
11	909	984	993	1,010	1,630	1,510	1,590	993	993	1,240	1,380	1,530
12	461	966	1,290	1,000	1,640	1,110	1,590	1,000	1,000	1,010	2,280	1,490
13	75	1,000	1,190	1,520	1,660	1,600	1,590	1,000	1,040	1,020	1,820	1,490
14	989	1,010	1,070	1,590	1,630	1,570	1,590	993	1,000	1,020	1,140	1,210
15	306	993	1,030	1,590	1,600	1,590	1,590	993	993	1,020	1,040	1,340
16	551	993	1,020	1,590	1,600	1,670	1,590	993	993	1,010	1,020	1,270
17	524	1,000	1,000	1,590	1,660	1,710	1,590	984	943	1,000	1,010	1,470
18	508	975	1,010	1,620	1,850	1,670	1,470	975	1,040	1,030	1,020	1,060
19	86	975	1,020	1,620	1,550	1,660	1,460	975	1,030	1,000	1,010	1,300
20	222	1,000	1,030	1,590	1,070	1,670	1,580	975	1,000	1,000	1,010	1,540
21	514	984	1,010	1,590	1,050	1,660	1,660	975	975	993	1,030	1,430
22	550	975	1,000	1,590	1,070	1,640	1,600	975	975	1,000	1,040	1,540
23	836	975	993	1,580	1,080	1,640	1,080	993	1,050	1,000	1,040	1,350
24	1,080	1,820	1,000	1,580	1,050	1,640	993	1,000	1,050	1,000	1,020	1,020
25	1,070	1,210	1,000	1,570	1,080	1,640	993	1,010	1,050	1,000	1,050	1,010
26	1,010	1,020	993	1,570	1,100	1,640	984	1,020	1,050	1,000	1,020	1,000
27	993	1,550	993	1,590	1,620	1,640	1,290	1,020	1,020	953	1,020	1,140
28	975	4,110	1,000	1,360	1,660	1,660	1,030	975	984	431	1,010	1,070
29	975	1,720	984	1,010	1,630	1,690	993	966	1,020	1,020	1,000	1,080
30	984	1,080	975	1,090	---	1,810	1,000	966	1,000	1,000	1,510	1,080
31	984	---	984	1,100	---	1,710	---	536	---	993	1,450	---
Total	21,698.0	36,753	31,525	42,253	37,910	52,780	43,913	30,241	29,598	30,833	35,170	40,670
Mean	700	1,225	1,017	1,363	1,307	1,703	1,464	976	987	995	1,135	1,356

	Observed			Adjusted†		
Calendar year 1959:	Max 4,110	Min 9.0	Mean 1,016	Mean 1,121	Cfsm 2.14	In. 29.03
Water year 1959-60:	Max 4,110	Min 9.0	Mean 1,184	Mean 1,211	Cfsm 2.31	In. 31.45

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge and Oconee No. 3 Lakes.

5645. 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 1960.

Gage.--Water-stage recorder. Datum of gage is 716.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--44 years, 1,284 cfs (unadjusted).

Extremes.--Maximum discharge during year, 4,550 cfs Aug. 13 (gage height, 7.50 ft); minimum, 75 cfs Aug. 31 (gage height, 2.85 ft); minimum daily, 120 cfs Oct. 6, 17, 18. 1911-16, 1921-60: Maximum discharge, 21,700 cfs Mar. 29, 1951 (gage height, 20.22 ft); minimum daily, 10 cfs Oct. 28, 1925.

Remarks.--Records excellent. Flow regulated by Blue Ridge, Ocoee No. 3, and Parksville Lakes (see p. 208).

Cooperation.--Water-stage recorder inspected by employees of Tennessee Valley Authority.

Revisions (water years).--WSP 823: Drainage area. WSP 1306: 1916, 1921-36 (adjusted runoff). WSP 1386: 1926.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

2.9	95	4.0	775
3.2	225	5.0	1,720
3.6	465	7.0	3,920

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,090	1,070	1,450	1,120	1,240	1,730	1,860	1,060	914	1,030	1,080	1,480
2	970	1,120	1,650	1,030	*1,320	2,170	1,660	1,060	772	1,050	*1,020	1,640
3	915	1,260	1,750	910	1,440	2,900	1,680	1,080	657	638	1,120	1,650
4	1,060	1,140	*1,700	948	1,420	2,880	1,500	1,180	588	630	1,020	1,590
5	480	1,050	1,620	1,830	1,510	2,850	*1,550	1,060	954	1,200	1,260	1,810
6	120	1,530	1,090	1,780	1,070	2,820	1,710	1,040	958	1,250	944	1,450
7	1,160	1,550	1,280	1,620	1,200	2,900	1,680	970	*1,190	1,230	910	1,600
8	2,020	1,630	1,400	2,190	1,270	2,120	1,760	1,030	913	1,260	1,400	1,690
9	927	1,290	1,230	1,330	1,510	1,630	1,500	1,060	1,240	1,280	1,340	1,780
10	460	1,080	1,240	1,310	1,430	1,600	1,480	1,060	1,230	1,030	1,540	1,560
11	133	947	1,210	1,370	1,570	1,920	1,460	852	731	1,620	1,050	1,930
12	129	972	1,660	1,260	1,810	1,720	1,440	882	750	1,050	1,930	1,810
13	309	931	1,570	1,710	1,680	1,830	1,460	1,060	1,260	840	2,870	1,500
14	2,750	955	1,580	1,620	1,570	1,330	1,460	1,100	1,240	1,010	1,850	1,380
15	727	924	1,410	1,570	1,640	1,320	1,640	1,080	969	1,030	1,080	1,830
16	372	1,310	1,290	1,730	1,880	1,990	1,600	1,030	1,400	1,030	706	950
17	120	1,430	1,280	1,650	2,040	1,820	1,330	1,020	1,260	766	974	1,540
18	120	1,510	1,200	1,580	1,800	2,150	1,380	1,080	1,470	1,010	1,090	1,370
19	246	1,400	1,250	1,840	2,190	2,080	1,410	1,280	446	1,100	1,100	1,150
20	480	1,450	1,270	1,830	2,150	1,780	1,350	1,060	1,110	1,120	1,090	1,360
21	*575	1,090	1,290	1,740	1,920	1,730	1,410	1,190	936	1,090	460	1,060
22	430	1,160	1,350	1,700	1,210	1,450	1,410	1,240	1,440	1,030	1,570	1,170
23	357	1,130	1,430	1,780	1,210	1,350	1,110	1,030	1,100	975	1,660	1,640
24	1,010	1,990	1,290	1,780	1,280	1,470	1,050	856	992	528	968	1,430
25	960	2,180	1,300	1,820	1,360	1,650	1,060	930	1,100	980	887	1,040
26	996	1,690	1,270	1,550	1,830	1,700	896	958	1,100	982	1,060	1,180
27	1,240	2,120	1,050	1,710	1,770	1,680	806	984	1,140	1,090	1,100	1,320
28	1,240	2,800	987	1,490	1,770	1,770	906	1,130	1,030	1,050	1,120	1,240
29	1,090	2,740	1,050	1,260	1,780	1,610	1,160	1,100	1,060	930	1,040	1,190
30	967	2,750	1,030	1,250	--------	1,700	1,120	1,040	1,080	813	1,370	1,250
31	1,090	--------	1,130	1,200	--------	2,120	--------	1,040	--------	708	1,240	--------
Total	24,543	44,199	41,307	47,508	45,870	59,770	41,818	32,522	31,030	31,560	37,849	43,590
Mean	792	1,473	1,332	1,533	1,582	1,928	1,394	1,049	1,034	1,018	1,221	1,453

	Observed			Adjusted†		
Calendar year 1959:	Max 3,800	Min 108	Mean 1,108	Mean 1,212	Cfsm 2.04	In. 27.66
Water year 1959-60:	Max 2,900	Min 120	Mean 1,316	Mean 1,340	Cfsm 2.25	In. 30.66

* Discharge measurement made on this day.
† Adjusted for change in contents in Blue Ridge, Ocoee No. 3, and Parksville Lakes.

5650. 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, 15.2 miles upstream from Charleston, and at mile 34.2.

Drainage area.--2,001 sq mi.

Records available.--October 1953 to September 1960.

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.

Average discharge.--7 years, 3,796 cfs, unadjusted.

Extremes.--Maximum discharge during year, 14,200 cfs Mar. 3 (gage height, 13.16 ft); minimum, 312 cfs Oct. 4 (gage height, 1.38 ft); minimum daily, 879 cfs July 31.
1953-60: Maximum discharge, 32,700 cfs Feb. 1, 1957; maximum gage height, 24.26 ft Feb. 1, 1957; minimum discharge, that of Oct. 4, 1959; minimum daily, 355 cfs 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. 205).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

2.3	810	8.0	7,000
4.0	2,080	13.0	14,000
6.0	4,400		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,600	3,850	5,450	4,400	3,250	5,050	3,630	2,590	1,640	3,380	1,800	4,050
2	2,080	3,870	5,040	4,150	3,660	5,930	2,840	3,020	1,630	3,560	3,730	4,380
3	1,740	4,210	*5,040	4,240	4,210	12,900	2,690	2,340	1,180	2,270	3,820	4,380
4	1,440	3,910	5,090	4,070	4,740	9,550	3,600	*2,020	1,360	1,680	3,750	4,290
5	2,970	3,910	4,830	3,890	4,010	7,840	3,560	2,510	1,110	2,620	3,970	4,500
6	2,810	4,680	4,560	5,690	3,860	7,350	3,510	2,180	2,230	3,120	3,680	4,330
7	2,830	4,620	4,520	6,240	3,330	7,140	3,730	1,840	2,700	3,560	3,530	4,270
8	4,980	4,710	4,600	6,050	3,520	6,360	4,070	2,070	1,130	3,810	3,910	4,570
9	3,430	4,360	4,460	4,440	3,810	5,920	4,350	2,520	2,150	2,550	4,680	4,370
10	2,350	4,190	4,460	3,850	3,840	5,600	3,340	2,920	2,220	1,810	5,100	4,460
11	1,580	3,870	4,730	3,800	4,480	5,760	4,300	3,240	1,140	3,360	4,530	4,750
12	2,350	5,690	6,590	3,430	4,950	5,640	3,820	3,790	961	3,300	4,730	5,030
13	2,980	3,990	7,040	4,170	5,220	5,600	2,400	3,140	1,870	2,010	5,940	4,240
14	5,270	3,800	5,830	3,690	5,060	5,330	2,610	2,060	3,470	3,190	4,250	3,910
15	3,640	3,620	5,640	3,920	4,820	*5,230	2,140	1,690	3,100	2,120	4,030	4,250
16	2,440	3,980	5,150	4,280	5,140	5,680	2,310	2,000	2,680	2,240	3,580	4,040
17	1,180	4,300	5,060	2,770	5,500	4,320	1,830	2,410	3,360	1,880	3,670	a4,200
18	1,010	4,420	5,160	3,010	6,400	4,280	2,740	2,550	3,110	1,650	3,770	a4,500
19	1,680	4,420	5,520	4,520	7,310	3,770	3,360	2,230	1,580	2,090	3,900	a4,100
20	2,730	4,300	5,340	4,320	6,160	3,170	2,640	2,310	2,280	*2,760	3,760	a4,000
21	3,370	4,170	5,110	3,930	6,420	3,180	2,480	2,510	4,040	3,100	2,380	a4,300
22	2,780	3,880	5,120	*4,250	5,900	3,430	3,200	1,660	3,720	2,850	3,580	a4,200
23	3,210	4,210	5,020	3,870	5,560	3,450	2,330	1,750	4,100	2,730	4,690	a4,400
24	4,230	6,120	5,010	4,430	5,640	2,750	1,650	3,380	3,100	1,510	4,040	a4,200
25	4,170	6,590	4,840	3,850	5,440	3,500	1,870	2,580	2,120	2,000	3,630	a3,500
26	4,010	4,990	4,870	4,840	5,910	3,180	1,960	2,770	3,020	3,210	3,830	a4,000
27	4,110	5,790	4,490	4,790	5,530	2,070	1,900	1,890	3,540	3,040	3,680	a3,900
28	3,910	12,100	4,630	4,300	5,190	2,830	2,330	1,980	3,500	3,030	3,890	a4,000
29	3,820	8,140	4,670	3,450	5,170	3,020	3,340	3,130	3,460	3,570	4,040	a4,000
30	3,800	6,560	4,440	3,550	--------	4,110	3,230	2,510	3,440	1,880	4,250	a4,000
31	4,040	--------	4,140	2,540	--------	3,980	--------	1,900	--------	879	4,260	--------
Total	95,540	145,450	156,450	128,710	144,030	157,920	87,760	75,490	74,941	80,759	122,400	127,120
Mean	3,017	4,848	5,047	4,152	4,967	5,094	2,925	2,435	2,498	2,605	3,948	4,237

	Observed			Adjusted†		
Calendar year 1959:	Max 12,100	Min 627	Mean 3,297	Mean 3,550	Cfsm 1.77	In. 24.08
Water year 1959-60:	Max 12,900	Min 879	Mean 3,810	Mean 3,912	Cfsm 1.96	In. 26.61

* 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 Parksville and Apalachia powerplants.

5653. South Chestuee Creek near Benton, Tenn.

Location.--Lat 35°10'02", long 84°42'59", on downstream right wingwall of county highway bridge, 1,000 ft downstream from Climer Branch, 2.4 miles southwest of Benton Station, 2.8 miles north of Ocoee, and 3.6 miles west of Benton, Polk County.

Drainage area.--31.8 sq mi.

Records available.--October 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 712.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--Maximum discharge during year, 2,070 cfs Mar. 3 (gage height, 7.98 ft); minimum, 3.7 cfs Aug. 7; minimum gage height, 0.62 ft Oct. 1.
1957-60: Maximum discharge, that of Mar. 3, 1960; minimum, 2.2 cfs Dec. 15, 1958 (gage height, 0.58 ft).

Remarks.--Records good.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 29, 30)

Oct. 1 to Mar. 3				Mar. 4 to Sept. 30	
0.6	4.5	5.0	240	0.7	4.0
1.0	14	6.0	380	1.0	10
1.5	29	6.5	510	3.0	71
3.0	74	7.0	840	4.0	127
4.0	127	7.5	1,450	5.5	302

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	11	42	23	58	52	58	19	8.4	7.4	4.4	31
2	5.8	11	43	22	48	336	50	15	8.0	8.0	4.4	11
3	5.8	9.5	43	40	42	*1,030	62	14	*7.8	7.0	4.4	6.8
4	5.8	9.2	*34	29	45	230	75	*14	8.0	11	4.4	5.8
5	6.0	11	31	*35	208	114	65	13	7.4	15	4.2	5.4
6	7.5	21	44	408	182	83	52	12	7.2	8.4	4.0	5.2
7	27	15	40	169	84	75	46	19	7.2	7.0	4.4	5.0
8	10	12	33	83	71	66	40	24	7.0	6.4	5.4	4.8
9	8.2	12	30	66	64	66	36	16	7.0	6.0	*44	4.8
10	7.5	12	27	58	146	74	32	14	7.0	8.2	87	6.2
11	7.2	11	45	51	139	88	31	14	7.2	58	8.8	54
12	8.0	11	453	44	71	82	*30	14	7.4	11	49	12
13	7.8	11	148	41	70	73	28	14	6.8	8.2	35	7.4
14	39	11	67	38	72	65	26	12	6.8	7.2	13	6.4
15	18	12	53	39	64	65	24	12	6.8	6.4	9.4	6.0
16	11	13	46	32	77	182	24	11	6.6	6.2	8.2	6.0
17	10	15	43	41	*126	93	22	11	16	6.0	7.8	14
18	11	13	104	53	424	71	22	9.8	9.0	6.0	7.0	10
19	9.0	12	101	44	325	63	21	9.6	7.4	6.4	6.8	7.0
20	7.8	12	64	36	137	57	20	9.2	7.0	*9.0	7.4	6.0
21	*7.5	11	52	32	121	51	33	9.0	6.6	6.2	15	5.8
22	7.8	12	43	29	117	47	30	8.6	6.8	5.8	37	5.4
23	12	14	38	26	84	44	22	8.6	6.0	11	136	5.0
24	35	357	35	26	77	41	20	8.6	14	19	14	4.8
25	19	57	31	24	81	38	19	9.0	64	6.6	9.4	4.4
26	13	36	29	23	71	36	19	8.4	10	5.6	8.0	4.4
27	12	169	28	71	62	33	21	30	9.2	5.4	7.0	36
28	12	535	44	64	60	32	19	13	9.0	7.3	6.6	40
29	11	69	36	60	60	208	17	10	8.6	7.5	6.0	96
30	12	49	28	97	-------	260	15	8.8	7.4	5.0	7.2	22
31	11	-------	25	71	-------	81	-------	8.4	-------	5.0	6.2	-------
Total	369.9	1,553.7	1,880	1,875	3,186	3,836	979	399.0	297.6	293.2	571.2	438.6
Mean	11.9	51.8	60.6	60.5	110	124	32.6	12.9	9.92	9.46	18.4	14.6
Cfsm	0.374	1.63	1.91	1.90	3.46	3.90	1.03	0.406	0.312	0.297	0.579	0.459
In.	0.43	1.82	2.20	2.19	3.73	4.49	1.14	0.47	0.35	0.34	0.67	0.51

Calendar year 1959: Max 626 Min 4.8 Mean 34.6 Cfsm 1.09 In. 14.80
Water year 1959-60: Max 1,030 Min 4.0 Mean 42.8 Cfsm 1.35 In. 18.34

Peak discharge (base, 800 cfs).--Nov. 28 (5 a.m.) 1,010 cfs (7.16 ft); Mar. 3 (4 a.m.) 2,070 cfs (7.98 ft).

* Discharge measurement made on this day.

5655. 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 5.7.

Drainage area.--57.0 sq mi.

Records available.--October 1954 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 716.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--6 years, 80.6 cfs.

Extremes.--Maximum discharge during year, 482 cfs Mar. 4 (gage height, 5.13 ft); minimum, 17 cfs Oct. 3; minimum gage height, 2.18 ft Sept. 8.
1954-60: Maximum discharge, 2,020 cfs Nov. 18, 1957 (gage height, 8.77 ft); minimum observed, 16 cfs Oct. 13-28, 1954, Sept. 27, 1959; minimum gage height observed, 2.12 ft Oct. 28, 1954.

Remarks.--Records good.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 4				June 5 to Sept. 30	
2.2	16	4.0	219	2.1	15
2.5	32	5.0	436	2.5	36
3.0	76	6.0	700	3.0	77
3.5	137			3.5	137

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	25	*78	70	96	108	111	59	33	29	28	22
2	18	25	71	68	92	160	105	60	33	29	27	22
3	18	23	75	110	88	443	105	56	32	29	26	20
4	18	*22	64	132	84	404	119	54	42	29	26	20
5	18	22	60	94	100	231	128	52	61	31	26	19
6	19	23	62	145	147	190	114	50	*41	28	26	20
7	39	23	70	168	116	170	108	51	38	27	26	19
8	36	22	60	159	102	159	104	57	36	26	27	*18
9	22	22	57	133	99	152	96	52	36	26	28	20
10	23	22	54	122	96	148	93	*50	35	29	*48	25
11	22	22	55	114	96	145	90	50	34	92	54	90
12	21	22	172	106	90	145	*88	49	36	*59	39	58
13	25	21	221	100	89	150	86	49	34	37	35	28
14	86	21	120	95	92	150	83	47	34	33	35	24
15	66	21	100	93	89	*147	81	45	34	31	31	23
16	35	22	90	90	88	165	78	45	33	30	29	22
17	30	25	84	84	*107	173	77	44	46	29	27	34
18	28	28	115	86	241	155	75	42	70	29	28	57
19	*27	24	243	82	306	145	72	42	38	28	25	32
20	26	23	203	76	203	137	70	41	35	29	25	26
21	25	23	132	74	168	128	70	40	33	28	25	25
22	24	22	117	*70	170	123	76	39	32	26	28	23
23	25	23	105	68	154	118	69	38	32	45	28	22
24	36	38	96	66	141	112	65	38	31	49	27	22
25	38	49	90	64	137	110	63	37	32	30	24	21
26	29	34	86	63	133	105	62	36	35	29	22	21
27	27	85	82	80	122	102	62	40	32	69	22	25
28	28	300	83	110	116	98	62	44	32	37	21	35
29	26	232	98	93	112	107	60	37	32	31	21	62
30	27	96	82	124	-------	147	58	36	31	29	21	43
31	27	-------	75	108	-------	129	-------	35	-------	29	21	-------
Total	907	1,360	3,100	3,047	3,674	4,956	2,530	1,415	1,103	1,082	874	898
Mean	29.3	45.3	100	98.3	127	160	84.3	45.6	36.8	34.9	28.2	29.9
Cfsm	0.514	0.795	1.75	1.72	2.23	2.81	1.48	0.800	0.646	0.612	0.495	0.525
In.	0.59	0.89	2.02	1.99	2.40	3.23	1.65	0.92	0.72	0.71	0.57	0.59

Calendar year 1959: Max 861 Min 17 Mean 63.2 Cfsm 1.11 In. 15.06
Water year 1959-60: Max 443 Min 18 Mean 68.2 Cfsm 1.20 In. 16.28

Peak discharge (base, 400 cfs).--Mar. 4 (1 to 2 a.m.) 482 cfs (5.13 ft).

* Discharge measurement made on this day.

5675. 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 at mile 12.4.

Drainage area.--428 sq mi.

Records available.--October 1928 to September 1960. Monthly discharge only for December 1930, published in WSP 1306. 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.--30 years, 682 cfs.

Extremes.--Maximum discharge during year, 13,400 cfs Mar. 3 (gage height, 15.42 ft); minimum, 97 cfs Oct. 8; minimum gage height, 0.39 ft Sept. 7.
1928-60: Maximum discharge, 27,600 cfs Mar. 30, 1951 (gage height, 20.73 ft); minimum, 61 cfs Oct. 8, 1941; minimum gage height, that of Sept. 7, 1960.

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. WSP 1386: 1932.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 23 to Mar. 4)

Oct. 1 to Dec. 11		Dec. 12 to Sept. 30			
0.4	94	0.4	102	8.0	2,840
.6	125	.6	128	10.0	4,000
1.0	199	1.0	205	12.0	5,720
2.0	470	2.0	495	14.0	8,650
4.0	1,190	4.0	1,240	15.0	11,100
8.0	2,840				

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	106	146	701	368	1,640	*450	1,320	850	*164	134	*109	127
2	98	*146	558	350	1,120	1,520	1,020	953	164	132	117	*198
3	98	144	505	446	*895	*10,100	1,070	*495	160	128	120	136
4	100	139	434	*474	776	9,730	1,460	401	160	146	117	121
5	102	139	380	410	1,230	3,740	1,430	356	160	160	503	114
6	106	237	404	2,470	2,130	1,750	1,110	329	160	160	343	107
7	190	309	437	2,680	1,550	1,290	926	335	222	140	150	107
8	224	222	350	1,580	1,030	1,110	802	410	175	131	150	107
9	149	187	317	1,050	858	1,010	647	359	158	125	137	107
10	132	175	292	832	795	1,040	573	311	157	152	196	108
11	123	162	348	706	990	1,380	565	292	153	285	164	122
12	114	156	2,330	580	724	1,360	536	280	148	220	142	122
13	117	151	2,560	573	650	1,210	510	272	146	182	225	121
14	469	149	1,440	514	706	1,100	488	260	145	150	298	112
15	498	153	876	539	673	1,060	436	250	143	130	225	110
16	259	158	695	521	687	1,210	425	242	143	124	160	117
17	205	162	602	528	1,130	1,410	401	235	178	120	138	862
18	240	171	873	1,350	2,360	1,200	383	228	164	117	128	949
19	189	166	1,450	1,180	4,430	1,080	365	220	155	120	127	298
20	164	155	1,000	798	3,120	952	344	210	146	124	134	203
21	149	156	747	662	1,780	839	353	198	143	120	136	162
22	144	155	628	521	1,670	747	478	194	138	118	193	145
23	144	158	547	467	1,280	676	401	187	136	118	439	146
24	149	1,280	484	450	956	628	350	182	194	152	275	136
25	166	2,150	439	398	876	595	335	178	210	173	169	127
26	160	1,160	407	380	802	550	323	173	164	132	137	122
27	142	676	380	851	624	506	446	180	157	130	136	169
28	137	2,720	550	1,330	547	478	532	205	152	124	124	358
29	137	2,480	676	971	514	968	380	180	140	122	124	1,300
30	139	*1,130	478	2,350	-------	2,840	341	175	137	117	124	1,000
31	146	-------	404	2,310	-------	2,260	-------	171	-------	112	118	-------
Total	5,296	15,492	22,292	28,639	36,543	54,789	18,750	9,311	4,772	4,398	5,658	7,913
Mean	171	516	719	924	1,260	1,767	625	300	159	142	183	264
Cfsm	0.400	1.21	1.68	2.16	2.94	4.13	1.46	0.701	0.371	0.332	0.428	0.617
In.	0.46	1.35	1.94	2.49	3.18	4.76	1.63	0.81	0.41	0.38	0.49	0.69

Calendar year 1959: Max 6,340 Min 98 Mean 480 Cfsm 1.12 In. 15.21
Water year 1959-60: Max 10,100 Min 98 Mean 584 Cfsm 1.36 In. 18.59

Peak discharge (base, 5,500 cfs).--Mar. 3 (12 p.m.) 13,400 cfs (15.42 ft).

* Discharge measurement made on this day.

5680. Tennessee River at Chattanooga, Tenn.

Location.--Lat 35°05'12", long 85°16'42", on right bank at Rivermont Golf and Country Club, 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 September 1960. Monthly discharge only for some periods, published in WSP 1306. July 1930 to September 1960 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 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 periods since Feb. 28, 1915. Present auxiliary gage at site 2½ miles downstream from base gage.

Average discharge.--86 years (1874-1960), using records at Hales Bar July 1930 to December 1935, 37,030 cfs.

Extremes.--Maximum discharge during year, 108,000 cfs Dec. 20; maximum gage height, 22.96 ft Dec. 20; maximum gage height at Walnut Street, 21.23 ft Dec. 20; minimum daily discharge, 10,600 cfs July 17; minimum gage height, 11.15 ft Apr. 17.
1874-1960: 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, 1,300 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 number of reservoirs above station (see p. 205).

Revisions (water years).--WSP 353: 1874-1912. WSP 783: 1917. WSP 823: 1875(M). WSP 973: 1942. WSP 1306: 1916(M), 1936 (monthly runoff). WSP 1386: 1932-34 (station at Hales Bar near Chattanooga).

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31,200	45,300	46,200	43,900	28,000	42,300	43,700	13,600	28,900	26,900	*23,600	38,500
2	32,500	45,000	46,700	42,700	23,300	45,500	25,100	21,700	25,200	23,800	27,100	40,300
3	26,700	46,000	50,700	37,500	31,400	71,000	26,900	33,500	26,300	19,800	32,300	40,700
4	26,000	37,600	56,700	44,000	32,300	83,700	20,100	34,200	21,100	19,100	26,400	38,100
5	36,500	43,400	57,000	43,800	34,900	74,000	24,200	24,000	16,900	20,400	31,600	39,200
6	39,600	44,200	56,900	45,600	30,300	54,900	28,300	19,400	22,200	28,700	22,700	39,500
7	37,000	44,800	55,000	49,600	38,200	45,900	33,800	14,500	26,000	27,800	26,200	39,500
8	38,600	44,300	51,600	50,600	37,300	45,000	40,000	11,000	23,800	21,400	22,200	40,400
9	29,000	45,600	51,000	50,500	39,100	44,200	23,800	18,800	22,900	28,000	31,800	40,300
10	29,700	45,600	50,700	50,000	39,100	44,200	23,900	21,900	26,500	16,100	28,600	40,100
11	31,800	43,100	51,400	48,000	40,300	44,500	27,300	23,900	23,400	31,300	24,500	39,400
12	33,200	45,300	58,600	47,500	44,300	32,600	29,300	33,100	19,700	24,800	26,900	39,100
13	31,900	44,400	67,300	49,500	41,700	37,700	31,800	29,000	21,700	23,800	24,800	39,000
14	30,700	42,900	72,800	51,000	41,500	39,200	28,400	20,300	25,100	26,800	14,800	39,700
15	41,600	44,500	64,600	53,500	41,200	41,600	27,300	16,700	26,400	31,700	28,000	40,500
16	39,900	43,200	57,600	52,500	45,200	35,600	18,200	17,000	29,300	27,900	28,800	42,100
17	41,000	44,500	53,900	50,000	45,500	39,800	11,900	20,700	33,100	10,600	30,800	43,300
18	38,800	39,200	59,500	46,000	43,500	46,300	15,300	23,700	32,500	20,000	27,000	43,100
19	41,000	44,000	89,900	43,000	55,400	45,600	34,100	23,600	16,800	22,500	26,400	41,700
20	31,800	43,500	106,000	43,500	73,200	43,900	35,600	19,600	22,600	25,000	28,800	40,200
21	34,300	37,900	95,400	43,000	63,700	32,500	27,200	14,700	33,800	25,000	34,000	40,700
22	41,700	19,500	86,000	43,000	52,900	33,900	13,300	17,000	34,300	21,700	31,200	41,900
23	45,000	23,200	82,000	43,500	*52,700	37,700	22,500	19,800	36,400	20,700	27,300	42,900
24	44,900	31,800	57,900	43,500	52,800	35,900	13,200	27,900	40,900	11,400	21,100	43,600
25	45,400	41,700	56,100	39,500	51,700	29,600	15,900	26,500	29,400	18,700	28,200	19,400
26	45,700	39,800	56,200	44,000	49,700	27,100	14,400	*19,900	22,300	22,600	26,400	34,000
27	43,400	43,800	55,500	39,500	48,500	24,800	22,500	24,400	30,000	25,800	27,500	35,600
28	44,300	39,300	56,300	36,000	48,300	24,100	17,600	22,300	24,600	30,300	33,300	37,100
29	43,800	42,600	51,100	39,500	41,100	20,600	25,200	15,800	27,600	29,000	36,400	42,000
30	44,900	*44,400	44,700	29,500	-------	26,300	14,500	18,500	30,700	24,100	40,100	38,800
31	45,400	-------	44,300	27,500	-------	44,900	-------	27,400	-------	12,500	39,600	-------
Total	‡1,167.3	‡1,240.4	‡1,889.6	‡1,371.2	‡1,267.1	‡1,294.9	735,300	674,400	800,400	718,200	876,400	‡1,180.7
Mean	37,650	41,350	60,950	44,230	43,690	41,770	24,510	21,750	26,680	23,170	28,270	39,360
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 106,000 Min 7,900 Mean 30,870 Cfsm 1.44 In. 19.58
Water year 1959-60: Max 106,000 Min 10,600 Mean 36,110 Cfsm 1.69 In. 22.97

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--No gage-height record at base gage Jan. 9 to Feb. 3; discharge estimated on basis of Chickamauga Dam releases and records for station on South Chickamauga Creek.

5685. 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 1960.

Gage.--Water-stage recorder. Datum of gage is 649.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--9 years (1951-60), 77.2 cfs.

Extremes.--Maximum discharge during year, 1,680 cfs Mar. 3 (gage height, 9.00 ft); minimum, 4.6 cfs Sept. 9, 10 (gage height, 0.82 ft).
1950-60: 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 fair. Some diurnal fluctuation at low flow caused by bleachery above station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 12-14, Feb. 5-18, Sept. 29, 30)

0.8	4.3	6.5	350
1.0	7.8	7.0	450
1.5	18	7.5	615
2.0	36	8.0	910
4.0	149	9.0	1,680
6.0	294		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	12	62	54	191	86	184	68	13	8.8	6.3	10
2	7.6	12	50	50	148	209	148	60	13	7.8	6.3	10
3	7.4	12	43	66	122	*1,130	164	52	13	7.6	5.9	7.8
4	7.6	12	35	62	107	406	209	45	25	9.1	5.9	6.8
5	7.8	13	32	62	209	280	206	40	17	9.3	6.3	6.5
6	8.2	13	37	278	308	216	164	38	18	9.5	7.4	5.9
7	9.9	13	42	283	226	180	144	46	17	8.4	7.4	5.4
8	10	13	38	232	182	155	120	54	14	7.4	6.8	5.3
9	10	13	33	164	155	148	104	44	13	7.0	6.3	4.9
10	9.7	12	31	128	*141	137	89	40	12	7.8	6.3	4.9
11	9.3	12	46	107	131	162	78	37	12	12	5.9	12
12	8.9	12	*335	90	109	152	72	34	11	9.5	7.2	13
13	9.1	12	292	80	108	162	65	32	11	8.8	9.3	9.7
14	20	12	170	77	114	174	60	30	11	7.8	14	8.0
15	18	13	124	79	101	180	57	28	10	7.2	11	7.2
16	*14	13	96	72	104	206	54	24	9.9	6.3	9.1	7.8
17	12	14	79	84	151	232	50	23	11	6.1	7.8	118
18	12	14	119	178	336	218	48	22	12	6.3	6.8	75
19	12	14	179	148	558	185	42	20	11	6.3	6.7	38
20	11	14	141	122	301	155	40	20	10	7.4	12	23
21	10	14	113	103	240	132	42	18	9.3	7.4	9.9	18
22	9.9	13	90	88	222	116	48	18	9.1	7.4	11	15
23	10	14	75	75	195	104	40	16	8.9	9.1	12	13
24	11	133	65	68	174	94	37	16	9.5	10	10	12
25	12	80	57	62	166	83	35	15	15	8.6	8.9	11
26	11	46	52	*56	146	74	34	*15	12	8.2	8.0	11
27	11	74	50	134	123	68	44	15	11	11	7.2	15
28	11	289	73	171	109	64	*42	15	10	8.9	6.7	32
29	11	136	75	161	99	104	38	15	9.7	*8.4	6.7	126
30	11	*83	66	371	-------	344	38	14	*9.7	7.2	*6.3	*96
31	12	-------	59	271	-------	249	-------	13	-------	6.8	5.7	-------
Total	331.8	1,137	2,759	3,976	5,276	6,205	2,496	927	368.1	253.4	247.1	728.2
Mean	10.7	37.9	89.0	128	182	200	83.2	29.9	12.3	8.17	7.97	24.3
Cfsm	0.211	0.749	1.76	2.53	3.60	3.95	1.64	0.591	0.243	0.161	0.158	0.480
In.	0.24	0.84	2.03	2.92	3.88	4.56	1.83	0.68	0.27	0.19	0.18	0.54

Calendar year 1959: Max 1,300 Min 5.6 Mean 58.3 Cfsm 1.15 In. 15.65
Water year 1959-60: Max 1,130 Min 4.9 Mean 67.5 Cfsm 1.33 In. 18.16

Peak discharge (base, 800 cfs).--Feb. 18 (12 p.m.) 952 cfs (8.06 ft); Mar. 3 (5 to 6 a.m.) 1,680 cfs (9.00 ft).

* Discharge measurement made on this day.

5700. 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 1960.

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.--30 years, 34,470 cfs.

Extremes.--Maximum discharge during year, 114,000 cfs Dec. 20; maximum gage height, 18.78 ft Dec. 20; minimum daily, 10,700 cfs May 8; minimum gage height, 4.79 ft Nov. 23.
1930-60: Maximum discharge, 241,000 cfs 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, from rating curve extended above 225,000 cfs).

Remarks.--Records good except those for periods of no gage-height record at base or auxiliary gage, which are fair. Since 1936, flow regulated by increasing number of reservoirs above station (see p. 205).

Revisions (water years).--WSP 853: Drainage area. WSP 973: 1942. WSP 1306: 1936 (monthly runoff). WSP 1386: 1932-34.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*32,300	45,800	46,500	44,600	32,800	*43,300	45,000	13,800	25,500	26,000	19,000	39,100
2	33,300	45,800	47,200	46,100	30,100	48,400	32,400	21,600	24,200	23,700	25,000	41,100
3	27,800	46,000	48,900	40,000	33,900	78,500	31,100	32,900	29,000	22,100	31,700	42,200
4	25,600	40,200	56,800	47,200	35,700	91,300	26,000	34,300	20,700	20,400	29,700	41,500
5	37,600	42,700	57,000	47,100	38,000	79,000	26,100	24,200	15,100	20,300	32,500	39,900
6	38,800	43,200	57,600	49,500	36,000	57,700	32,100	18,800	21,600	28,300	25,500	39,400
7	38,900	45,000	55,900	54,200	40,000	49,800	35,400	13,800	25,000	29,200	21,800	40,800
8	39,000	44,500	52,700	56,500	40,000	48,000	43,000	10,700	22,100	22,100	23,300	41,100
9	30,700	45,400	51,900	54,700	44,000	45,500	28,800	18,800	21,900	28,600	32,000	41,000
10	29,400	45,900	51,900	52,900	40,000	45,500	26,200	21,200	25,100	19,600	31,400	42,900
11	31,700	43,800	52,500	52,300	41,500	45,000	29,500	24,100	22,700	30,200	24,900	42,200
12	34,300	44,700	61,700	50,000	45,500	35,000	31,500	32,200	18,600	24,600	27,200	41,000
13	32,900	45,100	69,900	51,100	42,500	39,600	33,100	28,600	22,300	25,400	26,900	39,900
14	31,400	42,900	77,800	52,200	42,500	42,400	30,900	18,200	23,500	26,700	17,100	41,100
15	40,200	44,600	71,200	54,800	42,500	43,600	28,700	13,300	25,900	31,000	27,500	41,900
16	40,600	44,600	60,100	54,300	46,500	35,000	20,100	15,600	27,000	29,400	29,700	42,700
17	41,500	45,700	56,000	53,600	46,500	42,000	13,100	19,000	33,000	11,500	29,700	47,700
18	39,600	40,700	59,700	50,700	46,000	48,500	15,700	22,900	30,300	20,000	28,100	47,700
19	40,300	43,200	89,700	47,900	58,000	46,000	30,600	22,500	16,500	22,500	32,200	44,300
20	34,200	44,500	111,000	47,300	78,900	45,000	36,600	17,800	19,900	25,000	30,500	42,000
21	34,100	39,800	103,000	44,900	71,900	33,500	27,800	15,000	32,300	25,000	34,400	41,200
22	42,000	23,100	88,500	47,500	56,800	35,000	14,000	14,300	32,000	21,500	31,100	42,600
23	43,900	25,100	84,800	47,200	54,800	38,500	*23,500	18,400	32,700	20,500	25,900	42,400
24	46,400	32,100	64,000	46,300	56,000	36,500	*12,700	26,600	39,600	11,500	29,600	44,600
25	46,000	42,100	57,600	40,700	55,100	30,000	14,100	26,200	30,300	18,500	*27,100	26,400
26	45,100	41,000	57,500	47,200	53,500	27,000	15,700	20,500	22,500	22,500	26,200	33,200
27	45,800	44,600	56,800	44,600	51,300	25,000	22,100	22,300	28,800	25,500	28,400	34,600
28	44,200	44,000	58,100	39,000	50,300	24,500	18,500	22,700	23,500	30,500	34,500	37,300
29	43,800	47,100	56,000	43,700	46,600	21,500	*24,500	14,600	26,300	29,000	36,400	41,100
30	45,300	46,500	48,200	39,800	--------	29,000	*13,700	16,900	30,100	25,000	40,700	40,800
31	45,200	--------	*47,300	36,200	--------	47,000	--------	26,100	--------	12,500	39,500	--------
Total	‡1,181.9	‡1,269.7	‡1,957.8	‡1,484.1	‡1,357.2	‡1,356.6	782,500	647,700	768,000	728,600	‡99,500	‡1,223.7
Mean	38,130	42,320	63,150	47,870	46,800	43,760	26,080	20,890	25,600	23,500	29,020	40,790
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 111,000 Min 4,500 Mean 31,830 Cfsm 1.46 In. 19.82
Water year 1959-60: Max 111,000 Min 10,700 Mean 37,320 Cfsm 1.71 In. 23.30

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--No gage-height record at base or auxiliary gage during periods Feb. 5-19, Mar. 9-12, Mar. 16. to Apr. 1, July 17 to Aug. 2; discharge estimated on basis of records for Hales Bar Dam.

5710. 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, 4½ miles downstream from Griffith Creek, and at mile 25.1.

Drainage area.--384 sq mi.

Records available.--October 1920 to September 1960. Prior to December 1920 monthly discharge only, published in WSP 1306.

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.--40 years, 726 cfs.

Extremes.--Maximum discharge during year, 7,520 cfs Dec. 19 (gage height, 14.10 ft); minimum, 45 cfs Sept. 10 (gage height, 0.77 ft).
1920-60: Maximum discharge, 22,600 cfs Nov. 19, 1957 (gage height, 16.71 ft); minimum, 16 cfs Sept. 6-21, 27, 28, 1925.
Flood in March 1867 reached a stage of about 19 ft, from reports of Tennessee Valley Authority.

Remarks.--Records good. Prior to 1950, some diurnal fluctuation caused by small mills above station.

Revisions (water years).--WSP 603: 1922(M). WSP 758: 1929(M). WSP 823: Drainage area. WSP 1033: 1943(M). WSP 1386: 1921-22, 1923-25(M), 1927-28(M), 1930(M), 1933(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.7	40	6.0	1,510
1.0	65	10.0	3,000
1.3	100	12.0	4,120
2.0	210	13.0	5,200
3.0	475	13.5	6,020

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*116	152	*986	972	1,310	*1,100	*3,260	466	*147	*114	*74	*62
2	110	*148	782	852	*1,090	1,380	2,190	433	144	110	72	60
3	106	144	726	1,090	922	3,870	1,660	*397	146	106	70	56
4	104	138	692	1,330	838	3,990	1,390	370	144	150	67	53
5	103	181	636	1,270	1,160	2,750	1,240	345	138	141	79	51
6	104	391	592	1,320	2,140	1,950	1,100	322	134	152	72	50
7	123	376	592	1,480	1,970	1,600	996	391	127	128	66	49
8	128	358	562	1,730	1,630	1,380	880	1,010	126	117	70	48
9	127	305	523	1,780	1,370	1,260	782	1,030	124	103	176	46
10	126	260	487	1,700	1,340	1,170	692	877	116	97	168	59
11	119	226	487	1,590	1,730	1,090	622	674	113	188	147	406
12	113	206	2,060	1,410	1,690	1,010	580	559	110	173	133	1,470
13	110	190	3,310	1,250	1,530	972	538	487	109	148	110	716
14	127	183	2,780	1,100	1,330	1,020	505	433	106	121	97	342
15	142	178	2,070	1,090	1,100	1,120	472	382	104	109	100	218
16	147	182	1,390	996	1,000	1,810	448	345	100	103	112	180
17	144	208	1,080	916	1,150	2,870	430	320	110	96	110	2,210
18	138	265	1,630	961	2,720	2,780	415	295	152	94	108	3,740
19	128	290	6,000	961	4,490	2,340	397	270	161	97	118	1,890
20	120	290	5,700	898	3,530	1,940	376	248	150	90	120	1,070
21	116	270	3,860	818	2,520	1,600	388	230	138	82	101	642
22	109	245	2,340	734	2,020	1,380	397	214	128	79	92	472
23	106	230	1,580	653	1,740	1,250	379	200	114	97	117	373
24	109	235	1,240	598	1,600	1,170	358	192	110	131	101	315
25	108	349	1,030	559	1,640	1,100	345	183	109	109	92	268
26	106	684	891	517	1,930	1,000	335	178	108	91	94	232
27	113	568	786	550	1,740	912	445	173	175	126	86	220
28	127	1,620	1,410	632	1,460	832	550	168	146	99	77	214
29	138	1,820	1,700	698	1,280	968	550	163	131	87	73	224
30	152	1,390	1,420	1,350	-------	3,440	505	158	120	82	67	318
31	153	-------	*1,160	1,560	-------	4,650	-------	152	-------	75	63	-------
Total	3,772	12,082	50,502	33,365	49,970	55,704	23,225	11,665	3,840	3,495	3,032	16,054
Mean	122	403	1,629	1,076	1,723	1,797	774	376	128	113	97.8	535
Cfsm	0.318	1.05	4.24	2.80	4.49	4.68	2.02	0.979	0.333	0.294	0.255	1.39
In.	0.37	1.17	4.89	3.23	4.84	5.39	2.25	1.13	0.37	0.34	0.29	1.55

Calendar year 1959: Max 8,020 Min 103 Mean 713 Cfsm 1.86 In. 25.22
Water year 1959-60: Max 6,000 Min 46 Mean 729 Cfsm 1.90 In. 25.82

Peak discharge (base, 5,500 cfs).--Dec. 19 (8:30 p.m.) 7,520 cfs (14.10 ft).

* Discharge measurement made on this day.

5729. Town Creek near Geraldine, Ala.

Location.--Lat 34°22'42", long 85°59'25", in SE¼ sec.34, T.7 S., R.6 E., on downstream side of bridge on State Highway 110, 1,600 ft downstream from Reedy Creek, 4,500 ft upstream from Traylor Branch, 2 miles north northeast of Geraldine, and 15 miles northeast of Albertville.

Drainage area.--141 sq mi.

Records available.--July 1957 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 1,000 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,120 cfs Mar. 3 (gage height, 6.12 ft); no flow July 17, 19-21, 24-29.
1957-60: Maximum discharge, 10,600 cfs Nov. 18, 1957 (gage height, 15.6 ft); no flow Sept. 6-13, 1957, July 17, 19-21, 24-29, 1960.

Remarks.--Records fair except those below 1 cfs, which are poor.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 13-30)

0.2	0	1.1	31
.3	.4	1.3	53
.4	1.0	1.5	83
.5	2.2	2.0	178
.6	4.1	3.0	450
.7	6.8	4.0	860
.8	11	6.0	2,050
.9	16		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	6.0	238	187	560	252	435	149	14	3.9	1.2	2.8
2	3.2	5.7	213	183	468	704	381	133	12	3.0	.9	2.2
3	3.0	5.2	199	238	405	1,980	420	*113	11	2.6	.7	1.5
4	2.6	4.9	174	*215	375	1,430	468	102	10	2.8	.6	1.5
5	2.0	32	157	206	542	985	450	92	9.5	1.8	38	1.6
6	1.6	29	196	839	680	792	381	90	32	1.5	85	1.0
7	2.6	16	203	680	520	725	342	147	50	2.2	6.6	.8
8	2.6	14	172	520	435	640	298	194	27	1.5	2.8	.8
9	2.6	13	159	420	390	1,180	268	147	18	1.2	64	.7
10	2.4	12	149	369	363	1,400	238	118	15	1.0	23	.7
11	2.2	11	155	330	354	1,430	213	104	13	.8	14	.7
12	2.1	*10	955	290	295	1,130	196	98	9.1	.7	11	.7
13	2.4	11	815	270	309	860	180	92	6.8	.5	10	.9
14	*3.7	11	502	270	306	725	163	83	6.0	.4	15	4.4
15	3.9	12	405	333	280	748	149	73	5.2	.2	26	2.2
16	9.1	16	339	280	300	1,100	139	64	4.6	.1	20	3.6
17	11	29	309	381	390	985	133	59	11	0	11	27
18	9.5	27	390	620	668	770	149	54	17	.1	6.5	216
19	7.2	29	378	450	792	620	151	48	18	0	4.6	69
20	6.0	25	315	381	580	520	114	41	14	0	3.7	34
21	5.7	23	282	333	560	450	163	36	9.5	0	3.6	20
22	5.4	21	255	290	640	405	258	31	6.5	.1	14	13
23	5.2	23	230	258	*502	*354	180	28	*4.9	.2	20	8.7
24	6.8	555	211	240	435	318	145	25	4.1	0	36	6.3
25	7.2	340	196	*218	405	285	128	22	3.5	*0	*22	4.9
26	6.0	203	185	201	357	265	129	20	3.0	0	14	3.9
27	5.4	248	170	450	312	245	215	*28	3.2	0	9.1	19
28	5.4	680	275	450	290	228	199	27	3.9	0	6.8	51
29	6.3	390	282	519	280	344	161	22	3.5	0	5.4	53
30	6.3	282	223	960	------	860	141	20	4.1	1.6	4.1	52
31	6.3	------	201	725	------	560	------	16	------	1.8	3.5	------
Total	148.9	3,083.8	8,933	12,106	12,793	23,290	6,967	2,276	349.4	28.0	483.1	603.9
Mean	4.80	103	288	391	441	751	232	73.4	11.6	0.903	15.6	20.1
Cfsm	0.034	0.730	2.04	2.77	3.13	5.33	1.65	0.521	0.082	0.0064	0.111	0.143
In.	0.04	0.81	2.36	3.19	3.37	6.14	1.84	0.60	0.09	0.007	0.13	0.16

Calendar year 1959: Max 2,860 Min 1.6 Mean 171 Cfsm 1.21 In. 16.46
Water year 1959-60: Max 1,980 Min 0 Mean 194 Cfsm 1.38 In. 18.74

Peak discharge (base, 4,800 cfs).--No peak above base.

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

5745. 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, 4.1 miles upstream from Little Paint Creek, and at mile 26.6.

Drainage area.--320 sq mi.

Records available.--December 1935 to September 1960.

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.--24 years (1936-60), 623 cfs.

Extremes.--Maximum discharge during year, 12,200 cfs Dec. 20 (gage height, 18.42 ft); minimum, 16 cfs July 17, Aug. 7; minimum gage height, 0.65 ft Aug. 7.
1935-60: Maximum discharge, 31,300 cfs Dec. 28, 1942; maximum gage height, 20.84 ft Jan. 5, 1949; minimum discharge, 1.3 cfs Oct. 21, 1954 (gage height, 0.28 ft).

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

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 7-17, Dec. 30 to Jan. 5, Sept. 12, 13, 17, 19; rate of change in stage used as a factor Dec. 12-15, 18-22, Jan. 6-9, 18, 19, Jan. 30 to Feb. 1, Feb. 18-21, Mar. 2-6, 9-11, 16-18, Mar. 30 to Apr. 2, May 8, 9)

0.6	14	8.0	1,200
1.0	29	11.0	2,000
1.5	60	14.0	3,200
2.0	103	16.0	4,800
3.0	237	17.0	6,400
4.0	405	18.0	10,000

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	57	322	604	*2,170	620	3,400	234	78	45	18	40
2	19	53	259	520	1,160	1,550	1,650	*215	71	40	*22	37
3	19	49	224	712	830	5,600	1,050	196	68	37	39	34
4	18	45	194	1,260	684	*7,370	920	180	66	35	21	31
5	19	49	172	*926	630	3,760	840	167	61	33	18	28
6	19	372	160	2,100	752	1,900	a750	159	*58	23	17	26
7	21	359	*153	2,990	822	1,160	a650	358	54	23	16	25
8	22	196	146	2,360	686	838	a570	1,560	51	30	61	23
9	23	*140	141	1,530	606	1,280	a500	1,410	49	23	69	23
10	24	107	129	1,020	610	2,080	a450	712	46	24	34	23
11	24	88	167	806	*702	1,730	a400	520	43	*23	27	68
12	*22	74	1,630	660	596	1,490	a350	420	40	22	26	974
13	21	65	2,780	560	540	1,150	*325	359	39	20	166	*690
14	125	60	3,320	546	560	950	306	317	38	19	378	215
15	266	56	1,440	782	538	898	285	278	37	18	135	133
16	153	59	688	872	590	1,360	264	243	36	17	73	108
17	99	178	538	842	904	2,190	253	216	39	31	51	891
18	73	337	1,250	1,620	2,040	1,570	245	193	43	264	44	1,480
19	90	278	*5,190	1,430	3,190	1,070	231	173	51	39	37	628
20	77	200	9,430	1,010	3,110	864	210	158	52	29	32	337
21	60	159	4,620	784	1,870	706	301	142	50	25	59	234
22	50	133	2,180	636	1,660	600	716	126	42	23	858	173
23	45	118	1,090	526	1,550	534	584	115	37	21	544	135
24	44	114	654	452	1,310	473	432	105	35	19	352	108
25	49	118	516	402	1,150	426	376	97	36	18	219	88
26	80	121	435	359	1,230	386	342	96	92	18	144	78
27	71	162	383	632	1,050	352	339	103	91	18	100	78
28	61	734	726	1,460	840	325	318	125	64	27	77	86
29	60	838	1,490	1,260	724	622	283	122	61	34	62	101
30	64	460	1,040	2,340	-------	2,660	255	108	50	24	52	103
31	62	-------	748	3,030	-------	4,560	-------	90	-------	21	45	-------
Total	1,800	5,779	42,195	35,031	33,104	51,074	17,593	9,297	1,578	1,055	3,796	6,998
Mean	58.1	193	1,361	1,130	1,142	1,648	586	300	52.6	34.0	122	233
Cfsm	0.182	0.603	4.25	3.53	3.57	5.15	1.83	0.938	0.164	0.106	0.381	0.728
In.	0.21	0.67	4.90	4.07	3.85	5.94	2.04	1.08	0.18	0.12	0.44	0.81

Calendar year 1959: Max 9,780 Min 18 Mean 551 Cfsm 1.72 In. 23.38
Water year 1959-60: Max 9,430 Min 16 Mean 572 Cfsm 1.79 In. 24.31

Peak discharge (base, 6,000 cfs).--Dec. 20 (2:30 a.m.) 12,200 cfs (18.42 ft); Mar. 5 (2 a.m.) 9,420 cfs (17.87 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.

5750. 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, and at mile 35.9.

Drainage area.--342 sq mi.

Records available.--October 1929 to September 1960. Prior to May 1930 monthly discharge only, published in WSP 1306.

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.--31 years, 517 cfs.

Extremes.--Maximum discharge during year, 18,400 cfs Dec. 19 (gage height, 17.2 ft, from floodmark); minimum, 80 cfs Oct. 5 (gage height, 1.05 ft).
1929-60: Maximum discharge, 42,000 cfs Jan. 21, 1954 (gage height, 25.00 ft), from rating curve extended above 28,000 cfs; minimum, 44 cfs Sept. 20, 27, 30, 1931; minimum gage height, 0.82 ft Sept. 3, 27, 1954.
Flood in September 1929 reached a stage of 25.0 ft, from floodmarks (discharge, 42,000 cfs, from rating curve extended above 28,000 cfs).

Remarks.--Records good. Some diurnal fluctuation caused by small mills above station.

Revisions (water years).--WSP 823: Drainage area. WSP 853: 1936(M). WSP 1306: 1934(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 19				Dec. 20 to Sept. 30			
1.0	70	7.0	3,320	1.1	90	5.0	2,010
1.5	190	11.0	7,000	1.5	185	7.0	3,320
2.0	345	14.0	10,500	2.0	360	12.0	8,050
3.0	745	16.0	14,900	3.0	860		
5.0	1,900						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	132	244	590	*860	595	942	211	143	156	120	115
2	88	128	235	535	725	2,130	750	*202	140	143	*122	113
3	86	125	238	1,160	635	7,740	750	197	143	150	118	109
4	84	122	226	860	590	2,540	778	194	140	146	109	107
5	82	306	217	*750	805	1,330	675	191	136	140	118	105
6	88	298	217	1,830	1,270	998	565	200	*131	138	122	105
7	105	208	235	1,950	860	888	510	1,650	124	131	115	103
8	128	182	*214	1,440	650	778	460	1,330	122	126	111	100
9	112	*170	199	1,020	595	1,590	428	600	122	122	185	98
10	105	162	190	832	580	1,950	392	418	120	120	182	170
11	100	158	202	725	535	1,360	374	336	115	*115	177	750
12	*100	152	1,860	635	455	1,190	352	300	115	113	158	327
13	102	150	1,600	585	465	915	*340	280	115	111	143	169
14	445	145	790	560	485	805	328	259	118	107	174	*140
15	238	145	570	915	520	888	312	242	122	105	146	131
16	168	165	462	750	555	2,430	304	226	120	105	131	234
17	152	193	412	1,090	832	*1,770	300	217	238	395	122	3,170
18	135	205	4,400	1,710	2,310	1,140	304	205	233	3,030	122	942
19	128	185	*13,500	1,020	2,010	915	296	200	153	2,130	120	450
20	120	175	2,800	725	1,330	805	280	191	136	510	118	300
21	120	168	1,330	600	1,160	700	312	188	129	273	173	233
22	115	162	970	525	1,360	635	418	182	124	208	216	200
23	115	168	778	450	1,050	580	336	174	120	188	355	182
24	122	180	640	423	888	540	288	169	275	180	180	166
25	122	182	565	410	970	495	266	163	1,140	166	146	158
26	122	170	535	387	970	465	252	161	276	158	133	153
27	125	209	510	860	750	441	245	177	188	166	129	172
28	125	494	3,000	1,080	675	423	239	172	172	146	124	182
29	130	345	1,950	860	675	1,100	226	158	194	146	122	185
30	130	274	942	2,010	-------	2,820	220	156	200	126	120	182
31	132	-------	700	1,190	-------	1,470	-------	148	-------	129	118	-------
Total	4,026	5,858	40,731	28,477	25,565	42,426	12,242	9,497	5,604	9,979	4,529	9,551
Mean	130	195	1,314	919	882	1,369	408	306	187	322	146	318
Cfsm	0.380	0.570	3.84	2.69	2.58	4.00	1.19	0.895	0.547	0.942	0.427	0.930
In.	0.44	0.64	4.43	3.10	2.78	4.61	1.33	1.03	0.61	1.09	0.49	1.04

Calendar year 1959: Max 13,500 Min 82 Mean 443 Cfsm 1.30 In. 17.60
Water year 1959-60: Max 13,500 Min 82 Mean 542 Cfsm 1.58 In. 21.59

Peak discharge (base, 5,000 cfs).--Dec. 19 (9 a.m.) 18,400 cfs (17.2 ft); Mar. 3 (8 a.m.) 9,300 cfs (13.1 ft).

* Discharge measurement made on this day.

5755. 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 1960. Monthly discharge only for some periods, published in WSP 1306. 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.--36 years, 42,230 cfs.

Extremes.--Maximum discharge during year, 136,000 cfs Dec. 21; maximum gage height, 12.96 ft Dec. 21; minimum daily discharge, 1,300 cfs July 24; minimum gage height, 1.17 ft Feb. 4.

1924-60: Maximum discharge, 293,000 cfs Feb. 2, 1957 (gage height, 23.93 ft); 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 except those below 20,000 cfs, which are fair. Discharge below 20,000 cfs computed on basis of records for Guntersville Dam, adjusted for storage and inflow. Since 1936, flow regulated by increasing number of reservoirs above station (see p. 205).

Revisions (water years).--WSP 1306: 1936 (monthly runoff). WSP 1436: 1938-39, 1941-42.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31,800	44,000	49,500	55,100	57,900	53,900	60,000	15,200	28,100	39,600	*26,900	47,700
2	28,100	44,500	*48,600	51,600	47,200	60,900	58,800	26,600	*25,200	13,600	30,700	49,300
3	24,100	46,300	53,300	51,900	41,800	106,000	58,400	41,000	30,700	13,000	33,100	28,900
4	20,600	46,200	64,400	51,700	42,300	127,000	51,700	34,400	22,800	12,800	33,400	29,400
5	32,500	43,700	64,700	51,600	50,800	127,000	41,400	28,200	25,600	25,500	40,600	42,300
6	32,100	50,000	65,600	61,500	44,100	111,000	36,000	25,600	19,500	39,000	9,700	49,200
7	32,600	47,200	65,700	70,300	54,300	86,000	40,800	19,500	26,000	34,900	8,400	46,600
8	*32,500	47,000	63,100	72,300	51,800	65,700	47,300	17,100	20,500	28,900	26,900	41,500
9	33,600	48,300	57,000	71,200	*47,600	63,600	38,600	23,000	24,900	13,100	33,300	41,500
10	32,100	46,900	55,100	69,900	48,300	71,000	39,600	31,800	25,900	12,800	33,500	35,100
11	32,100	45,600	55,100	69,000	55,100	62,800	*33,600	28,300	23,100	25,100	35,000	39,000
12	34,600	44,900	62,600	66,200	54,100	61,300	28,600	34,500	23,300	38,900	36,500	47,900
13	31,300	42,300	80,700	60,500	54,300	57,000	26,700	35,000	20,300	33,800	10,500	47,900
14	33,100	41,900	93,000	57,500	55,100	54,600	26,600	36,200	23,900	34,300	2,100	45,900
15	35,500	44,500	96,300	57,800	53,300	47,800	25,700	15,500	27,700	36,000	32,500	45,600
16	49,300	42,300	86,200	58,900	52,600	57,000	26,300	16,000	26,900	10,600	33,900	42,100
17	50,800	47,000	67,200	62,700	53,000	59,100	15,000	25,700	30,400	7,500	32,800	40,200
18	42,400	47,400	67,200	65,600	58,400	59,000	15,400	27,200	35,000	28,600	34,000	47,200
19	44,400	46,700	89,300	66,400	70,800	57,800	36,300	26,300	18,000	32,300	35,800	52,400
20	31,900	45,400	114,000	63,100	94,900	57,100	30,700	18,500	24,800	33,300	20,200	51,400
21	31,200	44,100	135,000	58,200	100,000	55,400	31,800	17,500	34,600	33,300	9,900	50,900
22	46,000	25,400	132,000	54,700	90,800	55,200	30,700	17,700	39,300	32,600	38,200	50,200
23	44,900	24,300	115,000	52,400	81,600	47,900	24,800	21,500	40,900	8,200	36,600	49,700
24	46,700	36,200	87,800	50,800	68,900	44,600	15,400	34,000	40,000	1,300	35,600	26,800
25	47,500	48,100	75,600	50,400	66,100	42,300	27,500	23,000	15,700	25,400	35,800	17,000
26	46,000	43,000	68,400	47,900	63,600	37,600	18,500	36,500	13,800	25,800	37,000	35,100
27	48,200	42,800	61,200	50,700	61,600	27,900	25,800	18,500	37,300	28,700	18,200	37,900
28	48,700	51,700	61,800	50,700	61,100	31,900	26,600	28,200	32,700	34,100	23,400	40,800
29	45,800	52,500	65,800	54,200	58,700	35,700	16,800	18,800	34,000	33,000	32,000	43,600
30	41,500	50,800	66,100	59,600	--------	56,600	19,200	16,100	38,300	11,500	34,200	*42,400
31	41,100	-------	62,600	60,100	--------	60,400	--------	28,600	--------	4,200	37,400	--------
Total	‡1,173	‡1,331	‡2,329.9	‡1,824.5	‡1,740.1	‡1,941.1	974,600	786,000	823,200	751,700	888,100	‡1,265.5
Mean	37,840	44,370	75,160	58,850	60,000	62,620	32,490	25,350	27,640	24,250	28,650	42,180
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 135,000 Min 1,500 Mean 36,780 Cfsm 1.44 In. 19.49
Water year 1959-60: Max 135,000 Min 1,300 Mean 43,260 Cfsm 1.69 In. 22.99

* Discharge measurement made on this day.
‡ Expressed in thousands.

5761. Indian Creek near Madison, Ala.

Location.--Lat 34°41'50", long 86°42'00", in NE¼ sec.14, T.4 S., R.3 W., on downstream side of pier of bridge on State Highway 20, 0.3 mile downstream from Southern Railway bridge, 2.8 miles east of Madison, and 5.8 miles upstream from mouth.

Drainage area.--49.0 sq mi.

Records available.--October 1959 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 600 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,640 cfs Dec. 18 (gage height, 8.34 ft); minimum, 6.0 cfs Aug. 18 (gage height, 0.71 ft).

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

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 3 to Apr. 6, May 7, 8)

Oct. 1 to Dec. 18				Dec. 19 to Sept. 30			
0.8	5.7	2.5	120	0.7	5.7	2.5	120
.9	8.7	3.5	250	.8	8.2	3.5	250
1.0	12	5.0	550	1.0	15	5.0	550
1.2	21	7.0	1,140	1.5	40	7.0	1,140
1.8	58			2.0	76		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.6	8.7	14	87	115	84	101	26	15	9.2	8.2	7.0
2	6.3	9.1	14	86	*101	631	94	*25	14	8.8	7.7	7.0
3	6.3	8.1	13	120	91	763	102	24	14	8.5	*7.4	6.7
4	6.3	10	12	93	90	228	93	22	13	8.0	7.4	6.4
5	6.3	70	12	155	149	161	84	22	12	8.0	7.2	6.4
6	15	29	13	*304	142	144	77	29	12	7.7	7.2	6.4
7	11	18	12	180	109	133	74	291	*11	7.4	7.0	6.4
8	7.8	16	*12	139	97	120	69	88	11	7.4	6.7	6.4
9	7.2	*14	12	115	92	332	67	62	11	7.2	16	6.4
10	6.6	13	11	105	90	193	63	53	10	7.2	9.8	146
11	6.6	12	32	97	82	174	61	47	10	7.2	9.9	131
12	6.3	11	220	91	75	142	60	42	9.8	*7.2	7.7	20
13	*22	9.8	99	86	80	122	58	37	9.8	7.0	7.4	12
14	20	9.8	60	87	78	116	55	34	11	7.0	7.4	*9.5
15	11	9.8	45	110	78	149	52	31	11	6.7	7.0	8.8
16	9.5	13	39	90	83	*401	50	28	10	7.0	6.7	46
17	9.8	15	42	198	112	193	50	26	85	30	6.4	114
18	9.5	12	*846	186	242	151	*48	24	23	155	6.4	32
19	8.1	12	*991	118	174	136	44	23	13	89	6.4	20
20	7.8	11	252	98	142	120	41	22	12	19	6.7	16
21	7.8	10	155	87	161	113	46	21	11	12	27	14
22	7.8	9.1	127	82	155	106	42	20	10	10	43	12
23	7.8	9.5	111	74	128	100	38	19	11	10	19	11
24	9.1	9.8	96	71	117	96	35	18	13	9.5	10	11
25	8.1	9.1	86	67	126	90	34	18	14	8.8	8.8	10
26	8.1	8.1	85	65	109	85	33	19	11	57	8.2	10
27	9.5	14	82	109	98	81	32	22	10	38	7.7	13
28	8.1	21	457	99	95	78	30	20	9.2	13	7.7	12
29	8.4	18	174	135	91	221	28	18	12	11	7.4	23
30	8.7	16	113	216	-------	200	28	16	9.5	10	7.0	16
31	8.7	-------	96	137	-------	122	-------	15	-------	9.5	7.0	-------
Total	282.1	435.9	4,333	3,687	3,302	5,785	1,689	1,162	428.3	603.3	309.4	746.4
Mean	9.10	14.5	1.40	119	114	187	56.3	37.5	14.3	19.5	9.98	24.9
Cfsm	0.186	0.296	2.86	2.43	2.33	3.82	1.15	0.765	0.292	0.398	0.204	0.508
In.	0.21	0.33	3.29	2.80	2.51	4.39	1.28	0.88	0.33	0.46	0.23	0.57

Calendar year 1959: Max - Min - Mean - Cfsm - In. -
Water year 1959-60: Max 991 Min 6.3 Mean 62.2 Cfsm 1.27 In. 17.68

Peak discharge (base, 1,500 cfs).--Dec. 18 (9 p.m.) 1,640 cfs (8.34 ft).

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 5, May 12 to June 2; discharge estimated on basis of records for stations on nearby streams.

596833 O - 61 - 12

5764. Piney Creek near Athens, Ala.

Location.--Lat 34°48'10", long 86°53'00", on east half of line between secs. 6 and 7, T.3 S., R.3 W., near left bank on downstream side of pier of bridge on Limestone County Highway 44, $\frac{3}{4}$ mile upstream from Johnson Branch, $1\frac{3}{4}$ miles downstream from Panther Branch, and 5 miles east of Athens.
Drainage area.--55.8 sq mi.
Records available.--August 1959 to September 1960.
Gage.--Water-stage recorder. Altitude of gage is 455 ft (from topographic map).
Extremes.--1959: Maximum discharge during period August to September, 178 cfs Sept. 5 (gage height, 2.53 ft); minimum, 3.9 cfs Aug. 28.
1959-60: Maximum discharge during water year, 3,670 cfs Dec. 18 (gage height, 9.61 ft); minimum, 0.6 cfs Sept. 9.
Remarks.--Records fair.

Rating table, Aug. 20, 1959, to Sept. 30, 1960 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 20 to Sept. 4, 1959, Oct. 13 to Nov. 27, 1959, Aug. 22 to Sept. 30, 1960)

1.1	0.1	1.8	48
1.2	.8	2.5	187
1.3	2.5	3.5	449
1.4	6.0	5.0	1,000
1.5	12	8.0	2,600
1.6	21		

Discharge, in cubic feet per second, 1959

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	5.0	7	-	11	13	-	11	19	-	7.2	25	5.6	5.3
2	-	5.6	8	-	*9.0	14	-	9.0	20	*37	6.6	26	5.3	5.0
3	-	5.0	9	-	7.8	15	-	9.6	21	39	6.0	27	4.6	6.6
4	-	20	10	-	40	16	-	9.6	22	20	5.6	28	4.2	6.0
5	-	19	11	-	32	17	-	9.0	23	9.6	5.6	29	4.6	5.6
6	-	38	12	-	13	18	-	8.4	24	7.2	5.3	30	4.6	5.3
												31	4.2	-
Total													-	332.1
Mean													-	11.1
Cubic feet per second per square mile													-	0.199
Runoff in inches													-	0.22

Peak discharge (base, 2,000 cfs).--No peak above base.

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.0	16	67	126	144	76	130	17	11	18	4.6	1.6
2	4.6	16	67	124	*120	721	102	17	10	10	4.2	1.5
3	4.6	15	62	272	104	*1,080	104	*16	11	7.8	*3.9	1.3
4	5.0	15	51	222	102	334	108	15	9.6	7.2	3.6	1.1
5	5.0	50	44	165	290	174	92	14	9.0	6.6	3.6	1.0
6	15	51	46	*342	324	136	74	22	9.0	5.6	3.2	.8
7	37	44	48	364	189	124	65	436	*6.6	5.3	2.5	.8
8	22	33	*44	266	136	114	56	305	6.0	5.0	2.5	.8
9	27	27	39	194	120	346	51	124	5.6	5.0	2.5	.7
10	17	*24	34	157	114	300	45	76	5.0	5.0	3.2	1.1
11	15	20	65	138	98	236	40	58	5.0	3.9	8.3	2.2
12	11	18	523	122	80	183	39	48	5.0	*3.9	4.6	2.0
13	*14	16	434	114	84	140	36	42	5.0	3.9	3.6	2.8
14	116	15	229	114	90	122	33	36	5.0	3.6	3.6	*2.8
15	94	18	152	159	94	158	31	31	5.3	3.2	3.6	3.6
16	53	21	130	126	108	449	29	27	5.6	2.8	2.8	37
17	34	33	120	277	154	272	28	25	176	3.2	2.5	156
18	25	34	*1,820	302	242	167	*29	21	50	11	2.3	17
19	18	32	*2,150	196	192	136	27	19	20	6.6	2.0	5.6
20	16	25	504	140	146	120	23	18	13	4.6	2.0	3.6
21	12	21	236	118	146	104	52	18	9.6	3.9	3.2	2.5
22	12	20	169	100	159	92	65	16	7.8	3.6	14	2.2
23	11	23	140	86	128	84	42	15	7.8	53	6.0	2.0
24	14	31	120	82	110	74	31	14	7.8	50	10	1.8
25	15	31	108	76	122	69	25	12	126	9.0	3.2	1.5
26	14	25	112	73	120	65	22	14	94	7.2	2.8	1.6
27	15	139	150	161	98	60	25	22	32	6.0	2.3	2.2
28	15	196	1,830	176	90	56	22	16	19	5.0	2.2	2.5
29	16	136	1,340	174	88	96	19	14	15	5.0	2.0	2.5
30	17	84	222	272	-------	305	17	12	35	5.0	1.8	2.2
31	17	-------	152	201	-------	208	-------	11	-------	4.6	1.6	-------
Total	696.2	1,229	11,208	5,439	3,992	6,601	1,462	1,531	726.7	274.5	118.2	264.3
Mean	22.5	41.0	362	175	138	213	48.7	49.4	24.2	8.85	3.81	8.81
Cfsm	0.403	0.735	6.49	3.14	2.47	3.82	0.873	0.885	0.434	0.159	0.068	0.158
In.	0.46	0.82	7.47	3.63	2.66	4.40	0.97	1.02	0.48	0.18	0.08	0.18

Calendar year 1959: Max - Min - Mean - Cfsm - In. -
Water year 1959-60: Max 2,150 Min 0.7 Mean 91.6 Cfsm 1.64 In. 22.35

Peak discharge (base, 2,000 cfs).--Dec. 18 (7 p.m.) 3,670 cfs (9.61 ft); Dec. 28 (4 a.m.); 2,600 cfs (8.05 ft).

* Discharge measurement made on this day.

5765. 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.--36.3 sq mi.

Records available.--July 1952 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 580 ft (from topographic map).

Average discharge.--8 years, 125 cfs.

Extremes.--Maximum discharge during year, 5,920 cfs Mar. 3 (gage height, 13.54 ft); minimum, 0.1 cfs Aug. 2 (gage height, 0.83 ft).
1952-60: Maximum discharge, 9,200 cfs Mar. 21, 1955 (gage height, 14.6 ft); no flow for many days 1952-57.

Remarks.--Records fair.

Revisions (water years).--WSP 1556: 1953-57.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 20-27, Jan. 6-17, Jan. 29 to Mar. 2, Sept. 18-26)

0.8	0	5.0	124
.9	.3	7.0	255
1.0	.9	9.0	515
1.2	2.4	10.0	695
1.5	5.8	10.5	950
1.9	12	11.0	1,330
2.5	25	11.5	1,930
3.5	54	13.0	4,700

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5	15	69	96	620	150	395	46	8.6	7.4	0.2	12
2	2.3	14	61	84	425	896	230	42	7.6	15	.1	9.9
3	2.0	13	54	130	263	4,450	218	34	7.5	76	.3	8.6
4	1.6	12	50	124	232	1,580	204	30	8.0	25	3.8	7.4
5	1.4	20	46	119	272	712	171	27	7.5	15	*281	6.4
6	1.8	60	46	512	326	530	144	27	7.1	11	50	5.5
7	6.0	45	46	590	239	380	132	193	7.5	8.1	14	4.8
8	11	35	40	*410	204	263	116	296	7.8	6.1	9.2	4.0
9	8.7	27	38	225	*190	375	112	138	5.8	4.9	24	3.4
10	6.5	23	35	171	160	590	96	94	4.9	4.4	108	4.8
11	5.2	20	34	144	140	515	86	72	4.1	4.5	79	132
12	4.1	19	207	122	110	455	79	*59	3.5	3.4	41	54
13	27	17	225	109	147	326	74	52	2.9	2.7	27	23
14	82	16	141	102	159	255	67	46	*2.7	2.2	123	16
15	26	15	*109	122	159	326	65	40	2.3	1.6	45	12
16	16	14	92	99	190	*500	57	36	2.1	1.3	25	30
17	13	16	84	140	326	560	51	32	15	1.0	18	565
18	12	18	116	380	530	455	52	28	34	1.1	13	443
19	11	17	119	239	575	314	*48	25	14	1.2	10	*135
20	9.4	*16	99	177	500	247	44	23	8.4	1.9	9.0	84
21	15	16	89	147	425	197	76	21	6.1	1.7	31	56
22	25	15	79	126	545	171	114	19	4.8	1.0	412	44
23	20	17	69	106	515	159	72	17	3.8	.9	366	36
24	*28	24	63	96	380	138	59	15	5.0	1.1	166	30
25	31	25	57	89	302	126	52	13	22	*1.2	69	25
26	23	22	56	79	247	114	48	12	18	.9	45	70
27	22	82	54	195	204	106	46	15	11	.8	33	190
28	19	190	204	255	170	99	45	16	8.6	.5	26	106
29	17	119	225	281	160	197	39	13	10	.5	21	84
30	16	86	150	1,090	-------	605	35	11	10	.5	18	69
31	15	-------	119	1,060	-------	590	-------	9.9	-------	.3	15	-------
Total	480.5	1,029	2,876	7,619	8,715	16,181	3,036	1,501.9	260.6	203.2	2,082.6	2,270.8
Mean	15.5	34.3	92.8	246	301	522	101	48.4	8.69	6.55	67.2	75.7
Cfsm	0.180	0.397	1.08	2.85	3.49	6.05	1.17	0.561	0.101	0.076	0.779	0.877
In.	0.21	0.44	1.24	3.28	3.76	6.97	1.31	0.65	0.11	0.09	0.90	0.98

Calendar year 1959: Max 4,380 Min 0.9 Mean 113 Cfsm 1.31 In. 17.75
Water year 1959-60: Max 4,450 Min 0.1 Mean 126 Cfsm 1.46 In. 19.94

Peak discharge (base, 2,000 cfs).--Mar. 3 (5 a.m.) 5,920 cfs (13.54 ft).

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 2, 5-19, Dec. 28, Jan. 1-3, Feb. 9-12, 28, 29; discharge estimated on basis of records for nearby streams.

5780. 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, 1.8 miles upstream from Caldwell Creek, and at mile 194.8.

Drainage area.--65.6 sq mi.

Records available.--November 1951 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 981.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--8 years (1952-60), 128 cfs.

Extremes.--Maximum discharge during year, 4,110 cfs Dec. 19 (gage height, 11.54 ft); minimum, 4.2 cfs Aug. 8 (gage height, 1.88 ft).
1951-60: Maximum discharge, 4,950 cfs Feb. 1, 1957 (gage height, 12.02 ft); minimum, 1.0 cfs Sept. 27, 28, 1954; minimum gage height, 1.78 ft Sept. 1, 2, 1957.

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

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 19

1.9	4.5	4.0	155	9.5	1,330
2.5	18	6.0	455	10.0	1,840
3.0	47	8.0	755	11.0	3,200
3.5	90	9.0	1,020		

Dec. 20 to Sept. 30

1.9	4.5	3.0	51
2.1	9.0	3.5	90
2.5	24		

Note.--Same as preceding table above 3.5 ft.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.1	6.6	*99	137	275	157	268	58	13	14	6.5	6.3
2	5.0	6.4	90	118	200	381	200	51	13	13	5.9	6.1
3	5.0	6.4	107	290	160	1,180	178	47	13	13	5.7	5.7
4	4.9	8.0	85	282	136	667	180	43	14	53	5.5	5.5
5	4.7	15	74	220	136	365	160	39	13	32	5.1	5.3
6	5.2	17	70	260	230	256	133	38	12	22	4.9	5.1
7	5.7	16	75	378	290	200	116	193	11	16	4.5	5.1
8	5.3	16	60	538	238	170	101	530	10	13	7.6	4.9
9	*5.3	16	59	292	190	170	88	450	9.6	11	60	4.9
10	6.7	15	56	275	167	196	76	250	9.0	9.6	40	19
11	6.8	14	63	263	168	218	68	150	8.5	9.0	46	78
12	6.1	14	585	221	134	202	64	100	8.0	12	30	197
13	6.3	13	877	194	120	179	60	80	7.8	9.8	24	64
14	6.7	13	440	*184	126	185	56	70	8.2	8.5	65	37
15	10	15	242	206	109	203	52	60	8.0	8.0	44	26
16	9.0	25	173	197	120	422	50	50	8.5	7.0	26	21
17	8.0	45	136	185	210	557	49	45	23	7.0	19	230
18	7.0	60	471	230	584	374	56	42	49	8.2	*15	299
19	6.5	50	2,770	192	623	272	54	*39	28	12	13	158
20	6.0	*40	892	160	380	228	47	36	19	12	17	88
21	5.8	35	461	130	298	190	52	32	14	9.6	17	58
22	5.7	30	282	111	286	162	82	28	13	8.2	20	43
23	5.6	28	220	95	266	*140	65	25	11	7.0	22	34
24	5.7	39	180	85	254	125	60	22	*10	7.5	18	28
25	5.6	82	150	75	302	109	57	20	26	12	14	24
26	6.0	68	130	70	448	97	60	18	32	12	11	20
27	7.0	73	120	150	286	86	109	18	23	8.0	10	21
28	6.8	282	312	240	218	78	90	18	19	*9.6	9.6	*40
29	6.6	210	365	215	197	100	70	17	18	13	8.2	58
30	6.6	130	234	450	-------	*476	61	15	17	9.0	7.2	143
31	6.6	-------	173	410	-------	401	-------	14	-------	7.5	6.8	-------
Total	193.3	1,388.4	10,051	6,653	7,151	8,546	2,762	2,598	468.6	393.3	588.5	1,734.9
Mean	6.24	46.3	324	215	247	276	92.1	83.8	15.6	12.7	19.0	57.8
Cfsm	0.095	0.706	4.94	3.28	3.77	4.21	1.40	1.28	0.238	0.194	0.290	0.881
In.	0.11	0.79	5.70	3.77	4.05	4.84	1.57	1.47	0.27	0.22	0.33	0.98

Calendar year 1959: Max 2,770 Min 4.7 Mean 121 Cfsm 1.84 In. 25.04
Water year 1959-60: Max 2,770 Min 4.5 Mean 116 Cfsm 1.77 In. 24.10

Peak discharge (base, 1,000 cfs).--Dec. 19 (5:30 a.m.) 4,110 cfs (11.54 ft); Mar. 3 (8 a.m.) 1,430 cfs (9.60 ft).

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 15-21, Oct. 26 to Nov. 19, Nov. 29, 30, Dec. 23-27, Jan. 23-28, Feb. 9, 16, 17, Mar. 7-9, May 9-18; discharge estimated on basis of weather records, recorded range in stage when available, and records for stations on nearby streams.

5795. 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, 1.4 miles upstream from Rock Creek, 6.7 miles below Elk River Dam, and at mile 163.3.

Drainage area.--282 sq mi.

Records available.--October 1920 to September 1957, October 1959 to September 1960. Prior to December 1920 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 859.10 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1926, staff gage at site 100 ft downstream at same datum.

Average discharge.--38 years, 471 cfs (unadjusted).

Extremes.--Maximum discharge during year, 5,330 cfs Dec. 19 (gage height, 9.83 ft); minimum, 43 cfs Oct. 12-13 (gage height, 1.36 ft).
1920-57, 1959-60: 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 daily, 11 cfs Oct. 10, 1925; minimum gage height, 0.4 ft for several days in September, October, November 1924, October 1925.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Prior to August 1949, diurnal fluctuation caused by powerplant upstream. Flow regulated by Woods Reservoir since 1952 (see p. 209).

Revisions (water years).--WSP 803: 1929(M), 1934-35. WSP 1306: 1922(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 19, Aug. 11, 12, 25, 26, Sept. 10, 11, 13, 14, 17-20, 28-30)

1.3	36	3.0	555
1.5	60	5.0	1,640
1.8	110	7.0	3,000
2.2	210	9.0	4,580
2.6	360		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a46	71	166	480	805	595	1,120	171	77	64	141	87
2	*46	71	311	490	645	1,350	838	166	*79	67	139	84
3	46	66	351	1,400	705	3,870	790	121	79	71	137	94
4	46	49	222	1,080	610	2,820	468	85	79	80	110	132
5	46	86	219	a1,000	580	1,320	296	77	79	82	100	123
6	48	*94	303	a1,100	580	520	299	400	77	80	94	68
7	48	94	132	a1,300	755	455	299	992	74	80	90	52
8	46	94	74	a1,500	715	565	204	854	71	76	87	49
9	47	84	117	a1,200	530	790	241	745	70	74	104	49
10	46	70	160	a1,000	635	1,040	222	500	67	74	119	231
11	44	67	349	a850	645	992	104	388	66	74	465	794
12	44	68	1,090	a800	a550	888	80	320	66	71	*276	179
13	44	68	1,590	a1,000	a500	705	79	132	64	68	188	280
14	47	71	a1,000	*1,550	a450	595	79	108	73	67	188	*284
15	47	71	a700	1,540	a400	560	80	117	71	64	188	199
16	64	73	a500	1,140	445	*590	80	121	71	63	146	160
17	68	70	*555	860	555	670	80	121	457	66	94	1,510
18	71	71	1,990	1,000	1,190	893	112	125	84	76	92	795
19	68	71	*4,490	645	*1,750	844	80	*137	79	212	94	550
20	68	76	4,170	640	1,810	810	88	174	79	82	98	248
21	68	98	3,560	545	1,260	470	172	312	76	79	102	166
22	70	121	2,330	465	998	276	304	112	73	79	106	219
23	73	155	1,500	436	992	229	134	108	52	73	106	219
24	88	168	630	374	986	88	150	96	83	84	102	213
25	123	171	625	338	992	84	182	87	949	82	176	160
26	125	171	705	269	1,070	84	185	139	60	79	260	160
27	125	255	620	618	1,100	82	241	186	54	106	60	188
28	102	575	1,160	745	876	80	244	82	55	179	66	*219
29	73	535	1,150	755	595	182	193	82	*60	168	85	238
30	71	426	849	1,380	--------	*1,180	163	80	63	158	85	284
31	71	--------	655	1,260	--------	1,490	--------	80	--------	153	87	--------
Total	2,019	4,162	32,273	27,760	23,724	25,117	7,607	7,218	3,387	2,831	4,185	8,034
Mean	65.1	139	1,041	895	818	810	254	233	113	91.3	135	268

	Observed			Adjusted†		
Calendar year 1959:	Max -	Min -	Mean 401	Mean 400	Cfsm 1.42	In. 19.26
Water year 1959-60:	Max 4,490	Min 44	Mean 405	Mean 411	Cfsm 1.46	In. 19.82

* Discharge measurement made on this day.
† Adjusted for change in contents in Woods Reservoir.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

5815. 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 1960.

Gage.--Water-stage recorder. Datum of gage is 687.72 ft above mean sea level, datum of 1929.

Average discharge.--6 years (1954-60), 78.3 cfs.

Extremes.--Maximum discharge during year, 6,290 cfs Dec. 28 (gage height, 12.52 ft); minimum, 0.2 cfs Sept. 5-9; minimum gage height, 0.84 ft Sept. 9.
1953-60: Maximum discharge, 12,800 cfs Nov. 17, 1957 (gage height, 14.8 ft), from rating curve extended above 5,600 cfs on basis of contracted-opening measurement of peak flow; no flow at times in 1954-57.

Remarks.--Records fair.

Revisions (water years).--WSP 1506: 1954-55(M), 1956(P).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 28				Dec. 29 to Sept. 30			
1.0	0.6	2.0	60	0.85	0.2	1.7	32
1.1	1.6	2.5	129	.9	.4	2.0	60
1.2	4.0	3.0	230	1.0	1.1	2.5	129
1.3	6.5	4.0	490	1.2	4.8	3.0	230
1.5	15	6.0	1,190	1.3	8.0	4.0	490
1.7	29	9.0	2,390	1.5	17	6.0	1,190

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.1	5.0	45	64	113	48	101	10	*4.2	6.0	1.4	1.7
2	1.1	5.0	35	69	84	1,190	80	9.6	4.2	4.8	*1.1	.8
3	1.2	5.0	*26	189	67	649	76	8.8	5.4	4.2	.9	.5
4	1.2	28	21	94	58	230	71	8.4	4.8	13	.8	.4
5	1.1	165	18	82	529	138	62	7.6	4.2	7.3	1.1	.3
6	1.7	*51	23	*104	320	103	54	9.2	3.9	5.7	1.0	.2
7	*5.7	28	23	250	169	84	49	883	3.4	3.9	.8	.2
8	4.0	21	20	211	113	68	43	110	3.0	3.2	.6	.2
9	24	14	18	184	88	254	39	60	2.8	2.8	120	.4
10	8.2	12	15	144	80	171	35	43	2.8	2.4	20	3.2
11	5.5	10	446	111	65	154	31	32	2.6	2.4	12	46
12	4.2	8.9	1,030	88	49	137	30	26	2.6	2.0	7.6	8.0
13	16	7.8	242	74	53	104	28	21	2.4	1.7	5.7	3.6
14	100	7.8	120	65	50	92	26	18	14	*1.5	4.5	*2.6
15	43	7.8	82	70	51	96	24	16	7.3	1.4	3.4	1.8
16	23	108	64	59	80	*465	23	14	4.5	1.4	2.6	152
17	18	111	58	94	*194	173	23	12	58	30	2.2	675
18	12	58	2,060	122	694	122	21	11	19	35	1.7	72
19	9.3	42	657	97	280	96	18	10	10	14	1.8	35
20	7.8	30	218	79	178	74	17	*10	7.0	5.7	1.7	20
21	6.8	24	125	66	159	62	*19	11	5.7	3.9	1.6	14
22	6.3	19	88	55	148	57	16	8.4	4.2	3.2	2.4	11
23	6.0	18	70	46	115	49	14	7.6	3.9	16	2.6	8.4
24	8.5	16	56	42	100	46	14	7.0	26	6.6	2.0	7.0
25	7.8	14	48	36	101	40	14	6.6	34	4.5	1.4	6.0
26	6.3	12	43	33	87	37	12	7.0	12	11	1.2	5.7
27	5.2	500	261	263	70	33	12	9.2	10	9.2	1.0	7.6
28	5.0	167	1,760	148	65	30	12	7.0	8.8	3.9	.9	7.3
29	5.0	83	230	236	57	88	10	6.0	8.0	2.8	.7	7.6
30	5.7	51	120	370	-------	421	10	5.4	7.3	2.2	.7	7.6
31	5.5	-------	82	176	-------	156	-------	4.8	-------	1.7	.8	-------
Total	356.2	1,629.3	8,104	3,721	4,219	5,467	984	1,399.6	286.0	213.4	206.2	1,106.1
Mean	11.5	54.3	261	120	145	176	32.8	45.1	9.53	6.88	6.65	36.9
Cfsm	0.279	1.32	6.33	2.91	3.52	4.27	0.796	1.09	0.231	0.167	0.161	0.896
In.	0.32	1.47	7.32	3.36	3.81	4.93	0.89	1.26	0.26	0.19	0.19	1.00

Calendar year 1959: Max 2,060 Min 1.1 Mean 73.2 Cfsm 1.78 In. 24.12
Water year 1959-60: Max 2,060 Min 0.2 Mean 75.7 Cfsm 1.84 In. 25.00

Peak discharge (base, 3,500 cfs).--Dec. 18 (6:30 p.m.) 4,280 cfs (11.36 ft); Dec. 28 (2 a.m.) 6,290 cfs (12.52 ft); Mar. 2 (6:30 p.m.) 4,170 cfs (11.28 ft); May 7 (6:30 a.m.) 4,360 cfs (11.42 ft).

* Discharge measurement made on this day.

5820. Elk River above Fayetteville, Tenn.

Location.--Lat 35°08'04", long 86°32'23", on right bank 100 ft downstream from highway bridge, 1¾ 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 1960.

Gage.--Water-stage recorder. Datum of gage is 650.58 ft above mean sea level, datum of 1929.

Average discharge.--26 years, 1,379 cfs (unadjusted).

Extremes.--Maximum discharge during year, 14,000 cfs Dec. 20 (gage height, 19.48 ft); minimum, 175 cfs Sept. 9 (gage height, 1.23 ft).
1934-60: 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.
Flood in March 1842 reached a stage of 27.5 ft, from reports of Tennessee Valley Authority.

Remarks.--Records good. Prior to August 1949, diurnal fluctuation at low flow caused by powerplants upstream. Flow regulated by Woods Reservoir since 1952 (see p. 209). Records of water temperatures for June to September are given in WSP 1721.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 30 to Apr. 3)

Oct. 1 to Dec. 20				Dec. 21 to Sept. 30			
1.4	190	10.0	5,170	1.2	168	7.0	3,170
2.0	380	13.0	7,340	1.5	242	14.0	8,150
3.0	776	16.0	10,000	2.0	407	17.0	11,000
5.0	1,920	20.0	15,100	4.0	1,350		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	217	235	860	1,820	3,010	1,690	3,350	586	*350	291	285	210
2	214	229	572	1,540	2,320	3,700	2,600	572	342	282	276	218
3	214	226	*506	2,380	*1,910	9,900	2,180	563	356	273	*262	205
4	211	226	662	2,900	1,780	9,960	2,020	532	346	356	264	198
5	205	450	499	2,450	2,300	6,740	1,640	*475	332	356	262	198
6	211	*356	499	2,570	2,280	3,380	1,370	451	322	313	245	218
7	*229	328	532	3,420	2,050	*2,280	1,290	3,530	319	288	234	215
8	241	301	520	3,770	1,900	1,960	1,220	3,360	316	276	228	186
9	256	285	370	3,610	1,820	2,450	1,100	2,210	303	270	313	177
10	238	271	324	3,210	1,560	2,910	1,040	1,600	310	264	316	205
11	226	259	609	2,660	1,530	2,960	1,000	1,250	294	262	360	1,230
12	214	244	3,970	2,610	1,480	2,770	855	1,080	288	256	487	1,750
13	472	235	3,630	2,720	1,370	2,450	771	920	285	250	563	*644
14	646	241	2,990	2,600	1,240	2,150	730	725	339	245	435	483
15	380	244	2,530	2,580	1,240	2,010	707	608	336	237	356	479
16	304	274	1,690	2,530	1,300	3,230	684	563	306	234	336	520
17	268	485	1,230	2,270	1,700	3,060	671	540	550	262	313	2,780
18	262	373	6,400	2,230	4,270	2,520	680	519	662	371	267	2,600
19	250	348	13,200	2,240	5,070	2,420	658	507	479	467	239	1,500
20	241	310	13,700	1,730	4,240	2,190	622	495	329	356	234	1,080
21	235	292	10,500	1,610	3,830	2,000	640	519	306	367	234	762
22	235	283	6,330	1,450	3,270	1,620	702	640	294	270	248	475
23	232	301	3,930	1,280	2,800	1,360	915	463	291	285	364	447
24	241	320	2,900	1,220	2,580	1,260	684	427	297	279	276	451
25	241	348	1,870	1,130	2,580	1,060	648	411	419	259	248	431
26	247	345	1,680	1,080	2,600	975	662	407	1,120	264	234	387
27	271	1,400	1,770	1,530	2,420	915	658	439	451	313	353	367
28	277	1,070	6,950	2,020	2,310	870	680	519	322	276	270	383
29	274	1,220	*4,140	2,120	2,090	1,160	689	407	303	285	208	439
30	265	961	2,920	3,610	-------	3,430	648	364	310	310	200	451
31	241	-------	2,200	3,840	-------	*4,090	-------	353	-------	300	205	-------
Total	8,258	12,461	100,483	72,730	68,850	89,470	32,114	26,035	11,277	9,117	9,115	19,689
Mean	266	415	3,241	2,346	2,374	2,886	1,070	840	376	294	294	656

	Observed				Adjusted†			
Calendar year 1959:	Max 13,700	Min 205	Mean 1,179		Mean 1,178	Cfsm 1.42	In. 19.34	
Water year 1959-60:	Max 13,700	Min 177	Mean 1,256		Mean 1,261	Cfsm 1.52	In. 20.76	

Peak discharge (base, 8,000 cfs).--Dec. 20 (4 p.m.) 14,000 cfs (19.48 ft); Dec. 28 (8 a.m.) 8,770 cfs (14.69 ft); Mar. 4 (10 a.m.) 10,200 cfs (16.15 ft).

* Discharge measurement made on this day.
† Adjusted for change in contents in Woods Reservoir.

5830. 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, 3.8 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 1960.

Gage.--Water-stage recorder. Datum of gage is 655.61 ft above mean sea level, datum of 1929.

Average discharge.--5 years (1955-60), 58.9 cfs.

Extremes.--Maximum discharge during year, 4,790 cfs Dec. 28 (gage height, 13.05 ft); minimum, 0.03 cfs Sept. 7 (gage height, 0.82 ft).
1954-60: Maximum discharge, 12,600 cfs Mar. 21, 1955 (gage height, 16.38 ft), from rating curve extended above 7,200 cfs on basis of contracted-opening measurement of peak flow; no flow at times in 1954-57.

Remarks.--Records fair.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 13-18, Jan. 4 to Mar. 2, Mar. 4 to May 6)

Oct. 1 to Jan. 4				Jan. 4 to Sept. 30					
1.38	1.7	2.0	37	0.83	0.04	1.3	3.5	3.5	294
1.5	3.3	2.5	100	.9	.07	1.5	8.5	5.0	624
1.6	6.5	3.5	294	1.0	.3	1.7	16	8.0	1,440
1.7	12	5.0	624	1.1	.8	2.0	38		
1.8	18	8.0	1,440	1.2	1.7	2.5	100		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	8.5	39	67	57	31	96	19	5.8	5.1	0.09	0.09
2	1.8	7.0	32	73	49	1,160	80	18	5.8	4.0	.08	.09
3	1.7	6.2	27	119	42	492	97	16	6.6	3.3	.08	.08
4	1.7	33	23	68	38	244	83	15	5.8	2.8	.08	.07
5	1.7	*256	21	55	579	178	73	14	5.3	3.1	.2	.06
6	5.2	73	26	69	268	140	63	18	4.6	2.5	.09	.05
7	9.0	49	20	*168	124	112	56	447	4.4	1.9	.08	.04
8	53	35	18	163	86	93	49	78	3.7	1.6	.5	.09
9	26	27	16	134	59	280	42	50	3.5	1.4	.7	.08
10	10	22	15	115	98	178	35	39	3.3	1.3	1.7	.6
11	7.0	18	398	87	51	184	32	34	2.9	1.2	*4.3	.4
12	4.9	15	*755	66	40	155	29	30	2.7	1.0	1.4	.2
13	27	14	170	55	41	125	26	*25	*2.7	.8	.9	*.1
14	45	13	87	47	37	114	25	21	8.4	*.8	.8	.09
15	23	12	65	62	38	153	*23	19	4.6	.8	.6	.08
16	*15	40	*50	39	60	*439	21	16	3.5	.7	.4	9.7
17	12	47	50	89	110	196	23	16	34	.7	.3	47
18	9.0	29	1,180	89	*278	147	22	15	9.5	3.0	.2	4.6
19	7.5	24	454	61	155	120	19	14	6.3	3.9	.2	1.9
20	6.5	20	176	49	108	96	18	13	5.1	1.1	.2	1.2
21	5.9	18	108	40	109	82	30	11	4.2	.8	1.5	.8
22	5.2	15	80	34	90	74	22	9.9	3.5	.7	3.9	.6
23	5.5	15	65	28	73	65	19	9.6	4.1	.7	1.4	.5
24	9.5	14	57	26	62	56	18	8.8	15	.7	.8	.4
25	6.5	12	44	22	77	49	17	8.2	14	.6	.5	.4
26	5.2	11	44	21	55	45	87	8.5	8.2	.4	.4	.3
27	4.6	450	395	302	47	39	48	10	7.2	.4	.2	.6
28	3.9	114	1,010	110	42	37	30	8.0	6.6	.2	.2	1.0
29	13	68	208	93	36	90	23	7.4	10	.2	.2	16
30	15	49	112	132	-------	354	21	6.9	6.9	.2	.1	5.3
31	10	-------	82	77	-------	136	-------	6.1	-------	.1	.09	-------
Total	353.1	1,514.7	5,827	2,560	2,907	5,664	1,227	1,011.4	208.2	46.1	22.19	92.42
Mean	11.4	50.5	188	82.6	100	183	40.9	32.6	6.94	1.49	0.716	3.08
Cfsm	0.312	1.38	5.15	2.26	2.74	5.01	1.12	0.893	0.190	0.041	0.020	0.084
In.	0.36	1.54	5.94	2.61	2.98	5.77	1.25	1.03	0.21	0.05	0.02	0.09

Calendar year 1959: Max 1,180 Min 1.7 Mean 60.0 Cfsm 1.64 In. 22.31
Water year 1959-60: Max 1,180 Min 0.04 Mean 58.6 Cfsm 1.61 In. 21.83

Peak discharge (base, 2,500 cfs).--Dec. 18 (7:30 p.m.) 2,600 cfs (10.55 ft); Dec. 28 (1 a.m.) 4,790 cfs (13.05 ft); Mar. 2 (6 p.m.) 3,260 cfs (11.52 ft).

* Discharge measurement made on this day.

5835. Weakley Creek near Bodenham, Tenn.

Location.--Lat 35°15'08", long 87°10'08", on right downstream bank at wingwall of highway bridge, 1.6 miles northwest of Bodenham, 1.6 miles downstream from Muckle Creek, 4.9 miles upstream from mouth, and 8.7 miles northwest of Pulaski, Giles County.

Drainage area.--24.4 sq mi.

Records available.--July 1955 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 688.62 ft above mean sea level, datum of 1929.

Average discharge.--5 years, 36.3 cfs.

Extremes.--Maximum discharge during year, 675 cfs Dec. 28 (gage height, 5.46 ft); minimum, 5.5 cfs Aug. 18, 31; minimum gage height, 1.00 ft Dec. 10, 11.

1955-60: Maximum discharge, 2,440 cfs Nov. 17, 1957 (gage height, 7.68 ft), from rating curve extended above 670 cfs; minimum, 3.8 cfs Sept. 18, 1956; minimum gage height, 0.66 ft June 10-12, Sept. 18, 1956.

Flood of Mar. 21, 1955, reached a discharge of 13,500 cfs, at site 2.3 miles upstream (drainage area, 20.4 sq mi), by slope-area measurement of peak flow.

Remarks.--Records fair.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 4-11, Feb. 17 to Mar. 2)

Oct. 1 to Dec. 11, Sept. 1-30		Dec. 12 to Mar. 29		Mar. 30 to Aug. 31	
1.1	4.5	1.2	31	1.2	4.0
1.3	10	1.5	50	1.4	8.5
1.5	19	2.0	85	1.6	20
1.7	33	2.5	135	2.0	64
2.0	64	3.0	214	2.5	130
2.5	130	4.5	482	3.0	214
3.0	214				

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	9.4	14	48	61	50	75	19	11	14	6.2	12
2	6.5	9.1	14	46	56	375	63	19	10	13	6.0	9.7
3	6.2	8.8	12	45	53	224	119	19	10	12	6.0	8.8
4	6.2	*9.4	11	42	51	112	100	18	10	12	6.0	8.2
5	6.2	16	10	42	323	93	77	17	10	11	6.0	7.6
6	7.9	12	9.7	*42	198	85	64	22	9.4	11	6.0	7.0
7	9.7	10	9.1	42	97	79	56	30	9.4	9.8	5.8	7.6
8	10	9.4	8.8	44	79	74	49	24	9.4	9.4	5.6	9.4
9	14	8.5	8.5	49	73	91	44	21	9.0	9.0	5.6	10
10	12	7.9	7.9	60	76	99	40	19	9.0	8.5	*6.5	12
11	10	7.6	44	70	70	95	36	20	9.0	8.5	6.5	11
12	9.4	7.3	255	62	63	88	36	19	8.6	8.5	6.2	*10
13	8.8	6.8	87	57	62	83	33	*17	*9.0	*8.5	6.2	8.5
14	9.1	6.5	63	54	56	78	*32	18	12	8.5	6.0	7.9
15	*9.1	6.5	*51	52	52	*76	32	17	11	8.5	6.0	7.6
16	8.5	6.8	44	47	52	114	30	16	9.8	8.2	5.6	8.8
17	8.5	8.2	54	48	*55	98	29	16	12	8.0	5.6	21
18	7.9	7.9	267	49	63	87	27	15	12	8.0	5.4	13
19	7.6	7.6	271	48	61	80	25	15	11	8.0	5.6	11
20	7.3	7.6	93	46	62	74	25	15	11	7.8	5.8	10
21	7.3	7.3	65	45	63	72	28	14	10	7.8	6.0	9.1
22	7.3	6.8	53	44	60	69	25	13	10	7.5	7.2	8.5
23	7.3	13	45	42	57	68	22	14	9.8	7.5	7.2	7.9
24	8.5	20	40	42	58	66	22	13	9.4	7.2	6.5	7.6
25	8.5	11	37	41	61	64	22	12	10	7.0	6.2	7.3
26	8.2	9.1	35	40	61	63	22	13	10	7.0	6.0	7.3
27	7.9	145	36	56	58	61	21	14	10	7.0	6.0	7.3
28	9.1	44	413	61	57	60	21	14	32	6.8	6.0	7.9
29	11	25	116	64	52	76	19	14	41	6.8	5.8	7.9
30	16	18	71	68	-------	194	20	12	17	6.5	5.6	7.3
31	9.7	-------	57	67	-------	100	-------	12	-------	6.5	40	-------
Total	271.9	472.5	2,322.0	1,563	2,190	3,050	1,216	521	361.7	269.8	221.1	279.2
Mean	8.77	15.8	74.9	50.4	75.5	98.4	40.5	16.8	12.1	8.70	7.13	9.31
Cfsm	0.359	0.648	3.07	2.07	3.09	4.03	1.66	0.689	0.496	0.357	0.292	0.382
In.	0.41	0.72	3.54	2.38	3.34	4.65	1.85	0.79	0.55	0.41	0.34	0.43

Calendar year 1959: Max 413 Min 6.2 Mean 31.1 Cfsm 1.27 In. 17.32
Water year 1959-60: Max 413 Min 5.4 Mean 34.8 Cfsm 1.43 In. 19.41

Peak discharge (base, 1,000 cfs).--No peak above base.

* Discharge measurement made on this day.

5840. Richland Creek near Pulaski, Tenn.

Location.--Lat 35°13'51", long 87°06'05", on right bank 1,200 ft upstream from bridge on U. S. Highway 64, 1 mile downstream from Weakley Creek, 4 miles west of Pulaski, Giles County, and at mile 30.1.

Drainage area.--366 sq mi.

Records available.--April 1934 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 642.54 ft above mean sea level, datum of 1929.

Average discharge.--26 years, 587 cfs.

Extremes.--Maximum discharge during year, 7,350 cfs Mar. 3 (gage height, 15.32 ft); minimum, 17 cfs Sept. 7 (gage height, 0.66 ft).

1934-60: Maximum discharge, 75,000 cfs Mar. 21, 1955 (gage height, 27.49 ft), from rating curve extended above 32,000 cfs on basis of contracted-opening measurement of peak flow; minimum, 7.9 cfs Sept. 11, 1954 (gage height, 0.52 ft).

Flood in March 1902 (discharge, about 100,000 cfs) exceeded all known floods, including those of 1843 and 1856, from report by Tennessee Valley Authority.

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

Revisions (water years).--WSP 823: 1935-36(M), drainage area. WSP 1386: 1935-36, 1938, 1944, 1945-46(M), 1948, 1950-51(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 19				Dec. 20 to Sept. 30			
0.8	33	1.6	178	0.6	12	3.0	520
1.2	98	3.0	520	.8	30	5.0	1,220
				1.0	58	10.0	3,220
Note.--Same as following table above 3.0 ft.				1.2	92	12.0	4,280
				1.5	151	15.0	8,900
				2.0	260		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	90	422	804	1,000	673	1,550	228	107	153	29	55
2	43	84	375	688	832	2,450	1,200	206	103	125	27	39
3	40	78	320	737	712	6,740	1,520	200	102	109	26	33
4	40	91	285	631	676	3,280	1,580	191	98	100	25	30
5	39	*509	258	592	3,050	1,900	1,290	180	98	90	26	27
6	54	388	245	625	4,680	1,400	1,050	217	88	82	26	20
7	76	260	220	688	2,410	1,120	884	957	81	73	24	18
8	110	202	202	849	1,600	919	730	669	79	70	23	34
9	182	170	188	1,090	1,240	1,610	631	412	73	a67	26	34
10	136	146	174	1,350	1,500	2,040	550	328	72	a64	62	48
11	98	132	862	1,430	1,400	1,790	493	282	70	a62	*64	48
12	80	124	4,850	1,190	1,060	1,540	461	251	68	a60	58	40
13	73	114	2,410	964	956	1,300	426	*226	70	a58	43	*34
14	82	112	1,250	810	849	1,140	393	211	119	*55	38	30
15	88	110	852	734	721	*1,100	*375	197	*100	52	39	29
16	*80	120	*685	628	718	2,270	360	185	82	48	36	35
17	74	170	673	625	894	2,010	352	172	165	46	31	310
18	69	172	2,580	740	1,500	1,520	340	162	176	43	30	168
19	64	158	5,780	703	1,600	1,220	305	164	111	42	27	90
20	60	146	2,640	652	1,430	964	292	168	90	40	30	66
21	60	136	1,450	592	1,320	782	332	149	81	39	35	55
22	58	130	992	529	1,220	691	322	137	73	39	67	48
23	58	142	765	474	1,100	619	285	129	70	39	73	42
24	69	624	631	444	1,020	565	270	123	92	55	52	39
25	74	428	541	407	1,240	509	258	117	166	44	40	35
26	69	322	493	382	1,240	480	272	155	113	38	36	35
27	64	2,060	683	863	1,040	442	464	270	98	34	33	38
28	60	1,400	5,880	1,320	916	417	295	170	228	31	33	42
29	71	737	3,670	1,160	804	816	260	155	384	30	30	46
30	98	518	1,580	1,210	-------	3,650	244	129	235	29	29	46
31	100	-------	1,050	1,170	-------	2,500	-------	115	-------	29	53	-------
Total	2,313	9,873	43,006	25,081	38,728	48,457	17,784	7,255	3,493	1,846	1,171	1,614
Mean	74.6	329	1,387	809	1,335	1,563	593	234	116	59.5	37.8	53.8
Cfsm	0.204	0.899	3.79	2.21	3.65	4.27	1.62	0.639	0.317	0.163	0.103	0.147
In.	0.24	1.00	4.37	2.55	3.94	4.92	1.81	0.74	0.35	0.19	0.12	0.16

Calendar year 1959: Max 7,460 Min 39 Mean 514 Cfsm 1.40 In. 19.07
Water year 1959-60: Max 6,740 Min 18 Mean 548 Cfsm 1.50 In. 20.39

Peak discharge (base, 6,000 cfs).--Dec. 19 (4 a.m.) 6,030 cfs (14.22 ft); Dec. 28 (10:30 p.m.) 6,860 cfs (14.97 ft); Mar. 3 (1 p.m.) 7,350 cfs (15.32 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.

5845. 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, 5.4 miles upstream from Ford Creek, 7.9 miles upstream from Tennessee-Alabama State line, and at mile 41.5.

Drainage area.--1,784 sq mi.

Records available.--July 1904 to February 1908, January 1919 to September 1960. 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 February 1908 and January 1919 to March 1934, chain gage at site $11\frac{3}{4}$ miles downstream at datum 13.52 ft lower.

Average discharge.--44 years (1904-7, 1919-60), 2,995 cfs (unadjusted).

Extremes.--Maximum discharge during year, 23,400 cfs Dec. 20 (gage height, 23.81 ft); minimum, 208 cfs Sept. 7 (gage height, 0.48 ft).

1904-8, 1919-60: Maximum discharge, 104,000 cfs Mar. 22, 1955 (gage height, 38.96 ft), from rating curve extended above 63,000 cfs on basis of contracted-opening measurement of peak flow; minimum, 85 cfs Sept. 18-20, 1925, Sept. 11, 1931.

Flood in March 1902 reached a stage of 40.9 ft (discharge, 130,000 cfs), and may have been equalled by a flood in March 1897, from reports by Tennessee Valley Authority.

Remarks.--Records excellent. Prior to August 1949, diurnal fluctuation at low flow caused by powerplants upstream. Flow regulated by Woods Reservoir since 1952 (see p. 209)

Revisions (water years).--WSP 523: 1904-8, 1919-20. WSP 823: Drainage area. WSP 1436: 1920-22, 1923(M), 1924, 1927, 1929, 1931-32(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.5	212	10.0	7,600
1.0	345	15.0	12,600
1.5	540	20.0	18,200
3.0	1,370	24.0	23,700
5.0	2,930		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	301	442	2,170	4,380	6,820	3,530	7,430	1,110	536	640	351	243
2	295	414	1,870	3,610	5,300	8,020	5,620	1,010	518	536	336	267
3	287	392	1,450	4,980	4,200	21,100	4,960	970	508	482	318	256
4	281	*604	1,290	4,850	3,640	22,500	5,120	937	508	446	304	243
5	279	3,660	1,330	4,950	7,580	17,400	4,530	882	495	537	309	227
6	307	2,340	1,170	4,840	12,600	10,600	3,670	860	472	550	315	214
7	372	1,330	1,150	6,260	9,380	5,930	3,190	5,790	438	472	301	216
8	446	1,050	1,120	7,710	6,060	4,510	2,830	7,910	422	418	273	267
9	620	882	1,050	7,720	5,020	6,250	2,540	4,770	403	389	353	236
10	625	761	860	7,350	4,550	8,070	2,220	3,110	392	372	*598	354
11	477	684	1,520	6,540	4,660	7,420	2,050	2,380	392	357	555	265
12	396	620	13,000	5,560	3,780	6,960	1,920	*1,940	375	345	531	*1,450
13	457	570	14,300	5,200	3,460	5,940	1,710	1,650	366	*333	565	1,550
14	1,800	536	8,090	4,840	3,220	*5,110	*1,580	1,450	450	321	673	685
15	*1,190	526	*5,570	4,810	2,910	4,860	1,500	1,210	*555	309	522	536
16	788	545	4,350	4,470	3,010	9,700	1,430	1,080	486	298	434	584
17	615	1,090	3,150	4,590	*3,900	9,190	1,380	1,010	948	290	406	4,310
18	513	1,200	10,800	4,950	6,990	7,010	1,360	948	1,230	691	375	4,500
19	468	959	22,600	4,680	10,300	5,610	1,290	910	1,010	746	336	2,930
20	430	860	23,200	4,070	9,220	4,910	1,230	888	724	615	295	1,670
21	403	766	20,500	3,440	7,900	4,180	1,290	854	513	482	290	1,240
22	389	700	17,200	3,110	7,210	3,660	1,350	844	459	472	324	904
23	386	678	9,580	2,710	6,050	3,070	1,310	932	438	641	508	625
24	410	830	5,730	2,450	5,360	2,680	1,400	739	516	526	500	590
25	414	1,110	4,010	2,270	5,200	2,430	1,180	668	800	464	378	565
26	406	970	3,110	2,070	5,380	2,110	1,300	651	896	363	318	540
27	396	4,380	3,560	4,060	4,890	1,940	1,690	805	1,320	336	293	518
28	410	7,140	18,400	5,870	4,480	1,820	1,360	810	728	386	357	500
29	430	3,560	*19,600	5,310	4,220	1,950	1,230	827	788	339	354	952
30	482	2,730	10,300	7,270	---------	8,100	1,180	656	844	330	267	739
31	482	--------	5,740	7,840	--------	9,940	--------	575	--------	366	246	--------
Total	15,555	42,329	237,770	152,760	167,290	216,500	70,850	49,176	18,530	13,852	11,985	28,156
Mean	502	1,411	7,670	4,928	5,769	6,984	2,362	1,586	618	447	387	939

	Observed			Adjusted			
Calendar year 1959:	Max 23,200	Min 279	Mean 2,657	Mean 2,656	Cfsm 1.49	In. 20.21	
Water year 1959-60:	Max 23,200	Min 214	Mean 2,800	Mean 2,805	Cfsm 1.57	In. 21.40	

Peak discharge (base, 17,000 cfs).--Dec. 20 (1 p.m.) 23,400 cfs (23.81 ft); Dec. 28 (6 p.m.) 20,400 cfs (21.63 ft); Mar. 4 (1 p.m.) 22,900 cfs (23.42 ft).

* Discharge measurement made on this day.

5853. Sugar Creek near Good Springs, Ala.

Location.--Lat 34°56'40", long 87°09'20", in SW¼ sec.22, T.1 S., R.6 W., on downstream side of bridge on Limestone County Highway 60, 0.2 mile downstream from Bridgeforth Branch, 2.2 miles east of Good Springs, and 2.4 miles upstream from Dobbins Branch.

Drainage area.--152 sq mi.

Records available.--July 1957 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 575 ft (from topographic map).

Extremes.--Maximum discharge during year, 7,820 cfs Dec. 19 (gage height, 10.1 ft); minimum, 22 cfs Sept. 8, 9 (gage height, 0.34 ft).
1957-60: Maximum discharge, 10,500 cfs Nov. 18, 1957 (gage height, 10.85 ft); minimum, 15 cfs Sept. 8, 1957 (gage height, 0.22 ft).

Remarks.--Records good.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.3	19	5.0	1,120
.7	52	6.0	1,640
1.5	143	7.0	2,410
2.0	223	8.0	3,540
3.0	450	9.0	5,120
4.0	750		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	63	149	328	465	248	480	117	67	78	28	28
2	35	59	134	305	*388	1,030	400	111	66	69	27	28
3	32	55	121	364	328	3,680	749	*109	68	64	*26	25
4	32	112	107	305	305	1,140	780	105	64	60	26	25
5	32	340	100	283	1,120	690	585	100	60	62	27	23
6	53	196	99	*328	1,760	525	450	128	57	65	28	23
7	88	136	93	388	880	438	388	328	*55	56	26	23
8	124	109	*86	425	615	376	328	209	52	50	26	22
9	133	94	82	465	495	755	283	162	50	48	29	22
10	88	*84	79	480	480	810	254	139	49	48	47	56
11	66	79	186	465	450	720	234	127	48	47	55	50
12	55	75	2,060	388	364	630	221	120	48	*46	39	41
13	*58	72	1,130	340	352	525	209	113	48	42	37	34
14	107	70	540	294	316	450	198	107	80	43	36	*31
15	91	69	376	316	294	450	188	101	69	41	34	30
16	73	73	283	264	294	*1,090	183	98	57	38	32	56
17	64	97	254	340	352	860	177	94	166	38	29	305
18	58	89	1,580	465	450	630	*174	90	119	38	28	113
19	53	79	*4,570	400	480	510	158	90	76	37	30	68
20	50	75	1,020	340	425	425	153	92	64	36	32	55
21	49	73	615	283	425	352	203	84	58	35	36	48
22	48	71	425	246	400	316	196	80	55	36	50	42
23	49	73	340	214	352	294	169	77	51	34	95	39
24	59	74	281	202	328	268	158	75	96	34	80	38
25	60	71	244	186	364	248	151	69	465	34	43	36
26	52	67	231	175	328	236	150	126	144	32	36	36
27	48	382	462	490	294	219	146	169	110	32	34	41
28	46	383	3,450	645	283	210	134	101	105	31	33	46
29	54	234	1,080	555	279	250	125	84	94	29	32	45
30	77	177	800	675	-------	775	121	76	105	28	31	41
31	69	-------	425	585	-------	645	-------	70	-------	28	30	-------
Total	1,940	3,631	21,202	11,539	13,666	19,795	8,145	3,551	2,646	1,359	1,122	1,470
Mean	62.6	121	684	372	471	639	272	115	88.2	43.8	36.2	49.0
Cfsm	0.412	0.796	4.50	2.45	3.10	4.20	1.79	0.757	0.580	0.288	0.238	0.322
In.	0.47	0.89	5.19	2.82	3.34	4.84	1.99	0.87	0.65	0.33	0.27	0.36

Calendar year 1959: Max 4,570 Min 32 Mean 252 Cfsm 1.66 In. 22.51
Water year 1959-60: Max 4,570 Min 22 Mean 246 Cfsm 1.62 In. 22.02

Peak discharge (base, 3,000 cfs).--Dec. 19 (7 a.m.) 7,820 cfs (10.1 ft); Dec. 28 (12:30 p.m.) 4,840 cfs (8.85 ft); Mar. 3 (7 a.m.) 5,530 cfs (9.22 ft).

* Discharge measurement made on this day.

5865. 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, 12¾ miles upstream from mouth.

Drainage area.--166 sq mi.

Records available.--July 1935 to September 1940, March 1945 to September 1960.

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.--20 years, 262 cfs.

Extremes.--Maximum discharge during year, 5,610 cfs Mar. 3; maximum gage height, 18.94 ft Mar. 4; minimum daily discharge, 3.2 cfs Aug. 4.
1935-40; 1945-60: Maximum discharge, 12,300 cfs Jan. 7, 1950 (gage height, 22.60 ft); minimum daily, 0.4 cfs Sept. 15-17, 1954, Oct. 3-6, 12-17, 20-22, 1955; minimum gage height observed, 1.18 ft Oct. 25, 1954.

Remarks.--Records good.

Revisions (water years).--WSP 1033: 1939, 1940(M). WSP 1053: 1939(M). WSP 1306: 1936(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Rate of change in stage used as a factor Dec. 19, 20, Mar. 3, 4)

1.3	3.2	4.0	340
1.4	6.3	6.0	750
1.5	11	8.0	1,200
2.0	51	12.0	2,380
2.5	104	15.0	3,440
3.0	174	18.0	4,860

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	20	65	277	684	252	420	74	23	12	5.1	9.2
2	17	18	56	244	430	1,060	295	64	22	12	4.1	7.4
3	9.8	16	53	420	*331	4,470	331	56	20	10	3.5	7.0
4	8.7	17	49	420	295	4,400	470	*52	19	11	*3.2	6.6
5	7.8	56	44	324	750	1,640	313	46	18	11	3.5	6.0
6	14	212	42	1,380	1,480	750	236	71	35	9.8	3.8	6.0
7	23	88	46	2,000	790	440	196	751	204	9.2	13	6.0
8	31	47	46	*916	440	360	170	1,150	*51	8.2	16	6.0
9	32	35	*41	480	350	770	150	390	26	7.8	6.3	6.0
10	43	*30	36	370	313	*1,560	138	174	20	7.4	5.7	8.3
11	31	26	74	313	286	1,000	122	132	17	7.0	150	122
12	20	24	736	277	220	830	112	105	14	6.6	158	83
13	16	22	916	244	204	520	108	88	13	6.3	28	22
14	*245	21	370	277	236	400	102	79	12	*6.6	14	12
15	440	19	212	470	304	460	97	68	11	6.3	8.7	*8.2
16	103	20	163	440	410	1,450	92	60	11	5.7	7.4	13
17	51	22	143	506	790	1,700	86	55	233	6.0	6.6	597
18	37	28	1,100	1,370	1,200	706	84	49	228	6.0	6.0	681
19	32	29	3,060	805	960	470	*87	45	67	5.1	6.0	113
20	25	24	2,750	380	620	380	79	43	32	5.4	5.4	43
21	21	21	903	286	580	322	87	104	21	11	6.6	28
22	18	20	370	236	982	277	170	63	17	18	267	22
23	17	20	286	202	640	252	129	40	15	10	490	16
24	20	20	236	175	430	228	91	35	20	7.8	120	14
25	21	20	198	168	390	204	77	31	30	9.2	44	12
26	29	20	185	154	420	184	70	29	24	7.0	26	14
27	22	148	229	410	295	173	448	34	20	5.4	17	555
28	17	350	1,610	728	252	161	252	64	17	5.4	13	380
29	23	185	2,350	540	268	188	125	50	16	9.2	10	132
30	20	90	986	1,560	-------	1,030	90	33	14	7.0	9.2	78
31	19	-------	370	1,730	-------	960	-------	26	-------	5.4	8.2	-------
Total	1,477.3	1,668	17,725	18,102	15,350	27,597	5,227	4,061	1,270	254.8	1,465.3	3,013.7
Mean	47.7	55.6	572	584	529	890	174	131	42.3	8.22	47.3	100
Cfsm	0.287	0.335	3.45	3.52	3.19	5.36	1.05	0.789	0.255	0.050	0.285	0.602
In.	0.33	0.37	3.97	4.06	3.44	6.18	1.17	0.91	0.28	0.06	0.33	0.68

Calendar year 1959: Max 3,060 Min 3.2 Mean 189 Cfsm 1.14 In. 15.47
Water year 1959-60: Max 4,470 Min 3.2 Mean 266 Cfsm 1.60 In. 21.78

Peak discharge (base, 3,800 cfs).--May 3 (11 p.m.) 5,610 cfs (18.91 ft).

* Discharge measurement made on this day.

5885. Shoal Creek at Iron City, Tenn.

Location.--Lat 35°01'27", long 87°34'44", on downstream side near center of bridge on county road, 400 ft downstream from Holly Creek, 1,350 ft upstream from Louisville & Nashville Railroad bridge, 1,350 ft northeast of post office at Iron City, Lawrence County, and at mile 22.0.

Drainage area.--348 sq mi.

Records available.--July 1925 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 534.25 ft above mean sea level, datum of 1929. Prior to Feb. 25, 1931, staff gage at railroad bridge 1,350 ft downstream at datum 0.88 ft lower. Feb. 25, 1931, to Sept. 30, 1933, staff gage at site 825 ft downstream and Oct. 1, 1933, to Sept. 30, 1957, water-stage recorder at site 750 ft downstream at datum 0.66 ft higher.

Average discharge.--35 years, 627 cfs.

Extremes.--Maximum discharge during year, 11,400 cfs Dec. 19 (gage height, 14.58 ft); minimum, 98 cfs Sept. 7, 8; minimum gage height, 2.54 ft Oct. 3, 4, 5; minimum daily, 100 cfs Sept. 7.

1925-60: Maximum discharge, 132,000 cfs Mar. 21, 1955 (gage height, 27.22 ft, site and datum then in use), from rating curve extended above 32,000 cfs on basis of contracted-opening measurement at gage height 22.9 ft and a slope-area measurement at gage height 27.22 ft; minimum, 38 cfs Aug. 31, 1943 (gage height, -0.02 ft, site and datum then in use).

Flood in March 1902 reached a stage about 3 ft higher than that of Mar. 21, 1955, from information by local residents.

Remarks.--Records good. Prior to January 1951, diurnal fluctuation at low flow caused by powerplant near Lawrenceburg.

Revisions (water years).--WSP 823: Drainage area. WSP 1113: 1927(M). WSP 1436: 1926(M), 1927-29, 1930(M), 1932, 1933(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 14-17, Sept. 11-15)

Oct. 1 to Dec. 12				Dec. 13 to Sept. 30			
2.4	96	4.0	810	2.5	100	8.0	3,240
2.6	152	6.0	2,010	3.0	255	10.0	4,910
3.0	297	9.0	3,950	3.5	510	12.0	7,250
3.5	530			4.0	810	14.0	10,200

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	128	172	331	984	1,100	690	1,490	313	216	248	143	149
2	122	172	323	858	936	1,700	1,240	304	216	220	134	143
3	122	172	306	936	816	5,990	2,480	300	224	213	128	122
4	119	192	281	828	756	2,590	3,230	291	216	244	134	115
5	122	*372	265	786	1,210	1,730	1,930	287	210	248	149	110
6	202	306	253	804	2,140	1,340	1,420	365	206	234	140	105
7	265	238	246	810	1,570	1,110	1,150	642	199	202	140	100
8	242	224	231	852	1,250	948	942	534	199	185	140	105
9	358	216	224	972	1,080	1,600	804	438	196	196	128	122
10	238	206	220	1,120	1,070	2,110	696	390	196	196	149	146
11	192	199	439	1,290	1,040	1,770	630	365	192	185	*227	213
12	175	202	3,300	1,180	834	1,620	588	340	196	179	161	176
13	168	199	2,260	1,030	792	1,370	552	*326	202	173	152	*170
14	199	199	1,300	924	744	1,190	510	308	*300	*173	146	152
15	*192	220	936	882	684	*1,130	*486	304	238	170	143	149
16	175	224	*750	786	672	1,960	468	291	210	170	140	170
17	165	265	840	792	714	1,950	450	275	420	167	131	402
18	159	227	3,480	948	1,240	1,530	450	267	340	167	137	279
19	152	210	*9,050	912	1,430	1,290	408	279	238	167	155	182
20	152	202	2,440	816	1,250	1,090	396	287	220	164	170	155
21	149	192	1,530	726	1,150	912	432	255	202	170	199	152
22	149	188	1,110	642	1,070	804	432	241	196	155	287	143
23	152	210	870	552	924	732	385	238	192	176	300	137
24	168	440	726	504	834	672	370	230	289	170	227	134
25	165	394	630	456	1,010	618	360	224	438	164	173	134
26	152	306	600	426	1,050	576	365	227	267	170	149	137
27	152	1,130	1,070	996	930	540	370	370	244	164	143	155
28	149	1,110	*7,600	1,480	852	516	331	275	538	158	140	173
29	162	590	2,940	1,330	786	716	318	241	492	152	143	170
30	188	394	1,700	1,370	-------	2,540	322	234	336	143	134	161
31	178	-------	1,240	1,280	-------	2,090	-------	224	-------	148	128	-------
Total	5,411	9,371	47,491	28,272	29,934	45,424	24,005	9,665	7,828	5,671	4,970	4,761
Mean	175	312	1,532	912	1,032	1,465	800	312	261	183	160	159
Cfsm	0.503	0.897	4.40	2.62	2.97	4.21	2.30	0.897	0.750	0.526	0.460	0.457
In.	0.58	1.00	5.08	3.02	3.20	4.85	2.57	1.03	0.84	0.61	0.53	0.51

Calendar year 1959: Max 9,050 Min 119 Mean 574 Cfsm 1.65 In. 22.39
Water year 1959-60: Max 9,050 Min 100 Mean 609 Cfsm 1.75 In. 23.82

Peak discharge (base, 6,000 cfs).--Dec. 19 (6 a.m.) 11,400 cfs (14.58 ft); Dec. 28 (2:30 p.m.) 10,100 cfs (13.98 ft); Mar. 3 (10 a.m.) 7,570 cfs (12.27 ft).

* Discharge measurement made on this day.

5895. Tennessee River at Florence, Ala.

Location.--Lat 34°47'13", long 87°40'12", in SW¼ sec.14, T.3 S., R.11 W., on right bank of old lock and dam 1 canal at lower end of Patten Island, 137 ft upstream from Southern Railway bridge, 700 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 1960.

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 137 ft downstream at same datum. Apr. 1, 1926, to Mar. 11, 1958, water-stage recorder on left bank at lower end of old lock and dam 1, 400 ft upstream at same datum. Since Oct. 1, 1938, auxiliary water-stage recorder 15¼ miles downstream.

Average discharge.--66 years (1894-1960), 50,620 cfs.

Extremes.--Maximum discharge during year, 153,000 cfs Mar. 3; maximum gage height, 17.28 ft Nov. 19; minimum daily discharge, 14,600 cfs July 24; minimum gage height, 7.81 ft Feb. 4.

1871-1960: Maximum discharge observed, 444,000 cfs Mar. 19, 1897 (gage height, 32.5 ft), from rating curve extended above 390,000 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.

Flood in 1867 reached a stage of 31.1 ft, from U. S. Weather Bureau (discharge, 421,000 cfs).

Remarks.--Records good except those for periods of no gage-height record at auxiliary gage and those below 25,000 cfs, which are fair. Discharge below 25,000 cfs computed on basis of records for Wilson Dam. Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station (see p. 210). Flow now almost completely regulated.

Cooperation.--Auxiliary water-stage-recorder graph furnished by the Tennessee Valley Authority.

Revisions (water years).--WSP 473: 1897(M). WSP 1306: 1914(M), 1936 (monthly runoff). WSP 1436: 1897, 1899, 1916.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32,000	44,700	59,700	79,900	77,400	64,200	61,900	17,300	21,300	33,300	30,700	39,700
2	28,400	46,800	61,200	79,100	74,500	75,000	64,400	21,400	25,000	22,300	31,000	34,100
3	29,700	47,700	56,600	67,300	53,200	142,000	69,100	35,000	25,300	18,700	32,300	34,400
4	23,300	44,400	62,000	63,100	62,200	149,000	69,000	32,300	22,400	20,700	26,800	37,800
5	33,400	45,100	72,700	58,400	62,400	149,000	48,300	28,900	19,000	22,300	23,200	40,400
6	*38,000	52,900	73,600	70,200	74,400	148,000	37,600	33,600	24,300	33,400	20,700	44,500
7	40,600	47,700	66,200	*80,000	69,100	132,000	39,800	28,600	26,700	28,700	24,700	42,700
8	34,000	45,100	64,900	84,500	73,000	94,100	49,400	25,500	24,700	23,900	23,600	40,100
9	38,700	48,000	57,000	87,300	67,600	100,000	39,000	36,300	25,200	26,100	23,600	28,100
10	35,800	50,200	51,200	91,600	55,600	103,000	37,800	36,800	24,700	23,100	23,200	38,200
11	31,300	52,800	66,000	89,600	62,700	*88,400	38,500	*38,900	22,300	23,500	23,000	47,800
12	40,500	51,900	84,500	80,800	59,800	81,000	23,400	32,300	17,200	33,300	37,700	44,900
13	34,000	48,200	98,400	78,000	63,800	76,700	21,700	32,500	22,300	*31,700	18,500	40,600
14	36,900	47,600	108,000	78,600	64,900	74,000	23,100	37,200	25,700	29,800	23,100	43,600
15	44,500	38,300	113,000	74,900	64,900	72,800	15,200	18,200	25,700	25,300	33,600	41,800
16	48,800	*46,700	105,000	65,700	59,500	79,800	17,000	20,000	22,000	23,600	23,300	43,900
17	43,400	48,800	84,900	77,800	a58,800	78,600	18,400	24,500	33,600	22,000	23,800	42,700
18	31,100	47,900	102,000	79,600	a68,700	78,100	22,500	25,700	41,100	22,800	37,000	51,900
19	50,600	50,100	145,000	80,600	91,100	74,600	33,200	26,500	26,100	26,900	33,800	56,700
20	44,600	47,600	142,000	75,000	110,000	66,700	30,100	24,200	29,800	36,800	31,800	*57,800
21	38,400	a46,400	142,000	72,500	121,000	69,800	25,200	21,600	34,800	31,800	23,100	57,900
22	57,000	a24,500	142,000	64,400	114,000	57,700	29,000	18,800	39,500	30,500	33,000	45,600
23	47,600	a29,600	142,000	65,000	94,900	58,300	29,800	25,700	39,600	18,100	37,700	41,200
24	46,000	a33,700	126,000	57,700	81,000	50,600	26,000	24,500	36,600	14,600	40,100	33,400
25	42,500	a38,400	97,000	60,700	78,700	46,700	27,900	21,100	25,300	25,900	33,600	31,100
26	44,100	a31,900	85,600	50,800	75,400	42,400	19,100	22,800	31,100	21,100	40,300	32,600
27	50,700	a37,800	79,800	57,100	71,900	32,900	22,400	36,500	31,900	24,800	39,900	38,000
28	45,300	54,500	93,800	70,000	72,100	35,300	28,900	29,500	28,200	25,900	38,500	41,800
29	48,900	61,900	97,100	71,900	69,700	30,600	23,200	16,700	28,600	28,800	35,100	43,200
30	44,700	62,800	90,500	69,400	--------	42,700	22,900	20,800	32,700	26,400	37,500	35,200
31	45,000	--------	85,700	77,200	--------	68,500	--------	29,900	--------	17,300	39,100	--------
Total	1,249,800	1,374,000	2,853,400	2,258,700	2,152,300	2,462,500	1,013,800	843,600	830,700	793,400	973,300	1,249,700
Mean	40,320	45,800	92,050	72,860	74,220	79,440	33,790	27,210	27,690	25,590	31,490	41,660
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 145,000 Min 11,700 Mean 43,590 Cfsm 1.41 In. 19.21
Water year 1959-60: Max 149,000 Min 14,600 Mean 49,340 Cfsm 1.60 In. 21.80

* Discharge measurement made on this day.
a No gage-height record at auxiliary gage; discharge computed on basis of records for Wilson Dam.

5905. Tuscumbia Spring at Tuscumbia, Ala.

Location.--Lat 34°43'45", long 87°42'15", in NW¼ sec.9, T.4 S., R.11 W., at south end of Main Street in Tuscumbia, about an eighth of a mile upstream from mouth.

Records available.--November 1928 to April 1930, January 1956 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 409.65 ft above mean sea level, datum of 1929. Prior to April 1930 at approximately the same location at different datum.

Extremes.--Maximum daily discharge during year, 120 cfs Apr. 3; minimum daily, 17 cfs Oct. 5, Nov. 3.
1928-30, 1956-60: Maximum daily discharge, 160 cfs Mar. 9, 1929; minimum daily, 13 cfs Dec. 4-11, 1956, Nov. 7, 1957.

Remarks.--Records good. Records include diversion averaging about 1 cfs for water supply for city of Tuscumbia.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	19	35	94	102	98	112	99	76	57	33	*33
2	19	18	34	94	102	100	112	98	75	56	31	32
3	19	17	34	97	*102	103	120	97	74	55	*30	32
4	18	19	33	94	102	106	116	*97	73	53	30	32
5	17	27	33	94	107	106	112	96	73	50	30	30
6	19	31	32	98	104	106	112	95	72	48	29	29
7	19	33	32	*97	104	106	112	96	71	46	29	28
8	21	32	30	97	103	106	112	93	*70	42	29	27
9	27	31	*29	98	102	112	112	93	69	42	30	27
10	29	30	29	98	101	108	112	93	69	48	30	27
11	29	*30	31	97	101	*108	108	92	69	48	30	30
12	27	30	37	97	100	108	108	92	68	48	30	29
13	27	29	41	97	100	108	108	92	67	47	30	27
14	*27	29	42	96	100	108	108	90	66	*45	30	27
15	27	29	41	97	99	112	*108	89	66	45	28	26
16	26	29	41	96	99	112	106	89	64	44	26	27
17	25	28	42	97	99	112	106	89	68	44	25	30
18	25	28	54	102	101	112	106	87	71	42	25	31
19	25	27	70	101	99	112	105	87	71	41	25	29
20	24	27	84	101	99	112	104	86	70	40	25	27
21	23	27	85	101	100	112	106	86	69	39	30	27
22	23	26	85	101	100	112	106	85	69	39	36	27
23	22	25	84	101	99	112	104	84	69	39	36	27
24	21	23	84	100	99	112	104	83	68	38	36	27
25	20	23	83	99	100	108	104	83	68	38	36	27
26	20	23	83	99	99	108	103	82	66	36	36	27
27	19	28	84	99	99	108	101	81	66	36	35	26
28	19	34	84	99	99	108	99	80	64	35	35	25
29	19	36	94	101	99	112	96	79	62	35	35	24
30	19	36	94	107	-------	116	95	78	60	34	33	24
31	19	-------	95	101	-------	116	-------	77	-------	33	33	-------
Total	694	824	1,759	3,050	2,920	3,379	3,217	2,748	2,063	1,343	956	841
Mean	22.4	27.5	56.7	98.4	101	109	107	88.6	68.8	43.3	30.8	28.0
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 95 Min 17 Mean 51.6 Cfsm - In. -
Water year 1959-60: Max 120 Min 17 Mean 65.0 Cfsm - In. -

* Discharge measurement made on this day.

5918. Bear Creek near Hackleburg, Ala.

Location.--Lat 34°17'01", long 87°46'26", in SW¼ sec.11, T.9 S., R.12 W., on right bank at downstream side of bridge on U. S. Highway 43, 2 miles upstream from Bluff Creek and 3½ miles east of Hackleburg.

Drainage area.--143 sq mi.

Records available.--July 1956 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 646.50 ft above mean sea level, datum of 1929, supplementary adjustment of 1941.

Extremes.--Maximum discharge during year, 6,750 cfs Mar. 2 (gage height, 19.5 ft); minimum, 9.2 cfs Aug. 4, 8.
1956-60: Maximum discharge, 7,000 cfs Jan. 31, 1957 (gage height, 20.0 ft); minimum, 6.1 cfs Sept. 18, 19, 1956.

Remarks.--Records good.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

1.3	8	2.6	128
1.4	10	3.0	230
1.7	20	6.0	1,130
2.0	38	10.0	2,400
2.3	72	15.0	4,500

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	39	103	344	725	248	455	101	39	20	12	14
2	14	37	103	296	545	2,880	380	88	42	18	11	15
3	14	36	94	350	440	4,190	822	86	65	17	9.6	13
4	13	56	82	269	380	1,280	680	82	50	16	9.2	13
5	14	266	75	423	*1,010	800	*515	80	39	15	*9.4	12
6	27	168	77	1,640	920	605	410	*292	33	16	10	11
7	51	109	74	920	650	485	341	980	30	15	10	10
8	43	88	68	605	500	410	287	545	27	13	10	11
9	62	72	61	440	440	1,100	263	332	36	12	9.4	11
10	46	62	*57	359	395	1,010	221	251	*29	12	18	16
11	32	57	104	299	317	1,010	192	198	24	14	32	78
12	26	*54	1,130	*260	260	770	182	173	23	14	23	23
13	170	51	575	236	281	*590	170	153	22	13	17	16
14	560	51	332	233	269	500	161	137	24	12	14	14
15	170	52	236	359	239	665	151	122	30	12	14	13
16	92	57	192	275	284	1,490	146	109	24	10	14	31
17	69	57	195	647	410	1,010	144	96	54	9.8	12	238
18	56	51	1,130	890	680	710	149	88	90	10	11	72
19	43	48	1,430	560	590	545	130	78	36	*10	11	33
20	36	47	695	410	500	440	124	69	27	10	11	24
21	44	46	440	320	575	359	407	66	24	11	192	19
22	*66	45	320	266	710	320	377	57	20	12	515	16
23	51	51	257	215	575	287	257	51	19	13	104	15
24	54	58	206	195	470	260	212	47	72	19	41	14
25	47	50	180	175	440	227	182	42	239	31	26	13
26	40	46	198	161	365	209	161	57	47	15	24	39
27	43	181	554	515	305	192	146	178	36	13	19	161
28	39	236	2,960	470	290	185	130	92	34	12	18	90
29	37	153	1,100	871	293	383	120	66	31	11	19	55
30	38	118	620	2,260	-------	980	107	51	24	22	*17	38
31	39	-------	440	1,130	-------	650	-------	44	-------	14	15	-------
Total	2,052	2,442	14,088	16,393	13,858	24,790	8,022	4,811	1,290	441.8	1,257.6	1,128
Mean	66.2	81.4	454	529	478	800	267	155	43.0	14.3	40.6	37.6
Cfsm	0.463	0.569	3.17	3.70	3.34	5.59	1.87	1.08	0.301	0.100	0.284	0.263
In.	0.53	0.64	3.66	4.26	3.60	6.45	2.09	1.25	0.34	0.11	0.33	0.29

Calendar year 1959: Max 2,960 Min 11 Mean 202 Cfsm 1.41 In. 19.13
Water year 1959-60: Max 4,190 Min 9.2 Mean 247 Cfsm 1.73 In. 23.55

Peak discharge (base, 3,000 cfs).--Dec. 28 (7 a.m.) 4,100 cfs (14.1 ft); Mar. 2 (9 p.m.) 6,750 cfs (19.5 ft).

* Discharge measurement made on this day.

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5920. Bear Creek near Red Bay, Ala.

Location.--Lat 34°26'39", long 88°06'55", in NE¼ sec.21, T.7 S., R.15 W., near left abutment on downstream side of bridge on State Highway 24, 0.6 mile downstream from Norman Branch, 1.7 miles upstream from Mud Creek, and 1.8 miles east of Red Bay.

Drainage area.--263 sq mi.

Records available.--August 1913 to May 1920, July 1958 to September 1960. Prior to October 1918 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Altitude of gage is 510 ft (from topographic map). August 1913 to May 1920, staff gage at site 0.7 mile upstream at various datums. July 1, 1958, to Oct. 27, 1959, wire-weight gage at present site and datum.

Average discharge.--8 years (1913-19, 1958-60), 400 cfs.

Extremes.--Maximum discharge during year, 5,600 cfs Mar. 4 (gage height, 16.31 ft); minimum, 32 cfs Aug. 4, 5.
1913-20, 1958-60: Maximum discharge, that of Mar. 4, 1960; minimum daily, 10 cfs Aug. 15-17, Sept. 17, 1918 (gage height, 1.2 ft, site and datum then in use).

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

Revisions (water years).--WSP 1306: 1913-18, 1920(M), drainage area at former site.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 26 to Aug. 22)

3.7	32	8.0	785
3.8	37	13.0	1,880
4.2	63	14.0	2,250
4.8	125	15.0	3,220
5.8	277	16.1	5,160

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	78	192	a900	1,860	441	a1,100	200	101	57	40	47
2	83	76	174	a560	1,150	1,200	a920	186	97	52	38	47
3	55	75	170	a550	860	4,140	a740	a180	117	49	34	56
4	a50	100	160	a670	*710	5,160	a900	a170	120	46	32	47
5	a56	268	146	a540	710	2,720	a1,100	*a160	113	44	*34	44
6	57	355	140	a1,500	1,350	1,330	*a900	208	97	44	49	42
7	56	232	137	a2,000	1,150	1,010	710	710	86	43	40	41
8	56	172	131	a1,500	885	810	598	1,190	81	42	36	40
9	50	144	119	a1,100	710	1,070	510	685	*76	41	49	40
10	43	127	*117	a800	622	1,780	452	463	76	40	84	90
11	a40	115	154	a600	535	1,590	397	355	78	44	56	103
12	a50	*107	466	510	441	1,490	365	306	71	87	79	67
13	a150	101	1,210	*463	397	*1,190	345	268	68	58	62	87
14	a500	97	760	452	419	960	325	250	68	43	53	61
15	*448	96	463	498	386	960	306	224	68	39	46	51
16	208	98	355	572	386	1,550	286	208	72	38	42	58
17	170	100	345	610	474	2,000	277	192	102	36	40	102
18	107	101	1,140	1,290	785	a1,600	277	177	91	35	38	213
19	57	98	1,730	1,230	1,090	a1,300	268	177	115	*35	36	131
20	69	92	a1,900	885	910	a1,000	250	161	92	35	36	85
21	67	90	a1,100	660	810	a760	296	145	73	36	103	67
22	a70	89	a700	522	1,010	a630	635	132	66	42	397	59
23	78	97	a500	441	1,030	a540	510	126	62	43	424	54
24	96	97	a400	386	835	a480	397	118	66	47	156	50
25	80	99	a370	355	735	a450	345	112	65	60	103	47
26	75	98	a360	325	660	a410	306	106	210	70	69	85
27	77	156	a450	463	535	a380	277	118	97	54	60	181
28	77	312	a1,000	910	474	a360	250	216	74	42	57	180
29	82	325	a2,500	885	474	a350	224	158	66	37	53	147
30	81	232	a4,000	2,000	-------	a450	216	127	62	34	*51	109
31	79	-------	a1,200	3,220	-------	a1,300	-------	113	-------	34	49	-------
Total	3,218	4,227	22,589	27,397	22,393	39,411	14,482	7,941	2,630	1,407	2,446	2,431
Mean	104	141	729	884	772	1,271	483	256	87.7	45.4	78.9	81.0
Cfsm	0.395	0.536	2.77	3.36	2.94	4.83	1.84	0.973	0.333	0.173	0.300	0.308
In.	0.46	0.60	3.19	3.87	3.17	5.57	2.05	1.12	0.37	0.20	0.35	0.34

Calendar year 1959: Max 4,000 Min 37 Mean 338 Cfsm 1.29 In. 17.44
Water year 1959-60: Max 5,160 Min 32 Mean 411 Cfsm 1.56 In. 21.29

Peak discharge (base, 4,000 cfs).--Dec. 30 (time unknown) 4,180 cfs (15.61 ft); Mar. 4 (3 a.m.) 5,600 cfs (16.31 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 2 discharge measurements, 3 crest stages, and records for stations on nearby streams.

5922. Cedar Creek near Pleasant Site, Ala.

Location.--Lat 34°32'56", long 88°01'09", in SW¼ sec.9, T.6 S., R.14 W., on left bank on downstream side of pier of highway bridge, 2.6 miles east of Pleasant Site, and 4.3 miles upstream from Little Bear Creek.

Drainage area.--189 sq mi.

Records available.--August 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 482.67 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 6,560 cfs Dec. 18 (gage height, 18.1 ft); minimum, 3.7 cfs Aug. 4, 5, 6 (gage height, 0.73 ft).
1957-60: Maximum discharge, 6,860 cfs Nov. 16, 1957 (gage height, 18.6 ft); minimum, 3.5 cfs Sept. 6, 1957.
Flood in March 1951 reached a stage of 22.1 ft, from floodmarks, from information by Tennessee Valley Authority.

Remarks.--Records good.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.7	2.5	2.5	233
.8	6.5	4.0	610
.9	11	8.0	1,640
1.0	16	10.0	2,340
1.4	49	14.0	4,250
1.8	100	17.0	5,900

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	30	92	380	810	172	455	108	36	17	11	19
2	13	29	88	366	595	2,590	392	103	38	16	9.2	16
3	12	24	79	1,080	492	5,780	2,070	106	45	20	5.3	14
4	12	151	70	555	*430	2,050	1,140	97	39	17	*4.1	14
5	14	638	65	617	763	985	730	*91	36	16	4.9	16
6	38	178	65	2,300	835	745	*542	172	35	14	4.9	19
7	54	105	63	1,240	518	595	468	455	30	13	85	14
8	54	79	55	860	418	492	405	222	28	11	18	11
9	67	66	52	785	368	1,630	342	146	*27	11	13	11
10	41	55	*50	492	355	1,220	305	124	27	12	38	51
11	32	*50	325	418	290	*1,140	275	108	25	17	41	61
12	26	46	1,180	368	238	860	256	100	25	14	24	35
13	24	44	555	*325	247	655	235	92	26	10	20	20
14	*78	44	280	426	240	542	222	85	23	9.2	18	16
15	64	44	205	745	244	767	209	79	20	*7.8	17	14
16	45	48	168	380	318	2,060	203	78	16	6.5	17	42
17	36	48	557	1,140	492	1,140	192	70	49	7.0	12	118
18	35	42	3,010	1,180	1,010	810	190	65	44	8.8	12	65
19	30	39	4,810	640	785	655	168	87	31	8.8	10	40
20	25	36	985	492	568	530	159	71	29	7.0	10	29
21	26	36	568	405	640	442	338	56	22	6.5	230	23
22	29	36	418	355	685	405	330	51	21	6.5	609	20
23	28	80	330	300	480	355	215	49	18	9.2	160	20
24	31	61	266	278	380	328	186	45	18	11	57	17
25	31	46	235	249	392	300	166	43	45	17	40	18
26	28	42	229	233	312	278	151	42	34	14	39	199
27	25	516	767	890	247	256	140	60	29	14	30	358
28	23	320	3,750	542	226	244	130	61	26	11	29	119
29	28	147	1,290	767	207	678	121	48	22	8.3	*26	74
30	33	113	655	2,700	-------	1,240	116	44	20	7.8	*22	55
31	29	-------	468	1,240	-------	640	-------	40	-------	8.8	18	-------
Total	1,024	3,193	21,730	22,748	13,585	30,584	10,851	2,998	884	357.2	1,634.4	1,528
Mean	33.0	106	701	734	468	987	362	96.7	29.5	11.5	52.7	50.9
Cfsm	0.175	0.561	3.71	3.88	2.48	5.22	1.92	0.512	0.156	0.061	0.279	0.269
In.	0.20	0.63	4.28	4.48	2.67	6.02	2.14	0.59	0.17	0.07	0.32	0.30

Calendar year 1959: Max 4,810 Min 12 Mean 257 Cfsm 1.36 In. 18.47
Water year 1959-60: Max 5,780 Min 4.1 Mean 304 Cfsm 1.61 In. 21.87

Peak discharge (base, 3,500 cfs).--Dec. 18 (12 p.m.) 6,560 cfs (18.1 ft); Dec. 28 (8 a.m.) 4,150 cfs (13.8 ft); Mar. 3 (2 a.m.) 6,140 cfs (17.4 ft).

* Discharge measurement made on this day.

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5923. Little Bear Creek near Halltown, Ala.

Location.--Lat 34°29'19", long 88°02'07", in NW¼ sec.5, T.7 S., R.14 W., rear right bank on downstream side of pier of highway bridge, 2.7 miles northeast of Halltown and 4.2 miles upstream from Cedar Creek.

Drainage area.--78.2 sq mi.

Records available.--August 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 499.30 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 3,640 cfs Mar. 3 (gage height, 11.7 ft); minimum daily, 5.6 cfs July 22.
1957-60: Maximum discharge, 4,130 cfs Nov. 16, 1957 (gage height, 12.1 ft); minimum daily, that of July 22, 1960.

Remarks.--Records poor prior to Dec. 17, good thereafter except those for period of no gage-height record, which are fair. Occasional slight diurnal fluctuation at low flow caused by mill above station.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1, 14-20, Nov. 4-13, Nov. 20 to Dec. 11; stage-discharge relation indefinite Oct. 2-13, Oct. 21 to Nov. 3, Nov. 14-19)

Oct. 1 to Dec. 17		Dec. 18 to Sept. 30			
2.1	97	0.7	4.8	5.0	542
3.0	202	1.0	12	7.0	910
5.0	505	1.5	34	9.0	1,480
		2.0	72	10.0	1,960
		2.5	128	11.0	2,810
		3.0	202		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	20	56	172	346	125	194	63	28	16	7.3	13
2	26	19	55	188	270	1,160	170	59	30	20	6.2	*12
3	24	17	50	457	219	2,490	701	57	34	a21	6.6	12
4	22	125	44	262	*189	610	491	54	32	a18	*6.8	14
5	21	230	42	302	262	414	330	*53	28	a16	6.6	15
6	28	103	42	812	262	321	*253	92	26	a15	7.4	14
7	34	65	40	491	194	262	210	189	26	a13	32	15
8	40	49	36	346	167	228	180	119	24	a11	11	16
9	46	40	34	262	155	588	162	90	*22	a11	12	17
10	30	35	*32	209	147	474	145	77	21	a13	11	62
11	22	*33	128	175	128	474	133	68	21	a18	17	38
12	17	32	406	152	114	*372	124	63	19	a17	23	18
13	16	32	230	*140	118	296	115	60	19	a15	16	14
14	58	30	150	160	114	262	108	57	20	14	13	14
15	*40	30	122	199	110	330	101	53	19	*12	12	14
16	27	32	106	152	124	699	96	51	19	12	12	35
17	21	33	187	348	173	457	93	48	30	13	12	49
18	18	30	1,670	398	364	346	92	46	32	8.2	11	26
19	16	27	1,350	270	312	278	85	55	23	10	11	21
20	16	24	423	209	253	228	80	45	22	9.7	10	18
21	18	*25	278	170	262	197	160	40	20	8.2	144	16
22	19	28	196	148	287	178	147	37	18	5.6	166	16
23	19	44	158	132	228	164	113	36	18	8.5	44	17
24	21	40	133	123	196	151	99	34	29	7.8	27	19
25	21	40	116	113	196	142	90	32	26	9.8	21	19
26	19	38	113	107	167	132	85	32	22	12	18	77
27	17	158	331	270	145	123	78	46	22	13	17	115
28	15	131	1,230	216	138	118	74	42	20	10	16	49
29	19	85	474	338	137	154	68	36	19	8.5	*14	34
30	22	66	304	950	-------	380	66	32	18	8.7	*14	28
31	20	-------	214	525	-------	253	-------	30	-------	8.0	*14	-------
Total	760	1,661	8,750	8,796	5,777	12,406	4,843	1,796	707	383.0	738.9	827
Mean	24.5	55.4	282	284	199	400	161	57.9	23.6	12.4	23.8	27.6
Cfsm	0.313	0.708	3.61	3.63	2.54	5.12	2.06	0.740	0.302	0.159	0.304	0.353
In.	0.36	0.79	4.16	4.18	2.75	5.90	2.30	0.85	0.34	0.18	0.35	0.39

Calendar year 1959: Max 1,670 Min 9.0 Mean 112 Cfsm 1.43 In. 19.50
Water year 1959-60: Max 2,490 Min 5.6 Mean 130 Cfsm 1.66 In. 22.55

Peak discharge (base, 1,100 cfs).--Dec. 18 (8 p.m.) 3,280 cfs (11.4 ft); Dec. 28 (10 a.m.) 1,520 cfs (9.1 ft); Jan. 30 (11 a.m.) 1,220 cfs (8.2 ft); Mar. 3 (8:30 a.m.) 3,640 cfs (11.7 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.

5925. 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 Cedar Creek, three-quarters of a mile southwest of Bishop, and at mile 27.3.

Drainage area.--667 sq mi.

Records available.--August 1926 to June 1928, February 1929 to March 1932, June 1933 to September 1960.

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 5.00 ft lower. June 7, 1933, to May 28, 1934, chain gage at bridge 20 ft downstream at same datum as staff gage.

Average discharge.--30 years (1926-27, 1929-31, 1933-60), 1,060 cfs.

Extremes.--Maximum discharge during year, 13,000 cfs Dec. 19 (gage height, 16.47 ft); minimum, 51 cfs Aug. 6 (gage height, 0.75 ft).
1926-60: Maximum discharge, 37,000 cfs 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, -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 table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

0.7	45	8.0	2,720
1.0	84	11.0	4,360
1.5	160	14.0	7,500
2.5	379	16.0	11,600
4.0	900	17.0	14,700

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	162	450	2,500	3,890	1,160	2,330	458	209	129	60	92
2	95	158	396	1,570	3,900	3,290	2,460	433	197	120	58	92
3	90	153	379	2,440	*2,570	10,700	4,560	409	211	120	62	83
4	83	155	349	2,240	1,880	9,100	4,530	*392	221	115	*57	83
5	83	1,010	329	1,760	1,740	7,560	3,360	376	213	106	55	81
6	186	816	310	3,640	2,380	6,500	2,660	586	197	99	52	74
7	241	601	298	*4,310	2,400	3,440	2,000	1,160	181	91	265	73
8	349	420	282	3,630	2,040	2,210	1,670	1,490	167	87	140	66
9	346	334	*270	3,420	1,660	2,980	1,440	1,460	*152	84	104	60
10	252	289	254	2,230	1,470	4,040	1,270	988	145	80	80	453
11	213	*259	400	1,730	1,340	*3,630	1,130	752	138	77	157	806
12	188	241	2,130	1,470	1,150	3,660	1,030	630	138	91	129	257
13	167	223	2,140	1,300	1,060	3,070	952	544	146	116	135	152
14	*217	219	1,810	1,310	1,040	2,500	884	488	230	*124	116	135
15	342	221	1,320	1,980	1,040	2,420	*824	450	148	91	109	112
16	520	230	908	1,530	1,090	4,170	776	417	130	77	95	130
17	312	254	1,080	2,110	1,340	4,040	740	384	250	71	84	447
18	236	236	4,190	3,500	1,900	3,520	713	356	259	70	78	307
19	199	223	11,700	2,840	2,480	3,180	672	364	205	65	78	305
20	177	215	6,270	2,400	2,320	2,370	634	420	188	64	71	219
21	163	205	3,680	1,810	2,120	1,900	860	324	172	62	286	160
22	160	195	2,460	1,480	2,330	1,630	1,170	291	140	62	1,140	130
23	153	221	1,540	1,260	2,180	1,440	1,190	270	127	137	788	114
24	170	287	1,220	1,120	1,960	1,310	960	252	118	109	518	102
25	174	243	1,030	1,010	1,870	1,180	812	232	141	70	266	94
26	163	226	932	928	1,680	1,090	717	238	186	80	184	509
27	155	754	1,570	1,640	1,440	1,010	645	248	282	112	153	1,040
28	148	948	6,550	1,870	1,300	960	586	296	201	102	160	540
29	155	717	5,600	2,180	1,240	1,320	534	346	163	83	122	389
30	168	583	3,790	4,280	-------	2,930	494	280	140	67	109	300
31	167	-------	4,050	4,670	-------	2,650	-------	234	-------	62	*98	-------
Total	6,171	10,798	67,687	70,158	54,810	100,960	42,603	15,568	5,395	2,823	5,809	7,405
Mean	199	360	2,183	2,263	1,890	3,257	1,420	502	180	91.1	187	247
Cfsm	0.298	0.540	3.27	3.39	2.83	4.88	2.13	0.753	0.270	0.137	0.280	0.370
In.	0.34	0.60	3.77	3.91	3.06	5.63	2.38	0.87	0.30	0.16	0.32	0.41

Calendar year 1959: Max 11,700 Min 68 Mean 900 Cfsm 1.35 In. 18.30
Water year 1959-60: Max 11,700 Min 52 Mean 1,066 Cfsm 1.60 In. 21.75

Peak discharge (base, 7,500 cfs).--Dec. 19 (2 p.m.) 13,000 cfs (16.74 ft); Mar. 3 (8 p.m.) 11,700 cfs (16.03 ft).

* Discharge measurement made on this day.

5935. 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 1960.

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.--30 years, 52,120 cfs.

Extremes.--Maximum discharge during year, 168,000 cfs Mar. 5; maximum gage height, 72.77 ft Mar. 6; minimum daily discharge, 21,300 cfs May 15; minimum gage height, 54.30 ft Nov. 16.

1930-60: Maximum discharge, 403,000 cfs Feb. 6, 1957; maximum gage height, 92.42 ft Feb. 6, 1957; 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. 20, 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. Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station (see p. 210). Flow now almost completely regulated.

Cooperation.--Auxiliary water-stage-recorder graph furnished by Tennessee Valley Authority.

Revisions (water years).--WSP 853: 1937, drainage area. WSP 1306: 1936 (monthly runoff).

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32,900	32,200	75,100	85,400	83,200	72,100	68,800	30,100	25,000	37,500	29,400	41,800
2	33,500	44,100	67,800	84,200	81,300	78,600	80,800	*24,800	30,900	31,900	32,100	37,800
3	31,100	*50,700	58,700	80,300	75,500	143,000	84,500	41,000	31,100	31,700	33,900	46,100
4	29,000	46,600	65,200	68,700	67,200	165,000	83,500	40,100	25,900	22,100	29,000	54,300
5	34,700	48,100	75,200	62,400	69,500	167,000	67,700	36,300	29,900	26,300	26,300	40,900
6	39,200	50,800	81,300	67,600	75,900	166,000	52,100	40,900	29,100	36,900	32,300	43,900
7	42,100	49,800	75,400	82,300	73,600	154,000	48,100	35,000	33,600	33,700	41,800	45,700
8	38,600	29,600	61,700	87,000	75,500	122,000	53,600	42,100	29,900	26,700	26,900	42,100
9	40,400	39,500	59,400	92,900	71,800	119,000	40,600	46,600	30,200	42,600	29,100	40,500
10	37,400	28,900	63,700	96,800	60,600	121,000	44,000	44,900	34,800	34,700	28,100	48,400
11	34,500	34,200	74,700	95,800	64,300	102,000	36,400	50,200	27,600	23,000	32,900	59,300
12	43,000	36,400	86,300	86,200	63,000	86,100	29,100	38,300	23,400	36,200	45,300	48,100
13	33,800	36,400	95,800	83,500	72,700	82,800	26,500	42,800	30,700	28,600	33,200	44,800
14	34,200	22,800	115,000	83,400	68,300	84,500	26,100	45,000	30,000	33,000	32,100	*45,800
15	47,800	22,300	123,000	80,500	64,300	76,900	24,800	21,300	29,000	27,100	32,000	44,700
16	56,000	44,600	113,000	69,900	63,500	85,100	21,500	28,700	32,000	35,400	30,700	51,300
17	40,900	45,300	92,700	74,100	67,500	*85,400	22,100	28,600	39,600	38,200	27,100	53,000
18	26,100	42,400	94,500	82,900	74,500	82,500	22,800	32,800	47,000	23,200	37,200	75,000
19	44,500	48,600	152,000	83,800	87,400	80,500	36,900	33,600	40,100	30,100	36,900	65,800
20	51,000	47,800	162,000	82,700	107,000	73,800	32,800	30,400	36,100	36,500	43,600	52,900
21	45,500	46,700	155,000	*80,400	122,000	67,900	30,800	31,100	45,400	34,300	40,400	46,100
22	59,900	27,600	157,000	74,300	124,000	63,800	31,700	21,400	55,800	29,500	35,200	43,900
23	49,300	48,400	153,000	64,800	110,000	53,400	33,900	31,800	47,300	32,600	43,500	51,100
24	45,900	55,000	134,000	59,900	87,400	43,600	30,200	27,600	31,600	34,500	40,200	50,100
25	43,000	65,200	108,000	63,000	83,700	42,600	42,300	26,100	37,600	*27,300	38,100	42,300
26	43,800	57,400	90,700	58,300	84,300	43,700	41,500	29,300	43,900	22,100	41,500	36,100
27	51,800	61,900	85,800	61,500	80,200	35,700	28,500	41,300	38,100	27,300	47,500	40,900
28	56,300	62,000	100,000	77,000	80,000	36,100	33,700	35,900	29,400	27,700	51,600	47,200
29	54,700	67,800	110,000	78,300	75,600	28,700	27,600	22,200	32,600	35,200	38,600	48,100
30	48,400	75,000	98,000	74,900	-------	44,100	28,100	25,600	38,600	42,500	41,800	38,400
31	45,900	-------	99,100	83,200	-------	67,900	-------	37,700	-------	27,800	39,000	-------
Total	‡1,315.2	‡1,368.1	‡3,083.1	‡2,406	‡2,313.8	‡2,674.8	‡1,231	‡1,063.5	‡1,036.2	977,000	‡1,117.1	‡1,426.4
Mean	42,430	45,600	99,450	77,610	79,790	86,280	41,030	34,310	34,540	31,520	36,040	47,550
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 162,000 Min 16,100 Mean 46,590 Cfsm 1.41 In. 19.08
Water year 1959-60: Max 167,000 Min 21,300 Mean 54,680 Cfsm 1.65 In. 22.46

* Discharge measurement made on this day.
‡ Expressed in thousands.

5960. Duck River below Manchester, Tenn.

Location.--Lat 35°28'15", long 86°07'18", on right bank 50 ft downstream from Powers Bridge, 2 miles southwest of Manchester, Coffee County, 3¼ miles downstream from Little Duck River, 7 miles upstream from Crumpton Creek, and at mile 265.4.

Drainage area.--107 sq mi.

Records available.--April 1934 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 878.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--26 years, 176 cfs.

Extremes.--Maximum discharge during year, 4,770 cfs Dec. 19 (gage height, 10.07 ft); minimum, 15 cfs Oct. 2, 4, 5, 6; minimum gage height, 1.04 ft Sept. 8.

1934-60: 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 measurement of peak flow; minimum, 8 cfs Aug. 12, 1934; minimum gage height, 0.57 ft Sept. 19, 20, 1947.

Maximum stage known, 23.2 ft in March 1929 (discharge, about 50,000 cfs), from high-water mark by Tennessee Valley Authority. Flood in March 1902 reached approximately the same stage as the flood in March 1929.

Remarks.--Records good. Occasional regulation for short periods during low flow by small reservoir above station.

Revisions (water years).--WSP 1426: 1946-47.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 24, 25, July 18, 19, Sept. 10)

Oct. 1 to Dec. 18				Dec. 19 to Sept. 30			
1.1	14	2.5	298	1.0	17	3 0	485
1.2	21	3.0	485	1.3	38	5.0	1,360
1.5	56	5.0	1,360	1.5	61	8.0	3,100
2.0	147			2.0	166		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	21	123	205	200	183	334	58	42	43	34	26
2	18	21	110	190	171	557	243	56	42	41	30	24
3	17	20	104	417	152	2,050	212	52	41	41	29	22
4	17	21	92	334	137	681	202	48	36	61	27	22
5	16	35	86	246	147	398	173	47	36	45	26	22
6	20	39	88	257	238	298	147	49	35	40	26	21
7	26	38	103	470	210	265	133	1,970	34	37	25	21
8	32	38	90	521	171	230	117	1,410	33	36	26	38
9	*50	38	76	451	152	280	104	386	34	35	30	54
10	29	35	69	386	154	470	92	238	33	41	42	225
11	25	35	81	312	220	443	84	185	33	53	51	225
12	21	34	944	251	159	394	82	159	34	36	37	106
13	32	32	741	225	147	302	76	144	34	34	34	57
14	53	32	323	220	147	257	73	124	46	34	33	38
15	43	31	*218	268	149	243	68	106	39	30	33	32
16	40	47	175	254	159	641	66	94	37	30	32	59
17	38	72	154	218	251	493	64	86	*56	36	30	793
18	35	90	1,230	312	*1,070	295	108	76	44	161	*29	298
19	32	85	3,030	248	810	243	106	*71	41	75	29	168
20	31	*70	745	195	432	246	82	70	39	54	29	119
21	29	64	409	166	367	212	94	66	38	46	28	88
22	28	56	283	144	420	183	152	61	36	41	36	66
23	26	55	232	124	338	*164	113	57	37	36	34	54
24	29	53	202	115	277	147	90	54	122	35	32	47
25	25	59	178	111	305	133	75	52	86	34	29	43
26	24	61	161	104	316	124	68	49	47	47	29	39
27	25	270	159	185	230	113	68	49	43	45	29	47
28	23	525	*1,430	334	200	106	70	47	46	*51	26	*46
29	23	228	737	254	208	162	61	47	60	53	26	44
30	23	149	349	289	-------	*1,170	57	45	45	43	24	43
31	22	-------	251	248	-------	673	-------	44	-------	36	28	-------
Total	870	2,354	12,973	8,054	7,937	12,156	3,414	6,000	1,329	1,430	953	2,887
Mean	28.1	78.5	418	260	274	392	114	194	44.3	46.1	30.7	96.2
Cfsm	0.263	0.734	3.91	2.43	2.56	3.66	1.07	1.81	0.414	0.431	0.287	0.899
In.	0.30	0.82	4.51	2.80	2.76	4.23	1.19	2.09	0.46	0.50	0.33	1.00

Calendar year 1959: Max 3,030 Min 16 Mean 161 Cfsm 1.50 In. 20.37
Water year 1959-60: Max 3,030 Min 16 Mean 165 Cfsm 1.54 In. 20.99

Peak discharge (base, 2,500 cfs).--Dec. 19 (5 a.m.) 4,770 cfs (10.07 ft); Mar. 3 (8 a.m.) 2,700 cfs (7.36 ft); May 7 (9:30 p.m.) 4,150 cfs (9.35 ft).

* Discharge measurement made on this day.

5975. Wartrace Creek at Bell Buckle, Tenn.

Location.--Lat 35°25'16", long 86°20'22", on downstream right bank wingwall 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 1960.

Gage.--Water-stage recorder. Datum of gage is 822.74 ft above mean sea level, datum of 1929.

Average discharge.--6 years (1954-60), 23.2 cfs.

Extremes.--Maximum discharge during year, 3,840 cfs Dec. 28 (gage height, 9.25 ft), from rating curve extended above 1,200 cfs on basis of contracted-opening measurement at gage height 11.25 ft; minimum, 0.01 cfs Sept. 9 (gage height, 2.06 ft).
1954-60: Maximum discharge, 8,240 cfs Mar. 21, 1955 (gage height, 11.25 ft), from rating curve extended above 1,200 cfs on basis of contracted-opening measurement of peak flow; no flow at times in 1954-57.

Remarks.--Records fair.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 18-30)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30			
2.4	0.4	3.0	24	2.07	0.02	2.8	8.3
2.5	.8	3.5	95	2.1	.03	3.0	22
2.6	2.0	4.0	187	2.2	.09	3.2	45
2.7	4.6	5.0	445	2.3	.2	3.5	87
2.8	8.7	6.0	790	2.5	.5	4.0	180
2.9	15			2.6	1.9	5.0	445
				2.7	4.7	6.0	790

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	4.9	18	23	25	21	40	3.2	*1.3	1.7	0.2	0.05
2	1.2	4.3	17	26	21	347	30	2.9	1.3	1.1	.1	.05
3	.8	4.0	12	67	19	165	28	2.6	1.9	.8	*.06	.05
4	.7	6.2	11	30	*16	75	24	2.6	1.2	.8	.05	.04
5	.6	75	9.2	28	184	50	20	2.3	.8	.8	.06	.04
6	5.5	25	18	32	94	39	16	*3.2	.6	.5	.05	.03
7	6.1	15	16	86	54	32	14	584	.5	*.3	.6	.03
8	*26	11	13	94	38	25	12	58	.4	.3	.2	.02
9	24	7.7	10	82	31	88	10	30	.4	.2	7.4	.02
10	9.8	6.5	8.7	69	49	74	9.3	19	.4	.2	32	.03
11	6.5	5.7	164	53	31	66	8.3	13	.4	.2	3.1	.1
12	4.3	4.3	293	40	22	52	7.9	12	.3	.2	.4	.1
13	106	3.7	82	39	22	44	7.5	9.3	.3	.2	.2	.09
14	52	3.7	44	32	20	38	7.1	7.9	1.7	.2	.2	*.08
15	23	3.4	*31	32	19	42	6.7	7.1	.6	.2	.2	.08
16	13	97	24	23	31	188	6.3	6.3	.4	.2	.1	.2
17	8.7	70	21	45	105	68	7.1	5.6	21	89	.1	68
18	6.1	32	524	44	328	44	6.7	5.0	4.1	38	.09	14
19	4.9	*22	163	32	*111	38	5.6	4.7	1.9	8.5	.09	7.1
20	4.0	15	70	25	69	29	5.3	4.4	1.2	3.2	.09	4.1
21	3.1	12	40	20	69	23	5.9	3.8	.8	1.7	.09	2.3
22	2.8	9.2	28	*16	76	20	5.3	2.9	.6	1.3	3.2	1.2
23	3.1	24	21	14	64	16	4.7	2.3	.5	1.1	.7	.8
24	23	223	15	13	55	15	4.1	2.3	1.3	1.1	.2	.5
25	8.2	52	13	12	87	12	3.5	1.9	2.9	1.0	.1	.4
26	5.7	29	12	10	55	11	6.4	2.1	1.5	.6	.1	.3
27	4.3	333	77	68	40	9.8	8.3	13	1.3	.7	.1	1.5
28	3.7	77	686	45	35	8.8	6.3	4.1	3.8	.5	.09	2.1
29	4.0	41	80	34	28	148	4.7	2.9	5.9	.4	.09	1.1
30	5.7	26	48	35	-------	217	3.2	1.9	3.2	.3	.08	.6
31	4.9	-------	31	31	-------	*85	-------	1.5	-------	.2	.07	-------
Total	374.1	1,242.6	2,599.9	1,200	1,798	2,070.6	324.2	821.8	62.5	155.5	50.11	105.01
Mean	12.1	41.4	83.9	38.7	62.0	66.8	10.8	26.5	2.08	5.02	1.62	3.50
Cfsm	0.742	2.54	5.15	2.37	3.80	4.10	0.663	1.63	0.128	0.308	0.099	0.215
In.	0.85	2.84	5.93	2.74	4.10	4.72	0.74	1.88	0.14	0.35	0.11	0.24

Calendar year 1959: Max 756 Min 0.4 Mean 33.4 Cfsm 2.05 In. 27.77
Water year 1959-60: Max 686 Min 0.02 Mean 29.5 Cfsm 1.81 In. 24.64

Peak discharge (base, 2,000 cfs).--Dec. 28 (1 a.m.) 3,840 cfs (9.25 ft); May 7 (5 a.m.) 3,140 cfs (8.87 ft).

* Discharge measurement made on this day.

5980. Duck River near Shelbyville, Tenn.

Location.--Lat 35°28'49", long 86°29'57", on right bank 150 ft downstream from Sims Bridge, 2.1 miles upstream from Sugar Creek, 2.2 miles west of Shelbyville, Bedford County, 2.9 miles downstream from Flat Creek, and at mile 216.2.

Drainage area.--481 sq mi.

Records available.--October 1933 to September 1960. Prior to April 1934 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 685.51 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--27 years, 799 cfs.

Extremes.--Maximum discharge during year, 9,720 cfs Dec. 19 or 20 (gage height, 16.80 ft, from floodmark); minimum, 86 cfs Sept. 8; minimum gage height, 0.84 ft Oct. 5, 6.
1933-60: 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 measurement of peak flow; minimum, 5 cfs Aug. 23, 1936; minimum daily, 20 cfs Sept. 2, 1945.
Flood in March 1929 reached a stage of 37.6 ft (discharge, about 70,000 cfs), from high-water profile by Tennessee Valley Authority. Flood in March 1902 reached a stage about 2 ft higher than that in March 1929, from information by local residents.

Remarks.--Records good except those for periods 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 tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 18		Dec. 19 to Sept. 30			
0.8	85	0.9	88	6.0	2,080
1.3	180	1.2	153	10.0	4,350
2.0	370	1.8	310	14.0	7,200
3.0	700	3.0	700	16.0	9,000

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

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	126	644	996	1,100	900	2,020	276	172	212	131	105
2	102	124	532	1,030	904	2,500	1,360	259	*169	184	121	102
3	97	118	*448	1,280	764	8,000	1,130	251	176	182	*113	96
4	95	129	388	1,300	*686	3,500	1,000	242	172	230	109	93
5	94	1,180	346	1,100	1,750	2,000	868	228	159	259	121	91
6	102	584	355	1,060	2,160	1,800	740	*228	150	212	119	88
7	116	361	385	1,620	1,490	1,300	672	4,730	141	*184	217	88
8	*145	272	355	2,220	1,150	*1,120	602	5,520	135	169	168	107
9	222	228	325	2,310	964	1,500	550	2,470	127	152	397	93
10	198	198	289	1,990	976	2,020	508	1,180	125	143	457	129
11	149	180	326	1,670	984	1,930	467	836	127	139	752	389
12	126	170	4,490	1,320	808	1,830	441	668	119	150	305	425
13	126	161	3,360	1,090	728	1,560	419	570	117	143	215	223
14	842	157	2,020	948	704	1,300	398	504	141	135	588	*167
15	445	163	1,200	1,100	654	1,210	383	447	159	131	795	135
16	275	249	896	996	665	2,620	371	404	141	125	262	131
17	210	1,040	724	1,000	1,230	2,470	371	362	269	254	186	2,660
18	182	654	2,950	1,230	4,620	1,840	425	329	299	2,820	157	1,610
19	165	*497	9,000	1,150	4,150	1,380	389	305	186	848	145	712
20	153	418	7,000	968	2,000	1,150	386	288	152	353	176	428
21	147	349	4,700	808	1,700	1,000	386	268	139	234	167	311
22	143	295	1,900	693	2,000	884	407	259	131	189	686	245
23	139	265	1,300	606	1,600	788	422	251	127	176	404	210
24	143	1,020	900	553	1,300	704	383	228	316	252	262	179
25	172	511	650	511	1,400	651	353	212	1,790	162	194	164
26	153	343	550	474	1,500	606	347	202	474	150	157	145
27	139	2,350	450	912	1,100	564	344	212	296	174	135	155
28	133	2,080	*5,390	1,240	1,000	504	323	223	256	194	125	167
29	126	1,400	3,970	1,180	950	691	299	204	248	150	121	215
30	128	868	2,080	1,430	-------	3,920	279	194	254	147	115	215
31	131	-------	1,330	1,360	-------	*3,280	-------	186	-------	139	109	-------
Total	5,513	16,490	59,253	36,145	41,037	55,322	17,043	22,536	7,267	9,052	8,009	9,878
Mean	178	550	1,911	1,166	1,415	1,785	568	727	242	292	258	329
Cfsm	0.370	1.14	3.97	2.42	2.94	3.71	1.18	1.51	0.503	0.607	0.536	0.684
In.	0.43	1.27	4.58	2.79	3.17	4.28	1.32	1.74	0.56	0.70	0.62	0.76

Calendar year 1959: Max 9,000 Min 94 Mean 736 Cfsm 1.53 In. 20.78
Water year 1959-60: Max 9,000 Min 88 Mean 786 Cfsm 1.63 In. 22.22

Peak discharge (base, 8,000 cfs).--Dec. 19 or 20 (time unknown) 9,720 cfs (16.80 ft); Dec. 28 (3 p.m.) 8,000 cfs (14.89 ft); Mar. 3 (time unknown) 8,910 cfs (15.90 ft); May 7 (10 p.m.) 8,340 cfs (15.27 ft).

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 19-27, Feb. 20 to Mar. 7; discharge estimated on basis of weather records, high-water marks, and records for stations on nearby streams.

5990. 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 1960.

Gage.--Water-stage recorder. Datum of gage is 705.01 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 41.3 cfs.

Extremes.--Maximum discharge during year, 2,630 cfs Dec. 27 (gage height, 9.97 ft); minimum, 0.03 cfs Aug. 31, Sept. 5, 6, 7, 9 (gage height, 0.17 ft).

1954-60: Maximum discharge, 16,700 cfs Mar. 21, 1955 (gage height, 17.62 ft, from floodmarks), from rating curve extended above 2,400 cfs on basis of contracted-opening measurement of peak flow 0.6 mile upstream (drainage area, 19.0 sq mi); no flow at times in 1954-57.

Flood in July 1939 (discharge, 16,300 cfs) exceeded all previously known floods, including those in 1902, and 1856, from reports by Tennessee Valley Authority.

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

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 7-9)

Oct. 1 to July 3				July 4 to Sept. 30			
0.33	0.4	1.2	24	0.19	0.1	0.7	7.3
.4	.8	1.6	56	.25	.4	1.0	14
.5	1.5	2.0	100	.3	.8	1.5	48
.6	2.5	3.0	270	.4	1.9	2.0	100
.8	5.5	5.0	760	.5	3.5		
1.0	12						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	1.4	24	42	59	44	67	9.0	*1.8	1.6	0.4	0.2
2	.4	1.3	21	40	48	666	58	7.9	1.8	1.3	.2	.2
3	.5	1.2	17	57	*41	332	68	7.4	1.7	5.3	*.3	.2
4	.4	22	*14	40	41	152	63	6.8	1.6	52	.2	.1
5	.4	37	12	*40	438	104	53	*5.8	1.6	8.2	.2	.1
6	.7	13	14	45	199	77	45	8.6	1.4	*4.2	.1	.1
7	2.5	9.3	12	75	120	*63	40	180	1.3	2.8	.2	.2
8	*12	7.9	11	100	85	53	35	36	1.1	2.4	.5	.2
9	8.2	6.0	10	109	66	218	30	23	1.1	2.1	1.2	.1
10	2.0	5.0	9.7	106	192	115	28	18	1.1	1.9	6.6	.3
11	1.4	4.1	204	82	87	97	25	15	1.1	1.7	4.4	.2
12	1.1	3.4	417	63	63	83	24	14	1.0	1.7	1.4	.3
13	1.1	2.8	126	52	60	68	22	11	2.2	1.4	.9	*.2
14	1.4	2.5	70	46	51	60	19	9.3	9.0	1.4	1.8	.3
15	1.2	2.3	48	41	47	83	19	7.7	5.0	1.4	.9	.3
16	1.1	19	37	33	60	212	18	6.8	3.8	1.3	.5	4.5
17	1.0	22	34	50	124	97	18	6.0	22	1.3	.4	23
18	1.0	12	625	54	221	75	16	5.5	7.7	1.4	.3	6.9
19	1.0	*9.7	264	44	145	63	15	5.5	2.9	1.1	.6	3.0
20	.9	7.7	127	37	109	51	14	5.2	1.5	.9	.4	1.7
21	1.0	6.3	77	33	106	42	16	5.0	1.3	.8	.4	1.0
22	1.0	5.3	53	29	106	39	14	4.8	1.1	.8	.5	.8
23	2.2	137	41	25	91	34	12	4.6	1.1	7.3	.8	.6
24	1.2	74	33	24	80	31	12	4.5	1.2	5.4	.5	.5
25	1.1	27	28	22	159	28	11	4.3	1.1	1.5	.3	.4
26	1.0	17	26	22	96	26	13	5.0	1.2	2.0	.2	.4
27	1.0	394	227	124	73	24	15	a4.0	1.3	1.3	.2	.8
28	1.0	82	441	77	62	23	12	a3.5	7.3	1.0	.2	1.0
29	2.8	44	124	71	52	145	10	a3.0	29	.8	.2	.9
30	2.5	31	75	102	-------	242	10	a2.5	3.9	.5	.1	.7
31	1.6	-------	53	75	-------	*92	-------	a2.0	-------	.4	.6	-------
Total	55.3	1,006.9	3,274.7	1,780	3,081	3,439	802	431.7	119.2	117.2	25.5	49.2
Mean	1.78	33.6	106	56.8	106	111	26.7	13.9	3.97	3.78	0.82	1.64
Cfsm	0.071	1.35	4.26	2.28	4.26	4.46	1.07	0.558	0.159	0.152	0.033	0.066
In.	0.08	1.50	4.89	2.63	4.60	5.14	1.20	0.64	0.18	0.18	0.04	0.07

Calendar year 1959: Max 890 Min 0.3 Mean 38.0 Cfsm 1.53 In. 20.72
Water year 1959-60: Max 666 Min 0.1 Mean 38.7 Cfsm 1.55 In. 21.15

Peak discharge (base, 1,500 cfs).--Dec. 18 (6 p.m.) 1,610 cfs (8.13 ft); Dec. 27 (11 p.m.) 2,630 cfs (9.97 ft); Mar. 2 (5 p.m.) 2,310 cfs (9.54 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.

5995. Duck River at Columbia, Tenn.

Location.--Lat 35°37'05", long 87°01'56", on right bank 4 ft downstream from bridge on former U. S. Highway 31, 2 blocks north of public square at Columbia, Maury County, 0.7 mile downstream from Columbia hydroelectric plant, 2.4 miles upstream from Rutherford Creek, and at mile 132.8.

Drainage area.--1,208 sq mi.

Records available.--October 1904 to December 1908, April 1930 to September 1960. Monthly discharge only for some periods, published in WSP 1306. Gage-height records collected at same site 1887-95, 1911 (fragmentary), and since 1947, 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.--44 years (1904-8, 1930-60), 1,921 cfs.

Extremes.--Maximum discharge during year, 17,300 cfs Mar. 4 (gage height, 23.98 ft); minimum, 58 cfs May 28 (gage height, 1.59 ft); minimum daily, 68 cfs Sept. 7.
1904-8, 1930-60: 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 except those for periods of shifting control, which are fair. 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). WSP 853: Drainage area. WSP 1306: 1905-9, 1920-22, 1928(M).

Rating tables, water year 1959-60, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 3, June 18 to Sept. 30				Mar. 4 to June 17			
1.9	52	10.0	4,800	2.1	135	10.0	4,800
2.1	100	16.0	10,100	3.0	550	16.0	10,100
3.0	472	22.0	15,500	5.0	1,490	23.0	16,400
5.0	1,460						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	373	2,260	3,030	3,010	2,230	7,110	482	245	658	202	127
2	114	312	1,710	2,310	2,480	3,400	4,430	432	*240	481	190	107
3	182	269	1,450	2,290	2,030	12,500	3,850	405	240	373	166	94
4	138	256	1,220	2,900	1,730	16,400	3,710	*375	230	3,210	152	83
5	103	998	1,040	2,650	5,950	10,500	2,990	342	220	1,880	152	78
6	114	2,400	931	2,460	11,400	5,570	*2,370	338	216	960	214	72
7	*114	1,620	940	2,630	8,050	3,840	1,950	417	198	*523	182	68
8	152	1,010	980	4,170	4,600	3,050	1,640	6,560	184	440	178	92
9	550	748	*883	5,690	3,350	4,180	1,440	7,330	175	347	338	134
10	467	602	796	5,510	3,600	7,460	1,280	3,740	167	294	*616	163
11	422	495	964	4,550	5,350	6,600	1,160	1,680	159	244	911	145
12	395	422	8,330	3,640	3,600	5,520	1,060	1,210	155	206	1,280	110
13	369	364	12,300	3,050	2,620	4,760	980	985	159	186	748	*320
14	859	329	7,960	2,680	2,250	3,870	915	843	175	174	495	481
15	970	298	4,550	2,400	2,030	3,250	852	735	180	194	404	294
16	1,040	307	3,930	2,210	*1,990	5,090	802	*676	262	170	1,050	248
17	634	*776	2,280	2,120	2,590	7,110	745	525	7,050	156	625	1,070
18	486	1,950	6,710	2,460	4,620	*5,230	708	496	1,320	145	347	6,000
19	391	1,540	14,200	*2,830	9,890	3,930	765	559	705	2,550	239	2,950
20	325	1,040	15,500	2,400	9,110	3,090	716	370	504	2,130	182	1,450
21	281	921	11,900	2,020	6,270	2,540	626	356	338	839	163	916
22	244	686	5,470	1,680	4,800	2,110	654	351	252	426	244	653
23	231	743	3,290	1,420	4,320	1,820	667	324	214	944	298	495
24	227	2,520	2,450	1,220	3,740	1,600	658	302	202	1,390	616	369
25	227	4,130	1,920	1,100	4,720	1,440	640	288	223	955	477	298
26	244	2,130	1,590	1,000	4,990	1,340	613	375	1,290	472	338	248
27	239	5,640	1,720	1,490	3,800	1,230	658	608	970	382	248	227
28	231	10,200	10,000	3,370	3,010	1,150	794	356	883	440	190	214
29	223	6,160	14,700	3,400	2,570	2,430	586	279	1,110	316	156	202
30	360	3,370	9,100	3,140	-------	11,900	520	302	897	294	134	223
31	431	-------	4,710	3,360	-------	11,600	-------	274	-------	239	124	-------
Total	10,904	52,609	154,784	85,180	128,470	156,740	45,889	32,315	19,163	22,018	11,659	17,931
Mean	352	1,754	4,993	2,748	4,430	5,056	1,530	1,042	639	710	376	598
Cfsm	0.291	1.45	4.13	2.27	3.67	4.19	1.27	0.863	0.529	0.588	0.311	0.495
In.	0.34	1.62	4.77	2.62	3.96	4.83	1.41	0.99	0.59	0.68	0.36	0.55

Calendar year 1959: Max 18,200 Min 103 Mean 1,920 Cfsm 1.59 In. 21.59
Water year 1959-60: Max 16,400 Min 68 Mean 2,015 Cfsm 1.67 In. 22.72

Peak discharge (base, 16,000 cfs).--Dec. 20 (2 a.m.) 16,100 cfs (22.71 ft); Mar. 4 (5 a.m.) 17,300 cfs (23.98 ft).

* Discharge measurement made on this day.
Note.--Shifting-control method used Aug. 17 to Sept. 16, Sept. 22-30.

6005. Big Bigby Creek at Sandy Hook, Tenn.

Location.--Lat 35°29'10", long 87°13'59", on right bank 45 ft west of Louisville & Nashville Railroad track, 0.5 mile downstream from bridge on U. S. Highway 43, 0.4 mile northeast of Sandy Hook, Maury County, 0.5 mile upstream from Dry Creek, and 3.5 miles southwest of Mount Pleasant.

Drainage area.--17.5 sq mi.

Records available.--September 1955 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 670.59 ft above mean sea level, datum of 1929.

Average discharge.--7 years, 23.0 cfs.

Extremes.--Maximum discharge during year, 1,040 cfs Dec. 27 (gage height, 6.06 ft); minimum, 5.7 cfs Oct. 2-5 (gage height, 1.07 ft).

1958-60: Maximum discharge, 5,550 cfs Mar. 31, 1955 (gage height, 11.22 ft), from rating curve extended above 830 cfs; minimum, 1.0 cfs Sept. 10, 1958, and July 9, 1959, caused by removal of gravel from channel 0.8 mile upstream; minimum natural discharge, 1.5 cfs Sept. 4-7, 1954; minimum gage height, 0.80 ft Sept. 17, 1956.

Remarks.--Records fair.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 27				Dec. 28 to Sept. 30			
1.0	1.7	2.5	105	1.3	3.3	2.5	103
1.1	3.5	2.8	141	1.4	6.9	3.0	175
1.4	16	3.3	229	1.6	19	3.6	287
1.6	30	3.7	309	2.0	53		
2.0	61						

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	7.2	14	33	42	33	65	15	8.7	13	3.7	3.7
2	3.2	6.4	15	31	34	112	51	14	*8.7	11	3.5	3.3
3	2.9	5.7	14	48	29	141	256	14	8.7	9.7	3.7	3.3
4	2.7	7.6	13	37	29	79	121	*14	8.1	9.7	4.0	3.3
5	2.7	21	12	34	204	58	76	14	7.5	8.7	4.0	3.3
6	7.6	13	11	33	125	48	*59	18	7.5	8.1	3.7	3.3
7	*5.3	10	10	31	76	42	48	21	6.9	*6.9	3.5	3.3
8	21	8.7	9.9	36	55	37	40	18	6.9	6.5	3.3	3.5
9	16	7.6	*9.5	44	45	144	35	16	6.9	6.9	4.6	6.9
10	9.5	6.4	8.7	57	54	122	32	16	6.3	8.1	*5.8	7.5
11	7.9	5.7	46	56	48	87	29	15	6.3	6.9	5.4	7.5
12	6.0	5.3	159	43	39	70	28	14	6.3	6.3	4.6	5.8
13	8.9	4.9	57	38	37	59	26	14	8.1	5.8	4.6	*4.6
14	14	5.3	34	33	33	49	25	13	9.7	6.9	4.6	4.0
15	10	5.3	25	30	32	48	25	13	7.5	5.8	4.3	3.7
16	8.3	6.8	20	25	*35	87	23	12	7.5	5.8	4.0	5.4
17	7.2	*8.7	28	27	41	67	22	12	34	5.4	3.7	17
18	6.0	7.2	299	32	77	*53	21	12	12	5.4	3.5	6.9
19	5.7	6.8	146	*28	69	47	20	16	10	5.4	4.0	5.4
20	5.3	6.4	71	25	59	40	18	13	8.7	5.0	4.6	4.6
21	4.9	5.7	51	23	55	35	25	12	7.5	5.0	5.0	4.6
22	4.9	5.3	40	21	50	32	22	11	6.9	5.0	10	4.3
23	5.3	17	34	18	48	29	21	11	6.3	5.4	8.1	4.0
24	13	37	29	17	51	29	20	10	9.2	5.8	5.8	4.0
25	7.6	20	26	16	149	26	18	9.7	11	5.0	4.6	4.0
26	6.4	16	25	15	85	25	18	11	9.7	4.6	4.6	4.0
27	5.3	70	171	49	60	24	18	12	10	4.6	4.3	6.9
28	4.9	34	282	48	48	23	17	11	39	4.6	4.3	5.8
29	7.2	20	89	55	40	149	16	10	31	4.6	4.3	5.0
30	8.7	16	61	63	-------	230	16	9.2	18	4.3	4.0	4.6
31	7.6	-------	42	55	-------	97	-------	8.7	-------	4.3	3.7	-------
Total	229.2	397.0	1,854.1	1,101	1,749	2,122	1,211	409.6	334.9	200.3	141.8	153.5
Mean	7.39	13.2	59.8	35.5	60.3	68.5	40.4	13.2	11.2	6.46	4.57	5.12
Cfsm	0.422	0.754	3.42	2.03	3.45	3.91	2.31	0.754	0.640	0.369	0.261	0.293
In.	0.49	0.84	3.94	2.34	3.72	4.51	2.57	0.87	0.71	0.43	0.30	0.33

Calendar year 1959: Max 299 Min 2.7 Mean 19.7 Cfsm 1.13 In. 15.32
Water year 1959-60: Max 299 Min 2.7 Mean 27.1 Cfsm 1.55 In. 21.05

Peak discharge (base, 600 cfs).--Dec. 27 (10:30 p.m.) 1,040 cfs (6.06 ft).

* Discharge measurement made on this day.

6025. Piney River at Vernon, Tenn.

Location.--Lat 35°52'17", long 87°30'00", on left bank 350 ft upstream from county highway bridge, 400 ft upstream from Pretty Creek, 0.8 mile northwest of Vernon, Hickman County, 5.8 miles downstream from Mill Creek, 6.6 miles north of Centerville, and 8.4 miles upstream from mouth.

Drainage area.--193 sq mi.

Records available.--July 1925 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 464.83 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 10, 1934, staff gage at site half a mile downstream at datum 2.77 ft lower.

Average discharge.--35 years, 300 cfs.

Extremes.--Maximum discharge during year, 2,420 cfs Dec. 28 (gage height, 5.16 ft); minimum, 68 cfs Sept. 6; minimum gage height, 0.17 ft Sept. 6, 7, 25, 26, 30.
1925-60: Maximum discharge observed, 32,500 cfs Dec. 21, 1926 (gage height, 16.5 ft); minimum discharge, 35 cfs Sept. 19, 20, 1936; minimum gage height observed, -0.09 ft Sept. 27, Oct. 16, 1951.
Flood in March 1897 reached a stage of 17.5 ft (discharge, 37,000 cfs), from reports by Tennessee Valley Authority.

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

Revisions (water years).--WSP 758: 1927(M). WSP 823: Drainage area. WSP 1306: Drainage area at site used 1931-34. WSP 1436: 1926(M), 1927, 1929, 1930-31(M), 1932, 1934(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 26		Nov. 27 to Sept. 30			
0.2	65	0.2	68	2.0	674
.5	126	.5	136	4.0	1,720
		1.0	272		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	73	71	125	374	234	362	366	196	119	392	83	85
2	75	69	110	324	225	394	386	188	117	838	81	78
3	73	69	110	305	220	652	561	183	117	407	78	74
4	71	71	120	266	220	590	727	178	114	295	81	72
5	71	85	120	248	251	510	640	170	112	245	96	70
6	89	81	122	239	427	472	556	188	107	211	83	70
7	91	77	119	231	431	435	489	452	105	185	78	70
8	118	77	114	225	398	398	427	366	105	*170	76	74
9	105	77	110	231	378	477	382	298	103	159	81	78
10	89	77	107	245	620	577	338	266	103	149	126	87
11	81	79	152	254	811	619	*309	245	100	139	89	103
12	*77	81	519	254	594	603	292	*228	100	131	*83	89
13	77	83	444	288	514	598	272	214	107	124	81	85
14	99	89	324	309	448	590	254	201	131	124	81	83
15	87	95	266	362	386	565	239	193	107	119	78	*81
16	81	95	*236	350	358	749	234	183	105	112	76	81
17	79	101	242	350	358	766	228	175	149	110	76	100
18	77	105	358	407	362	657	217	172	119	107	76	89
19	73	101	411	386	*335	590	206	193	107	105	103	83
20	73	97	350	350	312	519	198	172	103	103	87	81
21	71	99	305	316	309	452	220	162	100	100	78	78
22	71	101	263	288	305	*415	211	152	96	98	98	76
23	71	103	236	266	285	382	198	146	96	100	98	76
24	75	*97	217	245	279	354	193	141	241	107	87	74
25	73	93	201	*231	427	327	193	139	192	96	81	74
26	71	120	191	217	510	302	206	136	126	94	78	72
27	71	470	278	239	472	282	257	134	124	96	78	76
28	69	320	1,610	248	435	269	225	129	413	91	78	76
29	71	215	*834	245	411	275	214	126	316	87	76	76
30	75	155	586	245	-------	382	209	124	269	87	74	72
31	73	-------	452	239	-------	382	-------	*119	-------	85	83	-------
Total	2,450	3,453	9,632	8,777	11,315	14,925	9,447	5,969	4,203	5,266	2,602	2,383
Mean	79.0	115	311	283	390	481	315	193	140	170	83.9	79.4
Cfsm	0.409	0.596	1.61	1.47	2.02	2.49	1.63	1.00	0.725	0.881	0.435	0.411
In.	0.47	0.67	1.86	1.69	2.18	2.88	1.82	1.15	0.81	1.01	0.50	0.46

Calendar year 1959: Max 1,790 Min 69 Mean 202 Cfsm 1.05 In. 14.18
Water year 1959-60: Max 1,610 Min 69 Mean 220 Cfsm 1.14 In. 15.50

Peak discharge (base, 4,000 cfs).--No peak above base.

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 15 to Dec. 5, Mar. 5; discharge estimated on basis of weather records, recorded range in stage when available, records for Yellow Creek near Shiloh, observer's readings, and 1 discharge measurement.

6030. Duck River above Hurricane Mills, Tenn.

Location.--Lat 35°55'48", long 87°44'25", on left bank 0.4 mile downstream from Tumbling Creek, 1.3 miles upstream from bridge on State Highway 13, 3.6 miles southeast of Hurricane Mills, Humphreys County, and at mile 26.0.

Drainage area.--2,557 sq mi.

Records available.--July 1925 to September 1960. 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 8, 1927, tape gage, June 8, 1927, to Feb. 20, 1934, staff gages, 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.--35 years, 3,910 cfs.

Extremes.--Maximum discharge during year, 20,300 cfs Mar. 5 (gage height, 14.90 ft); minimum, 470 cfs Oct. 1, 2; minimum gage height, 0.69 ft Sept. 9.
1925-60: 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 excellent. Occasional minor fluctuations at low flow from small dams upstream. Prior to about 1953, fluctuation and regulation were more pronounced. Minor diversions for irrigation.

Revisions (water years).--WSP 803: 1935. WSP 823: 1927(M). WSP 853: Drainage area. WSP 1436: 1926-28, 1938(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30			
0.7	430	6.0	5,100	0.6	450	6.0	5,100
1.0	590	9.0	9,600	1.0	620	9.0	9,600
2.0	1,240	15.0	20,500	2.0	1,320	14.0	18,600
4.0	3,000			4.0	3,100		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*470	934	6,040	9,540	5,630	5,860	17,000	1,740	899	2,980	*779	606
2	491	979	4,420	6,490	5,410	5,200	12,400	1,630	878	3,180	725	602
3	546	940	3,630	5,170	4,750	7,490	9,570	1,530	857	2,560	665	575
4	508	886	3,100	4,820	4,220	15,100	14,000	1,460	899	2,020	655	548
5	480	880	2,780	4,840	3,920	19,700	12,200	1,380	920	3,110	650	526
6	524	1,000	2,460	4,860	9,230	17,000	8,940	1,350	830	4,130	620	510
7	562	2,260	2,230	4,540	15,600	10,700	7,010	1,640	767	2,760	598	502
8	814	2,980	2,060	4,440	14,200	7,730	5,720	1,940	737	*2,090	584	494
9	1,350	2,220	2,020	4,310	9,420	6,850	4,870	4,160	714	1,600	620	486
10	1,800	1,740	1,940	7,810	7,470	10,200	4,270	8,400	686	1,400	645	570
11	1,370	1,440	1,940	8,460	8,300	13,400	3,810	6,010	670	1,230	864	655
12	1,160	1,250	3,540	7,780	9,200	13,100	2,460	*3,620	660	1,120	1,090	958
13	940	1,120	12,900	6,700	7,970	11,100	3,180	2,720	645	995	1,330	779
14	953	1,050	15,900	6,040	6,110	9,740	2,930	2,260	686	899	1,640	645
15	1,160	986	13,000	5,650	5,200	8,400	2,760	1,980	725	857	1,250	*611
16	1,570	953	8,450	5,630	4,630	7,810	2,600	1,770	731	818	913	773
17	1,630	986	5,980	5,140	4,440	9,710	2,480	1,630	2,050	785	798	792
18	1,580	1,200	5,380	5,110	4,800	11,600	2,340	1,520	13,800	749	1,270	1,180
19	1,220	1,900	9,960	5,170	6,700	9,980	2,210	1,450	5,790	714	1,110	3,880
20	1,000	2,640	16,600	5,370	*11,200	8,130	2,090	1,460	2,730	720	844	4,550
21	916	2,210	18,800	4,930	12,700	6,610	2,170	1,470	2,080	3,210	743	2,830
22	838	1,790	16,800	4,390	10,100	5,590	2,150	1,270	1,630	2,110	708	1,930
23	796	1,680	10,400	3,890	8,130	4,840	2,050	1,100	1,320	1,430	885	1,430
24	778	2,580	6,330	3,460	7,380	4,310	1,980	1,080	1,260	1,100	1,200	1,150
25	766	4,220	4,840	3,130	7,420	3,940	1,950	1,020	2,430	2,380	850	950
26	760	5,560	4,090	*2,860	10,600	3,610	1,890	965	1,870	2,020	965	830
27	754	5,140	3,690	2,720	10,400	3,320	2,000	942	1,610	1,650	899	761
28	736	8,300	7,910	3,070	8,540	3,070	2,010	1,300	2,770	1,200	779	737
29	724	11,900	17,700	4,520	6,960	2,920	*1,920	1,520	3,010	958	692	714
30	*754	*9,890	19,000	5,700	-------	4,770	1,950	1,220	3,110	950	*650	692
31	796	-------	*15,700	5,620	-------	*16,200	-------	*906	-------	837	616	-------
Total	28,746	81,614	249,590	162,160	230,630	267,980	142,910	62,443	57,764	52,562	26,637	32,266
Mean	927	2,720	8,051	5,231	7,953	8,645	4,797	2,014	1,925	1,696	859	1,076
Cfsm	0.363	1.06	3.15	2.05	3.11	3.38	1.88	0.788	0.753	0.663	0.336	0.421
In.	0.42	1.19	3.63	2.36	3.35	3.90	2.09	0.91	0.84	0.76	0.39	0.47

Calendar year 1959: Max 26,400 Min 470 Mean 3,360 Cfsm 1.31 In. 17.85
Water year 1959-60: Max 19,700 Min 470 Mean 3,815 Cfsm 1.49 In. 20.31

* Discharge measurement made on this day.

6040. 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 1960.

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.--40 years, 721 cfs.

Extremes.--Maximum discharge during year, 10,800 cfs Apr. 4 (gage height, 15.82 ft); minimum, 156 cfs Sept. 7, 8 (gage height, 1.92 ft).

1920-60: 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 measurements of peak flow and rainfall-runoff study; minimum observed, 65 cfs Sept. 9, 1925; minimum gage height observed, 1.12 ft Sept. 26, 1931.

Maximum stage known, that of Feb. 13, 1948.

Remarks.--Records good.

Revisions (water years).--WSP 758: 1933. WSP 803: 1935. WSP 823: Drainage area. WSP 1436: 1921(M), 1922-24, 1925(M), 1927(M), 1934(M).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 6				Feb. 7 to Sept. 30			
1.9	145	6.0	1,880	1.9	150	6.0	2,050
2.0	170	10.0	4,800	2.0	180	10.0	4,820
4.0	930			4.0	1,000	14.0	8,550

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	242	570	1,020	1,010	1,070	2,190	434	279	434	193	190
2	165	235	522	866	890	1,050	1,730	*414	326	362	190	180
3	162	*228	498	830	794	2,750	3,580	402	382	334	183	174
4	160	232	454	826	734	3,230	*8,310	402	350	334	180	168
5	162	280	414	734	722	2,060	3,470	394	299	322	180	165
6	179	350	389	714	1,030	1,530	2,150	418	276	310	180	162
7	228	316	368	698	1,280	1,260	1,600	537	268	283	180	159
8	340	280	347	694	1,060	1,110	1,300	553	257	268	180	156
9	312	266	330	730	933	1,770	1,100	487	250	272	180	162
10	291	249	316	806	946	3,570	956	450	*246	306	210	213
11	252	238	400	930	1,200	2,880	852	434	239	362	213	334
12	218	235	2,400	970	1,120	2,240	773	430	239	302	*210	306
13	246	235	3,340	942	996	1,820	725	414	250	272	200	*239
14	410	235	1,740	902	928	1,500	672	398	291	272	193	213
15	*396	266	1,150	970	839	1,340	634	382	299	283	196	196
16	319	298	*890	974	791	1,540	600	374	276	257	183	193
17	284	316	810	890	791	*1,930	587	370	1,690	239	177	226
18	256	326	1,350	902	857	1,630	570	362	2,080	236	177	314
19	235	305	3,570	878	1,050	1,380	537	370	844	230	283	272
20	228	280	3,000	802	*1,080	1,220	512	402	608	226	283	226
21	221	260	1,610	*730	1,050	1,060	549	378	487	239	295	206
22	218	249	1,170	662	1,030	942	558	346	422	243	362	193
23	214	382	934	602	1,010	857	524	326	378	233	338	183
24	218	678	794	558	982	786	499	314	374	250	326	180
25	249	710	690	522	1,570	734	479	306	446	*253	314	180
26	242	578	622	490	2,580	681	471	299	410	233	291	180
27	224	770	650	594	1,970	642	487	314	382	223	279	193
28	207	1,070	2,140	910	1,480	608	475	334	406	213	283	223
29	207	874	4,360	992	1,260	630	446	322	483	206	287	230
30	228	678	2,020	1,090	-------	2,930	434	302	508	203	257	213
31	242	-------	1,330	1,110	-------	4,190	-------	295	-------	200	210	-------
Total	7,481	11,661	39,178	25,338	31,983	50,940	37,770	11,963	14,045	8,400	7,213	6,229
Mean	241	389	1,264	817	1,103	1,643	1,259	386	468	271	233	208
Cfsm	0.539	0.870	2.83	1.83	2.47	3.68	2.82	0.864	1.05	0.606	0.521	0.465
In.	0.62	0.97	3.26	2.11	2.66	4.24	3.14	1.00	1.17	0.70	0.60	0.52

Calendar year 1959: Max 6,650 Min 160 Mean 581 Cfsm 1.30 In. 17.65
Water year 1959-60: Max 8,310 Min 156 Mean 689 Cfsm 1.54 In. 20.99

Peak discharge (base, 4,500 cfs).--Dec. 19 (8:30 p.m.) 4,520 cfs (9.85 ft); Dec. 29 (10.30 a.m.) 4,980 cfs (10.22 ft); Mar. 31 (3 a.m.) 5,190 cfs (10.46 ft); Apr. 4 (5 a.m.) 10,800 cfs (15.82 ft).

* Discharge measurement made on this day.

6045. 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.--October 1927 to September 1960. Monthly discharge only for October 1927, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 403.15 ft above mean sea level, datum of 1929. Nov. 1, 1927, to May 31, 1934, staff gage 40 ft downstream on left bank at same datum.

Average discharge.--33 years, 1,139 cfs.

Extremes.--Maximum discharge during year, 9,810 cfs Apr. 5 (gage height, 12.81 ft); minimum, 242 cfs Oct. 4, 5 (gage height, 1.84 ft).

1927-60: 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 measurement of peak flow; minimum, 135 cfs Aug. 18, 1953, caused by regulation upstream at unknown location; minimum discharge unaffected by regulation, 143 cfs Oct. 1-8, 1931; minimum gage height, 0.36 ft Oct. 3, 4, 7, 8, 1931.

Maximum stage known, that of Feb. 14, 1948. Flood of March 1902 reached a stage of about 31.8 ft (revised), from flood profile by Tennessee Valley Authority.

Remarks.--Records good.

Revisions (water years).--WSP 1935. WSP 853: 1928-37.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 28, 30)

1.8	230	5.0	1,850
2.0	290	9.0	4,750
2.5	450	11.0	6,990
3.0	670	13.0	10,200

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	254	332	g1,250	2,130	1,640	1,820	4,680	690	432	815	311	341
2	248	335	g1,040	1,730	1,540	1,670	3,080	675	422	795	305	311
3	245	332	g926	1,530	1,400	2,240	2,940	650	436	680	299	294
4	245	326	g815	1,400	1,280	3,380	*5,570	630	493	590	305	275
5	242	362	g750	1,320	1,200	3,720	9,020	615	497	548	320	269
6	254	429	g725	1,240	1,180	2,760	4,950	625	454	513	290	257
7	278	468	g690	1,190	1,360	2,190	2,980	805	418	482	284	251
8	454	471	g635	1,150	1,560	1,860	2,330	875	398	*457	281	245
9	910	436	g580	1,150	1,430	2,060	1,930	850	384	436	281	257
10	660	*390	g530	1,210	1,450	3,350	1,670	790	374	436	284	287
11	509	g380	g625	1,360	1,560	4,480	1,470	740	368	460	296	314
12	*432	g344	g2,000	1,510	1,670	3,830	1,320	*700	362	474	*308	368
13	380	g305	g3,730	1,560	1,630	3,040	1,200	680	362	464	308	426
14	422	g359	g4,090	1,550	1,500	2,580	1,120	650	426	454	296	*404
15	509	g371	g2,700	1,560	1,380	2,230	1,050	625	474	454	290	359
16	585	g377	*1,950	1,630	1,290	2,190	1,010	610	454	426	284	329
17	509	g440	1,630	1,640	1,230	2,350	964	580	552	412	278	338
18	440	g432	1,920	1,620	1,220	2,530	920	575	1,360	384	*269	341
19	390	g457	2,900	g1,550	1,250	2,300	880	590	1,970	374	266	365
20	359	g474	4,070	g1,480	*1,400	2,030	845	615	1,200	362	308	398
21	338	g432	3,750	g1,360	1,440	1,790	870	625	942	356	356	368
22	326	g394	2,480	g1,240	1,430	1,600	890	600	780	350	404	332
23	320	g404	1,910	g1,120	1,400	1,430	880	561	675	377	478	317
24	323	g305	1,560	g1,040	1,360	1,300	840	521	695	374	460	299
25	329	g1,120	1,320	*964	1,540	1,200	800	493	850	368	436	287
26	332	g1,130	1,160	905	2,240	1,120	775	478	715	371	415	284
27	332	1,410	1,120	905	2,940	1,050	750	471	670	365	404	284
28	320	1,520	3,290	1,040	2,570	1,000	745	468	760	350	377	296
29	311	g1,660	3,830	1,290	2,130	970	730	471	942	344	371	314
30	317	g1,540	4,800	1,490	-------	1,600	710	474	860	335	371	323
31	329	-------	2,980	1,610	-------	3,890	-------	*450	-------	320	365	-------
Total	11,902	18,335	61,756	42,474	45,220	69,560	57,919	19,182	19,725	13,926	10,300	9,523
Mean	384	611	1,992	1,370	1,559	2,244	1,931	619	658	449	332	317
Cfsm	0.543	0.864	2.82	1.94	2.21	3.17	2.73	0.876	0.931	0.635	0.470	0.448
In.	0.63	0.96	3.25	2.23	2.38	3.66	3.05	1.01	1.04	0.73	0.54	0.50

Calendar year 1959: Max 8,240 Min 242 Mean 927 Cfsm 1.31 In. 17.79
Water year 1959-60: Max 9,020 Min 242 Mean 1,038 Cfsm 1.47 In. 19.98

Peak discharge (base, 5,200 cfs).--Apr. 1 (6 a.m.) 5,270 cfs (9.53 ft); Apr. 5 (2 p.m.) 9,810 cfs (12.81 ft).

* Discharge measurement made on this day.
g Computed from bihourly radio-gage readings furnished by Tennessee Valley Authority.

3005. Big Sandy River at Bruceton, Tenn.

Location.--Lat 36°02'13", long 88°13'43", 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 1960.

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.--31 years, 285 cfs.

Extremes.--Maximum discharge during year, 1,480 cfs Dec. 12 (gage height, 10.94 ft); minimum, 38 cfs Aug. 9, 18 (gage height, 2.41 ft).

1929-60: Maximum discharge, 17,000 cfs Jan. 21, 1935 (gage height, 16.16 ft, from graph based on gage readings), from rating curve extended above 9,200 cfs; minimum, 28 cfs Aug. 17-19, 22, Sept. 1, 1943.

Maximum stage known, 18 ft in March 1897 (discharge, 25,000 cfs); flood in March 1919 reached a stage of 17 ft (discharge, 21,000 cfs); as determined by Tennessee Valley Authority.

Remarks.--Records good.

Revisions (water years).--WSP 853: Drainage area. WSP 923: 1929-35.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 15 to Nov. 28, Nov. 29 to Dec. 10, Dec. 16, 20-27, Mar. 5-8, Sept. 14-30)

2.3	37	9.0	950
2.5	50	10.0	1,150
3.0	92	11.0	1,500
4.0	202		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	82	122	148	156	153	197	146	58	132	42	51
2	57	83	115	146	144	179	160	116	59	375	42	49
3	56	81	106	167	134	444	155	106	64	222	42	49
4	56	87	100	146	177	270	192	97	59	426	42	48
5	56	114	100	143	338	173	150	92	56	288	42	48
6	101	94	107	177	357	154	134	206	54	117	42	47
7	79	85	98	195	212	161	127	265	52	81	42	48
8	418	84	96	206	*164	*154	118	134	52	a68	41	47
9	223	84	93	222	158	683	113	107	52	a67	40	48
10	103	*85	90	201	384	876	106	96	52	a66	78	76
11	162	85	476	*178	387	903	106	*93	52	a68	100	105
12	118	86	1,310	161	210	598	105	94	52	a66	56	67
13	*255	87	936	212	180	283	104	92	52	a58	49	56
14	459	138	844	209	182	213	102	85	84	a53	47	50
15	146	154	349	246	177	219	*105	80	64	a50	44	47
16	96	129	*197	178	194	594	111	78	55	a49	43	46
17	83	146	333	232	170	513	114	73	*136	a48	42	46
18	75	108	489	357	152	308	119	70	91	a47	41	47
19	71	101	318	221	135	218	100	114	64	*45	348	46
20	68	96	194	165	125	195	*95	138	56	45	142	44
21	68	94	161	149	132	166	362	116	55	45	77	43
22	67	89	144	135	136	155	262	85	53	45	*227	42
23	68	89	137	120	123	146	141	72	53	47	290	42
24	93	91	129	122	124	141	117	66	53	64	100	42
25	81	86	124	124	356	134	106	61	56	53	70	42
26	72	90	125	130	346	128	441	60	59	48	*61	42
27	70	541	187	255	190	123	648	171	72	46	59	*51
28	68	417	561	255	172	122	219	174	278	45	56	51
29	70	197	361	200	201	128	148	80	459	44	54	50
30	77	*135	204	240	-------	446	180	68	244	43	52	48
31	80	-------	160	183	-------	357	-------	62	-------	43	52	-------
Total	3,556	3,838	8,766	5,823	5,916	9,337	5,137	3,297	2,646	2,894	2,463	1,518
Mean	115	128	283	188	204	301	171	106	88.2	93.4	79.5	50.6
Cfsm	0.561	0.624	1.38	0.917	0.995	1.47	0.834	0.517	0.430	0.456	0.388	0.247
In.	0.65	0.70	1.59	1.06	1.07	1.69	0.93	0.60	0.48	0.53	0.45	0.28

Calendar year 1959: Max 2,320 Min 50 Mean 187 Cfsm 0.912 In. 12.38
Water year 1959-60: Max 1,310 Min 40 Mean 151 Cfsm 0.737 In. 10.03

Peak discharge (base, 2,000 cfs).--No peak above base.

* 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 South Fork Obion River near Greenfield.

6095. 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 21.6.

Drainage area.--40,200 sq mi, approximately (at Gilbertsville).

Records available.--October 1875 to August 1889 (gage heights only), September 1889 to September 1960. Prior to October 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.--71 years (1889-1960), 63,790 cfs.

Extremes.--Maximum discharge during year, 194,000 cfs Mar. 8; maximum gage height, 36.11 ft Apr. 7; minimum daily discharge, 150 cfs (based on lockages at Kentucky Dam) Apr. 11; minimum gage height, 13.34 ft July 13.

1889-60: Maximum discharge, 500,000 cfs Feb. 17, 1948; maximum gage height, 62.43 ft Feb. 2, 1937, at Gilbertsville, present datum; minimum daily discharge, that of Apr. 11, 1960.

Remarks.--Records good. Backwater from Ohio River and dam 52; discharge computed using fall as determined by auxiliary water-stage recorder as a factor. Discharge for days of extremely low fall (less than 0.40 ft) computed on basis of records for Kentucky Dam. Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station (see p. 210). Flow now almost completely regulated. Records of chemical analyses and water temperatures for the water year 1960 are given in WSP 1721.

Revisions (water years).--WSP 1306: 1936 (monthly runoff).

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43,400	48,000	96,100	127,000	107,000	91,500	88,800	20,900	28,500	56,600	31,200	42,600
2	40,600	46,700	96,400	114,000	113,000	90,900	95,500	22,600	29,000	36,200	29,000	*46,100
3	36,700	54,300	93,300	98,100	104,000	120,000	94,400	34,300	26,300	35,500	33,100	56,400
4	26,100	54,500	85,400	92,500	93,600	159,000	103,000	33,600	32,100	29,700	30,600	57,300
5	36,500	55,400	81,900	80,800	88,600	182,000	110,000	31,700	27,300	39,700	35,100	57,400
6	41,500	55,800	82,800	84,800	86,000	186,000	107,000	29,700	26,200	26,400	35,400	56,300
7	42,400	54,700	83,100	96,800	92,600	190,000	91,500	26,900	29,600	26,400	36,100	56,900
8	42,600	30,200	81,000	101,000	93,000	192,000	59,200	36,100	30,700	26,300	37,200	41,700
9	43,200	*43,400	*77,900	106,000	96,000	186,000	31,100	41,300	26,100	45,700	34,700	41,600
10	42,800	36,800	77,400	105,000	98,800	168,000	10,200	39,300	26,900	47,100	34,600	48,800
11	35,400	41,500	78,400	109,000	90,800	151,000	150	50,900	26,600	41,900	31,600	56,700
12	42,000	40,000	92,700	106,000	78,400	137,000	200	52,100	26,100	41,900	37,600	57,400
13	44,700	37,800	124,000	103,000	74,700	125,000	5,200	*52,200	27,100	36,000	38,000	57,800
14	48,900	36,000	145,000	105,000	78,000	122,000	20,800	52,500	26,000	40,000	34,800	49,500
15	54,500	30,200	153,000	104,000	84,000	112,000	33,400	49,300	30,800	29,500	33,200	52,000
16	54,300	39,400	152,000	103,000	86,000	110,000	25,200	32,600	39,000	36,600	35,100	56,600
17	55,700	55,400	133,000	98,400	81,700	117,000	24,300	35,100	41,600	33,000	35,800	50,000
18	56,400	47,500	117,000	98,500	84,100	122,000	31,000	33,700	46,900	31,100	36,400	58,100
19	55,600	47,200	144,000	97,900	95,300	113,000	36,300	36,800	49,500	33,700	37,500	57,900
20	55,600	47,200	175,000	*98,700	107,000	103,000	41,900	35,900	51,100	37,200	41,000	57,800
21	55,900	46,200	184,000	97,200	122,000	91,400	41,200	35,200	52,200	37,500	39,200	57,700
22	55,500	44,000	186,000	87,200	132,000	74,400	39,500	30,300	45,200	37,200	39,000	57,200
23	53,400	54,800	181,000	81,200	*134,000	66,300	31,100	38,700	*51,400	34,300	39,000	57,100
24	57,900	56,400	157,000	81,900	130,000	54,300	30,200	33,000	50,800	30,800	42,700	57,600
25	56,800	55,600	144,000	79,200	122,000	53,900	35,600	29,800	46,300	34,800	41,300	49,100
26	56,400	57,200	136,000	71,900	109,000	54,500	28,000	29,500	52,800	26,700	43,000	34,900
27	55,000	58,500	123,000	71,700	103,000	54,600	28,700	38,300	52,900	*26,800	43,100	44,000
28	55,000	67,200	124,000	75,900	103,000	53,700	27,900	38,400	50,600	32,900	44,200	50,100
29	53,500	87,100	130,000	80,300	99,900	*44,100	26,700	29,700	49,900	31,500	44,200	51,800
30	54,800	93,400	139,000	86,300	--------	62,600	21,400	30,600	57,100	36,800	43,100	52,000
31	44,500	--------	134,000	97,800	--------	75,800	--------	29,100	--------	27,200	42,400	--------
Total	‡1,497.6	‡1,522.4	‡3,807.4	‡2,940.1	‡2,887.5	‡3,463	1,318,450	‡1,110.1	‡1,156.6	‡1,087	‡1,159.2	‡1,570.4
Mean	48,310	50,750	122,800	94,840	99,570	111,700	43,980	35,810	38,550	35,060	37,390	52,350
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-

Calendar year 1959: Max 186,000 Min 20,600 Mean 55,650 Cfsm 1.38 In. 18.79
Water year 1959-60: Max 192,000 Min 150 Mean 64,260 Cfsm 1.60 In. 21.76

* Discharge measurement made on this day.
‡ Expressed in thousands.

6100. 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 1960.

Gage.--Water-stage recorder. Datum of gage is 459.88 ft above mean sea level, datum of 1929.

Average discharge.--9 years, 92.8 cfs.

Extremes.--Maximum discharge during year, 2,280 cfs Jan. 14 (gage height, 10.30 ft); no flow for many days.
1951-60: Maximum discharge, 32,300 cfs Mar. 22, 1952, and Nov. 18, 1957 (gage height, 15.20 ft); no flow for many days each year.

Remarks.--Records poor.

Revisions (water years).--WSP 1506: 1952(M).

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	2.4	5.0	43	b55	50	78	43	2.6	125	0.7	
2	5.3	2.3	4.6	42	b45	b40	54	18	6.4	154	.9	
3	5.0	6.0	4.0	82	b35	b35	40	13	6.0	34	.9	
4	4.3	10	4.0	53	b30	b33	33	*9.2	6.0	20	1.3	
5	147	86	4.3	41	218	b31	28	14	5.7	14	1.3	
6	162	20	4.0	43	200	b29	25	40	4.3	11	1.3	
7	10	12	3.6	58	93	b28	22	89	3.3	8.4	3.6	(*)
8	*6.8	9.2	3.3	*70	63	b26	20	22	*2.1	6.4	2.4	
9	7.6	8.0	2.9	72	52	33	18	9.6	1.5	5.7	1.8	
10	8.0	7.2	10	53	255	64	18	6.0	.9	4.3	1.3	
11	80	6.4	317	44	104	84	18	4.0	1.2	3.6	1.0	
12	18	6.0	1,150	39	56	104	18	2.6	.9	2.6	.8	
13	18	8.0	104	37	38	130	17	1.8	21	2.4	.7	
14	27	10	48	931	32	179	17	1.5	33	2.9	.5	
15	10	9.2	28	1,050	24	138	26	1.2	2.6	2.1	**.1	(*)
16	*8.0	7.2	21	180	22	1,050	35	1.0	2.3	1.5	0	
17	7.2	5.0	349	167	22	622	39	.8	2.0	1.5	2.3	
18	6.0	3.6	426	234	23	*388	38	*162	2.0	1.8	0	
19	5.3	3.3	82	144	20	496	41	215	1.8	1.6	1.0	
20	4.6	2.9	43	b100	18	300	47	664	1.8	2.0	.3	
21	4.3	2.6	29	b75	16	150	501	451	1.6	*1.2	0	
22	4.6	2.4	22	b60	*16	104	115	45	1.3	1.0	.3	
23	5.3	4.0	20	b45	18	a80	56	22	1.3	1.2	0	
24	5.3	6.4	18	b37	22	a70	33	13	1.2	1.2	0	
25	3.3	*5.7	16	b30	306	a50	24	8.4	1.0	1.0	0	
26	2.9	8.8	16	b27	181	a40	19	5.7	.9	1.5	0	
27	2.9	19	155	*182	82	a35	17	4.0	111	1.2	0	
28	3.3	10	568	176	71	a30	14	3.3	632	.9	0	(*)
29	*3.6	6.8	104	123	89	*a20	14	2.9	*822	.7	0	
30	2.6	5.7	62	b90	-------	300	54	3.3	91	.7	0	
31	2.4	-------	47	b70	-------	125	-------	2.6	-------	.7	0	-------
Total	586.6	296.1	3,670.7	4,398	2,206	4,864	1,479	1,878.9	1,770.7	416.1	22.5	0
Mean	18.9	9.87	118	142	76.1	157	49.3	60.6	59.0	13.4	0.73	0
Cfsm	0.211	0.110	1.32	1.58	0.848	1.75	0.550	0.676	0.658	0.149	0.0081	0
In.	0.24	0.12	1.52	1.82	0.91	2.02	0.61	0.78	0.73	0.17	0.009	0

Calendar year 1959: Max 1,660 Min 0.8 Mean 54.1 Cfsm 0.603 In. 8.17
Water year 1959-60: Max 1,150 Min 0 Mean 59.0 Cfsm 0.658 In. 8.93

Peak discharge (base, 3,000 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.
** Field estimate made on this day.
a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, and records for station near Benton.
b Stage-discharge relation affected by ice.

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6105. 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 641 and State Highway 58, 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 1960.

Gage.--Water-stage recorder. Datum of gage is 344.53 ft above mean sea level, datum of 1929 (Tennessee Valley Authority bench mark). Prior to Sept. 10, 1951, wire-weight gage at same site and datum.

Average discharge.--22 years, 272 cfs.

Extremes.--Maximum discharge during year, 2,850 cfs Jan. 16 (gage height, 12.60 ft); minimum, 3.5 cfs Sept. 7, 8, 9 (gage height, 2.26 ft).
1938-60: Maximum discharge, 36,000 cfs Nov. 19, 1957 (gage height, 17.10 ft), from rating curve extended above 17,000 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 fair.

Revisions (water years).--WSP 923: Drainage area. WSP 1143: 1938-47. WSP 1206: 1949(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 7-27, Nov. 29 to Dec. 11)

2.2	2.0	10.0	805
2.3	4.5	11.0	1,020
2.5	11	11.5	1,220
3.0	34	12.0	1,600
4.0	105	13.0	3,800
7.0	400		

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	26	59	141	107	175	220	163	34	339	8	4.5
2	18	26	54	127	94	135	158	115	31	364	8	4.8
3	16	26	47	237	86	128	127	82	30	208	8	4.5
4	15	54	43	227	82	114	108	*66	29	165	10	4.5
5	15	329	42	153	115	96	96	55	26	78	10	4.5
6	548	310	44	135	389	90	86	87	24	63	10	4.0
7	202	93	42	139	272	89	78	149	21	52	15	*3.8
8	*71	61	38	*170	154	88	71	157	*20	42	13	3.5
9	58	47	35	179	125	96	65	89	19	36	10	5.0
10	45	40	34	170	716	117	59	66	18	32	9	18
11	131	35	286	134	545	150	54	56	17	29	8	8.9
12	193	32	1,480	115	218	178	51	49	17	26	7	7.5
13	180	30	2,330	107	149	227	48	44	17	24	7	6.6
14	225	49	763	528	122	315	46	40	65	22	7	6.6
15	124	78	273	1,810	102	342	47	36	68	24	*7	5.7
16	75	62	193	2,650	94	722	51	33	31	20	7	5.1
17	56	51	423	760	90	*1,740	53	30	23	19	10	4.5
18	45	42	1,430	532	94	2,220	48	29	19	17	30	4.5
19	38	38	1,580	439	89	1,260	42	206	17	16	7	4.2
20	33	36	413	257	80	1,330	39	945	16	15	8	4.2
21	31	34	234	181	76	722	713	1,790	15	*15	5	4.0
22	29	32	175	141	*76	433	779	1,070	14	13	5	4.2
23	30	55	141	110	71	314	222	202	14	12	5	4.5
24	33	61	121	80	69	238	135	*121	14	12	4	4.5
25	35	47	105	70	300	184	101	96	13	16	4	4.0
26	34	42	96	70	763	152	109	86	13	14	4	4.0
27	30	*120	140	*105	303	131	86	79	16	12	4	4.0
28	27	204	994	322	200	115	68	61	979	11	4	*5.1
29	26	100	842	237	210	*107	64	51	1,350	10	4	5.1
30	*26	70	281	159	-------	243	187	44	*1,350	9	4	4.2
31	26	-------	182	127	-------	454	-------	38	-------	8	4	-------
Total	2,442	2,230	12,920	10,612	5,791	12,705	4,011	6,135	4,320	1,663	246	158.5
Mean	78.8	74.3	417	342	200	410	134	198	144	54.3	7.94	5.28
Cfsm	0.347	0.327	1.84	1.51	0.881	1.81	0.590	0.872	0.634	0.239	0.035	0.023
In.	0.40	0.37	2.12	1.74	0.95	2.08	0.66	1.01	0.71	0.28	0.04	0.03

Calendar year 1959: Max 3,580 Min 8.9 Mean 160 Cfsm 0.705 In. 9.57
Water year 1959-60: Max 2,650 Min 3.5 Mean 173 Cfsm 0.762 In. 10.39

Peak discharge (base, 4,400 cfs).--No peak above base.

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 23-26, July 22 to Sept. 1; discharge estimated on basis of 1 discharge measurement, recorded range in stage, weather records, and records for station at Murray.

Reservoirs in Tennessee River basin

4685. 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 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 504,400 cfs-days Apr. 11 (elevation, 983.38 ft); minimum, 62,500 cfs-days Jan. 26 (elevation, 924.96 ft). Maximum contents during period 1943-60, 760,000 cfs-days July 25, 1949 (elevation, 1,001.79 ft); minimum (after first filling), 1,000 cfs-days Jan. 16, 1956 (elevation, 883.7 ft, estimated).

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.

4760. 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 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 11, 1951, staff gage at same site and datum. Maximum contents during year, 302,700 cfs-days Apr. 25 (elevation, 1,723.89 ft); minimum, 150,500 cfs-days Oct. 1 (elevation, 1,670.50 ft). Maximum contents during period 1950-60, 315,800 cfs-days May 19, 1958 (elevation, 1,727.42 ft); minimum (after first filling), 57,700 cfs-days Jan. 13, 1956 (elevation, 1,614.15 ft).

Reservoir is formed by rock and rolled earthfill dam. Spillway is uncontrolled morning-glory type, 128 ft in diameter with six 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.

4835. 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 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 280,300 cfs-days Apr. 7 (elevation, 1,956.84 ft); minimum, 156,900 cfs-days Oct. 15 (elevation, 1,911.51 ft). Maximum contents during period 1948-60, 286,900 cfs-days Apr. 10, 1957 (elevation, 1,958.90 ft); minimum (after first filling), 25,100 cfs-days Jan. 13, 1956 (elevation, 1,813.47 ft).

Reservoir is formed by rock and rolled earthfill dam. Spillway is uncontrolled morning-glory type, 128 ft in diameter with six 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.

4868. Boone Lake.--Lat 36°26'26", long 82°36'16", at Boone Dam on South Fork 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 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 96,100 cfs-days July 28 (elevation, 1,383.64 ft); minimum, 44,000 cfs-days Jan. 19 (elevation, 1,351.35 ft). Maximum contents during period 1952-60, 98,100 cfs-days June 10, 1953 (elevation, 1,384.52 ft); minimum (after first filling), 21,300 cfs-days Jan. 23, 1956 (elevation, 1,327.06 ft).

Reservoir is formed by gravity nonoverflow type concrete dam. Spillway is equipped with five 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.

4870. 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 1960. 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 Apr. 28 (elevation, 1,262.89 ft); minimum, 11,500 cfs-days Oct. 9 (elevation, 1,258.02 ft). Maximum contents during period 1953-60, 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 is equipped with five 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 2,200 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

4935. 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 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 584,000 cfs-days May 30 (elevation, 1,060.41 ft); minimum, 153,100 cfs-days Nov. 20 (elevation, 1,009.50 ft). Maximum contents during period 1941-60, 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 nine 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.

4995. 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 1960. 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, 191,000 cfs-days May 15; maximum elevation, 814.66 ft May 17; minimum 12 p.m. contents, 141,000 cfs-days Jan. 26; minimum elevation, 806.65 ft Mar. 21. Maximum elevation during period 1943-60, 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.

5045. 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., 5.5 miles upstream from Whiteoak Creek, and at mile 22.8. Drainage area, 91.0 sq mi. Records available, January 1942 to September 1960. Prior to October 1944 month-end contents only, published in WSP 1306. 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. Prior to June 3, 1942, staff gage at same site and datum. Maximum contents during year, 66,600 cfs-days Apr. 25 (elevation, 2,885.76 ft); minimum, 39,600 cfs-days Sept. 30 (elevation, 2,845.58 ft). Maximum contents during period 1942-60, 70,400 cfs-days Apr. 12, 1957 (elevation, 2,890.55 ft); minimum (after first filling), 6,700 cfs-days Jan. 28, 1955 (elevation, 2,760.11 ft).

Reservoir is formed by rockfill 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.

Revisions (water years).--WSP 1306: 1942.

5075. Thorpe Lake.--Lat 35°11'46", long 83°09'09", at Thorpe Dam on West Fork Tuckasegee River, 2.3 miles northwest of Glenville, Jackson County, N. C., 3.0 miles upstream from Shoal Creek, and at mile 9.7. Drainage area, 36.7 sq mi. Records available, February 1941 to September 1960. Prior to October 1944 month-end contents only, published in WSP 1306. 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. Prior to Apr. 9, 1941, staff gage at same site and datum. Maximum contents during year, 34,300 cfs-days Apr. 8 (elevation, 3,098.11 ft); minimum, 19,100 cfs-days Sept. 30 (elevation, 3,073.91 ft). Maximum contents during period 1941-60, 35,700 cfs-days Mar. 13, 1950 (elevation, 3,100.01 ft); minimum (after first filling), 2,200 cfs-days Feb. 5, 1955, Jan. 13, 1956; minimum elevation, 3,025.10 ft Feb. 5, 1955.

Reservoir is formed by earth and rock dam and six 40-foot fuse-plug dams. Side channel spillway equipped with two 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.

5145. Fontana Lake.--Lat 35°27'07", long 83°48'18", at Fontana Dam on Little Tennessee River, 5.7 miles upstream from Twenty Mile Creek, 9.0 miles north of Robbinsville, Graham County, N. C., 9.6 miles upstream from Cheoah Dam, and at mile 61.0. Drainage area, 1,571 sq mi. Records available, October 1944 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 633,800 cfs-days May 29 (elevation, 1,691.38 ft); minimum, 292,100 cfs-days Jan. 29 (elevation, 1,598.12 ft). Maximum contents during period 1944-60, 722,300 cfs-days July 23, 1949 (elevation, 1,708.91 ft); minimum (after first filling), 78,300 cfs-days Jan. 29, 1955 (elevation, 1,472.0 ft).

Reservoir is formed by gravity nonoverflow type concrete dam. Spillway equipped with four 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

5165. 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 at mile 9.3. Drainage area, 176 sq mi. Records available, December 1927 to September 1960. Prior to October 1946 month-end contents only, published in WSP 1306. 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. Prior to February 1937, staff gage at same site and datum. Maximum contents during year, 65,400 cfs-days Apr. 7 (elevation, 1,806.44 ft); minimum, 23,200 cfs-days Oct. 1 (elevation, 1,760.87 ft). Maximum contents during period 1927-60, 81,100 cfs-days Sept. 3, 1928 (elevation, 1,817.90 ft); minimum (after first filling), 13,100 cfs-days Feb. 6, 1940 (elevation, 1,741.39 ft).

Reservoir is formed by concrete gravity and arch dam with concrete spillway controlled by six 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. 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.

5182. Chilhowee Lake.--Lat 35°32'44", long 84°03'01", at Chilhowee Dam on Little Tennessee River, 2.4 miles southwest of Chilhowee, Blount County, Tenn., 2.6 miles upstream from Citico Creek, 10.1 miles downstream from Calderwood Dam, and at mile 33.6. Drainage area, 1,976 sq mi. Records available, August 1957 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 24,800 cfs-days Feb. 19 (elevation, 873.91 ft); minimum, 19,300 cfs-days Feb. 24 (elevation, 867.48 ft). Maximum contents during period 1957-60, 25,200 cfs-days Feb. 6, 1958 (elevation, 874.46 ft); minimum (after first filling), that of Feb. 24, 1960.

Reservoir is formed by concrete dam with rockfill end abutments. Spillway controlled by six taintor gates 38 ft high by 35 ft wide. Closure of dam was made June 9, 1957. Storage above spillway crest (elevation, 836.0 ft) began Aug. 1, 1957; water in reservoir first reached minimum pool elevation Aug. 9, 1957. Total capacity at elevation 874.0 ft (top of gates) is 24,800 cfs-days, of which 3,400 cfs-days is controlled storage above elevation 870.0 ft (minimum pool). Reservoir is used for navigation, flood control, and power. Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

5325. 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 1960. 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, 792,200 cfs-days Apr. 17 (elevation, 1,004.76 ft); minimum, 327,300 cfs-days Nov. 24 (elevation, 961.68 ft). Maximum contents during period 1935-60, 1,236,700 cfs-days Feb. 11, 1937 (elevation, 1,031.10 ft); minimum (after first filling), 75,500 cfs-days Jan. 24, 1956 (elevation, 909.35 ft).

Reservoir is formed by concrete gravity dam with three drum gates 100 ft wide by 14 ft high. Some storage began in June 1935; 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.

5430. 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, approximately. Records available, October 1941 to September 1960. 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, 519,000 cfs-days May 11; maximum elevation, 742.54 ft May 11; minimum 12 p.m. contents, 382,000 cfs-days Mar. 23; minimum elevation, 734.84 ft Jan. 23. Maximum elevation during period 1941-60, 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.

5465. 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, 2.4 miles southeast of Hayesville, Clay County, N. C., and at mile 121.0. Drainage area, 189 sq mi. Records available, February 1942 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Aug. 4, 1942, staff gage at same site and datum. Maximum contents during year, 99,200 cfs-days Apr. 7 (elevation, 1,920.23 ft); minimum, 34,100 cfs-days Oct. 1 (elevation, 1,889.07 ft). Maximum contents during period 1942-60, 124,200 cfs-days Apr. 20, 1943 (elevation, 1,927.80 ft); minimum (after first filling), 9,400 cfs-days Sept. 5, 1947, Jan. 27, 1956; minimum elevation, 1,860.11 ft Sept. 5, 1947.

Reservoir is formed by a rolled earthfill 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.

Reservoirs in Tennessee River basin--Continued

5530. Nottely Lake.--Lat 34°57'29", long 84°05'22", at Nottely Dam on Nottely River, 1.3 miles upstream from Dooley Creek, 1.7 miles southwest 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 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 67,600 cfs-days Apr. 28 (elevation, 1,786.51 ft); minimum, 11,400 cfs-days Oct. 1 (elevation, 1,703.85 ft). Maximum contents during period 1942-60, 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 earthfill 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.

5545. 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, September 1939 to September 1960. 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, 212,400 cfs-days Aug. 13 (elevation, 1,523.79 ft); minimum, 55,700 cfs-days Jan. 5 (elevation, 1,437.95 ft). Maximum contents during period 1939-60, 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 seven 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.

5555. 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 66.0. Drainage area, 1,018 sq mi. Records available, February 1943 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 29,600 cfs-days July 28 (elevation, 1,280.03 ft); minimum, 24,400 cfs-days Dec. 30 (elevation, 1,270.59 ft). Maximum contents during period 1943-60, 30,300 cfs-days June 13, 1952 (elevation, 1,281.40 ft); minimum (after first filling), 15,700 cfs-days Aug. 28, 1955 (elevation, 1,251.73 ft).

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.

5585. 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 1960. 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, 93,900 cfs-days May 20 (elevation, 1,686.50 ft); minimum, 36,200 cfs-days Oct. 4 (elevation, 1,639.53 ft). Maximum 12 p.m. contents during period 1930-60, 100,900 cfs-days Feb. 11, 1946 (elevation, 1,690.83 ft); minimum (after first filling), 6,500 cfs-days Jan. 16, 1956 (elevation, 1,587.75 ft).

Reservoir is formed by earth dam. Spillway equipped with five 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.

5625. Ocoee No. 3 Lake.--Lat 35°02'25", long 84°28'00", at Ocoee No. 3 Dam or 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 1960. 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 elevations above mean sea level. Maximum contents during year, 3,600 cfs-days Nov. 6 (elevation, 1,435.60 ft); minimum, 800 cfs-days Oct. 4 (elevation, 1,410.90 ft). Maximum contents during period 1942-60, 7,800 cfs-days Jan. 8, 1946 (elevation, 1,436.7 ft, estimated); minimum (after first filling), that of Oct. 4, 1959.

Reservoir is formed by concrete dam. Spillway with crest at elevation 1,412.00 ft equipped with seven 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, Dec. 31, 1953, Sept. 30, 1958, Dec. 31, 1959. 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.

Reservoirs in Tennessee River basin--Continued

5640. 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 1960. Prior to October 1953, published as Parksville (Ocoee No. 1) Reservoir. Indicator gage. Datum of gage is 6.89 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, 43,400 cfs-days June 6 (elevation, 837.2 ft); minimum, 34,200 cfs-days Mar. 13 (elevation, 827.1 ft). Maximum 12 p.m. contents during period 1914-60, 53,300 cfs-days July 9, 1916; maximum 12 p.m. elevation, 840.2 ft Feb. 10, 1946; minimum contents, 27,300 cfs-days Jan. 27, 1956 (elevation, 817.7 ft); minimum 12 p.m. elevation, 814.8 ft Dec. 14, 1934.

Reservoir is formed by concrete dam with 347 ft of spillway. Spillway is equipped with four floodgates 7 ft high by 30 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 837.55 ft (about top of flashboards) is 43,700 cfs-days, of which 16,900 cfs-days is controlled storage above elevation 816.9 ft (minimum pool). Reservoir is used for power. Records furnished by Tennessee Valley Authority.

5665. 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, 30,730 sq mi, approximately. Records available, October 1939 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 326,000 cfs-days May 2; maximum elevation, 683.90 ft May 2; minimum 12 p.m. contents, 193,000 cfs-days Mar. 24; minimum elevation, 674.67 ft Dec. 29. Maximum elevation during period 1939-60, 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.

5695. Hales Bar Lake.--Lat 35°08'48", long 85°22'19", 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, approximately. Records available, October 1914 to September 1960. 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, 87,000 cfs-days Dec. 20; maximum elevation, 635.00 ft June 1; minimum 12 p.m. contents, 69,000 cfs-days Apr. 11; minimum elevation, 632.00 ft Jan. 3. Maximum elevation during period 1914-60, 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 elevation 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 at elevation 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.

5740. 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, approximately. Records available, October 1938 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 517,000 cfs-days Dec. 20; maximum elevation, 595.45 ft May 13; minimum 12 p.m. contents, 433,000 cfs-days Aug. 26; minimum elevation, 592.70 ft Feb. 5. Maximum elevation during period 1939-60, 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.

Revisions (water years).--WSP 1306: 1947-48.

5790. 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., 6.8 miles upstream from bridge on U. S. Highway 41A, and at mile 170.0. Drainage area, 263 sq mi. Records available, May 1952 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936. Maximum contents during year, 40,400 cfs-days July 26 (elevation, 960.08 ft); minimum, 29,600 cfs-days Feb. 4 (elevation, 954.08 ft). Maximum contents during period 1952-60, 42,300 cfs-days Apr. 21, 22, 1956 (elevation, 960.98 ft); minimum (after first filling), 26,300 cfs-days Nov. 8-11, 1953 (elevation, 951.93 ft).

Reservoirs in Tennessee River basin--Continued

5790. Woods Reservoir--Continued
Reservoir is formed by concrete gravity and earthfill type dam with riprapped embankments. Spillway equipped with three taintor gates, 25 ft high by 50 ft wide and two 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 U. S. Air Force.

5860. 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., 0.8 mile upstream from Big Nance Creek, 30.1 miles downstream from Decatur, Ala., 74.1 miles downstream from Guntersville Dam, and at mile 274.9. Drainage area, 29,590 sq mi, approximately. Records available, September 1936 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 583,000 cfs-days May 26; maximum elevation,556.38 ft May 9; minimum 12 p.m. contents, 412,000 cfs-days Nov. 14; minimum elevation, 549.76 ft Nov. 14. Maximum elevation during period 1936-60, 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.
Revisions (water years).--WSP 1306: 1947-48.

5890. 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, approximately. Records available, April 1924 to September 1960. Prior to August 1926 month-end contents only, published in WSP 1306. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum contents during year, 327,700 cfs-days Nov. 6 (elevation, 507.88 ft); minimum, 302,900 cfs-days Apr. 12 (elevation, 504.75 ft). Maximum contents during period 1924-60, 329,200 cfs-days Apr. 20, 1954 (elevation, 508.07 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.

5930. Pickwick Lake.--Lat 35°04'16", long 88°15'04", at Pickwick Landing Dam on Tennessee River, 1½ miles north of town of Pickwick Dam, Hardin County, Tenn., 6.1 miles upstream from Lick Creek, 52.7 miles downstream from Wilson Dam, and at mile 206.7. Drainage area, 32,820 sq mi, approximately. Records available, October 1937 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 541,000 cfs-days Nov. 18; maximum elevation, 417.71 ft Nov. 22; minimum 12 p.m. contents, 351,000 cfs-days Jan. 15; minimum elevation, 407.86 ft Dec. 18. Maximum elevation during period 1937-60, 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, one of which is used as a trash gate. Dam completed and storage began Feb. 8, 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.

6090. 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, approximately. Records available, July 1944 to September 1960. Gage, water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Maximum 12 p.m. contents during year, 1,413,000 cfs-days May 10; maximum elevation, 359.71 ft May 10; minimum 12 p.m. contents, 996,000 cfs-days Nov. 15; minimum elevation, 353.24 ft Nov. 17. Maximum elevation during period 1944-60, 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. Storage began Jan. 28, 1954.

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. Storage began Oct. 27, 1929.

Reservoirs in Tennessee River basin--Continued

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., with total 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. 28, 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. Storage began Dec. 8, 1918.

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.

Month-end elevation and contents, water year October 1959 to September 1960

Date	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)
	Douglas Lake			South Holston Lake			Watauga Lake		
Sept.30.....	969.37	351,400	-	1,670.50	150,500	-	1,914.78	164,500	-
Oct. 31.....	957.03	241,400	-110,000	1,675.19	160,900	+10,400	1,914.35	163,500	-1,000
Nov. 30.....	948.75	180,500	-60,900	1,681.27	175,200	+14,300	1,917.70	171,400	+7,900
Dec. 31.....	929.69	79,600	-100,900	1,695.67	212,600	+37,400	1,929.58	201,300	+29,900
Calendar year 1959.	-	-	-18,600	-	-	+106,900	-	-	+72,100
Jan. 31.....	930.02	80,800	+1,200	1,701.64	229,700	+17,100	1,936.47	219,800	+18,500
Feb. 29.....	945.33	158,400	+77,600	1,708.56	250,800	+21,100	1,944.92	243,800	+24,000
Mar. 31.....	967.05	329,000	+170,600	1,718.14	282,400	+31,600	1,954.49	272,900	+29,100
Apr. 30.....	980.62	471,800	+142,800	1,723.05	299,700	+17,300	1,954.73	273,600	+700
May 31.....	981.80	485,500	+13,700	1,720.28	289,800	-9,900	1,954.99	274,400	+800
June 30.....	979.83	462,700	-22,800	1,713.06	265,300	-24,500	1,948.25	253,700	-20,700
July 31.....	980.31	468,200	+5,500	1,710.98	258,500	-6,800	1,947.60	251,800	-1,900
Aug. 31.....	980.58	471,300	+3,100	1,700.25	225,600	-32,900	1,938.37	225,100	-26,700
Sept.30.....	959.73	263,500	-207,800	1,676.91	164,900	-60,700	1,913.80	162,200	-62,900
Water year 1959-60.	-	-	-87,900	-	-	+14,400	-	-	-2,300
	Boone Lake			Fort Patrick Henry Lake			Cherokee Lake		
Sept.30.....	1,377.47	83,500	-	1,258.41	11,700	-	1,037.61	342,400	-
Oct. 31.....	1,372.36	74,200	-9,300	1,260.22	12,400	+700	1,029.67	277,800	-64,600
Nov. 30.....	1,365.99	63,700	-10,500	1,260.18	12,400	0	1,022.06	224,500	-53,300
Dec. 31.....	1,354.04	47,200	-16,500	1,260.60	12,600	+200	1,016.27	189,300	-35,200
Calendar year 1959.	-	-	+700	-	-	+400	-	-	+86,000
Jan. 31.....	1,357.13	51,100	+3,900	1,261.01	12,800	+200	1,016.29	189,400	+100
Feb. 29.....	1,365.75	63,400	+12,300	1,259.65	12,200	-600	1,035.15	321,300	+131,900
Mar. 31.....	1,376.04	80,800	+17,400	1,259.05	11,900	-300	1,049.72	459,800	+138,500
Apr. 30.....	1,379.88	88,200	+7,400	1,260.96	12,800	+900	1,057.54	548,600	+88,800
May 31.....	1,382.78	94,300	+6,100	1,261.10	12,800	0	1,059.90	577,500	+28,900
June 30.....	1,382.98	94,700	+400	1,261.10	12,800	0	1,057.57	549,000	-28,500
July 31.....	1,382.97	94,700	0	1,259.06	11,900	-900	1,057.35	546,300	-2,700
Aug. 31.....	1,382.33	93,300	-1,400	1,259.16	12,000	+100	1,055.38	523,000	-23,300
Sept.30.....	1,378.01	84,600	-8,700	1,260.66	12,600	+600	1,044.47	406,000	-117,000
Water year 1959-60.	-	-	+1,100	-	-	+900	-	-	+63,600
	Fort Loudoun Lake‡			Nantahala Lake††			Thorpe Lake††		
Sept.30.....	812.62	177,500	-	2,853.93	44,500	-	3,080.07	22,600	-
Oct. 31.....	812.58	177,000	-500	2,860.70	48,700	+4,200	3,086.75	26,700	+4,100
Nov. 30.....	808.88	152,000	-25,000	2,862.95	50,200	+1,500	3,086.14	26,300	-400
Dec. 31.....	807.76	145,000	-7,000	2,864.26	51,000	+800	3,086.52	26,500	+200
Calendar year 1959.	-	-	+1,000	-	-	+23,700	-	-	+12,900
Jan. 31.....	807.44	143,000	-2,000	2,869.70	54,700	+3,700	3,086.67	26,600	+100
Feb. 29.....	807.28	142,000	-1,000	2,878.26	60,800	+6,100	3,093.01	30,800	+4,200
Mar. 31.....	808.00	146,000	+4,000	2,880.03	62,200	+1,400	3,095.55	32,500	+1,700
Apr. 30.....	812.91	179,000	+33,000	2,885.37	66,200	+4,000	3,096.74	33,400	+900
May 31.....	813.14	181,000	+2,000	2,880.33	62,400	-3,800	3,093.11	30,900	-2,500
June 30.....	812.28	175,000	-6,000	2,871.57	56,000	-6,400	3,088.02	27,500	-3,400
July 31.....	813.07	180,000	+5,000	2,872.40	56,600	+600	3,084.65	25,300	-2,200
Aug. 31.....	811.98	173,000	-7,000	2,863.92	50,800	-5,800	3,082.49	24,000	-1,300
Sept.30.....	812.55	177,000	+4,000	2,845.58	39,600	-11,200	3,073.95	19,100	-4,900
Water year 1959-50.	-	-	-500	-	-	-4,900	-	-	-3,500

† 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

Month-end elevation and contents, water year October 1958 to September 1960

Date	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)
	Fontana Lake			Santeetlah Lake††			Chilhowee Lake		
Sept.30.....	1,649.00	455,300	-	1,760.87	23,200	-	872.55	23,600	-
Oct. 31.....	1,636.71	409,100	-44,200	1,774.86	33,200	+10,000	873.08	24,000	+400
Nov. 30.....	1,614.04	336,500	-72,600	1,795.27	52,400	+19,200	872.40	23,400	-600
Dec. 31.....	1,600.74	293,100	-37,400	1,794.05	51,000	-1,400	872.20	23,300	-100
Calendar year 1959.	-	-	+138,400	-	-	+35,800	-	-	-300
Jan. 31.....	1,600.25	297,700	-1,400	1,789.58	46,400	-4,600	872.91	23,900	+600
Feb. 29.....	1,632.35	394,200	+96,500	1,796.14	53,300	+6,900	873.33	24,200	+300
Mar. 31.....	1,660.15	496,500	+102,300	1,802.25	60,300	+7,000	873.34	24,200	0
Apr. 30.....	1,686.18	609,300	+112,800	1,802.15	60,200	-100	872.00	23,100	-1,100
May 31.....	1,690.93	631,700	+22,400	1,801.37	59,300	-900	872.36	23,900	+900
June 30.....	1,686.35	610,100	-21,600	1,797.72	55,100	-4,200	870.73	22,000	-1,900
July 31.....	1,679.46	578,600	-31,500	1,791.89	48,800	-6,300	870.81	22,100	+100
Aug. 31.....	1,670.34	538,700	-39,900	1,793.29	50,200	+1,400	870.68	22,000	-100
Sept.30.....	1,640.99	424,000	-114,700	1,782.22	39,500	-10,700	871.14	22,400	+400
Water year 1959-60.	-	-	-29,300	-	-	+16,300	-	-	-1,200
	Norris Lake			Watts Bar Lake‡			Chatuge Lake		
Sept.30.....	981.95	510,200	-	741.30	494,000	-	1,883.07	34,100	-
Oct. 31.....	972.90	421,600	-88,600	738.69	445,000	-49,000	1,896.98	45,800	+11,700
Nov. 30.....	971.65	412,100	-9,500	738.12	435,000	-10,000	1,901.31	53,400	+7,600
Dec. 31.....	977.30	463,200	+51,100	735.80	396,000	-39,000	1,906.44	63,800	+10,400
Calendar year 1959.	-	-	+272,100	-	-	+8,000	-	-	+22,600
Jan. 31.....	973.67	428,600	-34,600	735.56	390,000	-6,000	1,903.98	71,700	+7,900
Feb. 29.....	983.95	531,700	+103,100	735.49	391,000	-1,000	1,913.89	81,400	+9,700
Mar. 31.....	997.94	699,000	+167,300	737.30	420,000	+29,000	1,918.07	92,900	+11,500
Apr. 30.....	1,003.04	767,900	+68,900	741.16	491,000	+71,000	1,913.95	98,400	+5,500
May 31.....	1,001.40	745,200	-22,700	740.97	488,000	-3,000	1,917.75	92,000	-6,400
June 30.....	997.11	688,100	-57,100	740.79	485,000	-3,000	1,913.41	80,200	-11,800
July 31.....	993.95	647,700	-40,400	740.00	469,000	-16,000	1,908.13	67,500	-12,700
Aug. 31.....	983.36	525,300	-122,400	740.51	482,000	+13,000	1,902.11	54,900	-12,600
Sept.30.....	973.35	425,700	-99,600	740.91	487,000	+5,000	1,896.92	45,700	-9,200
Water year 1959-60.	-	-	-84,500	-	-	-7,000	-	-	+11,600
	Nottely Lake			Hiwassee Lake			Apalachia Lake		
Sept.30.....	1,703.85	11,400	-	1,508.24	169,100	-	1,278.79	28,800	-
Oct. 31.....	1,723.16	21,600	+10,200	1,494.22	137,100	-32,000	1,277.78	28,300	-500
Nov. 30.....	1,733.16	28,800	+7,200	1,474.44	101,100	-36,000	1,278.72	28,800	+500
Dec. 31.....	1,740.80	35,400	+6,600	1,444.77	62,500	-38,600	1,272.42	25,400	-3,400
Calendar year 1959.	-	-	+19,000	-	-	+15,900	-	-	-3,000
Jan. 31.....	1,741.24	35,800	+400	1,452.45	71,100	+8,600	1,277.12	27,900	+2,500
Feb. 29.....	1,751.17	46,200	+10,400	1,461.20	81,900	+10,800	1,277.80	28,300	+400
Mar. 31.....	1,758.45	55,500	+9,300	1,479.85	110,000	+28,100	1,277.35	28,400	+100
Apr. 30.....	1,766.24	67,200	+11,700	1,501.37	152,700	+42,700	1,277.33	28,000	-400
May 31.....	1,763.97	63,600	-3,600	1,511.34	177,100	+24,400	1,276.51	28,700	+700
June 30.....	1,754.77	50,600	-13,000	1,519.87	200,600	+23,500	1,276.09	28,500	-200
July 31.....	1,745.26	39,800	-10,800	1,522.93	209,800	+9,200	1,277.76	28,300	-200
Aug. 31.....	1,734.44	29,800	-10,000	1,521.14	204,400	-5,400	1,277.44	28,100	-200
Sept.30.....	1,718.20	18,500	-11,300	1,512.11	179,100	-25,300	1,278.57	28,700	+600
Water year 1959-60.	-	-	+7,100	-	-	+10,000	-	-	-100
	Blue Ridge Lake			Ocoee No. 3 Lake‡‡			Parksville Lake		
Sept.30.....	1,641.87	38,300	-	1,417.15	1,100	-	836.4	42,600	-
Oct. 31.....	1,651.02	47,200	+8,900	1,431.52	2,600	+1,500	835.5	41,700	-900
Nov. 30.....	1,651.46	47,700	+500	1,430.20	2,400	-200	833.5	39,800	-1,900
Dec. 31.....	1,657.29	54,000	+6,300	1,429.80	2,300	-100	828.0	35,000	-4,800
Calendar year 1959.	-	-	+39,000	-	-	-800	-	-	-200
Jan. 31.....	1,656.14	52,700	-1,300	1,434.36	2,800	+500	828.5	35,400	+400
Feb. 29.....	1,671.52	71,700	+19,000	1,428.92	1,800	-1,000	828.0	35,000	-400
Mar. 31.....	1,679.44	83,000	+11,300	1,430.40	2,000	+200	830.0	36,700	+1,700
Apr. 30.....	1,684.49	90,800	+7,800	1,432.30	2,300	+300	835.9	42,100	+5,400
May 31.....	1,685.57	92,400	+1,600	1,432.63	2,400	+100	835.9	42,100	0
June 30.....	1,681.16	85,600	-6,800	1,429.83	1,900	-500	836.0	42,200	+100
July 31.....	1,673.83	74,900	-10,700	1,430.90	2,100	+200	836.5	42,700	+500
Aug. 31.....	1,667.76	66,700	-8,200	1,427.50	1,600	-500	836.3	42,500	-200
Sept.30.....	1,651.27	47,500	-19,200	1,428.50	1,700	+100	835.5	41,700	-800
Water year 1959-60.	-	-	+9,200	-	-	+600	-	-	-900

† 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.
‡‡ Revised capacity table dated November 1959 used after Dec. 31, 1959.

Reservoirs in Tennessee River basin--Continued

Month-end elevation and contents, water year October 1959 to September 1960

Date	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)†	Contents (cfs-days)	Change in contents (cfs-days)
	Chickamauga Lake‡			Hales Bar Lake‡			Guntersville Lake‡		
Sept.30.....	680.90	274,000	-	634.00	76,000	-	592.92	a438,000	-
Oct. 31.....	678.15	237,000	-37,000	634.00	79,000	+3,000	593.25	454,000	+16,000
Nov. 30.....	679.22	253,000	+16,000	632.70	74,000	-5,000	593.78	471,000	+17,000
Dec. 31.....	675.66	200,000	-53,000	632.20	73,000	-1,000	593.14	452,000	-19,000
Calendar year 1959.	-	-	+3,000	-	-	+1,000	-	-	+7,000
Jan. 31.....	675.90	201,000	+1,000	632.45	72,000	-1,000	593.36	453,000	+1,000
Feb. 29.....	675.90	203,000	+2,000	632.25	72,000	0	593.10	446,000	-7,000
Mar. 31.....	677.15	221,000	+18,000	632.69	74,000	+2,000	593.63	469,000	+23,000
Apr. 30.....	683.46	318,000	+97,000	633.92	74,000	0	595.00	499,000	+30,000
May 31.....	682.54	302,000	-16,000	633.90	76,000	+2,000	594.84	498,000	-1,000
June 30.....	681.65	286,000	-16,000	633.74	75,000	-1,000	594.27	479,000	-19,000
July 31.....	681.43	283,000	-3,000	633.00	71,000	-4,000	594.00	466,000	-13,000
Aug. 31.....	680.20	263,000	-20,000	633.48	76,000	+5,000	593.58	462,000	-4,000
Sept.30.....	680.97	276,000	+13,000	633.91	77,000	+1,000	593.90	471,000	+9,000
Water year 1959-60.	-	-	+2,000	-	-	+1,000	-	-	+33,000
	Woods Reservoir			Wheeler Lake‡			Wilson Lake		
Sept.30.....	957.28	35,100	-	552.85	480,000	-	507.56	325,100	-
Oct. 31.....	957.13	34,800	-300	551.28	442,000	-38,000	507.51	324,700	-400
Nov. 30.....	957.14	34,800	0	551.50	452,000	+10,000	507.01	320,600	-4,100
Dec. 31.....	957.18	34,900	+100	551.66	459,000	+7,000	505.20	306,400	-14,200
Calendar year 1959.	-	-	-200	-	-	+45,000	-	-	-4,700
Jan. 31.....	954.10	29,600	-5,300	551.15	446,000	-13,000	505.71	310,000	+3,600
Feb. 29.....	954.22	29,800	+200	550.47	432,000	-14,000	505.53	309,000	-1,000
Mar. 31.....	958.43	37,200	+7,400	553.40	503,000	+71,000	505.44	308,000	-1,000
Apr. 30.....	959.97	40,200	+3,000	555.67	560,000	+57,000	507.25	322,000	+14,000
May 31.....	959.73	39,700	-500	555.63	559,000	-1,000	507.40	323,000	+1,000
June 30.....	959.82	39,900	+200	555.70	564,000	+5,000	506.50	316,000	-7,000
July 31.....	959.80	39,900	0	554.02	508,000	-56,000	507.51	324,000	+8,000
Aug. 31.....	959.10	38,500	-1,400	553.00	486,000	-22,000	506.50	316,000	-8,000
Sept.30.....	958.40	37,100	-1,400	552.74	479,000	-7,000	506.74	318,000	+2,000
Water year 1959-60.	-	-	+2,000	-	-	-1,000	-	-	-7,100
	Pickwick Lake‡			Kentucky Lake‡					
Sept.30.....	411.00	398,500	-	355.05	b1,070,000	-			
Oct. 31.....	409.50	370,000	-28,500	354.35	1,023,000	-47,000			
Nov. 30.....	411.33	410,000	+40,000	354.96	1,093,000	+70,000			
Dec. 31.....	408.74	363,000	-47,000	354.09	1,079,000	-14,000			
Calendar year 1959.	-	-	+16,000	-	-	+79,000			
Jan. 31.....	408.99	367,000	+4,000	354.29	1,068,000	-11,000			
Feb. 29.....	408.45	356,000	-11,000	353.94	1,042,000	-26,000			
Mar. 31.....	414.10	466,000	+110,000	354.17	1,045,000	+3,000			
Apr. 30.....	414.13	464,000	-2,000	358.44	1,325,000	+280,000			
May 31.....	414.16	464,000	0	358.87	1,336,000	+11,000			
June 30.....	413.64	453,000	-9,000	357.79	1,255,000	-81,000			
July 31.....	412.14	421,000	-32,000	356.91	1,193,000	-62,000			
Aug. 31.....	411.63	410,000	-11,000	356.16	1,141,000	-52,000			
Sept.30.....	410.78	394,000	-16,000	354.91	1,058,000	-83,000			
Water year 1959-60.	-	-	-4,500	-	-	-12,000			

† Elevation at 12 p.m.
‡ Contents based on backwater profile.
a Revised; published as 437,000 in WSP 1626.
b Revised; published as 1,072,000 in WSP 1626.

4725. 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 1959 (discontinued).

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.--12 years, 100 cfs.

Extremes.--1947-59: Maximum discharge, 4,200 cfs Mar. 18, 1955, Jan. 29, 1957 (gage height, 5.75 ft); minimum, 2.0 cfs Sept. 8, 1954 (gage height, 0.15 ft).
Revisions.--Figures of maximum discharge for the water years 1955 and 1956 have been revised to 4,200 cfs Mar. 18, 1955 (gage height, 5.75 ft) and 3,350 cfs Apr. 16, 1956 (gage height, 5.14 ft), superseding those published in WSP 1386 and 1436, respectively.

Revisions.--Revised figures of discharge, in cubic feet per second, for the high-water periods in the water years 1955-56, superseding those published in WSP 1386 and 1436, are given herewith:

Mar. 18, 1955..... 2,420
Apr. 16, 1956..... 2,390

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff in inches
March 1955.....	15,610	2,420	119	504	9.00	10.38
Water year 1954-55.....	-	2,420	5.8	112	2.00	27.22
Calendar year 1955.....	-	2,420	6.4	109	1.95	26.51
April 1956.....	8,034	2,390	74	268	4.79	5.34
Water year 1955-56.....	-	2,390	9.0	104	1.86	25.24
Calendar year 1956.....	-	2,390	9.0	115	2.05	28.06

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. 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 "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1960

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Cumberland River basin				
*4007	Clover Fork at Evarts, Ky.	Lat 36°51'56", long 83°11'37", at bridge on State Highway 215, at Evarts, just below Yocum Creek.	82.4	1954-55, 1959-60	5- 3-60 7-26-60 9-20-60	54.7 43.9 33.0
*4015	Yellow Creek bypass at Middlesboro, Ky.	Lat 36°37'52", long 83°43'45", at Middlesboro, 1/3 mile above Fourmile Run and 1/3 mile below Lick Fork.	35.3	1960	10- 8-59 12-10-59 4-19-60 7-20-60 7-27-60 8-30-60	1.82 39.1 24.4 26.2 10.6 4.89
4192	Cane Creek near Spencer, Tenn.	Lat 35°44'36", long 85°23'33", at bridge on State Highway 30, 4 miles east of Spencer.	133	1930, 1951, 1959-60	4-19-60 5-25-60 9-27-60	6.14 2.53 1.39
4193	Cherry Creek at Yankeetown, Tenn.	Lat 35°60'00", long 85°25'10", at bridge on State Highway 84, 0.3 mile northeast of Yankeetown and 0.9 mile above mouth.	16.7	1959-60	4-13-60 5-24-60 8-17-60	18.1 8.91 4.07
4208	Hickory Creek near McMinnville, Tenn. a/	Lat 35°39'30", long 85°48'10", at bridge on State Highway 55, 2.3 miles southwest of McMinnville and 0.1 mile above mouth.	132	1950-52, 1954-55, 1959-60	4-13-60 5-25-60 8-18-60	114 43.6 18.2
*4212	Charles Creek near McMinnville, Tenn.	Lat 35°43'00", long 85°46'05", at bridge on county road at Faulkner Springs, 2.7 miles north of McMinnville.	32.0	1951-53, 1955, 1959-60	4-13-60 5-25-60 8-18-60	38.6 29.2 19.4
4319	Overall Creek at College Grove, Tenn.	Lat 35°47'14", long 86°40'12", at county road bridge, 0.3 mile east of College Grove and 0.8 mile above mouth.	11.4	1959-60	10- 7-59	.83
4320	Harpeth River near Kirkland, Tenn.	Lat 35°49'14", long 86°41'16", at Louisville & Nashville RR. bridge, 1.7 miles northwest of Kirkland and 3.1 miles above Nelson Creek.	64.6	1953, 1959-60	10- 7-59	1.84
4322	Nelson Creek near Arrington, Tenn.	Lat 35°50'44", long 86°41'57", at county road bridge, 0.4 mile below Wilson Branch, 0.5 mile above mouth, and 1.6 miles southeast of Arrington.	25.7	1953, 1959-60	10- 7-59	.36
4323	Arrington Creek at Arrington, Tenn.	Lat 35°51'56", long 86°42'28", at county road bridge, 0.2 mile southeast of Arrington and 0.8 mile above Louisville & Nashville RR. bridge.	15.9	1953, 1959-60	10- 7-59	.76
4324	Harpeth River below Franklin, Tenn.	Lat 35°56'53", long 86°52'54", at bridge on U. S. Highway 431, 1.1 miles below Spencer Creek and 1.3 miles north of city limits of Franklin.	210	1959-60	10- 7-59	4.76
4340	Turnbull Creek at Kinston Springs, Tenn.	Lat 36°06'04", long 87°05'36", at county road bridge, just above Louisville & Nashville RR. bridge, 0.2 mile above mouth and 0.7 mile west of Kingston Springs.	123	1926-27‡, 1932, 1954, 1959-60	8-25-60	28.4

* Also a crest-stage station.
‡ Operated as a continuous-record gaging station
a Formerly published as Big Hickory Creek.

Discharge measurements made at low-flow partial-record stations during water year 1960--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Tennessee River basin				
4414.2	Little River at Cedar Mountain, N. C.	Lat 35°09'19", long 82°37'43", at bridge, 0.2 mile below Duncan Creek and 1.1 miles northeast of Cedar Mountain, Transylvania County.	16.1	1944, 1953, 1960	12-20-43 5-10-60 9-27-60	b15.7 67.9 24.8
4447.5	South Fork Mills River near Pisgah Forest, N. C.	Lat 35°20'35", long 82°39'52", below footbridge, 1.6 miles below Poundingmill Branch and 6.4 miles northeast of Pisgah Forest, Transylvania County.	21.3	1960	5-19-60 9-27-60	51.2 26.1
4450	South Fork Mills River at The Pink Beds, N. C.	Lat 35°21'58", long 82°44'22", at The Pink Beds, Transylvania County, in Pisgah National Forest, 400 ft below Thompson Creek.	9.99	1926-49‡, 1950, 1953-55, 1960	5-19-60 9-27-60	21.3 14.3
4455.5	North Fork Mills River near Mills River, N. C.	Lat 35°23'38", long 82°37'00", at bridge 0.4 mile above mouth and 2.5 miles west of Mills River, Henderson County.	24.0	1904-9c, 1953-55, 1960	5-20-60 9-27-60	49.1 18.8
4472.3	Cane Creek above Fairview, N. C.	Lat 35°32'11", long 82°24'37", at bridge, 0.2 mile below Ballard Creek and 1.6 miles northwest of Fairview, Buncombe County.	17.2	1935, 1960	5-17-60 9-26-60	26.6 7.77
4482.1	Hominy Creek above South Hominy Creek at Candler, N. C.	Lat 35°32'08", long 82°41'40", at bridge on State Highway 112, 0.1 mile above South Hominy Creek and 0.1 mile west of Candler, Buncombe County.	30.2	1953-55, 1960	10-22-53 5-18-60 9-26-60	6.35 31.2 13.9
4484.1	South Hominy Creek at Candler, N.C.	Lat 35°32'08", long 82°41'32", at bridge on State Highway 112 at Candler, Buncombe County, 200 ft above mouth.	38.3	1944, 1960	12- 3-43 5-18-60 9-26-60	b20.9 52.8 20.7
4489.1	Swannanoa River at Grovestone, at Swannanoa, N. C.	Lat 35°36'11", long 82°21'55", at bridge on U. S. Highway 70 at Grovestone, 0.2 mile above North Fork and 1.8 miles northeast of Swannanoa, Buncombe County.	21.2	1944, 1953-55, 1958-60	12- 3-43 1-13-60 4-12-60	b11.9 40.6 71.8
4516.9	Newfound Creek near Alexander, N. C.	Lat 35°39'58", long 82°38'04", at bridge, 0.9 mile above mouth and 2.6 miles southwest of Alexander, Buncombe County.	34.2	1953-54, 1960	5-18-60 9-26-60	22.6 12.3
4518.9	Reems Creek at Alexander, N. C.	Lat 35°41'40", long 82°36'48", at bridge on U. S. Highway 25, at mouth 0.5 mile south of Alexander, Buncombe County.	36.3	1944, 1953-54, 1960	12- 1-43 6-10-60 9-26-60	b9.22 17.1 5.81
4613	Cosby Creek below Cosby, Tenn.	Lat 35°52'23", long 83°13'26", at bridge on State Highway 32, just below Middle Creek, 4 miles north of Cosby.	55.3	1959-60	4-25-60	47.2
4662	Big Limestone Creek at Limestone, Tenn.	Lat 36°13'07", long 82°38'27", 0.5 mile below bridge on former U. S. Highway 11E and Southern Ry. and 2.0 miles above mouth, at Limestone.	78.1	1958-60	4-25-60	67.8
4680	Long Creek at White Pine, Tenn.	Lat 36°07'00", long 83°17'08", at bridge on U. S. Highway 25E, 0.5 mile north of White Pine.	29.1	1952-54, 1956, 1959-60	4-25-60	19.6
4691	Little Pigeon River near Pittman Center, Tenn.	Lat 35°45'00", long 83°25'00", at bridge on State Highway 73, 1 mile southwest of Pittman Center.	48.3	1952-54, 1959-60	4-25-60	63.6
4818	Town Creek at Mountain City, Tenn.	Lat 36°28'01", long 81°48'15", at U. S. Highway 421, 25 ft below confluence of Goose Creek and Furnace Creek, at Mountain City.	24.4	1952-56, 1959-60	4-25-60	10.7
4822	Doe Creek at Doeville, Tenn.	Lat 36°23'39", long 81°58'03", at bridge on State Highway 67, 100 ft below mouth of Dugger Branch, and at Doeville.	36.0	1952-54, 1956, 1959-60	4-25-60	38.4
4842	Stony Creek at Hunter, Tenn.	Lat 36°22'17", long 82°09'19", at bridge on county highway, 0.3 mile above mouth at Hunter.	58.2	1952-54, 1956, 1959-60	4-25-60	59.1
4876	Reedy Creek at Kingsport, Tenn.	Lat 36°33'27", long 82°33'35", 0.1 mile below Roach Branch and 0.4 mile east of intersection of U. S. Highway 23 and county highway, at Kingsport.	57.2	1950-54, 1956, 1959-60	4-26-60	37.6
4950	Big Flat Creek near Skaggston, Tenn.	Lat 36°06'51", long 83°43'56", at bridge on U. S. Highway 11W, 2.4 miles northeast of Skaggston.	61.4	1952, 1959-60	4-25-60	35.3
4972	Little River near Townsend, Tenn.	Lat 35°39'39", long 83°42'25", in Great Smoky Mountain National Park, 600 ft above Middle Prong and 3 miles southeast of Townsend.	60.1	1952-54, 1956, 1958-60	4-25-60	84.0

‡ Operated as a continuous-record gaging station.
b Furnished by Tennessee Valley Authority.
c Continuous-record gaging station (published as "at Pinkbed") operated at site ½ mile upstream.

Discharge measurements made at low-flow partial-record stations during water year 1960--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Tennessee River basin--Continued				
5002.4	Cartoogechaye Creek near Franklin, N. C.	Lat 35°09'31", long 83°23'39", at bridge on U. S. Highway 23, 1.8 miles south of Franklin, Macon County, and 1.9 miles above mouth.	57.1	1944, 1947, 1953-55, 1958, 1960	12- 6-43 5- 9-60	b58.0 117
5156.1	Long Creek at Robbinsville, N. C.	Lat 35°19'44", long 83°48'40", at bridge, 200 ft above mouth and 0.5 mile north of Robbinsville, Graham County.	11.8	1944, 1953-55, 1958-60	12- 8-43 10-20-53 5-12-60	b10.6 b4.35 24.5
5188	Notchy Creek near Vonore, Tenn.	Lat 35°33'22", long 84°13'22", at county bridge, 0.2 mile above mouth and 2.5 miles south of Vonore.	27.9	1953-54, 1959-60	4-25-60	22.3
5282	Big Sycamore Creek near Springdale, Tenn.	Lat 36°26'21", long 83°27'00", at bridge on State Highway 33, 5 miles northeast from intersection of U. S. Highway 25E and State Highway 33, and 6.0 miles northeast of Springdale.	21.7	1959-60	4-26-60	8.77
5322	Big Creek at La Follette, Tenn.	Lat 36°23'19", long 84°07'33", at bridge on U. S. Highway 25W, 0.5 mile west of La Follette.	24.0	1950-53, 1959-60	4-25-60	10.6
5352	Beaver Creek near Powell, Tenn.	Lat 36°01'06", long 84°03'06", at bridge on U. S. Highway 25W, 1.5 miles southeast of Powell.	56.1	1952-53, 1955, 1959-60	4-25-60	38.9
*5382	Poplar Creek near Oliver Springs, Tenn.	Lat 36°01'20", long 84°18'37", at bridge on State Highway 61, 2.5 miles southeast of Oliver Springs and 4 miles above Indian Creek.	55.9	1951-55, 1957-60	4-25-60	39.5
*5432	Ten Mile Creek near Decatur, Tenn.	Lat 35°37'05", long 84°41'30", at bridge on State Highway 68, 10.5 miles northeast of Decatur.	26.4	1959-60	11- 4-59 4-19-60 8-10-60 9- 8-60	4.50 12.8 2.51 .67
5483.3	Brasstown Creek at Brasstown, N. C.	Lat 35°02'24", long 83°57'34", at bridge in Cherokee County, 0.1 mile northwest of Brasstown and 0.8 mile above mouth.	83.1	1944, 1947, 1953-55, 1960	12- 4-43 10-20-54 10- 1-59 5-19-60	b79.7 b31.2 44.3 86.7
5567	Spring Creek near Servilla, Tenn.	Lat 35°16'17", long 84°25'00", at bridge on county road, 3.7 miles northeast of Springton, 7.4 miles northeast of Reliance, and 12.8 miles above mouth.	3.82	1959-60	4-19-60 7-21-60 9- 1-60	3.01 .23 .80
5572	Cane Creek near Etowah, Tenn.	Lat 35°18'04", long 84°32'16", at U. S. Highway 411 bridge, 1.7 miles south of junction of State Highway 30 in Etowah and 2.7 miles above mouth.	10.3	1950-52, 1954, 1956-57, 1959-60	4-19-60 7-21-60 8-10-60	5.95 1.24 1.35
5661.5	Rogers Creek near Lamontville, Tenn.	Lat 35°23'04", long 84°47'37", at county road bridge, 2.4 miles northeast of Lamontville and 5.0 miles southeast of Goodfield.	44.5	1954, 1959-60	11- 4-59 4-19-60 8-10-60 9- 8-60	18.4 30.4 14.9 13.9
5662.5	Candies Creek near Cleveland, Tenn.	Lat 35°13'02", long 84°52'58", on State Highway 60, 4.0 miles north of Cleveland and 14.9 miles above mouth.	88.7	1959-60	4-19-60 7-19-60 9- 1-60	61.2 14.4 20.4
5663	Rock Creek at Sale Creek, Tenn.	Lat 35°23'10", long 85°06'30", on U. S. Highway 27, 0.5 mile north of Sale Creek and 0.9 mile above mouth.	38.1	1959-60	4-19-60 7-21-60	25.1 1.47
5664	Soddy Creek at Soddy, Tenn.	Lat 35°18'05", long 85°09'56", at county highway bridge, 0.8 mile north of Soddy and 1.2 miles above U. S. Highway 27 bridge.	49.0	1932, 1955-56, 1959-60	4-19-60 7-21-60	23.3 2.48
5706	Sequatchie River at Pikeville, Tenn.	Lat 35°36'19", long 85°11'09", at bridge, 0.2 mile east of Pikeville and 2.4 miles above Skillern Creek.	86.2	1932-33, 1952, 1959-60	4-19-60 7-21-60	100 14.2
5797	Rock Creek near Estill Springs, Tenn.	Lat 35°19'09", long 86°08'29", at bridge on county road, 1.5 miles southwest of Estill Springs, Franklin County, and 0.1 mile above mouth.	41.2	1953-54, 1956, 1960	5-31-60 6-16-60 7-15-60 8- 2-60	17.2 16.2 15.4 17.2
5807	Hurricane Creek at Awalt, Tenn.	Lat 35°15'24", long 86°15'21", at county road bridge at Awalt, 25 ft below Fall Lick Branch and 2.9 miles above mouth.	24.6	1959-60	4-21-60 5-20-60 8- 4-60	29.0 21.4 8.56
5808	Beans Creek near Lexie Crossroads, Tenn.	Lat 35°07'18", long 86°18'20", at county road bridge, 1.8 miles southwest of Lexie Crossroads, 2.0 miles northeast of Shady Grove, and 1.3 miles above mouth.	89.7	1953-54, 1959-60	4-21-60 5-20-60 8- 4-60	94.2 45.5 19.0

* Also a crest-stage station.
b Furnished by Tennessee Valley Authority.

Discharge measurements made at low-flow partial-record stations during water year 1960--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Measurements	
					Date	Discharge (cfs)
		Tennessee River basin--Continued				
5810	East Fork Mulberry Creek at Lynchburg, Tenn.	Lat 35°16'53", long 86°22'21", at county road bridge, 0.2 mile southeast of Lynchburg and 1.3 miles above Price Branch.	23.1	1932-33, 1950, 1959-60	4-21-60 5-20-60 8- 4-60	21.8 15.7 5.17
5827	Coldwater Creek at Coldwater, Tenn.	Lat 35°05'02", long 86°44'02", at bridge, 1.2 miles above mouth.	29.8	1952-54, 1959-60	11- 4-59 5-12-60 8-10-60	7.65 31.0 3.48
5834	Big Creek near Riversburg, Tenn.	Lat 35°16'31", long 87°03'30", at county road bridge, 1.0 mile northwest of Riversburg and 0.5 mile above mouth.	85.2	1952-54, 1959-60	5-13-60 7-14-60 9-13-60	47.2 21.7 14.2
5852	West Fork Shoal Creek near Minor Hill, Tenn.	Lat 35°02'55", long 87°08'25", at county road bridge, 1.0 mile southwest of Minor Hill and 4.4 miles above junction with East Fork Shoal Creek.	13.5	1959-60	5-13-60 7-14-60 8-11-60	8.08 .14 .044
5882	Crowson Creek near Lawrenceburg, Tenn.	Lat 35°14'33", long 87°21'25", at bridge on U. S. Highway 64, 1¼ miles west of Lawrenceburg and 0.5 mile above mouth.	18.6	1932, 1952, 1959-60	5-13-60 7-13-60 9-12-60	16.1 11.1 9.17
5993	Caney Creek at Caney Spring, Tenn.	Lat 35°36'29", long 86°46'05", at bridge on State Highway 99, 0.3 mile (revised), west of Caney Spring, and 1.0 mile above mouth.	28.9	1953-54, 1959-60	5- 5-60 8- 3-60	0 0
6027	Tumbling Creek near Hurricane Mills, Tenn.	Lat 35°55'58", long 87°43'50", at county road bridge 0.6 mile above mouth and 3.9 miles southeast of Hurricane Mills.	51.2	1953-60	10- 1-59 8-18-60 9-15-60	11.9 8.1 14.2
6072	West Sandy Creek near Springville, Tenn.	Lat 36°15'37", long 88°12'10", at bridge on State Highway 69, 0.4 mile above Beasley Creek and 3.6 miles southwest of Springville.	47.9	1958-60	4-20-60 9-27-60	27.9 17.6

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Cumberland River basin					
*4007	Clover Fork at Evarts, Ky.	See previous table.	82.4	1959-60	7-10-60	4.34	2,120
*4015	Yellow Creek bypass at Middlesboro, Ky.	See previous table.	35.3	1941-60	4- 4-41	3.24	2,700
					3-17-42	3.62	3,440
					4-19-43	3.09	2,420
					2-17-44	3.73	4,030
					1- 1-45	2.25	1,370
					1- 7-46	4.31	5,420
					1-20-47	3.05	2,700
					2-19-48	3.71	3,990
					1- 5-49	3.30	3,170
					1-30-50	3.67	3,910
					2- 1-51	4.77	6,580
					3-22-52	5.00	7,200
					2-21-53	2.42	1,610
					1-16-54	2.50	1,730
					3-22-55	4.71	6,420
					2-28-56	3.11	2,810
					1-28-57	3.58	3,720
					12- 7-58	2.53	1,780
					1-21-59	3.97	4,570
					6-23-60	2.77	2,170
4049	Lynn Camp Creek at Corbin, Ky.	Lat 36°57'18", long 84°05'41", on bridge on U. S. Highway 25W, at Corbin, 1.1 miles upstream from Horse Creek.	53.8	1957-60	7-10-60	11.16	2,620
4082	Brimstone Creek near Robbins, Tenn.	Lat 36°20'43", long 84°32'22", at Walker Bridge on rural road S-2342-1, 3.0 miles east of Robbins.	48.7	1955-60	12-19-59	14.66	(†)
4090	White Oak Creek at Sunbright, Tenn.	Lat 36°14'38", long 84°40'14", at bridge on U. S. Highway 27, in Sunbright.	13.5	1933‡, 1955-60	3-21-55	14.29	3,160
					2- -56	11.29	1,950
					12- -56	11.56	2,030
					11-18-57	13.61	2,850
					2-14-59	9.80	1,480
					12-19-59	11.98	2,180
4096	Black Creek tributary near Robbins, Tenn.	Lat 36°21'53", long 84°35'21", at culvert under U. S. Highway 27, 0.8 mile above mouth and 1.5 miles north of Robbins.	.25	1955-60	12- -59	.82	(†)
4147	Puncheon Camp Creek at Allred, Tenn.	Lat 36°19'35", long 85°11'10", at bridge on State Highway 85 at Allred, 7.0 miles south of intersection of State Highways 85 and 52.	15.5	1955-60	11-28-59	9.27	(†)
4157	Big Eagle Creek near Livingston, Tenn.	Lat 36°26'57, long 85°16'27", at bridge on county road, 0.8 mile north of intersection with State Highway 42 and 4.7 miles northeast of Livingston.	7.98	1955-60	5- -60	4.08	(†)
4177	Mathews Branch tributary near Livingston, Tenn.	Lat 36°20'04", long 85°20'23", at culvert under State Highway 42, 2.0 miles south of intersection of State Highways 85 and 42 and 2.9 miles southwest of Livingston.	.49	1955-60	7-24-60	4.0	159
4205	Barren Fork near Trousdale, Tenn.	Lat 35°39'55", long 85°53'00", at county highway bridge on Trousdale-McMinnville pike, 3½ miles east of Trousdale.	132	1933-57‡, 1958-60	5- 8-60	9.72	5,950
4206	Owen Branch near Centertown, Tenn.	Lat 35°42'30", long 85°53'05", at bridge on U. S. Highway 70S, 2.4 miles southeast of Centertown.	4.60	1955-60	5- 7-60	3.48	(†)
4207	Owen Branch near Trousdale, Tenn.	Lat 35°39'55", long 85°51'50", at bridge 0.2 mile above mouth, 1.0 mile east of Barren Fork near Trousdale gaging station, and 4.3 miles east of Trousdale.	9.42	1955-60	5- 7-60	5.58	(†)
*4212	Charles Creek near McMinnville, Tenn.	See previous table.	32.0	1955-60	12-19-59	7.36	(†)

* Also a low-flow partial-record station.
† Discharge not determined.
‡ Operated as a continuous-record gaging station.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Cumberland River basin--Continued					
4213	Bybee Branch at McMinnville, Tenn.	Lat 35°42'15", long 85°47'25", at culvert under State Highway 56, at northwest city limits of McMinnville.	1.16	1955-60	12-19-59	3.58	142
4257	Spencer Creek near Lebanon, Tenn.	Lat 36°14'20", long 86°24'03", at bridge on county road, 100 ft north of junction of county road and U. S. Highway 70N and 6.5 miles west of square in Lebanon.	3.32	1955-60	2- 5-60	7.03	1,130
4258	Cedar Creek tributary at Green Hill, Tenn.	Lat 36°13'52", long 86°31'40", at culvert under U. S. Highway 70N, 0.2 mile east of Green Hill.	.86	1955-57, 1959-60	2- 5-60	3.41	(†)
4295	Stewart Creek near Smyrna, Tenn.	Lat 35°59'54", long 86°30'18", at bridge on 15th Ave., 1.3 miles northeast of Smyrna.	69.7	1953-58‡, 1959-60	2-14-59 6-17-60	6.67 10.70	1,500 3,340
4368	Musterground Creek near Erin, Tenn.	Lat 36°19'12", long 87°40'19", at bridge on State Highway 13, 0.1 mile northeast of intersection with State Highway 49 and 1.5 miles east of Erin.	3.57	1955-60	1960	(a)	(†)
		Tennessee River basin					
4464.1	Laurel Branch near Edneyville, N. C.	Lat 35°22'15", long 82°24'10", at culvert on U. S. Highway 64, 0.5 mile above mouth and 4 miles southwest of Edneyville, Henderson County.	0.57	1955-60	8-12-60	20.44	(†)
4538.8	Brush Creek at Walnut, N. C.	Lat 35°50'40", long 82°44'30", at culvert 0.7 mile southwest of Walnut, Madison County, and 0.8 mile above mouth.	7.99	1954-60	1960	(a)	<285
4612	Cosby Creek near Cosby, Tenn.	Lat 35°47'02", long 83°13'08", at bridge on State Highway 32, 2.4 miles southeast of junction of State Highways 32 and 73 at Cosby.	10.2	1959-60	11-18-59	3.85	(†)
4619.1	North Toe River at Newland, N. C.	Lat 36°05'01", long 81°55'45", at culvert on State Highway 194 at Newland, Avery County, 100 ft below Kentucky Creek.	9.24	1955-60	3-30-60	19.42	(†)
4639.1	Phipps Creek near Burnsville, N. C.	Lat 35°54'43", long 82°22'10" (revised) at culvert on U. S. Highway 19E, 0.4 mile above mouth and 3.9 miles west of Burnsville, Yancey County.	1.60	1955-60	7- 2-60	b20.0	318
4650	North Indian Creek near Unicoi, Tenn.	Lat 36°10'35", long 82°17'36", on right bank, 900 ft above Rocky Branch and 3.4 miles southeast of Unicoi.	15.9	1945-57‡, 1959-60	7-23-60	3.50	347
4658	Muddy Fork at Fairview, Tenn.	Lat 36°10'52", long 82°32'38", at bridge on State Highway 81, 0.7 mile west of Fairview.	9.86	1955-60	1960	(a)	(†)
4675	Nolichucky River near Morristown, Tenn.	Lat 36°10'49", long 83°10'32", on right bank along Southern Ry., 0.6 mile above Susong Bridge and 7 miles southeast of Morristown.	1,679	1921-57‡, 1959-60	3-31-60	10.86	13,500
4691.3	Little Pigeon River near Sevierville, Tenn.	Lat 35°51'38", long 83°30'13", at bridge on U. S. Highway 411, 4½ miles east of Sevierville.	110	1954-60	11-23-59	11.56	(†)
4691.6	East Fork Little Pigeon River near Sevierville, Tenn.	Lat 35°51'55", long 83°29'17", at bridge on U. S. Highway 411, 5.2 miles east of Sevierville.	64.1	1954-60	11-23-59	11.05	(†)
4692	Little Pigeon River at Sevierville, Tenn.	Lat 35°52'12", long 83°34'04", at bridge just above West Fork on State Highway 66 in Sevierville.	201	1954-60	1958 11-23-59	(a) 12.85	<7,800 9,800
4693	Hog Pen Branch near Gatlinburg, Tenn.	Lat 35°43'37", long 83°28'18", at culvert under State Highway 73, 2.7 miles east of intersection of State Highway 73 and U. S. Highway 441 in Gatlinburg.	.61	1959-60	8-13-60	2.12	(†)
4695	West Fork Little Pigeon River near Pigeon Forge, Tenn.	Lat 35°48'21", long 83°34'28", at bridge on old State Highway 71, 1.6 miles northwest of Pigeon Forge.	76.2	1946-49‡, 1954-60	11-28-59	9.17	4,420
4725	Beaverdam Creek at Damascus, Va.	Lat 36°37'40", long 81°47'28", at Damascus, 0.65 mile upstream from mouth.	56.0	1947-59‡, 1960	3-30-60	4.15	2,040
4735	Middle Fork Holston River at Groseclose, Va.	Lat 36°53'19", long 81°20'51", 0.2 mile south of Groseclose.	7.39	1948-57‡, 1958-60	3-30-60	4.71	264
4738	Staley Creek near Marion, Va.	Lat 36°49'25", long 81°28'25", 2 miles southeast of Marion.	8.33	1951-60	2- 5-60	2.66	155

† Discharge not determined
‡ Operated as a continuous-record gaging station.
a Peak stage did not reach bottom of gage.
b Determined from curve of relation with a downstream gage.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Tennessee River basin--Continued					
4775	Beaver Creek near Wallace, Va.	Lat 36°38'25", long 82°06'42", 1.2 miles southeast of Wallace.	13.7	1946-57‡, 1958-60	11-24-59	1.70	19
4789.1	Cove Creek at Sherwood, N. C.	Lat 36°15'50", long 81°47'03", at bridge 0.3 mile below Isaac Hollow and 0.5 mile southwest of Sherwood, Watauga County.	23.1	1940, 1955-60	2- 5-60	17.28	(†)
c4805.4	Grassy Creek near Banner Elk, N.C.	Lat 36°10'20", long 81°54'42", at culvert on State Highway 194 (corrected) 100 ft above mouth and 2.7 miles west of Banner Elk, Avery County.	.54	1955-60	8-13-60	16.38	15
4816	Corn Creek at Mountain City, Tenn.	Lat 36°29'23", long 81°48'52", at bridge on county road, 600 ft north of junction of county road and U. S. Highway 421 and 1 mile northwest of Mountain City.	5.34	1959-60	3-30-60	2.22	(†)
4820	Roan Creek near Neva, Tenn.	Lat 36°22'37", long 81°53'14", on right bank on Butler-Neva road, 1.7 miles southwest of Neva.	c102	1943-55‡, 1959-60	3-30-60	5.49	2,480
4832	Kopley Creek tributary at Butler, Tenn.	Lat 36°21'21", long 82°01'48", at culvert under State Highway 67 about 500 ft northeast of intersection with old State Highway 67, at Butler.	.76	1959-60	12-19-59	1.19	(†)
4885	North Fork Holston River at Holston, Va.	Lat 36°46'29", long 82°04'22", at bridge on U. S. Highway 19, 0.5 mile east of Holston.	402	1952-59‡, 1959-60	3-30-60	8.54	6,150
4898	Cove Creek near Shelleys, Va.	Lat 36°39'13", long 82°21'16", 2 miles north of Shelleys.	17.3	1951-60	11-28-59	5.25	590
4899	Big Moccasin Creek near Gate City, Va.	Lat 36°38'47", long 82°33'12", at bridge on State Highway 71, 1.6 miles east of Gate City.	79.6	1953-59‡, 1960	11-28-59	5.66	1,420
4908	Surgoinsville Creek at Surgoinsville, Tenn.	Lat 36°28'15", long 82°51'06", at bridge on U. S. Highway 11W, at Surgoinsville.	4.38	1955-60	1960	(a)	(†)
4912	Big Creek tributary near Rogersville, Tenn.	Lat 36°25'30", long 82°57'17", at culvert under county road, 300 ft above mouth and 2.8 miles northeast of Rogersville.	2.00	1955-60	11-27-59	3.72	(†)
4987	Nails Creek near Knoxville, Tenn.	Lat 35°52'49", long 83°46'47", at culvert under State Highway 71, 0.8 mile southeast of Shooks Gap and 10.5 miles southeast of Knoxville.	.361	1955-60	11-27-59	1.85	(†)
5017.6	Coon Creek near Franklin, N. C.	Lat 35°14'04", long 83°20'28", at culvert under U. S. Highway 23, 0.7 mile above mouth and 4.5 miles northeast of Franklin, Macon County.	1.60	1958-60	5- 8-60	5.14	185
5134.1	Jenkins Branch tributary at Bryson City, N. C.	Lat 35°24'50", long 83°27'20" (corrected), at culvert 500 ft above mouth and 1.0 mile southwest of Bryson City, Swain County.	.45	1955-60	3- 3-60	18.78	(†)
5186	Tellico River tributary at Tellico Plains, Tenn.	Lat 35°21'48", long 84°17'24", at culvert under road running eastward to crossing of Tellico River, ¼ mile east of railroad crossing at Tellico Plains.	.25	1959-60	7-10-60	4.12	(†)
5196	Island Creek at Vonore, Tenn.	Lat 35°35'38", long 84°14'58", at bridge on State Highway 72, 0.5 mile northwest of Vonore.	11.2	1954-60	8-11-60	8.05	275
5197	Bat Creek near Vonore, Tenn.	Lat 35°38'36", long 84°15'12", at bridge on State Highway 72, 4.5 miles north of Vonore.	30.7	1954-60	8-11-60	8.89	695
5201	Sweetwater Creek near Loudon, Tenn.	Lat 35°44'17", long 84°22'25", at bridge on State Highway 72, 2.0 miles west of Loudon.	62.2	1954-60	8-11-60	6.69	(†)
5230	Cedar Creek near Lebanon, Va.	Lat 36°54'29", long 82°02'20", 2.3 miles east of Lebanon.	51.5	1952-59‡, 1960	11-24-59	2.80	750
5245	Guest River at Coeburn, Va.	Lat 36°55'45", long 82°27'23", at bridge on State Highway 72, 1.0 mile southeast of Coeburn.	87.3	1949-59‡, 1960	3-30-60	6.61	1,440
5250	Stony Creek at Fort Blackmore, Va.	Lat 36°46'30", long 82°34'50", at Fort Blackmore, 2,000 ft upstream from mouth.	41.4	1950-52‡, 1953-60	11-28-59	5.60	1,910
5295	Powell River at Big Stone Gap, Va.	Lat 36°52'08", long 82°46'32", at bridge on U. S. Highway 23, at Big Stone Gap.	112	1949-59‡, 1960	3-30-60	5.98	4,400
5300	South Fork Powell River at Big Stone Gap, Va.	Lat 36°51'54", long 82°46'16", at bridge in town of Big Stone Gap.	d40	1945-47‡, 1951-60	11-28-59	6.08	1,840
5305	North Fork Powell River at Pennington Gap, Va.	Lat 36°46'26", long 83°01'59", north of town of Pennington Gap.	d70	1945-51‡, 1952-60	1-22-59 11-28-59	8.60 6.82	e4,420 3,280

† Discharge not determined.
‡ Operated as a continuous-record gaging station.
a Peak stage did not reach bottom of gage.
c Revised.
d Approximately.
e Corrected.

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Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Tennessee River basin--Continued					
5340	Coal Creek at Lake City, Tenn.	Lat 36°13'14", long 84°09'27", at bridge on U. S. Highway 25W, at Lake City.	24.5	1933‡, 1955-60	12-18-59	d3.7	(†)
5345	Buffalo Creek at Norris, Tenn.	Lat 36°11'05", long 84°03'34", at culvert under Norris Freeway (State Highway 71), 1.0 mile southeast of Norris.	9.45	1948-50‡, 1955-60	4-15-56e/ 1-31-57e/ 12-18-59	7.34 9.03 6.09	640 1,130 385
*5382	Poplar Creek near Oliver Springs, Tenn.	See previous table.	55.9	1954-60	8-10-60	13.27	(†)
5383	Rock Creek near Sunbright, Tenn.	Lat 36°11'54", long 84°39'39", at bridge on U. S. Highway 27 at Pilot Mountain, 3.5 miles south of Sunbright.	5.54	1955-60	3-21-55 2-18-56 11-17-57 12-18-59	6.21 4.76 5.78 4.71	1,560 715 1,260 694
5385	Emory River near Wartburg, Tenn.	Lat 36°06'46", long 84°36'54", at bridge on Wartburg-Lancing road, 1½ miles northwest of Wartburg.	83.2	1935-57‡, 1958-60	12-18-59	17.70	8,110
5386	Obed River at Crossville, Tenn.	Lat 35°57'27", long 85°03'00", at bridge on U. S. Highway 70S, 0.9 mile west of junction of U. S. Highways 70S and 70N, at northwest city limits of Crossville.	12.0	1955-60	12-18-59	7.30	(†)
5387	Little Obed River near Crossville, Tenn.	Lat 35°58'31", long 85°02'06", at bridge on State Highway 28, 2.0 miles north of intersection of State Highway 28 and U. S. Highway 70, in Crossville.	4.71	1955-60	12-19-59	6.70	(†)
5388	Obed River tributary near Crossville, Tenn.	Lat 35°58'59", long 85°03'31", at culvert under U. S. Highway 70N, 2.3 miles northwest of junction with U. S. Highway 70S, at northwest city limits of Crossville.	.717	1955-60	12-19-59	3.82	(†)
5415	Whites Creek near Glen Alice, Tenn.	Lat 35°47'49", long 84°45'37", 2,200 ft above Southern Ry. bridge and 1.2 miles southwest of Glen Alice.	123	1933-55‡, 1956-60	12-19-59	11.64	5,440
5425	Piney Creek at Spring City, Tenn.	Lat 35°41'59", long 84°51'17", at bridge on U. S. Highway 27, 0.5 mile northeast of Spring City.	98.3	1928-30‡, 1955-60	1960	(a)	<4,300
*5432	Ten Mile Creek near Decatur, Tenn.	See previous table.	26.4	1954-60	1-12-60	8.51	770
5445	Richland Creek near Dayton, Tenn.	Lat 35°30'17", long 85°01'20", 0.4 mile above bridge on State Highway 30 and 1.0 mile northwest of Dayton.	50.2	1928-31‡, 1935-55‡, 1956-60	2- 5-60	5.38	2,510
5498.1	Hyatt Creek at Marble, N. C.	Lat 35°11'22", long 83°55'14", at bridge 0.8 mile north of Marble, Cherokee County, and 1.2 miles above mouth.	6.90	1955-60	12- -59	16.84	(†)
5552.1	Shoal Creek near Murphy, N. C.	Lat 35°06'48", long 84°14'06" (revised), at bridge on State Highway 294, 50 ft below Thompson Branch and 11 miles west of Murphy, Cherokee County.	12.6	1955-60	1- 6-60	14.38	(†)
5661	South Mouse Creek tributary near Cleveland, Tenn.	Lat 35°12'32", long 84°50'15", at bridge on old U. S. Highway 11, 4.2 miles northeast of intersection with U. S. Highway 64 in Cleveland.	1.31	1955-60	4- -56e/ 3- 3-60	5.70 3.88	(†) (†)
5662	Brymer Creek near McDonald, Tenn.	Lat 35°07'20", long 84°57'00", at bridge on U. S. Highways 11 and 64, 1.9 miles east of McDonald.	9.68	1955-60	3- 3-60	5.21	880
5667	South Chickamauga Creek at Ringgold, Ga.	Lat 34°55', long 85°08', at State Highway 3 at Ringgold, Catoosa County.	161	1950-60	3- 3-60	14.35	5,160
5672	West Chickamauga Creek near Kinsington, Ga.	Lat 34°48', long 85°21', at State Highway 2, 2½ miles northeast of Kinsington, Walker County.	73.0	1951-60	3- 3-60	12.08	2,460
5707	McWilliams Creek near Dunlap, Tenn.	Lat 35°24'22", long 85°19'46", at bridge on country road, 1.2 miles above mouth and 3.8 miles northeast of Dunlap.	6.64	1959-60	12-18-59	6.45	(†)
5708	Little Brush Creek near Dunlap, Tenn.	Lat 35°24'15", long 85°23'18", at bridge on State Highway 8, 1.5 miles north of Dunlap.	15.4	1959-60	9-18-60	7.39	1,980
5716	Brown Spring Branch near Sequatchie, Tenn.	Lat 35°08'55", long 85°33'28", at culvert under State Highway 27, 2.1 miles northeast of bridge over Little Sequatchie River and 3.1 miles northeast of Sequatchie.	.67	1955-60	12-18-59	3.89	48.4

* Also a low-flow partial-record station.
† Discharge not determined.
‡ Operated as a continuous-record gaging station.
a Peak stage did not reach bottom of gage.
d Approximately.
e Corrected.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Tennessee River basin--Continued					
5718	Battle Creek near Monteagle, Tenn.	Lat 35°08'03", long 85°46'15", at bridge on U. S. Highways 41 and 64, 9.2 miles southeast of Monteagle.	50.4	1955-60	12-18-59	7.59	(†)
5747	Big Huckleberry Creek near Belvidere, Tenn.	Lat 35°04'00", long 86°21'29", at culvert under U. S. Highway 64, 1.3 miles southeast of intersection of U. S. Highway 64 and State Highway 121 and 11 miles southwest of Belvidere.	2.18	1955-60	12-18-59	3.76	(†)
5785	Bradley Creek near Prairie Plains, Tenn.	Lat 35°21'21", long 85°58'45", on left bank 165 ft below highway bridge and 1.1 miles northwest of Prairie Plains.	41.3	1952-59‡, 1960	12-19-59	10.94	2,770
5798	Miller Creek near Cowan, Tenn.	Lat 35°10'17", long 85°59'00", at bridge on U. S. Highway 64, 1.8 miles east of Cowan.	4.30	1955-60	12-28-59	6.76	398
c5799	Boiling Fork Creek at Cowan, Tenn.	Lat 35°09'45", long 86°00'20", at bridge on county road, 1,200 ft southeast of intersection of county road and U. S. Highway 64 in Cowan.	17.0	1955-60	12-18-59	8.22	2,000
5822	Norris Creek tributary near Belleville, Tenn.	Lat 35°13'55", long 86°33'50", at culvert under U. S. Highway 231, 0.4 mile north of first crossing of Norris Creek from Fayetteville and 3.1 miles south of Belleville.	.034	1955-60	12-28-59	4.83	38.2
5823	Norris Creek near Fayetteville, Tenn.	Lat 35°09'53", long 86°32'43", at bridge on State Highway 50, 2.0 miles northeast of Fayetteville.	42.6	1954-60	12-28-59	9.29	6,860
5832	Chicken Creek at McBurg, Tenn.	Lat 35°11'03", long 86°48'47", at bridge on County Highway R7374, in McBurg.	7.66	1955-60	10- 8-59	5.98	2,660
5872	Bluewater Creek tributary near Leoma, Tenn.	Lat 35°08'29", long 87°22'05", at culvert under U. S. Highway 43, 1.8 miles southwest of Leoma.	.49	1955-60	12-18-59	2.62	(†)
5875	Shoal Creek above Little Shoal Creek at Lawrenceburg, Tenn. f/	Lat 35°14'02", long 87°20'00", at bridge on U. S. Highway 43, 0.5 mile south of intersection of U. S. Highways 43 and 64, in Lawrenceburg.	27.0	1933-34‡, 1955-60	12-28-59	7.42	(†)
5942	Eagle Creek near Clifton Junction, Tenn.	Lat 35°20'21", long 87°58'22", at bridge on State Highway 114, 3.0 miles north of intersection of State Highway 114 and U. S. Highway 64, in Clifton Junction.	19.0	1955-60	1960	(a)	(†)
5943	Cypress Creek tributary near Pope, Tenn.	Lat 35°37'10", long 87°57'20", at culvert under State Highways 20 and 100, in Craig Hollow, 2.0 miles east of Pope.	.75	1955-60	1960	(a)	(†)
*5944	Cypress Creek at Pope, Tenn.	See previous table.	16.8	1955-60	3- 8-60	1.34	(†)
5970	Garrison Fork at Fairfield, Tenn.	Lat 35°33'59", long 86°17'00", at bridge on county road, 0.1 mile east of Fairfield.	c66.3	1954-58‡, 1959-60	7-17-60	18.55	13,000
5982	Weakley Creek near Rover, Tenn.	Lat 35°38'05", long 86°33'03", at culvert under county road, 3.7 miles southeast of intersection of county road with U. S. Highway 41A, at Hover.	9.46	1955-60	12-18-59	4.51	504
5992	East Rock Creek at Farmington, Tenn.	Lat 35°30'05", long 86°42'50", at bridge on State Highway 64, 0.2 mile west of Farmington.	43.1	1954-60	12-18-59	10.22	2,650
5994	Little Flat Creek tributary near Rally Hill, Tenn.	Lat 35°41'15", long 86°49'46", at culvert under U. S. Highway 431 and State Highway 106, 1.5 miles north of crossing at Flat Creek in Rally Hill.	.630	1955-60	7- 6-60	3.44	140
6000	Rutherford Creek near Carters Creek, Tenn.	Lat 35°40'23", long 86°58'42", at bridge on county road, 3.2 miles south of town of Carters Creek.	68.8	1954-58‡, 1959-60	6-17-60	17.00	5,530
6021	Moss Spring Hollow near Centerville, Tenn.	Lat 35°45'44", long 87°27'47", at bridge on State Highways 48 and 100, 1.2 miles south of Centerville.	3.68	1955-60	1960	(a)	(†)
6038	Chalk Creek near Waynesboro, Tenn.	Lat 35°14'51", long 87°46'03", at bridge on State Highway 13, 5.0 miles south of Waynesboro, Tenn.	4.88	1955-57, 1960	1960	(a)	(†)
*6042	Cane Creek at Farmers Exchange, Tenn.	See previous table.	45.1	1955-60	3- 8-60	6.70	(†)

* Also a low-flow partial-record station.
† Discharge not determined.
‡ Operated as a continuous-record gaging station.
a Peak stage did not reach bottom of gage.
c Revised.
f Published as Shoal Creek at Lawrenceburg, 1955-59.

Annual maximum discharge at crest-stage partial-record stations--Continued

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum		
					Date	Gage height (feet)	Discharge (cfs)
		Tennessee River basin--Continued					
c6054	Trace Creek at Waverly, Tenn.	Lat 36°04'58", long 87°46'32", at bridge on U. S. Highway 70, on east side of Waverly.	17.4	1955-60 c/	1960	(a)	(†)
6057	Deer Creek tributary near Waverly, Tenn.	Lat 36°10'20", long 87°44'40", at culvert under State Highway 13 in Smith Hollow, 8.0 miles northeast of Waverly.	1.04	1955-60	6-29-60	2.08	(†)

† Discharge not determined.
a Peak stage did not reach bottom of gage.
c Revised.

Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Those that are measurements of base flow are designated by an asterisk (*); measurements of peak flow by a dagger(†).

Discharge measurements made at miscellaneous sites during water year 1960

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Cumberland River basin						
Martins Fork.	Clover Fork..	Lat 36°47'22", long 83°14'53", at road bridge, 20 ft below Bobs Creek and 1 mile west of Cawood, Ky.	74.9	1954-55, 1959	7-26-60 8- 4-60	*27.5 *15.0
Do.....	....do.....	Lat 36°49'57", long 83°19'36", at concrete bridge at Diessen, 1.0 mile above mouth and 1.0 mile south of courthouse at Harlan, Ky.	116		5- 2-60	*65.5
Left Fork Straight Creek.	Straight Creek.	Lat 36°47'29", long 83°39'57", at Louisville & Nashville RR. bridge, ¼ mile south of Cary, Ky., and 1.3 miles above mouth.	38.8	1947, 1959	10- 8-59 7-20-60 8- 4-60	.96 12.6 *3.06
Straight Creek.	Cumberland River.	Lat 36°46'24", long 83°40'12", at bridge on State Highway 66, at village of Straight Creek, Ky., 0.1 mile below Left Fork.	89.9	1954-55, 1959	10- 8-59 5- 3-60 7-20-60 8- 4-60	5.30 36.5 43.4 *9.24
Clear Fork...	....do.....	Lat 36°40'10", long 84°07'50", at bridge on U. S. Highway 25W, 0.9 mile below Wolf Creek and 5.4 miles south of Williamsburg, Ky.	356	1953-54, 1959	10- 9-59 5- 3-60 7-25-60	50.5 528 88.9
Browns Creek.	Watts Creek..	Lat 36°46'26", long 84°08'17", at culvert under State Highway 26, 0.1 mile above mouth and 2½ miles northeast of Williamsburg, Ky.	5.46	1957, 1959	10- 9-59 7-25-60 9-14-60	0 *.30 *.85
Jellico Creek	Cumberland River.	Lat 36°40'56", long 84°15'20", at bridge on State Highway 92, just below Parks Branch, 7.7 miles southwest of Williamsburg, Ky.	103	1953-54, 1957, 1959	10- 9-59 5- 4-60 7-25-60 8- 5-60	1.22 121 *8.92 *2.09
Marsh Creek..	....do.....	Lat 36°44'38", long 84°22'16", at ford, 1.5 miles below Laurel Creek and 5.6 miles east of Whitley City, Ky.	72.0		5- 4-60	33.5
Roundstone Creek.	Rockcastle River.	Lat 37°17'43", long 84°12'43", ¼ mile above mouth and ½ mile below bridge on State Highway 490, at Livingston, Ky.	144	1953-54, 1959	10- 6-59 7-21-60 9-15-60	*4.68 *26.2 *.01
Rockcastle River.	Cumberland River.	Lat 37°17'38", long 84°12'58", at Louisville & Nashville RR. bridge at Livingston, Ky., and 0.3 mile below Roundstone Creek.	454	1953-54, 1959	10- 6-59 7-21-60 9-15-60	*6.06 *199 *22.9
Little South Fork Cumberland River.	South Fork Cumberland River.	Lat 36°45'30", long 84°40'20", at bridge on State Highway 92, 7 miles east of Oil Valley, Ky.	98.4	1953-54, 1959	10- 7-59 7-22-60	*3.31 *21.5
Elk Spring Creek.	Beaver Creek.	Lat 36°49'40", long 84°50'40", at bridge on State Highway 92, at Monticello, Ky.	8.14	1959	10- 7-59 11-11-59 7-22-60	*.13 *.21 *2.37
Beaver Creek.	Cumberland River.	Lat 36°49'03", long 84°52'48", at bridge on State Highway 90, 0.1 mile below Elk Spring Creek and 2 miles southwest of Monticello, Ky.	92.0	1953-54, 1959	10- 7-59 7-22-60	*6.06 *38.1
Otter Creek..	Beaver Creek.	Lat 36°46'19", long 84°58'48", at bridge on State Highway 90, 0.2 mile below Gap Creek and 1¼ miles west of Susie, Ky.	67.4	1953-54, 1959	10- 7-59	*5.99
Little Harpeth River.	Harpeth River	Lat 36°01'10", long 86°48'23", just above McGavock Hayes Spring Branch, 0.6 mile below U. S. Highway 31 and 1.6 miles southwest of Brentwood, Williamson County, Tenn.	18.1	1951	8- 4-60	*.38
Dyer Lake Outflow.	Little Harpeth River.	Lat 36°01'24", long 86°48'40", 100 ft above mouth and 1.6 miles southwest of Brentwood, Williamson County, Tenn.	.14		8- 4-60	*.11

* Base flow.

Discharge measurements made at miscellaneous sites during water year 1960--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Tennessee River basin						
Dillingham Creek.	Ivy River....	Lat 35°46'37", long 82°27'31", above Paint Fork at Barnardsville, Buncombe County, N. C.	28.9		1-19-60	*52.0
Ivy River...	French Broad River.	Lat 35°47'28", long 82°32'20", at bridge on U. S. Highway 19, 50 ft above Little Ivy River and 2.6 miles west of Democrat, Buncombe County, N. C.	60.6	1925, 1944, 1953-54	1-19-60	*91.1
Right Prong Rock Creek	Rock Creek...	Lat 36°08'15", long 82°21'11", at Rock Creek Camp Grounds, 150 ft above mouth and 4.0 miles south of Unicoi, Unicoi County, Tenn.	2.53		10- 6-59 7- 7-60 8- 2-60 9- 6-60	*.23 3.33 *.94 *1.31
Watauga River.	South Fork Holston River.	Lat 36°09'23", long 81°46'14", at bridge at Foscoe, Watauga County, N. C., 0.1 mile below Moodys Mill Creek.	10.6	1955	6-13-60 7-25-60 8-16-60 8-30-60	*20.6 *13.4 *22.2 *17.4
Lance Creek.	Watauga River	Lat 36°10'20", long 81°43'00", at Camp Yonahlossee, 300 ft above swimming pool and 3.2 miles northwest of Blowing Rock, Watauga County, N. C.	.39		6-13-60 7-25-60 8-16-60 8-30-60	*.79 *.45 *.79 *.77
Watauga River.	South Fork Holston River.	Lat 36°11'40", long 81°44'47", just below Laurel Fork, 1.5 miles north of Shulls Mills, Watauga County, N. C.	33.7		6-13-60	*59.1
Dutch Creek.	Watauga River	Lat 36°12'02", long 81°46'57", 100 ft below Crab Orchard Creek and 0.7 mile southwest of Valle Crucis, Watauga County, N. C.	10.4		6-13-60	*10.6
Watauga River.	South Fork Holston River.	Lat 36°13'30", long 81°47'25", 0.6 mile below Dutch Creek and 1.3 miles northwest of Valle Crucis, Watauga County, N. C.	48.9		6-13-60	*74.2
Cove Creek..	Watauga River	Lat 36°16'41", long 81°46'42", 200 ft above bridge on U. S. Highway 421 at Amantha, Watauga County, N. C., and 1.1 miles above Vanderpool Creek.	18.0		6-13-60	*13.3
Do.....	....do.....	Lat 36°15'13", long 81°47'30", at bridge 200 ft below Brushy Fork and 0.4 mile southwest of Sugar Grove, Watauga County, N. C.	30.6		6-14-60	*23.2
Watauga River.	South Fork Holston River.	Lat 36°16'09", long 81°53'05", at bridge, 0.6 mile above Beech Creek and 1.0 mile northeast of Beech Creek, Watauga County, N. C.	127		6-14-60 8-18-60	*118 *177
Flat Springs Creek.	Beech Creek..	Lat 36°15'41", long 81°53'52", at bridge at Beech Creek, Avery County, N. C., 0.1 mile above mouth.	2.46		6-14-60 8-18-60	*1.33 *1.29
Elk River...	Watauga River	Lat 36°09'20", long 81°52'05", 0.2 mile above Banner Elk, Avery County, N. C., and 0.6 mile below Banner Elk Creek.	7.44		6-14-60	*9.59
Elk River tributary.	Elk River....	Lat 36°09'05", long 81°52'40", 0.6 mile above mouth and 0.7 mile southwest of Banner Elk, Avery County, N. C.	.19		8-31-60	*.20
Bear Creek..	Poplar Creek.	Lat 35°56'17", long 84°20'29", at bridge on State Highway 95, in triangle formed by intersection of State Highway 95 and Bear Creek Valley Rd. near Oak Ridge, Anderson County, Tenn.	4.26		4-16-59 5- 5-59 6- 3-59 7- 6-59 8- 4-59 9- 9-59 10- 2-59 11- 2-59 12-22-59 1-20-60 2-17-60 3-15-60 4-12-60 5- 4-60 6-16-60 7-19-60 8-10-60 9- 6-60	8.61 *2.62 3.85 *.67 *.70 *.59 *.40 *.72 7.81 5.74 8.17 10.9 *5.73 *2.51 *.66 *1.67 *1.18 *.48
Corn Creek..	Brasstown Creek.	Lat 34°56', long 83°51', on U. S. Highway 76, ½ mile north of Young Harris, Ga.	2.87		5-31-59	355
Bitter Creek	....do.....	Lat 34°54', long 83°52', at first county road crossing upstream from mouth, about 0.7 mile southwest of Jacksonville, Ga.	4.78		5-31-59	840

* Base flow.

Discharge measurements made at miscellaneous sites during water year 1960--Cortinued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Tennessee River basin--Continued						
Brasstown Creek.	Hiwassee River.	Lat 34°54', long 83°52', on U. S. Highway 76, ¾ mile southwest of Jacksonville, Ga.	12.6		5-31-59	2,280
Do.....	....do.....	Lat 34°56', long 83°52', on State Highway 66, ½ mile northwest of Young Harris, Ga.	20.3		5-31-59	3,990
Do.....	....do.....	Lat 34°58', long 83°53', on State Highway 66, about 4 miles northwest of Young Harris, Ga.	34.5		5-31-59	4,560
Do.....	....do.....	Lat 35°02'30", long 83°57'30", at county road crossing at Brasstown, N. C., 0.9 mile upstream from mouth.	83.1		5-31-59	6,380
Butternut Creek.	Nottley River.	Lat 34°54', long 83°55', on U. S., Highway 76, 3 miles northeast of Blairsville, Union County, Ga.	.98		5-31-59	249
Do.....	....do.....	Lat 34°52'37", long 83°58'10", on U. S. Highway 19, 0.6 mile west of Blairsville, Union County, Ga.	11.1		5-31-59	1,730
Sequatchie River.	Tennessee River.	Lat 35°21'34", long 85°22'20", at bridge on Alvin C. York Highway, 1.5 miles southeast of Dunlap, Sequatchie County, Tenn.	274		10- 6-59	*71.0
Coops Creek..	Sequatchie River.	Lat 35°22'10", long 85°23'16", at bridge on county road, one block south of Alvin C. York Highway, at Dunlap, Sequatchie County, Tenn.	a5.5	1932	10- 6-59	*1.25
Rock Creek...	Elk River.....	Lat 35°21'32", long 86°12'46", 300 ft below Lincoln Street Bridge in Tullahoma, Coffee County, Tenn., and at mile 12.3.	12.3		5-31-60 6- 7-60 6-16-60 6-29-60 7- 7-60 7-15-60 7-28-60 8- 2-60	*1.98 *1.91 *1.62 *2.90 *1.76 *1.46 *1.54 *1.27
Blue Creek...	Rock Creek....	Lat 35°19'33", long 86°12'38", at ford on county road, 2.5 miles south of Tullahoma, Coffee County, Tenn., just above mouth.	8.46		5-31-60 6- 7-60 6-16-60 6-29-60 7- 7-60 7-15-60 7-28-60 8- 2-60	*.58 *.37 *.28 *.57 *.20 *.12 *.24 *.15
Poorhouse Creek.	....do.....	Lat 35°18'16", long 86°11'38", at bridge on county road, 0.2 mile above mouth and 4 miles southeast of Tullahoma, Coffee County, Tenn.	5.06		5-31-60 6- 7-60 6-16-60 6-29-60 7- 7-60 7-15-60 7-28-60 8- 2-60	*2.31 *2.84 *2.37 *2.64 *2.03 *2.27 *2.19 *2.08
Rock Creek...	Elk River.....	Lat 35°17'16", long 86°11'17", at bridge on county road, 1.0 mile below June Branch, 1.5 miles below Poorhouse Creek, 5.2 miles southeast of Tullahoma, Coffee County, Tenn., and at mile 5.7.	33.6		5-31-60 6- 7-60 6-16-60 6-27-60 7- 7-60 7-15-60 7-28-60 8- 2-60	*13.9 *15.0 *12.4 *18.5 *13.7 *12.7 *13.5 *12.4
Tumbling Creek.	Duck River....	Lat 35°55'40", long 87°44'13", at mouth, 4 miles southeast of Hurricane Mills, Humphreys County, Tenn.	51.5		7- 8-60 8-18-60	32.3 *8.12
Green River..	Buffalo River.	Lat 35°19'43", long 87°45'41", 200 ft above Hurricane Creek and 0.6 mile north of Waynesboro, Wayne County, Tenn.	22.8	1932, 1950, 1953	6-10-60	*6.02
Hurricane Creek.	Green River...	Lat 35°19'45", long 87°45'40", 100 ft above mouth and 0.6 mile north of Waynesboro, Wayne County, Tenn.	12.3		6-10-60	*6.15
Spring Hollow Branch.	Lewis Branch to Whiteoak Creek.	Lat 36°18'06", long 87°46'03", 900 ft above mouth and 0.8 mile south of Tennessee Ridge, Houston County, Tenn.	.23		8-26-60	*.015

* Base flow.
a Approximately.

Discharge measurements made at miscellaneous sites during water year 1960--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Tennessee River basin--Continued						
Cypress Creek	Tennessee River.	Lat 37°01'24", long 88°18'39", at Illinois Central RR. bridge, 0.6 mile west of Gilbertsville, Ky.	27.6	1958-59	10-30-59	0
					11-24-59	*1.16
					6- 2-60	1.62
East Fork Clarks River.	Clarks River..	Lat 36°34'52", long 88°18'53", at bridge on U. S. Highway 641, 1.0 mile above Middle Fork Clarks River and 1.4 miles south of Murray, Ky.	45.6	1949-51, 1958-59	10-29-59	*2.00
					6- 2-60	4.33
West Fork Clarks River.	....do.....	Lat 36°53'03", long 88°33'11", at bridge on State Highway 131, at Kaler, Ky.	-	1957-59	10-30-59	*21.9
					5-31-60	47.9

* Base flow.

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 the discharge measurements show the characteristics of the springs and give good indication of the variation of the flow.

During the water years 1955-60 measurements were made at several springs, most of which were measured during the 1950-54 study. The results of discharge measurements during the 1960 water year (and a few made during the 1959 water year), showing the yield and the water temperature, are given in the following table:

Discharge measurements of springs in Tennessee, water year October 1959 to September 1960

Spring	Location	Tributary to--	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Anderson County							
Bear Creek Spring No. 1.	Lat 35°57'26", long 84°18'03", on Bear Creek Valley Rd., 2¾ miles northeast of intereection with State Highway 95, near Oak Ridge.	Bear Creek to East Fork Poplar Creek to Poplar Creek to Clinch River.	10- 2-59	45	68	56	
			11- 2-59	88	63	55	
			12-22-59	494	42	58	
			1-20-60	390	27	42	
			2-17-60	467	44	52	
			3-15-60	574	-	52	
			4-12-60	445	69	54	
			5- 4-60	232	76	55	
			6-16-60	136	86	48	
			7-19-60	195	85	55	
			8-10-60	117	72	56	
			9- 6-60	107	80	56	
Bear Creek Spring No. 2.	Lat 35°56'13", long 84°20'23", in triangle formed by intersection of Bear Creek Valley Rd. and State Highway 95, near Oak Ridge.	....do.....	10- 2-59	56	70	57	
			11- 2-59	69	60	56	
			12-22-59	322	44	55	
			1-20-60	240	29	55	
			2-17-60	290	44	52	
			3-15-60	294	41	54	
			4-12-60	249	73	55	
			5- 4-60	116	78	55	
			6-16-60	41	86	-	
			7-19-60	119	85	60	
			8-10-60	86	73	56	
			9- 6-60	39	82	57	
Dickson County							
Baker.....	Lat 36°10'54", long 87°19'00", at north edge of State Highway 49, 1.3 miles east of Charlotte.	Town Branch to Jones Creek to Harpeth River.	5- 9-59	242	80	56	
			8- 4-59	271	90	58	Clear.
			10- 5-59	108	80	62	Clear.
Spout.....	Lat 36°10'52", long 87°19'24", at north edge of State Highway 49, 0.9 mile east of Charlotte.	....do.....	5- 9-59	1.4	80	58	
Houston County							
Hankins.....	Lat 36°17'41", long 87°45'55", 1.2 miles south of Tennessee Ridge.	Lewis Branch to Whiteoak Creek to Tennessee River.	8-26-60	96	82	56	
Spring Hollow...	Lat 36°18'18", long 87°46'02", at picnic area, 0.6 mile southeast of Tennessee Ridge.	Spring Hollow Branch to Lewis Branch to Whiteoak Creek to Tennessee River.	8-26-60	2	80	56	
McMinn County							
Brock.....	Lat 35°22'50", long 84°39'46", 1.8 miles east of Riceville.	Oostanaula Creek..	12- 1-59	1,530	52	59	Clear.
			7-19-60	884	83	58	Clear.
Thompson.....	Lat 35°23'18", long 84°42'26", 1.0 mile northwest of Riceville.	North Mouse Creek.	12- 1-59	966	56	57	Clear.
			7-19-60	844	93	59	Clear.
Rutherford County							
Cheatham.....	Lat 35°44'20", long 86°39'19", at Eagleville, 1,800 ft southwest of State Highway 99 and U. S. Highway 41 crossing.	Cheatham Branch to Harpeth River.	11- 2-59	< 22	-	-	
Gwynn.....	Lat 35°59'04", long 86°32'24", 1.2 miles west of Smyrna.	Harts Branch to Stewart Creek to Stones River.	6- 2-60	27	-	56	

Discharge measurements of springs in Tennessee, water year October 1959 to September 1960--Continued

Spring	Location	Tributary to--	Date	Discharge (gallons per minute)	Temperature (degrees Fahrenheit)		Remarks
					Air	Water	
Rutherford County--Continued							
Mt. Vernon.....	Lat 35°43'09", long 86°37'23", 1.6 miles east of Eagleville.	Unnamed stream to Kelly Creek to Harpeth River.	11- 2-59 12-15-59	a1,800 a6,000	- -	- -	
Williamson County							
Fergerson.....	Lat 35°54'58", long 86°50'07", 700 ft south of State Highway 96 and 1.1 miles southeast of Franklin.	Harpeth River.....	11- 2-59	< 22	-	-	
German.....	Lat 35°55'29", long 86°47'47", 1.7 miles west of Clovercroft.	Watson Branch to Harpeth River.	11- 2-59	0	-	-	
Green.....	Lat 35°55'01", long 86°50'07", 450 ft south of State Highway 96 and 1.1 miles southeast of Franklin.	Harpeth River.....	11- 2-59	< 45	-	-	
Korn No. 1.....	Lat 35°59'40", long 86°47'27", 900 ft south of Concord Rd., 1,400 ft south of WSM radio tower, and 3.0 miles south of Brentwood.	Unnamed stream to Little Harpeth River.	12-21-59	530	48	58	
Korn No. 2.....	Lat 35°59'38", long 86°47'07", 900 ft south of Concord Rd., 2,300 ft southeast of WSM radio tower, and 3.0 miles south of Brentwood.	Little Harpeth River.	12-21-59	1,260	40	57	
Langford.....	Lat 35°54'56", long 86°48'23", 2.3 miles southwest of Clovercroft.	Watson Branch to Harpeth River.	11- 2-59	< 67	-	-	
McGavock-Hayes..	Lat 36°01'12", long 86°48'22", 500 ft south of Brentwood Country Clubhouse, and 1.6 miles southwest of Brentwood.	Little Harpeth River.	6- 9-59 8- 4-60	565 247	74 82	58 62	(b) Clear.
Rebels Rest.....	Lat 35°55'56", long 86°50'04", 2 miles northeast of Franklin.	Unnamed stream to Harpeth River.	11- 2-59	< 45	-	-	
Sweeney.....	Lat 35°55'16", long 86°47'04", 1 mile west of Clovercroft.	Unnamed stream to Mayes Creek to Harpeth River.	11- 2-59	< 9	-	-	
Truitt.....	Lat 35°54'31", long 86°49'15", 1,400 ft south of State Highway 96 and 2.9 miles southeast of Franklin.	Watson Branch to Harpeth River.	11- 2-59	< 45	-	-	

a Estimated.
b Pump operating.

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