Compilation of Records of Surface Waters of the United States, October 1950 to September 1960

Part 3–B. Cumberland and Tennessee River Basins

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1726

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

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PREFACE

This report contains summaries of streamflow records in the Cumberland and Tennessee River basins. It was prepared by the United States Geological Survey in 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, Reports Section.

The data were compiled under the supervision of district engineers, Surface Water Branch, as follows:

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COMPILATION OF RECORDS OF SURFACE WATERS OF CUMBERLAND AND TENNESSEE RIVER BASINS, 1951-60

PURPOSE AND SCOPE

This volume is one of a series of reports presenting monthly and yearly summaries of streamflow and reservoir data collected by the Geological Survey during the period October 1, 1950, to September 30, 1960. Included with these data are some records furnished by other Federal, State, and private agencies. This series of reports is a condensation of the detailed streamflow information presented in the annual series of reports known as "Surface Water Supply of the United States" for each of the years 1951 through 1960. The area covered by this report is the Cumberland and Tennessee River basins.

The purpose of the present series of reports is to make available in summarized form all of the surface-water records collected October 1, 1950, to September 30, 1960, and to continue the series of reports known as Water-Supply Papers 1301-19 and 1372 which summarized all surface-water records through September 30, 1950. The present series of reports includes corrections of errors which have been found in the earlier series. Also included are some records collected prior to October 1, 1950, that were omitted from the 1950 compilation series.

The Geological Survey collected the records mainly in cooperation with State, municipal, and other Federal agencies, and published them in detail in the series of annual reports known as "Surface Water Supply of the United States." Some records furnished by other agencies have been included in the annual reports and in the present series of reports; such records are identified in the station descriptions.

The data presented consist of records of discharge of streams and contents of reservoirs summarized on a monthly and yearly basis. Results of miscellaneous discharge measurements and, in general, stage records have been excluded. Included is a map of the area showing the location of each station (pl. 1). The reports of the present series are generally similar in the type of data they contain and in the form of presentation; moreover, they conform in style with the earlier series of compilation reports so that the entire record for any station up to September 30, 1960, is available in one or two volumes.

All records compiled for these summary reports were examined for major errors. A few revisions were made and the revised figures, noted as such, are included. Some previously unpublished information is included, as well as a few estimates of discharge that were made to fill short gaps in an otherwise complete period of record.

DESCRIPTION OF DATA

The gaging-station records are arranged in downstream order. The order used in this report is the same as that adopted for use in the annual series of reports on surface-water supply beginning with the water year 1951. 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 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.

As an added means of identification, each station was assigned a number which is shown on the index map and which is a part of the station name in the heading of the description in the text. The numbers are assigned in downstream order in each part (see explanation of "parts" under the heading "Publications," p. 4) beginning with the most upstream station. The numbers are not consecutive because gaps are left to allow for new stations that may be established.

The data presented for most of the gaging stations comprise a description of the station, a table of monthly discharge in cubic feet per second, a table of monthly runoff in inches, and a yearly summary table. The station description gives the name of the river basin, the station number and name, the location, drainage area, records available, types and datums of gages, average discharge, extremes of discharge, general remarks concerning the data, and a credit statement if records were furnished by another agency.

The location of the gaging station and the drainage area are obtained from the best available maps. When more than one site was used during water years 1951-60 and the difference in drainage areas is significant, the area for the latest site is shown first followed by the areas for other sites in chronological order. In some instances drainage-area figures have not been obtained because of the lack of suitable maps or because the boundaries cannot be defined or the effective drainage area determined.

The paragraph "Records available" lists all periods for which there are published records generally equivalent to those at the present site. If equivalent records have been published under another station name, that fact is also noted.

The gage described first is the present gage or the one used most recently. Information is then given in chronological order for all gages used earlier, giving changes in location, type of gage, or datum. The location or datum of all earlier gages is given with reference to the present or most recently used gage. The datum of the gage is the elevation of the zero of the gage above mean sea level. Where information as to datum is not available, the altitude of the gage is given.

The average discharge for a station is the average of all complete water years and is published only if there are five or more complete water years of record. The years used to determine the average are not necessarily consecutive. The average discharge is not published for some stations because of extensive changes in diversion or storage, or other water development, that have occurred upstream.

In general, the momentary maximum and minimum discharges and stages for the entire period of record are published in the "Extremes" paragraph. These are qualified if necessary according to the type of gage used and the completeness of the record. Maximum and minimum discharges at nonrecording gaging stations are qualified as "observed" unless determined from a graph drawn through actual gage heights which approximates the actual hydrograph.

Under "Remarks" information is given on factors which affect the basin runoff characteristics. These include upstream regulation, diversion, and utilization-- a history of changes in these items during the period 1951-60 is given when known. Also, references

are made to the records of storage or diversion upstream and to records concerning quality of water, if published.

When discharge records are furnished by another agency, credit is given under "Cooperation."

The streamflow data summarized in this report generally are contained in two monthly tables and one yearly table. The first monthly table is a tabulation of monthly and yearly mean discharges in cubic feet per second. These figures represent discharge passing the station; they are unadjusted for storage or diversion upstream unless otherwise specified under "Remarks" for the individual station. Each monthly figure is the mean flow for the entire month; generally no record for part of a month is tabulated. Likewise, each yearly figure is the mean flow for a full year, and no figure is shown for a partial year. Usually the months are arranged on a water-year basis. Exceptions to this rule are made in connection with seasonal records wherein the months are grouped to give a complete season for each calendar year.

The second monthly table is a tabulation of monthly and yearly runoff in inches. For streams that are subject to considerable regulation, the second table contains the adjusted runoff in inches. The table of runoff in inches is omitted if the data do not represent natural yield without gross error, whether adjusted or unadjusted.

The third table contains a yearly summary of the streamflow data. The column headed "WSP" lists the number of the water-supply paper in which the figures of daily and monthly discharge are published. If a part of the record has been revised and the revision published, then reference is made to both the original report and the one containing the revised record; if the daily discharge record for the entire year has been republished to include the revisions, then only the later report is listed. However, there is no reference in this column for revisions published for the first time in this report as the corresponding revised figures of daily discharge will be published in a water-supply paper which will contain daily records for the period 1961-65. For some stations the third table is omitted; however, the report containing records for any particular year can generally be found by referring to the table given on page 6.

In the third table the momentary maximum discharge for each water year and the date of its occurrence is given if known. For nonrecording gage records, momentary maximums were obtained from graphs drawn through the gage readings. The momentary maximum discharge, however obtained, is not qualified in any way if it is believed to be representative of the absolute maximum for the water year.

The mimimum daily discharge for each water year is listed if known. Other data listed in this table are the annual mean discharge and runoff for both the water year and the calendar year. The figures listed for the water year are the same as those given in the yearly columns of the preceding tables. In addition, the annual mean discharge per square mile is listed for the water year. If figures of runoff have been adjusted for regulation or diversion in the preceding table, adjusted figures are listed in the yearly summary table. For a few stations regulation affects monthly figures seriously, but the effect on annual figures is either negligible or can be adequately adjusted for; for these stations the monthly table of runoff in inches is omitted, but the annual runoff is given.

Most canal and diversion records are given in a single table. There are some records for large canals, however, that are published in the same detail as those for streams. Records of reservoirs also are given in a single table which shows the contents at the end of each month.

Revised figures of discharge for water years 1951-60 are not so indicated if they have been published in an annual report, but are noted as "revised" if they have not been published in an annual report. Revised daily figures which have not been published in annual reports will be published in the water-supply paper containing records for water years 1961-65, except for special cases involving only a few figures which are included in this series of reports. Figures that represent corrections of typographical or computational errors whereas no figures of daily discharge have been revised or changed are indicated as "corrected" in this report, except corrected figures of runoff in inches which are not noted if the correction is due solely to a revision of drainage area. Estimates of discharge made to complete months or years for this report are noted as estimates and as "not previously published."

Revisions or corrections of records published in WSP 1306 are included in this report. However, revised figures of runoff in inches or discharge per square mile for records prior to October 1, 1950, resulting solely from a revision of drainage area, are not given. For stations published during at least part of the period 1951-60, the revisions or corrections are published with the other data for the station; for stations not operated since the end of the 1950 water year, the revisions or corrections are published in a special section at the conclusion of the report.

PUBLICATIONS

This series of reports comprises 20 volumes of water-supply papers (WSP) as numbered below. The "Part" numbers and the areas covered are the same as those used for the annual series of reports on surface water supply of the United States since 1951. The boundaries of the parts are indicated on figure 1.

Numbers of water-supply papers for 1960 series of compilation reports

WSP	Part	Area
1721	1-A	North Atlantic slope basins, Maine to Connecticut.
1722	1-B	North Atlantic slope basins, New York to York River.
1723	2-A	South Atlantic slope basins, James River to Savannah River.
1724	2-B	South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.
1725	3-A	Ohio River basin except Cumberland and Tennessee River basins.
1726	3-B	Cumberland and Tennessee River basins.
1727	4	St. Lawrence River basin.
1728	5	Hudson Bay and Upper Mississippi River basins.
1729	6-A	Missouri River basin above Sioux City, Iowa.
1730	6-B	Missouri River basin below Sioux City, Iowa.
1731	7	Lower Mississippi River basin.
1732	8	Western Gulf of Mexico basins.
1733	9	Colorado River basin.
1734	10	The Great Basin.
1735	11	Pacific slope basins in California.
1736	12	Pacific slope basins in Washington and upper Columbia River basin.
1737	13	Snake River basin.
1738	14	Pacific slope basins in Oregon and lower Columbia River basin.
1739	-	Hawaii.
1740	-	Alaska.

Records prior to September 30, 1950, were summarized in a series of water-supply papers as listed below. Each of these volumes contains a list of the annual reports from which data prior to 1951 were summarized.

Numbers of water-supply papers for 1950 series of compilation reports

WSP	Part	WSP	Part	WSP	Part
1301	1-A	1308	5	1315-A	11-B
1302	1-B	1309	6-A	1315-B	11-A
1303	2-A	1310	6-B	1316	12
1304	2-B	1311	7	1317	13
1305	3-A	1312	8	1318	14
1306	3-B	1313	9	1319	Hawaii
1307	4	1314	10	1372	Alaska

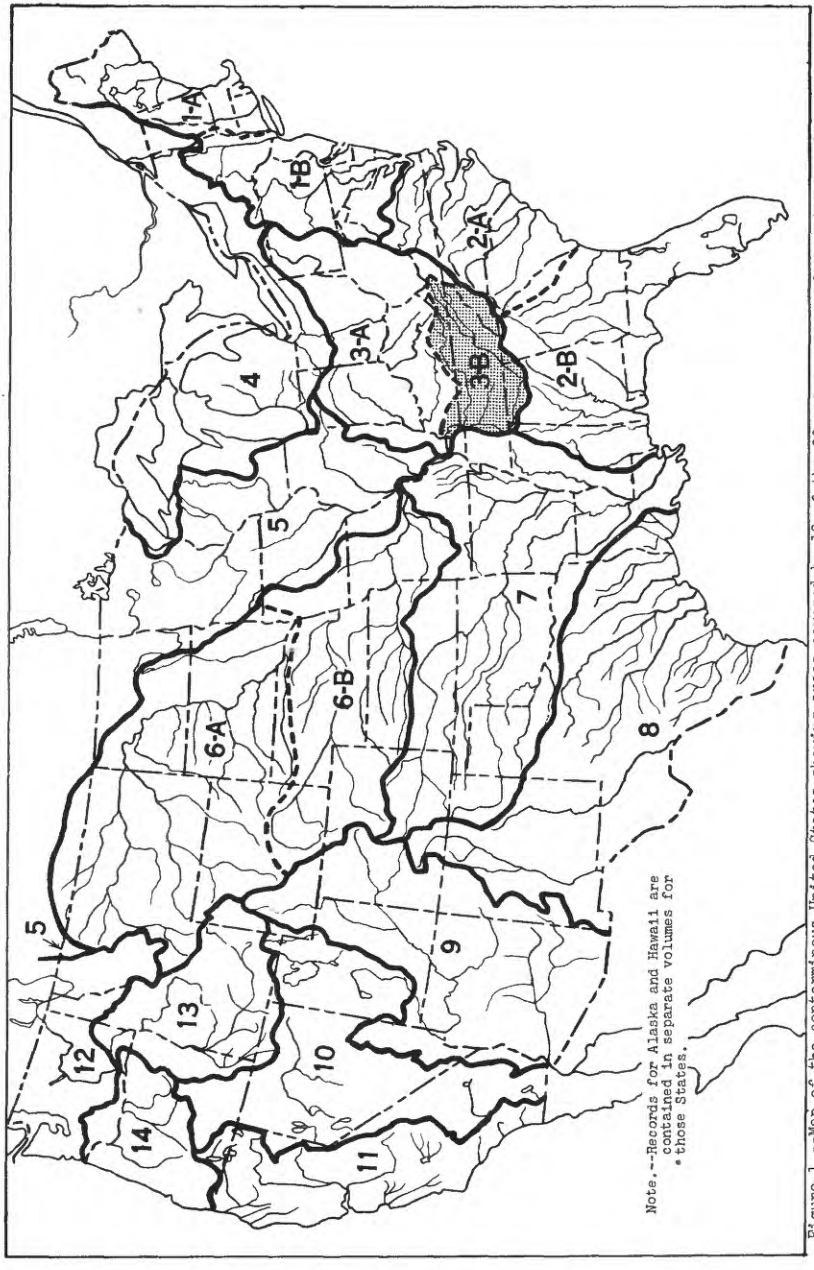

Figure 1.--Map of the conterminous United States showing areas covered by 18 of the 20 volumes on surface water supply. The area covered by this report is shaded.

This report is summarized from the following 10 annual reports which contain records of daily discharge for each of the water years from 1951 to 1960.

Annual water-supply papers, Part 3-B, 1951-60

Water year	WSP	Water year	WSP
1951	1206	1956	1436
1952	1236	1957	1506
1953	1276	1958	1556
1954	1336	1959	1626
1955	1386	1960	1706

In addition to the customary records of discharge collected during the systematic operation of gaging stations there is much additional hydrologic information available, both published and unpublished.

A list of flood reports and other special reports is contained in the introductory pages of each of the annual reports listed above.

Records for many stations have been analyzed by an electronic computer to give: the number of days in each year that the discharge was between selected limits (duration tables); the lowest and highest mean discharges for selected numbers of consecutive days in each year; and other statistical summaries.

Data on low flow or peak flows or both are available for many sites other than gaging stations.

Specific information on unpublished data available can be obtained by writing directly to the district engineer for the State in which the site or gaging station is located.

HYDROLOGIC CONDITIONS

Streamflow, a residual of precipitation after other demands have been met, varies considerably from year to year and from place to place. Figure 2 shows yearly discharge for three gaging stations in the Cumberland and Tennessee River basins. The pattern of yearly runoff shown by these streams is generally representative of hydrologic conditions in their parts of the report area.

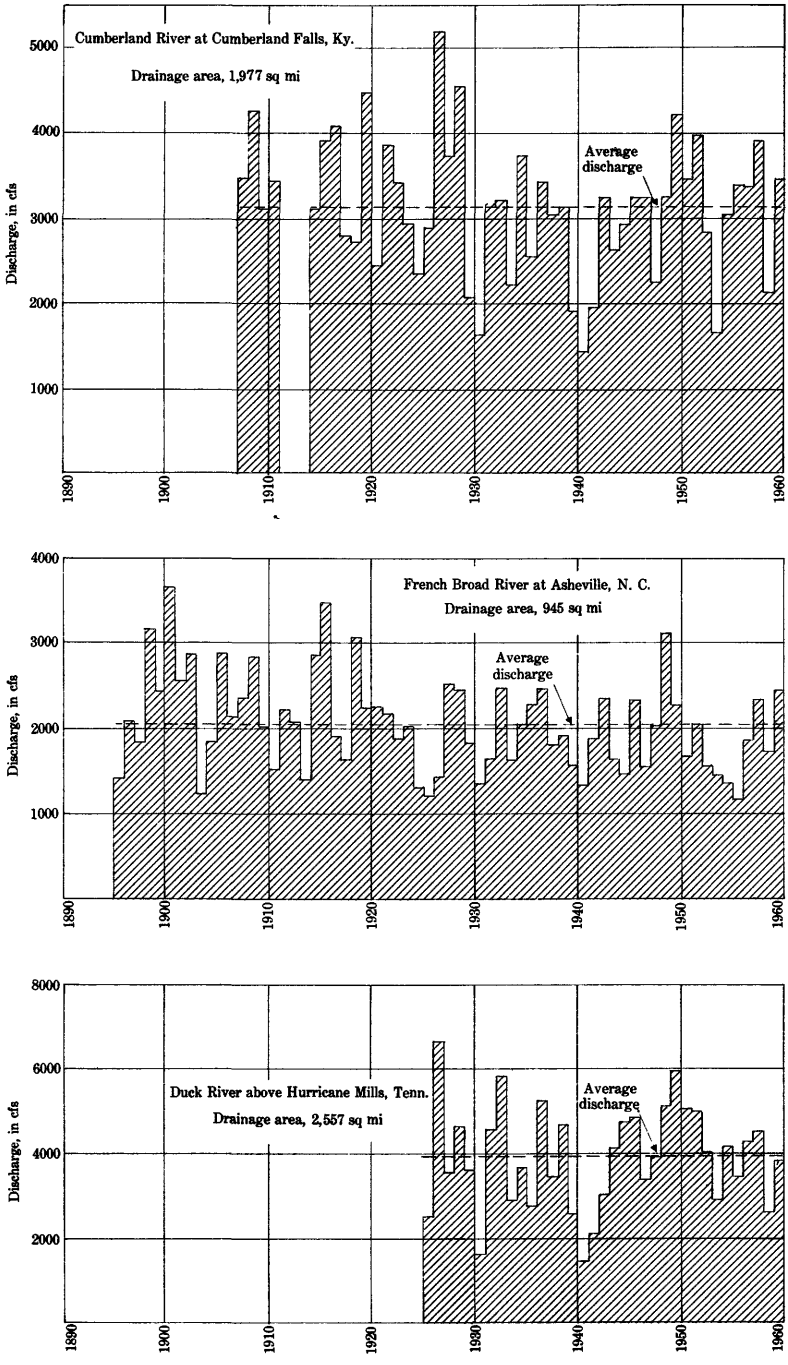

Figure 2.—Yearly discharge at three representative gaging stations.

CUMBERLAND RIVER BASIN

4005. Poor Fork at Cumberland, Ky.

Location.--Lat 36°58'26" (revised), 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 (revised).

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 (1940-60), 140 cfs.

Extremes.--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 .

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	17.8	73.2	298	229	422	323	271	250	96.6	57.4	16.8	73.9	176
1952	21.5	213	392	348	184	349	205	173	76.1	21.4	22.3	13.6	169
1953	6.98	60.2	121	233	257	209	99.9	330	44.7	45.3	16.7	6.62	119
1954	3.58	5.54	20.5	252	54.7	245	119	122	87.5	45.9	16.5	12.2	82.5
1955	8.40	18.0	165	121	480	640	155	63.9	40.2	37.4	17.0	9.07	145
1956	8.85	12.0	42.5	84.6	613	492	448	151	67.8	124	57.7	56.2	178
1957	16.5	41.3	214	530	452	132	249	34.6	46.9	23.3	16.6	32.5	147
1958	26.3	182	336	171	229	219	423	364	55.5	142	123	24.1	191
1959	17.9	25.9	62.8	241	149	166	258	77.8	132	30.6	20.4	23.3	100
1960	72.5	215	275	201	263	296	148	65.0	44.0	124	35.5	44.0	148

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.25	0.99	4.18	3.20	5.33	4.52	3.67	3.50	1.31	0.80	0.24	1.00	28.99
1952	.30	2.88	5.50	4.87	2.41	4.89	2.78	2.42	1.03	.30	.31	.18	27.87
1953	.10	.82	1.69	3.26	3.25	2.92	1.35	4.62	.61	.63	.23	.09	19.57
1954	.05	.08	.29	3.54	.69	3.43	1.61	1.70	1.19	.64	.23	.17	13.62
1955	.12	.24	2.32	1.70	6.07	8.97	2.11	.90	.54	.52	.24	.12	23.85
1956	.12	.16	.60	1.18	8.03	6.89	6.07	2.11	.92	1.73	.81	.76	29.38
1957	.23	.56	2.99	7.42	5.72	1.85	3.38	.48	.64	.33	.23	.44	24.27
1958	.37	2.47	4.70	2.39	2.90	3.07	5.73	5.10	.75	1.99	1.72	.33	31.52
1959	.25	.35	.88	3.38	1.89	2.33	3.49	1.09	1.80	.43	.29	.32	16.50
1960	1.02	2.92	3.85	2.82	3.45	4.15	2.00	.91	.60	1.74	.50	.60	24.56

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	191	31.59
1951	1206,1336	4,220	Dec. 7, 1950	11	176	2.14	28.99	196	32.25
1952	1236	2,530	Dec. 15, 1951	3.2	169	2.05	27.87	132	21.80
1953	1276	3,200	May 19, 1953	3.2	119	1.45	19.57	105	17.38
1954	1336	2,650	Jan. 16, 1954	2.6	82.5	1.00	13.62	96.2	15.88
1955	1386	3,510	Mar. 16, 1955	6	145	1.76	23.85	134	22.05
1956	1436	5,140	Apr. 15, 1956	6.5	178	2.16	29.38	195	32.28
1957	1506	11,800	Jan. 29, 1957	13	147	1.79	24.27	170	28.03
1958	1556	4,190	May 7, 1958	17	191	2.32	31.52	154	25.46
1959	1626	4,640	Jan. 21, 1959	9.5	100	1.22	16.50	138	22.81
1960	1706	3,200	Nov. 28, 1959	16	148	1.80	24.56	-	-

4010. Cumberland River near Harlan, Ky.

Location.--Lat 36°50'48" (revised), long 83°21'21" (revised), 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 (1940-60), 654 cfs.

Extremes.--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 of chemical analyses for the period October 1951 to September 1952 are published in WSP 1250.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	56.2	281	985	1,103	2,302	1,425	1,241	690	353	127	40.0	226	725
1952	59.5	1,059	2,239	1,894	1,015	1,907	843	716	257	59.0	74.2	40.6	849
1953	22.6	230	574	1,315	1,517	1,050	438	1,651	199	176	43.6	14.3	599
1954	9.00	25.8	112	1,244	226	1,100	495	533	292	144	57.7	30.6	358
1955	20.8	53.5	784	420	2,087	3,229	780	242	136	201	65.0	18.2	663
1956	41.0	71.9	189	420	3,003	2,370	2,019	605	340	709	216	169	836
1957	53.5	137	996	2,353	2,055	680	1,166	218	223	81.9	50.5	212	677
1958	104	813	1,753	658	1,018	979	2,030	1,613	223	385	447	80.0	841
1959	63.4	99.0	356	1,336	806	845	1,118	377	678	89.8	64.7	54.8	488
1960	187	847	1,301	987	1,251	1,423	706	256	408	869	231	321	729

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.17	0.84	3.04	3.40	6.41	4.39	3.70	2.13	1.05	0.39	0.12	0.67	26.31
1952	.18	3.16	6.90	5.84	2.93	5.88	2.51	2.21	.77	.18	.23	.12	30.91
1953	.07	.69	1.77	4.05	4.22	3.24	1.31	5.09	.59	.54	.13	.04	21.74
1954	.03	.08	.34	3.84	.63	3.39	1.48	1.64	.87	.44	.18	.09	13.01
1955	.06	.16	2.42	1.29	5.81	9.95	2.33	.75	.40	.62	.20	.05	24.04
1956	.13	.21	.58	1.29	8.66	7.30	6.02	1.87	1.01	2.18	.67	.50	30.42
1957	.17	.41	3.07	7.25	5.72	2.10	3.48	.67	.67	.25	.16	.63	24.58
1958	.32	2.42	5.40	2.03	2.84	3.02	6.05	4.97	.66	1.19	1.38	.24	30.52
1959	.20	.30	1.10	4.12	2.24	2.60	3.33	1.16	2.02	.28	.20	.16	17.71
1960	.58	2.53	4.01	2.98	3.61	4.39	2.11	.79	1.22	2.68	.71	.96	26.57

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	853	30.97
1951	1206	23,800	Feb. 1, 1951	14	725	1.94	26.31	896	32.50
1952	1236	19,700	Dec. 15, 1951	11	849	2.27	30.91	637	23.20
1953	1276	16,300	Feb. 21, 1953	7	599	1.60	21.74	542	19.66
1954	1336	9,810	Jan. 16, 1954	5.0	358	.957	13.01	419	15.20
1955	1386	19,200	Mar. 22, 1955	7.8	663	1.77	24.04	615	22.32
1956	1436	22,000	Apr. 16, 1956	20	836	2.24	30.42	911	33.15
1957	1506	31,000	Jan. 29, 1957	19	677	1.81	24.58	801	29.07
1958	1556	17,100	Dec. 7, 1957	48	841	2.25	30.52	660	23.98
1959	1626	25,900	Jan. 22, 1959	19	488	1.30	17.71	640	23.23
1960	1706	13,900	Nov. 28, 1959	50	729	1.95	26.57	-	-

4020. Yellow Creek near Middlesboro, Ky.

Location (revised).--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 (revised).

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 (1940-60), 105 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	7.54	42	151	175	491	296	209	52.5	43.6	20.8	6.00	7.23	123
1952	7.62	160	422	294	174	443	95.0	53.5	17.9	5.63	6.38	3.17	141
1953	3.54	20.0	81.9	223	237	151	82.3	156	84.0	71.2	6.02	4.21	92.6
1954	3.05	5.66	15.9	239	58.0	210	126	84.7	17.1	8.61	8.32	3.02	65.3
1955	4.23	9.07	171	63.1	279	586	138	32.5	23.4	11.5	8.18	3.22	110
1956	6.28	10.3	40.6	84.6	453	294	242	74.6	96.3	31.0	35.4	18.6	114
1957	7.67	14.8	208	375	315	107	252	43.9	57.8	14.9	17.3	39.0	120
1958	59.6	226	342	104	185	182	361	239	29.9	18.2	41.9	9.47	149
1959	9.93	18.6	82.8	261	150	151	165	78.3	30.9	12.1	7.19	6.40	80.8
1960	15.5	84.7	195	142	170	232	93.4	67.5	151	121	16.7	26.0	110

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.15	0.80	2.98	3.47	8.79	5.87	4.01	1.04	0.84	0.41	0.12	0.14	28.62
1952	.15	3.07	8.36	5.82	3.22	8.77	1.82	1.06	.34	.11	.13	.06	32.91
1953	.07	.38	1.62	4.41	4.24	2.98	1.58	3.08	1.61	1.41	.12	.08	21.58
1954	.06	.11	.32	4.73	1.04	4.16	2.43	1.68	.33	.17	.16	.06	15.25
1955	.08	.17	3.39	1.25	5.00	11.61	2.66	.64	.45	.23	.16	.06	25.70
1956	.12	.20	.80	1.68	8.40	5.83	4.64	1.48	1.85	.61	.70	.36	26.67
1957	.15	.28	4.13	7.42	5.63	2.11	4.82	.87	1.11	.30	.34	.75	27.91
1958	1.18	4.33	6.78	2.05	3.32	3.60	6.93	4.73	.57	.36	.83	.18	34.86
1959	.20	.36	1.64	5.17	2.68	2.99	3.17	1.55	.59	.24	.14	.12	18.85
1960	.31	1.62	3.87	2.82	3.15	4.60	1.79	1.34	2.90	2.39	.33	.50	25.62

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	140	32.64
1951	1206	5,570	Feb. 1, 1951	3.5	123	2.11	28.62	155	36.27
1952	1236	4,900	Mar. 22, 1952	1.8	141	2.42	32.91	100	23.40
1953	1276	2,030	Feb. 21, 1953	1.2	92.6	1.59	21.58	85.7	20.00
1954	1336	2,390	Jan. 16, 1954	1.6	65.3	1.12	15.25	78.9	18.40
1955	1386	4,950	Mar. 22, 1955	1.5	110	1.89	25.70	99.4	23.18
1956	1436	3,000	Feb. 18, 1956	3.5	114	1.96	26.67	129	30.11
1957	1506	3,980	Jan. 28, 1957	3.0	120	2.06	27.91	153	35.64
1958	1556	2,960	Dec. 8, 1957	5.5	149	2.56	34.86	106	24.77
1959	1626	5,550	Jan. 21, 1959	2.5	80.8	1.39	18.85	96.3	22.45
1960	1706	2,980	June 23, 1960	3.0	110	1.89	25.62	-	-

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 (revised).

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, auxiliary staff gage read twice daily, 1.9 miles upstream from base gage.

Average discharge.--22 years (1938-60), 1,321 cfs.

Extremes.--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 measurement at gage height 44.34 ft; minimum, 5.6 cfs Aug. 14, 1957.
Flood in March 1929 reached a stage of 47.3 ft (discharge, 51,000 cfs).

Remarks.--Low flow regulated by powerplant 1.9 miles upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	96.3	512	2,009	2,118	5,723	3,068	2,495	1,028	664	217	58.4	258	1,492
1952	92.5	2,096	4,923	3,780	2,022	4,528	1,450	1,134	355	71.6	141	69.0	1,728
1953	31.2	409	1,277	2,779	2,950	2,061	1,008	3,135	447	378	64.7	21.7	1,207
1954	9.05	40.7	196	2,746	545	2,451	1,306	1,098	345	155	69.4	37.1	755
1955	32.0	82.1	1,746	988	3,874	7,572	1,797	439	259	286	107	21.0	1,422
1956	65.2	132	330	853	6,429	4,179	3,512	1,147	730	1,284	500	367	1,606
1957	111	263	2,662	*4,769	4,534	1,461	2,784	419	499	159	95.3	429	*1,496
1958	303	1,842	3,671	1,383	2,143	2,252	4,483	3,249	396	464	588	118	1,738
1959	106	202	795	2,947	1,805	1,799	2,389	836	1,120	145	100	79.0	1,021
1960	230	1,508	2,707	2,000	2,441	2,991	1,354	590	1,865	1,863	415	452	1,532

* Revised.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.14	0.71	2.86	3.02	7.37	4.37	3.44	1.47	0.92	0.31	0.08	0.36	25.05
1952	.13	2.89	7.02	5.39	2.70	6.45	2.00	1.62	.49	.10	.20	.10	29.09
1953	.04	.56	1.82	3.96	3.80	2.94	1.39	4.47	.62	.54	.09	.03	20.26
1954	.01	.06	.28	3.91	.70	3.49	1.80	1.56	.48	.22	.10	.05	12.66
1955	.05	.11	2.49	1.41	4.99	10.79	2.48	.63	.36	.38	.15	.03	23.87
1956	.09	.18	.47	1.22	8.57	5.96	4.84	1.63	1.01	1.83	.71	.51	27.02
1957	.16	.36	3.79	*6.80	5.84	2.08	3.84	.60	.69	.23	.14	.59	*25.12
1958	.43	2.54	5.23	1.97	2.76	3.21	6.18	4.63	.55	.66	.84	.16	29.16
1959	.15	.28	1.13	4.20	2.32	2.56	3.29	1.19	1.55	.21	.14	.11	17.13
1960	.33	2.08	3.86	2.85	3.25	4.26	1.87	.84	2.57	2.66	.59	.62	25.78

* Revised.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,789	30.02
1951	1206	41,200	Feb. 1, 1951	26	1,492	1.84	25.05	1,869	31.38
1952	1236	29,700	Mar. 23, 1952	24	1,728	2.14	29.09	1,276	21.47
1953	1276	21,700	May 20, 1953	7.4	1,207	1.49	20.26	1,083	18.19
1954	1336	19,500	Jan. 16, 1954	6.2	755	.933	12.66	892	14.96
1955	1386	30,600	Mar. 22, 1955	7.0	1,422	1.76	23.87	1,308	21.96
1956	1436	30,600	Feb. 18, 1956	30	1,606	1.99	27.02	1,818	30.59
1957	1506	*44,100	Jan. 29, 1957	7.0	*1,496	*1.85	*25.12	*1,728	*29.01
1958	1556	26,400	Dec. 8, 1957	70	1,738	2.15	29.16	1,342	22.52
1959	1626	36,000	Jan. 22, 1959	18	1,021	1.26	17.13	1,302	21.84
1960	1706	18,900	Nov. 28, 1959	23	1,532	1.89	25.78	-	-

* Revised.

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 (revised).

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

Gage.--Wire-weight and crest-stage gages; gage read twice daily. Datum of gage is 942.97 ft (revised) 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 (1922-31, 1948-60), 1,716 cfs.

Extremes.--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 1946 reached a stage of 42.8 ft, present datum.

Remarks.--Diversion above station by city of Barbourville for municipal water supply. Records of water temperatures for the period October 1949 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	121	730	2,503	2,492	7,582	3,513	3,087	1,147	742	285	71.1	281	1,840
1952	99.3	2,376	5,764	4,626	2,367	6,036	1,593	1,364	419	76.7	145	74.1	2,087
1953	38.7	472	1,518	3,408	3,402	2,394	1,177	3,899	521	453	68.3	28.9	1,442
1954	9.86	44.3	207	3,242	568	2,923	1,547	1,275	408	166	74.5	40.6	882
1955	33.8	93.4	2,046	1,156	4,332	9,547	1,919	482	284	281	143	21.8	1,685
1956	74.2	148	412	988	7,919	4,878	4,209	1,173	754	1,386	542	385	1,879
1957	117	277	2,958	5,458	5,826	1,674	3,103	469	530	177	103	446	1,735
1958	370	2,416	4,385	1,609	2,517	2,628	5,045	4,206	447	494	692	132	2,076
1959	115	252	849	3,389	2,087	2,027	2,739	944	1,291	153	107	83.5	1,163
1960	286	1,852	3,178	2,345	2,847	3,374	1,594	647	2,436	2,240	444	535	1,812

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.15	0.85	3.01	2.99	8.22	4.22	3.59	1.38	0.86	0.34	0.09	0.33	26.03
1952	.12	2.76	6.92	5.56	2.66	7.25	1.85	1.64	.49	.09	.17	.09	29.60
1953	.05	.55	1.82	4.09	3.69	2.87	1.37	4.68	.60	.54	.08	.03	20.37
1954	.01	.05	.25	3.89	.62	3.51	1.80	1.53	.47	.20	.09	.05	12.47
1955	.04	.11	2.46	1.39	4.70	11.47	2.23	.58	.33	.34	.17	.03	23.85
1956	.09	.17	.49	1.19	8.90	5.86	4.89	1.41	.88	1.66	.65	.45	26.64
1957	.14	.32	3.55	6.55	6.32	2.01	3.61	.56	.62	.21	.12	.52	24.53
1958	.44	2.81	5.27	1.93	2.73	3.16	5.86	5.05	.52	.59	.83	.15	29.34
1959	.14	.29	1.02	4.07	2.26	2.43	3.18	1.13	1.50	.18	.13	.10	16.43
1960	.34	2.15	3.82	2.82	3.20	4.05	1.85	.78	2.83	2.69	.53	.62	25.68

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	2,181	30.84
1951	1205,1336	45,900	Feb. 2, 1951	36	1,840	1.92	26.03	2,250	31.82
1952	1236	32,700	Mar. 23, 1952	23	2,087	2.17	29.60	1,567	22.22
1953	1276	21,200	May 20, 1953	10	1,442	1.50	20.37	1,293	18.26
1954	1336	20,200	Jan. 16, 1954	7.0	882	.919	12.47	1,044	14.77
1955	1386	29,100	Mar. 22, 1955	7	1,685	1.76	23.85	1,555	21.99
1956	1436	28,500	Feb. 19, 1956	34	1,879	1.96	26.64	2,108	29.90
1957	1506	43,000	Jan. 30, 1957	16	1,735	1.81	24.53	2,054	29.04
1958	1556	25,300	May 8, 1958	73	2,076	2.16	29.34	1,576	22.27
1959	1626	30,300	Jan. 22, 1959	20	1,163	1.21	16.43	1,508	21.29
1960	1706	17,900	Nov. 28, 1959	58	1,812	1.89	25.68	-	-

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 (1950-60), 2,694 cfs.

Extremes.--1950-60: Maximum discharge, 49,700 cfs Jan. 31, 1957 (gage height, 33.78 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 of chemical analyses and water temperatures for the period October 1949 to September 1960 and suspended sediment loads for the period October 1953 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	155	1,270	4,072	3,847	11,580	6,258	5,182	1,730	922	559	112	308	2,941
1952	119	3,843	9,521	7,369	4,137	9,107	2,247	2,263	653	122	191	109	3,320
1953	48.7	879	2,558	5,883	5,709	3,887	2,136	5,743	1,170	921	149	33.3	2,414
1954	10.2	50.6	289	5,293	1,220	5,077	2,745	2,064	625	217	109	51.9	1,488
1955	85.2	167	3,173	2,508	6,523	14,270	3,292	763	380	340	238	36.9	2,634
1956	126	218	806	1,396	13,550	8,039	6,827	1,806	946	1,797	666	455	3,006
1957	134	353	4,939	7,337	11,560	2,854	5,576	837	926	297	145	634	2,907
1958	776	4,850	6,804	2,685	3,936	4,557	8,078	7,021	653	628	1,076	198	3,434
1959	169	319	1,246	5,157	3,304	3,232	4,627	1,376	1,949	266	194	161	1,822
1960	454	2,912	5,643	3,825	4,658	5,574	2,766	1,307	3,729	3,557	662	693	2,978

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.11	0.88	2.92	2.76	7.51	4.49	3.60	1.24	0.64	0.40	0.08	0.21	24.84
1952	.09	2.67	6.83	5.29	2.78	6.53	1.56	1.62	.45	.09	.14	.08	28.13
1953	.03	.61	1.83	4.22	3.70	2.79	1.48	4.12	.81	.66	.11	.02	20.38
1954	.007	.04	.21	3.80	.79	3.65	1.91	1.48	.43	.16	.08	.04	12.60
1955	.06	.12	2.28	1.80	4.23	10.24	2.29	.55	.26	.24	.17	.03	22.27
1956	.09	.15	.58	1.00	9.09	5.77	4.74	1.30	.66	1.29	.48	.32	25.47
1957	.10	.25	3.54	5.26	7.49	2.05	3.87	.60	.64	.21	.10	.44	24.55
1958	.56	3.37	4.88	1.93	2.55	3.27	5.61	5.04	.45	.45	.77	.14	29.02
1959	.12	.22	.89	3.70	2.14	2.32	3.21	.99	1.35	.19	.14	.11	15.38
1960	.33	2.02	4.05	2.74	3.13	4.00	1.92	.94	2.59	2.55	.48	.48	25.23

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	1206	37,200	Feb. 2, 1951	38	2,941	1.83	24.84	3,612	30.52
1952	1236	28,100	Mar. 24, 1952	38	3,320	2.07	28.13	2,481	21.01
1953	1276	18,800	May 20, 1953	15	2,414	1.50	20.38	2,150	18.17
1954	1336	20,500	Jan. 23, 1954	6.1	1,488	.926	12.60	1,749	14.80
1955	1386	29,900	Mar. 19, 1955	13	2,634	1.64	22.27	2,441	20.63
1956	1436	29,800	Feb. 19, 1956	42	3,006	1.87	25.47	3,368	28.54
1957	1506	49,700	Jan. 31, 1957	22	2,907	1.81	24.55	3,490	29.47
1958	1556	27,900	Nov. 20, 1957	112	3,434	2.14	29.02	2,538	21.44
1959	1626	26,900	Jan. 23, 1959	32	1,822	1.13	15.38	2,433	20.55
1960	1706	21,200	Dec. 20, 1959	44	2,978	1.85	25.23	-	-

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 (revised).

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 (1907-11, 1914-60), 3,134 cfs.

Extremes.--1907-11, 1915-60: Maximum discharge, 59,600 cfs Jan. 28, 1918 (gage height, 15.5 ft, present site and datum); minimum, 4 cfs Sept. 19, 1954.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	178	1,449	4,372	4,634	13,650	7,487	6,295	2,210	1,077	747	150	371	3,482
1952	150	4,600	11,330	8,700	5,159	10,950	2,575	2,881	865	145	207	144	3,990
1953	54.6	970	2,798	6,917	6,739	4,661	2,644	6,682	1,394	1,079	179	37.6	2,832
1954	10.5	51.7	315	5,630	1,517	5,870	3,259	2,393	683	225	110	53.6	1,685
1955	110	170	3,584	2,920	7,444	16,360	3,873	1,045	480	400	302	41.1	3,046
1956	174	239	867	1,519	15,700	9,094	7,849	1,961	995	1,861	729	471	3,400
1957	147	393	5,626	8,751	13,020	3,402	6,516	1,105	1,322	367	154	673	3,391
1958	886	5,500	7,454	3,114	4,406	5,368	9,507	8,116	736	695	1,226	242	3,933
1959	175	380	1,352	5,501	4,016	3,906	5,703	1,646	2,247	353	252	203	2,129
1960	487	3,111	6,750	4,538	5,610	6,578	3,372	1,955	4,162	3,849	709	774	3,487

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.10	0.82	2.55	2.70	7.19	4.37	3.55	1.29	0.61	0.44	0.09	0.21	23.92
1952	.09	2.60	6.61	5.07	2.81	6.38	1.45	1.68	.49	.08	.12	.08	27.46
1953	.03	.55	1.63	4.03	3.55	2.72	1.49	3.90	.79	.63	.10	.02	19.44
1954	.006	.03	.18	3.28	.80	3.42	1.84	1.40	.39	.13	.06	.03	11.57
1955	.06	.10	2.09	1.70	3.92	9.54	2.19	.61	.27	.23	.18	.02	20.91
1956	.10	.13	.51	.89	8.56	5.30	4.43	1.14	.56	1.09	.43	.27	23.41
1957	.09	.22	3.28	5.10	6.86	1.98	3.68	.64	.75	.21	.09	.38	23.28
1958	.52	3.10	4.35	1.82	2.32	3.13	5.37	4.73	.42	.41	.72	.14	27.03
1959	.10	.21	.79	3.21	2.12	2.28	3.22	.96	1.27	.21	.15	.11	14.63
1960	.28	1.76	3.94	2.65	3.06	3.84	1.90	1.14	2.35	2.24	.41	.44	24.01

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	4,210	28.92
1951	1206	46,500	Feb. 1, 1951	60	3,482	1.76	23.92	4,330	29.75
1952	1236	37,000	Mar. 22, 1952	47	3,990	2.02	27.46	2,962	20.37
1953	1276	20,700	May 20, 1953	16	2,832	1.43	19.44	2,541	17.45
1954	1336	24,900	Jan. 23, 1954	4.0	1,685	.852	11.57	1,981	13.60
1955	1386	41,600	Mar. 22, 1955	15	3,046	1.54	20.91	2,826	19.40
1956	1436	35,100	Feb. 18, 1956	45	3,400	1.72	23.41	3,813	26.26
1957	1506	57,400	Jan. 29, 1957	23	3,391	1.72	23.28	4,029	27.66
1958	1556	33,700	Nov. 19, 1957	112	3,933	1.99	27.03	2,934	20.16
1959	1626	25,900	Jan. 23, 1959	44	2,129	1.08	14.63	2,839	19.51
1960	1706	21,800	Dec. 20, 1959	38	3,487	1.76	24.01	-	-

4050. Laurel River at Corbin, Ky.
(Formerly published as Laurel River near Otas)

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 (revised).
Records available.--October 1922 to September 1924, July 1942 to September 1960. Prior to October 1953, published as Laurel River 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 (1922-24, 1942-60), 344 cfs.
Extremes.--1922-24, 1942-60: Maximum discharge, 19,600 cfs (revised) Jan. 29, 1957 (gage height, 19.30 ft); 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.--Some regulation at low flow by city water-supply reservoir.
Revisions.--Records for January 1946 and the momentary maximum discharges for the water years 1946 and 1948 were incorrectly revised in WSP 1506. Revised records for these years superseding those published in WSP 1306 and 1506 are given herewith. Also given herewith are revised records for June 1946, superseding those published in WSP 1306; revised daily discharges for these periods are available and will be published in a subsequent water-supply paper.

Month	Mean	Per square mile	Runoff in inches	Momentary maximum		Minimum day
				Discharge	Date	
January 1946.....	1,257	-	7.21	-	-	-
June.....	286	-	1.59	-	-	-
Water year 1945-46..	313	1.56	21.14	17,000	Jan. 8, 1946	1.3
Calendar year 1946..	281	-	19.01	-	-	-
Water year 1947-48..	-	-	-	12,700	Feb. 14, 1948	1.2

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	6.20	473	492	684	1,395	830	573	99.2	40.2	47.9	9.29	63.5	386
1952	10.3	883	1,149	955	435	1,122	151	499	59.9	2.79	35.2	10.2	444
1953	2.11	217	371	984	586	553	312	646	57.4	16.7	1.89	1.75	312
1954	1.81	2.18	3.13	501	143	616	216	216	144	3.58	1.53	2.68	155
1955	2.29	2.95	461	295	1,120	1,653	294	70.8	22.1	17.3	7.22	3.13	325
1956	2.11	3.70	18.2	187	1,825	877	862	120	16.4	229	11.2	7.38	340
1957	2.24	5.04	852	*1,587	954	378	572	69.0	119	12.7	4.54	17.5	*379
1958	31.3	540	704	308	600	433	1,141	783	135	153	108	52.4	414
1959	28.6	176	161	531	486	228	557	158	159	46.7	17.0	5.09	210
1960	11.0	392	710	445	796	779	242	223	590	400	47.7	13.2	386

* Revised.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.04	2.62	2.82	3.92	7.23	4.76	3.18	0.57	0.22	0.27	0.05	0.35	26.03
1952	.06	4.90	6.59	5.48	2.33	6.43	.84	2.86	.33	.02	.20	.06	30.10
1953	.01	1.20	2.13	5.64	3.04	3.17	1.73	3.70	.32	.10	.01	.01	21.06
1954	.01	.01	.02	2.88	.74	3.53	1.20	1.24	.80	.02	.009	.01	10.47
1955	.01	.02	2.65	1.69	5.80	9.48	1.63	.41	.12	.10	.04	.02	21.97
1956	.01	.02	.10	1.07	9.79	5.03	4.78	.69	.09	1.31	.06	.04	22.99
1957	.01	.03	4.89	*9.10	4.94	2.17	3.17	.40	.66	.07	.03	.10	*25.57
1958	.18	3.00	4.04	1.77	3.11	2.48	6.34	4.49	.75	.88	.62	.29	27.95
1959	.16	.98	.92	3.05	2.52	1.31	3.09	.91	.88	.27	.10	.03	14.22
1960	.06	2.17	4.07	2.55	4.27	4.47	1.34	1.28	3.28	2.30	.27	.07	26.13

* Revised.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	499	33.71
1951	1206	9,800	Feb. 1, 1951	2.0	386	1.92	26.03	476	32.10
1952	1236	9,830	Mar. 23, 1952	.8	444	2.21	30.10	323	21.89
1953	P 1276	3,560	Jan. 8, 1953	1.1	312	1.55	21.06	263	17.76
1954	1336	3,020	Jan. 22, 1954	.9	155	.77	10.47	194	13.11
1955	1386	7,780	Mar. 22, 1955	1.3	325	1.62	21.97	288	19.42
1956	1436	9,500	Feb. 18, 1956	.2	340	1.69	22.99	411	27.79
1957	1506	*19,600	Jan. 29, 1957	1.1	*379	*1.89	*25.57	*412	*27.86
1958	1556	6,810	Nov. 18, 1957	5.4	414	2.06	27.95	337	22.79
1959	1626	3,520	Jan. 22, 1959	0	210	1.04	14.22	273	18.46
1960	1706	7,820	June 23, 1960	.6	386	1.92	26.13	-	-

* Revised.

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 (1953-60), 5.43 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	0.28	0.26	0.27	4.71	2.50	7.15	4.05	4.95	1.30	0.71	0.53	0.38	2.26
1955	.31	.40	5.68	4.95	21.0	24.7	3.88	2.92	1.70	1.08	.73	.39	5.56
1956	.44	.39	.69	2.06	26.9	15.1	15.5	5.18	.94	6.53	1.67	.88	6.27
1957	.62	.81	13.1	24.1	21.2	6.59	8.73	1.40	1.70	.74	.61	1.60	6.69
1958	.65	6.94	12.9	5.85	10.5	5.80	18.5	14.0	1.89	3.64	4.07	1.52	7.16
1959	.78	1.87	1.93	7.02	8.48	4.59	9.76	2.53	1.22	1.20	.64	.42	3.33
1960	.99	2.76	8.18	7.35	12.2	13.9	4.90	3.20	16.5	7.52	2.15	1.54	6.74

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	0.08	0.07	0.08	1.40	0.67	2.12	1.16	1.47	0.37	0.21	0.16	0.11	7.90
1955	.09	.11	1.68	1.47	5.62	7.32	1.11	.87	.49	.32	.22	.11	19.41
1956	.13	.11	.20	.61	7.46	4.49	4.45	1.53	.27	1.93	.50	.25	21.93
1957	.18	.23	3.89	7.14	5.67	1.95	2.50	.41	.49	.22	.18	.46	23.32
1958	.19	1.99	3.82	1.73	2.80	1.72	5.31	4.15	.54	1.08	1.21	.44	24.98
1959	.23	.54	.57	2.08	2.27	1.36	2.80	.75	.35	.36	.19	.12	11.62
1960	.29	.79	2.42	2.18	3.39	4.11	1.41	.95	4.73	2.23	.64	.44	23.58

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	1336	87	Jan. 20, 1954	0.2	2.26	0.581	7.90	2.74	9.55
1955	1386	352	Mar. 21, 1955	.2	5.56	1.43	19.41	5.15	17.97
1956	1436	506	Feb. 17, 1956	.2	6.27	1.61	21.93	7.37	25.79
1957	1506	306	Jan. 29, 1957	.4	6.69	1.72	23.32	7.17	25.02
1958	1556	337	Nov. 18, 1957	.4	7.16	1.84	24.98	5.82	20.32
1959	1626	118	Jan. 21, 1959	.3	3.33	.856	11.62	3.95	13.78
1960	1706	418	June 22, 1960	.3	6.74	1.73	23.58	-	-

4065. Rockcastle River at Billows, Ky.

Location (revised).--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 (revised).

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 (1936-60), 895 cfs.

Extremes.--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 of chemical analyses for the period October 1951 to September 1952 are published in WSP 1250.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	248	1,771	1,520	2,285	3,576	1,968	1,466	366	82.7	82.3	36.7	200	1,114
1952	37.9	2,062	3,535	2,656	1,182	3,754	786	853	340	70.7	41.6	30.1	1,285
1953	5.38	242	436	2,164	1,305	1,509	814	1,388	551	263	30.7	5.63	725
1954	3.18	11.5	16.5	929	273	1,176	765	683	140	51.8	53.8	15.8	345
1955	17.0	30.3	818	700	3,267	4,471	617	583	270	205	33.8	5.02	906
1956	21.9	55.1	104	570	5,236	2,427	2,394	597	111	563	69.1	19.8	995
1957	16.8	59.8	1,701	3,324	2,618	1,015	1,716	294	227	63.1	10.1	230	930
1958	79.8	1,262	2,199	826	1,620	1,188	2,921	1,725	213	1,020	695	162	1,156
1959	59.7	229	301	1,405	1,772	823	1,556	477	128	248	169	57.8	594
1960	45.5	356	1,313	1,253	2,155	2,116	683	785	2,426	920	177	71.6	1,021

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.47	3.27	2.90	4.36	6.17	3.76	2.71	0.64	0.15	0.16	0.07	0.37	25.03
1952	.07	3.81	6.75	5.07	2.11	7.17	1.45	1.63	.63	.13	.08	.06	28.96
1953	.01	.45	.83	4.13	2.25	2.88	1.50	2.65	1.02	.50	.06	.01	16.29
1954	.006	.02	.03	1.77	.47	2.24	1.41	1.30	.26	.10	.10	.03	7.74
1955	.03	.06	1.56	1.34	5.63	8.53	1.14	1.11	.50	.39	.06	.009	20.36
1956	.04	.10	.20	1.09	9.35	4.63	4.42	1.14	.21	1.07	.13	.04	22.42
1957	.03	.11	3.25	6.34	4.51	1.94	3.17	.56	.42	.12	.02	.43	20.90
1958	.15	2.33	4.20	1.58	2.79	2.27	5.40	3.29	.39	1.95	1.33	.30	25.98
1959	.11	.42	.58	2.68	3.05	1.57	2.87	.91	.24	.47	.32	.11	13.33
1960	.09	.66	2.51	2.39	3.85	4.04	1.26	1.50	4.48	1.76	.34	.13	23.01

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,532	34.42
1951	1206	20,300	Feb. 1, 1951	8.0	1,114	1.84	25.03	1,291	29.02
1952	1236	39,800	Mar. 23, 1952	7.6	1,285	2.13	28.96	870	19.62
1953	1276	12,300	Jan. 9, 1953	2.5	725	1.20	16.29	670	15.06
1954	1336	8,020	Jan. 21, 1954	1.1	345	.571	7.74	416	9.33
1955	1386	22,200	Mar. 22, 1955	3.4	906	1.50	20.36	848	19.05
1956	1436	27,800	Feb. 18, 1956	8.0	995	1.65	22.42	1,130	25.47
1957	1506	25,000	Jan. 30, 1957	.9	930	1.54	20.90	1,077	24.19
1958	1556	19,100	Nov. 19, 1957	26	1,156	1.91	25.98	908	20.41
1959	1626	11,200	Jan. 22, 1959	11	594	.983	13.33	689	15.48
1960	1706	28,000	June 24, 1960	8.5	1,021	1.69	23.01	-	-

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.--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.--Flow affected slightly by pumping of water from coal mine above station. Records of chemical analyses, water temperatures, and suspended sediment loads for the period October 1956 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	5.38	2.93	2.19	0.236	0.132	0.263	0.143	0.0469	-
1957	0.0728	0.0560	1.57	5.23	2.30	1.25	1.51	.257	.284	.0727	.0258	.208	1.06
1958	.147	1.85	1.66	.898	1.37	1.45	4.11	1.76	.113	.159	.0687	.120	1.14
1959	.100	.261	.200	.865	1.34	.888	1.50	.251	.185	.313	.195	.158	.514
1960	.239	.897	2.39	1.20	2.42	2.43	.764	1.18	1.78	1.68	.148	.118	1.27

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	8.66	5.05	3.65	0.41	0.22	0.45	0.25	0.08	-
1957	0.13	0.09	2.70	8.99	3.57	2.15	2.51	.44	.47	.13	.04	.35	21.57
1958	.25	3.08	2.86	1.55	2.14	2.49	6.85	3.04	.19	.27	.12	.20	23.04
1959	.17	.43	.34	1.49	2.08	1.53	2.49	.43	.31	.54	.33	.26	10.40
1960	.41	1.49	4.12	2.06	3.90	4.18	1.27	2.03	2.96	2.89	.25	.20	25.76

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1956	1506	a98	Apr. 6, 1956	-	-	-	-	-	-
1957	1506	198	Jan. 29, 1957	0.010	1.06	1.58	21.57	1.23	24.84
1958	1556	154	Apr. 24, 1958	.021	1.14	1.70	23.04	.878	17.79
1959	1626	30	July 19, 1959	.050	.514	.767	10.40	.764	15.48
1960	1706	71	July 10, 1960	.054	1.27	1.90	25.76	-	-

a Maximum for period February to September.

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.--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 of chemical analyses, water temperatures, and suspended sediment loads for the period October 1956 to September 1958 and chemical analyses for the period October 1958 to September 1959 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	1.43	6.76	3.37	*2.31	0.382	0.166	0.312	0.193	0.101	-
1957	0.116	0.148	*1.81	*5.88	3.15	1.53	1.62	.336	.347	.221	.134	.286	*1.29
1958	.255	*2.12	*2.28	*1.15	*1.72	1.76	4.38	2.43	.275	.241	.192	.214	*1.41
1959	.201	.307	.259	1.04	1.51	.983	1.65	.437	1.25	.201	.188	.244	.680
1960	.301	.857	2.77	1.34	2.69	2.96	1.09	1.08	1.93	1.59	.213	.199	1.42

* Revised.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	1.94	8.58	4.58	*3.03	0.52	0.22	0.42	0.26	0.13	-
1957	0.16	0.19	*2.46	*7.97	3.86	2.08	2.12	.46	.46	.30	.18	.37	*20.61
1958	.35	*2.78	*3.10	*1.57	*2.10	2.39	5.76	3.29	.36	.33	.26	.28	*22.57
1959	.27	.40	.35	1.41	1.85	1.33	2.16	.59	1.64	.27	.26	.32	10.85
1960	.41	1.12	3.76	1.82	3.41	4.02	1.43	1.46	2.53	2.16	.29	.26	22.67

* Revised.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1956	1506	*a104	Apr. 6, 1956	-	-	-	-	*1.40	*22.49
1957	1506	136	Jan. 29, 1957	0.07	*1.29	*1.52	*20.61	*1.50	*24.03
1958	1556	54	Nov. 18, 1957	.16	*1.41	*1.66	*22.57	*1.09	*17.36
1959	1626	18.2	June 2, 1959	.14	.680	.800	10.85	.947	15.12
1960	1706	65	July 10, 1960	.16	1.42	1.67	22.67	-	-

* Revised.
a Maximum for period January to September.

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.--October 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.--8 years (1952-60), 224 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	‡0.2	‡15	‡69.6	408	328	433	214	403	235	131	13.4	0.17	‡187
1954	0	0	.38	300	75.4	140	220	113	49.3	19.9	11.8	1.40	77.7
1955	1.47	.30	142	160	962	1,068	106	101	167	18.9	5.75	.32	223
1956	4.70	13.4	22.5	262	1,570	622	588	133	19.0	172	13.9	1.44	280
1957	.09	1.31	452	909	768	327	639	73.8	56.9	19.8	1.55	157	280
1958	29.1	595	733	303	409	354	673	425	58.2	136	229	44.4	332
1959	11.6	53.1	74.9	422	521	241	355	70.7	24.3	29.6	23.8	3.97	150
1960	1.52	34.5	298	321	635	600	181	94.8	786	186	17.3	7.73	262

‡ Not previously published; estimated on basis of records for stations on nearby streams.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	‡0.001	‡0.10	‡0.49	2.85	2.07	3.03	1.45	2.82	1.59	0.91	0.09	0.001	‡15.40
1954	0	0	0.003	2.10	.48	.98	1.49	.79	.33	.14	.08	.009	6.40
1955	.010	.002	.99	1.12	6.07	7.46	.72	.70	1.13	.13	.04	.002	18.37
1956	.03	.09	.16	1.83	10.26	4.35	3.98	.93	.13	1.20	.10	.01	23.07
1957	.0006	.009	3.16	6.35	4.84	2.28	4.32	.52	.38	.14	.01	1.06	23.07
1958	.20	4.02	5.12	2.11	2.58	2.47	4.55	2.97	.39	.95	1.60	.30	27.26
1959	.08	.36	.52	2.95	3.29	1.69	2.40	.49	.16	.21	.17	.03	12.35
1960	.01	.23	2.08	2.25	4.15	4.19	1.22	.66	5.32	1.30	.12	.05	21.58

‡ Not previously published; estimated on basis of records for stations on nearby streams.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	1276	4,850	May 18, 1953	0	‡187	‡1.13	‡15.40	180	14.81
1954	1336	3,710	Jan. 21, 1954	0	77.7	0.471	6.40	89.9	7.40
1955	1386	9,920	Mar. 22, 1955	0	223	1.35	18.37	215	17.65
1956	1436	10,800	Feb. 18, 1956	0	280	1.70	23.07	315	25.96
1957	1506	9,710	Jan. 29, 1957	0	280	1.70	23.07	356	29.24
1958	1556	14,900	Nov. 19, 1957	3.7	332	2.01	27.26	230	18.88
1959	1626	4,490	Feb. 15, 1959	0	150	.909	12.35	167	13.71
1960	1706	13,600	June 23, 1960	0	262	1.59	21.58	-	-

‡ Not previously published.

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 (revised).

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 (1934-60), 710 cfs.

Extremes.--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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	34.7	181	1,105	1,450	3,187	2,075	1,331	536	85.5	157	12.4	12.5	833
1952	10.3	870	2,929	1,811	895	1,889	450	357	142	12.2	20.3	3.32	786
1953	.64	87.7	519	1,693	1,793	1,027	730	981	108	164	24.8	2.68	588
1954	.64	3.23	116	2,134	606	1,507	791	459	174	47.9	20.1	8.05	491
1955	41.7	54.4	1,717	584	1,946	3,054	811	230	436	231	87.2	26.1	763
1956	128	248	674	894	3,582	1,956	1,750	427	127	135	33.4	25.7	820
1957	26.7	94.5	1,639	2,493	2,340	745	1,559	242	315	65.2	26.0	415	820
1958	479	2,683	2,040	723	758	1,023	2,018	1,183	71.6	60.5	109	18.0	929
1959	17.6	77.8	202	1,417	1,350	1,113	1,100	188	293	86.5	313	72.8	514
1960	118	910	1,998	1,088	1,357	1,639	539	564	462	266	109	201	770

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.10	0.53	3.33	4.38	8.69	6.26	3.89	1.62	0.25	0.47	0.04	0.04	29.60
1952	.03	2.54	8.84	5.47	2.53	5.70	1.31	1.08	.41	.04	.06	.01	28.02
1953	.002	.26	1.57	5.11	4.89	3.10	2.13	2.96	.31	.49	.07	†.008	20.90
1954	.002	.009	.35	6.44	1.65	4.55	2.31	1.39	.51	.14	.06	.02	17.43
1955	.13	.16	5.18	1.76	5.30	9.22	2.37	.69	1.27	.70	.26	.08	27.12
1956	.39	.72	2.03	2.70	10.11	5.90	5.11	1.29	.37	.41	.10	.08	29.21
1957	.08	.28	4.95	7.52	6.38	2.25	4.55	.73	.92	.20	.08	1.21	29.15
1958	1.45	7.84	6.16	2.18	2.07	3.09	5.89	3.57	.21	.18	.33	.05	33.02
1959	.05	.23	.61	4.28	3.68	3.36	3.21	.57	.85	.26	.95	.21	18.26
1960	.36	2.66	6.03	3.28	3.83	4.95	1.57	1.70	1.35	.80	.33	.59	27.45

† Corrected.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,075	38.17
1951	1206	40,200	Feb. 1, 1951	2.6	833	2.18	29.60	1,042	37.05
1952	1236	27,900	Dec. 15, 1951	.9	786	2.06	28.02	517	18.44
1953	1276	21,200	Feb. 21, 1953	.1	588	1.54	20.90	547	19.43
1954	1336	22,600	Jan. 21, 1954	.3	491	1.29	17.43	634	22.54
1955	1386	32,900	Mar. 22, 1955	2.2	763	2.00	27.12	698	24.79
1956	1436	21,000	Feb. 18, 1956	3.8	820	2.15	29.21	880	31.38
1957	1506	29,200	Jan. 29, 1957	3.8	820	2.15	29.15	1,105	39.29
1958	1556	31,700	Nov. 19, 1957	2.5	929	2.43	33.02	520	18.46
1959	1626	31,600	Jan. 22, 1959	6.7	514	1.35	18.26	743	26.42
1960	1706	23,100	Dec. 19, 1959	9.4	770	2.02	27.45	-	-

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 (revised).

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 (1930-60), 459 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	28.9	161	673	1,067	2,167	1,248	902	374	42.6	63.1	15.6	15.0	553
1952	14.8	631	2,186	1,301	737	1,325	312	203	195	16.6	22.2	12.2	582
1953	4.22	24.4	126	1,012	1,156	832	526	710	85.8	79.2	32.1	2.92	379
1954	1.84	4.97	35.3	1,485	443	902	566	284	174	28.7	8.62	5.61	329
1955	21.9	17.4	925	405	1,363	2,269	628	138	212	108	52.8	37.9	511
1956	82.0	175	453	657	2,606	1,224	1,314	226	62.5	205	68.0	19.4	582
1957	27.6	77.8	1,097	1,463	1,454	579	1,023	365	420	41.3	14.7	40.9	545
1958	195	1,303	1,301	514	427	788	1,358	1,017	36.0	69.0	52.9	21.5	591
1959	13.4	51.9	112	602	980	1,039	813	251	255	45.1	90.9	19.2	352
1960	34.5	335	1,244	642	892	1,164	375	611	409	242	39.9	144	511

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.12	0.66	2.85	4.52	8.30	5.29	3.70	1.59	0.17	0.27	0.07	0.06	27.60
1952	.06	2.59	9.26	5.51	2.92	5.62	1.28	.86	.80	.07	.09	.05	29.11
1953	.02	.10	.54	4.29	4.43	3.52	2.16	3.01	.35	.34	.14	.01	18.91
1954	.008	.02	.15	6.29	1.70	3.82	2.32	1.21	.71	.12	.04	.02	16.41
1955	.09	.07	3.92	1.72	5.22	9.62	2.58	.58	.87	.46	.22	.16	25.51
1956	0.35	0.72	1.92	2.79	10.33	5.19	5.39	0.96	0.26	0.87	0.29	0.08	29.15
1957	.12	.32	4.65	6.20	5.57	2.45	4.20	1.55	1.72	.17	.06	.17	27.18
1958	.83	5.34	5.51	2.18	1.64	3.34	5.57	4.31	.15	.29	.22	.09	29.47
1959	.06	.21	.47	2.55	3.75	4.41	3.33	1.07	1.04	.19	.39	.08	17.55
1960	.15	1.37	5.27	2.72	3.54	4.93	1.54	2.59	1.68	1.03	.17	.59	25.58

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	715	35.70
1951	1206	22,500	Feb. 1, 1951	3.9	553	2.03	27.60	719	35.88
1952	1236	14,900	Dec. 15, 1951	2.1	582	2.14	29.11	357	17.86
1953	1276	7,250	Feb. 21, 1953	1.7	379	1.39	18.91	369	18.43
1954	1336	13,900	Jan. 21, 1954	1.0	329	1.21	16.41	407	20.31
1955	1386	19,400	Mar. 22, 1955	4.8	511	1.88	25.51	489	24.42
1956	1436	13,800	Feb. 18, 1956	5.1	582	2.14	29.15	624	31.25
1957	1506	15,000	Jan. 28, 1957	3.4	545	2.00	27.18	677	33.77
1958	1556	14,400	Nov. 19, 1957	3.6	591	2.17	29.47	371	18.53
1959	1626	9,320	Feb. 14, 1959	4.7	352	1.29	17.55	473	23.60
1960	1706	14,100	Dec. 19, 1959	3.6	511	1.88	25.58	-	-

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 (revised), upstream from Salt Branch and 5.5 miles southwest of Stearns, McCreary County. Records include flow of Bear Creek.

Drainage area.--954 sq mi (revised), 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 (1942-60), 1,738 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	133	624	2,470	3,194	7,250	4,455	3,155	1,255	216	299	65.4	71.4	1,899
1952	65.8	2,081	6,905	4,393	2,382	4,410	1,019	889	532	73.8	92.6	57.5	1,917
1953	36.6	176	787	3,651	3,951	2,647	1,659	2,559	330	360	119	29.6	1,346
1954	20.8	30.6	203	4,804	1,338	3,187	1,933	1,132	514	145	65.7	38.4	1,121
1955	106	102	3,272	1,354	4,646	7,425	2,053	574	761	454	187	87.3	1,739
1956	395	566	1,431	2,184	8,747	4,214	4,140	859	270	461	138	91.2	1,928
1957	90.9	227	3,508	5,898	5,172	1,965	3,046	993	1,666	223	81.1	517	1,929
1958	753	4,556	4,498	1,689	1,695	2,608	4,619	3,310	189	285	252	116	2,047
1959	79.7	225	472	2,736	3,082	2,907	2,790	664	776	224	496	151	1,204
1960	239	1,803	4,481	2,485	3,158	3,782	1,466	1,871	1,629	848	215	434	1,866

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.16	0.73	2.98	3.86	7.91	5.38	3.69	1.52	0.25	0.36	0.08	0.08	27.00
1952	.08	2.43	8.35	5.31	2.69	5.33	1.19	1.07	.62	.09	.11	.07	27.34
1953	.04	.21	.95	4.41	4.31	3.20	1.94	3.09	.39	.44	.14	.03	19.15
1954	.03	.04	.25	5.81	1.46	3.85	2.26	1.37	.60	.17	.08	.04	15.96
1955	.13	.12	3.95	1.64	5.07	8.97	2.40	.69	.89	.55	.23	.10	24.74
1956	.48	.66	1.73	2.64	9.89	5.09	4.84	1.04	.32	.56	.17	.11	27.53
1957	.11	.27	4.24	7.13	5.65	2.38	3.56	1.20	1.95	.27	.10	.61	27.47
1958	.91	5.33	5.44	2.04	1.85	3.15	5.40	4.00	.22	.34	.30	.14	29.12
1959	.10	.26	.57	3.31	3.36	3.51	3.26	.80	.91	.27	.60	.18	17.13
1960	.29	2.11	5.42	3.00	3.57	4.57	1.71	2.26	1.90	1.02	.26	.51	26.62

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	2,541	36.16
1951	1206	64,700	Feb. 1, 1951	34	1,899	1.99	27.00	2,389	33.99
1952	1236	45,500	Dec. 15, 1951	25	1,917	2.01	27.34	1,240	17.68
1953	1276	29,200	Feb. 21, 1953	19	1,346	1.41	19.15	1,283	18.27
1954	1336	36,100	Jan. 21, 1954	11	1,121	1.18	15.96	1,395	19.84
1955	1386	54,300	Mar. 22, 1955	29	1,739	1.82	24.74	1,645	23.41
1956	1436	42,200	Feb. 18, 1956	35	1,928	2.02	27.53	2,051	29.28
1957	1506	61,500	Jan. 29, 1957	20	1,929	2.02	27.47	2,425	34.53
1958	1556	40,500	Nov. 18, 1957	31	2,047	2.15	29.12	1,292	18.37
1959	1626	39,600	Jan. 22, 1959	47	1,204	1.26	17.13	1,688	24.02
1960	1706	40,400	Dec. 19, 1959	36	1,866	1.96	26.62	-	-

4120. Pitman Creek near Somerset, Ky.

Location.--Lat 37°08'05", long 84°35'15", on downstream side of bridge near center of span on State Highway 39, 300 ft upstream from Bradleys Branch and 2.5 miles north of Somerset, Pulaski County.

Drainage area.--26.3 sq mi.

Records available.--October 1950 to September 1953.

Gage.--Wire-weight gage and crest-stage indicator. Gage read twice daily. Altitude of gage is 900 ft (from topographic map).

Extremes.--1950-53: Maximum discharge, 3,560 cfs Mar. 22, 1952 (gage height, 10.82 ft); no flow at times each year.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	23.1	102	75.9	121	154	112	57.2	10.3	9.37	4.30	1.75	6.33	55.8
1952	2.63	119	194	127	48.5	189	22.5	27.0	9.43	1.01	1.31	0	62.2
1953	0	1.01	6.05	71.1	61.0	75.0	23.1	41.2	14.5	14.8	.59	.01	25.6

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.01	4.33	3.33	5.29	6.12	4.90	2.43	0.45	0.40	0.19	0.08	0.27	28.80
1952	.12	5.05	8.51	5.57	1.99	8.29	.96	1.18	.40	.04	.06	0	32.17
1953	0	.04	.27	3.12	2.42	3.29	.98	1.80	.62	.65	.03	.0003	13.22

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1951	1206	1,620	Jan. 31, 1951	0	55.8	2.12	28.80	65.5	33.81
1952	1236	3,560	Mar. 22, 1952	0	62.2	2.37	32.17	36.3	18.80
1953	1276	1,190	Feb. 21, 1953	0	25.6	.973	13.22	-	-

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 867.34 ft above mean sea level, datum of 1929. Prior to Oct. 28, 1953, staff gage at same site and datum.

Average discharge.--7 years (1953-60), 44.2 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	0.32	0.44	0.69	66.6	17.3	31.2	39.9	21.4	15.7	2.03	3.13	0.89	16.7
1955	.51	.57	32.4	31.5	195	197	23.7	53.2	35.5	8.58	2.43	.83	47.6
1956	1.91	2.28	4.81	42.6	281	126	118	24.1	3.38	41.2	4.42	.74	53.3
1957	.40	.93	94.3	191	156	66.5	100	12.3	11.0	4.91	3.47	42	56.3
1958	8.81	90	123	61.2	86.1	68.5	110	70.5	7.47	10.5	24.8	9.34	56.5
1959	4.46	13.4	15.8	75.5	108	50.1	75.5	11.2	5.97	3.96	25.1	2.79	32.1
1960	2.43	14.0	76.4	63.4	125	105	34.6	9.33	105	25.1	5.07	2.40	47.0

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	0.01	0.02	0.03	2.45	0.58	1.15	1.42	0.79	0.56	0.07	0.12	0.03	7.23
1955	.02	.02	1.19	1.16	6.48	7.84	.84	1.96	1.27	.32	.09	.03	20.62
1956	.07	.08	.18	1.57	9.68	4.64	4.22	.89	.12	1.52	.16	.03	23.16
1957	†.01	.03	3.47	7.03	5.19	2.45	3.58	.45	.39	.18	.13	1.50	24.41
1958	.32	3.21	4.91	2.26	2.86	2.52	3.92	2.60	.27	.39	.91	.33	24.50
1959	.16	.48	.58	2.78	3.60	1.84	2.69	.41	.21	.15	.92	.10	13.92
1960	.09	.50	2.81	2.33	4.32	3.86	1.23	.34	3.76	.92	.19	.09	20.44

† Corrected.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	1336	1,240	Jan. 20, 1954	0.1	16.7	0.534	7.23	19.4	8.40
1955	1386	2,430	Mar. 21, 1955	.2	47.6	1.52	20.62	45.5	19.72
1956	1436	2,260	Feb. 18, 1956	.3	53.3	1.70	23.16	61.4	26.68
1957	1506	2,260	Jan. 22, 1957	.1	56.3	1.80	24.41	67.6	29.34
1958	1556	1,460	Nov. 19, 1957	.7	56.5	1.81	24.50	39.9	17.28
1959	1626	2,850	Aug. 4, 1959	.3	32.1	1.03	13.92	37.1	16.10
1960	1706	2,530	June 23, 1960	.3	47.0	1.50	20.44	-	-

4135. Lake Cumberland near Jamestown, Ky.

Location.--Lat 36°52'09", long 85°08'45", in pylon of Wolf Creek Dam on Cumberland River, 10 miles southwest of Jamestown, Russell County.

Drainage area.--5,789 sq mi.

Records available.--April 1950 to September 1960 in reports of Geological Survey. Prior to October 1954, published as Wolf Creek Reservoir.

Gage.--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.

Extremes.--1950-60: Maximum contents, 2,505,800 cfs-days Dec. 23, 1951 (elevation, 741.32 ft); minimum (after first filling), 934,400 cfs-days Jan. 1, 1956 (elevation, 673.01 ft).

Remarks.--Reservoir is formed by earth embankment and concrete gravity dam surmounted by 10 tainter 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.

Cooperation.--Records furnished by Corps of Engineers, U.S. Army.

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Contents, in thousands of cfs-days, on last day of month, of Lake Cumberland near Jamestown, Ky.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1950	-	-	-	-	-	-	‡4.4	‡12.1	‡5.6	‡27.8	‡30.0	‡38.7
1951	44.4	177.5	426.2	932.4	1,806.4	2,140.7	2,061.3	2,019.5	2,035.3	2,021.8	1,990.2	2,017.0
1952	1,951.1	2,115.0	2,350.7	2,165.9	1,976.4	2,324.9	1,928.9	1,899.8	1,555.8	1,382.3	1,328.4	1,280.4
1953	1,217.7	1,224.7	1,111.5	1,429.5	1,616.2	1,782.9	1,682.2	1,965.3	1,674.5	1,616.2	1,466.2	1,386.7
1954	1,326.7	1,242.5	1,074.6	1,358.5	1,386.1	1,659.0	1,822.6	1,749.6	1,674.9	1,606.4	1,502.2	1,401.4
1955	1,309.7	1,163.4	1,263.0	1,056.7	1,541.9	2,401.5	1,906.9	1,753.9	1,624.8	1,607.5	1,507.3	1,374.6
1956	1,229.2	1,018.4	936.2	1,151.2	2,128.8	2,044.4	2,094.5	1,933.9	1,765.3	1,841.1	1,689.4	1,480.6
1957	1,337.8	1,191.5	1,417.5	1,981.2	2,136.8	1,822.3	1,936.2	1,925.5	1,976.1	1,674.0	1,513.0	1,479.3
1958	1,334.4	1,559.5	1,814.6	1,512.3	1,481.9	1,793.2	2,200.4	2,050.6	1,883.3	1,750.6	1,654.6	1,477.8
1959	1,242.1	1,212.5	1,051.2	1,291.9	1,604.3	1,829.8	1,947.1	1,957.1	1,866.7	1,815.8	1,698.0	1,604.8
1960	1,440.4	1,438.6	1,573.1	1,444.4	1,817.0	1,984.4	1,869.6	1,850.4	2,036.3	1,831.0	1,546.4	1,399.3

‡ Not published in WSP 1306.
Note.--Contents at 12 p.m.

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 Rowena, 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 (1939-60), 8,714 cfs (adjusted for storage).

Extremes.--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.--Flow regulated since July 1950 by Lake Cumberland. Records of chemical analyses for the period November 1950 to September 1951 are published in WSP 1197.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,142	5,200	6,253	2,578	7,660	12,290	19,450	6,259	1,263	1,901	1,251	274	5,431
1952	2,757	11,050	27,770	31,870	19,510	22,330	19,320	8,884	14,080	5,586	2,121	1,670	13,910
1953	1,842	1,598	8,720	9,468	10,570	9,275	11,830	6,632	13,010	4,133	4,747	2,370	6,985
1954	1,632	2,540	5,814	8,191	3,566	4,966	4,266	8,286	4,207	2,255	3,175	3,225	4,359
1955	2,848	5,060	8,064	13,840	11,470	18,600	26,840	8,554	6,911	2,020	4,182	4,673	9,389
1956	5,593	8,110	5,433	599	17,520	28,380	22,400	10,670	7,236	1,819	5,924	7,338	10,030
1957	4,839	5,474	10,140	16,370	26,500	21,360	14,730	3,823	2,802	10,720	5,208	4,044	10,410
1958	6,793	10,870	14,440	19,920	14,980	4,148	15,280	25,180	7,763	7,791	6,146	6,885	11,670
1959	8,117	2,745	8,096	6,308	3,460	3,928	11,760	3,610	6,906	3,083	5,138	3,388	5,555
1960	6,305	7,314	14,820	17,150	6,175	15,990	12,250	7,466	8,402	15,830	10,780	6,307	10,780

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	13,170	14,340	33.62
1951	1206	29,700	Apr. 5, 1951	0	5,431	10,850	1.87	25.44	7,876	13,150	30.83
1952	1236	39,800	Jan. 9, 1952	82	13,910	11,890	2.05	27.96	11,440	8,055	18.94
1953	1276	22,900	Apr. 13, 1953	102	6,985	7,276	1.26	17.06	6,798	6,697	15.70
1954	1336	22,000	May 8, 1954	61	4,359	4,399	.760	10.31	4,860	5,376	12.60
1955	1386	34,700	Apr. 8, 1955	51	9,389	9,316	1.61	21.84	9,649	8,754	20.52
1956	1436	31,100	Mar. 15, 1956	68	10,030	10,320	1.78	24.26	10,150	11,460	26.95
1957	1506	27,500	Feb. 22, 1957	82	10,410	10,410	1.80	24.41	11,380	12,470	29.24
1958	1556	26,900	Apr. 28, 1958	100	11,670	11,670	2.02	27.36	10,580	8,487	19.90
1959	1626	25,300	Apr.16-17,1959	60	5,555	5,903	1.02	13.84	6,348	7,777	18.23
1960	1706	25,400	June 28, 1960	117	10,780	10,220	1.77	24.02	-	-	-

a Adjusted for change in contents in Lake Cumberland.

4145. East Fork Obey River near Jamestown, Tenn.

Location (revised).--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 (revised).--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 (1942-60), 388 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	32.3	224	390	889	1,360	863	815	249	43.4	77.2	19.3	15.1	409
1952	17.7	497	1,656	983	552	969	292	144	211	16.8	12.2	10.7	448
1953	5.81	11.2	45.3	688	935	759	473	543	80.1	33.7	25.4	7.18	297
1954	5.22	8.05	31.4	1,190	331	742	568	243	157	16.6	11.0	9.04	277
1955	23.4	13.4	648	302	1,125	1,743	595	129	370	57.6	48.1	32.2	420
1956	37.0	88.4	267	586	1,900	808	1,053	163	34.7	76.6	22.6	15.5	414
1957	10.2	14.1	517	1,284	1,071	484	641	235	505	45.0	14.8	31.6	400
1958	122	973	901	407	390	610	859	817	28.4	61.0	65.5	99.9	444
1959	38.1	106	141	533	735	762	615	110	86.8	21.8	40.5	45.4	266
1960	38.4	331	926	539	698	802	319	390	170	403	47.9	93.5	397

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.18	1.24	2.22	5.07	7.01	4.93	4.50	1.42	0.24	0.44	0.11	0.08	27.44
1952	.10	2.75	9.45	5.61	2.95	5.53	1.61	.82	1.16	.10	.07	.06	30.21
1953	.03	.06	.26	3.92	4.82	4.33	2.61	3.10	.44	.19	.15	.04	19.95
1954	.03	.04	.18	6.79	1.71	4.24	3.14	1.39	.87	.10	.06	.05	18.60
1955	.13	.07	3.70	1.72	5.80	9.95	3.28	.74	2.04	.33	.27	.18	28.21
1956	.21	.49	1.52	3.35	10.14	4.61	5.82	.93	.19	.44	.13	.09	27.92
1957	.06	.08	2.95	7.33	5.52	2.76	3.54	1.34	2.79	.26	.08	.17	26.88
1958	.70	5.38	5.14	2.32	2.01	3.48	4.74	4.66	.16	.35	.37	.55	29.86
1959	.22	.58	.80	3.04	3.79	4.35	3.40	.63	.48	.12	.23	.25	17.89
1960	.22	1.83	5.29	3.07	3.73	4.58	1.76	2.23	.94	2.30	.27	.52	26.74

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	571	38.40
1951	1206	15,400	Jan. 31, 1951	7.9	409	2.02	27.44	537	36.10
1952	1236	19,400	Dec. 8, 1951	5.9	448	2.22	30.21	271	18.26
1953	1276	10,200	Feb. 21, 1953	5.0	297	1.47	19.95	296	19.85
1954	1336	13,400	Jan. 21, 1954	4.0	277	1.37	18.60	331	22.25
1955	1386	26,900	Mar. 21, 1955	4.7	420	2.08	28.21	395	26.53
1956	1436	14,300	Feb. 18, 1956	7.5	414	2.05	27.92	427	28.79
1957	1506	16,900	Jan. 29, 1957	7.5	400	1.98	26.88	521	35.01
1958	1556	14,600	Nov. 18, 1957	14	444	2.20	29.86	301	20.24
1959	1626	8,750	Feb. 14, 1959	12	266	1.32	17.89	352	23.63
1960	1706	15,000	Dec. 19, 1959	9.2	397	1.97	26.74	-	-

4150. West Fork Obey River near Alpine, Tenn.

Location (revised).--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 (revised).--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 (1942-60), 165 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	13.1	72.0	140	380	598	362	361	56.7	23.6	24.6	10.2	8.28	168
1952	8.91	237	691	504	258	444	133	42.2	77.4	9.15	7.25	10.1	202
1953	3.84	7.28	25.7	326	412	353	207	273	36.0	22.8	6.36	7.39	139
1954	4.07	4.61	12.9	461	126	300	200	74.5	27.1	7.33	6.48	7.21	103
1955	16.6	7.01	231	121	524	859	233	44.3	155	24.1	31.7	18.5	187
1956	27.3	38.2	76.8	229	872	340	431	44.0	15.0	16.3	12.0	7.78	173
1957	6.49	7.49	225	565	490	222	212	84.1	127	14.7	7.05	14.6	163
1958	32.8	384	348	189	183	261	428	357	17.4	20.6	22.5	31.2	189
1959	10.2	35.6	32.4	191	297	297	246	37.8	29.6	11.3	14.5	24.8	101
1960	17.6	161	416	235	337	359	114	115	60.8	162	21.9	15.0	168

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.13	0.70	1.40	3.81	5.41	3.63	3.50	0.57	0.23	0.25	0.10	0.08	19.81
1952	.09	2.30	6.92	5.06	2.42	4.45	1.29	.42	.75	.09	.07	.10	23.96
1953	.04	.07	.26	3.27	3.73	3.54	2.01	2.74	.35	.23	.06	.07	16.37
1954	.04	.04	.13	4.62	1.14	3.00	1.94	.75	.26	.07	.06	.07	12.12
1955	.17	.07	2.32	1.21	4.74	8.61	2.26	.44	1.50	.24	.32	.18	22.06
1956	.27	.37	.77	2.30	8.18	3.41	4.18	.44	.15	.16	.12	.08	20.43
1957	.07	.07	2.26	5.66	4.44	2.22	2.06	.84	1.23	.15	.07	.14	19.21
1958	.33	3.72	3.49	1.89	1.66	2.61	4.15	3.58	.17	.21	.23	.30	22.34
1959	.10	.35	.32	1.91	2.69	2.97	2.39	.38	.29	.11	.15	.24	11.90
1960	.18	1.56	4.17	2.36	3.16	3.59	1.11	1.16	.59	1.62	.22	.15	19.87

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	255	30.15
1951	1206	5,440	Jan. 31, 1951	4.7	168	1.46	19.81	228	26.89
1952	1236	7,960	Dec. 14, 1951	3.1	202	1.76	23.96	127	15.02
1953	1276	4,950	Feb. 21, 1953	2.9	139	1.21	16.37	137	16.21
1954	1336	4,400	Jan. 20, 1954	2.6	103	.896	12.12	123	14.47
1955	1386	15,100	Mar. 21, 1955	3.6	187	1.63	22.06	177	20.91
1956	1436	6,900	Feb. 18, 1956	3.5	173	1.50	20.43	181	21.42
1957	1506	9,510	Jan. 29, 1957	3.5	163	1.42	19.21	206	24.35
1958	1556	9,510	Nov. 18, 1957	4.8	189	1.64	22.34	132	15.57
1959	1626	4,140	Feb. 14, 1959	5.6	101	.878	11.90	144	17.04
1960	1706	8,280	Dec. 18, 1959	5.2	168	1.46	19.87	-	-

4160. Wolf River near Byrdstown, Tenn.

Location.--Lat 36°33'40", long 85°04'20", 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 (1942-60), 178 cfs.

Extremes.--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.--Some regulation at low flow caused by small mills above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	21.3	174	248	367	694	496	327	82.5	35.1	48.0	12.9	20.6	207
1952	13.7	292	691	547	288	563	121	65.3	74.1	14.7	10.3	12.4	225
1953	8.51	14.4	44.1	308	373	301	187	260	105	25.7	12.1	9.53	136
1954	6.14	7.86	13.0	416	119	218	234	106	41.4	17.4	9.49	7.97	99.9
1955	10.0	11.5	205	116	540	837	200	69.6	89.6	22.8	13.8	23.4	176
1956	30.7	34.9	80.5	202	980	413	368	75.6	21.6	40.5	11.7	12.4	186
1957	8.66	13.7	368	891	568	255	280	75.7	145	62.4	23.8	57.8	227
1958	37.7	396	420	187	264	312	565	401	32.2	97.4	21.8	35.7	230
1959	16.7	40.6	47.7	205	268	223	290	62.3	94.6	34.5	29.0	26.5	110
1960	42.4	231	453	273	370	409	158	195	263	109	23.2	17.2	212

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.23	1.84	2.72	4.02	6.88	5.45	3.48	0.91	0.37	0.53	0.14	0.22	26.79
1952	.15	3.10	7.58	6.00	2.96	6.19	1.28	.72	.79	.16	.11	.13	29.17
1953	.09	.15	.48	3.38	3.70	3.31	1.99	2.85	1.12	.28	.13	.10	17.58
1954	.07	.08	.14	4.57	1.18	2.39	2.49	1.17	.44	.19	.10	.08	12.90
1955	.11	.12	2.26	1.28	5.35	9.20	2.12	.76	.95	.25	.15	.25	22.80
1956	.34	.37	.88	2.22	10.06	4.53	3.91	.83	.23	.44	.13	.13	24.07
1957	.10	.15	4.04	9.78	5.63	2.80	2.98	.83	1.54	.69	.26	.61	29.41
1958	.41	4.21	4.61	2.05	2.62	3.42	6.00	4.41	.34	1.07	.24	.38	29.76
1959	.18	.43	.52	2.24	2.66	2.45	3.08	.68	1.01	.38	.32	.28	14.23
1960	.47	2.45	4.97	3.00	3.80	4.49	1.67	2.14	2.79	1.20	.25	.18	27.41

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	290	37.49
1951	1206	5,820	Feb. 1, 1951	7.6	207	1.97	26.79	254	32.83
1952	1236	9,160	Dec. 14, 1951	5.5	225	2.14	29.17	147	19.06
1953	1276	4,200	Feb. 21, 1953	3.9	136	1.30	17.58	133	17.15
1954	1336	4,530	Jan. 21, 1954	2.1	99.9	.951	12.90	117	15.10
1955	1386	14,100	Mar. 22, 1955	3.6	176	1.68	22.80	169	21.90
1956	1436	6,970	Feb. 18, 1956	6.9	186	1.77	24.07	207	26.77
1957	1506	22,600	Jan. 29, 1957	6.1	227	2.16	29.41	266	34.35
1958	1556	8,480	Nov. 18, 1957	9.2	230	2.19	29.76	168	21.66
1959	1626	2,160	Jan. 22, 1959	12	110	1.05	14.23	162	20.99
1960	1706	5,670	Dec. 19, 1959	11	212	2.02	27.41	-	-

4165. Dale Hollow Reservoir near Celina, Tenn.

Location.--Lat 36°32'19", long 85°27'05", at Dale Hollow Dam on Obey River, 3 miles east of Celina, Clay County, and 7.3 miles upstream from mouth.

Drainage area.--935 sq mi.

Records available.--August 1943 to September 1960.

Gage.--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.

Extremes.--1943-60: Maximum contents, 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).

Remarks.--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.

Cooperation.--Records furnished by Corps of Engineers.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	537.2	557.1	542.7	549.1	625.0	651.9	653.7	644.7	632.2	598.9	574.1	528.9
1952	492.6	526.1	649.2	685.1	659.5	700.6	630.3	595.9	558.1	540.5	525.2	515.2
1953	500.7	493.7	479.0	539.4	609.0	656.6	648.6	674.4	600.2	575.8	523.5	510.8
1954	500.3	477.8	448.0	524.7	529.8	562.5	619.9	597.5	576.8	569.1	545.8	530.2
1955	513.3	482.6	522.8	488.7	610.5	746.3	633.5	584.4	575.6	552.8	527.4	506.5
1956	483.8	458.3	440.4	498.2	675.5	659.7	667.5	634.7	594.0	596.3	567.9	534.3
1957	510.8	478.7	520.6	655.0	654.3	674.0	668.7	663.2	668.7	614.3	539.7	523.7
1958	493.2	557.5	577.7	540.0	560.6	636.9	689.6	662.7	654.4	610.6	561.2	529.1
1959	488.9	484.5	450.4	478.7	547.4	619.0	663.5	649.4	651.5	627.6	589.1	567.9
1960	527.3	515.5	591.3	582.4	642.2	666.8	657.7	650.9	657.0	661.0	591.7	515.7

4170. Obey River below Dale Hollow Dam, Tenn.

Location.--Lat 36°32'12", long 85°27'22", on right bank 1,200 ft downstream from Dale Hollow Dam, 3 miles east of Celina, Clay County, 7.1 miles upstream from mouth, and 24 miles downstream from Wolf River.

Drainage area.--935 sq mi.

Records available.--October 1938 to September 1958 (discontinued). Published as "near Celina" prior to October 1942 (corrected). Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 500.00 ft above mean sea level, Sandy Hook datum. Jan. 25, 1939, to Nov. 22, 1940, wire-weight gage and Nov. 23, 1940, to Sept. 30, 1942, water-stage recorder, at site 5.2 miles upstream, at datum 12.46 ft higher. Water-stage recorder for station on Cumberland River at Celina is used as an auxiliary gage for this station.

Average discharge.--20 years (1938-58), 1,395 cfs (unadjusted).

Extremes.--1938-58: Maximum discharge, 41,400 cfs Feb. 4, 1939, site and datum then in use, from rating curve extended above 20,000 cfs; maximum gage height, 43.40 ft Jan. 12, 1946 (backwater from Cumberland River); minimum discharge not determined.

Remarks.--Flow completely regulated by Dale Hollow Reservoir, beginning Aug. 30, 1943.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,618	804	2,284	3,412	3,021	3,076	3,185	847	820	1,280	763	1,555	1,883
1952	1,273	1,043	2,418	3,244	3,180	3,578	3,313	1,668	2,030	521	501	393	1,926
1953	376	331	753	828	663	1,286	2,024	1,318	2,926	936	1,526	364	1,111
1954	221	687	1,070	1,356	979	1,038	152	1,390	922	281	691	492	774
1955	548	1,182	992	2,058	973	2,941	5,590	2,018	1,299	891	895	1,061	1,701
1956	1,015	1,160	1,311	298	2,701	4,059	3,719	1,607	1,424	385	953	1,073	1,634
1957	771	1,085	1,485	1,987	4,875	1,478	2,875	918	1,095	2,031	2,408	1,154	1,825
1958	1,323	1,219	2,802	2,893	1,076	1.1	2,609	3,773	461	1,911	1,770	1,443	1,783
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Obey River below Dale Hollow Dam, Tenn.

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	2,313	2,380	34.56
1951	1206	b3,880	Jan. 29, 1951	-	1,883	1,724	1.84	25.02	1,884	2,176	31.59
1952	1236	b4,050	Mar. 24, 1952	-	1,926	1,888	2.02	27.49	1,651	1,185	17.26
1953	1276	4,010	July 3, 1953	-	1,111	1,099	1.18	15.96	1,154	1,069	15.53
1954	1336	5,770	June 10, 1954	-	774	827	.884	12.01	836	1,041	15.11
1955	1386	6,820	Mar. 22, 1955	-	1,701	1,636	1.75	23.76	1,766	1,541	22.37
1956	1436	6,210	Aug. 13, 1956	-	1,634	1,710	1.83	24.89	1,622	1,841	26.80
1957	1506	6,280	Apr. 8, 1957	-	1,825	1,796	1.92	26.08	1,995	2,151	31.23
1958	1556	6,060	Apr. 28, 1958	-	1,783	1,798	1.92	26.10	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-

a Adjusted for change in contents in Dale Hollow Reservoir.
b Maximum daily discharge.

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 (1922-60), 11,280 cfs (unadjusted).

Extremes.--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.--Flow regulated by Lake Cumberland and Dale Hollow Reservoir.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3,018	7,574	9,758	9,094	15,360	17,990	25,690	7,873	2,490	3,329	2,369	2,016	8,821
1952	4,074	14,300	34,870	39,030	25,670	30,360	23,740	10,740	16,360	6,274	2,965	2,036	17,530
1953	2,235	2,122	9,359	12,250	13,360	12,610	15,650	9,626	16,290	5,471	6,901	3,020	9,037
1954	1,948	3,240	7,142	11,890	5,453	7,305	6,457	10,280	5,807	2,941	4,368	4,235	5,937
1955	3,484	6,556	11,090	16,430	17,510	25,900	34,090	10,640	9,429	3,168	4,941	6,116	12,390
1956	6,748	9,522	7,134	3,478	25,670	34,950	28,700	13,350	8,296	2,524	6,746	8,588	12,900
1957	5,444	6,272	13,650	23,170	34,450	25,310	19,610	5,753	4,088	12,440	7,945	5,361	13,510
1958	8,525	13,830	19,930	24,610	18,180	5,094	20,500	30,260	9,170	9,670	8,328	8,275	14,690
1959	9,765	3,355	9,878	8,170	5,312	4,374	13,830	5,604	7,130	3,766	6,503	4,114	6,826
1960	7,828	9,478	16,920	20,850	9,642	20,860	15,020	9,306	10,720	17,780	13,780	10,010	13,560

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	17,130	18,370	34.06
1951	1206	36,600	Apr. 3, 1951	650	8,821	14,080	1.92	26.11	11,600	17,160	31.82
1952	1236	70,900	Mar. 22, 1952	280	17,530	15,480	2.11	28.78	14,210	10,360	19.27
1953	1276	26,200	Feb. 21, 1953	803	9,037	9,317	1.27	17.28	8,917	8,730	16.19
1954	1336	29,200	Apr. 16, 1954	264	5,937	6,030	.824	11.18	6,675	7,396	13.72
1955	1386	63,600	Mar. 22, 1955	488	12,390	12,250	1.67	22.71	12,570	11,450	21.23
1956	1436	52,400	Feb. 18, 1956	240	12,900	13,260	1.81	24.66	13,070	14,610	27.16
1957	1506	66,500	Jan. 29, 1957	513	13,510	13,470	1.84	24.98	14,920	16,170	29.98
1958	1556	44,600	Apr. 28, 1958	470	14,690	14,700	2.01	27.26	13,080	10,640	19.73
1959	1626	26,500	Apr. 15, 1959	186	6,826	7,280	.995	13.50	7,763	9,578	17.76
1960	1706	43,400	June 28, 1960	1,410	13,560	12,860	1.76	23.91	-	-	-

a Adjusted for change in contents in Lake Cumberland and Dale Hollow Reservoir.

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 (revised).--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 (1931-60), 108 cfs.

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

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	16.9	59.5	114	227	421	224	235	45.2	22.7	14.7	11.7	9.58	115
1952	9.61	149	466	334	184	226	74.3	34.9	36.1	10.4	10.8	8.08	132
1953	4.58	6.07	17.8	185	233	224	118	177	36.0	19.4	6.50	10.3	85.9
1954	3.54	4.81	8.10	270	77.7	165	115	53.7	20.8	8.14	6.78	6.28	61.8
1955	9.95	9.18	150	85.2	395	574	145	45.5	93.4	22.6	12.7	14.2	128
1956	16.2	19.4	42.1	120	649	253	334	42.9	25.8	18.0	14.8	11.7	126
1957	6.84	7.74	206	428	376	157	173	68.6	63.1	18.3	9.09	26.9	127
1958	34.9	214	218	120	130	153	301	244	26.5	30.8	17.7	46.2	128
1959	16.5	29.4	36.8	113	217	184	167	46.7	31.8	14.8	13.1	14.5	72.7
1960	16.3	125	276	154	206	235	66.3	60.5	65.2	195	30.4	29.4	122

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.25	0.84	1.67	3.33	5.57	3.27	3.34	0.66	0.32	0.22	0.17	0.14	19.78
1952	.14	2.11	6.82	4.89	2.52	3.89	1.05	.51	.51	.15	.16	.11	22.86
1953	.07	.09	.26	2.72	3.09	3.28	1.68	2.60	.51	.28	.10	.15	14.83
1954	.05	.07	.12	3.96	1.03	2.42	1.63	.79	.30	.12	.10	.09	10.68
1955	.15	.13	2.20	1.25	5.22	8.40	2.06	.67	1.32	.33	.19	.20	22.12
1956	0.24	0.28	0.62	1.76	8.89	3.71	4.74	0.63	0.37	0.26	0.22	0.17	21.89
1957	.10	.11	3.02	6.27	4.98	2.30	2.45	1.01	.89	.27	.13	.38	21.91
1958	.51	3.04	3.20	1.75	1.72	2.24	4.26	3.58	.38	.45	.26	.66	22.05
1959	.24	.42	.54	1.65	2.87	2.70	2.37	.68	.45	.22	.19	.21	12.54
1960	.24	1.77	4.04	2.26	2.82	3.44	.94	.89	.92	2.86	.44	.42	21.04

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	180	30.99
1951	1206	3,480	Feb. 1, 1951	5.6	115	1.46	19.78	151	26.09
1952	1236	3,750	Dec. 15, 1951	4.4	132	1.68	22.86	82.2	14.21
1953	1276	1,700	Feb. 21, 1953	3.6	85.9	1.09	14.83	84.8	14.65
1954	1336	1,960	Jan. 21, 1954	2.4	61.8	.785	10.68	74.8	12.92
1955	1386	5,550	Mar. 22, 1955	3.8	128	1.63	22.12	120	20.78
1956	1436	4,440	Feb. 18, 1956	5.8	126	1.60	21.89	139	23.98
1957	1506	4,830	Jan. 29, 1957	5.0	127	1.61	21.91	147	25.43
1958	1556	2,580	Nov. 19, 1957	5.6	128	1.63	22.05	95.6	16.50
1959	1626	1,720	Feb. 14, 1959	4.3	72.7	.924	12.54	101	17.39
1960	1706	2,540	Dec. 19, 1959	4.3	122	1.55	21.04	-	-

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 (revised).

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 (1940-60), 368 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	61.8	301	372	788	1,365	944	940	206	73.3	132	49.5	39.8	433
1952	42.6	434	1,523	1,007	501	928	286	115	127	53.9	37.5	27.2	425
1953	18.6	26.3	48.2	522	919	736	459	569	92.3	93.9	35.5	22.9	292
1954	15.8	15.6	50.6	1,265	371	666	568	238	152	42.1	32.8	26.5	287
1955	40.4	22.1	459	323	985	1,653	626	173	403	89.0	60.5	26.9	402
1956	41.3	89.0	244	454	1,701	629	756	204	60.7	126	39.9	25.4	358
1957	26.8	24.5	453	1,012	1,288	434	564	156	280	107	40.1	109	368
1958	138	1,268	925	385	376	546	1,101	946	83.0	80.6	71.4	133	504
1959	43.8	85.8	119	638	646	704	571	140	84.7	60.1	101	217	282
1960	88.0	408	1,005	651	660	866	303	308	93.7	178	65.1	153	399

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.40	1.89	2.41	5.10	7.98	6.11	5.89	1.34	0.46	0.85	0.32	0.25	33.00
1952	.28	2.72	9.86	6.52	3.04	6.01	1.79	.75	.80	.35	.24	.17	32.53
1953	.12	.16	.31	3.38	5.38	4.76	2.88	3.69	.58	.61	.23	.14	22.24
1954	.10	.10	.33	8.19	2.17	4.31	3.56	1.54	.95	.27	.21	.17	21.91
1955	.26	.14	2.97	2.09	5.76	10.71	3.92	1.12	2.53	.58	.39	.17	30.64
1956	.27	.56	1.58	2.94	10.30	4.07	4.74	1.32	.38	.82	.26	.16	27.40
1957	.17	.15	2.93	6.55	7.54	2.81	3.53	1.01	1.75	.70	.26	.69	28.09
1958	.89	7.94	5.99	2.50	2.20	3.54	6.90	6.13	.52	.52	.46	.83	38.42
1959	.28	.54	.77	4.13	3.78	4.56	3.58	.91	.53	.39	.65	1.36	21.48
1960	.57	2.56	6.51	4.21	4.00	5.61	1.90	2.00	.59	1.15	.42	.96	30.48

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	552	42.09
1951	1206	8,950	Feb. 1, 1951	31	433	2.43	33.00	540	41.16
1952	1236	8,580	Dec. 15, 1951	22	425	2.39	32.53	265	20.26
1953	1276	5,050	Feb. 21, 1953	14	292	1.64	22.24	291	22.18
1954	1336	8,860	Jan. 21, 1954	12	287	1.61	21.91	325	24.75
1955	1386	11,000	Mar. 22, 1955	17	402	2.26	30.84	389	29.68
1956	1436	7,970	Feb. 18, 1956	21	358	2.01	27.40	369	28.24
1957	1506	8,170	Jan. 29, 1957	18	368	2.07	28.09	520	39.66
1958	1556	9,280	Nov. 19, 1957	28	504	2.83	38.42	330	25.19
1959	1626	5,930	Jan. 21 or 22	33	282	1.58	21.48	387	29.53
1960	1706	7,410	Dec. 19, 1959	44	399	2.24	30.48	-	-

4205. Barren Fork near Trousdale, Tenn.

Location.--Lat 35°39'55", long 85°53'00", on left bank 15 ft downstream from highway bridge on Trousdale-McMinnville pike, 3¼ miles east of Trousdale, Warren County, 4.5 miles downstream from Bullpen Creek, 6 miles west of McMinnville, 6.2 miles upstream from Hickory Creek, and at mile 16.6.

Drainage area.--132 sq mi.

Records available.--June 1932 to September 1957. Water years 1958-60 (annual maximum). Prior to October 1932, published as "near McMinnville."

Gage.--Crest-stage gage. Datum of gage is 925.61 ft above mean sea level, datum of 1929. Prior to May 27, 1940, staff gage at site 200 ft downstream at same datum. May 27, 1940, to Sept. 30, 1957, water-stage recorder at present site and datum.

Average discharge.--25 years (1932-57), 218 cfs.

Extremes.--1932-60: Maximum discharge, 32,000 cfs Feb. 13, 1948 (gage height, 16.99 ft), from rating curve extended above 9,300 cfs on basis of slope-area and contracted-opening measurements of peak flow.
1932-57: Minimum discharge, 32 cfs Oct. 13, 1941; minimum gage height, 0.98 ft Sept. 22, 23, 1941.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	60.5	137	135	371	894	479	496	174	131	78.5	66.7	68.3	253
1952	64.1	184	863	582	307	556	185	94.6	153	59.7	54.6	51.0	264
1953	44.5	48.7	62.6	252	549	373	293	289	114	115	56.5	47.7	185
1954	41.0	40.4	54.3	726	219	328	374	231	154	59.1	59.5	41.2	194
1955	41.0	38.6	291	175	510	846	381	161	173	78.0	67.2	56.5	233
1956	58.6	129	179	336	886	280	360	130	84.7	111	87.1	55.2	222
1957	51.6	53.8	281	688	846	325	223	122	94.0	75.6	59.4	80.1	238
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.53	1.16	1.18	3.24	7.05	4.18	4.19	1.52	1.11	0.69	0.58	0.58	26.01
1952	.56	1.55	7.53	5.08	2.51	4.86	1.56	.83	1.30	.52	.48	.43	27.21
1953	.39	.41	.55	2.20	4.33	3.26	2.48	2.52	.96	1.01	.49	.40	19.00
1954	.36	.34	.47	6.34	1.72	2.86	3.16	2.02	1.30	.52	.52	.35	19.96
1955	.36	.33	2.54	1.53	4.02	7.39	3.22	1.41	1.46	.68	.59	.48	24.01
1956	.51	1.09	1.57	2.93	7.24	2.44	3.04	1.14	.72	.97	.76	.47	22.88
1957	.45	.46	2.46	6.01	6.68	2.83	1.89	1.07	.79	.66	.52	.68	24.50
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	303	31.17
1951	1206	14,300	Feb. 1, 1951	46	253	1.92	26.01	319	32.78
1952	1236	11,900	Dec. 8, 1951	45	264	2.00	27.21	183	18.92
1953	1276	5,360	Feb. 12, 1953	41	185	1.40	19.00	183	18.82
1954	1336	9,020	Jan. 21, 1954	36	194	1.47	19.96	214	22.02
1955	1386	29,900	Mar. 21, 1955	34	233	1.77	24.01	233	23.95
1956	1436	8,580	Jan. 30, 1956	47	222	1.68	22.88	224	23.08
1957	1506	8,600	Jan. 28, 1957	47	238	1.80	24.50	-	-
1958	1556	9,920	November 1957	-	-	-	-	-	-
1959	1626	9,750	Jan. 22, 1959	-	-	-	-	-	-
1960	1706	5,950	May 8, 1960	-	-	-	-	-	-

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, 1⅞ 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 (1924-60), 1,126 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	154	645	939	2,064	4,533	2,907	2,566	770	426	289	145	145	1,276
1952	121	917	3,946	2,784	1,693	2,641	819	350	947	153	129	140	1,223
1953	73.4	88.4	268	1,882	3,343	1,857	1,355	1,608	250	247	134	106	903
1954	68.5	70.2	275	4,027	1,005	1,667	1,739	1,154	400	137	194	83.0	904
1955	133	77.2	1,620	1,166	2,930	4,239	2,990	871	960	256	195	97.0	1,284
1956	104	487	1,160	1,221	5,292	1,922	2,234	551	227	803	158	137	1,174
1957	89.5	87.7	1,760	2,900	5,239	1,504	1,733	612	437	160	103	227	1,212
1958	701	4,286	2,847	1,272	1,519	1,346	2,626	2,263	315	671	371	249	1,535
1959	129	255	320	1,487	1,682	1,642	1,748	475	403	533	608	846	837
1960	198	676	2,937	1,788	2,181	2,603	977	864	240	286	192	506	1,119

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.28	1.15	1.74	3.81	7.56	5.37	4.59	1.42	0.76	0.53	0.27	0.26	27.74
1952	.22	1.64	7.29	5.14	2.93	4.88	1.46	.65	1.69	.28	.24	.25	26.67
1953	.14	.16	.50	3.11	5.58	3.43	2.42	2.97	.45	.46	.25	.19	19.66
1954	.13	.13	.51	7.44	1.68	3.08	3.11	2.13	.71	.25	.36	.15	19.68
1955	.25	.14	2.99	2.16	4.89	7.83	5.35	1.61	1.72	.47	.36	.17	27.94
1956	.19	.87	2.14	2.26	9.15	3.55	3.99	1.02	.41	1.48	.29	.25	25.60
1957	.17	.16	3.25	5.36	8.74	2.78	3.10	1.13	.78	.29	.19	.41	26.36
1958	1.30	7.66	5.26	2.35	2.54	2.49	4.70	4.18	.56	1.24	.69	.44	33.41
1959	.24	.46	.59	2.75	2.81	3.03	3.13	.88	.72	.98	1.12	1.51	18.22
1960	.37	1.21	5.43	3.30	3.77	4.81	1.75	1.60	.43	.49	.35	.90	24.41

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,566	34.05
1951	1206	33,200	Feb. 1, 1951	98	1,276	2.04	27.74	1,551	33.72
1952	1236	18,500	Dec. 8, 1951	93	1,223	1.96	26.67	840	18.32
1953	1276	19,000	Feb. 12, 1953	58	903	1.45	19.66	901	19.63
1954	1336	27,300	Jan. 22, 1954	61	904	1.45	19.68	1,025	22.29
1955	1386	47,500	Mar. 22, 1955	71	1,284	2.06	27.94	1,276	27.76
1956	1436	21,200	Feb. 4, 1956	75	1,174	1.88	25.60	1,190	25.98
1957	1506	32,200	Feb. 1, 1957	77	1,212	1.94	26.36	1,701	37.00
1958	1556	33,000	Nov. 19, 1957	114	1,535	2.46	33.41	941	20.48
1959	1626	11,700	Jan. 22, 1959	102	837	1.34	18.22	1,100	23.94
1960	1706	21,700	Dec. 19, 1959	116	1,119	1.79	24.41	-	-

4220. Great Falls Lake near Rock Island, Tenn.

Location.--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 (revised) northwest of Rock Island, Warren County, 2.4 miles upstream from Great Falls Dam on Caney Fork, and at mile 2.3.

Drainage area.--1,640 sq mi, approximately.

Records available.--January 1917 to September 1960. Prior to October 1953, published as Great Falls Reservoir.

Gage.--Remote indicator gage. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--1917-60: Maximum 12 p.m. elevation, 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).

Remarks.--Reservoir is formed by concrete gravity dam. Spillway is equipped with 18 tainter 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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	11.0	26.0	12.4	28.5	28.3	28.0	28.5	11.7	13.9	11.5	10.8	11.8
1952	11.7	21.7	28.0	28.4	23.1	25.4	12.4	12.8	12.0	11.0	11.5	11.2
1953	11.0	11.1	11.0	28.2	28.0	25.1	24.5	18.7	11.3	11.1	3.2	4.1
1954	7.1	10.1	10.7	28.1	27.7	27.9	27.2	10.8	11.2	11.0	10.9	11.7
1955	11.2	11.3	27.3	16.0	28.4	28.2	26.7	15.8	13.2	11.7	11.1	11.0
1956	11.1	11.3	10.6	28.1	28.4	18.2	18.4	11.0	11.1	11.7	10.6	11.0
1957	11.2	10.8	22.7	27.8	28.3	16.2	17.2	10.9	11.2	11.0	11.0	12.0
1958	12.0	28.5	27.6	27.9	13.0	28.3	28.0	10.7	12.5	13.8	11.3	14.0
1959	14.1	15.4	11.1	23.4	25.2	28.4	23.9	16.2	11.3	21.3	12.8	11.8
1960	11.2	28.1	28.0	25.6	28.4	28.1	15.0	13.0	14.1	16.6	13.0	19.6

Note.--Contents at 12 p.m.

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.--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.--Flow regulated by Great Falls Lake since Dec. 8, 1916.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	473	1,155	3,211	5,252	11,160	8,049	7,468	2,784	738	838	346	274	3,428
1952	267	2,312	10,550	7,464	4,566	7,304	2,668	1,132	2,732	467	280	273	3,343
1953	164	179	535	3,782	8,266	5,403	3,980	4,690	957	744	730	235	2,437
1954	37.2	40.6	633	10,350	3,189	5,728	5,032	3,845	957	332	335	169	2,560
1955	310	167	3,880	3,576	7,448	10,900	6,849	2,656	2,904	757	510	216	3,323
1956	229	1,379	3,316	3,080	13,740	5,564	6,496	2,285	569	1,407	361	230	3,175
1957	186	244	5,019	7,446	12,610	4,374	4,735	1,902	1,746	478	233	552	3,233
1958	1,303	9,575	7,260	3,215	4,186	3,604	7,274	6,397	709	1,066	782	467	3,809
1959	280	476	897	3,405	4,789	4,631	4,976	1,928	1,713	1,205	1,869	2,140	2,339
1960	531	1,779	7,737	4,785	5,618	6,735	3,046	2,509	537	820	592	1,089	2,982

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	4,250	4,213	34.87
1951	1206	75,600	Feb. 1, 1951	25	3,428	3,418	2.08	28.29	4,129	4,171	34.53
1952	1236	52,400	Dec. 15, 1951	25	3,343	3,341	2.04	27.73	2,311	2,264	18.79
1953	1276	46,100	Feb. 12, 1953	36	2,437	2,417	1.47	20.01	2,423	2,422	20.05
1954	1336	65,600	Jan. 22, 1954	32	2,560	2,580	1.57	21.36	2,869	2,914	24.12
1955	1386	89,700	Mar. 22, 1955	43	3,323	3,321	2.02	27.49	3,367	3,322	27.49
1956	1436	54,400	Jan. 30, 1956	36	3,175	3,175	1.94	26.35	3,223	3,256	27.02
1957	1506	68,600	Feb. 1, 1957	38	3,233	3,236	1.97	26.78	4,285	4,299	35.58
1958	1556	75,600	Nov. 19, 1957	39	3,809	3,815	2.33	31.58	2,434	2,389	19.77
1959	1626	34,000	Jan. 22, 1959	37	2,339	2,333	1.42	19.31	3,049	3,095	25.62
1960	1706	57,400	Dec. 19, 1959	30	2,982	3,003	1.83	24.93	-	-	-

a Adjusted for change in contents in Great Falls Lake.

4230. Falling Water River near Cookeville, Tenn.

Location (revised).--Lat 36°04'38", long 85°31'17", on left bank at old Burgess Mill site, 0.6 mile upstream from Post Oak Creek and 6.0 miles south of courthouse in Cookeville, Putnam County.

Drainage area.--67.0 sq mi (includes 21.1 sq mi without surface drainage).

Records available.--June 1932 to September 1956.

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

Average discharge.--24 years (1932-56), 112 cfs.

Extremes.--1932-56: Maximum discharge, 5,420 cfs Mar. 22, 1955 (gage height, 23.65 ft, from high-water mark on gage section); minimum observed, 0.9 cfs Oct. 15, 1936; minimum gage height observed, 1.08 ft (corrected) Aug. 25, 1934.
Floods of June 28, 1928, and Mar. 23, 1929, reached stages of 24.1 ft (discharge, 5,630 cfs) and 23.5 ft (discharge, 5,330 cfs), from floodmarks, respectively.

Remarks.--Low flow affected by storage in Cookeville City Lake. Some diurnal fluctuation at low flow caused by Burgess Mill, prior to 1953.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	15.2	104	141	253	476	242	262	57.1	19.5	30.6	8.74	8.55	132
1952	9.24	154	583	317	154	280	74.7	25.3	22.4	9.34	12.5	5.91	138
1953	3.37	4.87	12.2	242	318	261	131	105	29.4	54.8	10.8	10.6	97.4
1954	4.85	5.02	13.4	480	99.6	195	141	44.0	57.8	10.1	6.59	7.78	89.1
1955	12.5	6.91	180	111	383	650	211	58.9	138	24.3	11.1	8.99	148
1956	8.75	20.9	46.5	145	581	286	229	41.9	17.1	44.4	11.4	5.40	118
1957	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.26	1.73	2.43	4.35	7.40	4.17	4.36	0.98	0.32	0.53	0.15	0.14	26.82
1952	.16	2.57	10.03	5.45	2.48	4.82	1.24	.43	.37	.16	.21	.10	28.02
1953	.06	.08	.21	4.17	4.94	4.50	2.18	1.80	.49	.94	.19	.18	19.74
1954	.08	.08	.23	8.26	1.55	3.35	2.35	.76	.96	.17	.11	.13	18.03
1955	.21	.12	3.10	1.91	5.96	11.19	3.51	1.01	2.30	.42	.19	.15	30.07
1956	.15	.35	.80	2.50	9.36	4.92	3.81	.72	.28	.76	.20	.09	23.94
1957	-	-	-	-	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Note.--Runoff for water years 1951-55 recomputed on basis of revised drainage area.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	192	38.79
1951	1206	4,050	Feb. 1, 1951	2.8	132	1.97	26.82	174	35.16
1952	1236	3,650	Dec. 8, 1951	3.0	138	2.06	28.02	76.9	15.61
1953	1276	1,820	Feb. 21, 1953	2.8	97.4	1.45	19.74	97.6	19.78
1954	1336	3,560	Jan. 22, 1954	2.6	89.1	1.33	18.03	104	21.07
1955	1386	5,420	Mar. 22, 1955	4.2	148	2.21	30.07	138	27.94
1956	1436	3,020	Feb. 18, 1956	3.6	118	1.76	23.94	-	-
1957	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-

4240. Center Hill Reservoir near Smithville, Tenn.

Location.--Lat 36°05'48", long 85°49'38", at Center Hill Dam on Caney Fork, 10 miles north of Smithville, De Kalb County, 14 miles southeast of Carthage, and at mile 26.6.

Drainage area.--2,195 sq mi.

Records available.--October 1948 to September 1960.

Gage.--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.

Extremes.--1948-60: Maximum contents, 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).

Remarks.--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 and 648.0 ft (crest of spillway) is reserved for flood control, and 248,000 cfs-days between elevations 648.0 and 618.0 ft (ordinary minimum pool) is used for power production. Reservoir is used for navigation, flood control, and power.

Cooperation.--Records furnished by Corps of Engineers.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	791.6	678.6	646.6	667.4	680.0	708.9	657.8	651.4	599.3	551.9	538.3	517.4
1952	447.2	479.5	634.4	681.9	601.9	630.3	592.0	566.7	508.9	514.0	523.8	532.0
1953	534.5	557.9	446.3	534.2	654.8	626.3	602.4	655.9	599.7	607.1	564.6	554.2
1954	536.6	505.9	465.6	†669.0	601.4	640.3	616.5	609.9	601.1	586.7	568.6	554.3
1955	551.6	511.6	585.8	494.9	645.2	720.1	596.2	569.8	585.6	575.7	583.0	536.7
1956	515.7	500.4	470.0	528.6	663.9	608.4	606.0	583.2	577.2	581.5	576.4	556.5
1957	552.4	498.1	525.1	684.5	618.1	600.5	640.7	635.8	636.8	600.4	590.2	576.4
1958	543.2	666.5	573.5	501.5	546.3	623.0	707.6	667.6	641.6	611.6	608.1	578.9
1959	549.0	523.2	452.8	512.3	563.5	630.9	640.2	643.7	634.4	644.2	625.2	607.4
1960	560.3	542.7	587.3	508.6	†588.0	639.3	613.4	627.4	606.5	633.5	588.7	580.0

† Corrected.

4245. Caney Fork below Center Hill Dam, near Lancaster, Tenn.

Location.--Lat 36°06'10", long 85°50'40", on left bank 1.1 miles downstream from Center Hill Dam, 2 miles south of Lancaster, Smith County, 4.7 miles upstream from Indian Creek, 10 miles north of Smithville, and at mile 25.5.

Drainage area.--2,200 sq mi, approximately.

Records available.--October 1922 to September 1958. Published as "near Silver Point" October 1922 to June 1948 and as "near Lancaster" May 1944 to September 1950; records published for both sites May 1944 to June 1948. Prior to November 1922 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 469.00 ft above mean sea level, Sandy Hook datum (levels by Corps of Engineers). Nov. 23, 1922 (corrected), to July 28, 1926, staff gage and July 29, 1926, to Feb. 3, 1939, water-stage recorder at site 19.4 miles upstream at datum 30.60 ft higher. Feb. 4, 1939, to June 17, 1948, water-stage recorder at site 16.1 miles upstream at datum 27.44 ft higher. May 27, 1944, to Sept. 30, 1950, water-stage recorder at site 7.7 miles downstream at datum 6.62 ft lower.

Average discharge.--36 years (1922-58), 3,807 cfs (unadjusted).

Extremes.--1922-58: Maximum discharge, 178,000 cfs Mar. 23, 1929, from rating curve extended above 94,000 cfs on basis of slope-area measurement of peak flow; maximum gage height, 60.1 ft (corrected), Mar. 23, 1929, from floodmarks, site and datum then in use; minimum daily discharge, 12 cfs Oct. 1-18, 20-22, 1950.
Maximum stage known, that of Mar. 23, 1929, which at present site was about 61 ft, from flood profile by Corps of Engineers.

Remarks.--Flow regulated by Great Falls Lake and Center Hill Reservoir.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	12.6	5,743	5,152	6,947	14,770	8,793	11,380	3,195	2,685	2,522	839	1,024	5,177
1952	2,602	2,019	9,693	8,466	8,429	8,837	4,160	2,100	5,383	300	41.8	40.1	4,333
1953	52.4	128	3,529	2,143	6,192	7,945	5,390	3,599	2,898	755	1,936	541	2,906
1954	508	938	1,959	7,521	6,700	5,882	6,745	4,483	1,489	814	988	757	3,212
1955	504	1,583	2,797	7,406	4,513	13,160	12,960	3,951	3,086	1,261	367	1,939	4,456
1956	984	2,113	4,770	2,304	14,080	9,105	8,104	3,385	862	1,564	569	844	4,025
1957	364	2,048	5,325	4,885	18,570	6,066	4,538	2,408	2,193	1,752	559	1,381	4,074
1958	2,673	8,498	12,720	6,753	3,424	2,195	6,410	9,012	1,879	2,513	1,044	1,849	4,929
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Caney Fork below Center Hill Dam, near Lancaster, Tenn.

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	4,792	5,890	36.34
1951	1206,1276	25,900	Feb. 7, 1951	12	5,177	4,467	2.03	27.57	5,477	5,486	33.85
1952	1236	18,500	Dec. 15, 1951	30	4,333	4,371	1.99	27.04	3,440	2,879	17.81
1953	1276	13,200	Feb. 21, 1953	33	2,906	2,948	1.34	18.19	2,878	2,930	18.08
1954	1336	31,600	Jan. 25, 1954	44	3,212	3,233	1.47	19.95	3,335	3,710	22.89
1955	1386	30,900	Mar. 29, 1955	43	4,456	4,405	2.00	27.18	4,707	4,344	26.81
1956	1436	31,100	Feb. 21, 1956	43	4,025	3,960	1.80	24.50	4,003	4,187	25.90
1957	1506	30,400	Feb. 4, 1957	42	4,074	4,131	1.88	25.49	5,428	5,574	34.39
1958	1556	22,000	Nov. 20, 1957	50	4,929	4,941	2.25	30.49	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-

a Adjusted for change in contents in Great Falls Lake and Center Hill Reservoir.

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 (1922-60), 17,070 cfs (unadjusted).

Extremes.--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.--Flow regulated by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3,082	15,080	17,140	20,710	36,350	30,900	41,140	12,480	5,846	6,175	3,185	3,416	16,130
1952	6,805	18,990	50,680	51,530	37,900	43,700	29,140	13,470	23,250	6,975	3,338	2,331	23,990
1953	2,438	2,533	12,460	18,090	22,790	23,480	23,060	16,250	20,070	6,985	9,483	4,148	13,420
1954	2,390	3,933	8,890	24,080	13,690	15,650	15,080	15,260	7,413	3,611	5,168	4,923	10,000
1955	4,138	7,902	16,470	23,770	28,950	45,350	48,730	15,310	14,600	4,778	5,026	7,991	18,490
1956	7,987	11,810	12,670	8,494	47,660	46,980	39,970	17,560	9,622	4,707	7,124	9,495	18,530
1957	5,814	8,243	21,700	32,920	58,120	33,610	26,000	9,426	7,180	14,010	8,900	7,673	19,230
1958	12,810	25,060	35,170	33,550	24,380	10,070	30,910	40,960	11,550	12,310	10,240	10,920	21,490
1959	11,400	5,529	14,050	12,650	13,000	11,290	22,230	8,686	10,050	5,583	10,190	7,844	11,020
1960	10,380	14,650	29,510	32,260	17,020	31,640	20,550	12,070	13,090	18,480	15,270	11,460	18,920

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	24,400	26,730	33.91
1951	1206	72,900	Feb. 1, 1951	851	16,130	20,680	1.93	26.23	19,610	25,190	31.95
1952	1236	87,100	Dec. 15, 1951	1,460	23,990	21,980	2.05	27.96	19,040	14,630	18.61
1953	1276	50,900	Feb. 21, 1953	968	13,420	13,740	1.28	17.43	13,220	13,090	16.61
1954	1336	61,400	Jan. 22, 1954	798	10,000	10,120	.946	12.83	11,120	12,220	15.50
1955	1386	103,000	Mar. 22, 1955	1,080	18,490	18,300	1.71	23.21	18,810	17,330	21.98
1956	1436	91,800	Feb. 18, 1956	552	18,530	18,950	1.77	24.10	18,810	20,530	26.12
1957	1506	95,000	Jan. 29, 1957	682	19,230	19,250	1.80	24.42	22,350	23,740	30.12
1958	1556	82,200	Apr. 29, 1958	3,240	21,490	21,520	2.01	27.29	17,970	15,160	19.23
1959	1626	36,900	Apr. 15, 1959	2,000	11,020	11,550	1.08	14.65	13,000	15,230	19.32
1960	1706	58,000	Dec. 19, 1959	4,420	18,920	18,160	1.70	23.10	-	-	-

a Adjusted for change in contents in Lake Cumberland (since August 1950), Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir.

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 3.4 miles southeast of the square in 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 (1954-60), 59.6 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	14.6	1.74	113	39.5	238	277	58.1	26.0	22.2	2.88	0.402	20.7	67.0
1956	6.22	19.5	37.6	118	303	87.4	87.5	8.60	.326	1.42	1.08	.040	54.8
1957	.042	1.13	153	222	165	76.4	74.8	27.0	43.2	.184	0	27.3	65.3
1958	40.4	141	114	55.5	38.3	81.4	214	74.1	5.52	38.3	13.8	34.4	70.9
1959	.83	21.7	19.3	72.8	98.4	73.5	54.9	6.24	1.61	9.92	31.2	28.1	34.4
1960	19.4	90.8	163	82.2	139	136	27.0	3.93	90.7	25.0	1.33	6.00	65.1

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	0.48	0.05	3.70	1.29	7.03	9.04	1.84	0.85	0.70	0.09	0.01	0.66	25.74
1956	.20	.62	1.23	3.85	9.25	2.85	2.77	.28	.01	.05	.04	.001	21.15
1957	.001	.04	5.00	7.25	4.86	2.49	2.37	.88	1.36	.006	0	.86	25.12
1958	1.32	4.46	3.74	1.81	1.13	2.66	6.75	2.42	.17	1.25	.45	1.09	27.25
1959	.03	.69	.63	2.38	2.90	2.40	1.74	.20	.05	.32	1.02	.89	13.25
1960	.63	2.87	5.32	2.68	4.25	4.43	.85	.13	2.87	.82	.04	.19	25.08

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1386	7,980	Mar. 21, 1955	0.03	67.0	1.90	25.74	61.3	23.56
1956	1436	6,860	Feb. 18, 1956	0	54.8	1.55	21.15	62.6	24.14
1957	1506	4,720	Dec. 14, 1956	0	65.3	1.85	25.12	77.0	29.60
1958	1556	4,480	Apr. 27, 1958	.1	70.9	2.01	27.25	49.6	19.08
1959	1626	2,140	Feb. 14, 1959	.1	34.4	.975	13.25	53.9	20.72
1960	1706	5,020	June 17, 1960	.03	65.1	1.84	25.08	-	-

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 (1954-60), 24.8 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	1.09	0.78	12.6	7.61	66.4	112	22.7	10.1	3.11	0.49	0.531	0.627	19.6
1956	.85	3.26	2.98	60.1	108	41.7	54.8	25.8	2.35	1.74	.227	.199	24.8
1957	.398	.95	13.1	115	77.9	40.8	74.7	27.2	12.0	2.01	2.02	3.55	30.5
1958	6.17	109	74.4	39.8	25.9	52.1	63.0	45.3	3.30	15.7	7.76	2.52	37.1
1959	1.33	5.18	5.48	35.5	60.6	26.5	20.0	6.24	5.96	.96	2.02	4.82	14.2
1960	3.28	18.5	57.0	28.9	69.7	54.4	21.3	6.34	6.97	3.79	.40	1.72	22.6

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	0.07	0.05	0.75	0.46	3.60	6.75	1.32	0.61	0.18	0.03	0.03	0.04	13.89
1956	.05	.19	.18	3.61	6.06	2.50	3.19	1.55	.14	.10	.01	.01	17.59
1957	.02	.06	.78	6.93	4.23	2.45	4.34	1.63	.70	.12	.12	.21	21.59
1958	.37	6.33	4.46	2.39	1.40	3.13	3.66	2.72	.19	.94	.47	.15	26.21
1959	.08	.30	.33	2.13	3.29	1.59	1.16	.37	.35	.06	.12	.28	10.06
1960	.20	1.08	3.42	1.74	3.91	3.27	1.24	.38	.41	.23	.02	.10	16.00

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1436	2,910	Mar. 21, 1955	0.02	19.6	1.02	13.89	19.0	13.44
1956	1436	3,240	Jan. 29, 1956	.03	24.8	1.29	17.59	25.4	18.03
1957	1506	2,900	Jan. 22, 1957	.04	30.5	1.59	21.59	45.1	31.89
1958	1556,1626	3,370	Nov. 18, 1957	.3	37.1	1.93	26.21	22.3	15.76
1959	1626	935	Feb. 14, 1959	.3	14.2	.740	10.06	19.9	14.05
1960	1706	2,940	Dec. 27, 1959	.07	22.6	1.18	16.00	-	-

4263. Old Hickory Lake near Hendersonville, Tenn.

Location.--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, and at mile 216.2.

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

Records available.--May 1954 to September 1960.

Gage.--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.

Extremes.--1954-60: Maximum contents, 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).

Remarks.--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.

Cooperation.--Records furnished by Corps of Engineers.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	34.8	48.2	52.4	48.5	49.9
1955	49.9	50.6	64.4	62.4	61.6	77.6	59.3	60.0	59.5	60.7	59.7	54.7
1956	60.4	61.6	61.4	76.5	65.5	58.2	58.0	63.9	65.8	42.3	61.9	124.4
1957	141.0	144.9	184.8	228.0	195.2	201.6	196.2	208.9	203.1	200.7	198.3	197.6
1958	198.4	211.2	195.5	201.3	199.1	190.6	211.6	198.0	195.9	196.5	200.2	198.6
1959	206.6	209.7	208.0	199.2	205.3	192.8	198.7	204.7	201.7	206.2	205.7	209.0
1960	205.8	192.6	207.6	206.8	208.3	209.8	196.9	196.8	207.8	210.9	206.6	206.0

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 6.2 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. 21, 1957, auxiliary staff gage on lower lock wall.

Average discharge.--24 years (1931-42, 1947-60), 18,220 cfs (unadjusted).

Extremes.--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.--Flow regulated by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, Center Hill Reservoir, and since June 1954 by Old Hickory Lake.

Cooperation.--Discharge for the period June 11, 1954, to Sept. 30, 1956, computed by Corps of Engineers and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3,305	16,620	18,280	24,760	43,930	33,870	45,420	13,070	6,932	6,881	3,132	3,577	18,110
1952	6,703	21,040	60,160	55,970	41,300	49,300	30,230	13,990	23,890	7,065	3,458	2,295	26,280
1953	2,209	2,419	12,250	21,060	26,030	27,000	24,890	19,580	21,180	6,989	9,579	4,009	14,690
1954	2,357	4,113	8,936	28,330	15,920	18,710	18,080	16,500	7,523	3,498	5,638	5,478	11,220
1955	4,700	8,369	18,980	25,310	35,610	51,770	51,710	16,060	15,390	4,847	5,002	8,212	20,370
1956	7,843	11,790	13,170	10,560	55,580	49,210	42,660	18,230	8,850	5,694	6,445	7,508	19,620
1957	5,296	8,257	23,980	38,000	61,700	36,880	30,330	10,180	8,166	13,710	8,881	8,316	20,890
1958	12,170	28,160	39,370	34,560	25,210	12,110	31,720	42,780	12,430	12,450	10,760	11,050	22,730
1959	11,240	5,940	14,630	14,870	16,930	13,690	23,230	9,058	10,240	5,355	10,380	7,781	11,910
1960	10,820	16,030	32,880	35,040	21,690	35,670	22,310	12,470	13,910	19,940	15,880	12,140	20,780

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	27,230	29,560	34.30
1951	1206	83,000	Feb. 2, 1951	1,300	18,110	22,660	1.94	26.29	22,320	27,890	32.36
1952	1236	94,300	Dec. 16, 1951	1,370	26,280	24,260	2.07	28.23	20,310	15,900	18.50
1953	1556	55,700	Feb. 22, 1953	1,190	14,690	15,010	1.28	17.42	14,560	14,430	16.74
1954	1556	68,700	Jan. 22, 1954	700	11,220	11,380	.973	13.20	12,630	13,800	16.01
1955	1556	105,000	Mar. 23, 1955	690	20,370	20,190	1.73	23.43	20,420	18,930	21.96
1956	1556	94,000	Feb. 19, 1956	1,100	19,620	20,230	1.73	23.54	20,030	22,090	25.70
1957	1556	99,200	Jan. 31, 1957	1,600	20,890	21,110	1.80	24.50	24,420	25,840	29.97
1958	1556	85,200	Nov. 18, 1957	200	22,730	22,760	1.95	26.40	18,720	15,940	18.50
1959	1626	58,200	Feb. 15, 1959	3,310	11,190	12,460	1.06	14.46	14,250	16,480	19.12
1960	1706	65,000	Dec. 19, 1959	3,690	20,780	20,010	1.71	23.28	-	-	-

a Adjusted for change in contents in Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir; in Lake Cumberland since August 1950, and in Old Hickory Lake since June 1954.

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 (1954-60), 63.2 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	14.1	1.25	140	50.0	234	285	65.7	27.1	45.8	0.94	1.88	10.1	72.2
1956	15.7	76.0	63.9	140	376	116	70.8	7.29	3.58	5.39	10.7	.130	72.5
1957	.083	.279	147	220	174	67.9	79.7	19.0	48.8	.351	.022	43.5	66.1
1958	38.7	168	102	52.9	62.8	68.5	138	66.1	3.04	16.3	4.97	67.5	65.4
1959	3.16	33.0	13.9	77.1	99.9	110	78.6	22.5	7.96	1.14	69.4	7.90	43.4
1960	6.89	72.8	134	71.6	117	140	20.9	1.89	110	13.6	1.99	23.8	59.3

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	0.43	0.04	4.26	1.52	6.41	8.65	1.93	0.82	1.35	0.03	0.06	0.30	25.80
1956	.48	2.23	1.94	4.26	10.66	3.52	2.08	.22	.11	.16	.32	.004	25.98
1957	.003	.008	4.44	6.66	4.78	2.06	2.34	.58	1.43	.01	.0007	1.28	23.59
1958	1.17	4.93	3.09	1.60	1.72	2.08	4.06	2.01	.09	.49	.15	1.98	23.37
1959	.10	.97	.42	2.34	2.74	3.34	2.31	.68	.23	.03	2.10	.23	15.49
1960	.21	2.14	4.07	2.17	3.33	4.25	.61	.06	3.23	.41	.06	.70	21.24

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1386	12,800	Mar. 21, 1955	0.03	72.2	1.90	25.80	71.9	25.72
1956	1436	12,300	Feb. 17, 1956	.03	72.5	1.91	25.98	72.0	25.78
1957	1506	5,420	Jan. 29, 1957	.01	66.1	1.74	23.59	79.3	28.33
1958	1556	5,750	Sept.21, 1958	.06	65.4	1.72	23.37	43.9	15.67
1959	1626	8,090	Aug. 5, 1959	.1	43.4	1.14	15.49	57.2	20.42
1960	1706	4,750	June 17, 1960	.1	59.3	1.56	21.24	-	-

4275. East Fork Stones River near Lascassas, Tenn.

Location.--Lat 35°55'07", long 86°20'01", at downstream end of right pier of highway bridge, 2.5 miles southwest of Lascassas, Rutherford County, 3.7 miles downstream from Bradley Creek, 6.0 miles northeast of the courthouse in Murfreesboro, and 15½ miles upstream from confluence with West Fork.

Drainage area.--264 sq mi.

Records available.--October 1950 to November 1958.

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

Average discharge.--8 years (1950-58), 439 cfs.

Extremes.--1951-58: Maximum discharge, 21,300 cfs Mar. 22, 1955 (gage height, 34.07 ft); minimum, 0.2 cfs Oct. 23, 1953 (gage height, 2.22 ft); minimum daily, 0.4 cfs Aug. 31, 1953.

Remarks.--Frequent diurnal fluctuations at low flow caused by small mill above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	‡19.0	‡500	‡230	‡1,020	‡1,899	901	1,154	110	92.4	86.0	16.7	47.6	‡495
1952	80.3	781	1,768	1,128	506	1,108	169	57.4	100	23.4	21.0	35.5	484
1953	8.97	16.8	125	961	1,209	790	511	645	109	83.1	22.2	13.3	370
1954	7.13	9.56	37.5	1,808	420	737	732	288	59.9	18.6	15.7	54.5	350
1955	123	10.5	751	347	1,464	1,654	635	258	232	51.4	43.7	30.4	461
1956	102	438	368	781	2,136	619	511	109	62.1	93.6	113	49.6	441
1957	16.8	19.5	989	1,325	1,521	517	494	121	206	18.7	13.3	261	452
1958	252	1,167	840	418	430	470	941	497	55.1	134	58.5	283	461
1959	26.5	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; estimated on basis of records for Stones River near Smyrna.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	‡0.08	‡2.11	‡1.00	‡4.45	‡7.49	3.93	4.88	0.48	0.39	0.38	0.07	0.20	‡25.46
1952	.35	3.30	7.72	4.93	2.07	4.84	.72	.25	.42	.10	.09	.15	24.94
1953	.04	.07	.54	4.20	4.77	3.45	2.16	2.82	.46	.36	.10	.06	19.03
1954	.03	.04	.16	7.90	1.66	3.22	3.10	1.26	.25	.08	.07	.23	18.00
1955	.54	.04	3.28	1.51	5.77	7.22	2.69	1.13	.98	.22	.19	.13	23.70
1956	.45	1.85	1.61	3.41	8.73	2.70	2.16	.47	.26	.41	.49	.21	22.75
1957	.07	.08	4.32	5.79	6.00	2.26	2.09	.53	.87	.08	.06	1.10	23.25
1958	1.10	9.43	3.67	1.83	1.69	2.05	3.98	2.17	.23	.59	.26	1.20	23.70
1959	.12	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; estimated on basis of records for Stones River near Smyrna.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	1206	a16,300	Feb. 1, 1951	b5.7	‡495	‡1.88	‡25.46	‡654	‡33.64
1952	1236	19,200	Dec. 8, 1951	5	484	1.83	24.94	276	14.22
1953	1276	11,600	Feb. 21, 1953	.4	370	1.40	19.03	362	18.61
1954	1336	17,600	Jan. 21, 1954	1.0	350	1.33	18.00	420	21.63
1955	1386	21,300	Mar. 22, 1955	4.0	461	1.75	23.70	462	23.75
1956	1436	17,200	Feb. 18, 1956	9.7	441	1.67	22.75	452	23.31
1957	1506	15,300	Dec. 13, 1956	2.6	452	1.71	23.25	554	28.48
1958	1556	12,200	Nov. 18, 1957	8.1	461	1.75	23.70	-	-
1959	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-

‡ Not previously published.
a Not previously published; from floodmark.
b Minimum during period Feb. 10 to Sept. 30.

4280. West Fork Stones River near Murfreesboro, Tenn.

Location (revised).--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 (revised).--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 (1931-60), 212 cfs.

Extremes.--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 (corrected) and 22.73 ft; no flow Sept. 18-20, 1954, Aug. 7-10, Sept. 4-10, 1957.
Maximum stage known, 25.0 ft in March 1902 (discharge, about 50,000 cfs, from report of Tennessee Valley Authority).

Remarks.--Some diversion for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	5.82	239	134	599	1,105	470	578	47.1	287	111	2.90	4.97	292
1952	16.6	312	1,086	572	259	634	80.2	21.8	10.1	6.48	5.87	13.1	253
1953	1.31	1.92	66.8	472	688	453	285	334	17.7	92.2	50.8	3.15	203
1954	.90	.74	7.49	865	222	306	415	223	32.7	6.50	2.16	4.93	174
1955	41.0	4.62	415	229	774	888	265	143	59.3	12.7	10.1	1.78	234
1956	16.1	109	172	370	1,157	300	189	102	11.0	54.8	24.8	22.0	207
1957	2.44	2.16	493	647	778	209	189	46.3	21.1	2.80	.46	52.1	200
1958	98.9	576	403	181	175	192	488	293	40.8	187	34.1	123	232
1959	12.5	140	55.6	304	383	423	258	32.8	122	30.2	138	19.2	158
1960	17.4	222	462	259	480	499	109	86.7	27.5	63.5	4.91	20.9	187

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.05	2.08	1.21	5.40	8.99	4.23	5.04	0.42	2.50	1.00	0.03	0.04	30.99
1952	.15	2.72	9.78	5.16	2.18	5.71	.70	.20	.09	.06	.05	.11	26.91
1953	.01	.02	.60	4.25	5.60	4.08	2.48	3.01	.15	.83	.46	.03	21.52
1954	.008	.006	.07	7.79	1.81	2.75	3.62	2.01	.29	.06	.02	.04	18.47
1955	.37	.04	3.74	2.07	6.30	7.99	2.31	1.28	.52	.11	.09	.02	24.84
1956	.15	.95	1.55	3.33	9.75	2.70	1.65	.92	.10	.49	.22	.19	22.00
1957	.02	.02	4.44	5.83	6.33	1.89	1.65	.42	.18	.03	.004	.45	21.26
1958	.89	5.02	3.63	1.63	1.42	1.73	4.26	2.64	.36	1.68	.31	1.08	24.65
1959	.11	1.22	.50	2.74	3.12	3.81	2.25	.30	1.07	.27	1.25	.17	16.81
1960	.16	1.93	4.16	2.34	4.05	4.50	.95	.78	.24	.57	.04	.18	19.90

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	302	32.01
1951	1206	15,100	Feb. 1, 1951	0.4	292	2.28	30.99	380	40.30
1952	1236	12,300	Dec. 8, 1951	.8	253	1.98	26.91	140	14.89
1953	1276	10,500	Mar. 3, 1953	.3	203	1.59	21.52	198	20.97
1954	1336	13,800	Jan. 21, 1954	0	174	1.36	18.47	212	22.54
1955	1386	34,400	Mar. 21, 1955	.6	234	1.83	24.84	220	23.34
1956	1436	10,900	Jan. 30, 1956	2.3	207	1.62	22.00	224	23.83
1957	1506	10,300	Dec. 13, 1956	0	200	1.56	21.26	248	26.32
1958	1556	11,300	Nov. 18, 1957	2.5	232	1.81	24.65	160	16.94
1959	1626	7,700	Mar. 27, 1959	4.5	158	1.23	16.81	200	21.23
1960	1706	6,880	Dec. 28, 1959	.8	187	1.46	19.90	-	-

4290. Stones River near Smyrna, Tenn.

Location (revised).--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 (revised).--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 (1925-60), 945 cfs.

Extremes.--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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	36.5	1,217	555	2,457	4,270	1,982	2,522	283	421	346	34.5	70.7	1,159
1952	123	1,716	4,535	2,540	1,239	2,844	414	127	140	41.2	55.7	74.3	1,160
1953	19.0	26.1	245	2,045	2,823	1,892	1,185	1,817	203	247	134	23.9	878
1954	13.9	12.7	59.4	3,749	1,102	1,583	1,930	765	201	39.4	18.5	58.8	795
1955	303	36.7	1,611	959	3,468	4,468	1,498	617	403	99.0	93.6	40.3	1,121
1956	176	753	758	1,535	5,167	1,503	1,176	342	106	233	219	90.1	987
1957	29.7	29.4	2,192	2,881	3,923	1,320	1,178	274	360	38.9	20.8	338	1,031
1958	473	2,362	1,790	885	903	966	2,234	1,297	148	383	143	606	1,013
1959	72.2	440	269	1,278	1,597	1,874	1,325	357	434	244	898	156	740
1960	126	1,038	2,252	1,263	2,188	2,361	582	339	491	233	64.7	213	926

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.08	2.46	1.16	5.13	8.06	4.14	5.10	0.59	0.85	0.72	0.07	0.14	28.50
1952	.26	3.47	9.47	5.31	2.42	5.94	.84	.27	.28	.09	.12	.15	28.62
1953	.04	.05	.51	4.27	5.33	3.95	2.39	3.79	.41	.52	.28	.05	21.59
1954	.03	.03	.12	7.83	2.08	3.31	3.90	1.60	.41	.08	.04	.12	19.55
1955	.63	.07	3.37	2.00	6.54	9.33	3.03	1.29	.81	.21	.20	.08	27.56
1956	.37	1.52	1.58	3.21	10.09	3.14	2.38	.71	.22	.49	.46	.18	24.35
1957	.06	.06	4.58	6.02	7.40	2.76	2.38	.57	.73	.08	.04	.68	25.36
1958	.99	4.77	3.74	1.85	1.70	2.02	4.51	2.71	.30	.80	.30	1.22	24.91
1959	.15	.89	.56	2.67	3.01	3.91	2.68	.75	.88	.51	1.87	.32	18.20
1960	.26	2.10	4.70	2.64	4.27	4.93	1.18	.71	.99	.49	.14	.43	22.84

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,374	33.80
1951	1206,1436	29,000	Feb. 1, 1951	19	1,159	2.10	28.50	1,545	38.00
1952	1236,1436	35,000	Dec. 8, 1951	20	1,160	2.10	28.62	649	16.02
1953	1276	20,700	Feb. 21, 1953	11	878	1.59	21.59	861	21.17
1954	1336,1436	32,200	Jan. 21, 1954	6.5	795	1.44	19.55	953	23.44
1955	1386,1436	46,300	Mar. 22, 1955	15	1,121	2.03	27.56	1,097	26.96
1956	1436	33,600	Feb. 18, 1956	23	987	1.79	24.35	1,037	25.58
1957	1506	24,500	Dec. 13, 1956	12	1,031	1.87	25.36	1,227	30.16
1958	1556	21,600	Nov. 18, 1957	14	1,013	1.84	24.91	692	17.01
1959	1626	17,600	Mar. 27, 1959	30	740	1.34	18.20	962	23.66
1960	1706	15,200	Dec. 19, 1959	20	926	1.68	22.84	-	-

4295. Stewart Creek near Smyrna, Tenn.

Location.--Lat 35°59'54", long 86°30'18", on upstream end of right abutment of bridge on Fifteenth Avenue, 0.4 mile downstream from Harts Branch, 0.7 mile southwest of headquarters at Sewart Air Force Base, 1.3 miles northeast of Smyrna, Rutherford County, and 5.3 miles upstream from mouth.

Drainage area.--69.7 sq mi (includes 7.6 sq mi without surface drainage).

Records available.--June 1952 to September 1958. October 1958 to September 1960 (annual maximum only).

Gage.--Crest-stage gage. Datum of gage is 490.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1958, water-stage recorder at same site and datum.

Average discharge.--6 years (1952-58), 107 cfs.

Extremes.--1952-60: Maximum discharge, 8,700 cfs Mar. 21, 1955 (gage height, 17.61 ft), from rating curve extended above 4,300 cfs on basis of contracted-opening measurement of peak flow.
1952-58: No flow at times each year 1953-57.
Flood of Feb. 13, 1948, reached about the same stage as that of Mar. 21, 1955.

Remarks.--Occasional regulation at low flow caused by small dams above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	0.79	3.10	2.94	-
1953	0.77	2.02	20.4	166	256	196	158	249	13.2	4.64	1.92	.163	88.2
1954	0	0	1.36	386	196	178	168	65.6	33.2	2.51	.88	5.91	86.0
1955	38.0	1.73	162	82.5	420	552	169	64.8	15.6	27.8	63.4	18.4	133
1956	10.8	58.2	64.7	158	626	203	175	16.2	4.20	4.96	18.6	2.09	110
1957	.075	.441	233	354	400	158	137	33.5	22.2	2.51	.615	14.5	111
1958	54.0	250	217	123	88.1	121	312	106	10.8	18.2	10.4	59.3	114
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	0.01	0.05	0.05	-
1953	0.01	0.03	0.34	2.75	3.83	3.25	2.53	4.12	0.21	.08	.03	.003	17.18
1954	0	0	.02	6.39	2.93	2.95	2.70	1.08	.53	.04	.01	.09	16.74
1955	.63	.03	2.68	1.37	6.28	9.13	2.70	1.07	.25	.46	1.05	.29	25.94
1956	.18	.93	1.07	2.61	9.69	3.36	2.80	.27	.07	.08	.31	.03	21.40
1957	.001	.007	3.86	5.86	5.98	2.62	2.20	.55	.35	.04	.01	.23	21.71
1958	.89	4.01	3.60	2.03	1.32	2.01	4.99	1.76	.17	.30	.17	.95	22.20
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	1336	-	-	-	-	-	-	-	-
1953	1336,1386	2,560	Apr. 30, 1953	0	88.2	1.27	17.18	86.4	16.82
1954	1336,1386	4,900	Jan. 21, 1954	0	86.0	1.23	16.74	103	20.06
1955	1386	8,700	Mar. 21, 1955	0	133	1.91	25.94	127	24.78
1956	1436	5,760	Feb. 18, 1956	.1	110	1.58	21.40	118	23.09
1957	1506	3,690	Jan. 22, 1957	0	111	1.59	21.71	135	26.34
1958	1556	2,430	Nov. 17, 1957	.8	114	1.64	22.20	-	-
1959	1706	1,500	Feb. 14, 1959	-	-	-	-	-	-
1960	1706	3,340	June 17, 1960	-	-	-	-	-	-

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. Auxiliary gages about 3.3 miles downstream from base gages used for short periods in 1939, 1940, 1945, 1946.

Average discharge.--22 years (1938-60), 1,377 cfs.

Extremes.--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.--Some regulation at low flow.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	45.0	1,715	865	3,405	5,911	2,835	3,414	368	582	613	56.2	84.2	1,625
1952	171	2,499	6,737	3,641	1,874	3,909	595	168	152	53.5	76.3	112	1,674
1953	27.7	47.9	406	2,924	3,746	2,588	1,531	2,763	272	350	135	23.5	1,222
1954	14.3	14.3	94.9	5,253	1,666	2,248	2,520	927	286	43.9	21.1	128	1,101
1955	466	50.0	2,266	1,276	4,968	6,158	1,960	785	527	153	245	130	1,564
1956	276	933	1,025	2,245	7,346	2,148	1,910	413	133	227	286	96.6	1,395
1957	35.4	48.3	3,070	4,142	5,369	1,909	1,605	585	757	60.1	29.5	494	1,486
1958	771	3,453	2,840	1,385	1,293	1,578	3,505	1,807	215	680	239	865	1,550
1959	90.7	580	396	1,814	2,334	2,549	1,826	509	470	297	1,034	259	1,005
1960	182	1,390	3,265	1,878	3,326	3,428	877	608	1,095	384	99.1	308	1,398

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.06	2.29	1.20	4.71	7.38	3.92	4.57	0.51	0.78	0.85	0.08	0.11	26.46
1952	.24	3.34	9.31	5.03	2.42	5.40	.80	.23	.20	.07	.11	.15	27.30
1953	.04	.06	.56	4.04	4.68	3.58	2.05	3.82	.36	.48	.19	.03	19.89
1954	.02	.02	.13	7.26	2.08	3.11	3.37	1.28	.38	.06	.03	.17	17.91
1955	.64	.07	3.13	1.76	6.20	8.51	2.62	1.09	.71	.21	.34	.17	25.45
1956	.38	1.25	1.42	3.10	9.50	2.97	2.56	.57	.18	.31	.40	.13	22.77
1957	.05	.06	4.24	5.73	6.70	2.64	2.15	.81	1.01	.08	.04	.66	24.17
1958	1.07	4.62	3.93	1.91	1.61	2.18	4.69	2.50	.29	.94	.33	1.16	25.23
1959	.13	.78	.55	2.51	2.91	3.52	2.44	.70	.63	.41	1.43	.35	16.36
1960	.25	1.86	4.51	2.60	4.30	4.74	1.17	.84	1.46	.53	.14	.41	22.81

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,959	31.89
1951	1206	32,100	Feb. 1, 1951	22	1,625	1.95	26.46	2,199	35.80
1952	1236	40,300	Dec. 9, 1951	20	1,674	2.01	27.30	924	15.07
1953	1276	24,200	Feb. 21, 1953	14	1,222	1.47	19.89	1,192	19.40
1954	1336	35,500	Jan. 21, 1954	11	1,101	1.32	17.91	1,326	21.58
1955	1386	49,900	Mar. 22, 1955	26	1,564	1.88	25.45	1,515	24.66
1956	1436	43,600	Feb. 18, 1956	22	1,395	1.67	22.77	1,475	24.07
1957	1506	28,800	Jan. 30, 1957	14	1,486	1.78	24.17	1,808	29.44
1958	1556	24,200	Nov. 18, 1957	30	1,550	1.86	25.23	1,048	17.07
1959	1626	19,000	Feb. 14, 1959	40	1,005	1.21	16.36	1,323	21.52
1960	1706	17,900	Dec. 19, 1959	25	1,398	1.68	22.81	-	-

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, 2.1 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 (1953-60), 95.3 cfs.

Extremes.--1953-60: Maximum discharge, 17,000 cfs Mar. 21, 1955 (gage height, 19.73 ft); no flow for days each year 1953-56.
Maximum stage known since at least 1920, that of Mar. 21, 1955.

Remarks.--Minor diversion from gage pool for industrial use.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	0	0	2.85	316	153	184	160	74.9	9.55	0.017	1.56	5.83	75.4
1955	16.1	.95	101	50.2	321	560	133	44.6	6.99	5.23	15.2	11.6	105
1956	3.47	25.5	29.9	171	512	154	133	25.1	2.70	.668	11.7	.085	87.3
1957	0	2.03	143	340	324	152	69.4	83.7	152	5.98	12.2	41.0	109
1958	69.6	225	244	111	76.5	140	325	84.9	10.9	54.7	31.0	18.2	116
1959	1.36	11.2	13.7	96.5	155	161	70.3	40.2	8.63	23.7	6.22	21.3	50.2
1960	49.8	108	218	121	290	240	74.3	13.8	318	16.4	8.46	43.6	124

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	0	0	0.05	5.69	2.50	3.32	2.79	1.35	0.17	0.0003	0.03	0.10	16.00
1955	.29	.02	1.82	.90	5.22	10.09	2.33	.80	.12	.09	.27	.20	22.15
1956	.06	.44	.54	3.09	8.63	2.77	2.31	.45	.05	.01	.21	.001	18.56
1957	0	.04	2.58	6.13	5.26	2.74	1.21	1.51	2.66	.11	.22	.71	23.17
1958	1.25	3.92	4.40	1.99	1.24	2.52	5.67	1.53	.19	.99	.56	.32	24.58
1959	.02	.20	.25	1.74	2.52	2.91	1.22	.72	.15	.43	.11	.37	10.64
1960	.90	1.88	3.93	2.18	4.89	4.32	1.30	.25	5.54	.29	.15	.76	26.39

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	1336	6,580	Mar. 24, 1954	0	75.4	1.18	16.00	85.2	18.08
1955	1386	17,000	Mar. 21, 1955	0	105	1.64	22.15	99.4	21.06
1956	1436	7,320	Feb. 17, 1956	0	87.3	1.36	18.56	94.7	20.14
1957	1506	5,570	Jan. 29, 1957	0	109	1.70	23.17	142	30.12
1958	1556	5,120	Dec. 20, 1957	.4	116	1.81	24.58	73.0	15.48
1959	1626	2,880	July 1, 1959	.4	50.2	.784	10.64	79.6	16.88
1960	1706	15,600	June 17, 1960	.09	124	1.94	26.39	-	-

4315. Cumberland River at Nashville, Tenn.

Location.--Lat 36°09'45", long 85°46'17", on right bank pier of Shelby Avenue (formerly Sparkman Street) Bridge in Nashville, Davidson County, 3.3 miles downstream from Mill Creek, and at mile 191.1.

Drainage area.--12,860 sq mi, approximately.

Records available.--October 1892 to September 1954. Gage-height records collected in this vicinity since 1873 are contained in reports of U.S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 368.17 ft above mean sea level, Sandy Hook datum. Prior to fall of 1922, inclined and vertical staff gage at site 350 ft downstream and from fall of 1922 to Apr. 9, 1940, staff gage at site 400 ft downstream; both gages at same datum. Nov. 1, 1931, to Aug. 3, 1958, upper staff gage at former lock 1, 2.7 miles downstream was used as auxiliary gage.

Average discharge.--62 years (1892-1954), 20,100 cfs (unadjusted).

Extremes.--1892-1954: Maximum discharge, 203,000 cfs Jan. 1, 1927 (gage height, 56.2 ft); minimum daily, 60 cfs Oct. 19, 1935; minimum gage height observed after first filling of pool at dam 1, 6.1 ft Oct. 19, 1935.

Remarks.--Some regulation by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, Center Hill Reservoir, and Old Hickory Lake and by navigation pools.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3,452	18,840	20,030	29,450	50,620	37,410	49,710	13,710	7,266	7,844	3,131	3,677	20,190
1952	6,875	24,100	66,800	60,410	44,910	55,110	30,790	14,230	23,760	7,208	3,633	2,504	28,360
1953	2,341	2,600	12,800	24,930	30,290	30,940	26,750	23,650	21,700	7,490	9,742	3,986	16,350
1954	2,356	4,121	8,993	34,190	18,180	21,540	21,110	17,400	7,749	3,593	4,800	4,900	12,400

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	29,720	32,060	33.84
1951	1206	92,800	Feb. 2, 1951	1,390	20,190	24,740	1.92	26.11	24,880	30,450	32.15
1952	1236	102,000	Dec. 15, 1951	1,520	28,360	26,350	2.05	27.89	21,640	17,230	18.23
1953	1276	71,300	Mar. 4, 1953	1,670	16,350	16,670	1.30	17.60	16,150	16,020	16.91
1954	1336	91,700	Jan. 22, 1954	b916	12,400	12,550	.976	13.25	-	-	-

a Adjusted for change in contents in Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir; in Lake Cumberland since August 1950, and in Old Hickory Lake since June 1954.
b Minimum during period Oct. 1 to Aug. 3.

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 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 (1954-60), 96.8 cfs (revised).

Extremes.--1954-60: Maximum discharge, 25,000 cfs June 17, 1960 (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; no flow Sept. 20-23, 26, 27, 1955.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	10	1.09	45.1	47.5	316	*581	194	109	28.4	3.29	9.21	5.10	*111
1956	1.71	6.80	14.7	107	700	131	121	22.1	5.26	6.89	6.00	.868	90.9
1957	.092	.933	101	353	313	136	82.1	122	45.0	11.1	5.01	18.6	97.9
1958	63.9	252	239	105	93.1	125	242	157	13.4	15.8	6.29	12.8	110
1959	3.22	8.43	9.47	89.5	150	172	68.2	15.6	15.5	16.9	8.19	3.56	46.1
1960	21.0	90.8	239	147	266	231	87.3	20.4	334	26.5	27.6	22.0	125

* Revised.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	0.17	0.02	0.78	0.82	4.92	*10.00	3.24	1.88	0.47	0.06	0.16	0.09	*22.61
1956	.03	.11	.25	1.84	11.28	2.26	2.02	.38	.09	.12	.10	.01	18.49
1957	.002	.02	1.74	6.09	4.87	2.34	1.37	2.10	.75	.19	.09	.31	19.87
1958	1.10	4.20	4.13	1.81	1.45	2.16	4.04	2.70	.22	.27	.11	.21	22.40
1959	.06	.14	.16	1.54	2.34	2.97	1.14	.27	.26	.29	.14	.06	9.37
1960	.36	1.51	4.12	2.53	4.29	3.98	1.46	.35	5.58	.46	.48	.37	25.49

* Revised.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1386	18,900	Mar. 21, 1955	0	*111	*1.66	*22.61	*109	*22.03
1956	1436	14,800	Feb. 17, 1956	.04	90.9	1.36	18.49	97.6	19.86
1957	1506	13,400	Jan. 22, 1957	.02	97.9	1.46	19.87	136	27.54
1958	1556	3,940	Nov. 17, 1957	.1	110	1.64	22.40	65.8	13.33
1959	1626	1,460	Mar. 21, 1959	.2	46.1	.689	9.37	73.9	15.00
1960	1706	25,000	June 17, 1960	.2	125	1.87	25.49	-	-

* Revised.

4335. Harpeth River at Belleview, Tenn.

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

Drainage area (revised).--408 sq mi. At site used prior to Oct. 1, 1933, 417 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 (1920-60), 558 cfs.

Extremes.--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.--Minor diversion for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	41.7	754	546	1,718	2,764	1,115	1,474	161	216	170	16.3	10.2	734
1952	23.8	567	2,863	1,572	996	2,118	301	94.2	21.7	32.5	74.2	79.7	732
1953	13.5	32.9	135	1,187	1,479	1,275	804	1,281	93.2	181	35.7	4.23	539
1954	2.58	11.0	33.4	2,005	1,083	869	1,032	415	172	15.6	5.76	32.7	470
1955	70.6	12.3	422	332	1,840	2,838	1,041	463	109	32.5	33.2	21.0	594
1956	24.8	73.2	136	646	3,069	942	689	136	31.6	21.5	37.9	7.92	473
1957	7.36	14.2	703	1,721	2,124	921	575	573	564	68.6	54.9	85.8	609
1958	360	1,498	1,446	639	505	740	1,458	920	95.7	95.1	51.3	110	660
1959	22.4	75.3	74.2	546	862	949	486	155	126	137	141	61.4	300
1960	159	535	1,439	872	1,520	1,441	530	91.2	760	134	*82.3	*138	*639

* Revised.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.12	2.06	1.54	4.85	7.05	3.15	4.03	0.46	0.59	0.48	0.05	0.03	24.41
1952	.07	1.55	8.09	4.44	2.63	5.99	.82	.27	.06	.09	.21	.22	24.44
1953	.04	.09	.38	3.35	3.77	3.60	2.20	3.62	.25	.51	.10	.01	17.92
1954	.007	.03	.09	5.67	2.76	2.45	2.82	1.17	.47	.04	.02	.09	15.62
1955	.20	.03	1.19	.94	4.70	8.02	2.85	1.31	.30	.09	.09	.06	19.78
1956	.07	.20	.38	1.83	8.11	2.66	1.88	.38	.09	.06	.11	.02	15.79
1957	.02	.04	1.99	4.86	5.42	2.60	1.57	1.62	1.54	.19	.16	.23	20.24
1958	1.02	4.10	4.09	1.81	1.29	2.09	3.99	2.60	.26	.27	.14	.30	21.96
1959	.06	.21	.21	1.54	2.20	2.68	1.33	.44	.35	.39	.40	.17	9.98
1960	.45	1.46	4.07	2.46	4.02	4.07	1.45	.26	2.08	.38	*.23	*.38	*21.31

* Revised.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	923	30.70
1951	1206	10,500	Feb. 1, 1951	1.8	734	1.80	24.41	914	30.40
1952	1236	13,300	Dec. 9, 1951	.8	732	1.79	24.44	457	15.24
1953	1276	8,380	Mar. 3, Apr. 30	1.5	539	1.32	17.92	528	17.54
1954	1336	14,700	Jan. 21, 1954	.2	470	1.15	15.62	509	16.91
1955	1386	28,900	Mar. 22, 1955	1.5	594	1.46	19.78	571	19.01
1956	1436	20,500	Feb. 18, 1956	.3	473	1.16	15.79	515	17.19
1957	1506	11,700	Jan. 29, 1957	.3	609	1.49	20.24	824	27.40
1958	1556	9,160	Nov. 18, 1957	5.6	660	1.62	21.96	398	13.23
1959	1626	6,210	Feb. 14, 1959	12	300	.735	9.98	465	15.48
1960	1706	16,000	June 17, 1960	12	*639	1.57	*21.31	-	-

* Revised.

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 (1924-60), 934 cfs.

Extremes.--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 (site then in use).
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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	152	1,114	1,010	2,841	4,476	1,846	2,357	333	360	315	88.3	77.5	1,224
1952	78.3	1,127	4,708	2,412	1,822	3,739	708	257	92.2	80.5	153	170	1,284
1953	79.6	99.5	243	1,887	2,161	2,161	1,379	2,208	210	369	87.1	39.4	905
1954	42.7	65.2	106	2,759	1,475	1,471	1,516	709	263	62.7	38.5	41.2	709
1955	155	63.2	560	452	2,646	4,677	1,989	992	246	103	105	43.9	994
1956	97.1	171	219	1,180	5,107	1,575	1,203	282	97.6	70.9	86.4	37.1	826
1957	45.7	63.5	958	3,054	3,166	1,438	1,048	1,101	1,142	224	135	160	1,032
1958	518	2,526	2,394	1,055	922	1,396	2,386	1,702	246	215	179	205	1,145
1959	79.5	157	162	960	1,478	1,451	820	296	391	234	244	132	528
1960	235	725	1,965	1,318	2,134	2,025	957	307	861	249	152	224	925

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.26	1.81	1.70	4.77	6.79	3.10	3.83	0.56	0.59	0.53	0.15	0.13	24.22
1952	.13	1.83	7.90	4.05	2.86	6.27	1.15	.43	.15	.14	.26	.28	25.45
1953	.13	.16	.41	3.17	3.28	3.63	2.24	3.70	.34	.62	.15	.06	17.89
1954	.07	.11	.18	4.63	2.24	2.47	2.46	1.19	.43	.11	.06	.07	14.02
1955	.26	.10	.94	.76	4.01	7.85	3.23	1.66	.40	.17	.18	.07	19.63
1956	.16	.28	.37	1.98	8.02	2.64	1.95	.47	.16	.12	.15	.06	16.36
1957	.08	.10	1.61	5.12	4.80	2.41	1.70	1.85	1.86	.38	.23	.26	20.40
1958	.87	4.10	4.02	1.77	1.40	2.34	3.87	2.86	.40	.36	.30	.33	22.62
1959	.13	.26	.27	1.61	2.24	2.44	1.33	.50	.63	.39	.41	.22	10.43
1960	.39	1.18	3.30	2.21	3.35	3.40	1.55	.52	1.40	.42	.26	.36	18.34

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,544	30.53
1951	1206	14,900	Feb. 1, 1951	49	1,224	1.78	24.22	1,533	30.31
1952	1236	31,500	Dec. 15, 1951	32	1,284	1.87	25.45	822	16.29
1953	1276	13,300	Mar. 4, 1953	30	905	1.32	17.89	888	17.55
1954	1336	19,300	Jan. 22, 1954	20	709	1.03	14.02	756	14.96
1955	1386	41,500	Mar. 22, 1955	22	994	1.45	19.63	969	19.14
1956	1436	25,600	Feb. 18, 1956	22	826	1.20	16.36	875	17.34
1957	1506	33,000	Jan. 29, 1957	26	1,032	1.50	20.40	1,396	27.60
1958	1556	18,700	Nov. 19, 1957	58	1,145	1.67	22.62	723	14.29
1959	1626	9,430	Feb. 15, 1959	49	528	.769	10.43	741	14.64
1960	1706	13,300	June 18, 1960	44	925	1.35	18.34	-	-

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.--14,356 sq mi (revised).

Records available.--October 1954 to September 1960.

Gage.--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 (1954-60), 22,840 cfs (unadjusted).

Extremes.--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.--Some regulation by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, Center Hill Reservoir, and Old Hickory Lake, and by Cheatham Dam.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	5,818	8,307	21,370	26,810	45,510	69,780	60,000	20,070	16,930	5,287	5,580	8,541	24,340
1956	8,719	13,590	14,730	14,560	78,970	56,850	48,750	20,200	9,427	5,736	6,994	7,281	23,560
1957	5,900	8,508	27,430	46,080	80,510	42,180	35,530	14,250	11,380	13,630	9,405	8,732	24,940
1958	13,990	39,250	47,210	38,370	29,110	17,030	37,120	49,160	12,720	13,290	11,290	11,790	26,690
1959	11,740	6,612	14,950	18,460	22,640	17,790	25,550	11,240	11,880	5,978	12,060	8,588	13,890
1960	10,540	19,160	39,140	38,500	28,810	42,550	25,470	13,380	16,140	19,900	16,260	12,840	23,590

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-
1955	1506	176,000	Mar. 23, 1955	1,240	24,340	24,160	1.68	22.85	24,460	22,960	21.71
1956	1506	149,000	Feb. 20, 1956	783	23,560	24,170	1.68	22.92	23,980	26,040	24.69
1957	1506	144,000	Jan. 30, 1957	1,670	24,940	25,170	1.75	23.80	29,830	31,250	29.55
1958	1556	118,000	Nov. 19, 1957	1,570	26,690	26,720	1.86	25.26	21,080	18,300	17.30
1959	1626	103,000	Feb. 15, 1959	964	13,890	14,450	1.01	13.66	16,880	19,110	18.07
1960	1706	87,400	Dec. 29, 1959	1,360	23,590	22,820	1.59	21.64	-	-	-

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

4355. Red River near Adams, Tenn.

Location (revised).--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 northwest of Adams, Robertson County, and at mile 33.0.

Drainage area (revised).--706 sq mi (includes 397 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 (1920-60), 963 cfs.

Extremes.--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.

Correction.--In WSP 1306, the momentary maximum discharge for June 30, 1928, should be 16,800 cfs; this figure was originally published in WSP 663 and has not been revised.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	345	956	1,441	3,213	3,948	2,558	1,631	451	412	724	205	236	1,328
1952	112	1,999	4,613	2,319	1,669	3,581	930	420	167	120	76.6	105	1,347
1953	63.3	60.7	171	901	1,091	2,633	895	2,294	434	214	77.5	52.5	742
1954	40.9	61.3	70.6	954	892	871	944	572	702	155	83.3	138	453
1955	238	63.4	424	312	2,417	4,067	1,335	902	598	192	203	68.9	894
1956	119	97.9	111	1,038	4,761	2,020	1,455	682	204	170	184	66.1	893
1957	70.6	52.9	160	2,276	3,307	1,409	2,240	1,445	552	195	135	141	982
1958	122	2,488	2,953	1,143	1,173	1,456	1,791	1,443	382	408	380	188	1,160
1959	101	101	113	926	1,698	840	533	325	340	155	208	201	453
1960	143	283	921	977	1,390	1,633	817	286	467	465	125	119	634

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.56	1.51	2.35	5.25	5.82	4.18	2.58	0.74	0.65	1.18	0.33	0.37	25.52
1952	.18	3.16	7.53	3.79	2.55	5.85	1.47	.69	.26	.20	.13	.17	25.98
1953	.10	.10	.28	1.47	1.61	4.30	1.41	3.75	.69	.35	.13	.08	14.27
1954	.07	.10	.12	1.56	1.32	1.42	1.49	.93	1.11	.25	.14	.22	8.73
1955	.39	.10	.69	.51	3.57	6.64	2.11	1.47	.94	.31	.33	.11	17.17
1956	.19	.15	.18	1.70	7.27	3.30	2.30	1.11	.32	.28	.30	.10	17.20
1957	.12	.08	.26	3.72	4.88	2.30	3.54	2.36	.87	.32	.22	.22	18.89
1958	.20	3.93	4.82	1.87	1.73	2.38	2.83	2.36	.60	.67	.62	.30	22.31
1959	.16	.16	.18	1.51	2.50	1.37	.84	.53	.54	.25	.34	.32	8.70
1960	.23	.45	1.50	1.60	2.12	2.67	1.29	.47	.74	.76	.20	.19	12.22

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,981	38.10
1951	1206	12,600	Jan. 15, 1951	104	1,328	1.88	25.52	1,663	31.97
1952	1236	21,500	Mar. 23, 1952	56	1,347	1.91	25.98	807	15.59
1953	1276	10,400	Mar. 4, 1953	42	742	1.05	14.27	731	14.08
1954	1336	6,310	Jan. 21, 1954	39	453	.642	8.73	500	9.62
1955	1386	17,600	Mar. 22, 1955	55	894	1.27	17.17	860	16.51
1956	1436	17,300	Jan. 31, Feb. 18	41	893	1.26	17.20	889	17.14
1957	1506	20,200	Jan. 30, 1957	41	982	1.39	18.89	1,424	27.38
1958	1556	16,700	Nov. 19, 1957	63	1,160	1.64	22.31	721	13.86
1959	1626	8,990	Feb. 15, 1959	76	453	.642	8.70	541	10.38
1960	1706	6,540	Dec. 28, 1959	72	634	.898	12.22	-	-

4360. Sulphur Fork Red River near Adams, Tenn.

Location (revised).--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 (revised) upstream at same datum.

Average discharge.--22 years (1938-60), 233 cfs.

Extremes.--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 of June 1934.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	50.9	133	287	666	1,165	492	415	101	116	143	40.5	48.0	299
1952	25.2	587	1,232	584	445	1,168	150	98.0	37.3	53.0	27.3	35.5	372
1953	28.3	23.5	48.7	313	321	680	232	574	63.6	43.7	12.6	6.11	196
1954	7.84	19.2	20.2	263	237	257	313	188	71.8	14.8	16.2	13.7	118
1955	18.2	13.1	81.0	45.4	606	1,205	156	182	68.9	26.2	56.1	14.2	204
1956	27.1	35.9	35.8	467	1,131	387	351	140	39.8	48.2	43.4	12.1	223
1957	19.6	17.4	68.9	818	827	376	642	314	91.0	33.6	30.1	94.4	274
1958	49.0	678	813	281	314	410	500	385	78.7	62.5	49.3	40.1	305
1959	24.4	29.3	31.5	260	582	196	149	97.8	58.9	27.4	59.4	91.5	131
1960	56.8	126	325	279	447	467	176	74.3	117	78.4	20.6	25.9	182

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.32	0.80	1.79	4.15	6.56	3.06	2.50	0.63	0.70	0.89	0.25	0.29	21.94
1952	.16	3.54	7.68	3.64	2.59	7.28	.90	.61	.23	.33	.17	.21	27.54
1953	.18	.14	.30	1.95	1.81	4.24	1.40	3.58	.38	.27	.08	.04	14.37
1954	.05	.12	.13	1.64	1.34	1.60	1.89	1.17	.43	.09	.10	.08	8.64
1955	.11	.08	.50	.28	3.41	7.51	.94	1.13	.42	.16	.35	.09	14.98
1956	.17	.22	.22	2.91	6.60	2.41	2.12	.87	.24	.30	.27	.07	16.40
1957	.12	.10	.43	5.10	4.65	2.34	3.87	1.96	.55	.21	.19	.57	20.09
1958	.31	4.09	5.06	1.75	1.77	2.55	3.02	2.40	.47	.39	.31	.24	22.36
1959	.15	.18	.20	1.62	3.28	1.22	.90	.61	.36	.17	.37	.55	9.61
1960	.35	.76	2.02	1.74	2.61	2.91	1.06	.46	.71	.49	.13	.16	13.40

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	450	33.05
1951	1206	4,350	Jan. 4, 1951	16	299	1.62	21.94	414	30.41
1952	1236	13,200	Mar. 22, 1952	5.2	372	2.01	27.34	225	16.58
1953	1276	6,220	May 19, 1953	5.1	196	1.06	14.37	191	14.05
1954	1336	3,660	Jan. 21, 1954	3.5	118	.638	8.64	123	9.03
1955	1386	8,900	Mar. 22, 1955	7.2	204	1.10	14.98	203	14.90
1956	1436	11,500	Jan. 30, 1956	3.8	223	1.21	16.40	224	16.44
1957	1506	13,100	Jan. 29, 1957	4.6	274	1.48	20.09	394	28.90
1958	1556	5,940	Nov. 18, 1957	11	305	1.65	22.36	183	13.43
1959	1626	4,890	Feb. 15, 1959	12	131	.708	9.61	166	12.21
1960	1706	3,340	Dec. 28, 1959	9.0	182	.984	13.40	-	-

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.

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.--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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	39.9	532	494	160	197	301	341	246	69.2	41.8	29.3	26.6	206
1959	26.2	39.2	36.0	188	294	129	121	164	287	65.5	47.0	35.4	118
1960	35.7	56.5	162	144	193	276	164	77.4	54.9	110	35.6	33.3	112

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	0.37	4.79	4.59	1.49	1.65	2.80	3.06	2.29	0.62	0.39	0.27	0.24	22.56
1959	.24	.35	.33	1.75	2.47	1.20	1.09	1.53	2.59	.61	.44	.32	12.92
1960	.33	.51	1.50	1.34	1.68	2.57	1.47	.72	.49	1.03	.33	.30	12.27

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1958	1556	4,040	Nov. 17, 1957	18	206	1.66	22.56	126	13.73
1959	1626	3,400	June 1, 1959	24	118	.952	12.92	131	14.34
1960	1706	2,240	July 2, 1960	22	112	.903	12.27	-	-

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.

Average discharge.--23 years (1937-60), 24,360 cfs (unadjusted).

Extremes.--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.--Some regulation by Lake Cumberland, Dale Hollow Reservoir, Great Falls Lake, Center Hill Reservoir, and Old Hickory Lake, and by Cheatham and navigation dams B and C on Cumberland River.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	4,790	22,350	27,010	44,670	70,300	48,610	60,510	16,810	9,433	10,780	3,883	4,663	26,660
1952	7,401	31,020	89,020	71,400	56,810	73,460	36,420	16,390	24,820	8,242	4,227	3,387	35,220
1953	2,907	3,262	13,720	30,490	36,050	44,620	32,380	36,620	23,780	9,248	10,620	4,525	20,610
1954	2,614	4,613	9,540	38,960	24,280	27,620	26,100	21,380	9,779	4,342	5,523	5,722	15,000
1955	6,229	8,547	21,660	27,720	51,100	78,550	63,330	22,630	18,870	6,252	6,221	8,786	26,480
1956	9,178	14,120	15,540	13,700	96,530	61,960	51,650	23,040	10,160	6,675	7,270	7,596	26,130
1957	6,110	8,432	27,300	46,030	94,140	45,120	41,250	19,330	13,880	15,640	10,220	9,716	27,660
1958	14,730	45,310	56,440	41,800	33,340	22,700	43,620	55,260	14,670	14,290	12,460	13,250	30,650
1959	12,530	6,628	16,220	21,580	27,620	21,020	27,840	13,060	14,000	6,629	13,010	9,444	15,720
1960	11,380	19,460	39,640	40,850	32,240	45,340	28,560	14,820	17,020	24,760	17,330	13,900	25,470

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	39,670	42,000	34.69
1951	1206	101,000	Feb. 3, 1951	799	26,660	31,210	1.90	25.77	32,860	38,430	31.74
1952	1236	127,000	Mar. 24, 1952	1,000	35,220	33,210	2.02	27.50	26,190	21,780	18.03
1953	1276	96,800	Mar. 5, 1953	1,920	20,610	20,930	1.27	17.29	20,340	20,210	16.69
1954	1336	102,000	Jan. 24, 1954	654	15,000	15,160	.922	12.52	16,660	17,840	14.73
1955	1386	169,000	Mar. 24, 1955	1,460	26,480	26,300	1.60	21.72	26,670	25,170	20.79
1956	1436	144,000	Feb. 21, 1956	855	26,130	26,740	1.63	22.14	26,400	28,450	23.56
1957	1506	150,000	Feb. 2, 1957	1,910	27,660	27,880	1.70	23.03	33,900	35,320	29.17
1958	1556	126,000	Nov. 20, 1957	3,870	30,650	30,680	1.87	25.33	23,870	21,090	17.41
1959	1626	96,400	Feb. 16, 1959	3,620	15,720	16,270	.990	13.44	18,660	20,890	17.25
1960	1706	77,300	Dec. 30, 1959	5,250	25,470	24,700	1.50	20.46	-	-	-

a Adjusted for change in contents in Dale Hollow Reservoir, Great Falls Lake, and Center Hill Reservoir, in Lake Cumberland since August 1950, and in Old Hickory Lake since June 1954.

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 (revised), of which about 11 sq mi does not contribute directly to surface runoff.

Records available.--October 1949 to September 1960.

Gage.--Water-stage recorder and concrete control. Datum of gage is 499.71 ft above mean sea level, datum of 1929. Prior to Dec. 22, 1949, wire-weight gage; 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 (1949-60), 71.3 cfs.

Extremes.--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.--Some regulation at low flow by Western State Hospital, 2 miles above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	12.7	116	142	371	237	172	113	17.8	30.7	19.2	2.33	7.87	103
1952	2.33	134	287	131	88.8	274	40.6	8.64	2.91	3.83	.78	1.04	81.6
1953	1.96	3.33	26.8	74.9	54.9	264	79.3	195	12.3	9.26	.85	.55	60.7
1954	.42	.65	1.05	51.3	57.2	37.5	89.1	40.2	41.8	20.7	17.7	29.4	32.0
1955	24.3	3.12	93.1	46.0	254	270	80.1	70.5	74.4	8.44	14.1	7.68	77.7
1956	4.57	5.63	18.0	130	334	154	97.1	37.2	9.09	1.78	15.3	.97	66.3
1957	.62	1.76	7.41	126	161	79.5	158	230	42.0	10.1	4.09	1.33	67.9
1958	1.92	342	173	82.9	83.8	119	96.2	136	14.0	68.9	31.8	7.85	96.3
1959	2.45	3.21	4.55	122	93.2	55.6	26.1	37.6	27.4	21.9	26.0	3.90	35.1
1960	2.65	4.47	42.1	60.9	65.1	95.6	49.4	15.3	33.8	31	9.24	5.27	34.5

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.32	2.79	3.53	9.19	5.31	4.26	2.70	0.44	0.74	0.48	0.06	0.19	30.01
1952	.06	3.23	7.12	3.24	2.06	6.79	.97	.21	.07	.09	.02	.02	23.88
1953	.05	.08	.66	1.86	1.23	6.55	1.90	4.83	.30	.23	.02	.01	17.72
1954	.01	.02	.03	1.27	1.28	.93	2.14	1.00	1.00	.51	.44	.71	9.34
1955	.60	.07	2.31	1.14	5.68	6.68	1.92	1.75	1.78	.21	.35	.18	22.67
1956	.11	.14	.45	3.22	7.76	3.83	2.33	.92	.22	.04	.38	.02	19.42
1957	.02	.04	.18	3.13	3.60	1.97	3.80	5.70	1.01	.25	.10	.03	19.83
1958	.05	8.20	4.30	2.06	1.88	2.94	2.31	3.37	.34	1.71	.79	.19	28.14
1959	.06	.08	.11	3.04	2.09	1.38	.63	.93	.66	.54	.64	.09	10.25
1960	.07	.11	1.04	1.51	1.51	2.37	1.19	.38	.81	.77	.23	.13	10.12

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	137	39.93
1951	1206	5,670	Jan. 14, 1951	1.3	103	2.22	30.01	116	33.78
1952	1236	4,070	Mar. 22, 1952	.2	81.6	1.75	23.88	48.8	14.26
1953	1276	2,490	May 17, 1953	.3	60.7	1.31	17.72	58.1	16.99
1954	1336	1,250	Apr. 16, 1954	.3	32.0	.688	9.34	42.0	12.26
1955	1388	a2,600	Mar. 21, 1955	.6	77.7	1.67	22.67	69.9	20.39
1956	1436	(b)	Jan. 30, 1956	.4	66.3	1.43	19.42	64.8	18.96
1957	1506	2,710	May 22, 1957	.4	67.9	1.46	19.83	110	32.14
1958	1556	9,320	Nov. 18, 1957	.8	96.3	2.07	28.14	54.2	15.84
1959	1626	2,100	Jan. 22, 1959	1.5	35.1	.755	10.25	38.4	11.22
1960	1706	1,010	June 28, 1960	1.9	34.5	.742	10.12	-	-

a About.
b Not determined.

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 (revised), 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 (1940-60), 338 cfs.

Extremes.--1940-60: Maximum discharge, 14,200 cfs Jan. 14, 1951 (gage height, 21.00 ft); minimum observed, 1.0 cfs Oct. 3, 1941.

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

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	124	429	771	1,833	1,274	951	669	193	131	163	48.3	59.7	551
1952	29.0	496	1,367	755	455	1,429	384	127	55.2	55.3	23.9	38.0	436
1953	25.2	29.6	107	288	280	1,298	465	1,130	151	65.2	30.2	17.6	326
1954	12.9	14.5	19.9	240	251	208	418	188	167	60.0	54.2	98.7	143
1955	131	25.1	312	193	986	1,301	480	361	341	79.9	64.7	44.3	356
1956	60.4	36.7	60.4	425	1,586	730	473	186	57.8	40.6	102	21.5	310
1957	16.9	22.8	34.9	549	995	498	748	990	358	339	227	48.8	399
1958	35.6	1,677	1,191	467	484	682	488	607	120	349	154	64.0	526
1959	29.7	35.9	43.5	494	535	293	154	144	209	251	156	90.3	201
1960	39.6	47.8	281	330	305	567	308	98.9	213	223	78.1	52.5	212

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.59	1.96	3.64	8.66	5.44	4.50	3.06	0.91	0.60	0.77	0.23	0.27	30.63
1952	.14	2.27	6.46	3.57	2.01	6.75	1.76	.60	.24	.26	.11	.17	24.34
1953	.12	.14	.51	1.36	1.20	6.13	2.13	5.34	.69	.31	.14	.08	18.15
1954	.06	.07	.09	1.13	1.07	.98	1.91	.89	.76	.28	.26	.45	7.95
1955	.62	.11	1.48	.91	4.21	6.15	2.19	1.71	1.56	.38	.31	.20	19.83
1956	.29	.17	.29	2.01	7.01	3.45	2.16	.88	.26	.19	.48	.10	17.29
1957	.08	.10	.17	2.60	4.24	2.35	3.42	4.68	1.64	1.60	1.07	.22	22.17
1958	.17	7.67	5.63	2.21	2.06	3.22	2.23	2.87	.55	1.65	.73	.29	29.28
1959	.14	.16	.21	2.33	2.28	1.38	.70	.68	.96	1.19	.74	.41	11.18
1960	.19	.22	1.33	1.56	1.35	2.68	1.41	.47	.97	1.05	.37	.24	11.84

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	727	40.42
1951	1206	14,200	Jan. 14, 1951	30	551	2.25	30.63	599	33.31
1952	1236	8,810	Mar. 22, 1952	18	436	1.79	24.34	291	16.24
1953	1276	8,330	May 17, 1953	14	326	1.34	18.15	316	17.60
1954	1336	3,020	Apr. 17, 1954	9.0	143	.586	7.95	179	9.94
1955	1386	6,580	Mar. 24, 1955	21	356	1.46	19.83	330	18.37
1956	1436	7,980	Jan. 30, 1956	15	310	1.27	17.29	303	16.89
1957	1506	13,000	July 29, 1957	13	399	1.64	22.17	634	35.29
1958	1556	13,600	Nov. 19, 1957	23	526	2.16	29.28	293	16.32
1959	1626	5,970	Jan. 21, 1959	24	201	.824	11.18	223	12.41
1960	1706	4,460	June 29, 1960	28	212	.869	11.84	-	-

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.--17,913 sq mi (revised).

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.--1939-60: Maximum discharge, 201,000 cfs Feb. 18, 1950; maximum gage height, 43.10 ft Feb. 13, 1950.
1941-60: Minimum daily discharge, 453 cfs June 23, 1944.
Maximum stage known, 51.1 ft January to February 1937.

Remarks.--Some regulation by navigation dams on Cumberland River and the following reservoirs: Lake Cumberland since Aug. 7, 1950, Dale Hollow Reservoir since Aug. 30, 1943, Great Falls Lake since 1916, Center Hill Reservoir since Nov. 27, 1948, and Old Hickory Lake since June 1954. Records of chemical analyses for the period October 1956 to September 1960 and water temperatures for the period October 1949 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	5,398	24,970	33,060	56,280	79,380	57,410	67,950	19,150	9,880	12,170	4,289	5,293	30,920
1952	7,706	31,260	95,920	77,740	65,010	81,020	43,000	18,060	25,700	8,844	4,501	3,668	38,530
1953	3,027	3,356	14,790	32,060	38,250	52,040	35,860	43,370	25,090	9,744	11,110	4,566	22,710
1954	2,636	4,702	9,767	40,170	27,170	30,140	29,080	24,260	10,890	4,516	5,771	5,992	16,210
1955	6,503	8,613	22,560	29,980	56,090	83,820	74,900	25,200	21,450	6,615	7,111	9,724	29,170
1956	9,903	15,380	16,390	11,550	107,700	73,230	56,790	24,790	11,110	7,995	8,225	8,668	28,950
1957	6,796	8,866	28,580	44,950	107,100	49,150	49,050	25,710	18,040	18,070	12,020	10,180	31,030
1958	15,200	55,830	65,190	46,420	37,290	28,140	47,040	63,900	16,520	17,580	16,850	13,810	35,320
1959	13,460	6,713	18,120	25,120	36,500	26,220	31,020	15,000	17,070	8,154	14,390	10,780	18,420
1960	11,550	20,420	43,950	45,590	36,920	49,900	35,760	18,620	17,700	27,380	18,560	15,140	28,480

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	44,990	47,320	35.86
1951	1206	106,000	Jan. 17, 1951	624	30,920	35,470	1.98	26.88	36,970	42,550	32.24
1952	1236	122,000	Dec. 20-21,1951	1,290	38,530	36,520	2.04	27.75	28,970	24,560	18.66
1953	1276	99,900	Mar. 6, 1953	1,820	22,710	23,030	1.29	17.45	22,360	22,220	16.84
1954	1336	94,900	Jan. 26, 1954	714	16,210	16,360	.913	12.40	17,940	19,120	14.49
1955	1386	159,000	Mar. 27-28,1955	1,070	29,170	28,990	1.62	21.97	29,490	28,000	21.22
1956	1436	137,000	Feb. 23-24,1956	937	28,950	29,560	1.65	22.46	29,190	31,240	23.74
1957	1506	144,000	Feb. 5-6,1957	2,010	31,030	31,250	1.74	23.68	38,710	40,130	30.41
1958	1556	127,000	Nov. 21, 1957	4,560	35,320	35,350	1.97	26.78	27,140	24,360	18.46
1959	1626	91,600	Feb. 16, 1959	4,160	18,420	18,980	1.06	14.38	21,580	23,810	18.04
1960	1706	77,900	Dec. 30, 1959	5,480	28,480	27,710	1.55	21.08	-	-	-

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

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.--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 of chemical analyses for the period October 1957 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	212	168	300	184	227	289	326	215	192	132	110	89.2	204
1952	80.4	183	328	240	282	597	353	218	147	94.2	122	86.4	228
1953	61.6	127	147	297	437	382	231	245	168	159	106	104	204
1954	69.7	86.5	237	327	262	306	291	193	125	83.0	65.3	43.6	174
1955	42.2	56.7	148	99.7	238	204	329	357	218	221	239	112	188
1956	108	92.7	88.8	74.2	315	232	301	206	132	141	79.5	89.0	154
1957	102	104	193	205	370	282	581	217	300	175	114	178	233
1958	242	433	396	331	318	291	410	373	184	221	165	105	289
1959	96.7	89.7	108	227	193	234	314	372	285	185	126	211	203
1960	376	220	232	273	437	336	400	216	185	122	192	169	262

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3.60	2.77	5.10	3.12	3.48	4.91	5.36	3.66	3.16	2.23	1.87	1.47	40.73
1952	1.36	3.01	5.57	4.07	4.48	10.14	5.80	3.70	2.42	1.60	2.07	1.42	45.64
1953	1.05	2.09	2.50	5.05	6.70	6.48	3.79	4.16	2.76	2.70	1.80	1.71	40.79
1954	1.18	1.42	4.02	5.55	4.02	5.20	4.78	3.28	2.06	1.41	1.11	.72	34.75
1955	.72	.93	2.51	1.69	3.66	3.46	5.41	6.06	3.58	3.76	4.05	1.85	37.68
1956	1.84	1.52	1.51	1.26	5.01	3.94	4.94	3.51	2.17	2.39	1.35	1.46	30.90
1957	1.73	1.71	3.28	3.48	5.68	4.78	9.55	3.68	4.93	2.98	1.94	2.93	46.67
1958	4.10	7.11	6.72	5.61	4.88	4.95	6.73	6.33	3.03	3.76	2.80	1.73	57.75
1959	1.64	1.47	1.83	3.86	2.97	3.96	5.15	6.32	4.68	3.15	2.13	3.46	40.62
1960	6.38	3.61	3.93	4.63	6.94	5.70	6.58	3.67	3.03	2.07	3.26	2.78	52.58

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	250	50.04
1951	1206	4,500	Dec. 7, 1950	68	204	3.00	40.73	196	39.20
1952	1236	5,660	Mar. 11, 1952	59	228	3.36	45.64	206	41.34
1953	1276	4,380	Feb. 21, 1953	56	204	3.00	40.79	209	41.77
1954	1336	3,060	Jan. 22, 1954	37	174	2.56	34.75	161	32.29
1955	1386	2,530	May 22, 1955	37	188	2.77	37.68	192	38.39
1956	1436	2,700	Apr. 15, 1956	47	154	2.27	30.90	163	32.75
1957	1506	5,180	Apr. 4, 1957	60	233	3.43	46.67	290	57.88
1958	1556	3,380	Dec. 20, 1957	87	289	4.26	57.75	224	44.76
1959	1626	3,530	Jan. 21, 1959	65	203	2.99	40.62	248	49.60
1960	1706	2,880	Oct. 9, 1959	96	262	3.86	52.58	-	-

4395. French Broad River at Calvert, N. C.

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

Drainage area.--103 sq mi.

Records available.--October 1924 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,154.63 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to July 5, 1932, staff gage and July 5, 1932, to May 16, 1934, chain gage, at same site and datum.

Average discharge.--31 years (1924-55), 344 cfs.

Extremes.--1924-55: Maximum discharge, 16,100 cfs Aug. 15, 1928 (gage height, 13.0 ft), from rating curve extended above 3,600 cfs on basis of slope-area measurement at gage height 11.66 ft; minimum, 54 cfs Sept. 17-23, 1925, Oct. 5, 1954; minimum gage height, 0.17 ft Oct. 5, 1954.
Maximum stage known, about 13.5 ft in July 1916, from French Broad River profile by Tennessee Valley Authority.

Remarks.--Occasional regulation by several small recreational lakes on East and Middle Forks after October 1954.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	330	248	443	268	334	432	475	312	284	203	165	132	302
1952	117	259	521	376	448	930	581	371	246	168	206	143	364
1953	105	189	230	447	680	616	363	401	282	260	175	177	325
1954	125	146	389	542	415	472	445	304	205	141	108	70.4	280
1955	67.5	94.6	243	165	381	316	494	513	318	348	353	176	289

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3.69	2.69	4.96	2.99	3.38	4.83	5.15	3.50	3.07	2.27	1.84	1.43	39.80
1952	1.31	2.81	5.83	4.21	4.69	10.41	6.30	4.15	2.66	1.88	2.31	1.55	48.11
1953	1.18	2.05	2.58	5.01	6.88	6.90	3.94	4.49	3.05	2.91	1.96	1.91	42.86
1954	1.40	1.59	4.35	6.07	4.19	5.28	4.82	3.40	2.22	1.58	1.21	.76	36.87
1955	.76	1.03	2.72	1.85	3.86	3.53	5.35	5.75	3.44	3.90	3.95	1.90	38.04

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	396	52.17
1951	1206	5,600	Dec. 7, 1950	99	302	2.93	39.80	291	38.41
1952	1236	6,960	Mar. 11, 1952	85	364	3.53	48.11	333	43.97
1953	1276	6,070	Feb. 21, 1953	86	325	3.16	42.86	337	44.39
1954	1336	5,010	Jan. 22, 1954	61	280	2.72	36.87	258	34.04
1955	1386	3,580	Feb. 6, 1955	58	289	2.81	38.04	-	-

4400. Catheys Creek near Brevard, N. C.

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

Drainage area.--11.7 sq mi.

Records available.--October 1944 to September 1955.

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

Average discharge.--11 years (1944-55), 36.1 cfs.

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

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	36.5	26.6	43.5	30.1	33.9	42.9	49.8	33.4	27.5	21.1	28.6	16.9	32.6
1952	14.6	27.1	48.9	40.5	44.3	110	64.2	40.3	32.1	18.0	20.9	14.7	39.7
1953	11.5	18.1	19.5	41.2	67.4	57.5	37.4	37.0	24.9	20.4	17.3	16.3	30.5
1954	12.6	14.5	35.1	46.8	42.5	51.3	51.7	35.8	23.6	15.9	11.5	8.21	29.1
1955	7.30	8.69	20.5	14.5	30.7	30.5	47.2	45.4	32.2	33.9	35.4	19.1	27.1

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3.60	2.53	4.28	2.97	3.01	4.22	4.75	3.29	2.62	2.08	2.82	1.61	37.78
1952	1.44	2.58	4.82	3.99	4.08	10.85	6.12	3.97	3.06	1.77	2.06	1.40	46.14
1953	1.13	1.73	1.92	4.06	6.00	5.67	3.56	3.65	2.38	2.01	1.70	1.55	35.36
1954	1.25	1.38	3.46	4.61	3.78	5.05	4.93	3.53	2.25	1.57	1.13	.78	33.72
1955	.72	.83	2.02	1.42	2.73	3.01	4.50	4.48	3.07	3.34	3.49	1.82	31.43

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	40.5	47.02
1951	1206	735	Aug. 14, 1951	14	32.6	2.79	37.78	31.2	36.21
1952	1236	1,260	Mar. 11, 1952	11	39.7	3.39	46.14	36.2	42.08
1953	1276	720	Feb. 21, 1953	10	30.5	2.61	35.36	31.6	36.67
1954	1336	391	Jan. 22, 1954	6.6	29.1	2.49	33.72	26.9	31.20
1955	1386	383	Dec. 29, 1954	6.6	27.1	2.32	31.43	-	-

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 (1920-60), 126 cfs.

Extremes.--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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	126	93.8	164	96.9	124	166	181	113	90.6	72.2	75.0	49.4	113
1952	44.0	93.0	187	149	164	365	202	119	77.6	49.4	78.3	58.7	132
1953	36.9	68.0	82.0	172	227	210	119	114	66.4	57.6	40.6	37.8	102
1954	28.2	36.2	99.4	163	131	163	146	101	60.0	42.9	30.1	17.5	84.7
1955	18.2	24.5	82.6	52.7	128	111	172	174	106	145	135	55.9	100
1956	55.7	41.9	45.7	37.8	182	127	175	123	67.4	75.7	38.0	40.8	83.7
1957	55.4	57.2	102	113	245	152	349	103	173	88.4	47.8	93.6	130
1958	131	225	208	164	161	161	233	208	89.2	93.0	66.2	49.3	149
1959	51.4	42.1	62.1	128	101	123	192	231	190	103	62.8	162	121
1960	229	125	124	157	247	188	230	119	112	65.7	114	67.8	148

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3.59	2.59	4.69	2.77	3.21	4.72	5.01	3.23	2.50	2.06	2.14	1.36	37.87
1952	1.25	2.57	5.34	4.26	4.37	10.42	5.57	3.39	2.14	1.41	2.23	1.62	44.57
1953	1.05	1.88	2.34	4.90	5.85	5.98	3.30	3.26	1.83	1.65	1.16	1.04	34.24
1954	.80	1.00	2.84	4.65	3.38	4.64	4.04	2.88	1.66	1.22	.86	.48	28.45
1955	.52	.68	2.36	1.51	3.31	3.17	4.76	4.97	2.92	4.13	3.84	1.54	33.71
1956	1.59	1.16	1.31	1.08	4.85	3.64	4.83	3.51	1.86	2.16	1.08	1.13	28.20
1957	1.58	1.58	2.91	3.22	6.30	4.33	9.65	2.94	4.78	2.52	1.36	2.59	43.76
1958	3.75	6.22	5.94	4.68	4.15	4.59	6.43	5.95	2.46	2.65	1.89	1.36	50.07
1959	1.47	1.16	1.77	3.65	2.60	3.51	5.31	6.59	5.25	2.94	1.79	4.46	40.50
1960	6.52	3.44	3.54	4.47	6.61	5.36	6.34	3.40	3.11	1.88	3.26	1.87	49.80

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	135	45.18
1951	1206	2,830	Dec. 7, 1950	34	113	2.80	37.87	108	36.16
1952	1236	4,490	Mar. 11, 1952	30	132	3.27	44.57	121	40.68
1953	1276	2,620	Feb. 21, 1953	22	102	2.52	34.24	100	33.61
1954	1336	1,900	Jan. 22, 1954	14	84.7	2.10	28.45	81.4	27.37
1955	1386	1,760	Dec. 29, 1954	14	100	2.48	33.71	102	34.21
1956	1436	2,030	Apr. 15, 1956	21	83.7	2.07	28.20	89.7	30.21
1957	1506	4,770	Apr. 4, 1957	25	130	3.22	43.76	160	53.60
1958	1556	2,060	Dec. 20, 1957	36	149	3.69	50.07	115	38.56
1959	1626	2,880	Jan. 21, 1959	31	121	3.00	40.50	148	49.60
1960	1706	2,370	Aug. 12, 1960	48	148	3.66	49.80	-	-

4415. Little River near Penrose, N. C.

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

Drainage area.--41.4 sq mi.

Records available.--October 1942 to September 1955.

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

Average discharge.--13 years (1942-55), 146 cfs.

Extremes.--1942-55: Maximum discharge, 3,280 cfs Mar. 11, 1952 (gage height, 10.72 ft); minimum, 0.3 cfs Oct. 24, 1943, Oct. 5, 1947; minimum gage height, 0.16 ft Oct. 5, 1947.

Floods of July 1916 (maximum known) and August 1928 reached stages of 14 and 13.5 ft, respectively, from flood profiles by Tennessee Valley Authority. From information by Tennessee Valley Authority the flood of Aug. 13, 1940, reached a stage of about 11 ft (discharge, 3,400 cfs).

Remarks.--Considerable diurnal fluctuation and regulation at low flow by powerplant on Cascade Lake (capacity, about 500 cfs-days). Records of chemical analyses and water temperatures for the period October 1953 to September 1954 are published in report of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	135	103	207	107	129	182	177	111	91.6	95.7	61.6	44.5	120
1952	44.7	104	240	152	216	447	226	149	84.0	54.9	79.3	49.8	154
1953	37.7	73.9	91.7	179	279	285	141	165	137	75.9	44.0	67.4	130
1954	49.6	53.9	172	241	192	197	172	135	70.5	44.7	36.0	27.5	116
1955	18.3	34.2	115	88.8	177	112	213	175	124	94.6	73.8	40.1	105

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	155	50.72
1951	1206	2,380	Dec. 7, 1950	2.0	120	2.90	39.49	116	37.93
1952	1236	3,280	Mar. 11, 1952	5.6	154	3.72	50.62	138	45.49
1953	1276	2,230	Feb. 21, 1953	1.3	130	3.14	42.77	137	44.80
1954	1336	2,320	Jan. 22, 1954	.7	116	2.80	37.91	106	34.90
1955	1386	1,710	Dec. 30, 1954	.7	105	2.54	34.39	-	-

4420. Crab Creek near Penrose, N. C.

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

Drainage area.--10.9 sq mi.

Records available.--October 1942 to September 1955.

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

Average discharge.--13 years (1942-55), 28.4 cfs.

Extremes.--1942-55: Maximum discharge, 1,500 cfs Mar. 11, 1952 (gage height, 7.57 ft), from rating curve extended above 450 cfs on basis of channel-conveyance study of peak flow; minimum not recorded; minimum daily, 4.8 cfs Sept. 29, 1954.
Flood of July 1916 reached stage of about 10.5 ft, from flood profile by Tennessee Valley Authority.

Remarks.--Slight regulation by two small recreation ponds after October 1951 (combined capacity, 7.44 cfs-days).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	27.0	19.5	50.5	23.9	27.5	34.7	34.9	28.6	22.7	16.8	11.7	9.34	25.6
1952	9.32	16.8	35.4	27.0	39.9	83.9	44.5	30.2	20.3	13.1	17.5	15.7	29.5
1953	11.2	13.9	16.3	35.1	40.4	42.9	26.9	30.2	24.4	13.6	10.5	15.1	23.3
1954	9.63	10.5	21.9	37.8	34.2	37.1	35.1	27.8	16.2	11.0	9.11	6.18	21.3
1955	5.77	8.88	16.9	12.1	29.2	19.3	32.5	26.1	18.2	14.7	14.5	8.42	17.1

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.86	1.99	5.34	2.53	2.63	3.67	3.57	3.03	2.32	1.78	1.24	0.96	31.92
1952	.99	1.72	3.74	2.86	3.95	8.88	4.55	3.19	2.07	1.38	1.85	1.60	36.78
1953	1.19	1.42	1.72	3.71	3.86	4.54	2.75	3.19	2.50	1.44	1.11	1.55	28.98
1954	1.02	1.07	2.32	4.00	3.27	3.92	3.60	2.94	1.66	1.16	.96	.63	26.55
1955	.61	.91	1.78	1.28	2.79	2.04	3.33	2.76	1.87	1.56	1.53	.86	21.32

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	30.9	38.49
1951	1208	1,080	Dec. 7, 1950	7.9	25.6	2.35	31.92	22.6	28.18
1952	1236	1,500	Mar. 11, 1952	7.6	29.5	2.71	36.78	27.8	34.66
1953	1278	523	June 7, 1953	7.9	23.3	2.14	28.98	23.3	29.06
1954	1338	504	Jan. 22, 1954	4.8	21.3	1.95	26.55	20.4	25.44
1955	1386	359	Feb. 6, 1955	5.0	17.1	1.57	21.32	-	-

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 (1920-60), 935 cfs.

Extremes.--1920-60: Maximum discharge, 26,500 cfs Aug. 16, 1928 (gage height, 22.9 ft), from rating curve extended above 12,000 cfs; minimum, 119 cfs Oct. 11, 1954 (gage height, 2.36 ft).
Maximum stage known, 27.1 ft in July 1916, from floodmarks.

Remarks.--Considerable diurnal fluctuation at low flow since 1938 caused by powerplant above station. Records of chemical analyses for the periods October 1952 to September 1953, October 1957 to September 1960 and water temperatures for the period October 1952 to September 1953, are published in reports of Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	901	640	1,266	743	923	1,164	1,254	826	722	544	465	344	816
1952	305	697	1,409	1,032	1,245	2,686	1,566	969	648	421	557	412	996
1953	284	493	603	1,179	1,788	1,663	931	1,067	766	589	406	448	846
1954	316	373	1,002	1,421	1,068	1,266	1,139	810	504	357	267	169	724
1955	157	235	630	501	1,047	811	1,316	1,241	815	866	832	394	735
1956	357	311	301	260	1,334	889	1,212	777	474	486	288	347	582
1957	417	435	733	764	1,498	1,125	2,274	833	1,298	699	426	779	933
1958	998	1,688	1,509	1,355	1,270	1,250	1,839	1,551	715	910	600	393	1,172
1959	372	343	476	902	778	947	1,372	1,553	1,266	769	537	1,192	874
1960	1,688	1,029	1,035	1,208	2,115	1,534	1,792	959	746	528	903	587	1,173

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3.51	2.41	4.93	2.89	3.25	4.53	4.73	3.22	2.72	2.12	1.81	1.30	37.42
1952	1.19	2.63	5.49	4.02	4.54	10.46	5.90	3.78	2.44	1.64	2.17	1.55	45.81
1953	1.11	1.86	2.35	4.59	6.29	6.48	3.51	4.15	2.89	2.30	1.58	1.69	38.80
1954	1.23	1.41	3.90	5.54	3.76	4.93	4.29	3.15	1.90	1.39	1.04	.64	33.18
1955	.61	.88	2.45	1.95	3.68	3.16	4.96	4.84	3.07	3.37	3.24	1.48	33.69
1956	1.39	1.17	1.17	1.01	4.86	3.46	4.57	3.03	1.79	1.89	1.12	1.31	26.77
1957	1.62	1.64	2.86	2.97	5.27	4.38	8.57	3.25	4.89	2.72	1.66	2.94	42.77
1958	3.89	6.36	5.88	5.28	4.47	4.87	6.93	6.04	2.69	3.54	2.34	1.48	53.77
1959	1.45	1.29	1.85	3.51	2.74	3.69	5.17	6.05	4.77	2.99	2.09	4.49	40.09
1960	6.58	3.88	4.03	4.71	7.71	5.97	6.76	3.73	2.81	2.06	3.52	2.21	53.97

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,043	47.83
1951	1206	6,880	Dec. 7, 1950	271	816	2.76	37.42	782	35.88
1952	1236	9,730	Mar. 11, 1952	229	996	3.36	45.81	909	41.82
1953	1276	11,300	Feb. 22, 1953	220	846	2.86	38.80	873	40.02
1954	1336	7,290	Jan. 23, 1954	134	724	2.45	33.18	667	30.58
1955	1386	4,570	Dec. 30, 1954	123	735	2.48	33.69	730	33.48
1956	1436	3,900	Apr. 16, 1956	160	582	1.97	26.77	634	29.16
1957	1506	12,800	Apr. 5, 1957	212	933	3.15	42.77	1,151	52.78
1958	1556	4,270	Nov. 19, 1957	292	1,172	3.96	53.77	921	42.23
1959	1626	3,900	Apr. 13, 1959	238	874	2.95	40.09	1,090	49.99
1960	1706	4,660	Oct. 11, 1959	394	1,173	3.96	53.97	-	-

4440. Boylston Creek near Horseshoe, N. C.

Location.--Lat 35°22'13" (revised), long 82°33'50", on right bank, 100 ft upstream from county highway bridge, 1.7 miles upstream from mouth, and 2 miles north of Horseshoe, Henderson County.

Drainage area.--14.8 sq mi.

Records available.--October 1942 to September 1955. Monthly discharge only for some periods, published in WSP 1306.

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

Average discharge.--13 years (1942-55), 32.8 cfs.

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

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	32.5	22.0	47.5	26.1	30.5	37.9	40.3	30.9	30.4	21.3	20.1	14.2	29.5
1952	13.0	26.2	44.6	41.5	42.5	91.9	59.6	36.3	27.5	15.9	18.6	17.4	36.3
1953	11.5	15.8	16.5	31.1	49.6	36.5	25.8	26.4	17.2	13.8	12.0	12.8	22.2
1954	9.29	11.1	25.5	45.5	26.4	39.8	32.3	24.3	19.7	15.8	15.4	7.42	22.7
1955	6.69	10.4	21.1	14.5	33.6	25.1	35.1	35.3	22.5	28.0	16.5	10.9	21.6

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.54	1.66	3.70	2.04	2.14	2.96	3.04	2.40	2.29	1.66	1.57	1.07	27.07
1952	1.01	1.97	3.48	3.24	3.10	7.16	4.50	2.83	2.08	1.24	1.45	1.31	33.37
1953	.90	1.19	1.28	2.42	3.49	2.84	1.94	2.06	1.29	1.07	.93	.96	20.37
1954	.72	.84	1.99	3.54	1.86	3.10	2.43	1.89	1.49	1.23	1.20	.56	20.85
1955	.52	.78	1.65	1.13	2.36	1.96	2.64	2.75	1.70	2.18	1.29	.82	19.78

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	35.3	32.40
1951	1206	805	Dec. 7, 1950	12	29.5	1.99	27.07	27.9	25.63
1952	1236	693	Mar. 23, 1952	10	36.3	2.45	33.37	32.9	30.28
1953	1276	432	Feb. 21, 1953	7.9	22.2	1.50	20.37	22.4	20.55
1954	1336	608	Aug. 23, 1954	5.7	22.7	1.53	20.85	22.1	20.25
1955	1386	390	Feb. 6, 1955	6.0	21.6	1.46	19.78	-	-

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 village of Mills River, Henderson County, and 4.2 miles northwest of Horseshoe.

Drainage area.--66.7 sq mi.

Records available.--September 1924 to September 1926, 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 (1924-26, 1933-60), 158 cfs.

Extremes.--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.--City of Hendersonville diverts from tributaries an average of 4 cfs for water supply. Records of chemical analyses and water temperatures for the period October 1951 to September 1952 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	191	140	243	148	179	226	258	156	125	108	84.8	56.9	160
1952	53.9	106	237	202	239	479	300	186	118	74.2	95.2	71.8	180
1953	51.2	76.4	91.0	209	280	271	161	140	77.8	61.2	44.5	47.3	125
1954	32.5	45.4	126	204	169	218	173	134	91.8	59.7	46.1	23.7	110
1955	24.8	35.2	97.4	74.2	171	139	209	218	133	176	135	62.7	123
1956	60.8	51.8	50.3	43.5	202	153	243	159	84.8	96.7	58.5	71.1	106
1957	84.8	88.9	134	132	261	202	468	159	213	126	74.2	121	171
1958	170	307	277	225	224	243	327	312	151	120	95.2	57.6	209
1959	56.6	54.2	82.0	163	128	165	260	265	199	147	87.5	190	150
1960	283	173	161	203	349	282	359	178	116	80.9	147	92.0	201

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3.31	2.34	4.21	2.57	2.80	3.90	4.31	2.69	2.09	1.87	1.47	0.95	32.51
1952	.93	1.78	4.09	3.49	3.87	8.28	5.01	3.22	1.97	1.28	1.65	1.20	36.77
1953	.89	1.28	1.57	3.61	4.37	4.69	2.70	2.42	1.30	1.06	.77	.79	25.45
1954	.56	.76	2.17	3.52	2.63	3.76	2.89	2.31	1.54	1.03	.80	.40	22.37
1955	.43	.59	1.68	1.28	2.66	2.40	3.50	3.77	2.23	3.04	2.33	1.05	24.96
1956	1.05	.87	.87	.75	3.27	2.64	4.07	2.74	1.42	1.67	1.01	1.19	21.55
1957	1.47	1.49	2.32	2.28	4.08	3.49	7.83	2.76	3.57	2.18	1.28	2.02	34.77
1958	2.94	5.13	4.79	3.90	3.50	4.21	5.47	5.39	2.52	2.07	1.64	.96	42.52
1959	.98	.91	1.42	2.82	2.00	2.85	4.34	4.59	3.34	2.53	1.51	3.18	30.47
1960	4.89	2.89	2.78	3.50	5.65	4.87	6.01	3.08	1.94	1.40	2.55	1.54	41.10

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	180	36.74
1951	1206	2,910	Dec. 7, 1950	44	160	2.40	32.51	145	29.45
1952	1236	3,360	Mar. 11, 1952	38	180	2.70	36.77	165	33.71
1953	1276	2,610	Feb. 21, 1953	26	125	1.87	25.45	124	25.20
1954	1336	2,450	Jan. 22, 1954	18	110	1.65	22.37	106	21.58
1955	1386	1,520	Dec. 30, 1954	20	123	1.84	24.96	123	25.05
1956	1436	1,740	Apr. 16, 1956	28	106	1.59	21.55	118	24.04
1957	1506	4,340	Apr. 4, 1957	45	171	2.56	34.77	208	42.35
1958	1556	1,680	Nov. 19, 1957	45	209	3.13	42.52	162	32.97
1959	1626	1,710	Jan. 22, 1959	32	150	2.25	30.47	185	37.72
1960	1706	1,570	Aug. 13, 1960	58	201	3.01	41.10	-	-

4465. Clear Creek near Hendersonville, N. C.

Location.--Lat 35°21'14", long 82°26'40", on right bank at upstream side of county highway bridge, 0.6 mile upstream from Allen Branch, 1.0 mile downstream from Wolfpen Creek, 1.2 miles upstream from mouth, and 2.7 miles northeast of Hendersonville, Henderson County.

Drainage area.--42.2 sq mi.

Records available.--October 1944 to September 1955. Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 2,071.98 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--11 years (1944-55), 69.1 cfs.

Extremes.--1944-55: Maximum discharge, 4,020 cfs Aug. 28, 1949 (gage height, 10.50 ft), from rating curve extended above 2,500 cfs on basis of velocity-area studies; minimum, 8.8 cfs Sept. 19, 1954 (gage height, 0.80 ft).
Floods in July 1916 and Aug. 13, 1940, reached stages of 16 and 12 ft, respectively, from flood profiles by Tennessee Valley Authority.

Remarks.--Occasional slight diurnal fluctuation at low flow caused by gristmill and three small stock ponds on tributaries above gage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	81.6	55.9	133	59.3	75.5	99.0	91.6	57.5	62.9	47.8	30.3	25.4	68.4
1952	25.1	48.6	106	78.5	94.6	209	95.4	61.9	41.4	27.8	31.8	27.7	70.7
1953	23.7	28.4	31.2	76.0	116	78.6	48.3	44.2	36.2	25.8	26.8	25.8	46.3
1954	20.8	21.0	46.4	103	72.8	98.3	76.9	51.5	32.3	28.5	18.1	11.0	48.3
1955	12.0	19.6	37.1	29.5	57.3	44.9	60.9	62.3	42.3	56.7	32.8	20.7	39.6

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.23	1.48	3.64	1.62	1.86	2.70	2.42	1.57	1.66	1.31	0.83	0.67	21.99
1952	.69	1.29	2.88	2.14	2.42	5.70	2.52	1.69	1.10	.76	.87	.73	22.79
1953	.65	.75	.85	2.08	2.85	2.15	1.28	1.21	.96	.70	.73	.68	14.89
1954	.57	.56	1.27	2.80	1.80	2.68	2.03	1.41	.85	.78	.49	.29	15.53
1955	.33	.52	1.01	.80	1.41	1.23	1.61	1.70	1.12	1.55	.90	.55	12.73

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	93.1	29.95
1951	1206	2,240	Dec. 7, 1950	19	68.4	1.62	21.99	60.6	19.50
1952	1236	2,340	Mar. 11, 1952	17	70.7	1.68	22.79	62.6	20.18
1953	1276	1,080	Feb. 21, 1953	12	46.3	1.10	14.89	46.7	15.04
1954	1336	1,600	Jan. 22, 1954	9.6	48.3	1.14	15.53	46.6	14.99
1955	1386	627	Feb. 6, 1955	10	39.6	.938	12.73	-	-

4470. Mud Creek at Naples, N. C.

Location.--Lat 35°22'52", long 82°29'54", on left bank at downstream side of bridge on old Asheville-Hendersonville highway, 100 ft downstream from Byers Creek, 0.8 mile south of Naples, Henderson County, and 2.2 miles upstream from mouth.

Drainage area.--109 sq mi.

Records available.--May to December 1907, September 1938 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,047.48 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. May 10 to Dec. 31, 1907, staff gage at same site at different datum.

Average discharge.--17 years (1938-55), 196 cfs.

Extremes.--1907, 1938-55: Maximum discharge, 10,800 cfs Aug. 13, 1940 (gage height, 13.07 ft); minimum, 22 cfs Sept. 30, 1954 (gage height, -0.24 ft).
Floods in July 1916 and August 1928 reached stages of 21 and 15 ft, respectively, from information by Tennessee Valley Authority.

Remarks.--Occasional regulation by many small reservoirs and recreational ponds. Mud Creek receives sewage from city of Hendersonville, which diverts its water supply from tributaries of Mills River. Records of chemical analyses for the period October 1951 to September 1952 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	210	143	422	165	215	272	248	150	180	120	84.1	74.7	190
1952	67.5	143	319	239	281	675	285	182	123	80.6	96.4	89.0	215
1953	68.7	91.5	103	233	363	276	150	148	133	100	89.9	77.7	151
1954	60.8	68.8	147	363	243	282	210	153	110	77.6	53.7	30.8	150
1955	33.0	63.6	143	108	220	139	225	190	124	139	102	56.1	128

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.22	1.46	4.47	1.75	2.05	2.88	2.54	1.59	1.84	1.27	0.89	0.76	23.72
1952	.71	1.47	3.38	2.52	2.78	7.14	2.91	1.93	1.26	.85	1.02	.91	26.88
1953	.73	.94	1.09	2.46	3.46	2.92	1.54	1.56	1.36	1.06	.95	.80	18.87
1954	.64	.70	1.55	3.84	2.32	2.98	2.15	1.62	1.13	.82	.57	.32	18.64
1955	.35	.65	1.51	1.14	2.10	1.47	2.31	2.01	1.27	1.47	1.08	.57	15.93

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	250	31.07
1951	1206	5,940	Dec. 7, 1950	58	190	1.74	23.72	170	21.13
1952	1236	5,940	Mar. 11, 1952	51	215	1.97	26.88	193	24.08
1953	1276	3,150	Feb. 21, 1953	42	151	1.39	18.87	153	19.00
1954	1336	4,930	Jan. 23, 1954	25	150	1.38	18.64	147	18.26
1955	1386	1,890	Feb. 7, 1955	26	128	1.17	15.93	-	-

4475. Cane Creek at Fletcher, N. C.

Location.--Lat 35°26'08", long 82°29'23", on right bank at downstream side of county highway bridge, 0.5 mile upstream from Hooper Creek, 0.5 mile northeast of Fletcher, Henderson County, and 0.8 mile downstream from county line.

Drainage area.--63.1 sq mi.

Records available.--October 1942 to September 1958.

Gage.--Water-stage recorder. Datum of gage is 2,072.22 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--16 years (1942-58), 73.7 cfs.

Extremes.--1942-58: Maximum discharge, 3,340 cfs Apr. 4, 1957 (gage height, 8.73 ft); minimum, 9.4 cfs Sept. 21, 1956.
Maximum stage known since at least 1876, 14.8 ft in July 1916; flood of Aug. 30, 1940, reached a stage of 9.4 ft (discharge, 4,200 cfs); stages from high-water marks and flood profiles by Tennessee Valley Authority.

Remarks.--Records of chemical analyses for the period October 1953 to September 1954 are published in report of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	62.1	45.7	119	56.5	69.6	113	95.3	57.8	58.2	37.8	24.9	26.6	63.9
1952	23.2	39.9	91.5	73.9	89.7	224	111	72.6	43.1	32.3	52.2	32.2	73.9
1953	25.9	39.2	37.0	101	142	93.8	60.3	55.9	45.0	23.2	20.2	22.8	55.0
1954	17.0	21.9	41.6	136	99.9	132	96.2	63.5	45.3	22.5	19.9	12.1	58.8
1955	13.6	24.0	34.6	29.0	59.1	64.5	64.9	56.4	39.4	42.8	50.5	23.3	41.8
1956	21.9	23.9	23.0	21.7	74.9	62.7	137	67.6	35.2	33.0	19.1	26.3	45.3
1957	30.1	31.3	59.5	63.3	114	79.7	211	66.2	109	40.7	28.5	38.1	72.0
1958	42.3	107	101	89.4	102	104	186	137	64.7	62.6	38.6	28.6	88.4
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.14	0.81	2.18	1.03	1.15	2.06	1.68	1.06	1.03	0.69	0.45	0.47	13.75
1952	.42	.71	1.67	1.35	1.53	4.09	1.97	1.33	.76	.59	.95	.57	15.94
1953	.47	.69	.68	1.84	2.35	1.71	1.07	1.02	.80	.42	.37	.40	11.82
1954	.31	.39	.76	2.48	1.65	2.41	1.70	1.16	.80	.41	.36	.21	12.64
1955	.25	.42	.63	.53	.98	1.18	1.15	1.03	.70	.78	.92	.41	8.98
1956	.40	.42	.42	.40	1.28	1.15	2.43	1.23	.62	.60	.35	.46	9.76
1957	.55	.55	1.09	1.16	1.88	1.46	3.74	1.21	1.92	.74	.52	.67	15.49
1958	.77	1.90	1.85	1.63	1.68	1.90	3.29	2.50	1.14	1.14	.70	.51	19.01
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	89.2	19.20
1951	1206	2,240	Dec. 7, 1950	17	63.9	1.01	13.75	57.8	12.42
1952	1236	2,530	Mar. 23, 1952	19	73.9	1.17	15.94	69.4	14.98
1953	1276	1,620	Feb. 21, 1953	10	55.0	.872	11.82	53.2	11.44
1954	1336	2,900	Jan. 22, 1954	10	58.8	.932	12.64	58.1	12.48
1955	1386	925	Mar. 22, 1955	10	41.8	.662	8.98	41.5	8.92
1956	1436	2,130	Apr. 16, 1956	10	45.3	.718	9.76	49.7	10.71
1957	1506	3,340	Apr. 4, 1957	19	72.0	1.14	15.49	82.8	17.82
1958	1556	1,610	Apr. 28, 1958	26	88.4	1.40	19.01	-	-
1959	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-

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, 6.2 miles upstream from Hominy Creek, 6.7 miles south of Asheville, Buncombe County, and at mile 157.7.

Drainage area.--676 sq mi.

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

Gage.--Water-stage recorder. Datum of gage is 1,995.91 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--27 years (1933-60), 1,602 cfs.

Extremes.--1933-60: Maximum discharge, 23,600 cfs Aug. 14, 1940 (gage height, 12.6 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.--Some diurnal fluctuation at low flow caused by powerplant above station. Records of chemical analyses for the period of October 1958 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,572	1,141	2,447	1,274	1,561	2,043	2,152	1,382	1,285	964	765	582	1,431
1952	530	1,133	2,396	1,847	2,202	4,835	2,626	1,661	1,137	718	942	749	1,732
1953	541	831	941	1,990	2,926	2,573	1,459	1,629	1,191	924	655	674	1,352
1954	506	596	1,537	2,479	1,794	2,256	1,912	1,347	923	628	488	291	1,228
1955	289	471	997	890	1,741	1,344	2,086	1,961	1,240	1,408	1,288	607	1,190
1956	612	554	547	477	2,081	1,394	2,099	1,291	791	855	518	597	978
1957	720	732	1,191	1,168	2,468	1,846	4,006	1,343	2,231	1,135	720	1,205	1,551
1958	1,501	2,749	2,440	2,212	2,115	2,194	3,230	2,730	1,289	1,526	1,033	702	1,975
1959	683	677	1,002	1,612	1,285	1,557	2,306	2,383	1,914	1,211	871	1,927	1,451
1960	3,017	1,609	1,680	1,982	3,757	2,764	3,294	1,663	1,241	934	1,750	1,012	2,052

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.68	1.88	4.17	2.17	2.40	3.48	3.55	2.36	2.12	1.64	1.31	0.96	28.72
1952	.90	1.87	4.09	3.15	3.51	8.25	4.33	2.83	1.88	1.22	1.61	1.24	34.88
1953	.92	1.37	1.61	3.39	4.51	4.39	2.41	2.78	1.97	1.58	1.12	1.11	27.16
1954	.86	.98	2.62	4.23	2.76	3.85	3.16	2.30	1.52	1.07	.83	.48	24.66
1955	.49	.78	1.70	1.52	2.68	2.29	3.44	3.34	2.05	2.40	2.20	1.00	23.89
1956	1.04	.91	.93	.81	3.32	2.38	3.46	2.20	1.30	1.46	.88	.98	19.67
1957	1.23	1.21	2.03	1.99	3.80	3.15	6.61	2.29	3.68	1.94	1.23	1.99	31.15
1958	2.56	4.54	4.16	3.77	3.26	3.74	5.33	4.66	2.13	2.60	1.76	1.16	39.67
1959	1.16	1.12	1.71	2.75	1.98	2.66	3.81	4.06	3.16	2.07	1.48	3.18	29.14
1960	5.15	2.66	2.87	3.38	5.99	4.71	5.44	2.84	2.05	1.59	2.98	1.67	41.33

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,788	35.89
1951	1206	12,400	Dec. 7 or 8, 1950	456	1,431	2.12	28.72	1,338	26.85
1952	1236	11,000	Mar. 12, 1952	444	1,732	2.56	34.88	1,585	31.92
1953	1276	12,000	Feb. 22, 1953	392	1,352	2.00	27.16	1,380	27.72
1954	1336	12,400	Jan. 23, 1954	238	1,228	1.82	24.66	1,154	23.17
1955	1386	6,790	Feb. 6, 1955	234	1,190	1.76	23.89	1,186	23.80
1956	1436	8,160	Apr. 16, 1956	300	978	1.45	19.67	1,057	21.26
1957	1506	18,600	Apr. 5, 1957	394	1,551	2.29	31.15	1,889	37.94
1958	1556	7,410	Apr. 29, 1958	572	1,975	2.92	39.67	1,614	32.40
1959	1626	8,650	Sept.30, 1959	490	1,451	2.15	29.14	1,783	35.83
1960	1706	7,850	Feb. 5, 1960	714	2,052	3.04	41.33	-	-

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 (1942-60), 88.2 cfs.

Extremes.--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.--Numerous small diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	105	77.5	162	84.9	88.5	138	134	82.9	78.7	71.8	46.7	38.2	92.5
1952	33.5	55.6	119	101	141	248	142	101	73.6	52.4	61.3	43.8	97.6
1953	34.6	44.4	51.3	103	140	117	78.2	72.9	42.0	34.8	25.7	23.7	63.6
1954	21.4	24.4	37.6	102	68.6	122	86.5	63.9	50.6	39.4	28.3	16.8	55.1
1955	20.6	27.2	37.8	32.7	77.2	81.5	87.3	108	63.2	82.4	51.8	27.4	58.0
1956	27.8	31.4	30.1	27.0	85.7	74.1	119	67.4	41.3	49.0	25.1	39.2	51.1
1957	51.9	42.6	55.9	74.6	170	112	301	90.1	107	51.5	39.8	61.8	95.6
1958	78.0	161	146	124	140	145	176	193	91.2	79.5	62.1	44.1	120
1959	44.3	46.5	72.1	113	73.2	93.7	133	110	79.4	59.3	49.0	88.2	80.1
1960	136	81.1	82.5	106	200	170	190	108	79.8	61.0	85.5	51.7	112

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.52	1.08	2.33	1.23	1.15	2.00	1.88	1.20	1.10	1.04	0.68	0.53	15.74
1952	.48	.78	1.72	1.46	1.91	3.58	1.98	1.47	1.03	.76	.89	.61	16.67
1953	.50	.62	.74	1.49	1.83	1.69	1.09	1.05	.59	.50	.37	.33	10.80
1954	.31	.34	.54	1.48	.90	1.76	1.21	.92	.71	.57	.41	.23	9.38
1955	.30	.38	.55	.47	1.01	1.18	1.22	1.56	.88	1.19	.75	.38	9.87
1956	.40	.44	.43	.39	1.16	1.07	1.66	.97	.58	.71	.36	.55	8.72
1957	.75	.60	.81	1.08	2.21	1.62	4.21	1.30	1.50	.74	.58	.86	16.26
1958	1.13	2.26	2.11	1.79	1.82	2.09	2.46	2.79	1.28	1.15	.90	.62	20.40
1959	.64	.65	1.04	1.63	.96	1.35	1.86	1.59	1.11	.86	.71	1.23	13.63
1960	1.96	1.13	1.19	1.53	2.71	2.45	2.66	1.57	1.12	.88	1.23	.72	19.15

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	111	18.92
1951	1206	2,890	Dec. 7, 1950	30	92.5	1.16	15.74	81.0	13.79
1952	1236	1,670	Mar. 11, 1952	28	97.6	1.22	16.67	91.1	15.55
1953	1276	1,250	Feb. 21, 1953	14	63.6	.797	10.80	59.7	10.13
1954	1336	1,480	Jan. 22, 1954	14	55.1	.690	9.38	55.3	9.42
1955	1386	918	July 28, 1955	14	58.0	.727	9.87	58.3	9.91
1956	1436	935	Apr. 15, 1956	16	51.1	.640	8.72	56.3	9.61
1957	1506	4,410	Apr. 4, 1957	26	95.6	1.20	16.26	115	19.60
1958	1556	1,140	Nov. 19, 1957	37	120	1.50	20.40	101	17.23
1959	1626	1,850	Dec. 28, 1958	32	80.1	1.01	13.63	91.6	15.58
1960	1706	1,570	Feb. 5, 1960	41	112	1.40	19.15	-	-

4490. North Fork Swannanoa River near Black Mountain, N. C.

Location.--Lat 35°39'11", long 82°21'04", on left bank 0.1 mile downstream from Walker Branch, 0.8 mile downstream from Burnett Dam, 1.9 miles downstream from Sugar Fork, 3.0 miles northwest of town of Black Mountain, Buncombe County, and 3.4 miles downstream from Right Fork.

Drainage area.--23.8 sq mi.

Records available.--January 1926 to May 1958.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,428.03 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--31 years (1926-57), 55.6 cfs (adjusted for storage and diversion).

Extremes.--1926-58: Maximum discharge, 16,500 cfs June 16, 1949 (gage height, 9.10 ft), from rating curve extended above 2,600 cfs on basis of slope-area measurements at gage heights 8.55 and 9.10 ft; minimum, 0.6 cfs Sept. 17, 1953 (gage height, 0.83 ft).

Remarks.--City of Asheville diverted part of its water supply by gravity from four main tributaries with a combined drainage area of 16.4 sq mi at points 1.9 to 4.0 miles upstream; and by pumping plant 1.2 miles upstream intermittently Sept. 29, 1952, to Jan. 16, 1953, July 21 to Dec. 4, 1953; and by pumping from Burnett Lake Aug. 24, 1954, to Feb. 7, 1955, Aug. 6 to Nov. 17, 1956, Aug. 5 to Sept. 30, 1957. Burnett Dam, 0.8 mile upstream, was completed and gates closed Jan. 27, 1954. Occasional regulation by Burnett Lake due to construction operations at Burnett Dam October 1952 to Jan. 27, 1954. No regulation after Mar. 26, 1954, when lake first reached spillway level. Records of diversion and change in contents in Burnett Lake furnished by city of Asheville, Division of Watersheds. Records of evaporation furnished by Tennessee Valley Authority.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	30.6	15.4	60.4	31.0	50.1	81.0	62.4	22.3	39.5	14.5	5.52	3.14	34.6
1952	3.15	20.3	54.8	49.6	65.9	131	62.5	30.2	8.87	5.05	8.59	11.5	37.6
1953	1.97	16.0	20.9	83.5	120	81.5	34.5	35.8	12.9	3.70	4.33	14.8	35.3
1954	2.49	9.03	61.1	31.4	3.26	23.3	77.6	56.8	18.4	5.70	1.81	1.43	24.5
1955	1.48	1.81	2.16	2.04	53.1	84.9	65.8	41.9	23.7	37.7	63.3	5.56	31.9
1956	5.26	5.05	8.41	4.12	94.1	84.7	90.9	32.2	8.24	10.2	2.28	3.04	28.7
1957	12.8	25.1	54.0	64.1	153	71.0	138	36.0	72.9	25.1	3.9	13.7	54.9
1958	33.8	78.0	95.6	46.7	60.0	68.0	136	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches (adjusted) a/

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.94	1.14	3.38	1.96	2.61	4.38	3.36	1.53	2.31	1.18	0.66	0.41	24.86
1952	.39	1.40	3.10	2.78	3.33	6.74	3.33	1.90	.83	.65	.88	.94	26.27
1953	.42	1.09	1.45	4.52	5.65	4.38	2.04	2.15	1.03	.51	.61	1.01	24.86
1954	.47	.83	3.32	5.46	3.05	4.80	3.89	3.00	1.12	.57	.40	.20	27.11
1955	.22	.44	1.83	1.05	3.17	4.64	3.64	2.60	1.67	2.45	3.58	.74	26.03
1956	.69	.69	.89	.66	4.84	4.63	4.79	2.09	.90	1.02	.39	.99	22.58
1957	1.52	1.78	3.18	4.11	6.86	3.73	7.04	2.25	4.08	1.68	.65	1.65	38.53
1958	2.09	4.21	5.10	2.72	3.13	3.74	6.92	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

a Adjusted for diversion by city of Asheville for water supply and, since October 1953, for evaporation and change in contents in Burnett Lake.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	56.5	66.3	37.83
1951	1206	1,540	Dec. 7, 1950	2.3	34.6	43.6	1.83	24.86	32.2	40.9	23.29
1952	1236	1,510	Mar. 23, 1952	1.7	37.6	46.0	1.93	26.27	34.2	42.6	24.34
1953	1276	1,840	Feb. 21, 1953	.8	35.3	43.6	1.83	24.86	38.2	46.5	26.52
1954	1336	249	Nov. 23, 1953	.9	24.5	47.5	2.00	27.11	18.8	43.8	24.98
1955	1386	398	Mar. 22, 1955	1.3	31.9	45.6	1.92	26.03	33.0	45.3	25.81
1956	1436	531	Apr. 16, 1956	1.8	28.7	39.5	1.66	22.58	34.9	46.8	26.79
1957	1506	1,110	Apr. 5, 1957	2.5	54.9	67.5	2.84	38.53	64.6	76.2	43.45
1958	1556	b576	Dec. 20, 1957	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-

a Adjusted for diversion by city of Asheville for water supply and, since October 1953, for evaporation and change in contents in Burnett Lake.
b Maximum during period October to May.

4500. Beetree Creek near Swannanoa, N. C.

Location.--Lat 35°39'11", long 82°24'20", on left bank 1,000 ft upstream from Beetree Reservoir and 3.8 miles north of Swannanoa, Buncombe County.

Drainage area.--5.46 sq mi.

Records available.--February 1926 to September 1960.

Gage.--Water-stage recorder and modified Parshall flume set in masonry control. Datum of gage is 2,728.39 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--34 years (1926-60), 10.4 cfs.

Extremes.--1926-60: 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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3.98	3.30	14.3	8.11	11.5	18.9	14.7	6.79	8.07	5.76	2.21	1.52	8.25
1952	1.24	3.93	11.5	10.8	12.6	30.1	14.2	7.79	2.62	1.57	1.20	1.02	8.23
1953	.74	1.84	2.90	15.4	25.0	15.1	8.56	10.6	4.02	1.69	1.76	2.53	7.41
1954	1.37	2.44	9.33	20.6	13.3	20.2	18.0	11.9	4.87	2.07	1.21	.51	8.80
1955	.65	1.23	4.44	4.07	11.5	18.4	16.6	11.7	6.96	6.90	9.51	2.12	7.82
1956	1.72	2.16	3.37	2.71	16.1	17.4	20.1	9.16	2.76	3.39	1.15	1.61	6.76
1957	2.91	4.95	11.4	13.2	27.1	15.0	29.8	8.25	11.9	5.15	1.66	2.06	11.0
1958	3.58	13.6	17.6	9.66	14.2	15.3	23.6	21.5	4.64	3.17	1.78	1.12	10.8
1959	1.54	2.78	5.46	12.0	9.41	9.20	19.6	18.1	15.7	4.92	6.53	15.3	10.0
1960	24.1	9.81	13.7	14.1	19.9	19.3	22.2	9.07	9.22	7.54	7.58	3.02	13.3

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.84	0.67	3.03	1.71	2.19	4.00	3.00	1.43	1.65	1.22	0.47	0.31	20.52
1952	.26	.80	2.43	2.28	2.49	6.36	2.90	1.64	.53	.33	.25	.21	20.48
1953	.16	.38	.61	3.25	4.77	3.19	1.75	2.23	.82	.36	.37	.52	18.41
1954	.29	.50	1.97	4.35	2.53	4.26	3.68	2.51	.99	.44	.26	.10	21.88
1955	.14	.25	.94	.86	2.19	3.89	3.39	2.47	1.42	1.46	2.01	.43	19.45
1956	.36	.44	.71	.57	3.19	3.68	4.11	1.93	.56	.72	.24	.33	16.84
1957	.62	1.01	2.41	2.78	5.16	3.18	6.08	1.74	2.43	1.09	.35	.42	27.27
1958	.76	2.78	3.72	2.04	2.71	3.24	4.82	4.54	.95	.67	.38	.23	26.84
1959	.32	.57	1.15	2.52	1.80	1.94	4.01	3.82	3.21	1.04	1.38	3.13	24.89
1960	5.08	2.00	2.90	2.98	3.92	4.07	4.53	1.92	1.88	1.59	1.60	.62	33.09

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	11.5	28.54
1951	1206	265	Dec. 7, 1950	1.1	8.25	1.51	20.52	7.83	19.47
1952	1236	247	Mar. 23, 1952	.7	8.23	1.51	20.48	7.28	18.14
1953	1276	454	Feb. 21, 1953	.6	7.41	1.36	18.41	8.06	20.02
1954	1336	273	Jan. 22, 1954	.3	8.80	1.61	21.88	8.23	20.45
1955	1386	83	Mar. 22, 1955	.4	7.82	1.43	19.45	7.90	19.63
1956	1436	132	Apr. 15, 1956	.5	6.76	1.24	16.84	7.77	19.37
1957	1506	284	Apr. 4, 1957	.8	11.0	2.01	27.27	12.3	30.49
1958	1556	158	Dec. 20, 1957	.7	10.8	1.98	26.84	8.69	21.62
1959	1626	290	Sept.30, 1959	.9	10.0	1.83	24.89	13.2	32.83
1960	1706	235	Mar. 30, 1960	1.7	13.3	2.44	33.09	-	-

4510. Swannanoa River at Biltmore, N.C.

Location.--Lat 35°34'06", long 82°32'42", on left bank at Biltmore, Buncombe County, 100 ft downstream from Biltmore Avenue Bridge, 200 ft upstream from Southern Railway bridge, and 1.6 miles upstream from mouth.

Drainage area.--130 sq mi.

Records available.--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.--1920-26, 1933-60: Maximum discharge, 18,400 cfs Aug. 13, 1940 (gage height, 19.00 ft), from rating curve extended above 8,400 cfs on basis of computation of peak flow over dam 3.6 miles above station; minimum, 1.1 cfs Oct. 9, 14, 15, 1941; minimum daily, 1.2 cfs Oct. 14, 1941; minimum gage height, 0.65 ft July 17, 1936.
Maximum stage known, 20.7 ft (revised) in 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.--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 (capacity, 11,600 cfs-days) after Aug. 24, 1954. No regulation from Lake Craig 3.6 miles above station after 1950 (reservoir silted). Textile mills above gage divert about 5 mgd for industrial use, of which about 3 mgd, equivalent to a mean discharge of 4.5 cfs, is discharged into French Broad River. Practically all of the flow of North Fork at Grovestone is diverted through a gravel-washing plant, resulting in an excessive evaporation loss. Records of chemical analyses for the period October 1955 to September 1956 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	115	72.8	221	111	150	264	226	107	134	68.4	36.3	29.3	128
1952	21.5	64.4	160	140	200	471	240	126	65.3	40.6	46.5	44.8	135
1953	27.4	60.9	63.6	205	340	230	115	131	62.1	23.3	25.5	42.8	109
1954	20.6	35.0	115	229	127	217	241	170	85.0	36.7	23.9	13.8	110
1955	13.7	30.3	38.7	34.1	129	202	189	129	80.9	103	172	41.1	96.8
1956	33.5	38.0	41.2	32.3	213	210	266	119	50.0	64.1	18.8	43.4	93.4
1957	55.0	71.3	138	152	387	207	528	125	225	88.7	27.5	58.3	170
1958	88.8	222	260	158	204	219	405	337	105	75.9	42.5	27.0	178
1959	34.1	37.9	95.5	152	126	132	295	260	188	73.7	76.8	268	145
1960	352	138	173	211	405	302	376	155	116	107	148	68.1	212

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	185	-
1951	1206	2,850	Dec. 7, 1950	17	128	-	-	114	-
1952	1236	3,270	Mar. 23, 1952	17	135	-	-	127	-
1953	1276	3,560	Feb. 21, 1953	4.8	109	-	-	111	-
1954	1336	3,270	Jan. 22, 1954	8.0	110	-	-	102	-
1955	1386	805	Mar. 22, 1955	6.8	96.8	-	-	99.3	-
1956	1436	1,320	Apr. 16, 1956	8.2	93.4	-	-	106	-
1957	1506	5,340	Apr. 5, 1957	16	170	-	-	195	-
1958	1556	1,770	Apr. 28, 1958	18	178	-	-	145	-
1959	1626	3,760	Sept.30, 1959	22	145	-	-	186	-
1960	1706	1,880	Mar. 30, 1960	51	212	-	-	-	-

Note.--Monthly and yearly records of adjusted discharge, in cubic feet per second per square mile, and runoff in inches, published in water-supply papers prior to October 1952, may be subject to considerable error because of uncertainty regarding the adjustments. These records are not published herein and should not be used.

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, 1930, chain gage at present site and datum.

Average discharge.--65 years (1895-1960), 2,058 cfs.

Extremes.--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.--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 water temperatures for the period October 1950 to September 1951 and chemical analyses for the periods October 1950 to September 1951 and October 1956 to September 1960 are published in reports of the Geological Survey.

Revisions.--The maximum discharge for the water year 1902, has been revised to 33,900 cfs Feb. 28, 1902, superseding figure published in WSP 1306.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,822	1,339	2,894	1,511	1,853	2,475	2,541	1,594	1,524	1,145	867	684	1,688
1952	629	1,296	2,768	2,193	2,624	5,707	3,102	1,958	1,319	859	1,120	880	2,039
1953	632	973	1,102	2,399	3,494	2,916	1,684	1,868	1,278	971	751	793	1,560
1954	582	698	1,758	2,963	2,087	2,701	2,337	1,623	1,063	734	604	346	1,457
1955	353	557	1,122	1,021	2,019	1,703	2,400	2,217	1,420	1,612	1,524	696	1,383
1956	692	646	636	548	2,484	1,744	2,576	1,547	892	978	569	771	1,166
1957	866	854	1,415	1,458	3,122	2,225	4,950	1,601	2,612	1,321	831	1,340	1,867
1958	1,752	3,192	2,906	2,584	2,572	2,623	3,916	3,308	1,539	1,762	1,206	778	2,343
1959	789	786	1,216	1,976	1,501	1,814	2,771	2,765	2,212	1,429	1,034	2,337	1,718
1960	3,592	1,912	1,985	2,315	4,447	3,283	3,987	1,995	1,448	1,089	2,052	1,146	2,430

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.22	1.58	3.53	1.84	2.04	3.02	3.00	1.94	1.80	1.40	1.06	0.81	24.24
1952	.77	1.53	3.38	2.68	2.99	6.96	3.66	2.39	1.56	1.05	1.37	1.04	29.38
1953	.77	1.15	1.34	2.93	3.85	3.56	1.99	2.28	1.51	1.19	.92	.94	22.43
1954	.71	.82	2.14	3.61	2.30	3.30	2.76	1.98	1.26	.90	.74	.41	20.93
1955	.43	.66	1.37	1.25	2.22	2.08	2.83	2.70	1.68	1.97	1.86	.82	19.87
1956	.84	.76	.78	.67	2.83	2.13	3.04	1.89	1.05	1.19	.69	.91	16.78
1957	1.06	1.01	1.73	1.78	3.44	2.71	5.84	1.95	3.08	1.61	1.01	1.58	26.80
1958	2.14	3.77	3.55	3.15	2.83	3.20	4.62	4.04	1.82	2.15	1.47	.92	33.66
1959	.96	.93	1.48	2.41	1.65	2.21	3.27	3.37	2.61	1.74	1.26	2.76	24.65
1960	4.38	2.26	2.42	2.82	5.08	4.01	4.71	2.43	1.71	1.33	2.50	1.35	35.00

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	2,152	30.91
1951	1206	16,400	Dec. 7, 1950	550	1,688	1.79	24.24	1,572	22.59
1952	1236	15,600	Mar. 23, 1952	506	2,039	2.16	29.38	1,872	26.96
1953	1276	14,700	Feb. 21, 1953	440	1,560	1.65	22.43	1,589	22.84
1954	1336	16,500	Jan. 23, 1954	252	1,457	1.54	20.93	1,372	19.72
1955	1386	8,220	Feb. 6, 1955	260	1,383	1.46	19.87	1,378	19.79
1956	1436	10,400	Apr. 16, 1956	350	1,166	1.23	16.78	1,264	18.20
1957	1506	24,200	Apr. 5, 1957	481	1,867	1.98	26.80	2,261	32.46
1958	1556	9,050	Apr. 28, 1958	590	2,343	2.48	33.66	1,920	27.57
1959	1626	12,300	Sept.30, 1959	579	1,718	1.82	24.65	2,114	30.34
1960	1706	10,300	Feb. 5, 1960	796	2,430	2.57	35.00	-	-

4520. Sandymush Creek near Alexander, N. C.

Location.--Lat 35°43'49", long 82°40'11", 0.7 mile downstream from Turkey Creek, 1.3 miles upstream from mouth, and 3.5 miles northwest of Alexander, Buncombe County.

Drainage area.--79.5 sq mi.

Records available.--October 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,732.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years (1942-55), 58.0 cfs.

Extremes.--1942-55: Maximum discharge, 5,490 cfs Feb. 10, 1946 (gage height, 9.65 ft), from rating curve extended above 2,200 cfs by logarithmic plotting; minimum not recorded; minimum daily, 4.7 cfs Sept. 2, 1953.
Flood of Aug. 30, 1940, reached a stage of 16.7 ft, from floodmarks.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	31.4	29.0	78.1	46.0	48.0	100	80.2	41.5	45.6	64.4	34.6	24.5	52.1
1952	18.5	37.0	93.8	89.0	84.5	152	60.7	40.1	28.4	22.6	27.2	15.9	55.9
1953	14.2	21.0	25.2	59.1	112	76.6	44.7	47.2	18.9	13.2	11.8	11.1	37.5
1954	10.2	12.9	20.0	120	40.1	131	67.0	42.0	37.9	22.6	16.1	8.10	44.2
1955	15.0	18.8	26.6	22.4	73.0	118	73.3	60.1	27.7	38.2	23.2	12.6	42.3

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.45	0.41	1.13	0.67	0.63	1.45	1.13	0.60	0.64	0.93	0.50	0.34	8.88
1952	.27	.52	1.36	1.29	1.15	2.20	.85	.58	.40	.33	.39	.22	9.56
1953	.21	.30	.37	.86	1.46	1.11	.63	.68	.27	.19	.17	.16	6.41
1954	.15	.18	.29	1.75	.52	1.90	.94	.61	.53	.33	.23	.11	7.54
1955	.22	.26	.39	.33	.96	1.72	1.03	.87	.39	.55	.34	.18	7.24

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	65.3	11.14
1951	1206	1,550	Dec. 7, 1950	18	52.1	0.655	8.88	53.0	9.04
1952	1236	1,580	Mar. 23, 1952	11	55.9	.703	9.56	48.4	8.29
1953	1276	2,120	Feb. 21, 1953	4.7	37.5	.472	6.41	36.0	6.15
1954	1336	3,270	Jan. 22, 1954	5.5	44.2	.556	7.54	45.6	7.79
1955	1386	1,410	Mar. 22, 1955	8.1	42.3	.532	7.24	-	-

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 (1933-60), 148 cfs.

Extremes.--1933-60: Maximum discharge, 8,880 cfs Aug. 30, 1940 (gage height, 12.67 ft), from rating curve extended above 5,400 cfs on basis of slope-area 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 of chemical analyses for the period October 1952 to September 1953 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	51.9	52.8	144	97.5	131	273	241	124	145	106	46.8	43.9	121
1952	32.0	84.6	196	220	166	365	170	106	49.9	29.8	26.7	22.6	123
1953	19.3	44.1	62.3	174	371	182	113	136	43.3	39.6	24.7	32.4	102
1954	23.0	32.6	79.1	364	155	419	208	107	54.0	73.5	40.0	21.7	132
1955	29.1	36.4	72.6	61.4	177	358	191	96.8	58.0	58.5	75.4	24.3	103
1956	31.1	46.4	55.8	57.3	290	257	328	105	47.9	123	22.8	63.0	118
1957	43.8	54.9	131	246	563	182	517	145	263	65.7	35.9	49.1	188
1958	62.6	225	296	159	314	237	299	314	107	114	51.6	36.2	184
1959	45.0	61.9	115	191	180	166	366	152	133	79.5	88.3	129	142
1960	222	109	213	206	388	334	310	125	84.7	90.0	80.4	47.5	184

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.38	0.37	1.05	0.71	0.86	1.99	1.70	0.90	1.02	0.78	0.34	0.31	10.41
1952	.23	.60	1.43	1.60	1.14	2.66	1.20	.77	.35	.22	.19	.16	10.55
1953	.14	.31	.45	1.27	2.45	1.33	.80	.99	.31	.29	.18	.23	8.75
1954	.17	.23	.58	2.65	1.02	3.06	1.47	.78	.38	.54	.29	.15	11.32
1955	.21	.26	.53	.45	1.17	2.61	1.35	.71	.41	.43	.55	.17	8.85
1956	.23	.33	.41	.42	1.98	1.87	2.31	.77	.34	.90	.17	.44	10.17
1957	.32	.39	.95	1.80	3.71	1.33	3.65	1.06	1.86	.48	.26	.35	16.16
1958	.46	1.59	2.16	1.16	2.07	1.73	2.11	2.29	.75	.84	.38	.26	15.80
1959	.33	.44	.84	1.39	1.19	1.21	2.59	1.11	.94	.58	.64	.91	12.17
1960	1.62	.77	1.56	1.51	2.65	2.44	2.19	.91	.60	.66	.59	.34	15.84

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	175	15.09
1951	1206	2,360	Dec. 7, 1950	27	121	0.766	10.41	127	10.87
1952	1236	2,390	Mar. 23, 1952	14	123	.778	10.55	107	9.19
1953	1276	5,630	Feb. 21, 1953	8.5	102	.646	8.75	103	8.83
1954	1336	5,860	Jan. 22, 1954	14	132	.835	11.32	132	11.34
1955	1386	2,340	Mar. 19, 1955	14	103	.652	8.85	102	8.82
1956	1436	3,370	Apr. 16, 1956	16	118	.747	10.17	126	10.86
1957	1506	8,680	Apr. 5, 1957	19	188	1.19	16.16	218	18.71
1958	1556	3,780	Dec. 20, 1957	28	184	1.16	15.80	154	13.20
1959	1626	3,450	Dec. 28, 1958	25	142	.899	12.17	169	14.51
1960	1706	1,990	Feb. 5, 1960	31	184	1.16	15.84	-	-

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

Location (revised).--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 (1942-60), 2,274 cfs.

Extremes.--1942-60: Maximum discharge, 33,100 cfs Apr. 5, 1957 (gage height, 10.48 ft); minimum, 193 cfs Sept. 13, 14, 1954 (gage height, 0.36 ft); minimum daily, 292 cfs Sept. 27, 28, 1954.
Floods in July 1916 and Aug. 30, 1940, reached stages of 22.0 (revised) ft and 16.6 (revised) ft, respectively, from high-water marks and flood profiles by Tennessee Valley Authority.

Remarks.--Diurnal fluctuation at low flow caused by powerplants above station. Records of chemical analyses for the period October 1956 to September 1957; and water temperatures for the period October 1957 to September 1960, are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,965	1,447	3,248	1,758	2,131	3,054	3,084	1,906	1,895	1,515	1,044	820	1,990
1952	709	1,527	3,168	2,678	3,072	6,600	3,590	2,275	1,514	1,014	1,251	968	2,365
1953	715	1,086	1,251	2,758	4,255	3,369	1,986	2,250	1,449	1,116	843	865	1,814
1954	630	756	1,895	3,734	2,430	3,557	2,787	1,896	1,256	909	692	384	1,743
1955	450	651	1,281	1,222	2,424	2,435	2,788	2,508	1,646	1,835	1,765	814	1,647
1956	829	783	778	715	3,085	2,348	3,306	1,786	1,070	1,300	635	915	1,453
1957	1,019	1,050	1,734	1,942	4,202	2,609	6,032	2,027	3,180	1,544	947	1,512	2,294
1958	1,965	3,817	3,625	3,024	3,296	3,234	4,616	4,171	1,879	2,076	1,398	945	2,834
1959	959	956	1,556	2,464	1,967	2,279	3,599	3,205	2,584	1,702	1,276	2,606	2,093
1960	4,174	2,244	2,472	2,792	5,437	4,054	4,761	2,392	1,804	1,443	2,361	1,365	2,932

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.70	1.21	2.81	1.52	1.67	2.64	2.58	1.65	1.59	1.31	0.90	0.69	20.27
1952	.61	1.28	2.74	2.32	2.49	5.71	3.01	1.97	1.27	.88	1.08	.81	24.17
1953	.62	.91	1.08	2.39	3.33	2.92	1.66	1.95	1.21	.97	.73	.72	18.49
1954	.54	.63	1.64	3.23	1.90	3.08	2.33	1.64	1.05	.79	.60	.32	17.75
1955	.39	.55	1.11	1.06	1.89	2.11	2.34	2.17	1.38	1.59	1.53	.68	16.80
1956	.72	.66	.67	.62	2.50	2.03	2.77	1.55	.90	1.13	.55	.77	14.87
1957	.88	.88	1.50	1.68	3.29	2.26	5.05	1.75	2.66	1.34	.82	1.27	23.38
1958	1.70	3.20	3.14	2.62	2.58	2.80	3.87	3.61	1.57	1.80	1.21	.79	28.89
1959	.83	.80	1.35	2.13	1.54	1.97	3.01	2.77	2.16	1.47	1.10	2.18	21.31
1960	3.61	1.88	2.14	2.42	4.40	3.51	3.99	2.07	1.51	1.25	2.04	1.14	29.96

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	2,541	25.89
1951	1206	19,000	Dec. 7, 1950	635	1,990	1.49	20.27	1,883	19.18
1952	1236	22,400	Mar. 23, 1952	582	2,365	1.78	24.17	2,167	22.15
1953	1276	22,800	Feb. 21, 1953	460	1,814	1.36	18.49	1,834	18.69
1954	1336,1436	23,200	Jan. 22, 1954	292	1,743	1.31	17.75	1,667	16.99
1955	1386	9,760	Feb. 7, 1955	310	1,647	1.24	16.80	1,648	16.80
1956	1436	13,800	Apr. 16, 1956	367	1,453	1.09	14.87	1,572	16.08
1957	1506	33,100	Apr. 5, 1957	566	2,294	1.72	23.38	2,762	28.16
1958	1556	12,100	Nov. 25, 1957	740	2,834	2.13	28.89	2,337	23.83
1959	1626	18,000	Dec. 28, 1958	740	2,093	1.57	21.31	2,500	25.96
1960	1706	13,200	Feb. 5, 1960	996	2,932	2.20	29.96	-	-

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

Location.--Lat 35°55'11", long 82°45'42", on left bank 50 ft west of State Highway 208, 0.2 mile downstream from Big Hurricane Creek, 0.6 mile upstream from Little Hurricane Creek, 2.8 (revised) miles north of Stackhouse, Madison County, and 4.2 (revised) miles upstream from mouth.

Drainage area.--126 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 1,595.68 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--27 years (1933-60), 181 cfs.

Extremes.--1933-60: Maximum discharge, 7,700 cfs Jan. 31, 1957 (gage height, 8.15 ft); minimum, 11 cfs Jan. 6, 1942 (gage height, 0.92 ft), result of freezeup; minimum daily, 19 cfs Sept. 2, 16-18, 1953.

Remarks.--Records of chemical analyses and water temperatures for the period October 1951 to September 1952 are published in report of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	58.3	63.8	195	149	195	405	375	173	237	193	67.8	75.7	182
1952	51.4	164	237	303	190	316	203	144	76.7	58.5	48.7	41.4	153
1953	26.6	53.9	84.4	227	366	247	184	224	90.7	67.6	44.7	31.3	136
1954	26.9	30.7	64.5	414	122	409	318	212	89.6	72.2	58.1	41.4	156
1955	40.4	61.9	106	95.1	279	534	296	145	83.3	93.6	92.6	39.1	155
1956	47.3	63.7	88.2	115	460	362	420	225	117	124	43.8	61.2	176
1957	42.1	49.9	132	390	742	221	460	193	207	86.6	68.0	119	222
1958	88.5	297	358	189	450	277	330	401	154	159	104	54.7	237
1959	49.1	56.1	96.2	217	230	208	438	122	120	94.7	92.0	97.0	151
1960	224	187	337	230	415	362	283	158	121	271	113	81.3	232

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.53	0.56	1.78	1.37	1.61	3.71	3.32	1.58	2.10	1.77	0.62	0.67	19.62
1952	.47	1.45	2.17	2.77	1.63	2.89	1.79	1.32	.68	.54	.45	.37	16.53
1953	.24	.48	.77	2.08	3.02	2.26	1.63	2.05	.80	.62	.41	.28	14.64
1954	.25	.27	.59	3.79	1.01	3.74	2.81	1.94	.79	.66	.53	.37	16.75
1955	.37	.55	.97	.87	2.30	4.89	2.62	1.33	.74	.86	.85	.35	16.70
1956	.43	.56	.81	1.05	3.93	3.32	3.72	2.06	1.03	1.13	.40	.54	18.98
1957	.38	.44	1.21	3.57	6.13	2.02	4.07	1.76	1.83	.79	.62	1.05	23.87
1958	.81	2.63	3.28	1.73	3.72	2.53	2.92	3.67	1.36	1.46	.95	.48	25.54
1959	.45	.50	.88	1.99	1.90	1.90	3.88	1.11	1.06	.87	.84	.86	16.24
1960	2.05	1.66	3.08	2.11	3.55	3.32	2.50	1.44	1.08	2.48	1.03	.72	25.02

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	225	24.26
1951	1206	2,490	Dec. 7, 1950	42	182	1.44	19.62	193	20.84
1952	1236	1,810	Apr. 28, 1952	23	153	1.21	16.53	129	13.93
1953	1276	3,090	Feb. 21, 1953	19	136	1.08	14.64	132	14.26
1954	1336	4,800	Jan. 22, 1954	22	156	1.24	16.75	163	17.53
1955	1386	2,090	Mar. 18, 1955	22	155	1.23	16.70	154	16.61
1956	1436	4,380	Apr. 16, 1956	29	176	1.40	18.98	178	19.21
1957	1506	7,700	Jan. 31, 1957	34	222	1.76	23.87	265	28.56
1958	1556	2,460	May 7, 1958	43	237	1.88	25.54	192	20.65
1959	1626	4,020	Jan. 22, 1959	25	151	1.20	16.24	197	21.20
1960	1706	2,050	July 2, 1960	50	232	1.84	25.02	-	-

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 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 for October to November 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.--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 ft and 22.5 ft, respectively, from reports of the Tennessee Valley Authority.

Revisions.--The momentary maximum discharge for the water year 1901 published in WSP 1306, has been revised to 65,000 cfs.

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

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2,166	1,640	4,021	2,248	2,894	4,773	5,019	2,679	2,813	2,198	1,304	1,027	2,732
1952	820	1,997	4,073	3,934	3,810	7,640	4,154	2,741	1,722	1,098	1,306	1,041	2,863
1953	737	1,195	1,495	3,598	5,738	4,363	2,638	3,097	1,636	1,307	954	895	2,284
1954	713	827	2,024	5,429	3,286	5,117	3,993	2,669	1,419	1,033	765	475	2,312
1955	508	731	1,395	1,404	3,186	4,539	3,755	2,849	1,817	1,968	1,954	822	2,071
1956	846	872	932	968	4,786	3,721	4,876	2,491	1,284	1,729	731	1,118	2,014
1957	1,103	1,140	2,095	2,987	7,655	3,465	7,821	2,461	3,813	1,626	1,025	1,713	3,032
1958	2,225	4,811	4,840	3,603	4,707	4,096	5,856	5,614	2,312	2,768	1,821	1,068	3,636
1959	1,038	1,063	1,831	3,197	2,788	3,024	5,377	3,644	3,090	1,951	1,451	2,731	2,592
1960	5,007	2,931	3,769	3,561	7,234	5,347	5,914	2,864	2,136	2,012	2,886	1,539	3,755

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.34	0.98	2.49	1.39	1.62	2.96	3.01	1.66	1.69	1.36	0.81	0.62	19.93
1952	.51	1.20	2.53	2.44	2.21	4.74	2.49	1.70	1.03	.68	.81	.63	20.97
1953	.46	.72	.93	2.23	3.22	2.71	1.58	1.92	.98	.81	.59	.54	16.69
1954	.44	.50	1.26	3.37	1.84	3.18	2.40	1.66	.85	.64	.47	.29	16.90
1955	.32	.44	.87	.87	1.79	2.82	2.25	1.77	1.09	1.22	1.21	.49	15.14
1956	.52	.52	.58	.60	2.78	2.31	2.93	1.55	.77	1.07	.45	.67	14.75
1957	.68	.68	1.30	1.85	4.29	2.15	4.70	1.53	2.29	1.01	.64	1.03	22.15
1958	1.38	2.89	3.00	2.24	2.64	2.54	3.52	3.48	1.39	1.72	1.13	.64	26.57
1959	.64	.64	1.14	1.98	1.56	1.88	3.23	2.26	1.86	1.21	.90	1.64	18.94
1960	3.11	1.76	2.34	2.21	4.20	3.32	3.55	1.78	1.28	1.25	1.79	.92	27.51

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	3,417	24.95
1951	1206	24,100	Dec. 7, 1950	752	2,732	1.47	19.93	2,651	19.36
1952	1236	26,300	Mar. 23, 1952	640	2,863	1.54	20.97	2,572	18.84
1953	1276	33,400	Feb. 21, 1953	478	2,284	1.23	16.69	2,297	16.78
1954	1336	47,600	Jan. 22, 1954	376	2,312	1.24	16.90	2,233	16.33
1955	1386	13,700	Mar. 22, 1955	376	2,071	1.11	15.14	2,072	15.13
1956	1436	17,900	Apr. 16, 1956	479	2,014	1.08	14.75	2,156	15.79
1957	1506	54,900	Apr. 5, 1957	655	3,032	1.63	22.15	3,662	26.76
1958	1556	16,900	Nov. 25, 1957	836	3,636	1.96	26.57	2,972	21.72
1959	1626	22,300	Dec. 29, 1958	724	2,592	1.40	18.94	3,247	23.73
1960	1706	16,800	Oct. 1, 1959 a/	1,050	3,755	2.02	27.51	-	-

a Maximum discharge during year, 16,800 cfs at 12:01 a.m. Oct. 1, 1959, stage falling; peak occurred Sept. 30, 1959. Maximum peak discharge during year, 15,100 cfs Feb. 6 (gage height, 7.36 ft).

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 (1954-60), 99.0 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	139	101	66.0	44.0	28.3	20.9	13.0	-
1955	13.5	29.5	74.2	49.0	141	133	169	151	78.8	85.3	75.5	28.4	85.2
1956	37.5	34.0	52.5	34.1	203	148	171	85.3	54.4	76.6	27.8	32.6	79.2
1957	52.6	44.3	122	169	284	112	279	86.2	155	65.8	38.0	77.9	122
1958	91.2	187	195	108	131	114	191	148	46.0	69.9	38.9	31.8	112
1959	41.7	35.5	50.6	121	90.2	104	151	176	89.8	42.9	29.5	94.6	85.5
1960	227	94.1	101	131	175	131	176	71.4	57.6	44.4	68.3	51.7	110

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	5.82	4.08	2.76	1.78	1.18	0.87	0.53	-
1955	0.56	1.19	3.10	2.05	5.30	5.56	6.82	6.29	3.18	3.56	3.15	1.15	41.91
1956	1.57	1.37	2.20	1.42	7.93	6.19	6.92	3.56	2.20	3.20	1.16	1.32	39.04
1957	2.20	1.79	5.12	7.06	10.71	4.69	11.27	3.60	6.26	2.75	1.59	3.15	60.19
1958	3.81	7.55	8.13	4.50	4.95	4.75	7.71	6.19	1.86	2.92	1.63	1.28	55.28
1959	1.74	1.43	2.11	5.04	3.40	4.36	6.10	7.36	3.63	1.79	1.23	3.83	42.02
1960	9.49	3.80	4.23	5.46	6.84	5.46	7.10	2.98	2.33	1.85	2.85	2.09	54.48

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	1336	a890	Mar. 13, 1954	-	-	-	-	-	-
1955	1386	2,250	Mar. 22, 1955	11	85.2	3.09	41.91	85.8	42.20
1956	1436	4,550	Apr. 15, 1956	14	79.2	2.87	39.04	87.2	43.01
1957	1506	3,540	Apr. 4, 1957	18	122	4.42	60.19	143	70.57
1958	1556	3,920	Dec. 20, 1957	18	112	4.06	55.28	83.5	41.07
1959	1626	5,050	Jan. 21, 1959	20	85.5	3.10	42.02	110	54.26
1960	1706	3,870	Oct. 9, 1959	26	110	3.99	54.48	-	-

a Maximum during period March to September.

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 (1954-60), 158 cfs.

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

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	259	156	118	77.3	50.0	37.4	32.4	-
1955	27.9	25.7	122	82.0	234	222	282	196	124	123	116	47.5	133
1956	54.6	50.0	73.6	49.2	304	247	300	155	86.9	117	42.4	48.4	126
1957	81.8	69.7	188	258	481	205	454	153	232	99.0	55.6	104	196
1958	152	284	312	180	206	190	294	258	82.6	97.3	54.2	44.5	179
1959	56.9	49.5	79.7	182	140	184	263	273	155	69.5	44.6	135	136
1960	314	147	164	220	310	241	291	125	95.2	69.9	99.7	73.9	179

Monthly and yearly runoff, in inches (adjusted) a/

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	1.14	1.01	1.54	1.03	5.92	5.14	6.06	3.23	1.75	2.44	0.88	0.98	31.12
1957	1.71	1.41	3.92	5.41	9.03	4.26	9.17	3.18	4.68	2.06	1.16	2.10	48.09
1958	2.94	5.78	6.60	3.85	3.88	3.87	6.03	5.37	1.66	2.03	1.13	.90	44.04
1959	1.18	1.00	1.66	3.78	2.64	3.75	5.39	5.69	3.12	1.45	.93	2.72	33.31
1960	6.54	2.97	3.42	4.60	6.05	5.02	5.87	2.59	1.92	1.46	2.08	1.49	44.01

a Adjusted for change in contents in Lake Logan since October 1955.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-
1954	1336	b539	Mar. 14, 1954	-	-	-	-	-	-	-	-
1955	1386	1,810	Dec. 29, 1954	17	133	-	2.41	32.61	133	-	32.64
1956	1436	5,180	Apr. 15, 1956	24	126	126	2.28	31.12	140	140	34.46
1957	1506	4,120	Jan. 31, 1957	26	196	196	3.54	48.09	230	230	56.37
1958	1556	4,150	Dec. 20, 1957	27	179	179	3.24	44.04	132	133	32.56
1959	1626	5,090	Jan. 21, 1959	29	136	136	2.46	33.31	173	173	42.40
1960	1706	3,540	Oct. 9, 1959	42	179	179	3.24	44.01	-	-	-

a Adjusted for change in contents in Lake Logan since October 1955.
b Maximum during period March to September.

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

Location.--Lat 35°27'42", long 82°52'12", on right bank 800 ft upstream from U.S. Highway 276, 0.3 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 (1954-60), 135 cfs.

Extremes.--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 of water temperatures for the period July 1954 to September 1960, are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	196	131	91.8	61.1	36.8	26.5	16.0	-
1955	17.1	27.9	84.5	68.5	180	152	217	185	102	116	152	50.9	112
1956	47.5	37.9	42.4	33.8	217	165	235	108	53.2	55.0	28.2	37.6	87.7
1957	89.3	78.6	120	147	318	184	480	113	142	71.5	41.6	105	156
1958	170	312	273	159	174	190	275	216	78.9	60.0	39.2	32.7	165
1959	37.3	34.2	62.9	165	107	147	217	276	152	58.9	43.2	179	123
1960	334	148	136	179	308	212	324	112	87.5	54.3	72.4	52.7	168

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	4.39	2.84	2.06	1.32	0.82	0.59	0.35	-
1955	0.38	0.60	1.89	1.53	3.64	3.40	4.70	4.15	2.21	2.59	3.41	1.10	29.60
1956	1.06	.82	.95	.76	4.55	3.70	5.10	2.41	1.15	1.23	.63	.82	23.18
1957	2.00	1.70	2.69	3.29	6.43	4.12	10.39	2.52	3.07	1.60	.93	2.28	41.02
1958	3.80	6.75	6.11	3.55	3.52	4.24	5.96	4.84	1.71	1.34	.88	.71	43.41
1959	.83	.74	1.41	3.70	2.17	3.28	4.69	6.19	3.29	1.32	.97	3.88	32.47
1960	7.48	3.21	3.05	4.02	6.45	4.74	7.02	2.50	1.90	1.22	1.62	1.14	44.35

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	1336	a514	Mar. 14, 1954	-	-	-	-	-	-
1955	1386	1,970	Feb. 6, 1955	14	112	2.17	29.60	112	29.56
1956	1436	3,640	Apr. 15, 1956	18	87.7	1.70	23.18	101	26.74
1957	1506	6,640	Apr. 4, 1957	26	156	3.03	41.02	195	51.29
1958	1556	3,690	Dec. 20, 1957	26	165	3.20	43.41	113	29.73
1959	1626	4,920	Jan. 21, 1959	20	123	2.39	32.47	164	43.23
1960	1706	3,390	Oct. 9, 1959	35	168	3.26	44.35	-	-

a Maximum during period March to September.

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.--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.--Occasional diurnal fluctuation and considerable regulation at low flow caused by gristmill and Lake Logan on West Fork (capacity, 1,050 cfs-days) since 1932. Small diversion just above station for supplementary water supply of city of Canton since 1948. Records of chemical analyses for the period October 1957 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	313	207	490	253	329	445	461	221	203	173	129	107	278
1952	98.7	231	574	470	494	929	447	253	142	92.8	111	133	331
1953	78.8	166	248	555	679	554	260	278	133	105	70.8	63.5	264
1954	59.9	60.1	241	533	330	487	316	229	145	91.0	64.9	50.2	217
1955	48.2	59.2	215	159	450	406	530	411	237	252	281	96.0	261
1956	107	92.3	123	85.3	558	451	605	290	152	185	73.8	93.4	233
1957	182	157	324	418	889	424	1,005	289	400	187	111	226	380
1958	339	645	628	369	420	405	610	526	180	183	112	87.9	375
1959	102	91.5	170	391	263	359	544	596	343	147	99.1	348	287
1960	701	321	321	430	669	494	667	249	194	131	203	143	376

Monthly and yearly runoff, in inches (adjusted) a/

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	-	-
1956	0.93	0.78	1.07	0.74	4.53	3.91	5.08	2.51	1.28	1.61	0.65	0.79	23.88
1957	1.58	1.32	2.81	3.64	6.96	3.68	8.44	2.50	3.36	1.62	.97	1.90	38.78
1958	2.85	5.43	5.49	3.24	3.29	3.47	5.16	4.56	1.51	1.59	.97	.74	38.30
1959	.89	.77	1.48	3.39	2.07	3.08	4.60	5.17	2.88	1.28	.87	2.93	29.41
1960	6.08	2.70	2.79	3.74	5.43	4.29	5.60	2.17	1.63	1.14	1.77	1.21	38.55

a Adjusted for change in contents in Lake Logan, and diversion by city of Canton.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	344	-	35.09
1951	1206	9,180	Dec. 7, 1950	64	278	-	2.09	28.33	268	-	27.39
1952	1236	7,450	Mar. 11, 1952	58	331	-	2.49	33.92	297	-	30.37
1953	1276	7,360	Feb. 21, 1953	37	264	-	1.98	26.91	253	-	25.80
1954	1336	5,300	Jan. 22, 1954	27	217	-	1.63	22.17	214	-	21.84
1955	1386	3,900	Feb. 6, 1955	41	261	-	1.96	26.62	261	-	26.61
1956	1436	7,300	Apr. 16, 1956	44	233	233	1.75	23.88	262	262	26.81
1957	1506	9,940	Apr. 4, 1957	59	380	380	2.86	38.78	459	459	46.84
1958	1556	7,220	Dec. 20, 1957	59	375	375	2.82	38.30	270	271	27.68
1959	1626	9,150	Jan. 21, 1959	61	287	288	2.17	29.41	370	371	37.84
1960	1706	6,110	Oct. 9, 1959	83	376	377	2.83	38.55	-	-	-

a Adjusted for change in contents in Lake Logan, and diversion by city of Canton, since October 1955.

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 (1949-60), 35.4 cfs (unadjusted).

Extremes.--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.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	19.5	17.6	34.7	26.2	32.9	42.7	49.5	28.0	28.9	23.3	21.6	17.8	28.5
1952	12.6	28.0	64.7	67.5	55.0	85.0	53.7	33.4	19.1	11.9	16.1	13.9	38.4
1953	8.59	14.0	26.7	51.1	79.9	53.6	34.5	34.2	18.9	15.7	9.56	9.62	29.4
1954	6.70	6.84	28.2	75.7	38.7	58.2	49.9	34.4	24.6	15.6	13.1	6.71	29.9
1955	5.53	8.53	22.8	15.5	55.5	58.8	65.8	47.5	30.5	24.2	18.1	9.39	30.0
1956	13.1	13.0	19.4	12.4	72.5	67.9	68.4	44.3	25.8	29.3	11.2	12.9	32.3
1957	18.7	19.9	51.0	69.9	136	49.0	93.1	40.8	55.9	24.2	13.3	16.7	48.4
1958	26.3	51.7	67.1	37.0	43.4	40.7	58.6	66.5	22.9	25.7	13.7	11.4	38.7
1959	14.1	14.4	17.8	39.4	34.9	41.5	72.5	58.6	41.7	19.5	15.1	22.7	32.6
1960	53.0	34.2	43.0	55.0	66.9	57.7	72.1	33.1	23.2	16.0	18.8	13.0	40.4

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	36.9	-
1951	1206	400	Dec. 7, 1950	10	28.5	-	-	31.3	-
1952	1236	909	Dec. 20, 1951	7.8	38.4	-	-	33.7	-
1953	1276	951	Feb. 21, 1953	6.4	29.4	-	-	28.8	-
1954	1336	576	Jan. 22, 1954	5.4	29.9	-	-	29.5	-
1955	1386	576	Mar. 22, 1955	5.0	30.0	-	-	30.7	-
1956	1436	576	Apr. 15, 1956	5.7	32.3	-	-	36.0	-
1957	1506	1,320	Jan. 31, 1957	7.5	48.4	-	-	53.0	-
1958	1556	546	Dec. 20, 1957	8.2	38.7	-	-	30.5	-
1959	1626	1,470	Jan. 21, 1959	9.0	32.6	-	-	39.7	-
1960	1706	540	Oct. 9, 1959	8.5	40.4	-	-	-	-

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 1929 to September 1960. Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 2,383.89 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--31 years (1929-60), 126 cfs.

Extremes.--1929-60: Maximum discharge, 3,200 cfs Aug. 30, 1940, and Jan. 21, 1959 (gage height, 7.51 ft); minimum, 18 cfs Jan. 2, 1940 (gage height, 0.54 ft), result of freezeup; minimum daily, 23 cfs Sept. 17, 18, 23, 1953.

Remarks.--Slight diurnal fluctuation at low flow caused by small mill above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	63.8	58.1	113	106	140	195	209	103	94.7	112	71.2	66.0	111
1952	44.1	88.6	243	239	175	306	153	91.3	78.1	53.0	49.2	42.6	130
1953	31.2	49.1	85.4	157	298	200	130	143	69.8	55.9	38.4	29.4	106
1954	25.8	29.7	77.5	263	134	213	182	120	82.5	61.6	52.3	30.8	106
1955	28.9	39.0	91.3	68.9	214	275	206	131	85.4	86.8	52.9	35.3	109
1956	44.1	48.0	59.1	51.1	235	212	249	143	91.5	90.1	46.3	59.6	110
1957	65.1	75.1	149	226	490	164	319	168	168	78.6	55.8	60.0	166
1958	101	224	242	141	189	164	190	257	99.1	97.1	64.2	51.5	151
1959	49.5	57.5	73.6	174	148	163	257	152	123	93.1	74.3	78.8	120
1960	111	122	190	194	251	211	246	107	84.0	68.9	109	63.4	146

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.13	0.99	2.00	1.87	2.23	3.44	3.57	1.81	1.62	1.97	1.26	1.13	23.02
1952	.78	1.51	4.30	4.22	2.89	5.40	2.62	1.61	1.33	.94	.87	.73	27.20
1953	.55	.84	1.51	2.77	4.75	3.54	2.22	2.53	1.19	.99	.68	.50	22.07
1954	.46	.51	1.37	4.65	2.14	3.76	3.10	2.11	1.41	1.09	.92	.53	22.05
1955	.51	.67	1.61	1.22	3.41	4.85	3.52	2.31	1.46	1.53	.93	.60	22.62
1956	.78	.82	1.04	.90	3.88	3.74	4.25	2.53	1.56	1.59	.82	1.02	22.93
1957	1.15	1.28	2.64	3.99	7.81	2.89	5.46	2.97	2.87	1.39	.99	1.02	34.46
1958	1.79	3.82	4.27	2.49	3.01	2.90	3.24	4.53	1.69	1.71	1.13	.88	31.46
1959	.87	.98	1.30	3.07	2.35	2.88	4.39	2.68	2.11	1.64	1.31	1.35	24.93
1960	1.96	2.08	3.35	3.43	4.15	3.72	4.20	1.89	1.44	1.22	1.93	1.08	30.45

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	139	28.93
1951	1206	1,450	Sept. 1, 1951	39	111	1.70	23.02	123	25.49
1952	1236	1,860	Dec. 21, 1951	30	130	1.99	27.20	113	23.51
1953	1276	2,750	Feb. 21, 1953	23	106	1.62	22.07	103	21.51
1954	1336	2,140	Jan. 22, 1954	24	106	1.62	22.05	108	22.50
1955	1386	1,760	Mar. 22, 1955	26	109	1.67	22.62	108	22.47
1956	1436	1,930	Apr. 15, 1956	31	110	1.68	22.93	122	25.36
1957	1506	3,070	Jan. 31, 1957	34	166	2.54	34.46	189	39.27
1958	1556	1,660	May 11, 1958	39	151	2.31	31.46	119	24.73
1959	1626	3,200	Jan. 21, 1959	41	120	1.84	24.93	140	29.17
1960	1706	1,110	Aug. 12, 1960	48	146	2.24	30.45	-	-

4595. Pigeon River near Hepco, N. C.

Location.--Lat 35°38'07", long 82°59'22", on left bank 0.8 mile downstream from Jonathan Creek, 2.0 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 (1927-60), 653 cfs.

Extremes.--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.--Considerable regulation by Lake Junaluska on Richland Creek and Lake Logan on West Fork Pigeon River for short periods of low flow (combined capacity of reservoirs, about 2,200 cfs-days). Records of chemical analyses for the periods October 1955 to September 1956, October 1957 to September 1960, are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	491	382	791	533	673	917	958	503	471	469	335	280	567
1952	213	460	1,141	1,045	934	1,683	867	526	372	240	259	257	667
1953	177	300	457	917	1,308	993	545	610	305	238	163	142	508
1954	150	133	419	1,150	654	1,033	743	504	331	248	201	129	475
1955	122	157	414	341	940	1,043	1,022	698	455	486	424	187	521
1956	211	210	263	216	1,128	982	1,207	627	367	421	197	266	505
1957	367	334	695	935	2,059	883	1,849	719	828	391	265	381	798
1958	583	1,176	1,212	736	916	831	1,167	1,150	436	437	280	221	761
1959	235	240	372	816	620	756	1,213	1,021	713	396	285	588	603
1960	1,047	602	736	910	1,369	1,109	1,252	536	443	326	461	292	755

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	682	26.45
1951	1206	10,600	Dec. 7, 1950	181	567	1.62	21.97	579	22.45
1952	1236	10,800	Mar. 23, 1952	130	667	1.91	25.93	593	23.05
1953	1276	12,000	Feb. 21, 1953	110	508	1.45	19.71	489	18.97
1954	1336	9,440	Jan. 22, 1954	102	475	1.36	18.41	474	18.37
1955	1386	6,660	Feb. 6, 1955	110	521	1.49	20.22	521	20.19
1956	1436	12,200	Apr. 16, 1956	123	505	1.44	19.62	565	21.96
1957	1506	16,600	Apr. 5, 1957	159	798	2.28	30.95	929	36.05
1958	1556	9,000	Dec. 20, 1957	159	761	2.17	29.51	583	22.61
1959	1626	14,100	Jan. 22, 1959	149	603	1.72	23.40	733	28.43
1960	1706	6,040	Oct. 9, 1959	203	755	2.16	29.35	-	-

4600. Cataloochee Creek near Cataloochee, N. C.

Location.--Lat 35°40'02", long 83°04'23", at bridge on State Highway 284, 500 ft upstream from Little Cataloochee Creek and 2 miles north of Cataloochee, Haywood County.

Drainage area.--49.2 sq mi.

Records available.--October 1933 to September 1952.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,457.48 ft above mean sea level, datum of 1929.

Average discharge.--19 years (1933-52), 104 cfs.

Extremes.--1933-52: Maximum discharge, 3,390 cfs Aug. 30, 1940 (gage height, 7.01 ft), from rating curve extended above 1,500 cfs by logarithmic plotting; minimum, 9 cfs Jan. 2, 1940, Dec. 17, 24, 1943 (gage height, 1.87 ft), result of freezeup.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	43.1	50.6	105	94.5	120	179	181	82.4	78.1	98.3	57.6	46.2	94.5
1952	32.7	76.2	237	226	143	261	104	68.6	57.6	37.5	31.8	32.5	109

Monthly and yearly runoff, in inches, of Cataloochee Creek near Cataloochee, N. C.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.01	1.15	2.46	2.22	2.55	4.21	4.10	1.93	1.77	2.30	1.35	1.05	26.10
1952	.77	1.73	5.55	5.30	3.13	6.11	2.37	1.61	1.31	.88	.74	.74	30.24

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	118	32.66
1951	1206	1,090	Dec. 7, 1950	30	94.5	1.92	26.10	107	29.53
1952	1236	2,140	Dec. 21, 1951	21	109	2.22	30.24	-	-

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 (1900-29, 1944-46, 1948-60), 1,227 cfs.

Extremes.--1900-1929, 1944-46, 1948-60: Maximum discharge (revised), 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.--Considerable regulation by Lakes Junaluska, Logan, 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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	619	586	1,409	997	1,257	2,003	2,010	961	1,128	932	595	387	1,073
1952	352	862	2,164	2,167	1,750	2,705	1,495	845	682	523	478	230	1,189
1953	235	490	843	1,587	2,444	1,852	928	1,180	537	495	273	145	909
1954	209	234	717	2,457	986	2,157	1,643	1,070	567	474	354	168	922
1955	182	275	762	657	1,790	2,504	1,799	1,032	656	837	824	269	961
1956	398	451	612	516	2,509	2,084	2,462	1,075	667	995	372	517	1,047
1957	603	615	1,387	1,728	4,762	1,553	2,792	1,153	1,428	613	448	563	1,445
1958	924	2,103	2,392	1,336	1,761	1,661	2,091	2,377	752	1,030	603	376	1,449
1959	366	425	672	1,666	1,304	1,503	2,362	1,400	1,229	918	569	1,019	1,116
1960	1,778	1,276	1,944	1,630	2,475	1,865	2,255	807	813	717	1,193	596	1,442

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,237	25.21
1951	1206	15,200	Dec. 7, 1950	75	1,073	1.61	21.87	1,137	23.18
1952	1236	16,600	Mar. 23, 1952	56	1,189	1.79	24.28	1,036	21.18
1953	1276	18,100	Feb. 21, 1953	48	909	1.36	18.53	875	17.84
1954	1336	22,900	Jan. 22, 1954	52	922	1.38	18.80	927	18.89
1955	1386	6,300	July 9, 1955	57	961	1.44	19.59	981	20.00
1956	1436	20,100	Apr. 16, 1956	94	1,047	1.57	21.40	1,144	23.38
1957	1506	34,500	Feb. 1, 1957	83	1,445	2.17	29.45	1,680	34.23
1958	1556	10,900	Nov. 19, 1957	232	1,449	2.18	29.54	1,118	22.79
1959	1626	9,240	Jan. 22, 1959	168	1,116	1.68	22.75	1,414	28.82
1960	1706	7,820	Apr. 4, 1960	92	1,442	2.17	29.48	-	-

4620. North Toe River at Altapass, N. C.

Location.--Lat 35°53'59", long 82°01'50", 0.1 mile upstream from Rose Creek, 1 mile northwest of Altapass, Mitchell County, and at mile 36.0.

Drainage area.--104 sq mi.

Records available.--October 1933 to December 1957. Prior to October 1938, published as "above Spruce Pine" (flow of Rose Creek included).

Gage.--Water-stage recorder. Datum of gage is 2,542.91 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Oct. 1-14, 1938, staff gage at same site and datum. Prior to Oct. 1, 1938, water-stage recorder at site 1.2 miles downstream at datum 13.90 ft lower.

Average discharge.--24 years (1933-57), 197 cfs.

Extremes.--1933-57: Maximum discharge, 22,200 cfs Aug. 13, 1940 (gage height, 19.5 ft, from floodmark in gage well), from rating curve extended above 5,000 cfs on basis of slope-area measurement of peak flow; minimum, 23 cfs Sept. 9, 1954 (gage height, 0.99 ft); minimum daily, 28 cfs Sept. 16, 1956.
Maximum stage known, about 24 ft in July 1916, from flood profiles by Tennessee Valley Authority.

Remarks.--Slight diurnal fluctuation at low flow caused by gristmills and primary mineral processing mills.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	102	98.3	329	192	218	252	281	150	137	121	84.2	60.4	169
1952	49.4	108	217	191	258	368	213	148	105	66.0	74.0	53.6	154
1953	47.6	78.9	104	266	339	335	189	173	112	102	64.9	60.1	155
1954	46.5	63.4	141	323	209	286	241	246	116	81.1	63.5	43.1	155
1955	45.9	72.8	131	101	242	369	486	191	118	145	243	88.6	186
1956	81.3	93.9	95.9	81.6	328	300	401	182	85.5	91.6	43.4	91.1	155
1957	104	130	156	229	509	255	536	214	293	158	89.5	148	232
1958	144	302	390	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.13	1.05	3.65	2.13	2.19	2.80	3.01	1.66	1.47	1.34	0.93	0.65	22.01
1952	.55	1.16	2.41	2.12	2.67	4.08	2.29	1.64	1.13	.73	.82	.58	20.18
1953	.53	.85	1.15	2.94	3.39	3.72	2.03	1.92	1.21	1.13	.72	.64	20.23
1954	.52	.68	1.56	3.59	2.09	3.17	2.59	2.73	1.25	.90	.70	.46	20.24
1955	.51	.78	1.46	1.12	2.43	4.09	5.21	2.12	1.26	1.60	2.69	.95	24.22
1956	.90	1.01	1.06	.90	3.40	3.32	4.30	2.02	.92	1.02	.48	.98	20.31
1957	1.15	1.40	1.73	2.53	5.10	2.83	5.75	2.38	3.14	1.75	.99	1.59	30.34
1958	1.60	3.24	4.32	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	201	26.19
1951	1206	4,970	Dec. 7, 1950	49	169	1.62	22.01	155	20.30
1952	1236	1,820	Feb. 3, 1952	34	154	1.48	20.18	142	18.59
1953	1276	2,760	Feb. 21, 1953	34	155	1.49	20.23	157	20.46
1954	1336	3,520	Jan. 22, 1954	32	155	1.49	20.24	155	20.23
1955	1386	5,710	Apr. 14, 1955	37	186	1.79	24.22	187	24.44
1956	1436	2,610	Apr. 16, 1956	28	155	1.49	20.31	165	21.62
1957	1506	5,340	Apr. 5, 1957	52	232	2.23	30.34	270	35.22
1958	1506	a2,790	Dec. 20, 1957	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-

a Maximum during period October to December.

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.--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 of water temperatures for the period October 1958 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	-	36.9	144	-
1958	149	212	229	125	146	171	283	186	73.3	53.9	28.7	21.3	140
1959	36.3	36.0	116	125	128	134	237	236	138	135	99.0	321	145
1960	272	133	145	188	272	195	279	98.5	80.8	90.2	124	91.9	164

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	-	0.98	3.71	-
1958	3.95	5.44	6.07	3.32	3.50	4.54	7.29	4.95	1.88	1.43	.76	.55	43.68
1959	.96	.92	3.07	3.33	3.07	3.57	6.10	6.26	3.54	3.57	2.63	8.26	45.28
1960	7.23	3.42	3.84	4.98	6.76	5.18	7.17	2.62	2.08	2.40	3.29	2.36	51.33

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1957	1506	a1,370	Sept.29, 1957	-	-	-	-	-	-
1958	1556,1626	3,400	Dec. 20, 1957	16	140	3.23	43.68	106	33.17
1959	1626	10,600	Sept.30, 1959	16	145	3.34	45.28	175	54.82
1960	1706	2,610	Mar. 30, 1960	48	164	3.78	51.33	-	-

a Maximum during period July 19 to Sept. 30.

4635. South Toe River at Newdale, N. C.

Location.--Lat 35°54'31" (revised), long 82°11'29" (revised), at bridge on U.S. Highway 19E at Newdale, Yancey County, 1.3 miles upstream from Little Crabtree Creek, 6.1 miles east of Burnsville, and at mile 6.9.

Drainage area.--60.8 sq mi.

Records available.--October 1933 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,443.98 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--19 years (1933-52), 174 cfs.

Extremes.--1933-52: Maximum discharge, 29,400 cfs Aug. 13, 1940 (gage height, 17.4 ft), from rating curve extended above 8,000 cfs on basis of discharge measurement at gage height 16.9 ft and contracted-opening measurement at gage height 17.4 ft; minimum, 7.8 cfs Oct. 20-23, Nov. 30, 1943 (gage height, 1.13 ft).
Flood of July 1916 reached a stage of 14 ft, from information by local resident (discharge, 20,3000 cfs).

Remarks.--Slight diurnal fluctuation at medium and low flow caused by powerplants and primary mineral processing mills above station. Records of chemical analyses for the period October 1951 to September 1952, are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	248	122	264	118	164	234	235	105	96.8	82.9	50.1	34.1	146
1952	37.2	94.4	255	179	288	413	217	117	53.3	39.7	71.4	101	155

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	4.70	2.23	5.00	2.23	2.82	4.43	4.32	1.99	1.78	1.57	0.95	0.63	32.65
1952	.70	1.73	4.83	3.40	5.11	7.83	3.98	2.22	.98	.75	1.35	1.85	34.73

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	212	47.37
1951	1206	6,240	Dec. 7, 1950	28	146	2.40	32.65	125	27.98
1952	1236	4,390	Feb. 3, 1952	21	155	2.55	34.73	-	-

4640. Cane River near Sioux, N. C.

Location.--Lat 36°00'52", long 82°19'40", on right bank on State Highway 26, 1.3 miles upstream from confluence with North Toe River 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 (1933-60), 244 cfs.

Extremes.--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 freeze-up; minimum daily, 27 cfs Sept. 14, 1953.

Remarks.--Prior to October 1955 considerable diurnal fluctuation and slight regulation at low flow caused by Burnsville powerplant. Slight diurnal fluctuation at low flow caused by small mills above gage. Records of chemical analyses and water temperatures for the period October 1951 to September 1952 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	186	116	303	186	245	368	384	204	232	212	99.7	73.9	217
1952	58.7	156	350	329	348	468	264	182	97.3	60.6	57.4	87.3	205
1953	47.1	88.3	129	311	501	336	191	199	105	72.0	65.1	76.5	175
1954	46.1	58.0	155	530	244	510	346	355	131	99.1	77.5	44.4	217
1955	57.1	86.2	169	125	342	526	338	195	123	132	174	60.4	193
1956	72.6	95.7	116	98.1	477	410	504	215	110	164	59.7	133	203
1957	133	139	210	358	906	318	682	271	367	143	94.1	137	308
1958	147	368	456	235	370	345	528	552	212	180	118	77.9	298
1959	89.4	108	208	333	288	288	511	285	228	151	152	345	248
1960	404	242	382	378	566	457	515	213	158	223	149	101	315

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.37	0.83	2.22	1.36	1.62	2.71	2.73	1.50	1.65	1.55	0.73	0.53	18.80
1952	.43	1.11	2.57	2.41	2.39	3.44	1.88	1.34	.69	.45	.42	.62	17.75
1953	.35	.63	.95	2.28	3.32	2.47	1.36	1.46	.75	.53	.48	.54	15.12
1954	.34	.41	1.14	3.89	1.62	3.75	2.46	2.60	.93	.73	.57	.32	18.76
1955	.42	.61	1.24	.92	2.27	3.86	2.40	1.43	.88	.97	1.28	.43	16.71
1956	.53	.68	.85	.72	3.28	3.01	3.58	1.58	.78	1.20	.44	.95	17.60
1957	.97	.99	1.54	2.63	6.01	2.33	4.85	1.99	2.61	1.05	.69	.97	26.63
1958	1.08	2.62	3.35	1.72	2.45	2.53	3.75	4.05	1.51	1.32	.86	.55	25.79
1959	.66	.76	1.53	2.44	1.91	2.12	3.63	2.09	1.62	1.11	1.12	2.45	21.44
1960	2.96	1.72	2.80	2.78	3.89	3.35	3.66	1.56	1.12	1.64	1.09	.72	27.29

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	288	24.92
1951	1206	5,640	Dec. 7, 1950	50	217	1.38	18.80	214	18.49
1952	1236	3,550	Dec. 21, 1951	33	205	1.31	17.75	179	15.57
1953	1276	7,490	Feb. 21, 1953	27	175	1.11	15.12	174	15.08
1954	1336	6,660	Jan. 22, 1954	31	217	1.38	18.76	221	19.14
1955	1386	2,610	Feb. 6, 1955	34	193	1.23	16.71	191	16.50
1956	1436	5,200	Apr. 16, 1956	43	203	1.29	17.60	220	19.04
1957	1506	9,030	Apr. 5, 1957	64	308	1.96	26.63	349	30.18
1958	1556	3,580	Dec. 20, 1957	63	298	1.90	25.79	251	21.69
1959	1626	18,400	Sept.30, 1959	50	248	1.58	21.44	300	25.97
1960	1706	2,350	Mar. 30, 1960	74	315	2.01	27.29	-	-

4645. Nolichucky River at Poplar, N. C.

Location.--Lat 36°04'29", long 82°20'41", at Poplar, Mitchell County, 3.9 miles downstream from confluence of North Toe and Cane Rivers, 6.1 miles upstream from North Carolina-Tennessee State line, and at mile 106.8.

Drainage area.--608 sq mi.

Records available.--October 1924 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,971.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. July 24, 1925, to Feb. 14, 1926, staff gages at site a quarter of a mile upstream at different datum. Feb. 15, 1926, to Sept. 30, 1927, staff gage at present site at datum 1.00 ft higher. Oct. 1, 1927, to May 17, 1934, staff gage at same site and datum.

Average discharge.--31 years (1924-55), 1,004 cfs.

Extremes.--1924-55: Maximum discharge, 74,500 cfs Aug. 13, 1940 (gage height, 19.7 ft), from rating curve extended above 9,000 cfs on basis of slope-area measurement of peak flow; minimum, 89 cfs Sept. 7, 1925.
Floods of 1901 and 1916 reached a stage slightly over 21 ft, from floodmarks.

Remarks.--Considerable diurnal fluctuation caused by many small mills and powerplants above station. Records of chemical analyses and water temperatures for the period October 1953 to September 1954 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	765	527	1,591	835	1,043	1,459	1,520	773	802	737	375	295	894
1952	253	585	1,213	1,168	1,340	1,882	1,119	754	494	303	339	349	816
1953	232	410	522	1,314	1,860	1,630	878	839	466	383	283	316	755
1954	206	268	618	1,734	946	1,786	1,287	1,267	570	384	281	190	796
1955	218	372	630	477	1,280	1,927	934	934	537	649	973	338	831

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.45	0.97	3.02	1.58	1.79	2.77	2.79	1.47	1.47	1.40	0.71	0.54	19.96
1952	.48	1.07	2.30	2.21	2.38	3.57	2.05	1.43	.91	.57	.64	.64	18.25
1953	.44	.75	.99	2.49	3.19	3.09	1.61	1.59	.86	.73	.54	.58	16.86
1954	.39	.49	1.17	3.29	1.62	3.39	2.36	2.40	1.05	.73	.53	.35	17.77
1955	.41	.68	1.20	.90	2.19	3.65	3.06	1.77	.99	1.23	1.85	.62	18.55

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,165	26.00
1951	1206	24,500	Dec. 7, 1950	220	894	1.47	19.96	823	18.37
1952	1236	9,700	Mar. 11, 1952	174	816	1.34	18.25	741	16.58
1953	1276	18,700	Feb. 21, 1953	141	755	1.24	16.86	749	16.73
1954	1336	23,300	Jan. 22, 1954	137	796	1.31	17.77	807	18.01
1955	1386	13,000	Apr. 14, 1955	164	831	1.37	18.55	-	-

4650. North Indian Creek near Unicoi, Tenn.

Location.--Lat 36°10'35", long 82°17'36", on right bank 100 ft upstream from unnamed tributary, 900 ft upstream from Rocky Branch, and 3.4 miles southeast of Unicoi, Unicoi County.

Drainage area.--15.9 sq mi.

Records available.--May 1944 to September 1957, water years 1959-60 (annual maximum only).

Gage.--Crest-stage gage. Datum of gage is 2,209.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1957, water-stage recorder at same site and datum.

Average discharge.--13 years (1944-57), 21.2 cfs.

Extremes.--1944-60: Maximum discharge, 536 cfs Jan. 21, 1959 (gage height, 4.30 ft), from rating curve extended above 280 cfs.
1944-57: Minimum discharge, 1.9 cfs Nov. 29, 1953; minimum gage height, 0.79 ft Sept. 22-28, 1944.

Remarks.--Some diversion from Davis Spring, 1 mile upstream, for part of water supply of Johnson City.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	10.3	10.2	30.7	20.5	26.4	38.3	49.7	21.3	25.8	18.0	6.65	7.17	22.0
1952	6.53	18.6	29.3	36.4	24.5	36.1	27.4	16.6	9.55	5.36	5.04	3.36	18.2
1953	3.28	7.56	10.7	26.9	42.6	29.2	19.4	21.6	8.80	12.5	4.86	3.75	15.8
1954	2.65	2.43	5.25	36.5	17.4	45.7	46.1	33.6	10.2	9.62	4.86	3.18	18.2
1955	3.30	5.67	12.7	12.3	36.7	69.5	35.0	22.1	10.4	8.38	7.66	3.66	18.9
1956	4.41	6.83	7.75	10.5	55.7	37.2	46.5	23.1	12.5	16.5	5.70	9.62	19.5
1957	6.54	7.99	13.5	47.2	87.1	23.5	49.0	24.5	29.9	12.3	8.83	7.67	26.0
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.74	0.71	2.23	1.48	1.73	2.77	3.49	1.55	1.81	1.30	0.48	0.50	18.79
1952	.47	1.31	2.12	2.64	1.66	2.62	1.92	1.20	.67	.39	.37	.24	15.61
1953	.24	.53	.78	1.95	2.79	2.11	1.36	1.57	.62	.91	.35	.26	13.47
1954	.19	.17	.38	2.65	1.14	3.31	3.23	2.44	.72	.70	.35	.22	15.50
1955	.24	.40	.92	.89	2.40	5.04	2.46	1.60	.73	.61	.56	.26	16.11
1956	.32	.48	.56	.76	3.78	2.70	3.27	1.68	.88	1.19	.41	.67	16.70
1957	.47	.56	.98	3.42	5.71	1.71	3.44	1.78	2.10	.89	.64	.54	22.24
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	28.5	24.33
1951	1206	362	Dec. 7, 1950	4.2	22.0	1.38	18.79	22.3	19.01
1952	1236	196	Apr. 28, 1952	2.8	18.2	1.14	15.61	15.5	13.26
1953	1276	398	July 22, 1953	2.9	15.8	0.994	13.47	14.8	12.66
1954	1336	486	July 22, 1954	2.2	18.2	1.14	15.50	19.1	16.32
1955	1386	266	Mar. 19, 1955	2.6	18.9	1.19	16.11	18.6	15.91
1956	1436	343	Apr. 15, 1956	3.4	19.5	1.23	16.70	20.3	17.35
1957	1506	495	Jan. 31, 1957	4.5	26.0	1.64	22.24	-	-
1958	-	-	-	-	-	-	-	-	-
1959	1626	536	Jan. 21, 1959	-	-	-	-	-	-
1960	1706	347	July 23, 1960	-	-	-	-	-	-

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.--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, 1.60 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.--Slight diurnal fluctuation at low flow caused by small mill above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	957	694	1,974	1,136	1,448	2,131	2,288	1,051	1,226	1,097	520	416	1,244
1952	326	873	1,771	1,827	1,845	2,636	1,729	1,079	598	365	387	395	1,152
1953	261	495	630	1,705	2,508	2,160	1,263	1,209	587	512	333	351	992
1954	246	314	742	2,499	1,160	2,333	1,898	1,579	665	455	343	234	1,041
1955	258	448	832	677	1,850	2,992	2,082	1,104	647	716	1,056	394	1,084
1956	398	490	523	522	2,690	2,004	2,619	1,139	544	904	291	580	1,050
1957	600	702	1,008	1,939	4,494	1,677	3,727	1,403	2,051	818	524	877	1,626
1958	912	2,235	2,639	1,483	2,449	2,014	2,867	2,871	1,057	912	845	395	1,718
1959	416	473	909	1,582	1,445	1,478	2,665	1,379	1,058	716	785	1,267	1,177
1960	1,846	1,167	1,963	1,767	3,060	2,592	2,872	1,197	899	1,308	985	642	1,687

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.37	0.96	2.83	1.63	1.87	3.05	3.17	1.51	1.70	1.57	0.75	0.58	20.99
1952	.47	1.21	2.54	2.62	2.47	3.78	2.40	1.55	.83	.52	.55	.55	19.49
1953	.37	.69	.90	2.44	3.24	3.09	1.75	1.73	.81	.73	.48	.49	16.72
1954	.35	.44	1.06	3.58	1.50	3.34	2.63	2.26	.92	.65	.49	.32	17.54
1955	.37	.62	1.19	.97	2.39	4.28	2.89	1.58	.90	1.03	1.51	.55	18.28
1956	.57	.68	.75	.75	3.60	2.87	3.63	1.63	.75	1.29	.42	.80	17.74
1957	.86	.97	1.44	2.78	5.81	2.40	5.17	2.01	2.84	1.17	.75	1.22	27.42
1958	1.31	3.10	3.78	2.12	3.17	2.88	3.97	4.11	1.46	1.31	1.21	.55	28.97
1959	.60	.66	1.30	2.27	1.87	2.12	3.69	1.97	1.47	1.03	1.12	1.76	19.86
1960	2.64	1.62	2.81	2.53	4.10	3.71	3.98	1.71	1.25	1.87	1.41	.89	28.52

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,574	26.54
1951	1206	27,500	Dec. 7, 1950	290	1,244	1.55	20.99	1,188	20.05
1952	1236	11,900	Mar. 11, 1952	222	1,152	1.43	19.49	1,018	17.23
1953	1276	21,800	Feb. 21, 1953	168	992	1.23	16.72	986	16.61
1954	1336	28,800	Jan. 22, 1954	183	1,041	1.29	17.54	1,060	17.87
1955	1386	14,500	Apr. 14, 1955	198	1,084	1.35	18.28	1,073	18.10
1956	1436	21,200	Apr. 16, 1956	210	1,050	1.30	17.74	1,125	19.01
1957	1506	38,000	Apr. 5, 1957	318	1,626	2.02	27.42	1,917	32.34
1958	1556	15,600	Dec. 20, 1957	334	1,718	2.13	28.97	1,384	23.34
1959	1626	28,100	Sept.30, 1959	263	1,177	1.46	19.86	1,445	24.37
1960	1706	14,100	Mar. 30, 1960	438	1,687	2.10	28.52	-	-

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 (1902-9, 1918-25, 1945-60), 1,851 cfs.

Extremes.--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.

The 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.--Low flow regulated by Lake Davy Crockett since 1913 (usable storage, 4,060 cfs-days).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	990	810	2,223	1,360	1,769	2,685	3,134	1,409	1,593	1,361	670	573	1,546
1952	418	1,225	2,204	2,445	2,330	2,986	1,955	1,382	808	506	498	534	1,439
1953	361	619	878	2,023	3,400	2,843	1,543	1,954	888	825	501	449	1,346
1954	342	416	854	3,323	1,563	3,006	2,862	2,081	939	640	455	369	1,406
1955	320	485	911	911	2,214	4,397	2,855	1,538	845	877	1,252	476	1,420
1956	505	557	640	673	3,740	2,924	3,778	1,676	802	1,307	505	772	1,478
1957	730	844	1,238	2,463	7,002	2,418	4,655	1,849	2,428	1,157	709	1,016	2,169
1958	1,178	2,515	3,289	1,901	2,988	2,654	3,362	4,291	1,506	1,272	1,140	582	2,219
1959	571	595	1,020	2,028	2,000	1,951	3,720	1,821	1,412	914	962	1,118	1,503
1960	2,351	1,543	2,746	2,220	3,650	3,088	3,484	1,517	1,145	1,618	1,136	773	2,102

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.96	0.76	2.16	1.32	1.56	2.61	2.95	1.37	1.50	1.33	0.65	0.54	17.71
1952	.41	1.15	2.15	2.38	2.12	2.91	1.84	1.35	.76	.49	.49	.50	16.55
1953	.35	.58	.86	1.97	2.99	2.77	1.45	1.90	.84	.80	.49	.42	15.42
1954	.33	.39	.83	3.24	1.37	2.93	2.70	2.03	.88	.62	.44	.35	16.11
1955	.31	.46	.89	.89	1.95	4.28	2.69	1.50	.80	.85	1.22	.45	16.29
1956	.49	.52	.62	.66	3.41	2.85	3.56	1.63	.76	1.27	.49	.73	16.99
1957	.71	.80	1.21	2.40	6.16	2.35	4.39	1.80	2.29	1.13	.69	.96	24.89
1958	1.15	2.37	3.20	1.85	2.63	2.58	3.17	4.16	1.42	1.24	1.11	.55	25.45
1959	.56	.56	.99	1.97	1.76	1.90	3.51	1.77	1.33	.89	.94	1.05	17.23
1960	2.29	1.45	2.67	2.16	3.32	3.01	3.28	1.48	1.08	1.58	1.11	.73	24.16

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	2,105	24.14
1951	1206	24,300	Dec. 8, 1950	32	1,546	1.31	17.71	1,530	17.54
1952	1236	11,600	Dec. 21, 1951	219	1,439	1.22	16.55	1,273	14.63
1953	1276	22,900	Feb. 21, 1953	24	1,346	1.14	15.42	1,325	15.18
1954	1336	32,000	Jan. 23, 1954	27	1,406	1.19	16.11	1,414	16.22
1955	1386	13,400	Mar. 20, 1955	22	1,420	1.20	16.29	1,418	16.26
1956	1436	23,700	Apr. 16, 1956	108	1,478	1.25	16.99	1,571	18.08
1957	1506	36,500	Apr. 5, 1957	27	2,169	1.83	24.89	2,519	28.89
1958	1556	18,300	May 7, 1958	329	2,219	1.87	25.45	1,817	20.84
1959	1626	19,700	Sept.30, 1959	26	1,503	1.27	17.23	1,879	21.53
1960	1706	19,600	Oct. 1, 1959a/	534	2,102	1.78	24.16	-	-

a Maximum discharge during year, 19,600 cfs at 12:01 a.m. Oct. 1, 1959, stage falling; peak occurred Sept. 30, 1959. Maximum peak discharge during year, 13,700 cfs Mar. 31 (gage height, 9.75 ft).

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 (1946-60), 237 cfs.

Extremes.--1946-60: Maximum discharge, 10,700 cfs Jan. 31, 1950 (gage height, 16.24 ft), from rating curve extended above 8,000 cfs; maximum gage height, 16.25 ft May 7, 1958; minimum discharge, 8.4 cfs Sept. 12, 1954 (gage height, 1.56 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	33.1	38.4	164	296	485	536	485	154	133	144	54.7	29.4	211
1952	24.8	172	392	439	271	406	170	84.5	42.4	37.8	48.6	23.0	176
1953	18.0	79.1	155	344	708	510	146	724	140	57.9	26.9	30.3	243
1954	17.5	19.1	27.2	702	91.3	373	246	110	44.8	40.2	20.0	12.8	143
1955	15.5	20.5	89.8	102	389	963	259	96.1	39.6	61.2	28.3	18.7	173
1956	31.9	42.3	81.7	141	1,090	523	730	136	69.8	187	47.2	37.4	256
1957	20.7	22.3	225	757	1,354	344	479	91.7	130	48.1	90.3	39.4	293
1958	24.6	266	479	158	433	321	475	881	177	233	135	38.7	301
1959	27.8	31.3	101	319	402	393	457	125	79.4	38.3	26.5	19.1	165
1960	106	466	471	310	392	456	217	77.6	95.2	244	45.9	27.0	242

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.17	0.19	0.86	1.55	2.29	2.81	2.46	0.81	0.67	0.76	0.29	0.15	13.01
1952	.13	.87	2.05	2.30	1.33	2.13	.86	.44	.21	.20	.25	.12	10.89
1953	.09	.40	.81	1.80	3.35	2.67	.74	3.80	.71	.30	.14	.15	14.96
1954	.09	.10	.14	3.68	.43	1.96	1.25	.57	.23	.21	.10	.06	8.82
1955	.08	.10	.47	.53	1.84	5.05	1.31	.50	.20	.32	.15	.09	10.64
1956	.17	.21	.43	.74	5.34	2.74	3.70	.71	.35	.98	.25	.19	15.81
1957	.11	.11	1.18	3.97	6.41	1.80	2.43	.48	.66	.25	.47	.20	18.07
1958	.13	1.35	2.51	.83	2.05	1.68	2.41	4.62	.90	1.22	.71	.20	18.61
1959	.15	.16	.53	1.67	1.90	2.06	2.21	.66	.40	.20	.14	.10	10.18
1960	.56	2.36	2.47	1.62	1.92	2.39	1.10	.41	.48	1.28	.24	.14	14.97

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	343	21.16
1951	1206	2,640	Mar. 30, 1951	22	211	0.959	13.01	241	14.84
1952	1236	3,390	Dec. 22, 1951	16	176	.800	10.89	148	9.14
1953	1276	5,240	May 24, 1953	13	243	1.10	14.96	227	13.99
1954	1336	4,890	Jan. 23, 1954	8.8	143	.650	8.82	148	9.14
1955	1386	4,860	Mar. 19, 1955	10	173	.786	10.64	175	10.80
1956	1436	8,140	Apr. 16, 1956	12	256	1.16	15.81	265	16.40
1957	1506	8,030	Jan. 29, 1957	18	293	1.33	18.07	335	20.66
1958	1556	8,540	May 7, 1958	19	301	1.37	18.61	250	15.46
1959	1626	4,640	Mar. 28, 1959	10	165	.750	10.18	239	14.73
1960	1706	4,520	Nov. 29, 1959	16	242	1.10	14.97	-	-

4675. Nolichucky River near Morristown, Tenn.

Location.--Lat 36°10'49", long 83°10'32", on right bank 0.25 mile downstream from Bent Creek, 0.6 mile upstream from Susong Bridge, 1.1 miles upstream from Forgey Island, 7 miles southeast of Morristown, Hamblen County, and at mile 14.5.

Drainage area.--1,679 sq mi.

Records available.--November 1920 to September 1957, water years 1958-60 (annual maximum only).

Gage.--Crest-stage gage. Datum of gage is 1,015.78 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Nov. 6, 1925, chain gage at bridge 3¾ miles downstream at datum 10.34 ft lower. Nov. 6, 1925, to Sept. 30, 1942, water-stage recorder 150 ft upstream from chain gage at same datum as chain gage. Oct. 1, 1942, to Sept. 30, 1957, water-stage recorder at present site and datum.

Average discharge.--36 years (1921-57), 2,185 cfs.

Extremes.--1920-57, 1959-60: Maximum discharge, 61,900 cfs Aug. 14, 1940 (gage height, 22.68 ft, site and datum then in use), from rating curve extended above 39,000 cfs on basis of records for station at Embreeville and peak flow over Nolichucky Dam.
1920-57: Minimum discharge observed, 22 cfs Sept. 7, 28, 1925 (gage height, 1.00 ft, site and datum then in use); minimum daily, 60 cfs Sept. 7, 28, 1925.

Remarks.--Low flow partly regulated by Lake Davy Crockett (usable storage, 4,060 cfs-days), 18 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,107	915	2,595	1,918	2,654	3,750	4,148	1,690	1,930	1,716	842	672	1,990
1952	477	1,609	2,949	3,319	2,879	3,812	2,267	1,608	920	593	617	595	1,803
1953	420	793	1,189	2,759	4,920	3,960	1,967	3,340	1,274	1,038	580	517	1,880
1954	399	461	944	4,726	1,779	3,882	3,464	2,474	1,099	761	492	396	1,744
1955	367	550	1,096	1,176	2,987	6,407	3,460	1,888	1,018	1,050	1,426	537	1,825
1956	632	678	847	994	5,897	3,979	5,230	2,113	1,054	1,714	647	909	2,038
1957	819	958	1,776	3,651	9,697	3,112	5,442	2,090	2,815	1,323	874	1,133	2,753
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.76	0.61	1.78	1.32	1.65	2.58	2.76	1.16	1.28	1.18	0.58	0.45	16.11
1952	.33	1.07	2.03	2.28	1.85	2.62	1.51	1.10	.61	.41	.42	.40	14.63
1953	.29	.53	.82	1.89	3.05	2.72	1.31	2.29	.85	.71	.40	.34	15.20
1954	.27	.31	.65	3.24	1.10	2.67	2.30	1.70	.73	.52	.34	.26	14.09
1955	.25	.37	.75	.81	1.85	4.40	2.30	1.30	.68	.72	.98	.36	14.77
1956	.43	.45	.58	.68	3.79	2.73	3.48	1.45	.70	1.18	.44	.60	16.51
1957	.56	.64	1.22	2.51	6.01	2.14	3.62	1.44	1.87	.91	.60	.75	22.27
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	2,819	22.79
1951	1206	22,400	Dec. 8, 1950	176	1,990	1.19	16.11	2,024	16.39
1952	1236	13,400	Dec. 22, 1951	268	1,803	1.07	14.63	1,582	12.84
1953	1276	24,500	Feb. 22, 1953	256	1,880	1.12	15.20	1,830	14.79
1954	1336	37,000	Jan. 23, 1954	70	1,744	1.04	14.09	1,761	14.23
1955	1386	18,300	Mar. 20, 1955	76	1,825	1.09	14.77	1,837	14.86
1956	1436	28,400	Apr. 17, 1956	200	2,038	1.21	16.51	2,155	17.47
1957	1506	43,800	Feb. 1, 1957	156	2,753	1.64	22.27	-	-
1958	-	-	-	-	-	-	-	-	-
1959	1626	18,200	Sept.30, 1959	-	-	-	-	-	-
1960	1706	13,500	Mar. 31, 1960	-	-	-	-	-	-

4685. Douglas Lake near Sevierville, Tenn.

Location.--Lat 35°57'40", long 83°32'20", at Douglas Dam on French Broad River, 6½ miles north of Sevierville, Sevier County, 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.
Extremes.--1943-60: Maximum contents, 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).
Remarks.--Reservoir formed by concrete main dam and 10 saddle dams. Spillway equipped with 11 tainter 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.
Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	421.3	175.0	102.5	101.3	180.2	348.6	576.6	493.0	508.2	501.0	354.1	250.4
1952	127.3	155.6	103.6	182.2	163.3	396.5	426.9	491.4	482.5	377.5	345.8	294.4
1953	166.8	143.3	61.8	161.3	251.4	287.5	222.1	392.5	300.8	268.0	152.7	131.8
1954	154.2	111.1	73.3	230.2	154.6	312.4	472.2	497.6	412.8	296.7	157.6	124.0
1955	94.4	78.5	73.4	41.6	209.4	361.9	500.4	493.1	427.3	351.4	221.6	110.6
1956	91.0	75.1	50.6	38.1	181.3	280.1	579.3	634.9	572.9	525.1	351.5	212.0
1957	123.7	67.2	83.7	226.2	203.7	191.0	531.5	494.6	591.6	500.8	350.5	290.7
1958	174.4	257.7	105.9	113.3	141.2	272.6	528.3	619.6	503.8	525.1	418.5	244.5
1959	99.5	69.5	98.2	105.5	127.9	265.2	608.6	667.3	628.6	546.7	466.3	351.4
1960	241.4	180.5	79.6	80.8	158.4	329.0	471.8	485.5	462.7	468.2	471.3	263.5

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, 1923, staff gage at Dandridge 13 miles upstream at datum 37.67 ft higher. Oct. 8, 1923, to June 18, 1931, staff gage and June 19, 1931, to Sept. 30, 1942, water-stage recorder, at Dandridge at datum 37.63 ft higher.
Average discharge.--42 years (1918-60), 6,551 cfs (unadjusted).
Extremes.--1918-60: Maximum discharge, 95,600 cfs Aug. 31, 1940 (gage height, 20.93 ft), site and datum then in use; minimum, 4.7 cfs Mar. 10, 1943 (gage height, 1.16 ft); minimum daily, 5.5 cfs Mar. 9, 10, 1943.
The greatest known flood at Dandridge reached a stage of 25.2 ft (corrected) 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.--Flow completely regulated by Douglas Lake.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	11,570	11,900	10,790	5,781	4,812	6,301	3,960	8,239	5,556	5,210	7,633	5,742	7,318
1952	5,677	3,801	11,200	7,781	9,531	7,396	7,357	3,170	3,614	5,708	3,466	3,583	6,020
1953	5,529	3,563	6,555	5,410	11,310	9,708	8,097	2,562	6,867	4,001	5,493	2,242	5,909
1954	588	2,885	4,907	9,027	8,802	7,294	4,333	5,729	6,259	6,277	6,230	2,137	5,360
1955	2,031	2,189	3,654	4,812	2,945	10,150	4,701	6,280	5,962	6,642	8,459	5,380	5,294
1956	2,626	2,718	3,365	3,144	9,818	7,275	3,521	4,038	5,241	6,295	7,665	7,370	5,237
1957	5,532	4,751	5,318	5,146	25,170	9,061	5,698	6,960	4,766	6,515	7,223	5,367	7,509
1958	8,121	7,811	16,980	7,369	9,743	5,640	4,358	12,010	9,257	4,977	7,358	7,874	8,460
1959	6,591	3,220	3,111	7,728	6,834	3,357	1,534	5,315	7,149	6,655	5,662	8,457	5,461
1960	13,030	8,999	13,220	8,255	11,950	6,281	7,562	4,885	5,265	4,834	5,335	9,799	8,268

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	7,879	7,880	23.55
1951	1206	15,800	Dec. 18, 1950	86	7,318	6,237	1.37	18.64	6,186	6,189	18.49
1952	1236	22,700	Dec. 24, 1951	99	6,020	6,140	1.35	18.40	5,595	5,481	16.42
1953	1276	25,500	Feb. 26, 1953	25	5,909	5,464	1.20	16.32	5,294	5,325	15.91
1954	1336	31,400	Jan. 26, 1954	7.9	5,360	5,339	1.18	15.95	5,319	5,319	15.89
1955	1386	19,000	Mar. 27, 1955	14	5,294	5,257	1.16	15.71	5,364	5,301	15.84
1956	1436	17,600	Mar. 23, 1956	16	5,237	5,514	1.21	16.52	5,816	5,906	17.70
1957	1506	33,100	Feb. 12, 1957	20	7,509	7,724	1.70	23.08	8,970	9,031	26.98
1958	1556	23,300	Dec. 26-27, 1957	25	8,460	8,333	1.83	24.90	6,775	6,754	20.18
1959	1626	18,300	Sept.30, 1959	14	5,461	5,753	1.27	17.19	7,341	7,290	21.78
1960	1706	19,000	Oct. 16, 1959	28	8,268	8,028	1.77	24.05	-	-	-

a 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 881.44 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to June 14, 1928, staff gage at same site and datum.

Average discharge.--40 years (1920-60), 552 cfs.

Extremes.--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.--Some regulation at low flow caused by powerplants on forks.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	121	142	594	494	856	1,724	1,081	397	581	321	151	216	555
1952	104	611	969	1,190	538	950	551	346	233	102	146	114	489
1953	51.8	286	432	853	1,551	653	577	812	294	282	138	69.6	493
1954	46.4	96.9	280	1,653	339	1,257	924	413	206	144	157	55.9	467
1955	55.1	144	500	271	1,059	1,715	646	315	234	308	286	81.0	465
1956	226	240	305	395	1,865	944	1,322	437	196	381	179	257	556
1957	148	219	660	1,229	2,566	644	1,020	497	840	246	197	206	692
1958	335	1,191	1,284	504	1,085	733	1,230	1,148	274	638	235	102	727
1959	99.2	143	301	845	796	719	1,187	344	485	335	258	309	482
1960	645	951	1,194	665	881	949	724	319	422	401	568	194	659

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.40	0.45	1.94	1.61	2.52	5.63	3.42	1.30	1.84	1.05	0.49	0.68	21.33
1952	.34	1.93	3.17	3.89	1.65	3.10	1.74	1.13	.74	.33	.48	.36	18.86
1953	.17	.91	1.41	2.79	4.57	2.13	1.82	2.65	.93	.92	.45	.22	18.97
1954	.14	.31	.92	5.40	1.00	4.11	2.92	1.35	.65	.47	.51	.18	17.96
1955	.18	.45	1.63	.89	3.12	5.60	2.04	1.03	.74	1.01	.93	.26	17.88
1956	.74	.76	1.00	1.29	5.70	3.08	4.18	1.43	.62	1.24	.59	.81	21.44
1957	.48	.69	2.15	4.01	7.57	2.10	3.22	1.62	2.66	.80	.64	.65	26.59
1958	1.09	3.76	4.19	1.64	3.20	2.39	3.89	3.75	.87	2.08	.77	.32	27.95
1959	.32	.45	.98	2.76	2.35	2.35	3.75	1.12	1.53	1.10	.84	.98	18.53
1960	2.10	3.00	3.90	2.17	2.69	3.10	2.29	1.04	1.33	1.31	1.85	.61	25.39

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	578	22.22
1951	1206	20,400	Mar. 29, 1951	70	555	1.57	21.33	624	23.98
1952	1236	10,100	Mar. 11, 1952	46	489	1.39	18.86	412	15.91
1953	1276	13,300	Feb. 21, 1953	44	493	1.40	18.97	465	17.85
1954	1336	14,600	Jan. 21, 1954	34	467	1.32	17.96	490	18.85
1955	1386	9,290	Feb. 23, 1955	35	465	1.32	17.88	471	18.12
1956	1436	20,400	Apr. 16, 1956	70	556	1.58	21.44	577	22.26
1957	1506	28,300	Feb. 1, 1957	68	692	1.96	26.59	841	32.31
1958	1556	9,660	Nov. 18, 1957	78	727	2.06	27.95	538	20.66
1959	1626	19,000	Jan. 22, 1959	68	482	1.37	18.53	671	25.78
1960	1706	18,000	Nov. 28, 1959	95	659	1.87	25.39	-	-

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 (1945-60), 7,488 cfs (unadjusted).

Extremes.--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.--Flow regulated by Douglas Lake, 24.6 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	11,440	11,720	11,430	6,617	6,210	9,152	5,673	8,822	6,354	5,652	7,827	5,993	8,097
1952	5,913	4,533	12,550	9,219	10,240	8,520	7,820	3,549	3,695	5,744	3,625	3,542	6,578
1953	5,363	3,716	6,955	6,418	13,110	10,350	8,636	3,672	7,115	4,297	5,528	2,378	6,418
1954	669	2,903	5,171	11,340	9,073	8,681	5,398	6,074	6,295	6,320	6,397	2,140	5,864
1955	2,049	2,273	4,298	5,055	4,292	12,060	5,495	6,585	6,056	6,805	8,519	5,435	5,766
1956	2,850	2,956	3,728	3,675	12,090	8,455	5,368	4,579	5,463	6,818	7,809	7,631	5,925
1957	5,759	5,018	6,340	6,945	30,520	10,230	7,575	7,893	5,901	6,943	7,695	5,822	8,739
1958	8,419	9,341	18,400	8,049	11,160	6,451	6,138	13,540	9,507	5,768	7,582	8,006	9,362
1959	6,738	3,296	3,352	8,654	7,870	4,452	3,068	5,832	7,636	7,053	6,049	8,955	6,069
1960	13,910	10,260	14,870	9,367	13,140	7,752	8,383	5,406	5,993	5,540	5,957	10,240	9,219

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30								Calendar year		
		Observed					Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches		Mean	Mean	Runoff in inches
		Discharge	Date									
1950	-	-	-	-	-	-	-	-		8,823	8,824	23.48
1951	1206	28,300	Mar. 29, 1951	1,220	8,097	7,016	1.38	18.67		7,131	7,134	18.99
1952	1236	24,700	Dec. 23, 1951	790	6,578	6,698	1.31	17.87		5,991	5,876	15.68
1953	1276	26,600	Feb. 21, 1953	844	6,418	5,972	1.17	15.89		5,801	5,832	15.52
1954	1336	32,100	Jan. 26, 1954	68	5,864	5,842	1.15	15.55		5,855	5,855	15.58
1955	1386	26,400	Mar. 22, 1955	216	5,766	5,729	1.12	15.25		5,842	5,779	15.38
1956	1436	22,000	Feb. 18, 1956	950	5,925	6,202	1.22	16.55		6,562	6,652	17.75
1957	1506	47,500	Feb. 1, 1957	903	8,739	8,955	1.76	23.83		10,340	10,410	27.69
1958	1556	25,400	Dec. 27, 1957	780	9,362	9,235	1.81	24.58		7,444	7,423	19.75
1959	1626	25,400	Sept.30, 1959	150	6,069	6,361	1.25	16.93		8,228	8,177	21.76
1960	1706	25,200	Dec. 19, 1959	1,590	9,219	8,979	1.76	23.96		-	-	-

a Adjusted for change in contents in Douglas Reservoir.

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 (1920-31, 1942-60), 109 cfs.

Extremes.--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, but may have been less in 1925 or 1926 before installation of water-stage recorder; minimum daily, 8 cfs July 19, 1926.

Remarks.--Diurnal fluctuations at low flow caused by mill 500 ft above station prior to August 1951.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	32.1	36.2	186	91.7	130	175	224	143	68.1	55.4	36.2	26.3	100
1952	22.4	33.9	92.1	159	146	184	98.2	102	44.9	29.7	45.7	26.4	82.0
1953	22.7	33.2	53.6	144	198	224	101	122	83.2	68.6	31.1	23.4	91.6
1954	19.9	19.9	37.5	166	89.7	185	132	143	48.6	43.3	29.7	23.4	78.4
1955	25.4	31.2	84.5	67.3	228	512	191	73.2	42.7	45.9	31.2	23.4	112
1956	22.7	23.4	25.8	28.8	206	190	248	142	45.7	42.7	28.1	33.5	85.7
1957	34.4	64.3	93.4	350	508	131	292	62.0	86.9	47.8	27.0	34.3	142
1958	33.9	128	188	153	225	192	243	245	69.7	74.5	168	39.0	146
1959	34.7	34.0	59.9	117	94.5	129	276	113	62.9	38.2	30.9	33.3	85.1
1960	73.3	98.1	154	133	249	262	248	103	55.5	103	41.8	29.8	129

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.49	0.53	2.81	1.38	1.78	2.65	3.28	2.17	1.00	0.84	0.55	0.39	17.87
1952	.34	.50	1.40	2.41	2.07	2.79	1.44	1.54	.66	.45	.69	.39	14.68
1953	.34	.49	.81	2.18	2.71	3.39	1.48	1.84	1.22	1.04	.47	.34	16.31
1954	.30	.29	.57	2.51	1.23	2.80	1.93	2.17	.71	.66	.45	.34	13.96
1955	.39	.46	1.28	1.02	3.12	7.76	2.80	1.11	.63	.70	.47	.34	20.08
1956	.34	.34	.39	.44	2.92	2.88	3.64	2.16	.67	.65	.43	.49	15.35
1957	.52	.94	1.42	5.30	6.96	1.98	4.28	.94	1.27	.72	.41	.50	25.24
1958	.51	1.87	2.85	2.32	3.08	2.90	3.56	3.71	1.02	1.13	2.55	.57	26.07
1959	.53	.50	.91	1.78	1.29	1.95	4.05	1.71	.92	.58	.47	.49	15.18
1960	1.11	1.44	2.33	2.01	3.53	3.96	3.64	1.57	.81	1.56	.63	.44	23.03

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	124	22.14
1951	1206	3,270	Dec. 7, 1950	23	100	1.31	17.87	91.1	16.28
1952	1236	541	Jan. 28, 1952	19	82.0	1.08	14.68	78.7	14.08
1953	1276	1,450	Feb. 21, 1953	20	91.6	1.20	16.31	88.9	15.83
1954	1336	2,280	Jan. 22, 1954	18	78.4	1.03	13.96	83.8	14.93
1955	1386	2,580	Mar. 18, 1955	19	112	1.47	20.08	107	19.02
1956	1436	2,070	Apr. 16, 1956	19	85.7	1.13	15.35	95.7	17.16
1957	1506	3,800	Jan. 29, 1957	20	142	1.87	25.24	155	27.59
1958	1556	3,670	Aug. 1, 1958	27	146	1.92	26.07	128	22.78
1959	1626	1,420	Jan. 22, 1959	20	85.1	1.12	15.18	102	18.12
1960	1706	2,100	Mar. 30, 1960	25	129	1.70	23.03	-	-

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, water year 1960 (annual maximum).

Gage.--Crest-stage gage. Datum of gage is 1,946.66 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to October 1959, water-stage recorder and concrete control at same site and datum.

Average discharge.--12 years (1947-59), 100 cfs.

Extremes.--1947-60: Maximum discharge, 4,200 cfs Mar. 18, 1955 (gage height, 5.75 ft), from rating curve extended above 2,600 cfs by logarithmic plotting.
1947-59: Minimum discharge, 2.0 cfs Sept. 8, 1954 (gage height, 0.15 ft).

Remarks.--Plant diverts about 0.5 cfs 800 ft above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	17.2	21.1	102	105	148	†154	207	152	64.1	28.5	21.0	12.1	85.5
1952	10.3	45.1	132	189	123	151	85.8	115	45.0	15.7	21.8	10.6	78.7
1953	7.78	27.6	54.2	158	218	160	109	137	41.7	27.6	13.6	10.3	79.7
1954	9.76	12.1	53.4	246	80.9	162	172	136	39.3	21.4	16.5	7.80	79.9
1955	10.5	23.1	77.7	65.3	234	504	234	88.0	49.1	31.2	25.6	11.8	112
1956	13.0	26.9	37.1	53.5	337	228	268	90.3	38.2	105	29.7	33.0	104
1957	33.2	53.2	129	399	485	118	257	49.4	98.8	39.2	20.5	23.6	140
1958	22.8	118	230	119	228	151	197	193	38.6	52.1	68.3	22.2	119
1959	15.3	25.5	66.2	134	112	116	267	49.0	34.8	20.4	16.9	16.2	72.3
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

† Corrected.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.35	0.42	2.10	2.17	2.75	3.17	4.13	3.12	1.27	0.59	0.43	0.24	20.74
1952	.21	.90	2.72	3.88	2.37	3.11	1.71	2.36	.90	.32	.45	.21	19.14
1953	.16	.55	1.12	3.25	4.05	3.30	2.18	2.82	.83	.57	.28	.21	19.32
1954	.20	.24	1.10	5.06	1.50	3.33	3.42	2.80	.78	.44	.34	.16	19.37
1955	.22	.46	1.60	1.35	4.35	10.38	4.66	1.81	.98	.64	.53	.24	27.22
1956	.27	.54	.76	1.10	6.49	4.69	5.34	1.86	.76	2.16	.61	.66	25.24
1957	.68	1.06	2.65	8.21	9.02	2.43	5.12	1.02	1.96	.81	.42	.47	33.85
1958	.47	2.35	4.74	2.44	4.24	3.11	3.93	3.98	.77	1.07	1.41	.44	28.95
1959	.31	.51	1.36	2.76	2.07	2.40	5.31	1.01	.69	.42	.35	.32	17.51
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	122	29.51
1951	1206	690	Dec. 7, 1950	8.7	85.5	1.53	20.74	89.4	21.70
1952	1236	995	Dec. 21, 1951	6.0	78.7	1.41	19.14	70.5	17.14
1953	1276	1,590	Feb. 21, 1953	4.8	79.7	1.42	19.32	78.5	19.03
1954	1336	2,880	Jan. 22, 1954	2.6	79.9	1.43	19.37	83.0	20.11
1955	1386,1706	4,200	Mar. 18, 1955	5.8	112	2.00	27.22	109	26.51
1956	1436,1706	3,350	Apr. 16, 1956	9.0	104	1.86	25.24	115	28.06
1957	1506	4,200	Jan. 29, 1957	8.0	140	2.50	33.85	153	37.02
1958	1556	1,060	Dec. 8, 1957	12	119	2.12	28.95	97.3	23.57
1959	1626	1,920	Jan. 22, 1959	7.5	72.3	1.29	17.51	-	-
1960	-	2,040	Mar. 30, 1960	-	-	-	-	-	-

4730. South Fork Holston River at Vestal, Va.

Location.--Lat 36°39'06", long 81°50'39", on right bank 500 ft (revised) 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 (1931-60), 459 cfs.

Extremes.--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 of chemical analyses for the water year 1952 are published in report of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	140	149	579	426	585	696	926	710	309	228	149	111	416
1952	96.7	182	587	889	625	805	409	489	197	103	168	88.4	387
1953	76.5	152	249	675	925	873	465	609	374	258	113	90.4	402
1954	83.3	87.0	228	888	379	790	669	641	208	145	110	79.0	360
1955	95.3	146	374	293	968	2,075	905	366	207	180	135	90.3	484
1956	95.5	135	146	196	1,199	948	1,085	542	223	303	141	160	427
1957	162	277	488	1,490	2,022	555	1,142	279	473	203	126	159	604
1958	143	523	878	565	924	710	964	993	288	355	705	158	599
1959	131	127	296	569	453	541	1,183	351	196	141	120	116	351
1960	360	406	726	575	910	931	987	408	205	373	196	113	515

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.54	0.55	2.21	1.64	2.02	2.66	3.44	2.72	1.15	0.87	0.57	0.41	18.78
1952	.37	.68	2.25	3.40	2.24	3.08	1.52	1.87	.73	.39	.64	.33	17.50
1953	.29	.56	.95	2.58	3.20	3.34	1.72	2.33	1.38	.99	.43	.33	18.10
1954	.32	.32	.87	3.40	1.31	3.02	2.48	2.46	.77	.56	.42	.29	16.22
1955	.37	.54	1.43	1.12	3.35	7.94	3.36	1.41	.77	.69	.52	.33	21.83
1956	.37	.50	.56	.75	4.29	3.63	4.02	2.08	.83	1.16	.54	.59	19.32
1957	.62	1.03	1.87	5.71	7.00	2.12	4.23	1.07	1.75	.78	.48	.59	27.25
1958	.55	1.94	3.37	2.17	3.20	2.72	3.57	3.80	1.07	1.36	2.70	.59	27.04
1959	.50	.47	1.14	2.18	1.57	2.07	4.39	1.34	.73	.54	.46	.43	15.82
1960	1.38	1.50	2.78	2.20	3.26	3.56	3.66	1.56	.76	1.43	.75	.42	23.26

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	574	25.88
1951	1206	6,110	Dec. 7, 1950	86	416	1.38	18.78	416	18.78
1952	1236	4,060	Dec. 21, 1951	68	387	1.29	17.50	354	16.00
1953	1276	5,470	Feb. 21, 1953	68	402	1.34	18.10	396	17.81
1954	1336	9,350	Jan. 22, 1954	60	360	1.20	16.22	378	17.05
1955	1386	11,400	Mar. 18, 1955	66	484	1.61	21.83	464	20.92
1956	1436	9,500	Apr. 16, 1956	74	427	1.42	19.32	473	21.41
1957	1506	15,100	Jan. 29, 1957	89	604	2.01	27.25	683	29.59
1958	1556	5,990	Aug. 2, 1958	110	599	1.99	27.04	516	23.29
1959	1626	5,360	Jan. 22, 1959	75	351	1.17	15.82	430	19.37
1960	1706	6,480	Mar. 30, 1960	90	515	1.71	23.26	-	-

4735. Middle Fork Holston River at Groseclose, Va.

Location.--Lat 36°53'19", long 81°20'51", on left bank at downstream side of highway bridge in village of Groseclose, Smyth County, 0.2 mile upstream from Rocky Spring Branch, and 10 miles northeast of Marion.

Drainage area.--7.39 sq mi.

Records available.--October 1947 to September 1957. Monthly discharge only for some periods, published in WSP 1306. Water years 1958-60 (annual maximum).

Gage.--Crest-stage gage. Datum of gage is 2,442.86 ft above mean sea level, datum of gage is 2,442.86 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to October 1957, water-stage recorder at same site and datum.

Average discharge.--10 years (1947-57), 9.04 cfs.

Extremes.--1947-60: Maximum discharge, 813 cfs July 6, 1953 (gage height, 7.42 ft), from rating curve extended above 300 cfs on basis of slope-area measurement of peak flow.
1947-57: Minimum discharge, 1.8 cfs Jan. 24, 1948, result of freezeup; minimum daily, 2.7 cfs Nov. 13-15, 1954.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	5.83	5.30	14.3	7.99	8.39	13.9	17.0	8.97	5.47	4.60	7:27	4.57	8.64
1952	3.55	4.36	8.52	14.3	11.7	14.0	8.41	7.37	5.59	5.43	5.38	3.95	7.71
1953	3.39	4.09	4.87	11.4	15.2	19.7	9.57	10.9	7.35	13.3	4.70	3.96	9.01
1954	3.53	3.24	3.73	11.9	6.04	8.39	9.14	10.2	5.55	5.58	4.00	4.30	6.31
1955	4.09	3.79	8.28	5.76	16.6	37.1	13.9	7.26	5.53	5.11	4.20	3.65	9.58
1956	3.41	3.21	2.95	3.59	13.1	12.6	17.0	12.4	5.68	4.95	3.98	3.99	7.22
1957	4.53	5.69	6.86	25.0	44.6	14.5	25.2	7.11	5.47	4.97	3.81	4.94	12.5
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.91	0.80	2.24	1.24	1.19	2.17	2.57	1.40	0.83	0.72	1.13	0.69	15.89
1952	.55	.66	1.33	2.24	1.70	2.18	1.27	1.15	.84	.85	.84	.60	14.21
1953	.53	.62	.76	1.78	2.14	3.08	1.44	1.70	1.11	2.08	.73	.60	16.57
1954	.55	.49	.58	1.86	.85	1.31	1.38	1.59	.84	.87	.62	.65	11.59
1955	.64	.57	1.29	.90	2.34	5.79	2.10	1.13	.83	.80	.65	.55	17.59
1956	.53	.48	.46	.56	1.91	1.97	2.57	1.94	.86	.77	.62	.60	13.27
1957	.71	.86	1.07	3.90	6.29	2.26	3.80	1.11	.83	.78	.59	.75	22.95
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	11.5	21.20
1951	1206,1236	210	Dec. 7, 1950	3.5	8.64	1.17	15.89	7.88	14.48
1952	1236	181	July 5, 1952	3.3	7.71	1.04	14.21	7.37	13.58
1953	1276	813	July 6, 1953	2.9	9.01	1.22	16.57	8.86	16.28
1954	1336	178	July 21, 1954	3.0	6.31	.854	11.59	6.79	12.47
1955	1386	234	Mar. 18, 1955	2.7	9.58	1.30	17.59	9.03	16.56
1956	1436	167	Apr. 16, 1956	2.8	7.22	.977	13.27	7.84	14.44
1957	1506	309	Jan. 29, 1957	3.5	12.5	1.69	22.95	-	-
1958	-	256	May 6, 1958	-	-	-	-	-	-
1959	-	(a)	Apr. 12, 1959	-	-	-	-	-	-
1960	-	264	Mar. 30, 1960	-	-	-	-	-	-

a Discharge not determined.

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 Meade 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 and concrete control. Datum of gage is 1,960.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--18 years (1942-60), 159 cfs.

Extremes.--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.--Some diurnal fluctuation at low flow caused by mill 9 miles above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	61.1	55.3	238	142	179	295	340	200	84.1	57.8	61.7	44.0	146
1952	47.6	49.4	122	319	193	268	130	112	51.5	40.4	41.0	36.1	118
1953	34.6	55.1	63.9	183	312	341	161	300	140	102	40.4	34.9	146
1954	41.7	29.8	46.7	243	85.5	236	180	168	49.5	71.7	45.7	35.0	103
1955	50.3	44.1	143	107	342	844	279	106	60.5	47.6	42.8	44.4	175
1956	35.0	34.3	34.1	42.7	293	303	397	194	61.8	77.3	37.7	48.5	129
1957	52.9	77.7	174	708	870	227	416	86.0	80.4	45.9	37.2	67.2	232
1958	41.6	135	261	167	303	274	339	429	75.1	74.1	97.5	40.0	186
1959	47.2	39.7	74.2	147	140	186	414	142	80.1	38.4	34.1	38.3	115
1960	120	129	217	200	341	386	222	130	49.5	61.6	40.4	35.8	161

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.53	0.47	2.08	1.24	1.42	2.57	2.88	1.75	0.71	0.50	0.54	0.37	15.06
1952	.42	.42	1.07	2.79	1.58	2.34	1.10	.98	.44	.35	.36	.30	12.15
1953	.30	.47	.56	1.60	2.46	2.97	1.36	2.62	1.18	.89	.35	.29	15.05
1954	.36	.25	.41	2.12	.67	2.06	1.52	1.46	.42	.63	.40	.30	10.60
1955	.44	.37	1.24	.94	2.70	7.37	2.35	.93	.51	.42	.37	.37	18.01
1956	.31	.29	.30	.37	2.39	2.65	3.36	1.70	.52	.68	.33	.41	13.31
1957	.46	.66	1.52	6.18	6.86	1.98	3.51	.75	.68	.40	.33	.57	23.90
1958	.36	1.14	2.28	1.46	2.40	2.40	2.87	3.75	.63	.65	.85	.34	19.13
1959	.41	.34	.65	1.28	1.10	1.62	3.50	1.24	.68	.33	.30	.32	11.77
1960	1.05	1.09	1.89	1.74	2.79	3.37	1.88	1.14	.42	.54	.35	.30	16.56

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	203	20.87
1951	1206	3,280	Dec. 7, 1950	32	146	1.11	15.06	135	13.89
1952	1236	1,540	Jan. 28, 1952	21	118	.894	12.15	112	11.57
1953	1276	2,540	July 7, 1953	25	146	1.11	15.05	144	14.74
1954	1336	3,910	Jan. 22, 1954	24	103	.780	10.60	113	11.63
1955	1386	4,600	Mar. 18, 1955	21	175	1.33	18.01	164	16.86
1956	1436	5,020	Apr. 16, 1956	21	129	.977	13.31	146	15.05
1957	1506	7,680	Jan. 29, 1957	29	232	1.76	23.90	244	25.04
1958	1556	1,820	May 6, 1958	30	186	1.41	19.13	162	16.75
1959	1626	2,540	Apr. 12, 1959	23	115	.871	11.77	140	14.40
1960	1706	2,290	Mar. 30, 1960	22	161	1.22	16.56	-	-

4750. Middle Fork Holston River near Meadowview, Va.

Location.--Lat 36°42'47", long 81°49'08", on left bank 100 ft downstream from highway bridge on State Highway 80, 0.9 mile upstream from Cedar Creek, 4.1 miles southeast of Meadowview, Washington County, and 12.9 miles upstream from mouth.

Drainage area.--211 sq mi.

Records available.--October 1931 to September 1953. Monthly discharge only for October 1931, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 1,820.22 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--22 years (1931-53), 231 cfs.

Extremes.--1931-53: Maximum discharge, 6,650 cfs Feb. 18, 1944 (gage height, 9.80 ft); minimum, 6 cfs at times in 1933, 1936, 1940, 1942, and 1943; minimum daily, 7 cfs Nov. 19, 1950.

Remarks.--Flow regulated by powerplant above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	99.1	84.3	299	213	285	428	525	376	167	118	97.7	79.5	231
1952	75.6	85.1	183	456	302	388	198	165	82.7	65.3	66.9	50.0	177
1953	52.3	69.5	88.0	223	435	501	255	457	218	169	71.3	55.5	215

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.55	0.45	1.64	1.16	1.41	2.34	2.78	2.05	0.88	0.64	0.53	0.42	14.85
1952	.41	.45	1.00	2.49	1.54	2.12	1.05	.90	.44	.36	.37	.26	11.39
1953	.29	.37	.48	1.22	2.14	2.73	1.35	2.50	1.15	.92	.39	.29	13.83

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	319	20.55
1951	1206	3,700	Dec. 8, 1950	7	231	1.09	14.85	219	14.07
1952	1236	1,960	Jan. 28, 1952	18	177	.839	11.39	165	10.67
1953	1276	3,000	Mar. 4, 1953	8.0	215	1.02	13.83	-	-

4760. South Holston Lake near Bristol, Va.-Tenn.

Location.--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, Va.-Tenn., 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.

Extremes.--1950-60: Maximum contents, 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).

Remarks.--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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month a/

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	-	4.0	38.1	64.5	93.2	127.1	174.6	220.5	236.2	231.1	219.2	206.3
1952	182.1	163.6	176.0	220.0	249.6	285.1	286.1	266.0	244.2	222.2	205.3	184.1
1953	154.4	152.5	153.4	176.9	215.3	267.8	279.1	283.0	252.7	223.4	171.4	119.4
1954	112.3	115.8	99.8	108.1	123.3	155.8	185.4	203.1	188.5	167.0	136.4	108.8
1955	84.1	63.2	62.6	61.2	98.2	232.8	250.0	240.6	239.2	215.2	166.2	120.0
1956	86.4	72.4	64.5	65.7	121.7	179.0	244.4	264.9	258.0	257.7	236.2	195.8
1957	157.6	144.5	154.4	235.6	254.9	264.1	294.8	268.1	256.0	246.5	213.5	183.0
1958	164.2	164.9	210.9	216.1	226.5	230.4	267.0	311.4	299.2	277.8	264.6	219.2
1959	172.5	137.8	105.7	103.2	117.8	143.3	207.3	210.2	196.1	177.3	153.4	150.5
1960	160.9	175.2	212.6	229.7	250.8	282.4	299.7	289.8	265.3	258.5	225.6	164.9

a Contents at 10:00 p.m. prior to May 9, 1951, 12:00 p.m. thereafter.

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 (1951-60), 925 cfs (unadjusted).

Extremes.--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.--Flow completely regulated by South Holston Lake.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	672	631	-
1952	985	1,011	504	194	155	322	786	1,480	1,131	913	869	890	771
1953	1,120	398	440	372	390	41.2	593	1,299	1,860	1,609	2,034	2,058	1,021
1954	391	36.1	859	1,403	118	338	219	392	859	1,007	1,234	1,092	668
1955	987	923	684	599	498	51.0	1,078	983	447	1,134	1,863	1,784	921
1956	1,250	656	476	280	235	30.4	25.8	412	641	601	951	1,654	601
1957	1,535	878	656	631	4,177	989	1,444	1,446	1,199	647	1,327	1,351	1,335
1958	885	863	134	967	1,503	1,334	614	1,073	998	1,462	1,654	1,975	1,119
1959	1,832	1,481	1,606	1,128	409	264	205	629	896	919	1,031	313	899
1960	335	347	192	618	1,027	953	1,129	1,103	1,295	979	1,533	2,406	989

Yearly discharge, in cubic feet per second, of South Fork Holston River below South Holston Dam, Tenn.

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1951	1206	-	-	-	-	-	-	-	-	-	-
1952	1236	2,710	Dec.12,15, 1951	1.3	771	711	1.01	13.76	727	665	12.88
1953	1276	3,360	Sept.13, 1953	2.8	1,021	843	1.20	16.29	965	818	15.79
1954	1336	3,000	Oct. 7, 1953	4.6	668	639	.909	12.34	777	675	13.03
1955	1386	3,290	Sept. 6, 1955	0.5	921	952	1.35	18.38	904	909	17.55
1956	1436	2,850	Sept.28, 1956	1.3	601	808	1.15	15.65	659	905	17.51
1957	1506	8,270	Feb. 12, 1957	4.5	1,335	1,300	1.85	25.10	1,234	1,389	26.83
1958	1556	3,300	Feb. 1, 1958	4.0	1,119	1,218	1.73	23.52	1,375	1,087	20.99
1959	1626	3,250	Aug. 19, 1959	5.5	899	711	1.01	13.72	558	851	16.43
1960	1706	3,280	Sept.23, 1960	6.1	989	1,029	1.46	19.92	-	-	-

a Adjusted for change in contents in South Holston Lake.

4770. South Fork Holston River at Bluff City, Tenn.

Location.--Lat 36°28'38", long 82°15'47", on right bank 100 ft upstream from bridge on U.S. Highways 11E and 19 at Bluff City, Sullivan County, 600 ft downstream from Southern Railway bridge, 0.8 mile downstream from Indian Creek, and 4.8 miles upstream from Beaver Creek.

Drainage area.--813 sq mi.

Records available.--July 1900 to May 1953.

Gage.--Water-stage recorder. Datum of gage is 1,368.35 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. July 17, 1900, to Aug. 18, 1928, staff and chain gages 150 ft downstream at same datum.

Average discharge.--52 years (1900-52), 1,157 (unadjusted).

Extremes.--1900-53: Maximum discharge, 30,700 cfs May 22, 1901 (gage height, 16.0 ft, site then in use), from rating curve extended above 19,000 cfs; minimum (prior to regulation commencing Nov. 20, 1950), 45 cfs Jan. 3, 1940; minimum daily, 35 cfs Nov. 22-30, 1950.
Flood of Apr. 11, 1896, reached a stage of 14.5 ft (discharge, 26,600 cfs) from reports of U.S. Weather Bureau.

Remarks.--Flow regulated by South Holston Lake, 15 miles above station.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	316	224	90.5	84.3	356	589	623	226	236	722	794	715	415
1952	1,085	1,150	711	461	338	542	995	1,697	1,282	1,026	964	939	934
1953	1,206	464	560	563	718	307	740	1,501	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	1,354	1,458	24.34
1951	1206	4,220	Mar. 30, 1951	35	415	980	1.21	16.36	609	987	16.47
1952	1236	3,980	Jan. 28, 1952	45	934	874	1.08	14.63	875	814	13.62
1953	1276	4,240	Feb. 21, 1953	-	-	-	-	-	-	-	-

a Adjusted for change in contents in South Holston Lake.

4775. Beaver Creek near Wallace, Va.

Location.--Lat 36°38'25", long 82°06'42", on left bank 0.4 mile upstream from Clear Creek, 1.3 miles southeast of Wallace, Washington County, and 3.8 miles northeast of Bristol.

Drainage area.--13.7 sq mi.

Records available.--October 1945 to September 1957, water years 1958-60 (annual maximum).

Gage.--Crest-stage gage. Datum of gage is 1,808.93 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to October 1957, water-stage recorder and concrete control at same site and datum.

Average discharge.--12 years (1945-57), 14.6 cfs.

Extremes.--1945-60: Maximum discharge, 383 cfs July 15, 1948 (gage height, 5.94 ft), from rating curve extended above 230 cfs on basis of velocity-area studies.
1945-57: Minimum discharge, 2.8 cfs Jan. 6, 1956; minimum gage height, 1.05 ft Dec. 1-12, 1946.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	7.98	7.01	9.47	10.7	18.9	20.5	29.8	30.0	14.0	11.7	9.94	6.85	14.7
1952	5.94	6.62	13.6	22.7	21.8	25.0	16.9	11.1	8.32	5.78	5.88	4.85	12.4
1953	4.61	5.58	7.90	13.1	25.9	29.8	18.4	23.7	13.5	10.3	6.72	5.62	13.7
1954	4.41	4.55	4.77	15.8	10.8	16.7	15.0	9.48	7.38	5.57	5.39	4.51	8.69
1955	4.67	4.11	7.73	9.62	22.1	59.6	24.9	12.7	8.28	5.66	5.10	5.09	14.1
1956	3.92	4.31	3.74	4.06	24.5	31.6	32.9	21.3	11.1	8.55	5.42	4.99	13.0
1957	4.16	4.02	10.2	36.4	85.4	25.2	33.1	12.7	10.6	6.95	6.31	7.48	19.7
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.67	0.57	0.80	0.90	1.44	1.73	2.43	2.52	1.14	0.98	0.84	0.56	14.58
1952	.50	.54	1.14	1.91	1.72	2.10	1.37	.93	.68	.49	.49	.40	12.27
1953	.39	.45	.67	1.10	1.97	2.51	1.50	1.99	1.10	.87	.57	.46	13.58
1954	.37	.37	.40	1.33	.82	1.41	1.22	.80	.60	.47	.45	.37	8.61
1955	.39	.33	.65	.81	1.68	5.02	2.03	1.07	.67	.48	.43	.42	13.98
1956	.33	.35	.31	.34	1.93	2.66	2.68	1.79	.90	.72	.46	.41	12.88
1957	.35	.33	.86	3.07	6.49	2.12	2.70	1.07	.86	.58	.53	.61	19.57
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	21.4	21.26
1951	1206	258	Aug. 9, 1951	6.3	14.7	1.07	14.58	14.9	14.72
1952	1236	79	Mar. 11, 1952	4.4	12.4	.905	12.27	11.7	11.60
1953	1276	170	Mar. 4, 1953	4.4	13.7	1.00	13.58	13.3	13.21
1954	1336	103	Jan. 22, 1954	3.8	8.69	.634	8.61	8.93	8.84
1955	1386	220	Mar. 18, 1955	3.3	14.1	1.03	13.98	13.7	13.60
1956	1436	186	Apr. 15, 1956	3.0	13.0	.949	12.88	13.5	13.43
1957	1506	286	Apr. 8, 1957	3.4	19.7	1.44	19.57	-	-
1958	-	274	May 6, 1958	-	-	-	-	-	-
1959	-	†104	Mar. 27, 1959	-	-	-	-	-	-
1960	-	*120	July 1, 1960*	-	-	-	-	-	-

* Revised estimate.
† Corrected.

4784. Beaver Creek near Bristol, Va.

Location.--Lat 36°37'54", long 82°08'02", on right bank 50 ft upstream from bridge entering Kerns Bakery on U.S. Highway 11, 75 ft downstream from Goose Creek, 0.9 mile downstream from Clear Creek, and 2.1 miles northeast of Bristol, Washington County.

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.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	‡24.7	14.9	17.1	-
1958	13.4	23.6	49.8	39.7	54.8	53.4	53.5	129	44.3	42.2	35.8	21.4	46.8
1959	15.4	16.3	15.6	26.2	34.9	37.6	60.0	32.6	21.1	16.3	12.7	11.2	24.9
1960	21.9	28.3	49.6	41.7	41.7	53.2	56.2	27.5	17.2	21.7	16.8	11.4	32.3

‡ Not previously published; estimated on basis of weather records and records for Beaverdam Creek at Damascus and Middle Fork Holston River at Sevenmile Ford.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	‡1.03	0.62	0.69	-
1958	0.56	0.95	2.08	1.65	2.06	2.22	2.15	5.37	1.78	1.75	1.49	.86	22.92
1959	.64	.66	.65	1.09	1.31	1.57	2.42	1.36	.85	.68	.53	.45	12.21
1960	.91	1.14	2.06	1.74	1.62	2.21	2.26	1.15	.69	.90	.70	.46	15.84

‡ Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1957	1556	-	-	11	-	-	-	-	-
1958	1556	795	May 6, 1958	12	46.8	1.69	22.92	43.5	21.28
1959	1626	310	Mar. 27, 1959	10	24.9	.899	12.21	29.3	14.37
1960	1706	280	July 1, 1960	10	32.3	1.17	15.84	-	-

4790. Watauga River near Sugar Grove, N. C.

Location.--Lat 36°14'18", long 81°49'22", on right bank 300 ft downstream from Cove Creek, 2.3 miles southwest of Sugar Grove, Watauga County, and at mile 64.4.

Drainage area.--90.8 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 (1939-60), 163 cfs.

Extremes.--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 a quarter of a mile above station as witnessed by local resident (discharge, 28,000 cfs, from rating curve extended above 2,100 cfs on basis of slope-area measurement at gage height 29.6 ft).

Remarks.--Slight diurnal fluctuation at low flow caused by small mills above station. Records of chemical analyses and water temperatures for the period October 1952 to September 1953 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	88.2	89.1	434	146	194	287	241	105	77.3	49.3	38.5	27.5	148
1952	24.3	61.4	186	164	230	312	155	98.0	63.0	36.3	53.9	36.5	118
1953	32.6	86.7	100	273	297	359	141	170	106	65.5	32.5	29.5	141
1954	23.4	41.9	92.2	225	195	276	186	194	65.7	36.5	28.2	18.1	115
1955	19.2	51.9	113	70.0	225	379	360	117	76.8	147	112	45.6	142
1956	40.9	46.0	52.7	55.5	270	212	287	107	46.7	65.7	25.6	41.7	103
1957	92.2	110	106	214	453	192	557	107	231	94.5	39.2	102	189
1958	110	334	363	225	301	252	384	323	101	93.1	69.2	37.4	215
1959	37.0	40.9	123	184	119	177	300	129	124	78.9	91.5	256	138
1960	233	114	224	206	399	438	428	153	123	159	156	92.4	227

Monthly and yearly runoff, in inches, of Watauga River near Sugar Grove, N. C.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.12	1.10	5.51	1.85	2.22	3.64	2.97	1.34	0.95	0.63	0.49	0.34	22.16
1952	.31	.75	2.36	2.09	2.73	3.96	1.91	1.24	.77	.46	.68	.45	17.71
1953	.41	1.07	1.27	3.47	3.41	4.56	1.74	2.16	1.30	.83	.41	.36	20.99
1954	.30	.51	1.17	2.86	2.24	3.50	2.28	2.46	.81	.46	.36	.22	17.17
1955	.24	.64	1.44	.89	2.58	4.81	4.42	1.49	.94	1.87	1.42	.56	21.30
1956	.52	.57	.67	.70	3.20	2.69	3.52	1.36	.57	.83	.32	.51	15.46
1957	1.17	1.35	1.35	2.72	5.19	2.43	6.84	1.36	2.83	1.20	.50	1.25	28.19
1958	1.40	4.10	4.61	2.86	3.45	3.20	4.71	4.10	1.24	1.18	.88	.46	32.19
1959	.47	.50	1.57	2.34	1.37	2.25	3.69	1.64	1.53	1.00	1.16	3.15	20.67
1960	2.96	1.40	2.85	2.61	4.75	5.56	5.26	1.95	1.51	2.02	1.99	1.13	33.99

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	190	28.45
1951	1206	15,500	Dec. 7, 1950	20	148	1.63	22.16	119	17.85
1952	1236	4,060	Mar. 11, 1952	17	118	1.30	17.71	114	17.04
1953	1276	3,490	Feb. 21, 1953	16	141	1.55	20.99	135	20.22
1954	1336	4,740	Feb. 21, 1954	13	115	1.27	17.17	117	17.51
1955	1386	7,820	Apr. 14, 1955	14	142	1.56	21.30	139	20.74
1956	1436	3,880	Apr. 16, 1956	16	103	1.13	15.46	117	17.57
1957	1506	9,490	Apr. 4, 1957	24	189	2.08	28.19	230	34.43
1958	1556	7,270	Dec. 20, 1957	28	215	2.37	32.19	165	24.62
1959	1626	6,420	Sept.30, 1959	26	138	1.52	20.67	169	25.34
1960	1706	4,340	Mar. 30, 1960	60	227	2.50	33.99	-	-

4795. Watauga River at North Carolina-Tennessee State line

Location.--Lat 36°17'25", long 81°55'33", on left bank in Tennessee, 0.6 mile downstream from North Carolina-Tennessee State line, 1.9 miles downstream from Stone Mountain Branch, and 7½ miles southeast of Butler, Johnson County.

Drainage area.--152 sq mi.

Records available.--October 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,060.57 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--13 years (1942-55), 253 cfs.

Extremes.--1942-55: Maximum discharge, 14,700 cfs Dec. 7, 1950 (gage height, 7.15 ft), from rating curve extended above 3,500 cfs; minimum, 6.4 cfs Aug. 14, 1954 (gage height, 1.05 ft); minimum daily, 12 cfs Aug. 14, 1954.

Remarks.--Some diurnal fluctuation at low flow caused by a small powerplant near Sugar Grove, N. C.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	124	143	605	246	331	487	439	207	161	97.4	64.0	55.2	247
1952	43.9	140	335	331	434	516	284	168	95.6	48.8	68.6	48.7	209
1953	38.3	114	160	454	492	523	248	320	134	94.9	41.6	39.6	220
1954	30.0	50.9	130	386	263	458	335	343	98.1	55.8	40.6	33.6	185
1955	25.5	65.1	167	127	389	702	547	193	115	‡102	‡112	‡46.0	‡215

‡ Not previously published.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.94	1.05	4.59	1.87	2.26	3.69	3.23	1.57	1.18	0.74	0.49	0.40	22.01
1952	.33	1.03	2.54	2.51	3.08	3.91	2.08	1.27	.70	.37	.52	.36	18.70
1953	.29	.84	1.21	3.44	3.37	3.96	1.82	2.42	.98	.72	.32	.29	19.66
1954	.23	.37	.98	2.93	1.80	3.49	2.46	2.60	.72	.42	.31	.25	16.55
1955	.19	.48	1.27	.96	2.67	5.33	4.01	1.47	.84	‡.77	‡.85	‡.34	‡19.18

‡ Not previously published.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	315	28.14
1951	1206	14,700	Dec. 7, 1950	38	247	1.62	22.01	217	19.33
1952	1236	4,560	Feb. 3, 1952	18	209	1.38	18.70	191	17.14
1953	1276	4,510	Feb. 21, 1953	15	220	1.45	19.66	212	18.90
1954	1336	5,990	Jan. 22, 1954	12	185	1.22	16.55	189	16.91
1955	1386	8,280	Apr. 14, 1955	-	‡215	‡1.41	‡19.18	-	-

‡ Not previously published.

4810. Elk River near Elk Park, N. C.

Location.--Lat 36°11'01", long 81°57'45", 1.4 miles downstream from Little Elk Creek, 2.0 miles northeast of Elk Park, Avery County, and 3.1 miles upstream from North Carolina-Tennessee State line.

Drainage area.--42.0 sq mi.

Records available.--October 1934 to September 1955. Prior to October 1949, published as Elk Creek near Elk Park.

Gage.--Water-stage recorder. Altitude of gage is 2,810 ft (from topographic map). Aug. 18, 1940, to Feb. 25, 1941, staff gage at same site and datum.

Average discharge.--21 years (1934-55), 81.5 cfs.

Extremes.--1934-55: Maximum discharge, 27,500 cfs Aug. 13, 1940 (gage height, 17.8 ft, from floodmarks), from rating curve extended above 900 cfs on basis of slope-area measurement of peak flow; minimum, 4 cfs Dec. 15, 1939 (gage height, 0.78 ft), result of freezeup; minimum daily, 6.1 cfs Sept. 8, 9, 1954.

Remarks.--Slight diurnal fluctuation caused by small powerplant above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	38.6	38.2	178	79.4	98.0	131	132	60.3	39.8	30.5	22.1	15.1	71.9
1952	13.0	33.8	115	104	139	141	77.0	50.8	30.9	19.3	18.1	13.6	62.8
1953	15.3	29.9	50.3	142	164	129	75.8	84.4	41.6	27.9	15.4	16.2	65.4
1954	11.0	15.5	49.7	150	81.2	147	101	134	37.1	25.9	13.4	10.2	64.9
1955	10.2	22.2	61.9	46.9	164	205	179	59.3	37.3	37.3	52.0	20.1	73.9

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.06	1.01	4.90	2.18	2.43	3.58	3.52	1.66	1.06	0.84	0.61	0.40	23.25
1952	.36	.90	3.14	2.86	3.57	3.87	2.04	1.39	.82	.53	.50	.36	20.34
1953	.42	.80	1.38	3.91	4.07	3.53	2.01	2.32	1.10	.77	.42	.43	21.16
1954	.30	.41	1.37	4.12	2.01	4.04	2.70	3.69	.99	.71	.37	.27	20.98
1955	.28	.59	1.70	1.29	4.07	5.62	4.76	1.63	.99	1.02	1.43	.53	23.91

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	88.3	28.55
1951	1206	5,320	Dec. 7, 1950	11	71.9	1.71	23.25	63.9	20.68
1952	1236	1,980	Feb. 3, 1952	9.0	62.8	1.50	20.34	57.2	18.54
1953	1276	2,060	Feb. 21, 1953	7.6	65.4	1.56	21.16	63.9	20.64
1954	1336	2,560	Jan. 22, 1954	6.1	64.9	1.55	20.98	66.4	21.47
1955	1386	4,260	Apr. 13, 1955	7.5	73.9	1.76	23.91	-	-

4820. Roan Creek near Neva, Tenn.

Location.--Lat 36°22'37"(revised), long 81°53'14", 1.1 miles downstream from Avery Branch, 1.7 miles southwest of Neva, Johnson County, and 2.2 miles upstream from Hopper Creek.

Drainage area.--102 sq mi.

Records available.--June 1942 to September 1955, water years 1959-60 (annual maximum only).

Gage.--Crest-stage gage. Datum of gage is 2,103.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Water-stage recorder prior to July 1955 at same site and datum.

Average discharge.--13 years (1942-55), 103 cfs.

Extremes.--1942-55, 1959-60: Maximum discharge, 3,590 cfs Mar. 18, 1955 (gage height, 6.26 ft); maximum gage height, 6.35 ft Jan. 22, 1954.
1942-55: Minimum discharge, 5.0 cfs Sept. 17, 1954; minimum gage height, 0.88 ft Sept. 7, 8, 17, 1954.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	31.7	34.4	161	103	133	174	199	133	68.9	50.3	38.3	28.7	96.1
1952	23.5	57.5	153	202	180	189	90.8	67.5	34.5	19.8	33.9	15.2	88.7
1953	11.7	27.0	45.8	148	190	172	92.3	113	56.8	49.8	21.2	15.3	77.9
1954	11.0	12.8	50.0	223	73.8	175	166	123	41.7	25.6	14.1	11.3	77.6
1955	15.1	24.3	62.7	59.8	210	473	245	75.7	36.0	‡35.0	‡38.0	‡17.0	‡107

‡ Not previously published; estimated on basis of correlation with station Doe River at Elizabethton, Tenn.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.36	0.38	1.82	1.16	1.36	1.97	2.17	1.50	0.75	0.57	0.43	0.31	12.78
1952	.27	.63	1.73	2.28	1.90	2.13	.99	.76	.38	.22	.38	.17	11.84
1953	.13	.30	.52	1.67	1.94	1.94	1.01	1.27	.62	.56	.24	.17	10.37
1954	.12	.14	.57	2.53	.75	1.98	1.82	1.39	.46	.29	.16	.12	10.33
1955	.17	.27	.71	.68	2.14	5.34	2.68	.86	.39	‡.40	‡.43	‡.19	‡14.26

‡ Not previously published; estimated on basis of correlation with station Doe River at Elizabethton, Tenn.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	119	15.83
1951	1206,1336	2,870	Dec. 7, 1950	20	96.1	0.942	12.78	96.6	12.85
1952	1236	1,830	Dec. 21, 1951	10	88.7	.870	11.84	76.2	10.16
1953	1276,1336	1,670	June 10, 1953	9.3	77.9	.764	10.37	77.0	10.25
1954	1336	3,340	Jan. 22, 1954	6.2	77.6	.761	10.33	79.9	10.65
1955	1386	3,590	Mar. 18, 1955	-	‡107	‡1.05	‡14.26	-	-
1956	-	-	-	-	-	-	-	-	-
1957	-	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-
1959	1626	3,710	Jan. 22, 1959	-	-	-	-	-	-
1960	1706	2,480	Mar. 30, 1960	-	-	-	-	-	-

‡ Not previously published; estimated on basis of correlation with station Doe River at Elizabethton, Tenn.

4835. Watauga Lake near Elizabethton, Tenn.

Location.--Lat 36°19'20", long 82°07'16", at Watauga Dam on Watauga River, 5 miles east of Elizabethton, Carter County, 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.
Extremes.--1948-60: Maximum contents, 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).
Remarks.--Reservior is formed by rock and rolled earthfill dam. Spillway is uncontrolled morning-glory type, 128 ft in diameter with 6 piers 3 ft wide to guide flow spilling into a concrete-lined shaft and tunnel 34 ft in diameter. Closure of dam was made Dec. 1, 1948; water in reservoir first reached minimum pool elevation Dec. 31, 1948. Total capacity at elevation 1,975.00 ft (spillway crest) is 342,200 cfs-days, of which 316,200 cfs-days is controlled storage above elevation 1,815.00 ft (minimum pool). Reservoir is used for navigation, flood control, and power.
Cooperation.--Records furnished by the Tennessee Valley Authority.

Contents, in thousand of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	243.8	217.1	215.5	189.7	176.0	177.4	193.5	203.0	207.8	206.2	208.6	210.7
1952	192.2	170.9	184.4	208.4	232.1	261.3	258.1	238.5	219.1	203.8	176.4	152.3
1953	115.9	102.3	97.0	119.2	149.2	182.1	199.1	205.9	194.8	187.7	165.7	144.3
1954	122.8	126.4	101.5	96.1	107.6	140.1	166.4	185.5	176.8	159.7	137.0	102.4
1955	69.1	36.6	28.6	27.6	45.3	113.0	142.9	150.9	153.2	156.5	139.1	112.9
1956	72.4	36.1	33.0	31.4	73.2	106.9	149.2	166.7	173.8	188.2	184.6	178.5
1957	169.6	161.6	152.9	182.0	249.8	258.8	258.6	236.9	241.4	245.7	236.1	206.6
1958	186.9	189.4	215.0	202.4	210.5	217.8	247.6	272.0	266.4	245.0	233.7	207.8
1959	176.8	156.6	129.2	117.8	119.9	118.2	156.6	165.7	173.3	171.3	170.4	164.5
1960	163.5	171.4	201.3	219.8	243.8	272.9	273.6	274.4	253.7	251.8	225.1	162.2

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 (1902-8, 1948-60), 713 cfs (unadjusted).
Extremes.--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, 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.--Flow completely regulated by Watauga Lake.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,015	1,220	1,324	1,563	1,367	1,132	668	379	324	369	140	106	798
1952	759	1,092	427	252	200	230	748	1,134	922	660	1,139	985	713
1953	1,313	746	576	286	163	49.3	45.9	537	740	527	851	843	559
1954	843	58.1	1,134	1,332	229	101	49.1	168	588	773	898	1,285	626
1955	1,196	1,388	730	434	473	57.4	432	280	250	245	895	1,058	619
1956	1,495	1,526	385	368	178	44.1	54.3	70.9	37.9	136	297	511	425
1957	597	636	807	520	114	447	1,950	1,177	789	213	539	1,347	782
1958	1,010	969	443	1,220	1,004	776	394	620	615	1,244	914	1,082	857
1959	1,207	927	1,423	1,299	627	840	168	205	213	368	344	793	704
1960	650	194	97.9	223	603	603	1,394	572	1,153	656	1,336	2,454	824

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	772	789	22.74
1951	1206	3,500	Feb. 22, 1951	47	798	651	1.38	18.76	690	605	17.42
1952	1236	3,010	Aug. 20,21, 1952	41	713	553	1.17	15.98	744	505	14.59
1953	1276	3,020	July 13, 1953	31	559	537	1.14	15.49	510	523	15.06
1954	1336	2,960	Sept.22, 1954	26	626	511	1.08	14.74	731	531	15.32
1955	1386	4,340	May 31, 1955	10	619	648	1.38	18.68	627	639	18.41
1956	1436	3,020	Oct. 8, 1955	24	425	605	1.28	17.47	312	640	18.49
1957	1506	3,020	Mar. 6, 1957	23	762	839	1.78	24.18	794	964	27.78
1958	1556	3,090	Feb. 18, 1958	46	857	861	1.83	24.80	954	719	20.71
1959	1626	3,080	Nov. 6, 1958	30	704	585	1.24	16.86	484	681	19.63
1960	1706	6,750	Jan. 19, 1960	26	824	818	1.74	23.63	-	-	-

a Adjusted for change in contents in Watauga Lake.

4855. Doe River at Elizabethton, Tenn.

Location.--Lat 36°20'40", long 82°12'37", on left bank 1,500 ft upstream from bridge on State Highway 91 at Elizabethton, Carter County, and 1 mile upstream from mouth.

Drainage area.--137 sq mi.

Records available.--June 1907 to June 1908 (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.--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 of water temperatures for the period February 1954 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	91.6	91.6	329	209	257	352	405	192	198	138	83.5	74.3	201
1952	63.8	181	329	329	298	346	215	153	102	60.5	62.6	42.4	182
1953	39.0	82.4	120	281	430	284	211	246	106	94.4	56.1	47.9	165
1954	40.3	46.2	94.2	350	179	404	371	299	110	108	64.5	46.3	176
1955	52.4	85.7	166	143	394	674	391	213	124	96.1	104	56.2	207
1956	62.8	85.9	95.0	115	545	370	482	255	126	182	74.6	130	208
1957	84.3	114	171	473	868	252	514	207	364	156	97.3	118	280
1958	115	304	413	262	399	322	411	453	171	234	330	107	293
1959	91.3	106	149	329	287	262	488	197	134	99.1	136	98.6	197
1960	178	165	353	265	428	422	413	202	146	224	146	81.1	252

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.77	0.75	2.77	1.76	1.95	2.96	3.30	1.62	1.61	1.16	0.70	0.61	19.96
1952	.54	1.48	2.77	2.77	2.35	2.91	1.75	1.29	.83	.51	.53	.35	18.08
1953	.33	.67	1.01	2.37	3.26	2.39	1.72	2.07	.86	.79	.47	.39	16.33
1954	.34	.38	.79	2.95	1.36	3.40	3.02	2.52	.89	.91	.54	.38	17.48
1955	.44	.70	1.40	1.20	3.00	5.67	3.19	1.79	1.01	.81	.88	.46	20.55
1956	.53	.70	.80	.97	4.29	3.12	3.92	2.15	1.03	1.53	.63	1.06	20.73
1957	.71	.92	1.44	3.98	6.59	2.12	4.19	1.74	2.96	1.31	.82	.96	27.74
1958	.97	2.47	3.48	2.21	3.03	2.71	3.35	3.82	1.40	1.97	2.78	.87	29.06
1959	.77	.86	1.25	2.77	2.18	2.21	3.98	1.66	1.09	.83	1.14	.80	19.54
1960	1.49	1.34	2.97	2.23	3.37	3.55	3.36	1.70	1.19	1.89	1.23	.66	24.98

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-		-	-	-	-	276	27.30
1951	1206	6,860	Dec. 7, 1950	53	201	1.47	19.96	206	20.46
1952	1236	2,440	Dec. 21, 1951	34	182	1.33	18.08	154	15.30
1953	1276	4,150	Feb. 21, 1953	34	165	1.20	16.33	160	15.83
1954	1336	5,150	Jan. 22, 1954	32	176	1.28	17.48	187	18.51
1955	1386	2,910	Mar. 16, 1955	39	207	1.51	20.55	202	20.04
1956	1436	5,870	Apr. 16, 1956	46	208	1.52	20.73	219	21.77
1957	1506	6,190	Apr. 5, 1957	56	280	2.04	27.74	319	31.59
1958	1556	3,740	Aug. 1, 1958	81	293	2.14	29.06	252	25.02
1959	1628	7,000	Jan. 22, 1959	42	197	1.44	19.54	227	22.46
1960	1706	2,210	Mar. 30, 1960	56	252	1.84	24.98	-	-

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 for 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.--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.--Flow partly regulated by Watauga Lake, 10 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	710	964	977	-
1954	933	112	1,320	1,995	471	703	636	557	751	933	1,005	1,348	903
1955	1,216	1,425	887	624	1,101	1,345	1,105	636	451	378	1,017	1,145	942
1956	1,650	1,681	521	543	1,111	663	873	462	206	443	407	695	768
1957	712	787	1,087	1,350	1,578	838	2,832	1,478	1,301	400	662	1,483	1,202
1958	1,135	1,356	1,050	1,619	1,662	1,286	1,012	1,416	851	1,579	1,404	1,264	1,302
1959	1,384	1,099	1,711	1,844	1,057	1,267	987	469	400	501	503	890	1,011
1960	913	494	690	649	1,270	1,315	2,050	880	1,378	963	1,573	2,598	1,226

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-
1953	1276	-	-	-	-	-	-	-	-	-	-
1954	1336	10,600	Jan. 22, 1954	85	903	788	1.14	15.45	998	798	15.65
1955	1386	6,910	Mar. 18, 1955	122	942	971	1.40	19.04	969	981	19.24
1956	1436	9,390	Apr. 16, 1956	112	768	948	1.37	18.64	664	991	19.50
1957	1506	9,360	Apr. 5, 1957	115	1,202	1,279	1.85	25.08	1,281	1,451	28.47
1958	1556	5,000	Feb. 7, 1958	155	1,302	1,305	1.89	25.60	1,358	1,123	22.03
1959	1626	9,420	Jan. 22, 1959	141	1,011	892	1.29	17.50	834	1,032	20.24
1960	1706	6,510	Mar. 30, 1960	157	1,226	1,220	1.76	24.00	-	-	-

a Adjusted for change in contents in Watauga Lake.

4868. Boone Lake at Boone Dam, Tenn.

Location.--Lat 36°26'26", long 82°26'16", at Boone Dam on South Fork Holston River in Sullivan County, 0.7 mile northeast of Spurgeon, Washington County, 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.

Extremes.--1952-60: Maximum contents, 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).

Remarks.--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.

Cooperation.--Records furnished by the Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1953	-	-	19.1	29.4	38.1	41.9	51.7	85.6	89.4	89.4	85.8	83.7
1954	79.7	67.2	47.2	58.8	60.9	85.4	86.1	89.2	85.2	84.2	76.3	77.8
1955	72.2	50.8	24.4	25.6	54.2	71.9	87.1	85.7	89.0	89.8	89.5	81.6
1956	74.3	66.2	41.0	24.2	65.6	80.4	85.9	84.0	86.7	87.2	87.4	84.7
1957	73.7	62.5	52.9	67.0	69.6	69.0	87.1	88.2	84.9	90.5	92.0	84.9
1958	75.1	66.4	51.1	51.8	68.8	75.4	80.7	90.5	94.6	95.2	92.2	87.0
1959	71.4	58.0	46.5	49.8	60.8	76.5	90.7	89.4	92.1	96.1	91.8	83.5
1960	74.2	63.7	47.2	51.1	63.4	80.8	88.2	94.3	94.7	94.7	93.3	84.6

4870. Fort Patrick Henry Lake near Kingsport, Tenn.

Location.--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.

Extremes.--1953-60: Maximum contents, 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).

Remarks.--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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1954	2.8	6.3	12.9	13.0	10.2	12.4	12.2	12.4	12.0	12.3	13.0	12.6
1955	11.7	13.0	12.1	12.6	11.9	12.7	12.1	12.0	12.8	12.0	12.2	13.1
1956	12.8	12.7	12.4	12.8	11.8	12.1	12.5	13.0	12.8	13.1	13.1	13.2
1957	13.2	12.6	12.2	12.7	12.5	12.6	12.3	12.6	12.7	12.8	13.0	13.0
1958	12.8	12.4	12.4	12.7	12.2	12.8	12.9	13.1	12.4	13.3	12.9	13.3
1959	13.2	12.8	12.2	12.4	13.0	12.2	12.6	12.3	12.8	12.9	13.0	11.7
1960	12.4	12.4	12.6	12.8	12.2	11.9	12.8	12.8	12.8	11.9	12.0	12.6

4875. South Fork Holston River at Kingsport, Tenn.

Location.--Lat 36°31'51", long 82°33'29", on left bank on Long Island 1,000 ft downstream from bridge on State Highway 81, at Kingsport, Sullivan County, 1½ miles upstream from Reedy Creek, and 3¾ miles upstream from confluence with North Fork Holston River.

Drainage area.--1,935 sq mi.

Records available.--September 1925 to September 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 and 1,000 ft above head of Long Island at datum 8.47 ft higher. Since May 1, 1954, supplementary water-stage recorder on downstream side of bridge over sluice channel 2,000 ft southeast of main gage at same datum.

Average discharge.--35 years (1925-60), 2,528 cfs (unadjusted).

Extremes.--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.--Flow regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes. Some diversion upstream by the city of Kingsport, Tennessee Eastman Corp., and Holston Ordnance Works. During period May 1954 to September 1955, discharge was computed by adding discharges of main channel and sluice channel as determined from separate stage-discharge relations.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,544	1,655	2,171	2,219	2,649	2,898	2,792	1,523	1,205	1,636	1,319	1,136	1,892
1952	1,965	2,748	2,238	2,059	1,682	2,055	2,515	3,357	2,509	1,763	2,249	1,980	2,261
1953	2,629	1,502	1,002	1,388	2,158	1,625	1,208	2,071	3,030	2,554	3,279	3,306	2,145
1954	1,436	578	2,688	4,182	1,106	1,109	1,820	1,280	2,037	2,182	2,638	2,580	1,979
1955	2,668	3,285	2,857	1,570	1,510	3,410	2,550	2,147	1,038	1,823	3,051	3,257	2,437
1956	3,238	2,671	2,039	1,637	1,507	1,440	2,189	1,548	1,073	1,404	1,619	2,689	1,921
1957	2,835	2,120	2,488	2,968	8,873	2,678	4,849	3,154	2,963	1,050	2,170	3,353	3,246
1958	2,434	2,957	2,568	3,036	3,476	3,076	2,357	4,282	2,194	3,390	3,565	3,561	3,075
1959	3,850	3,218	3,904	3,459	1,775	1,859	2,115	1,789	1,510	1,647	2,032	1,848	2,425
1960	2,008	1,787	2,665	1,939	2,749	2,816	3,742	2,051	2,908	2,328	3,463	5,433	2,817

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	3,179	3,301	23.20
1951	1206	10,400	Dec. 7, 1950	420	1,892	2,309	1.20	16.23	2,023	2,315	16.28
1952	1236	8,810	Dec. 21, 1951	396	2,261	2,041	1.06	14.39	2,111	1,862	13.13
1953	1276	7,040	Sept. 4, 1953	422	2,145	2,175	1.13	15.29	2,110	2,088	14.68
1954	1336	8,590	Aug. 9, 1954	301	1,979	1,854	0.958	13.00	2,321	1,954	13.71
1955	1386	18,300	Mar. 18, 1955	346	2,437	2,508	1.30	17.60	2,365	2,429	17.04
1956	1436	16,800	Apr. 16, 1956	424	1,921	2,316	1.20	16.29	1,880	2,485	17.48
1957	1506	15,800	Feb. 10, 1957	460	3,246	3,287	1.70	23.06	3,287	3,608	25.31
1958	1558	11,400	May 6, 1958	536	3,075	3,184	1.65	22.34	3,330	2,793	19.60
1959	1626	9,650	Aug. 14, 1959	672	2,425	2,104	1.09	14.76	2,046	2,539	17.81
1960	1706	9,490	Aug. 9, 1960	482	2,817	2,856	1.48	20.09	-	-	-

a Adjusted for change in contents in South Holston, Watauga, Boone, and Fort Patrick Henry Lakes.

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 (1907-8, 1920-60), 293 cfs.

Extremes.--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 of chemical analyses for the period October 1954 to September 1956 are published in reports of the Geological Survey.

Correction.--Monthly totals of discharge for January and August 1947 were found to be in error. Corrections to affected records published in WSP 1306 are given herewith:

Month	Mean	Per square mile	Runoff in inches
January 1947	958	-	4.98
August	276	-	1.43
Water year 1946-47	242	1.09	14.82
Calendar year 1947	262	-	16.03

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	69.2	80.0	438	259	424	617	634	344	170	98.7	83.9	106	276
1952	45.3	141	403	691	347	630	261	242	78.1	43.4	37.4	28.4	246
1953	25.7	67.7	128	324	627	655	276	727	157	208	46.7	31.7	271
1954	24.9	29.5	74.9	485	177	460	299	281	68.7	124	51.1	38.6	177
1955	51.3	86.3	347	234	686	1,735	546	168	72.8	56.4	55.0	30.0	338
1956	27.3	34.9	48.6	80.7	786	653	821	379	143	156	58.3	59.0	268
1957	66.4	166	411	1,317	1,500	427	768	169	218	94.5	48.2	123	435
1958	120	427	722	318	562	650	713	839	116	86.5	206	43.7	400
1959	35.7	48.0	119	306	286	377	772	216	97.7	48.5	60.7	42.2	200
1960	222	328	428	366	516	692	504	229	79.4	123	55.9	33.3	297

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.36	0.40	2.27	1.35	1.99	3.20	3.19	1.79	0.85	0.51	0.44	0.53	16.88
1952	.24	.71	2.10	3.58	1.68	3.27	1.32	1.26	.39	.22	.19	.14	15.10
1953	.13	.34	.67	1.68	2.94	3.40	1.38	3.77	.79	1.08	.24	.16	16.58
1954	.13	.15	.39	2.51	.83	2.39	1.51	1.46	.34	.64	.27	.19	10.81
1955	.27	.43	1.80	1.21	3.22	9.02	2.74	.87	.37	.29	.29	.15	20.66
1956	.14	.18	.25	.42	3.82	3.39	4.13	1.97	.72	.81	.30	.30	16.43
1957	.34	.83	2.13	6.84	7.04	2.21	3.86	.88	1.10	.49	.25	.62	26.59
1958	.62	2.14	3.75	1.65	2.64	3.38	3.58	4.36	.58	.45	1.07	.22	24.44
1959	.19	.24	.62	1.59	1.34	1.96	3.88	1.12	.49	.25	.32	.21	12.21
1960	1.15	1.65	2.22	1.90	2.51	3.59	2.53	1.19	.40	.64	.29	.17	18.24

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	361	22.02
1951	1206	4,920	Dec. 8, 1950	48	276	1.24	16.88	276	16.90
1952	1236	3,210	Jan. 23, 1952	19	246	1.11	15.10	215	13.19
1953	1276	5,680	May 19, 1953	21	271	1.22	16.58	264	16.11
1954	1336	6,500	Jan. 22, 1954	23	177	.797	10.81	207	12.64
1955	1386	10,300	Mar. 16, 1955	25	338	1.52	20.66	306	18.73
1956	1436	9,560	Apr. 16, 1956	24	268	1.21	16.43	312	19.16
1957	1506	16,500	Jan. 29, 1957	28	435	1.96	26.59	487	29.80
1958	1556	5,000	Mar. 31, 1958	32	400	1.80	24.44	310	18.98
1959	1626	4,640	Apr. 13, 1959	25	200	.901	12.21	265	16.18
1960	1706	4,250	Mar. 31, 1960	25	297	1.34	18.24	-	-

4885. North Fork Holston River at Holston, Va.

Location.--Lat 36°46'29", long 82°04'22", on left bank at downstream side of bridge on U.S. Highway 19, 100 ft downstream from Greendale Creek, 0.4 mile upstream from Garrett Creek, 0.5 mile east of Holston, Washington County, and 0.6 mile upstream from Little Moccasin Creek.

Drainage area.--402 sq mi.

Records available.--June 1951 to September 1959, water year 1960 (annual maximum).

Gage.--Crest-stage gage. Datum of gage is 1,437.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1959, water-stage recorder at same site and datum.

Average discharge.--8 years (1951-59), 524 cfs.

Extremes.--1951-60: Maximum discharge, 24,300 cfs Jan. 29, 1957 (gage height, 16.50 ft), from rating curve extended above 12,000 cfs on basis of slope-area measurement of peak flow.
1951-59: Minimum discharge, 41 cfs Sept. 8, 1954, Dec. 1, 1955; minimum gage height, 1.97 ft Sept. 8, 1957, Sept. 26, 1959.

Remarks.--Records of chemical analyses and water temperatures for the period October 1951 to September 1956 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	‡354	231	160	202	-
1952	75.5	281	760	1,277	627	1,120	460	391	152	79.5	62.9	53.2	446
1953	50.3	119	287	689	1,109	1,074	516	1,207	302	294	82.2	62.1	480
1954	52.7	56.9	114	810	364	827	579	461	191	151	87.8	69.5	314
1955	85.7	144	592	410	1,301	3,080	820	331	145	161	87.5	50.1	598
1956	57.1	69.0	95.3	182	1,480	1,274	1,422	649	241	241	121	113	490
1957	134	259	762	2,164	2,670	765	1,248	263	385	162	87.4	209	746
1958	204	678	1,259	537	996	1,044	1,296	1,658	229	452	492	113	746
1959	83.5	105	230	584	551	725	1,410	362	200	109	101	72.9	376
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; partly estimated on basis of high-water mark, weather records, and records for stations near Saltville and Gate City.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	‡0.98	0.66	0.46	0.56	-
1952	0.22	0.78	2.18	3.67	1.68	3.22	1.27	1.12	.42	.23	.18	.15	15.12
1953	.14	.33	.82	1.97	2.87	3.08	1.43	3.46	.84	.84	.24	.17	16.19
1954	.15	.16	.33	2.32	.94	2.38	1.61	1.33	.53	.43	.25	.19	10.62
1955	.25	.40	1.70	1.18	3.37	8.83	2.28	.95	.40	.46	.25	.14	20.21
1956	.16	.19	.27	.52	3.97	3.66	3.95	1.86	.67	.69	.35	.31	16.60
1957	.38	.72	2.19	6.20	6.91	2.19	3.46	.75	1.07	.46	.25	.58	25.16
1958	.58	1.89	3.61	1.54	2.58	3.00	3.59	4.75	.64	1.29	1.41	.31	25.19
1959	.24	.29	.66	1.68	1.43	2.08	3.91	1.04	.55	.31	.29	.20	12.68
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; see footnote to preceding table.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	1236	4,680	Jan. 23, 1952	48	446	1.11	15.12	391	13.23
1953	1276	8,090	May 19, 1953	47	480	1.19	16.19	460	15.54
1954	1336	7,570	Jan. 23, 1954	42	314	.781	10.62	365	12.33
1955	1386	11,400	Mar. 17, 1955	41	598	1.49	20.21	548	18.48
1956	1436	12,800	Apr. 16, 1956	44	490	1.22	16.60	569	19.27
1957	1506	24,300	Jan. 29, 1957	45	746	1.86	25.16	828	27.95
1958	1556	9,410	May 6, 1958	83	746	1.86	25.19	601	20.30
1959	1626	6,940	Apr. 13, 1959	44	376	.935	12.68	-	-
1960	1706	6,150	Mar. 30, 1960	-	-	-	-	-	-

4899. Big Moccasin Creek near Gate City, Va.

Location.--Lat 36°38'47", long 82°33'12", on left bank at downstream side of bridge on State Highway 71, 0.2 mile downstream from Franklin Branch, 0.9 mile upstream from Pike Branch, 1.6 miles upstream from Little Moccasin Creek, and 1.6 miles east of Gate City, Scott County.

Drainage area.--79.6 sq mi.

Records available.--October 1952 to September 1959 (daily discharge records discontinued). Water year 1960 (annual maximum).

Gage.--Crest-stage gage. Datum of gage is 1,267.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1959, water-stage recorder at same site and datum.

Average discharge.--7 years (1952-59), 107 cfs.

Extremes.--1952-60: Maximum discharge, 3,570 cfs May 6, 1958 (gage height, 8.84 ft).
1952-59: Minimum discharge, 3.0 cfs Sept. 11, 1954 (gage height, 1.04 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	16.5	59.6	102	146	280	261	106	240	58.5	54.0	16.3	16.5	112
1954	14.2	12.4	22.5	190	47.0	167	121	86.2	35.3	18.6	16.5	10.0	62.0
1955	15.6	22.2	85.3	67.3	278	536	95.7	54.4	24.5	25.7	15.5	11.2	102
1956	12.8	21.8	25.3	48.5	318	261	301	91.3	40.4	46.0	34.8	35.6	102
1957	22.0	28.5	142	399	537	176	185	36.5	34.7	20.4	18.7	29.2	133
1958	24.8	124	261	115	208	171	280	429	60.0	103	116	28.6	160
1959	19.9	21.7	41.5	137	133	153	247	81.6	34.1	21.6	18.1	14.3	76.3
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	0.24	0.84	1.48	2.11	3.66	3.78	1.48	3.48	0.82	0.78	0.24	0.23	19.14
1954	.21	.17	.33	2.76	.61	2.42	1.70	1.24	.49	.27	.24	.14	10.58
1955	.23	.31	1.23	.97	3.63	7.76	1.34	.79	.34	.37	.22	.16	17.35
1956	.19	.31	.37	.70	4.30	3.78	4.22	1.33	.57	.67	.50	.50	17.44
1957	.32	.40	2.05	5.78	7.03	2.55	2.59	.53	.49	.30	.27	.41	22.72
1958	.36	1.74	3.78	1.66	2.72	2.48	3.93	6.21	.84	1.49	1.68	.40	27.29
1959	.29	.30	.60	1.98	1.74	2.21	3.46	1.18	.48	.31	.26	.20	13.01
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	1276	2,550	May 19, 1953	10	112	1.41	19.14	101	17.29
1954	1336	1,700	Jan. 22, 1954	4.0	62.0	.779	10.58	68.2	11.64
1955	1436	2,220	Mar. 16, 1955	7.4	102	1.28	17.35	96.5	16.45
1956	1436	3,110	Apr. 16, 1956	6.2	102	1.28	17.44	113	19.34
1957	1506	3,340	Jan. 29, 1957	8.0	133	1.67	22.72	151	25.83
1958	1556	3,570	May 6, 1958	15	160	2.01	27.29	132	22.60
1959	1626	1,830	Jan. 22, 1959	8.6	76.3	.959	13.01	-	-
1960	1706	1,420	Nov. 28, 1959	-	-	-	-	-	-

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 (revised) downstream from Big Moccasin Creek and 2.1 miles (revised) 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 (1931-60), 854 cfs.

Extremes.--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.--Prior to 1957, diurnal fluctuation at low flow caused by one or more mills above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	158	219	1,041	820	1,499	1,728	1,958	1,235	433	330	198	265	819
1952	110	479	1,374	2,157	1,092	1,912	699	659	238	140	176	99.1	763
1953	75.5	259	502	1,106	2,145	2,025	902	2,087	417	435	113	90.6	840
1954	71.5	84.8	171	1,467	505	1,312	875	696	243	207	128	83.3	489
1955	111	180	785	584	2,044	5,466	1,214	489	192	227	146	76.3	957
1956	106	128	161	278	2,546	2,112	2,629	1,102	371	369	236	198	844
1957	183	309	1,227	3,550	4,905	1,334	2,147	363	467	218	167	275	1,237
1958	309	1,072	2,293	1,036	1,817	1,718	2,147	3,193	437	809	811	157	1,316
1959	118	150	321	1,023	1,036	1,319	2,341	605	232	136	140	104	623
1960	563	1,112	1,412	1,150	1,558	1,880	1,542	558	243	368	211	120	891

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.27	0.36	1.79	1.41	2.32	2.96	3.25	2.12	0.72	0.57	0.34	0.44	16.55
1952	.19	.80	2.35	3.70	1.75	3.29	1.16	1.13	.40	.24	.30	.16	15.47
1953	.13	.43	.86	1.90	3.32	3.47	1.50	3.58	.69	.75	.19	.15	16.97
1954	.12	.14	.29	2.51	.78	2.25	1.45	1.20	.40	.36	.22	.14	9.86
1955	.19	.30	1.35	1.00	3.17	9.37	2.02	.84	.32	.39	.25	.13	19.33
1956	.18	.21	.28	.48	4.09	3.62	4.36	1.89	.62	.63	.40	.33	17.09
1957	.31	.51	2.11	6.09	7.60	2.29	3.56	.62	.78	.37	.29	.46	24.99
1958	.53	1.78	3.93	1.78	2.81	2.95	3.56	5.48	.73	1.38	1.40	.26	26.59
1959	.20	.25	.55	1.76	1.61	2.26	3.89	1.04	.39	.23	.24	.17	12.59
1960	.97	1.85	2.42	1.97	2.50	3.23	2.56	.96	.40	.63	.36	.20	18.05

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,163	23.51
1951	1206	9,540	Dec. 8, 1950	117	819	1.22	16.55	865	17.47
1952	1236	8,220	Dec. 21, 1951	73	763	1.14	15.47	669	13.55
1953	1276	15,800	May 20, 1953	61	840	1.25	16.97	798	16.10
1954	1336	11,900	Jan. 23, 1954	50	489	.728	9.86	552	11.15
1955	1386	16,100	Mar. 17, 1955	52	957	1.42	19.33	899	18.16
1956	1436	22,000	Apr. 16, 1956	69	844	1.26	17.09	956	19.35
1957	1506	28,700	Jan. 30, 1957	63	1,237	1.84	24.99	1,401	28.30
1958	1556	21,600	May 7, 1958	105	1,316	1.96	26.59	1,057	21.35
1959	1626	10,200	Apr. 13, 1959	50	623	.927	12.59	832	16.83
1960	1706	8,320	Nov. 25, 1959	77	891	1.33	18.05	-	-

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 (revised). 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 (1940-60), 3,503 cfs (unadjusted).

Extremes.--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.--Flow partly regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,808	1,946	3,455	3,305	4,895	5,214	5,596	2,944	1,668	2,085	1,634	1,494	2,992
1952	2,061	3,498	4,249	4,787	3,330	4,628	3,471	4,278	2,842	1,885	2,595	2,110	3,315
1953	2,748	1,895	1,737	2,818	5,020	4,400	2,302	4,540	3,417	2,996	3,322	3,447	3,210
1954	1,514	657	2,919	6,167	1,731	2,685	2,993	1,999	2,345	2,562	2,931	2,903	2,629
1955	2,947	3,390	3,748	2,291	4,062	10,160	4,130	2,954	1,412	2,011	3,186	3,469	3,649
1956	3,329	2,924	2,388	2,092	5,389	4,512	5,803	2,731	1,746	1,985	1,962	2,992	3,140
1957	2,977	2,423	3,980	7,358	15,280	4,460	7,501	3,694	3,544	1,311	2,283	3,563	4,786
1958	2,766	4,216	5,210	4,229	5,540	5,062	5,166	8,586	2,717	4,354	4,547	3,697	4,675
1959	3,926	3,343	4,298	4,556	3,094	3,335	4,629	2,361	1,725	1,662	2,055	1,918	3,077
1960	2,676	3,355	4,582	3,526	4,760	5,152	5,604	2,701	3,060	2,801	3,510	5,518	3,928

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	4,378	4,860	22.95
1951	1206	15,400	Mar. 31, 1951	657	2,992	3,409	1.19	16.10	3,208	3,501	16.53
1952	1236	17,900	Dec. 21, 1951	540	3,315	3,094	1.08	14.66	3,029	2,780	13.17
1953	1276	20,800	May 20, 1953	730	3,210	3,240	1.13	15.30	3,104	3,082	14.56
1954	1336	16,700	Jan. 23, 1954	530	2,629	2,503	.915	11.82	3,046	2,679	12.65
1955	1386	33,500	Mar. 19, 1955	540	3,649	3,720	1.29	17.57	3,528	3,591	16.96
1956	1436	38,900	Apr. 16, 1956	700	3,140	3,535	1.23	16.74	3,204	3,809	18.04
1957	1506	45,100	Jan. 30, 1957	730	4,786	4,827	1.68	22.80	5,020	5,340	25.22
1958	1556	41,100	May 7, 1958	924	4,675	4,784	1.66	22.60	4,624	4,088	19.31
1959	1626	18,200	Apr. 13, 1959	876	3,077	2,756	.959	13.02	2,996	3,489	16.48
1960	1706	15,700	Apr. 1, 1960	924	3,928	3,966	1.38	18.78	-	-	-

a Adjusted for change in contents in South Holston, Watauga, Boone, and Fort Patrick Henry Lakes.

4910. Big Creek near Rogersville, Tenn.

Location.--Lat 36°25'34", long 82°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 (revised) 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.--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, 1.32 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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	9.04	81.9	156	49.8	102	95.0	198	206	18.1	25.9	12.3	6.13	79.9
1959	5.75	6.53	19.7	64.6	81.0	84.5	117	28.0	33.1	7.74	4.77	5.58	37.8
1960	19.7	73.8	101	88.2	111	126	70.2	24.5	21.0	96.5	12.0	5.98	62.5

Monthly and yearly runoff, in inches, of Big Creek near Rogersville, Tenn.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	0.22	1.93	3.81	1.21	2.24	2.32	4.67	5.03	0.43	0.63	0.30	0.14	22.93
1959	.14	.15	.48	1.58	1.78	2.06	2.75	.68	.78	.19	.12	.13	10.84
1960	.48	1.74	2.47	2.15	2.54	3.08	1.66	.60	.49	2.35	.29	.14	17.99

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1955	1556	3,280	Mar. 19, 1955	-	-	-	-	-	-
1956	1556	2,530	Apr. 16, 1956	-	-	-	-	-	-
1957	1556	3,180	Jan. 31, 1957	-	-	-	-	-	-
1958	1556	2,850	Apr. 28, 1958	5.2	79.9	1.69	22.93	61.8	17.74
1959	1626	1,740	Apr. 12, 1959	2.6	37.8	.799	10.84	51.4	14.76
1960	1706	2,380	July 10, 1960	3.6	62.5	1.32	17.99	-	-

4925. Mossy Spring near Jefferson City, Tenn.

Location.--Lat 36°07'17", long 83°28'22", in spring pool, 15 ft upstream from waterplant intake, 300 ft south of city waterplant, tributary to unnamed branch at point 500 ft upstream from confluence of Buffalo Wallows Branch and unnamed branch, 1.1 miles east of Jefferson City Post Office, Jefferson County.

Records available.--September 1950 to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,092.3 ft above mean sea level (Tennessee Valley Authority construction plans for waterworks).

Average discharge.--9 years (1950-59), 43.8 cfs.

Extremes.--1950-59: Maximum discharge, 316 cfs Feb. 1, 1957 (gage height, 3.00 ft), from rating curve extended above 120 cfs; minimum daily, 7.4 cfs Jan. 8, 9, 1954.

Remarks.--Records do not include diversion averaging about three-quarters of a cubic foot per second for the water supply of Jefferson City.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	-	-	-	-	21.8	-
1951	17.4	16.4	31.9	45.9	87.8	100	105	66.8	42.9	47.3	25.6	17.4	50.1
1952	15.8	36.7	61.8	73.7	69.5	77.3	48.4	28.0	18.6	15.1	26.2	13.4	40.2
1953	11.2	18.8	34.7	51.6	84.7	88.3	53.9	66.9	51.6	27.9	19.5	15.3	43.5
1954	12.3	10.0	8.93	63.2	60.4	68.9	68.1	43.8	25.2	18.9	14.4	11.6	33.6
1955	10.2	9.65	18.9	22.0	52.2	97.4	73.8	36.5	22.3	17.8	14.3	12.0	32.1
1956	13.0	12.8	19.7	20.5	115	94.5	110	73.0	39.8	31.3	21.3	32.1	48.2
1957	14.5	15.0	56.3	59.3	176	103	92.1	52.2	33.6	29.0	19.5	14.3	54.6
1958	13.2	54.0	91.0	62.1	53.7	61.2	78.2	105	60.7	47.1	31.0	21.4	56.6
1959	16.5	14.3	19.7	42.4	64.0	56.4	81.1	51.5	27.2	21.8	17.6	15.6	35.4
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	1336	-	-	-	-	-	-	-	-
1951	1336	128	Mar. 29, 1951	14	50.1	-	-	54.2	-
1952	1336	127	Dec. 21, 1951	11	40.2	-	-	36.0	-
1953	1336	135	Feb. 21, 1953	10	43.5	-	-	40.6	-
1954	1336	163	Jan. 22, 1954	7.4	33.6	-	-	34.3	-
1955	1386	170	Mar. 21, 1955	7.5	32.1	-	-	32.7	-
1956	1436	183	Apr. 15, 1956	9.5	48.2	-	-	51.6	-
1957	1506	316	Feb. 1, 1957	11	54.6	-	-	60.6	-
1958	1556	144	Nov. 17, 1957	12	56.6	-	-	47.5	-
1959	1626	123	Mar. 27, 1959	12	35.4	-	-	-	-
1960	-	-	-	-	-	-	-	-	-

4935. Cherokee Lake near Jefferson City, Tenn.

Location.--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, 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.

Extremes.--1941-60: Maximum contents, 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).

Remarks.--Reservoir is formed by concrete dam with riprapped earth embankments. Spillway is 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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	455.1	329.5	217.7	150.8	221.6	410.8	572.2	584.8	497.8	485.0	394.0	326.0
1952	249.4	287.3	213.1	292.3	310.5	469.5	496.2	554.9	540.5	467.1	411.4	362.1
1953	294.4	239.0	143.8	189.6	328.8	403.3	332.2	488.7	440.4	413.2	339.4	288.0
1954	183.8	86.0	56.8	219.3	199.5	291.4	362.5	417.2	392.9	286.9	233.4	143.5
1955	128.6	97.8	121.7	51.9	179.7	484.9	578.2	568.2	499.0	429.6	275.3	197.1
1956	152.5	102.4	66.3	66.9	304.2	420.7	637.4	653.3	584.3	538.7	421.2	307.2
1957	235.0	121.8	152.3	269.4	327.1	416.1	580.4	575.3	603.8	522.4	410.2	392.3
1958	302.6	305.0	215.9	166.3	241.2	397.2	567.0	719.6	585.5	572.2	503.8	357.3
1959	214.3	124.4	103.3	154.6	249.7	271.5	421.7	450.0	459.1	415.1	407.3	342.4
1960	277.8	224.5	189.3	189.4	321.3	459.8	548.6	577.5	549.0	546.3	523.0	406.0

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 (1936-60), 4,094 cfs (unadjusted).

Extremes.--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.--Flow regulated by South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	5,865	6,154	7,526	6,264	4,069	790	1,822	2,941	5,049	2,764	4,591	3,877	4,312
1952	4,631	2,796	8,069	3,645	3,803	1,134	3,133	2,675	3,492	4,398	4,652	3,779	3,857
1953	4,870	4,236	4,981	2,266	1,913	3,352	5,077	842	5,446	4,055	5,636	5,126	3,990
1954	4,858	3,832	4,035	2,858	2,983	885	1,468	737	3,306	5,947	4,338	5,483	3,396
1955	3,319	4,363	3,304	4,949	1,027	3,438	1,855	3,774	3,656	4,507	8,168	6,127	4,066
1956	4,839	4,640	3,936	2,449	177	2,355	1,060	2,807	4,101	3,797	6,072	6,834	3,601
1957	5,404	6,092	4,345	5,796	16,560	2,612	3,565	4,572	2,971	3,958	6,222	4,321	5,458
1958	5,727	5,175	9,729	6,711	4,042	1,344	1,557	5,559	7,731	5,163	7,021	8,642	5,713
1959	8,535	6,515	5,447	3,955	955	3,715	1,114	2,021	1,572	3,182	2,200	4,018	3,628
1960	5,004	5,789	6,889	4,503	1,290	2,231	3,798	2,238	4,547	3,432	4,331	9,384	4,455

Yearly discharge, in cubic feet per second, of Holston River near Jefferson City, Tenn.

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	5,729	5,867	23.23
1951	1206	9,780	Nov. 21, 1950	64	4,312	4,035	1.18	15.97	3,978	4,258	16.86
1952	1236	19,000	Dec. 25, 1951	42	3,857	3,735	1.09	14.83	3,733	3,296	13.08
1953	1276	12,700	Sept.28, 1953	47	3,990	3,817	1.11	15.11	3,875	3,614	14.31
1954	1336	17,800	July 6, 1954	60	3,396	2,875	0.838	11.38	3,247	3,058	12.11
1955	1386	17,600	Mar. 26, 1955	54	4,066	4,284	1.25	16.96	4,271	4,183	16.56
1956	1436	16,900	Mar. 25, 1956	34	3,601	4,297	1.25	17.06	3,803	4,643	18.43
1957	1506	25,900	Feb. 11, 1957	53	5,458	5,735	1.67	22.70	5,868	6,362	25.19
1958	1556	17,800	Dec. 4, 1957	53	5,713	5,726	1.67	22.67	5,698	4,853	19.21
1959	1626	17,300	Oct. 10, 1958	37	3,628	3,266	0.952	12.93	3,390	4,120	16.31
1960	1706	18,000	Oct. 22, 1959	40	4,455	4,667	1.36	18.53	-	-	-

a Adjusted for change in contents in South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes.

4945. Mill Spring near Jefferson City, Tenn.

Location.--Lat 36°09'08", long 83°31'35", in spring pool at Tennessee Valley Authority pumping station, 300 ft northwest of State Highway 92, half a mile upstream from mouth, and 3 miles northwest of Jefferson City, Jefferson County.

Records available.--August 1951 to September 1959 in reports of Geological Survey. October 1940 to September 1948 in files of Tennessee Valley Authority.

Gage.--Water-stage recorder and concrete weir. Datum of gage is 962.3 ft above mean sea level (Tennessee Valley Authority construction plans for waterworks).

Average discharge.--8 years (1951-59), 5.07 cfs.

Extremes.--1951-59: Maximum discharge, 26 cfs Feb. 1, 1957 (gage height, 1.70 ft); minimum daily, 1.7 cfs Nov. 18-20, 1954.

Remarks.--Records do not include diversion, averaging one-twentieth of a cubic foot per second, for the domestic water supply of Cherokee Dam.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	4.03	3.52	-
1952	2.72	4.10	7.98	9.73	10.2	10.9	7.44	4.95	3.75	3.21	2.85	2.52	5.86
1953	2.31	2.30	3.11	4.11	9.42	11.5	6.58	7.20	5.69	4.00	3.16	2.53	5.14
1954	2.27	2.03	2.11	5.59	5.77	7.28	8.33	4.93	3.71	3.00	2.59	2.24	4.14
1955	2.04	1.87	1.99	2.19	4.41	10.8	9.10	5.28	3.88	3.22	2.55	2.15	4.12
1956	2.16	2.10	2.23	2.23	10.7	10.1	11.8	8.25	5.45	3.95	3.29	2.81	5.39
1957	2.26	2.17	3.55	4.30	18.0	10.3	9.76	5.60	3.80	3.33	2.74	2.46	5.60
1958	2.25	4.88	8.75	6.89	5.64	6.32	7.82	13.8	7.94	5.04	3.75	3.03	6.36
1959	2.63	2.25	2.16	2.68	5.20	5.67	8.43	6.45	3.89	3.06	2.58	2.20	3.92
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	1336	-	-	-	-	-	-	-	-
1952	1336	15	Dec. 21, 1951	2.4	5.86	-	-	5.26	-
1953	1336	17	Feb. 21, 1953	2.1	5.14	-	-	4.80	-
1954	1336	15	Jan. 22, 1954	1.9	4.14	-	-	4.10	-
1955	1386	18	Mar. 22, 1955	1.7	4.12	-	-	4.17	
1956	1436	19	Apr. 16, 1956	2.0	5.39	-	-	5.52	-
1957	1506	26	Feb. 1, 1957	2.0	5.60	-	-	6.26	-
1958	1556	20	May 8, 1958	2.1	6.36	-	-	5.61	-
1959	1626	10	Apr. 29, 1959	2.0	3.92	-	-	-	-
1960	-	-	-	-	-	-	-	-	-

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, 1.8 miles northeast of Knoxville city limits, Knox County, and 5.5 miles upstream from confluence with French Broad River.

Drainage area.--3,747 sq mi.

Records available.--October 1930 to September 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 (1930-60), 4,458 cfs (unadjusted).

Extremes.--1930-60: Maximum discharge, 62,900 cfs Mar. 28, 1935 (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 ft and 32 ft, respectively, from profile by Tennessee Valley Authority. The flood in 1867 exceeded all other known floods, including that in 1791, from reports of the Tennessee Valley Authority.

Remarks.--Flow regulated by South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	6,175	6,252	7,625	6,500	5,285	1,971	2,793	3,420	5,416	2,866	4,522	4,098	4,740
1952	4,700	3,342	8,991	4,264	4,435	2,077	3,252	2,629	3,222	4,244	4,822	3,671	4,144
1953	4,845	4,349	5,411	2,874	2,730	4,057	6,045	1,490	5,532	4,380	5,806	5,392	4,413
1954	4,870	3,749	3,939	3,808	3,166	1,690	1,859	991	3,528	6,279	4,719	5,921	3,714
1955	3,236	4,205	3,530	4,967	1,860	4,560	2,301	3,656	3,611	4,592	8,291	6,096	4,264
1956	4,852	4,841	4,329	2,972	1,681	3,203	2,332	3,162	4,281	3,953	6,175	7,212	4,090
1957	5,427	5,991	4,827	6,479	18,940	3,057	4,346	4,441	3,284	4,157	6,508	4,785	5,930
1958	5,845	6,202	10,710	7,227	4,737	2,159	2,502	6,128	7,558	5,296	7,222	8,792	6,209
1959	8,592	6,578	5,673	4,289	1,675	4,255	1,694	2,161	1,659	3,359	2,292	4,077	3,880
1960	4,956	5,987	7,231	5,057	1,674	2,976	4,012	2,247	4,616	3,804	4,410	9,986	4,748

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30								Calendar year		
		Observed					Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean		Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date									
1950	-	-	-	-	-		-	-	-	6,167	6,305	22.84
1951	1206	b11,000	Feb. 1, 1951	334	4,740		4,463	1.19	16.17	4,492	4,772	17.29
1952	1236	19,700	Dec. 25, 1951	525	4,144		4,023	1.07	14.61	3,936	3,498	12.71
1953	1276	12,700	Apr. 7, 1953	339	4,413		4,240	1.13	15.36	4,241	3,980	14.42
1954	1336	16,600	July 13, 1954	218	3,714		3,192	0.852	11.57	3,578	3,389	12.28
1955	1386	17,800	Mar. 27, 1955	272	4,264		4,482	1.20	16.24	4,521	4,433	16.06
1956	1436	15,600	Sept.16, 1956	290	4,090		4,785	1.28	17.38	4,275	5,115	18.58
1957	1506	29,700	Feb. 1, 1957	310	5,930		6,205	1.66	22.48	6,482	6,977	25.27
1958	1556	17,800	Dec. 5, 1957	432	6,209		6,222	1.66	22.54	6,046	5,201	18.84
1959	1626	16,800	Oct. 11, 1958	205	3,880		3,519	0.939	12.75	3,655	4,384	15.88
1960	1706	19,900	Dec. 19, 1959	210	4,748		4,960	1.32	18.02	-	-	-

a Adjusted for change in contents in South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes.
b Maximum daily discharge.

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 (1945-60), 22.1 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	6.18	7.20	20.3	31.3	73.6	65.9	51.3	24.1	12.8	16.8	6.85	8.71	26.8
1952	5.24	28.9	47.0	40.5	28.9	49.6	17.4	9.01	6.26	5.59	5.94	9.01	21.1
1953	3.26	10.3	23.4	30.2	57.8	38.3	16.5	23.2	14.4	9.86	4.66	4.07	19.4
1954	3.25	3.20	7.92	66.9	19.7	39.9	27.0	19.0	11.0	6.46	4.32	3.76	17.8
1955	3.67	4.22	24.4	17.1	39.4	56.4	24.7	15.7	9.80	10.5	5.11	3.61	17.8
1956	3.91	6.31	12.1	14.5	78.1	44.9	63.2	24.0	9.28	12.1	5.19	4.00	22.9
1957	3.41	3.75	28.4	37.9	97.6	23.5	29.9	9.57	13.0	5.05	3.60	14.8	22.0
1958	15.7	65.6	57.4	23.8	19.9	26.5	39.2	50.1	11.5	8.20	5.08	4.22	27.3
1959	3.20	3.90	5.67	18.4	28.2	24.4	31.7	14.6	9.89	6.25	3.45	2.89	12.6
1960	5.26	18.5	39.7	31.8	27.7	43.9	23.3	9.92	12.2	14.8	9.08	5.44	20.2

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.45	0.51	1.49	2.30	4.88	4.84	3.64	1.77	0.91	1.23	0.50	0.62	23.14
1952	.38	2.06	3.45	2.97	1.99	3.64	1.24	.66	.44	.41	.44	.64	18.32
1953	.24	.73	1.72	2.22	3.84	2.81	1.17	1.70	1.02	.72	.34	.29	16.80
1954	.24	.23	.58	4.91	1.31	2.93	1.92	1.40	.78	.47	.32	.27	15.36
1955	.27	.30	1.79	1.26	2.61	4.14	1.76	1.15	.70	.77	.37	.26	15.38
1956	.29	.45	.88	1.07	5.37	3.30	4.49	1.76	.66	.89	.38	.28	19.82
1957	.25	.27	2.08	2.79	6.47	1.72	2.13	.70	.92	.37	.26	1.05	19.01
1958	1.15	4.66	4.22	1.75	1.32	1.94	2.79	3.68	.82	.60	.37	.30	23.60
1959	.24	.28	.42	1.35	1.87	1.79	2.26	1.07	.70	.46	.25	.21	10.90
1960	.39	1.32	2.92	2.33	1.90	3.23	1.65	.73	.87	1.09	.67	.39	17.49

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	32.4	28.03
1951	1206	894	Feb. 1, 1951	4.8	26.8	1.71	23.14	30.7	26.58
1952	1236	422	Dec. 21, 1951	3.1	21.1	1.34	18.32	17.4	15.12
1953	1276	366	Feb. 21, 1953	3.0	19.4	1.24	16.80	17.5	15.16
1954	1336	593	Jan. 21, 1954	2.4	17.8	1.13	15.36	19.3	16.67
1955	1386	306	Mar. 22, 1955	2.7	17.8	1.13	15.38	16.9	14.64
1956	1436	643	Apr. 15, 1956	2.7	22.9	1.46	19.82	24.0	20.80
1957	1506	460	Feb. 1, 1957	2.3	22.0	1.40	19.01	30.6	26.44
1958	1556	1,310	Nov. 18, 1957	3.0	27.3	1.74	23.60	16.8	14.51
1959	1626	262	Mar. 27, 1959	2.6	12.6	0.803	10.90	16.9	14.59
1960	1706	348	Nov. 28, 1959	2.5	20.2	1.29	17.49	-	-

4965. First Creek at Fifth Avenue, at Knoxville, Tenn.

Location.--Lat 35°58'40", long 83°54'51", on left bank at Fifth Avenue Bridge in Knoxville, Knox County, 1.8 miles upstream from mouth and 4.1 miles downstream from gage at Mineral Springs Avenue in Knoxville.

Drainage area.--21.1 sq mi, includes 4.5 sq mi without surface drainage.

Records available.--June 1932 to March 1934, April 1945 to December 1958. Published as "at Knoxville" 1932-34.

Gage.--Water-stage recorder. Datum of gage is 883.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. June 23, 1932, to Mar. 31, 1934, staff gage at McCalla Avenue Bridge a quarter of a mile downstream at different datum.

Average discharge.--14 years (1932-33, 1945-58), 28.7 cfs.

Extremes.--1932-34, 1945-58: Maximum discharge, 1,230 cfs Feb. 13, 1948 (gage height, 8.92 ft); minimum, 2.1 cfs Sept. 8, 1955, Sept. 7, 1957; minimum gage height, -0.42 ft Dec. 31, 1958.

Floods of June 29, 1928, and Sept. 30, 1944, reached stages of 11.9 and 11.8 ft, respectively, from report by the Tennessee Valley Authority.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	7.29	9.20	23.6	37.1	89.5	77.6	64.8	29.6	17.9	18.7	8.83	13.4	32.7
1952	7.57	37.2	58.9	49.4	35.9	61.3	20.8	11.5	8.39	9.57	7.55	11.5	26.6
1953	3.97	11.7	27.2	33.8	72.1	46.8	20.3	28.5	17.7	12.6	5.76	5.53	23.5
1954	3.55	4.35	9.63	84.0	23.4	48.0	31.9	23.6	14.4	9.32	5.74	4.96	22.0
1955	3.80	5.06	29.5	18.8	47.9	69.8	28.2	21.0	13.4	14.0	7.86	5.79	22.0
1956	5.67	9.30	16.0	17.8	97.8	54.8	76.5	28.5	10.8	15.8	7.75	5.50	28.5
1957	4.11	4.78	36.1	46.5	120	26.0	37.1	12.3	18.1	6.95	5.80	23.3	27.8
1958	21.6	78.2	67.1	27.7	21.7	28.6	43.6	55.3	13.2	13.1	8.30	7.44	32.2
1959	3.99	5.01	7.24	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.40	0.49	1.29	2.03	4.42	4.24	3.43	1.62	0.95	1.02	0.48	0.71	21.08
1952	.41	1.97	3.22	2.70	1.83	3.35	1.10	.63	.44	.52	.41	.61	17.19
1953	.22	.62	1.49	1.85	3.56	2.56	1.08	1.56	.94	.69	.31	.29	15.17
1954	.19	.23	.53	4.59	1.15	2.62	1.69	1.29	.76	.51	.31	.26	14.13
1955	.21	.27	1.61	1.03	2.36	3.81	1.49	1.15	.71	.76	.43	.31	14.14
1956	.31	.49	.87	.97	5.00	2.99	4.04	1.56	.57	.86	.42	.29	18.37
1957	.22	.25	1.97	2.54	5.93	1.42	1.96	.67	.96	.38	.32	1.23	17.85
1958	1.18	4.13	3.67	1.51	1.07	1.57	2.31	3.02	.70	.72	.45	.39	20.72
1959	.22	.27	.40	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	38.3	24.63
1951	1206	870	Feb. 1, 1951	5.3	32.7	1.55	21.08	38.1	24.50
1952	1236	468	Dec. 21, 1951	3.6	26.6	1.26	17.19	21.6	13.92
1953	1276	495	Feb. 21, 1953	3.1	23.5	1.11	15.17	21.4	13.79
1954	1336	673	Jan. 21, 1954	2.9	22.0	1.04	14.13	23.8	15.27
1955	1386	336	Mar. 22, 1955	2.6	22.0	1.04	14.14	21.3	13.72
1956	1436	710	Apr. 16, 1956	3.3	28.5	1.35	18.37	29.7	19.14
1957	1506	618	Feb. 1, 1957	2.4	27.8	1.32	17.85	37.9	24.39
1958	1556	1,060	Nov. 18, 1957	3.0	32.2	1.53	20.72	19.6	12.63
1959	1556	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-

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 River, 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 (1899-1960), 12,810 cfs (unadjusted).

Extremes.--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, site and datum of gage at old city pumping plant, 3.2 miles downstream from base gage (discharge, 290,000 cfs, from rating curve extended above 130,000 cfs), from high-water profile by Corps of Engineers and Tennessee Valley Authority.

Remarks.--Flow regulated by South Holston, Watauga, Boone, Fort Patrick Henry, Douglas, and Cherokee Lakes.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	17,320	18,230	19,470	13,430	12,380	11,490	8,721	12,190	11,630	8,627	12,660	10,440	13,060
1952	11,030	8,587	21,960	14,400	15,570	11,480	11,990	6,809	7,760	10,520	8,828	7,903	11,410
1953	11,020	8,627	12,830	9,756	16,290	15,040	14,680	5,480	13,280	9,101	11,500	7,774	11,240
1954	5,506	6,715	9,662	16,260	13,440	10,880	7,079	7,414	9,570	13,020	10,930	8,141	9,878
1955	5,028	6,876	8,511	10,750	6,557	17,630	9,086	10,920	9,602	11,090	17,110	11,780	10,450
1956	7,885	8,111	8,482	6,772	14,920	12,650	7,981	8,049	9,762	10,780	14,250	15,130	10,380
1957	11,600	11,480	12,100	14,280	48,610	14,060	11,860	12,700	9,860	11,060	14,010	10,570	14,960
1958	14,620	17,260	31,060	16,530	17,050	9,512	8,619	20,720	19,220	12,220	16,340	18,620	16,820
1959	16,940	11,790	10,220	14,600	10,990	10,200	5,676	8,772	9,716	11,530	9,294	14,070	11,160
1960	20,950	19,040	24,020	15,970	16,160	12,440	13,770	8,395	12,230	9,685	10,810	21,910	15,430

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	15,300	23.24
1951	1206	32,100	Feb. 1, 1951	3,000	13,060	1.46	19.85	11,950	18.15
1952	1236	42,700	Dec. 25,26,1951	1,110	11,410	1.28	17.38	10,630	16.20
1953	1276	33,000	Feb. 26, 1953	2,060	11,240	1.26	17.09	10,350	15.73
1954	1336	45,300	Jan. 22, 1954	1,010	9,878	1.11	15.01	9,752	14.82
1955	1386	40,800	Mar. 22, 1955	1,450	10,450	1.17	15.88	10,800	16.40
1956	1436	28,500	Apr. 16, 1956	1,640	10,380	1.16	15.81	11,270	17.18
1957	1506	67,500	Feb. 1, 9, 1957	1,130	14,960	1.67	22.72	17,300	26.28
1958	1556	43,700	Dec. 27, 1957	1,280	16,820	1.88	25.56	14,800	22.49
1959	1626	30,400	Oct. 8, 1958	1,440	11,160	1.25	16.96	13,270	20.16
1960	1706	43,600	Dec. 19, 1959	1,410	15,430	1.73	23.51	-	-

4980. Little River near Walland, Tenn.

Location.--Lat 35°45'48", long 83°51'00", on right bank 0.4 mile upstream from bridge on State Highway 73, 1.0 mile upstream from Ellejoy Creek, and 3 miles downstream from Walland, Blount County.

Drainage area.--192 sq mi.

Records available.--July 1931 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 877.36 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years (1931-52), 370 cfs.

Extremes.--1931-52: Maximum discharge, 17,600 cfs Mar. 29, 1951 (gage height, 14.88 ft); minimum (revised), 7.8 cfs Sept. 23, 1932; minimum daily, 25 cfs Oct. 22, 1939; minimum gage height, 0.66 ft Oct. 9, 1948.

Remarks.--Diurnal fluctuation at low flow caused by small mills above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	81.6	107	360	362	595	1,121	765	287	495	319	128	136	395
1952	73.7	401	843	814	414	675	‡310	‡245	‡242	‡75.0	‡105	‡69.0	‡356

‡ Not previously published.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.49	0.62	2.16	2.17	3.23	6.73	4.45	1.72	2.88	1.92	0.77	0.79	27.93
1952	.44	2.33	5.06	4.89	2.33	4.06	‡1.80	‡1.47	‡1.41	‡.45	‡.63	‡.40	‡25.27

‡ Not previously published.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	415	29.32
1951	1206	17,600	Mar. 29, 1951	54	395	2.06	27.93	460	32.49
1952	1236	8,000	Dec. 21, 1951	-	‡356	‡1.85	‡25.27	-	-

‡ Not previously published.

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 (1951-60), 503 cfs.

Extremes.--1951-60: Maximum discharge, 19,600 cfs Feb. 1, 1957 (gage height, 21.18 ft); minimum, 32 cfs Aug. 27, 1956 (gage height, 6.85 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.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	374	147	157	-
1952	99.0	547	1,107	1,074	556	849	404	320	315	100	139	92.0	468
1953	54.2	249	467	967	1,510	757	584	862	230	218	108	72.0	501
1954	56.0	86.5	247	1,588	308	1,044	757	422	268	122	97.9	55.6	423
1955	54.5	92.0	441	294	1,069	1,430	699	303	342	247	275	84.5	441
1956	221	294	340	371	1,875	976	1,117	446	166	173	83.2	106	508
1957	78.6	158	605	1,051	2,254	623	941	316	598	202	108	148	578
1958	252	1,160	1,171	483	1,023	680	1,026	1,106	217	426	198	103	651
1959	96.3	132	198	685	719	711	1,006	283	420	306	188	207	410
1960	471	817	1,053	622	772	903	582	254	281	223	415	182	548

Monthly and yearly runoff, in inches, of Little River near Maryville, Tenn.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	1.60	0.63	0.65	-
1952	0.42	2.27	4.74	4.60	2.23	3.64	1.68	1.37	1.31	.43	.60	.38	23.67
1953	.23	1.03	2.00	4.14	5.85	3.24	2.42	3.70	.95	.93	.36	.30	25.25
1954	.24	.36	1.06	6.81	1.19	4.47	3.14	1.81	1.11	.52	.42	.23	21.36
1955	.23	.38	1.89	1.26	4.14	6.13	2.90	1.30	1.42	1.06	1.18	.35	22.24
1956	.95	1.22	1.46	1.59	7.52	4.18	4.63	1.91	.69	.74	.36	.44	25.69
1957	.34	.66	2.59	4.50	8.73	2.67	3.90	1.36	2.48	.86	.46	.62	29.17
1958	1.08	4.81	5.02	2.07	3.96	2.92	4.26	4.74	.90	1.82	.85	.43	32.86
1959	.41	.55	.85	2.94	2.78	3.05	4.17	1.21	1.74	1.31	.81	.66	20.68
1960	2.02	3.39	4.51	2.66	3.09	3.87	2.41	1.09	1.17	.96	1.78	.76	27.71

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1951	1206	-	-	-	-	-	-	-	-
1952	1236	9,460	Dec. 21, 1951	53	468	1.74	23.67	385	19.50
1953	1276	11,500	Feb. 21, 1953	49	501	1.86	25.25	469	23.65
1954	1336	13,300	Jan. 16, 1954	44	423	1.57	21.36	440	22.20
1955	1386	7,770	Feb. 23, 1955	45	441	1.64	22.24	463	23.37
1956	1436	12,400	Apr. 16, 1956	51	508	1.89	25.69	507	25.65
1957	1506	19,600	Feb. 1, 1957	51	578	2.15	29.17	723	36.49
1958	1556	10,000	Nov. 18, 1957	77	651	2.42	32.86	471	23.76
1959	1626	9,350	Jan. 22, 1959	72	410	1.52	20.68	571	28.79
1960	1706	11,600	Nov. 28, 1959	102	548	2.04	27.71	-	-

4995. Fort Loudoun Lake near Lenoir City, Tenn.

Location.--Lat 35°47'30", long 84°14'35", at Fort Loudoun Dam on Tennessee River, 1 mile northeast of Lenoir City, Loudon County, 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.

Extremes.--1943-60: Maximum elevation, 815.00 ft Sept. 11, 1943, May 14, 1945; minimum (after first filling), 803.54 ft Jan. 18, 1954. Contents based on backwater profile.

Remarks.--Reservoir is 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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	161	145	142	148	146	163	183	176	184	176	182	170
1952	152	151	144	140	147	148	176	179	175	179	181	163
1953	160	149	144	144	144	144	188	189	185	178	182	177
1954	166	153	143	147	145	156	175	179	179	175	178	173
1955	161	152	149	141	148	158	180	180	174	179	177	168
1956	158	148	144	150	140	143	180	179	175	174	171	181
1957	179	146	148	158	149	142	179	181	181	175	178	181
1958	180	150	144	143	146	147	179	180	176	176	180	181
1959	178	143	144	141	146	152	181	181	176	171	181	178
1960	177	152	145	143	142	146	179	181	175	180	173	177

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 (1943-60), 370 cfs.

Extremes.--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 of chemical analyses and water temperatures for the period September 1952 to October 1953 are published in report of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	334	246	411	292	351	456	506	339	346	226	145	144	316
1952	128	244	624	493	553	1,199	599	365	313	153	152	131	413
1953	106	160	227	513	727	599	365	387	214	195	141	120	310
1954	104	141	388	735	442	570	564	351	245	168	131	80.2	326
1955	70.5	101	240	203	477	400	574	665	357	315	271	148	316
1956	155	146	159	132	598	500	694	370	214	252	150	132	290
1957	136	141	361	366	783	481	814	323	392	234	139	184	359
1958	308	641	607	494	565	511	637	557	257	407	244	156	448
1959	138	128	155	348	343	366	472	462	475	238	153	240	293
1960	462	297	359	440	779	621	711	336	284	241	376	256	429

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.75	1.96	3.39	2.40	2.61	3.75	4.03	2.79	2.76	1.86	1.19	1.15	30.64
1952	1.05	1.94	5.14	4.06	4.26	9.87	4.78	3.01	2.49	1.26	1.25	1.04	40.15
1953	.87	1.28	1.87	4.23	5.40	4.93	2.91	3.19	1.70	1.60	1.16	.96	30.10
1954	.85	1.12	3.19	6.05	3.29	4.69	4.49	2.89	1.96	1.38	1.08	.64	31.63
1955	.58	.80	1.97	1.65	3.45	3.29	4.63	5.48	2.84	2.58	2.22	1.16	30.65
1956	1.28	1.16	1.31	1.08	4.61	4.12	5.53	3.05	1.71	2.08	1.23	1.06	28.22
1957	1.12	1.12	2.97	3.01	5.82	3.96	6.49	2.66	3.12	1.93	1.15	1.47	34.82
1958	2.53	5.11	5.00	4.07	4.20	4.21	5.07	4.58	2.05	3.35	2.01	1.25	43.43
1959	1.14	1.02	1.28	2.86	2.55	3.02	3.76	3.81	3.79	1.96	1.26	1.91	28.36
1960	3.81	2.37	2.95	3.62	6.00	5.12	5.67	2.77	2.27	1.98	3.10	2.04	41.70

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	427	41.37
1951	1206	2,000	Dec. 7, 1950	104	316	2.26	30.64	316	30.67
1952	1236	5,190	Mar. 11, 1952	96	413	2.95	40.15	371	36.04
1953	1276	4,060	Feb. 21, 1953	87	310	2.21	30.10	322	31.24
1954	1336	3,430	Jan. 22, 1954	68	326	2.33	31.63	308	29.82
1955	1436	3,150	May 23, 1955	65	316	2.26	30.65	320	31.05
1956	1436	3,410	Apr. 16, 1956	92	290	2.07	28.22	305	29.68
1957	1506	3,750	Apr. 5, 1957	92	359	2.56	34.82	436	42.25
1958	1556	2,310	Nov. 19, 1957	128	448	3.20	43.43	353	34.23
1959	1626	2,520	Jan. 22, 1959	104	293	2.09	28.36	351	34.05
1960	1706	1,900	Feb. 11, 1960	133	429	3.06	41.70	-	-

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 230.22 ft higher.

Average discharge.--29 years (1931-60), 59.0 cfs.

Extremes.--1927-60: Maximum discharge, 5,100 cfs Aug. 30, 1940 (gage height, 9.35 ft), from rating curve extended above 800 cfs on basis of computation of peak flow over dam; minimum, 0.2 cfs Oct. 13, 14, 1947; minimum daily, 0.2 cfs Oct. 13, 1947.

Remarks.--Low flow regulated by Sequoyah Lake. Some diurnal fluctuation caused by powerplant at Highlands municipal dam.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	50.9	31.3	67.6	44.0	64.0	79.9	89.7	52.2	51.1	29.3	19.7	18.7	49.8
1952	18.9	52.1	110	75.8	77.4	165	76.0	43.4	24.8	14.5	18.6	21.5	58.3
1953	13.8	30.1	49.5	110	136	106	48.3	47.7	25.9	31.5	23.0	18.6	52.9
1954	13.3	21.7	88.0	104	68.6	83.5	85.3	42.4	25.3	12.4	13.4	8.91	47.2
1955	5.93	8.89	60.3	37.5	90.2	71.5	110	117	56.0	52.2	60.8	22.6	57.6
1956	23.4	19.5	21.8	15.5	107	69.9	95.0	41.0	27.3	41.5	16.7	14.5	40.8
1957	22.0	27.1	70.1	70.3	129	81.8	128	36.5	89.3	45.0	18.9	41.5	62.7
1958	71.1	136	105	73.8	76.8	73.4	108	85.0	27.7	83.4	33.5	16.5	74.2
1959	16.3	10.3	18.7	70.1	61.6	63.7	83.1	108	70.5	58.2	31.8	49.5	53.5
1960	147	64.9	71.6	73.2	115	92.8	116	43.9	45.4	31.7	57.2	34.9	74.5

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3.94	2.34	5.23	3.40	4.47	6.18	6.71	4.04	3.82	2.27	1.53	1.40	45.33
1952	1.47	3.90	8.54	5.87	5.60	12.76	5.69	3.36	1.86	1.12	1.44	1.61	53.22
1953	1.07	2.25	3.83	8.52	9.52	8.17	3.61	3.69	1.94	2.43	1.78	1.39	48.20
1954	1.03	1.62	6.81	8.08	4.79	6.46	6.39	3.28	1.89	.96	1.04	.67	43.02
1955	.46	.67	4.67	2.90	6.31	5.53	8.23	9.09	4.19	4.04	4.70	1.69	52.48
1956	1.81	1.46	1.68	1.20	7.76	5.41	7.11	3.17	2.05	3.21	1.29	1.09	37.24
1957	1.71	2.03	5.42	5.44	9.03	6.33	9.57	2.83	6.69	3.48	1.46	3.10	57.09
1958	5.50	10.22	8.12	5.71	5.37	5.68	8.07	6.58	2.07	6.45	2.60	1.23	67.60
1959	1.26	.77	1.44	5.42	4.31	4.93	6.22	8.39	5.28	4.50	2.46	3.71	48.69
1960	11.41	4.86	5.54	5.67	8.36	7.18	8.71	3.40	3.40	2.45	4.42	2.62	68.02

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	62.0	56.49
1951	1206	802	Dec. 7, 1950	1.3	49.8	3.34	45.33	52.4	47.73
1952	1236	1,630	Mar. 11, 1952	1.7	58.3	3.91	53.22	50.9	46.46
1953	1276	1,290	Feb. 21, 1953	1.1	52.9	3.55	48.20	55.5	50.51
1954	1336	618	Jan. 22, 1954	1.2	47.2	3.17	43.02	43.2	39.36
1955	1386	945	Dec. 29, 1954	1.8	57.6	3.87	52.48	56.7	51.63
1956	1436	880	Apr. 16, 1956	2.4	40.8	2.74	37.24	45.4	41.45
1957	1506	926	Apr. 4, 1957	7.6	62.7	4.21	57.09	78.8	71.77
1958	1556	860	Nov. 19, 1957	9.4	74.2	4.98	67.60	51.9	47.23
1959	1626	1,080	Jan. 21, 1959	2.8	53.5	3.59	48.69	73.6	67.03
1960	1706	1,230	Oct. 9, 1959	22	74.5	5.00	68.02	-	-

5010. Cullasaja River at Cullasaja, N. C.

Location.--Lat 35°09'59", long 83°19'25", on right bank at Cullasaja, Macon County, 1.4 miles downstream from Ellijay Creek and 4.1 miles upstream from mouth.

Drainage area.--86.5 sq mi.

Records available.--June 1907 to December 1909, October 1920 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 2,023.37 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 23, 1934, staff gages at same site and datum.

Average discharge.--42 years (1907-9, 1920-60), 222 cfs.

Extremes.--1907-9, 1920-60: 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. 2, 1940.
Maximum stage known, that of Aug. 30, 1940. A stage of 17.2 ft, from floodmarks, occurred in July 1916, but has been exceeded at other times, according to information by State Highway Commission.

Remarks.--Slight regulation at low flow by Sequoyah Lake and mill on Buck Creek. Records of chemical analyses for the period October 1954 to September 1956 are published in report of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	174	127	278	163	216	296	334	189	209	135	80.8	78.9	190
1952	66.8	166	370	285	311	640	315	187	109	74.8	76.8	76.1	223
1953	52.4	89.1	140	343	469	341	190	232	112	107	83.3	62.7	184
1954	48.6	67.4	220	383	238	340	339	178	123	70.4	60.4	38.6	175
1955	34.9	48.4	151	112	278	242	390	451	213	168	217	91.8	199
1956	94.2	81.2	93.9	72.4	376	283	397	205	121	137	66.8	64.5	165
1957	78.5	80.0	218	213	468	305	527	192	302	151	80.8	117	225
1958	189	435	364	275	310	289	385	343	127	217	106	64.3	258
1959	65.6	58.1	68.1	208	187	213	299	338	257	146	91.5	128	171
1960	391	183	223	245	434	357	409	168	162	116	183	107	248

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.32	1.63	3.70	2.17	2.60	3.95	4.30	2.53	2.70	1.80	1.08	1.02	29.80
1952	.89	2.14	4.93	3.80	3.87	8.53	4.06	2.49	1.41	1.00	1.02	.98	35.12
1953	.70	1.15	1.86	4.57	5.64	4.54	2.45	3.10	1.45	1.42	1.11	.81	28.80
1954	.65	.87	2.94	5.11	2.87	4.53	4.38	2.37	1.59	.94	.80	.50	27.55
1955	.47	.62	2.01	1.49	3.34	3.22	5.03	6.01	2.75	2.24	2.89	1.18	31.25
1956	1.26	1.05	1.25	.97	4.69	3.77	5.12	2.73	1.56	1.83	.89	.83	25.95
1957	1.05	1.03	2.91	2.84	5.63	4.06	6.80	2.56	3.90	2.01	1.08	1.51	35.38
1958	2.52	5.62	4.85	3.66	3.73	3.86	4.97	4.57	1.64	2.90	1.42	.83	40.57
1959	.87	.75	.91	2.77	2.25	2.84	3.86	4.51	3.31	1.95	1.22	1.65	26.89
1960	5.21	2.36	2.97	3.27	5.41	4.76	5.27	2.25	2.09	1.55	2.45	1.38	38.97

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	246	38.63
1951	1206	2,640	Dec. 7, 1950	44	190	2.20	29.80	192	30.11
1952	1236	4,810	Mar. 11, 1952	46	223	2.58	35.12	196	30.87
1953	1276	4,000	Feb. 21, 1953	36	184	2.13	28.80	188	29.55
1954	1336	2,810	Jan. 22, 1954	30	175	2.02	27.55	167	26.19
1955	1386	3,460	May 22, 1955	28	199	2.30	31.25	202	31.71
1956	1436	3,220	Apr. 15, 1956	41	165	1.91	25.95	174	27.38
1957	1506	3,450	Apr. 4, 1957	45	225	2.60	35.38	276	43.38
1958	1556	2,500	Nov. 19, 1957	53	258	2.98	40.57	192	30.11
1959	1626	3,830	Jan. 21, 1959	43	171	1.98	26.89	222	34.90
1960	1706	2,660	Oct. 9, 1959	74	248	2.87	38.97	-	-

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 92.9.

Drainage area.--436 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 1,761.19 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--17 years (1943-60), 1,011 cfs.

Extremes.--1943-60: Maximum discharge, 20,200 cfs June 16, 1949 (gage height, 11.10 ft), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, 52 cfs Nov. 7, 8, 1954 (gage height, 1.16 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.--Considerable diurnal fluctuation caused by Porters Bend powerplant at Lake Emory.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	782	603	1,077	779	969	1,429	1,447	882	961	648	393	397	863
1952	341	682	1,651	1,416	1,427	2,864	1,378	887	714	408	431	369	1,048
1953	297	415	640	1,383	2,072	1,549	953	1,197	596	528	375	324	854
1954	272	344	952	2,167	1,152	1,689	1,518	918	728	458	366	208	898
1955	192	282	687	591	1,494	1,254	1,854	1,739	953	820	769	393	915
1956	445	421	520	407	1,792	1,555	1,877	1,043	624	671	374	325	833
1957	387	384	971	1,115	2,620	1,309	2,449	974	1,171	706	423	551	1,075
1958	876	1,869	1,733	1,300	1,666	1,444	1,742	1,640	734	1,050	618	393	1,253
1959	380	362	399	985	954	1,052	1,440	1,239	1,155	686	425	567	801
1960	1,097	746	944	1,157	1,972	1,699	1,846	887	722	563	823	552	1,080

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.07	1.54	2.85	2.06	2.31	3.78	3.70	2.33	2.46	1.71	1.04	1.02	26.87
1952	.90	1.75	4.37	3.74	3.53	7.57	3.53	2.35	1.83	1.08	1.14	.95	32.74
1953	.78	1.06	1.69	3.66	4.95	4.10	2.44	3.16	1.53	1.40	.99	.83	26.59
1954	.72	.88	2.52	5.73	2.75	4.47	3.89	2.43	1.86	1.21	.97	.53	27.96
1955	.51	.72	1.82	1.56	3.57	3.32	4.74	4.60	2.44	2.17	2.03	1.01	28.49
1956	1.18	1.08	1.38	1.08	4.43	4.11	4.80	2.76	1.60	1.77	.99	.83	26.01
1957	1.02	.98	2.57	2.95	6.26	3.46	6.27	2.58	3.00	1.87	1.12	1.41	33.49
1958	2.32	4.78	4.58	3.44	3.98	3.82	4.46	4.34	1.88	2.78	1.63	1.00	39.01
1959	1.00	.93	1.06	2.60	2.28	2.78	3.68	3.28	2.96	1.81	1.12	1.45	24.95
1960	2.90	1.91	2.50	3.06	4.88	4.49	4.72	2.35	1.85	1.49	2.18	1.41	33.74

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,129	35.15
1951	1206	6,310	Dec. 7, 1950	288	863	1.98	26.87	881	27.43
1952	1236	11,500	Mar. 23, 1952	265	1,048	2.40	32.74	937	29.25
1953	1276	11,500	Feb. 21, 1953	79	854	1.96	26.59	872	27.18
1954	1336	12,200	Jan. 22, 1954	152	898	2.06	27.96	863	26.89
1955	1386	8,840	Feb. 7, 1955	71	915	2.10	28.49	933	29.08
1956	1436	8,960	Apr. 16, 1956	202	833	1.91	26.01	863	26.94
1957	1506	12,700	Apr. 5, 1957	191	1,075	2.47	33.49	1,303	40.60
1958	1556	7,160	Nov. 19, 1957	318	1,253	2.87	39.01	973	30.32
1959	1626	7,960	Jan. 22, 1959	280	801	1.84	24.95	940	29.27
1960	1706	4,890	Apr. 4, 1960	322	1,080	2.48	33.74	-	-

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 (revised) 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 (1940-60), 194 cfs.

Extremes.--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.--Occasional regulation caused by fishtrap, March 1955 to September 1958. Occasional slight diurnal fluctuation at low flow caused by small ponds on tributaries above station since March 1951.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	152	127	201	169	204	288	306	175	191	145	81.7	83.4	177
1952	67.5	145	353	339	299	485	229	155	123	70.4	73.8	65.8	201
1953	45.6	79.7	154	274	438	304	185	200	106	93.8	73.5	61.1	166
1954	44.2	57.2	203	502	241	342	298	181	151	98.4	83.9	46.8	187
1955	42.2	56.6	129	115	299	300	323	257	176	160	131	73.3	171
1956	98.8	101	143	96.5	377	360	321	222	119	173	87.5	71.6	180
1957	67.6	74.4	232	311	657	238	454	174	184	141	79.1	94.2	222
1958	164	290	343	219	306	213	263	266	108	157	103	63.2	207
1959	64.7	67.0	77.2	192	249	218	286	269	233	112	89.9	103	163
1960	198	179	219	260	317	264	307	142	112	89.6	151	104	195

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	3.38	2.73	4.47	3.74	4.09	6.41	6.58	3.89	4.10	3.23	1.81	1.79	46.22
1952	1.50	3.13	7.84	7.53	6.22	10.76	4.93	3.45	2.64	1.56	1.64	1.42	52.62
1953	1.01	1.71	3.42	6.09	8.80	6.75	3.97	4.44	2.28	2.08	1.63	1.31	43.49
1954	.98	1.23	4.50	11.15	4.83	7.59	6.40	4.01	3.24	2.18	1.86	1.01	48.98
1955	.94	1.22	2.88	2.54	6.00	6.66	6.94	5.71	3.78	3.56	2.90	1.58	44.71
1956	2.19	2.18	3.18	2.14	7.84	8.00	6.91	4.93	2.56	3.83	1.94	1.54	47.24
1957	1.50	1.60	5.15	6.91	13.19	5.29	9.76	3.86	3.95	3.13	1.76	2.03	58.13
1958	3.64	6.23	7.61	4.87	6.14	4.72	5.65	5.91	2.32	3.48	2.29	1.36	54.22
1959	1.44	1.44	1.71	4.26	4.99	4.85	6.16	5.98	5.02	2.49	2.00	2.21	42.55
1960	4.41	3.85	4.87	5.78	6.58	5.86	6.61	3.16	2.41	1.99	3.35	2.23	51.10

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	234	61.16
1951	1206	1,800	Mar. 29, 1951	54	177	3.41	46.22	184	48.11
1952	1236	2,760	Mar. 11, 1952	40	201	3.87	52.62	177	46.29
1953	1276	2,970	Feb. 21, 1953	38	166	3.20	43.49	169	44.06
1954	1336	3,320	Jan. 16, 1954	34	187	3.60	48.98	181	47.31
1955	1386	2,140	Mar. 22, 1955	38	171	3.29	44.71	181	47.22
1956	1436	2,170	Apr. 15, 1956	48	180	3.47	47.24	183	47.94
1957	1506	4,860	Jan. 31, 1957	49	222	4.28	58.13	258	67.36
1958	1556	2,190	Dec. 20, 1957	51	207	3.99	54.22	158	41.33
1959	1626	2,690	Jan. 21, 1959	45	163	3.14	42.55	195	51.09
1960	1706	1,400	Apr. 3, 1960	67	195	3.76	51.10	-	-

5045. Nantahala Lake near Topton, N. C.

Location.--Lat 35°11'56", long 83°39'17", at Nantahala Dam on Nantahala River, 4.2 miles southeast of Topton, Cherokee County, 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. Prior to 1954 published as "Nantahala Reservoir." Prior to June 3, 1942, staff gage at same site and datum.

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.

Extremes.--1942-60: Maximum contents, 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).

Remarks.--Lake 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 lake 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 elevation 2,760.0 ft(minimum pool). Lake is used for flood control and power.

Cooperation.--Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Contents, in cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	59,500	53,300	50,600	43,700	42,800	48,400	53,100	55,200	53,000	51,600	47,100	42,800
1952	34,600	33,800	50,500	66,600	66,200	69,000	63,500	54,600	44,500	38,200	31,500	24,600
1953	15,500	13,400	11,100	16,600	33,900	51,300	55,200	55,700	48,400	47,900	47,800	39,900
1954	32,200	24,700	22,400	37,500	43,200	53,600	60,800	57,200	59,700	50,800	40,500	30,400
1955	20,400	11,100	9,200	6,800	15,500	27,400	39,700	42,000	36,400	43,000	43,700	31,800
1956	20,900	12,400	12,200	9,500	24,600	38,100	46,500	48,600	49,100	48,100	50,600	41,100
1957	33,800	29,500	34,300	45,100	68,500	66,900	68,800	60,600	54,600	53,900	44,700	37,600
1958	38,500	46,200	59,900	63,400	64,400	61,900	65,600	64,600	58,400	55,000	51,900	45,000
1959	36,400	32,600	27,300	28,900	33,400	35,400	49,100	60,500	61,500	54,900	50,900	44,500
1960	48,700	50,200	51,000	54,700	60,800	62,200	66,200	62,400	56,000	56,600	50,800	39,600

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 (revised) 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 (1942-60), 478 cfs (adjusted for storage).

Extremes.--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.--Flow regulated by Nantahala Lake and Queens Creek Lake (capacity, about 300 cfs-days).

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	502	457	510	630	540	574	590	331	539	380	321	323	474
1952	425	329	283	346	738	957	755	679	669	380	408	397	529
1953	415	250	401	482	424	120	324	563	511	226	155	404	355
1954	359	388	496	687	309	464	435	556	331	544	557	481	469
1955	444	466	386	356	466	350	417	501	609	129	271	571	412
1956	572	532	332	326	420	459	521	450	274	405	105	482	406
1957	398	303	379	409	866	662	937	717	716	346	518	472	557
1958	319	425	345	406	746	643	545	734	522	555	360	416	500
1959	431	292	353	424	348	424	238	200	453	530	340	423	372
1960	225	349	493	522	521	668	603	488	492	190	494	607	470

Monthly and yearly runoff, in inches (adjusted) a/, of Nantahala River at Nantahala, N. C.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.44	1.94	3.38	3.26	3.67	6.04	5.78	3.19	3.60	2.68	1.41	1.39	38.78
1952	1.28	2.34	6.58	6.93	5.42	8.62	4.20	3.13	2.58	1.41	1.54	1.29	45.32
1953	.97	1.40	2.61	5.28	7.54	5.46	3.51	4.64	2.07	1.68	1.21	1.09	37.46
1954	.88	1.07	3.38	9.40	3.70	6.40	5.23	3.52	3.21	2.05	1.80	1.12	41.76
1955	.97	1.21	2.60	2.23	5.62	5.87	6.41	4.61	3.28	2.73	2.35	1.35	39.23
1956	1.76	1.93	2.61	1.91	7.05	7.16	6.20	4.15	2.25	2.99	1.49	1.28	40.78
1957	1.30	1.21	4.30	6.06	12.30	4.88	7.75	3.62	4.00	2.59	1.77	1.83	51.61
1958	2.79	5.27	6.27	4.15	5.65	4.51	5.18	5.64	2.45	3.57	2.08	1.44	49.00
1959	1.23	1.28	1.45	3.80	3.68	3.92	5.38	4.57	3.77	2.54	1.69	1.62	34.93
1960	2.89	3.09	4.14	5.12	5.48	5.70	5.71	2.93	2.20	1.67	2.46	1.80	43.19

Adjusted for change in contents in Nantahala Lake.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	612	559	52.68
1951	1206	2,440	Mar. 29, 1951	25	474	412	2.86	38.78	438	437	41.22
1952	1236	4,480	Mar. 23, 1952	20	529	480	3.33	45.32	532	424	40.10
1953	1276	2,730	Feb. 21, 1953	17	355	397	2.76	37.46	370	401	37.81
1954	1336	2,840	Jan. 22, 1954	17	469	443	3.08	41.76	473	437	41.21
1955	1386	1,830	Feb. 6, 1955	25	412	416	2.89	39.23	424	432	40.75
1956	1436	1,740	Apr. 15, 1956	23	406	431	2.99	40.78	376	437	41.29
1957	1506	4,320	Jan. 31, 1957	25	557	548	3.81	51.61	558	628	59.13
1958	1556	1,560	Nov. 19, 1957	36	500	520	3.61	49.00	499	410	38.63
1959	1626	2,520	Jan. 21, 1959	28	372	370	2.57	34.93	371	436	41.09
1960	1706	1,110	Nov. 28, 1959	30	470	457	3.17	43.19	-	-	-

a Adjusted for change in contents in Nantahala Lake.

5075. Thorpe Lake near Glenville, N. C.

Location.--Lat 35°11'46", long 83°09'09", at Thorpe Dam on West Fork Tuckasegee River, 2.3 miles northwest of Glenville, Jackson County, 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.

Extremes.--1941-60: Maximum contents, 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.

Remarks.--Lake 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). Lake is used for flood control and power.

Cooperation.--Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Contents, in cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	29,600	27,100	26,400	22,300	20,700	20,900	22,400	23,400	22,000	21,400	20,000	17,900
1952	14,800	14,100	18,300	21,000	24,500	34,400	32,500	27,000	20,800	18,000	16,300	12,400
1953	9,000	8,900	7,900	10,200	15,300	20,900	23,600	23,600	19,700	19,400	19,600	17,400
1954	14,800	11,400	10,300	11,800	13,500	15,000	16,200	15,900	15,400	14,000	11,300	8,100
1955	5,200	3,600	3,800	2,300	3,400	6,700	12,300	17,900	17,600	16,000	15,200	13,900
1956	8,600	4,400	3,200	2,800	6,500	10,400	14,100	16,600	18,300	19,400	19,900	17,700
1957	15,800	14,400	14,900	16,300	23,400	26,900	32,700	31,200	31,000	28,500	23,800	21,000
1958	20,600	24,700	28,800	30,500	30,100	30,200	32,800	30,900	27,300	25,100	23,500	20,700
1959	17,700	16,600	13,600	13,600	13,400	12,400	15,300	20,500	22,300	22,000	21,800	22,600
1960	26,700	26,300	26,500	26,600	30,800	32,500	33,400	30,900	27,500	25,300	24,000	19,100

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 (revised) 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 2,125.16 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--26 years (1934-60), 388 cfs (adjusted for storage).

Extremes.--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.--Flow regulated by Thorpe Lake since Feb. 12, 1941, Cedar Cliff Lake since Apr. 26, 1952, Bear Creek Lake since Oct. 9, 1953, and Tennessee Creek project lakes since Mar. 22, 1955.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	394	303	562	418	437	501	475	258	367	227	182	205	360
1952	206	289	460	375	410	870	573	483	390	198	215	231	392
1953	221	167	250	497	607	435	253	438	379	245	158	196	319
1954	228	157	186	373	364	490	513	281	205	172	189	151	275
1955	139	177	195	262	402	281	450	549	454	380	418	187	324
1956	323	334	200	154	489	366	465	295	160	362	277	118	294
1957	233	257	157	254	643	473	892	519	522	315	320	352	409
1958	361	615	615	525	568	509	552	755	364	488	229	246	485
1959	181	153	234	386	348	432	398	483	437	271	172	246	312
1960	527	389	434	461	570	515	758	381	358	225	288	364	438

Monthly and yearly runoff, in inches (adjusted) a/

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.58	1.71	4.35	2.31	2.76	4.09	4.10	2.34	2.50	1.68	1.10	1.05	30.57
1952	.86	2.08	4.80	3.73	4.00	9.59	4.55	2.46	1.40	.97	1.37	.90	36.71
1953	.72	1.25	1.94	4.65	5.72	4.97	2.72	3.51	1.93	1.90	1.32	.96	31.59
1954	.66	.89	2.78	5.63	3.18	4.86	4.09	2.38	1.50	.85	.83	.36	28.01
1955	.42	.73	1.95	1.34	3.43	3.24	5.41	6.99	3.07	2.90	3.15	1.11	33.74
1956	1.18	1.14	1.25	1.19	4.67	3.92	5.02	3.04	1.66	2.13	.92	.89	27.01
1957	1.42	1.10	3.13	3.45	6.59	4.38	8.58	3.28	4.43	1.89	1.34	1.83	41.42
1958	2.77	6.26	5.79	4.39	4.08	4.13	5.63	5.29	1.88	3.14	1.55	.85	45.76
1959	.88	.87	1.05	3.10	2.45	3.23	4.25	5.52	3.62	2.05	1.39	2.06	30.47
1960	5.49	2.81	3.15	3.78	5.45	4.99	5.91	2.55	1.83	1.31	1.96	1.54	40.77

a Adjusted for change in contents in Thorpe Lake.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	435	415	39.35
1951	1206	6,130	Dec. 7, 1950	61	360	322	2.25	30.57	335	312	29.67
1952	1236	3,720	Mar. 11, 1952	8.0	392	386	2.70	36.71	365	345	32.88
1953	1276	5,260	Feb. 21, 1953	10	319	333	2.33	31.59	313	337	32.01
1954	1336	1,820	Jan. 22, 1954	9.0	275	295	2.06	28.01	270	282	26.78
1955	1386	5,090	May 22, 1955	10	324	355	2.48	33.74	353	360	34.21
1956	1436	1,630	Apr. 15, 1956	10	294	284	1.99	27.01	277	306	29.09
1957	1506	7,630	Apr. 4, 1957	6.4	409	436	3.05	41.42	488	533	50.59
1958	1586	3,800	Nov. 19, 1957	10	485	482	3.37	45.76	400	356	33.74
1959	1626	2,610	May 23, 1959	10	312	321	2.24	30.47	377	412	39.12
1960	1706	2,300	Apr. 4, 1960	18	438	428	2.99	40.77	-	-	-

a Adjusted for change in contents in Thorpe Lake.

5090. Scott Creek above Sylva, N. C.

Location.--Lat 35°23'02", long 83°12'51", on right bank 800 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 (1941-60), 107 cfs.

Extremes.--1941-60: Maximum discharge, 2,320 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, 3,200 cfs).

Remarks.--Prior to October 1950 considerable diurnal fluctuation at low flow caused by gristmills above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	51.5	47.0	80.8	78.4	93.3	133	145	93.5	94.2	78.1	54.6	53.6	83.5
1952	40.0	68.1	145	163	129	237	143	90.4	64.2	47.0	53.7	39.8	102
1953	30.1	42.5	66.1	113	218	155	106	133	74.1	54.3	41.3	33.6	88.1
1954	27.5	30.8	76.2	206	108	162	125	83.9	64.2	41.0	38.0	24.8	82.3
1955	24.8	31.7	52.5	43.8	131	148	155	127	92.7	80.7	53.2	37.9	81.1
1956	43.9	44.0	55.5	45.4	175	167	173	130	80.4	112	56.9	53.2	94.3
1957	57.4	57.0	132	174	399	158	258	151	157	85.4	58.4	60.8	144
1958	78.4	139	159	101	136	124	148	181	80.5	109	64.9	46.0	114
1959	48.5	53.4	59.4	119	119	120	194	154	155	85.1	69.7	72.6	104
1960	150	110	156	183	210	181	211	110	88.6	60.1	80.6	53.6	133

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.17	1.03	1.84	1.78	1.92	3.03	3.18	2.13	2.07	1.78	1.24	1.18	22.35
1952	.91	1.50	3.30	3.70	2.75	5.39	3.16	2.05	1.41	1.07	1.22	.88	27.34
1953	.68	.94	1.50	2.58	4.47	3.52	2.32	3.02	1.63	1.24	.94	.74	23.58
1954	.63	.68	1.73	4.67	2.21	3.68	2.76	1.91	1.41	.93	.86	.55	22.02
1955	.56	.70	1.19	1.00	2.68	3.37	3.41	2.89	2.04	1.84	1.21	.83	21.72
1956	1.00	.97	1.26	1.03	3.72	3.80	3.81	2.95	1.77	2.55	1.29	1.17	25.32
1957	1.30	1.26	2.99	3.96	8.19	3.60	5.69	3.44	3.44	1.94	1.33	1.34	38.48
1958	1.78	3.07	3.61	2.30	2.79	2.82	3.25	4.12	1.77	2.47	1.48	1.01	30.47
1959	1.10	1.18	1.35	2.70	2.44	2.72	4.28	3.50	3.41	1.94	1.59	1.60	27.81
1960	3.41	2.43	3.55	4.16	4.47	4.12	4.64	2.50	1.95	1.37	1.83	1.18	35.61

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	116	31.11
1951	1206	685	Dec. 7, 1950	35	83.5	1.65	22.35	89.7	24.02
1952	1236	1,420	Dec. 20, 1951	29	102	2.01	27.34	92.2	24.75
1953	1276	1,960	Feb. 21, 1953	25	88.1	1.74	23.58	87.7	23.50
1954	1336	1,360	Jan. 22, 1954	22	82.3	1.62	22.02	80.1	21.43
1955	1386	1,070	Mar. 23, 1955	22	81.1	1.60	21.72	84.0	22.50
1956	1436	1,230	July 2, 1956	30	94.3	1.86	25.32	103	27.64
1957	1506	2,320	Jan. 31, 1957	40	144	2.84	38.48	155	41.39
1958	1556	1,260	July 8, 1958	36	114	2.25	30.47	95.8	25.64
1959	1626	2,120	May 29, 1959	39	104	2.05	27.81	125	33.57
1960	1706	1,040	Aug. 12, 1960	37	133	2.62	35.61	-	-

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 (1928-60), 755 cfs (unadjusted).

Extremes.--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.--Considerable diurnal fluctuation caused by Dillsboro powerplant 0.7 mile above station. Flow partly regulated by Thorpe Lake since Feb. 12, 1941, Cedar Cliff Lake since Apr. 26, 1952, Bear Creek Lake since Oct. 9, 1953, and Tennessee Creek project lakes since Mar. 22, 1955. Records of chemical analyses for the period October 1957 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	603	494	874	688	753	944	976	581	690	523	382	399	658
1952	346	541	973	936	895	1,756	1,119	855	641	379	429	380	771
1953	336	324	477	875	1,269	906	582	867	617	444	309	312	606
1954	337	269	422	1,064	723	1,067	976	595	453	325	333	246	567
1955	243	306	382	440	816	750	1,002	1,042	790	677	681	355	622
1956	487	492	408	340	1,059	984	1,134	771	463	727	473	290	634
1957	433	450	588	795	1,938	1,061	1,870	991	1,064	619	546	573	901
1958	629	1,104	1,173	907	1,089	1,011	1,129	1,404	687	853	486	438	909
1959	375	350	426	778	721	843	1,061	1,000	915	582	399	492	661
1960	930	680	836	978	1,238	1,171	1,476	775	669	453	555	552	857

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	844	33.03
1951	1206	8,500	Dec. 7, 1950	212	658	1.90	25.75	649	25.37
1952	1236	7,420	Mar. 23, 1952	120	771	2.22	30.25	711	27.87
1953	1276	8,940	Feb. 21, 1953	134	606	1.75	23.71	597	23.36
1954	1336	6,250	Jan. 22, 1954	107	567	1.63	22.19	559	21.87
1955	1386	4,560	May 23, 1955	112	622	1.79	24.34	660	25.83
1956	1436	5,160	Apr. 16, 1956	143	634	1.83	24.86	641	25.14
1957	1506	13,200	Apr. 5, 1957	155	901	2.60	35.26	1,021	39.96
1958	1556	5,170	Nov. 19, 1957	202	909	2.62	35.54	762	29.79
1959	1626	5,280	Jan. 21, 1959	184	661	1.90	25.85	770	30.12
1960	1706	3,410	Apr. 4, 1960	170	857	2.47	33.64	-	-

5120. Oconaluftee River at Birdtown, N. C.

Location.--Lat 35°27'42", long 83°21'13", on left bank 200 ft upstream from county bridge, 0.5 mile south of Birdtown, Swain County, 0.6 mile downstream from Adams Creek, 0.6 mile upstream from Goose Creek, 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.--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 (1945-46, 1948-60), 502 cfs.

Extremes.--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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	192	215	448	423	574	933	776	385	437	398	212	252	436
1952	164	416	868	942	553	992	465	312	275	169	172	148	457
1953	100	204	299	649	1,058	666	430	548	298	329	218	142	408
1954	102	127	429	1,161	425	805	633	369	270	203	200	121	405
1955	94.5	146	411	275	879	977	696	493	357	552	381	166	450
1956	258	228	321	233	1,166	948	941	505	311	460	203	203	478
1957	173	208	593	856	1,680	545	932	440	447	259	199	235	539
1958	356	777	865	414	659	629	737	775	315	518	290	184	543
1959	173	189	244	651	569	634	843	431	483	308	311	272	424
1960	474	626	802	676	744	679	895	346	291	261	535	261	549

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.20	1.30	2.81	2.65	3.25	5.85	4.70	2.41	2.65	2.50	1.33	1.53	32.18
1952	1.02	2.52	5.44	5.90	3.24	6.22	2.82	1.96	1.67	1.06	1.08	.90	33.83
1953	.63	1.23	1.87	4.07	5.99	4.17	2.61	3.43	1.81	2.06	1.36	.86	30.09
1954	.64	.77	2.69	7.27	2.41	5.05	3.84	2.31	1.64	1.27	1.25	.73	29.87
1955	.59	.88	2.57	1.73	4.98	6.12	4.22	3.09	2.16	3.46	2.39	1.01	33.20
1956	1.62	1.38	2.01	1.46	6.84	5.94	5.70	3.16	1.89	2.88	1.27	1.23	35.38
1957	1.09	1.26	3.72	5.36	9.50	3.41	5.65	2.76	2.71	1.62	1.25	1.43	39.76
1958	2.23	4.71	5.42	2.60	3.73	3.94	4.47	4.86	1.91	3.24	1.82	1.12	40.05
1959	1.08	1.15	1.53	4.08	3.22	3.98	5.11	2.70	2.93	1.93	1.95	1.65	31.31
1960	2.97	3.80	5.02	4.24	4.36	4.26	5.43	2.17	1.76	1.64	3.35	1.58	40.58

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	540	39.80
1951	1206	8,780	Mar. 29, 1951	144	436	2.37	32.18	486	35.85
1952	1236	7,070	Dec. 21, 1951	101	457	2.48	33.83	386	28.58
1953	1276	11,300	Feb. 21, 1953	88	408	2.22	30.09	413	30.46
1954	1336	7,970	Jan. 16, 1954	87	405	2.20	29.87	404	29.81
1955	1386	10,500	July 9, 1955	82	450	2.45	33.20	463	34.17
1956	1436	8,360	Apr. 16, 1956	125	478	2.60	35.38	493	36.44
1957	1506	11,600	Jan. 31, 1957	113	539	2.93	39.76	624	46.05
1958	1556	5,700	Nov. 19, 1957	138	543	2.95	40.05	426	31.45
1959	1626	12,600	Jan. 21, 1959	122	424	2.30	31.31	533	39.34
1960	1706	6,930	Nov. 28, 1959	166	549	2.98	40.58	-	-

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 (1897-1960), 1,564 cfs (unadjusted).

Extremes.--1897-1960: Maximum discharge, 61,600 cfs Aug. 30, 1940 (gage height, 15.96 ft), from rating curve extended above 25,000 cfs on basis of logarithmic plotting and slope-area measurement of peak flow; minimum, 27 cfs Sept. 10, 1925; minimum gage height, 0.47 ft Oct. 26, 1952; minimum daily discharge, 31 cfs Sept. 9, 10, 1925, caused by filling reservoir on Oconaluftee River; minimum daily during normal regulation, 186 cfs Oct. 13, 1925.

Flood in May 1840 reached a stage of 20 ft (revised), as reported by Tennessee Valley Authority.

Remarks.--Considerable diurnal fluctuation caused by powerplants above station. Flow regulated by Thorpe Lake since Feb. 12, 1941; Cedar Cliff Lake since Apr. 26, 1952; Bear Creek Lake since Oct. 9, 1953; Tennessee Creek project lakes since Mar. 22, 1955, and two small reservoirs with combined capacity of 250 cfs-days. Records of water temperatures for period October 1950 to September 1951 and chemical analyses for the period October 1950 to September 1960 are published in reports of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	921	823	1,557	1,357	1,645	2,399	2,211	1,203	1,342	1,092	689	783	1,333
1952	605	1,157	2,258	2,366	1,790	3,299	1,873	1,395	1,057	623	706	599	1,479
1953	496	623	920	1,800	2,843	2,001	1,245	1,736	1,068	911	642	526	1,225
1954	508	486	1,038	2,839	1,387	2,309	1,921	1,122	841	618	611	393	1,174
1955	356	474	887	801	2,120	2,183	2,112	1,790	1,369	1,431	1,154	571	1,265
1956	830	795	840	660	2,776	2,394	2,521	1,543	883	1,330	737	540	1,314
1957	642	706	1,406	2,060	4,566	1,957	3,278	1,647	1,728	983	830	900	1,703
1958	1,116	2,194	2,485	1,584	2,185	2,030	2,284	2,611	1,176	1,625	907	721	1,741
1959	612	624	749	1,660	1,612	1,749	2,316	1,711	1,696	1,074	814	829	1,284
1960	1,504	1,512	1,925	1,949	2,349	2,190	2,747	1,380	1,117	835	1,181	890	1,628

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,718	35.59
1951	1206	14,300	Dec. 7, 1950	448	1,333	2.04	27.63	1,393	28.87
1952	1236	14,400	Dec. 21, 1951	306	1,479	2.26	30.73	1,313	27.28
1953	1276	22,500	Feb. 21, 1953	268	1,225	1.87	25.39	1,225	25.38
1954	1336	18,700	Jan. 22, 1954	246	1,174	1.79	24.33	1,147	23.77
1955	1386	13,200	Feb. 6, 1955	224	1,265	1.93	26.22	1,328	27.52
1956	1436	14,400	Apr. 16, 1956	300	1,314	2.01	27.31	1,339	27.83
1957	1506	30,000	Jan. 31, 1957	308	1,703	2.60	35.28	1,957	40.55
1958	1556	9,860	Nov. 19, 1957	432	1,741	2.66	36.08	1,422	29.47
1959	1626	19,100	Jan. 21, 1959	393	1,284	1.96	26.60	1,532	31.75
1960	1706	9,770	Apr. 3, 1960	482	1,628	2.49	33.84	-	-

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 (1935-60), 44.1 cfs.

Extremes.--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.--Prior to October 1951 occasional slight diurnal fluctuation at low flow caused by small powerplant 1.1 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	16.6	16.7	32.9	40.0	57.6	95.3	72.5	35.8	34.6	30.8	15.0	24.7	39.3
1952	17.8	45.7	90.3	94.3	50.6	91.1	39.1	29.4	20.9	11.2	12.2	11.3	42.9
1953	6.95	15.1	24.5	59.0	95.6	65.5	35.5	59.5	25.6	28.3	19.0	11.6	36.9
1954	8.15	10.9	39.9	120	37.8	67.5	52.6	33.6	26.0	13.8	12.3	6.29	35.9
1955	5.92	10.9	31.1	26.7	95.8	99.9	73.7	47.0	42.4	58.9	26.8	14.4	44.1
1956	24.8	23.3	33.5	22.8	129	96.6	88.2	53.9	25.7	35.7	13.7	11.4	46.2
1957	9.66	13.5	57.9	103	180	54.8	81.8	26.5	38.1	22.3	12.4	17.8	50.6
1958	25.4	64.5	87.5	38.2	63.7	63.8	80.7	75.9	22.3	39.6	17.6	10.7	49.1
1959	11.2	11.6	14.7	49.5	56.2	53.3	66.3	36.5	40.0	26.5	21.9	15.4	33.4
1960	39.2	69.7	65.9	58.6	59.4	61.9	89.1	27.6	24.7	19.9	27.4	17.8	46.7

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.39	1.35	2.75	3.34	4.35	7.96	5.86	2.99	2.80	2.57	1.25	1.99	38.60
1952	1.49	3.69	7.54	7.87	3.95	7.61	3.16	2.45	1.69	.93	1.02	.92	42.32
1953	.58	1.22	2.05	4.93	7.21	5.47	2.87	4.97	2.07	2.37	1.59	.94	36.27
1954	.68	.88	3.33	10.05	2.85	5.64	4.25	2.81	2.10	1.16	1.02	.51	35.28
1955	.49	.88	2.60	2.23	7.23	8.34	5.96	3.93	3.43	4.92	2.24	1.17	43.42
1956	2.07	1.88	2.80	1.91	10.11	8.07	7.13	4.51	2.08	2.98	1.14	.93	45.61
1957	.81	1.09	4.84	8.61	13.60	4.58	6.61	2.22	3.08	1.86	1.04	1.44	49.78
1958	2.12	5.21	7.31	3.19	4.81	5.33	6.52	6.34	1.81	3.31	1.47	.86	48.28
1959	.93	.94	1.23	4.14	4.24	4.45	5.36	3.05	3.23	2.22	1.83	1.25	32.87
1960	3.27	5.64	5.51	4.89	4.64	5.17	7.20	2.30	2.00	1.66	2.29	1.44	46.01

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	53.8	52.95
1951	1206	745	Mar. 29, 1951	10	39.3	2.85	38.60	46.6	45.83
1952	1236	931	Mar. 11, 1952	6.5	42.9	3.11	42.32	33.9	33.45
1953	1276	827	Feb. 21, 1953	6.0	36.9	2.67	36.27	37.9	37.31
1954	1336	987	Jan. 16, 1954	5.2	35.9	2.60	35.28	34.9	34.36
1955	1386	1,210	July 9, 1955	5.3	44.1	3.20	43.42	47.0	46.20
1956	1436	614	Apr. 15, 1956	7.9	46.2	3.35	45.61	46.2	45.60
1957	1506	1,430	Jan. 31, 1957	7.1	50.6	3.67	49.78	58.6	57.68
1958	1556	485	Apr. 29, 1958	8.3	49.1	3.56	48.28	37.4	36.74
1959	1626	980	Jan. 21, 1959	6.6	33.4	2.42	32.87	44.9	44.19
1960	1706	729	Apr. 3, 1960	11	46.7	3.38	46.01	-	-

5140. Hazel Creek at Proctor, N. C.

Location.--Lat 35°28'38", long 83°42'58", in Great Smoky Mountains National Park, 0.4 mile northeast of Proctor, Swain County, 1.3 miles downstream from Rowan Branch, and 1.4 miles upstream from Fontana Lake.

Drainage area.--44.4 sq mi.

Records available.--October 1942 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,803.39 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--10 years (1942-52), 130 cfs.

Extremes.--1942-52: Maximum discharge, 4,870 cfs Mar. 29, 1951 (gage height, 5.86 ft), from rating curve extended above 1,000 cfs by logarithmic plotting; minimum, 22 cfs Oct. 13-17, 29, 30, 1948; minimum gage height, 1.26 ft Oct. 15-17, 1948, Sept. 11, 12, 1952.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	39.1	41.2	89.2	100	138	276	217	105	104	105	53.0	54.3	110
1952	38.8	105	225	245	154	227	123	91.6	79.1	49.8	47.5	33.1	118

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.02	1.04	2.32	2.60	3.25	7.17	5.46	2.72	2.62	2.73	1.38	1.37	33.68
1952	1.01	2.64	5.84	6.36	3.75	5.90	3.09	2.38	1.99	1.29	1.23	.83	36.31

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	153	46.70
1951	1206	4,870	Mar. 29, 1951	33	110	2.48	33.68	127	38.79
1952	1236	1,250	Dec. 21, 1951	24	118	2.66	36.31	-	-

5145. Fontana Lake at Fontana Dam, N. C.

Location.--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, 9.6 (revised) miles upstream from Cheoah Dam, and at mile 61.0.

Drainage area.--1,571 sq mi.

Records available.--October 1944 to September 1960. Prior to November 1944 month-end contents only, published in WSP 1306. Prior to 1954 published as "Fontana Reservoir."

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

Extremes.--1944-60: Maximum contents, 722,300 cfs-days July 23, 1949 (elevation, 1,708.91 ft); minimum (after first filling), 78,300 cfs-days Jan. 29, 1955 (elevation, 1,472.00 ft).

Remarks.--Lake 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 lake 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). Lake is used for navigation, flood control, and power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	389,900	290,300	279,600	255,800	278,500	407,000	514,800	572,700	619,300	621,700	566,200	494,000
1952	373,300	336,900	358,700	390,200	387,100	542,700	582,700	561,100	510,000	420,900	339,300	260,800
1953	208,500	207,600	213,800	276,900	383,100	448,400	453,500	495,400	484,200	428,100	387,400	344,900
1954	260,600	191,900	193,200	333,200	330,400	409,600	458,800	445,400	437,200	408,800	359,300	288,600
1955	219,900	158,600	110,200	78,800	137,100	252,200	387,000	455,100	428,900	389,400	359,400	320,400
1956	249,900	178,400	118,100	101,000	274,200	407,000	564,400	612,200	612,800	629,700	578,600	499,800
1957	383,000	252,100	262,100	318,200	415,400	428,600	550,400	556,600	571,700	523,700	459,000	401,600
1958	369,600	396,000	339,400	245,400	275,500	353,200	509,200	644,200	602,600	607,200	537,800	391,600
1959	275,500	181,500	160,700	210,800	268,800	320,200	451,600	537,500	605,100	594,200	508,700	453,300
1960	409,100	336,500	299,100	297,700	394,200	496,500	609,300	631,700	610,100	578,600	538,700	424,000

5150. Little Tennessee River at Fontana Dam, N. C.

Location.--Lat 35°26'44", long 83°48'19", 0.4 mile downstream from Fontana Dam, Swain and Graham Counties, 5.3 miles upstream from Twenty Mile Creek, and at mile 60.6.

Drainage area.--1,571 sq mi.

Records available.--August 1938 to June 1955. Prior to October 1944, published as "near Fontana."

Gage.--Water-stage recorder. Datum of gage is 1,270.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1944, at site 500 ft upstream at datum 5.09 ft higher. Oct. 1, 1944, to Feb. 12, 1945, at site 1,200 ft downstream at present datum. Feb. 13, 1945, to Sept. 24, 1946, discharge computed from powerplant records at Fontana Dam. Since Sept. 25, 1946, auxiliary water-stage recorder 2 miles downstream at same datum.

Average discharge.--16 years (1938-54), 3,586 cfs (adjusted for storage).

Extremes.--1938-55: Maximum discharge, 71,200 cfs Aug. 30, 1940 (gage height, 15.94 ft, site and datum then in use), from rating curve extended above 21,000 cfs on basis of computation of flow into Cheoah Lake below station; minimum daily, 5 cfs (estimated leakage prior to installation of turbines) Nov. 8-11, 1944, Dec. 24, 1944, to Jan. 1, 1945.

Floods in May 1840 and March 1867 reached stages of 21 and 23 ft, respectively (former datum), from flood profiles by Tennessee Valley Authority.

Remarks.--Flow partly regulated by Thorpe Lake and Nantahala Lake; completely regulated by Fontana Lake.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	5,153	5,538	4,133	4,251	3,120	2,028	1,994	1,093	1,891	2,527	3,450	4,234	3,284
1952	5,454	3,933	4,890	4,605	5,034	3,989	3,448	4,168	4,719	4,654	4,565	4,193	4,472
1953	3,033	1,624	2,179	2,598	3,114	2,585	3,030	3,208	2,911	3,909	2,748	2,783	2,810
1954	3,880	3,605	2,882	3,262	3,586	3,223	3,151	3,595	2,542	2,674	3,275	3,506	3,263
1955	3,300	3,410	3,892	3,134	3,142	1,360	992	2,450	4,332	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	4,632	4,391	37.94
1951	1206	6,460	Nov. 25, 1950	40	3,284	3,244	2.06	28.03	3,242	3,436	29.69
1952	1236	17,100	Dec. 28, 1951	1,670	4,472	3,770	2.40	32.67	3,848	3,316	28.73
1953	1276	5,600	Many days.	460	2,810	3,096	1.97	26.75	3,105	3.086	26.66
1954	1336	8,100	At times.	857	3,263	3,057	1.95	26.42	3,284	3,002	25.94
1955	1386	b8,100	At times.	40	-	-	-	-	-	-	-

a Adjusted for change in contents in Thorpe, Nantahala, and Fontana Lakes.
b Maximum during period October to June.

5160. Snowbird Creek near Robbinsville, N. C.

Location.--Lat 35°18'40", long 83°51'35", 0.5 mile upstream from Hooper Branch, 3.1 miles west of Robbinsville, Graham County, and 4.6 miles downstream from Little Snowbird Creek.

Drainage area.--42.0 sq mi.

Records available.--October 1942 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 1,953.57 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--10 years (1942-52), 159 cfs.

Extremes.--1942-52: Maximum discharge, 7,430 cfs Mar. 29, 1951 (gage height, 8.96 ft), from rating curve extended above 2,200 cfs on basis of slope-area measurement of peak flow; minimum, 20 cfs Dec. 24, 1943 (gage height, 0.89 ft), result of freezeup.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	56.9	67.2	99.3	118	158	320	266	123	108	98.5	51.7	60.8	127
1952	45.4	107	265	281	197	300	145	107	96.5	51.4	59.3	39.2	141

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.56	1.78	2.73	3.25	3.90	8.77	7.06	3.37	2.87	2.70	1.42	1.62	41.03
1952	1.25	2.84	7.28	7.71	5.06	8.23	3.86	2.93	2.56	1.41	1.63	1.04	45.80

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-		-	-	-	-	182	58.78
1951	1206	7,430	Mar. 29, 1951	33	127	3.02	41.03	143	46.33
1952	1236	2,690	Mar. 11, 1952	29	141	3.36	45.80	-	-

5165. Santeetlah Lake near Robbinsville, N. C.

Location.--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, 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. Prior to 1954, published as "Santeetlah Reservoir."

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.

Extremes.--1927-60: Maximum contents, 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).

Remarks.--Lake 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 lake 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). Lake is used for power.

Cooperation.--Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Contents, in cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	32,500	23,000	23,800	23,400	27,100	50,000	55,200	45,100	36,500	36,600	39,700	39,200
1952	27,100	26,100	48,200	68,200	71,000	79,000	67,800	52,000	42,100	36,300	28,000	21,500
1953	18,000	19,400	17,000	29,700	51,100	64,800	56,300	57,300	46,600	42,500	41,600	27,400
1954	20,600	19,500	19,900	48,200	47,400	57,400	59,600	60,000	57,300	47,000	38,700	30,300
1955	22,200	16,400	21,100	21,800	33,600	43,200	47,700	40,100	38,800	30,200	20,200	16,600
1956	16,500	19,100	18,200	17,600	42,200	50,800	55,800	47,500	32,400	25,100	28,700	30,400
1957	24,100	19,000	30,600	47,400	77,900	74,500	76,000	63,400	62,100	58,600	42,100	28,300
1958	30,200	42,700	69,200	68,600	67,400	62,600	62,300	66,000	54,300	49,700	47,100	45,100
1959	31,700	23,000	17,200	29,300	33,600	29,500	41,000	38,600	40,900	26,100	18,100	23,200
1960	33,200	52,400	51,000	46,400	53,300	60,300	60,200	59,300	55,100	48,800	50,200	39,500

5180. Little Tennessee River at Calderwood, Tenn.

Location.--Lat 35°30'24", long 84°00'14", on right bank 250 ft downstream from Scona Lodge Ferry, two-thirds of a mile west of Calderwood, Blount County, 2½ miles downstream from Calderwood Dam, and at mile 41.1.

Drainage area.--1,862 sq mi.

Records available.--October 1911 to December 1918, October 1920 to August 1957. Monthly discharge only for some periods published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 861.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1927, staff gages and water-stage recorders at several sites within 1 mile of present site at various datums.

Average discharge.--40 years (1912-18, 1922-56), 4,270 cfs (unadjusted).

Extremes.--1912-18, 1921-57: Maximum discharge, 82,000 cfs Mar. 4, 1917; maximum gage height observed, 11.75 ft Mar. 4, 1917, before breaking of levee near gage; minimum discharge, 7.2 cfs Sept. 4, 1955 (gage height, -0.66 ft); minimum daily, 76 cfs June 9, 1957.

Remarks.--Flow regulated by several reservoirs above station.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	5,931	5,934	4,604	4,752	3,810	3,039	3,072	1,947	2,677	2,863	3,412	4,425	3,871
1952	5,919	4,445	5,593	5,322	5,733	5,400	4,536	5,270	5,439	4,815	4,834	4,435	5,147
1953	3,152	1,768	2,665	3,374	4,169	3,279	4,218	4,326	3,678	4,331	2,815	3,398	3,427
1954	4,253	3,772	3,352	4,313	4,263	4,367	4,124	4,424	3,558	3,457	3,883	3,935	3,974
1955	3,637	3,796	4,375	3,569	4,145	2,550	2,249	3,241	4,937	4,824	4,136	3,219	3,722
1956	4,768	4,879	4,789	2,824	1,937	2,889	2,180	3,408	3,071	2,970	3,220	4,406	3,451
1957	5,696	6,379	3,631	4,229	8,876	5,569	5,544	4,825	5,080	4,583	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	5,468	5,184	37.79
1951	1206	14,500	Dec. 7, 1950	308	3,871	3,796	2.04	27.68	3,832	4,091	29.82
1952	1236	17,200	Dec. 28, 1951	1,320	5,147	4,396	2.36	32.14	4,445	3,829	27.99
1953	1276	8,330	Feb. 21, 1953	1,070	3,427	3,729	2.00	27.19	3,743	3,729	27.19
1954	1336	12,800	Jan. 22, 1954	1,070	3,974	3,764	2.02	27.44	4,011	3,732	27.21
1955	1386	8,250	Feb. 23, 1955	446	3,722	3,791	2.04	27.63	3,942	3,963	28.89
1956	1436	12,000	June 11, 1956	281	3,451	4,015	2.16	29.35	3,555	4,073	29.78
1957	1506	13,400	Jan. 31, 1957	-	-	-	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-

a Adjusted for change in contents in Fontana, Cheoah, Calderwood, Nantahala, Thorpe, and Santeetlah Lakes.

5182. Chilhowee Lake near Chilhowee, Tenn.

Location.--Lat 35°32'44", long 84°03'01", at Chilhowee Dam on Little Tennessee River, 2.4 miles southwest of Chilhowee, Blount County, 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.

Extremes.--1957-60: Maximum contents, 25,200 cfs-days Feb. 6, 1958 (elevation, 874.46 ft); minimum (after first filling), 19,300 cfs-days Feb. 24, 1960 (elevation, 867.48 ft).

Remarks.--Lake 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 lake 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). Lake is used for navigation, flood control, and power.

Cooperation.--Gage-height record furnished by Aluminum Co. of America; level storage records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1957	-	-	-	-	-	-	-	-	-	-	21.8	23.5
1958	23.7	23.4	23.1	23.1	23.2	24.1	24.4	23.6	24.1	23.3	23.0	22.2
1959	23.4	22.6	23.6	24.3	23.6	24.0	24.0	23.5	23.1	23.8	24.3	23.6
1960	24.0	23.4	23.3	23.9	24.2	24.2	23.1	23.9	22.0	22.1	22.0	22.4

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.--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.--Flow regulated by many reservoirs above station.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	-	-	-	-	-	-	-	-	-	4,646	4,962	6,876	-
1959	6,047	5,307	3,050	3,220	2,839	3,803	2,192	1,787	2,309	4,033	5,264	4,139	3,675
1960	5,061	6,574	7,145	5,921	3,854	4,113	3,962	3,218	4,297	3,494	4,925	6,838	4,951

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1958	1626	-	-	-	-	-	-	-	-	-	-
1959	1626	13,400	Jan. 16, 1959	1,350	3,675	3,791	1.91	25.90	4,043	4,614	31.52
1960	1706	12,400	May 11, 1960	1,360	4,951	4,890	2.46	33.50	-	-	-

a Adjusted for change in contents in Santeetlah, Chilhowee, Fontana, Thorpe, Cheoah, Calderwood, and Nantahala Lakes.

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 (1925-60), 278 cfs.

Extremes.--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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	79.1	100	229	224	395	693	508	210	154	121	66.4	88.7	238
1952	60.8	223	513	494	339	565	221	175	173	63.7	93.7	55.5	248
1953	35.0	116	193	572	724	435	354	471	134	113	63.6	61.8	270
1954	37.6	55.3	171	805	231	503	378	240	253	83.8	57.9	28.0	238
1955	28.4	58.3	200	152	508	511	540	195	165	181	131	60.3	225
1956	119	148	190	158	843	536	493	274	116	140	66.2	55.1	259
1957	44.4	71.0	275	561	972	365	528	252	559	215	85.6	83.4	329
1958	113	467	547	303	541	359	449	435	138	254	167	72.5	319
1959	62.4	83.7	88.0	350	271	264	503	189	175	130	79.7	143	194
1960	219	466	505	341	446	476	311	180	100	86.8	152	120	283

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.77	0.95	2.23	2.19	3.49	6.77	4.80	2.05	1.46	1.19	0.65	0.84	27.39
1952	.59	2.11	5.01	4.83	3.10	5.52	2.09	1.71	1.63	.62	.92	.52	28.65
1953	.34	1.10	1.89	5.59	6.39	4.25	3.35	4.60	1.26	1.10	.62	.58	31.07
1954	.37	.52	1.67	7.87	2.04	4.91	3.57	2.34	2.39	.82	.57	.26	27.33
1955	.28	.55	1.95	1.48	4.49	4.99	5.10	1.91	1.56	1.77	1.28	.57	25.93
1956	1.16	1.40	1.85	1.54	7.71	5.23	4.67	2.67	1.09	1.37	.65	.52	29.86
1957	.43	.67	2.68	5.48	8.57	3.56	4.99	2.46	5.28	2.10	.84	.79	37.85
1958	1.11	4.42	5.34	2.96	4.77	3.51	4.25	4.25	1.31	2.48	1.64	.69	36.73
1959	.61	.79	.86	3.42	2.39	2.58	4.76	1.85	1.66	1.27	.78	1.35	22.32
1960	2.14	4.41	4.93	3.34	4.08	4.65	2.94	1.76	.95	.85	1.48	1.13	32.66

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	305	35.13
1951	1206	15,100	Mar. 29, 1951	40	238	2.02	27.39	271	31.15
1952	1236	6,560	Mar. 11, 1952	36	248	2.10	28.65	210	24.27
1953	1276	10,400	Feb. 21, 1953	31	270	2.29	31.07	263	30.30
1954	1336	10,300	Jan. 21, 1954	22	238	2.02	27.33	240	27.55
1955	1386	5,960	Apr. 6, 1955	24	225	1.91	25.93	240	27.56
1956	1436	6,500	Apr. 15, 1956	37	259	2.19	29.86	253	29.23
1957	1506	17,500	Jan. 31, 1957	32	329	2.79	37.85	391	44.94
1958	1556	5,720	Nov. 18, 1957	54	319	2.70	36.73	244	28.12
1959	1626	8,180	Jan. 21, 1959	46	194	1.64	22.32	274	31.54
1960	1706	8,780	Nov. 27, 1959	45	283	2.40	32.66	-	-

5190. Tellico River near Vonore, Tenn.

Location.--Lat 35°33'33", long 84°13'32", on left bank 0.1 mile downstream from Notchy Creek, 2.3 miles southeast of Vonore, Monroe County, and 4.2 miles upstream from mouth.

Drainage area.--271 sq mi.

Records available.--June 1948 to October 1952.

Gage.--Water-stage recorder. Datum of gage is 768.44 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--1948-52: Maximum discharge, 14,900 cfs Mar. 29, 1951 (gage height, 25.38 ft); minimum, 54 cfs July 30, 1952 (gage height, 1.45 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	140	187	399	427	871	1,452	962	349	250	206	103	140	455
1952	105	471	1,008	1,012	634	1,154	380	254	249	95.8	185	91.3	471

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.60	0.77	1.70	1.82	3.35	6.18	3.96	1.48	1.03	0.88	0.44	0.58	22.79
1952	.45	1.94	4.29	4.30	2.52	4.91	1.56	1.08	1.03	.41	.79	.38	23.66

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	589	29.49
1951	1206	14,900	Mar. 29, 1951	64	455	1.68	22.79	527	26.40
1952	1236	a4,500	Mar. 11, 1952	56	471	1.74	23.66	-	-

a Maximum daily discharge.

5195. Little Tennessee River at McGhee, Tenn.

Location.--Lat 35°36'16", long 84°12'43", on right bank at mouth of Tellico River, 100 ft upstream from bridge on U.S. Highway 411, 0.3 mile upstream from Louisville & Nashville Railroad bridge, and 0.5 mile south of McGhee, Monroe County. Records include flow of Tellico River.

Drainage area.--2,443 sq mi, 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 located at various sites and datums within 0.4 mile of present site.

Average discharge.--56 years (1904-60), 5,610 cfs (unadjusted).

Extremes.--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.--Flow regulated by many reservoirs above station.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	6,290	6,464	5,580	5,718	5,598	5,889	5,132	2,558	3,239	3,281	3,585	4,621	4,823
1952	6,270	5,563	7,728	7,458	7,137	7,340	5,135	5,631	5,753	4,967	5,171	4,512	6,058
1953	3,240	2,108	3,290	5,224	7,135	4,866	5,254	6,347	3,949	4,791	3,124	3,567	4,393
1954	4,339	3,933	3,672	7,823	4,920	6,317	5,377	4,989	3,981	3,492	4,000	3,987	4,739
1955	3,691	3,962	5,030	4,103	6,094	4,696	4,106	3,589	5,371	5,256	4,325	3,218	4,443
1956	4,701	5,012	5,095	3,182	5,587	4,715	4,039	4,112	3,324	3,167	3,245	4,364	4,205
1957	5,859	6,677	4,440	5,922	13,910	6,920	7,245	5,505	6,417	4,947	4,304	4,954	6,365
1958	4,472	8,105	10,380	8,998	8,464	5,191	3,823	4,797	5,594	5,520	5,491	7,181	6,489
1959	6,244	5,606	3,224	4,053	3,655	4,719	3,636	2,165	2,712	4,442	5,629	4,685	4,236
1960	5,568	7,934	8,693	7,194	5,219	5,445	4,625	3,336	4,418	3,611	5,294	7,289	5,718

Yearly discharge, in cubic feet per second, of Little Tennessee River at McGhee, Tenn.

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	6,701	6,417	35.66
1951	1206	32,600	Mar. 29, 1951	640	4,823	4,748	1.94	26.38	4,930	5,189	28.83
1952	1236	19,800	Dec. 21, 1951	2,190	6,058	5,308	2.17	29.58	5,143	4,527	25.22
1953	1276	23,000	Feb. 21, 1953	1,520	4,393	4,695	1.92	26.09	4,669	4,655	25.86
1954	1336	30,500	Jan. 22, 1954	1,710	4,739	4,529	1.85	25.17	4,802	4,523	25.13
1955	1386	20,900	Apr. 7, 1955	574	4,443	4,512	1.85	25.07	4,621	4,642	25.79
1956	1436	20,900	Feb. 3, 1956	1,050	4,205	4,769	1.95	26.57	4,384	4,903	27.32
1957	1506	40,300	Feb. 1, 1957	1,570	6,365	6,154	2.52	34.20	6,869	7,361	40.90
1958	1556	25,800	Nov. 18, 1957	1,950	6,489	6,523	2.67	36.25	5,826	5,063	28.13
1959	1626	19,200	Jan. 22, 1959	1,480	4,236	4,353	1.78	24.19	4,835	5,406	30.04
1960	1706	20,900	Nov. 28, 1959	1,610	5,718	5,656	2.32	31.52	-	-	-

a Adjusted for change in contents in Santeetlah, Chilhowee, Fontana, Thorpe, Cheoah, Calderwood, and Nantahala Lakes.

5200. Tennessee River at Loudon, Tenn.

Location.--Lat 35°44'33", long 84°19'56", in second pier from left bank at bridge on U.S. Highway 11, at Loudon, Loudon County, 9¾ miles downstream from Little Tennessee River, 10¾ miles downstream from Fort Loudoun Dam, 61 miles upstream from Watts Bar Dam, and at river mile 591.6.

Drainage area.--12,220 sq mi.

Records available.--October 1922 to September 1955. Gage-height records collected in same vicinity since 1884 are contained in reports of U.S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 726.29 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1929, staff gage at Huff Ferry, 5½ (revised) miles downstream at datum 6.60 ft lower. Since Feb. 17, 1942, auxiliary water-stage recorder at Lenoir City, 8¾ miles upstream from base gage.

Average discharge.--33 years (1922-55), 18,700 cfs.

Extremes.--1922-55: Maximum discharge, 169,000 cfs Mar. 28, 1936 (gage height, 25.75 ft); minimum daily, 1,820 cfs Apr. 30, 1950; minimum gage height, 0.82 ft Sept. 12, 1925, site and datum then in use.

Floods of Mar. 5, 1917, reached a stage of 32.9 ft, present site and datum (discharge, 225,000 cfs, from rating curve extended above 151,000 cfs). U.S. Weather Bureau reports stages of 49.7 ft Mar. 10 or 11, 1867, 42.7 ft Feb. 27, 1875, and 34.9 ft Mar. 31, 1886, present site and datum. Flood of Mar. 31, 1886, may have reached a higher stage; no readings obtained that year after Mar. 31.

Remarks.--Flow regulated by many lakes above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	24,570	25,790	26,140	20,570	21,140	20,780	16,770	16,720	16,060	12,970	17,250	16,160	19,570
1952	18,440	15,230	32,500	23,530	23,200	20,160	16,820	12,400	13,070	14,960	13,800	13,050	18,110
1953	14,530	12,380	17,620	16,940	26,490	21,260	19,140	12,330	17,670	12,980	14,780	11,800	16,430
1954	10,540	11,910	14,170	27,100	18,360	18,330	13,510	12,450	14,560	16,610	14,800	12,090	15,370
1955	9,324	11,310	14,190	15,650	14,480	24,600	13,040	14,490	15,360	‡16,320	‡20,410	‡14,640	‡15,340

‡ Not previously published; estimated on basis of Fort Loudoun Dam releases plus flow of Little Tennessee River at McGhee plus 1 percent of total discharge.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	23,620	26.24
1951	1206	60,400	Mar. 30, 1951	3,030	19,570	1.60	21.74	18,730	20.80
1952	1236	61,700	Dec. 22, 1951	4,280	18,110	1.48	20.17	16,280	18.14
1953	1276	56,400	Feb. 21, 1953	2,690	16,430	1.34	18.25	15,750	17.50
1954	1336	81,000	Jan. 16, 1954	3,420	15,370	1.26	17.07	15,220	16.91
1955	1386	51,100	Mar. 22, 1955	-	‡15,340	‡1.26	‡17.04	-	-

‡ Not previously published; estimated on basis of Fort Loudoun Dam releases plus flow of Little Tennessee River at McGhee plus 1 percent of total discharge.

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 (1945-60), 190 cfs.

Extremes.--1945-60: Maximum discharge, 9,640 cfs Jan. 29, 1957 (gage height, 19.3 ft), 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, 9.0 cfs Sept. 5, 1955.

Maximum stage known 21.3 ft June 22, 1901, from floodmark (discharge, 11,500 cfs), from report by Tennessee Valley Authority, present site and datum. Flood of Feb. 18, 1944, reached a stage of 13.7 ft, from floodmark (discharge, 5,500 cfs), from report by Tennessee Valley Authority, present site and datum.

Remarks.--Diurnal fluctuation at low flow caused by mill above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	41.9	56.2	278	134	326	410	333	166	101	53.5	64.6	52.4	167
1952	32.4	70.0	198	444	219	435	215	261	75.5	54.9	44.2	27.1	174
1953	22.6	66.1	127	268	419	330	173	519	171	238	40.2	25.2	199
1954	21.0	24.4	34.2	212	172	305	197	199	77.4	149	67.7	41.6	125
1955	61.7	86.0	235	197	595	1,197	251	121	59.5	41.8	38.4	16.8	240
1956	23.8	40.0	46.0	91.8	557	436	495	210	88.1	82.5	62.2	64.5	181
1957	69.0	72.4	197	821	869	278	319	74.2	111	60.1	33.8	164	252
1958	113	235	468	278	381	372	451	569	88.7	112	238	53.8	280
1959	38.7	47.6	106	218	183	292	462	104	43.7	34.7	31.8	24.7	132
1960	111	221	293	248	311	351	297	120	59.9	82.0	67.8	28.7	182

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.35	0.45	2.31	1.11	2.45	3.40	2.68	1.37	0.81	0.44	0.54	0.42	16.33
1952	.27	.56	1.64	3.68	1.70	3.61	1.73	2.17	.61	.46	.37	.22	17.02
1953	.19	.53	1.05	2.22	3.13	2.73	1.38	4.30	1.37	1.97	.33	.20	19.40
1954	.17	.20	.28	1.76	1.29	2.52	1.58	1.65	.62	1.23	.56	.33	12.19
1955	.51	.69	1.95	1.64	4.46	9.93	2.02	1.00	.48	.35	.32	.14	25.49
1956	.20	.32	.38	.76	4.32	3.62	3.97	1.74	.71	.68	.52	.52	17.74
1957	.57	.58	1.64	6.81	6.51	2.31	2.56	.62	.89	.50	.28	1.32	24.59
1958	.94	1.89	3.88	2.31	2.85	3.09	3.62	4.72	.71	.93	1.97	.43	27.34
1959	.32	.38	.88	1.81	1.37	2.42	3.71	.87	.35	.29	.26	.20	12.86
1960	.92	1.77	2.43	2.06	2.41	2.92	2.39	1.00	.48	.68	.56	.23	17.85

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	218	21.10
1951	1206	2,500	Dec. 8, 1950	32	167	1.20	16.33	161	15.69
1952	1236	2,630	Jan. 22, 1952	18	174	1.25	17.02	166	16.32
1953	1276	5,080	May 19, 1953	16	199	1.43	19.40	188	18.28
1954	1336	2,180	Jan. 22, 1954	16	125	.899	12.19	151	14.69
1955	1386	4,700	Mar.1,6, 1955	9.0	240	1.73	23.49	217	21.24
1956	1436	3,650	Apr. 16, 1956	12	181	1.30	17.74	200	19.63
1957	1506	9,640	Jan. 29, 1957	15	252	1.81	24.59	292	28.51
1958	1556	3,750	May 6, 1958	38	280	2.01	27.34	228	22.21
1959	1626	2,360	Jan. 22, 1959	14	132	.950	12.86	168	16.40
1960	1706	1,860	Nov. 24, 1959	18	182	1.31	17.85	-	-

5220. Little River at Wardell, Va.

Location.--Lat 37°02'16", long 81°47'52", on right bank 50 ft upstream from Katie Branch, 0.5 mile downstream from Indian Creek, 0.5 mile northwest of Wardell, Tazewell County, and 16.0 miles upstream from mouth.

Drainage area.--103 sq mi.

Records available.--August 1949 to September 1952.

Gage.--Water-stage recorder. Datum of gage is 2,033.01 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--1949-52: Maximum discharge, 1,830 cfs Feb. 2, 1950 (gage height, 8.05 ft), from rating curve extended above 960 cfs on basis of slope-area measurement of peak flow; minimum, 9.8 cfs Nov. 25, 1950; minimum daily, 16 cfs Sept. 12, 13, 1952.
Maximum stage known, 14.34 ft Jan. 29, 1957, from floodmarks.

Remarks.--Small diurnal fluctuation at low flow caused by mill above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	38.5	52.8	231	140	274	319	286	152	94.1	48.8	45.6	74.5	145
1952	36.6	95.3	235	364	200	350	163	164	57.1	37.7	30.3	26.1	147

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.43	0.57	2.58	1.57	2.77	3.57	3.10	1.71	1.02	0.55	0.51	0.81	19.19
1952	.41	1.03	2.63	4.07	2.09	3.92	1.76	1.83	.62	.42	.34	.28	19.40

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	175	23.08
1951	1206	1,370	Dec. 7, 1950	30	145	1.41	19.19	149	19.68
1952	1236	1,580	Mar. 11, 1952	16	147	1.43	19.40	-	-

5230. Cedar Creek near Lebanon, Va.

Location.--Lat 36°54'29", long 82°02'20", on right bank 2.3 miles east of Lebanon, Russell County, 800 ft upstream from Roaring Spring Creek, 1.3 miles downstream from Burgess Creek, and 1.9 miles upstream from Little Cedar Creek.

Drainage area.--51.5 sq mi.

Records available.--October 1952 to September 1959, water year 1960 (annual maximum).

Gage.--Crest-stage gage. Datum of gage is 1,928.96 ft above mean sea level (Tennessee Valley Authority bench mark). Prior to Oct. 1, 1959, water-stage recorder at same site and datum.

Average discharge.--7 years (1952-59), 74.0 cfs.

Extremes.--1952-60: Maximum discharge, 2,740 cfs Jan. 29, 1957 (gage height, 4.48 ft in gage well, 4.7 ft outside), from rating curve extended above 2,300 cfs on basis of contracted-opening measurement of peak flow.
1952-59: Minimum discharge, 3.8 cfs Jan. 15, 1956; minimum gage height, 1.27 ft Oct. 19, 1952, Dec. 26, 1953, result of freezeup.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	6.00	25.6	69.4	123	201	130	55.7	181	54.0	24.9	10.0	9.50	73.6
1954	7.13	6.58	14.2	134	59.1	123	79.0	53.0	19.1	11.2	14.3	7.21	44.1
1955	10.3	20.0	88.6	49.6	231	503	58.6	27.9	17.1	23.3	10.7	6.48	86.7
1956	9.54	12.8	15.2	46.2	211	151	183	91.4	35.2	20.0	11.6	14.3	66.1
1957	17.8	16.9	76.0	279	383	95.8	110	24.7	68.2	18.2	11.3	41.5	93.2
1958	20.0	83.0	133	87.6	150	128	155	278	29.0	73.2	104	20.2	105
1959	15.3	15.6	29.0	68.8	78.8	101	170	53.5	29.0	13.2	10.8	8.59	49.2
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	0.13	0.55	1.56	2.76	4.06	2.90	1.20	4.05	1.17	0.56	0.22	0.21	19.37
1954	.16	.14	.32	3.00	1.20	2.76	1.71	1.19	.41	.25	.32	.16	11.62
1955	.23	.43	1.98	1.11	4.68	11.26	1.27	.62	.37	.52	.24	.14	22.85
1956	.21	.28	.34	1.03	4.42	3.38	3.96	2.04	.76	.45	.26	.31	17.44
1957	.40	.37	1.71	6.25	7.75	2.14	2.39	.55	1.47	.41	.25	.90	24.59
1958	.45	1.80	2.97	1.96	3.03	2.87	3.36	6.23	.63	1.64	2.33	.44	27.71
1959	.34	.34	.65	1.54	1.59	2.26	3.69	1.20	.63	.30	.24	.19	12.97
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	1386	2,600	May 19, 1953	5.0	73.6	1.43	19.37	67.4	17.75
1954	1386	1,980	Jan. 22, 1954	4.6	44.1	.856	11.62	51.8	13.64
1955	1386	2,650	Mar. 16, 1955	5.6	86.7	1.68	22.85	79.8	21.04
1956	1436	2,510	Apr. 16, 1956	6.4	66.1	1.28	17.44	72.3	19.09
1957	1506	2,740	Jan. 29, 1957	6.5	93.2	1.81	24.59	104	27.33
1958	1556	2,400	May 6, 1958	11	105	2.04	27.71	90.3	23.82
1959	1626	2,250	Jan. 22, 1959	6.9	49.2	.955	12.97	-	-
1960	1706	750	Nov. 24, 1959	-	-	-	-	-	-

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 (1920-60), 698 cfs.

Extremes.--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 momentary maximum discharge for the water year 1927 published in WSP 1306 has been revised to 20,400 cfs Dec. 22, 1926 (gage height, 20.1 ft, from graph based on corrected gage readings).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	143	222	1,081	597	1,343	1,495	1,333	834	458	220	155	242	673
1952	92.6	381	978	1,743	895	1,609	792	950	241	152	127	103	674
1953	64.9	243	504	971	1,646	1,249	619	1,839	650	588	149	94.5	714
1954	61.5	70.7	125	917	476	1,180	768	764	321	332	191	117	445
1955	160	255	884	682	2,076	4,572	787	355	156	224	171	61.8	861
1956	89.6	133	158	385	2,306	1,754	1,939	785	358	319	186	194	709
1957	207	220	695	2,768	3,360	1,108	1,172	286	429	179	98.3	462	899
1958	365	778	1,642	898	1,369	1,240	1,691	2,254	283	431	1,133	182	1,023
1959	111	133	286	862	789	1,085	1,736	427	205	128	121	96.2	495
1960	565	942	1,195	980	1,214	1,370	1,098	389	205	313	223	119	716

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.31	0.47	2.36	1.30	2.64	3.26	2.81	1.82	0.97	0.48	0.34	0.51	17.27
1952	.20	.81	2.13	3.80	1.83	3.52	1.67	2.08	.51	.33	.28	.22	17.38
1953	.14	.51	1.10	2.12	3.25	2.73	1.30	4.01	1.37	1.28	.33	.20	18.34
1954	.13	.15	.27	2.01	.94	2.57	1.62	1.67	.68	.73	.42	.24	11.44
1955	.35	.54	1.92	1.49	4.09	9.98	1.66	.77	.33	.49	.37	.13	22.12
1956	.20	.28	.34	.84	4.71	3.83	4.10	1.72	.76	.70	.41	.41	18.30
1957	.45	.47	1.52	6.04	6.62	2.42	2.48	.62	.91	.39	.21	.98	23.11
1958	.80	1.64	3.58	1.96	2.70	2.71	3.57	4.92	.60	.94	2.48	.38	26.28
1959	.24	.28	.62	1.88	1.56	2.37	3.67	.93	.43	.28	.26	.20	12.72
1960	1.23	1.99	2.61	2.14	2.48	2.99	2.32	.85	.43	.68	.49	.25	18.46

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	887	22.80
1951	1206	6,050	Dec. 8, 1950	88	673	1.27	17.27	673	17.27
1952	1236	6,740	Mar. 11, 1952	54	674	1.28	17.38	620	15.99
1953	1276	16,000	May 20, 1953	54	714	1.35	18.34	667	17.14
1954	1336	6,980	Jan. 23, 1954	54	445	.843	11.44	533	13.70
1955	1386	15,500	Mar. 7, 1955	42	861	1.63	22.12	784	20.13
1956	1436	14,000	Apr. 16, 1956	48	709	1.34	18.30	772	19.92
1957	1506	31,000	Jan. 30, 1957	48	899	1.70	23.11	1,039	26.69
1958	1556	13,900	May 6, 1958	114	1,023	1.94	26.28	833	21.40
1959	1626	7,840	Jan. 22, 1959	52	495	.937	12.72	678	17.41
1960	1706	6,170	Nov. 25, 1959	68	716	1.36	18.46	-	-

5245. Guest River at Coeburn, Va.

Location.--Lat 36°55'45", long 82°27'23", on right bank at downstream side of bridge on State Highway 72, 1.0 mile southeast of Coeburn, Wise County, 1.4 miles upstream from Jaybird Branch, 1.8 miles downstream from Pine Camp Creek, and 6 miles upstream from mouth.

Drainage area.--87.3 sq mi.

Records available.--September 1949 to September 1959, water year 1960 (annual maximum).

Gage.--Crest-stage gage. Datum of gage is 1,925.00 ft above mean sea level (Interstate Railroad bench mark). Prior to Oct. 1, 1959, water-stage recorder at same site and datum.

Average discharge.--10 years (1949-59), 140 cfs.

Extremes.--1949-60: Maximum discharge, 6,360 cfs Jan. 29, 1957 (gage height, 14.20 ft), from rating curve extended above 3,500 cfs on basis of slope-area measurement of peak flow.
1949-59: Minimum discharge, 1.6 cfs Oct. 21, 22, 25, 26, Nov. 9, 10, 1953; minimum gage height, 1.23 ft Sept. 22, 23, 1955.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	20.2	65.5	260	167	336	305	268	187	114	60.8	17.1	18.2	150
1952	7.71	136	372	322	178	379	188	191	60.4	23.2	19.7	9.24	158
1953	4.06	42.1	110	204	324	270	114	333	82.5	30.0	3.93	3.92	126
1954	1.84	2.48	12.5	181	61.0	233	97.3	164	51.6	39.9	9.41	8.45	72.3
1955	9.08	14.6	148	84.9	461	781	134	75.5	20.0	39.7	17.6	3.54	148
1956	10.2	13.3	30.9	72.9	523	399	426	111	35.7	137	47.0	24.4	151
1957	13.7	43.4	157	501	443	144	231	53.6	87.6	22.0	7.58	23.7	142
1958	18.9	134	307	176	250	206	304	334	42.8	98.8	163	28.1	172
1959	11.2	13.5	59.1	196	148	218	257	85.6	90.8	37.5	21.9	28.8	96.9
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.27	0.84	3.44	2.20	4.01	4.02	3.42	2.47	1.46	0.80	0.23	0.23	23.39
1952	.10	1.74	4.91	4.25	2.20	5.00	2.40	2.52	.77	.31	.26	.12	24.58
1953	.05	.54	1.45	2.70	3.86	3.56	1.46	4.39	1.05	.40	.05	.05	19.56
1954	.02	.03	.16	2.39	.73	3.08	1.24	2.17	.66	.53	.12	.11	11.24
1955	.12	.19	1.92	1.12	5.50	10.32	1.71	1.00	.26	.52	.23	.05	22.94
1956	.13	.17	.41	.96	6.46	5.27	5.44	1.46	.46	1.81	.62	.31	23.50
1957	.18	.55	2.08	6.62	5.28	1.90	2.96	.71	1.12	.29	.10	.30	22.09
1958	.25	1.71	4.06	2.33	2.98	2.72	3.88	4.42	.55	1.30	2.16	.36	26.72
1959	.15	.17	.78	2.59	1.76	2.88	3.29	1.13	1.16	.50	.29	.37	15.07
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	174	27.03
1951	1206	2,500	Dec. 8, 1950	7.0	150	1.72	23.39	165	25.59
1952	1236	2,400	Mar. 23, 1952	3.0	158	1.81	24.58	128	19.87
1953	1276	2,550	Feb. 21, 1953	1.9	126	1.44	19.56	114	17.73
1954	1336	1,510	Jan. 16, 1954	1.6	72.3	.828	11.24	85.2	13.26
1955	1386	3,620	Mar. 16, 1955	2.0	148	1.70	22.94	138	21.42
1956	1436	4,020	Apr. 16, 1956	3.2	151	1.73	23.50	164	25.60
1957	1506	6,360	Jan. 29, 1957	2.1	142	1.63	22.09	163	25.30
1958	1556	2,080	May 7, 1958	11	172	1.97	26.72	140	21.80
1959	1626	2,560	Jan. 22, 1959	7.5	96.9	1.11	15.07	-	-
1960	1706	1,440	Mar. 30, 1960	-	-	-	-	-	-

5250. Stony Creek at Fort Blackmore, Va.

Location.--Lat 36°46'30", long 82°34'50", on right bank at Fort Blackmore, Scott County, 2,000 ft upstream from mouth and 9.5 miles north of Gate City.

Drainage area.--41.4 sq mi.

Records available.--September 1949 to September 1952, water years 1953-60 (annual maximum).

Gage.--Crest-stage gage. Datum of gage is 1,270.17 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Oct. 1, 1952, water-stage recorder at same site and datum.

Extremes.--1949-60: Maximum discharge, 2,550 cfs Apr. 16, 1956 (gage height, 6.55 ft), from rating curve extended above 1,300 cfs by logarithmic plotting.
1949-52: Minimum discharge, 0.3 cfs Aug. 20, 21, 25, 1951; minimum gage height, 1.22 ft Oct. 19, 20, 1951.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	6.12	28.0	124	120	192	177	151	51.6	24.6	10.5	3.51	6.47	73.8
1952	2.63	61.0	161	222	100	188	86.4	73.3	24.1	4.34	3.36	2.82	77.7

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.17	0.75	3.46	3.34	4.83	4.93	4.07	1.44	0.66	0.29	0.10	0.17	24.21
1952	.07	1.64	4.48	6.18	2.61	5.23	2.33	2.04	.65	.12	.09	.08	25.52

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	102	33.47
1951	1206	1,730	Dec. 7, 1950	0.8	73.8	1.78	24.21	79.3	26.02
1952	1236	1,910	Mar. 23, 1952	.8	77.7	1.88	25.52	-	-
1953	1556	2,220	February 1953	-	-	-	-	-	-
1954	1556	a1,000	(1954)	-	-	-	-	-	-
1955	1556	a1,500	(1955)	-	-	-	-	-	-
1956	1556	2,550	Apr. 16, 1956	-	-	-	-	-	-
1957	1556	2,220	Jan. 29, 1957	-	-	-	-	-	-
1958	1556	2,410	May 6, 1958	-	-	-	-	-	-
1959	1626	1,340	Mar. 27, 1959	-	-	-	-	-	-
1960	1706	1,910	Nov. 28, 1959	-	-	-	-	-	-

a Estimated.

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. 29, 1953, wire-weight gage on highway bridge at same site and datum.

Average discharge.--13 years (1947-60), 144 cfs.

Extremes.--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 3,500 cfs by logarithmic plotting; minimum, 3.6 cfs Jan. 15, 1956 (gage height, 1.98 ft), result of freezeup.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	41.2	53.6	193	141	312	273	302	145	61.4	72.7	46.3	68.5	141
1952	28.3	125	285	392	213	327	121	132	66.6	51.0	53.7	36.6	153
1953	26.2	80.8	123	168	337	313	140	295	83.3	57.6	26.4	25.7	139
1954	22.3	21.1	35.0	242	71.0	185	100	110	70.3	40.4	37.4	29.2	80.7
1955	25.3	35.0	96.5	77.0	340	620	140	78.5	42.6	28.9	29.8	19.6	127
1956	23.9	26.5	37.8	62.6	415	363	412	166	95.2	91.3	62.1	61.5	150
1957	35.1	42.4	163	454	646	219	217	66.8	58.0	36.9	36.4	48.1	165
1958	33.5	152	300	164	248	214	348	539	88.2	115	138	42.2	199
1959	35.4	31.1	61.8	192	179	202	291	131	59.1	32.7	27.4	22.6	105
1960	71.7	182	238	189	248	220	186	60.5	42.5	63.3	46.1	31.4	131

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.45	0.56	2.10	1.53	3.06	2.97	3.18	1.58	0.65	0.79	0.50	0.72	18.09
1952	.31	1.32	3.10	4.27	2.17	3.55	1.27	1.44	.70	.55	.58	.38	19.64
1953	.28	.85	1.34	1.82	3.31	3.40	1.47	3.20	.88	.63	.29	.27	17.74
1954	.24	.22	.38	2.63	.70	2.02	1.05	1.20	.74	.44	.41	.31	10.34
1955	.28	.37	1.05	.84	3.34	6.74	1.47	.85	.45	.31	.32	.21	16.23
1956	.26	.28	.41	.68	4.23	3.94	4.34	1.81	1.00	.99	.68	.65	19.27
1957	.38	.45	1.78	4.93	6.34	2.39	2.29	.73	.61	.40	.40	.51	21.21
1958	.36	1.60	3.26	1.79	2.44	2.33	3.66	5.86	.93	1.24	1.50	.44	25.41
1959	.38	.33	.87	2.09	1.76	2.20	3.06	1.43	.62	.36	.30	.24	13.44
1960	.78	1.92	2.59	2.06	2.52	2.39	1.96	.66	.45	.69	.50	.33	16.85

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	202	25.93
1951	1206	1,590	Dec. 8, 1950	28	141	1.33	18.09	154	19.71
1952	1236	1,980	Jan. 28, 1952	25	153	1.44	19.64	135	17.38
1953	1276	3,040	May 19, 1953	21	139	1.31	17.74	126	16.11
1954	1336	1,340	Jan. 16, 1954	18	80.7	.761	10.34	87.3	11.20
1955	1436	2,780	Mar. 16, 1955	15	127	1.20	16.23	121	15.48
1956	1436	3,580	Apr. 16, 1956	10	150	1.42	19.27	163	20.93
1957	1506	3,200	Jan. 30, 1957	20	165	1.56	21.21	186	23.82
1958	1556	4,100	May 6, 1958	24	199	1.88	25.41	169	21.57
1959	1626	2,720	Jan. 22, 1959	18	105	.991	13.44	135	17.35
1960	1706	2,060	Nov. 28, 1959	24	131	1.24	16.85	-	-

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.--1,126 sq mi.

Records available.--October 1920 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 1936. Prior to Nov. 23, 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 (1920-60), 1,578 cfs.

Extremes.--1920-60: Maximum discharge, 45,300 cfs Jan. 30, 1957 (gage height, 28.92 ft); minimum, 42 cfs Sept. 29, Oct. 23, 1939; minimum daily, 77 cfs Oct. 7, 8, 14, 15, 22, 1930.

Flood in February 1862 reached a stage of 33 ft, present site and datum, from reports by Tennessee Valley Authority. Flood of Feb. 28, 1902, reached a stage of 26.6 ft, at site 400 ft upstream (corrected) and at datum about 1 ft higher, from records of U.S. Weather Bureau.

Remarks.--Records of chemical analyses for the period October 1951 to September 1952 are published in report of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	275	574	2,458	1,645	3,460	3,212	3,100	1,767	836	541	276	399	1,533
1952	169	1,074	2,980	4,124	2,212	3,770	1,677	1,984	557	300	282	221	1,617
1953	139	534	1,108	2,061	3,603	3,004	1,477	3,443	1,198	913	213	150	1,477
1954	106	123	243	2,196	923	2,545	1,475	1,810	756	514	288	172	933
1955	201	362	1,759	1,434	4,234	8,882	1,714	814	289	391	258	110	1,695
1956	167	227	357	684	5,493	4,206	4,590	1,701	759	977	436	360	1,644
1957	303	395	1,621	5,531	6,942	2,286	2,497	566	755	281	208	528	1,793
1958	534	1,606	3,480	1,857	2,911	2,458	3,979	5,053	730	1,232	2,037	368	2,187
1959	210	230	796	1,917	1,950	2,457	3,607	1,287	623	264	250	225	1,145
1960	1,060	1,936	2,818	2,312	2,795	3,093	2,310	743	411	859	529	335	1,597

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.28	0.57	2.51	1.68	3.20	3.29	3.07	1.81	0.83	0.55	0.28	0.40	18.47
1952	.17	1.06	3.06	4.22	2.11	3.86	1.66	2.03	.55	.31	.29	.22	19.54
1953	.14	.53	1.13	2.11	3.33	3.08	1.46	3.53	1.18	.94	.22	.15	17.80
1954	.11	.12	.25	2.25	.85	2.61	1.46	1.86	.75	.53	.30	.17	11.26
1955	.21	.36	1.80	1.46	3.92	9.10	1.70	.83	.29	.40	.26	.11	20.44
1956	.17	.23	.37	.70	5.26	4.31	4.55	1.74	.75	1.00	.45	.36	19.89
1957	.31	.39	1.66	5.66	6.42	2.34	2.48	.58	.75	.29	.21	.52	21.61
1958	.55	1.60	3.56	1.90	2.70	2.51	3.94	5.18	.72	1.26	2.09	.36	26.37
1959	.21	.23	.81	1.96	1.80	2.52	3.57	1.32	.62	.27	.26	.22	13.79
1960	1.09	1.92	2.89	2.37	2.68	3.17	2.29	.76	.41	.88	.54	.33	19.33

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	2,078	25.04
1951	1206	13,900	Dec. 8, 1950	162	1,533	1.36	18.47	1,609	19.40
1952	1236	15,300	Mar. 23, 1952	126	1,617	1.44	19.54	1,412	17.05
1953	1276	23,700	May 20, 1953	107	1,477	1.31	17.80	1,367	16.48
1954	1336	11,600	Jan. 23, 1954	97	933	.829	11.26	1,089	13.15
1955	1386	25,600	Mar. 17, 1955	97	1,695	1.51	20.44	1,562	18.84
1956	1436	28,400	Apr. 16, 1956	115	1,644	1.46	19.89	1,777	21.48
1957	1506	45,300	Jan. 30, 1957	108	1,793	1.59	21.61	2,070	24.96
1958	1556	33,100	May 7, 1958	215	2,187	1.94	26.37	1,818	21.91
1959	1626	15,800	Jan. 22, 1959	120	1,145	1.02	13.79	1,529	18.44
1960	1706	14,600	Nov. 28, 1959	150	1,597	1.42	19.33	-	-

5275. North Fork Clinch River at Duffield, Va.

Location.--Lat 36°42'40", long 82°47'45", on right bank at upstream side of bridge on U.S. Highways 58 and 421, 0.2 mile downstream from Spurlock Branch, 0.5 mile south of Duffield, Scott County, and 1.6 miles upstream from Harris Branch.

Drainage area.--23.1 sq mi.

Records available.--Water years 1951-52 (annual maximum), October 1952 to September 1959. Monthly discharge only for May to September 1959.

Gage.--Water-stage recorder. Datum of gage is 1,814.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Nov. 16, 1950, to Sept. 30, 1952, crest-stage gage at same site and datum.

Average discharge.--7 years (1952-59), 35.4 cfs.

Extremes.--1950-59: Maximum discharge, 811 cfs May 6, 1958 (gage height, 7.46 ft).
1952-59: Minimum discharge, 1.0 cfs Sept. 17-19, 23, 24, 1955.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	1.77	6.52	13.9	46.6	101	78.0	37.4	74.7	12.4	8.76	2.08	3.17	31.8
1954	1.31	1.71	4.59	71.3	18.0	68.9	25.7	36.7	7.44	4.25	2.40	1.87	20.5
1955	1.78	2.28	18.2	18.2	122	192	48.1	13.9	5.07	3.88	2.57	1.31	35.3
1956	3.13	5.15	11.7	22.3	176	125	110	38.7	19.5	31.2	5.60	6.03	45.6
1957	4.45	8.14	46.0	137	151	49.3	73.7	11.4	6.57	3.22	3.27	5.17	40.9
1958	5.07	40.8	96.2	32.7	63.9	63.6	116	105	10.8	15.1	11.9	4.62	47.1
1959	3.94	4.38	11.9	48.3	54.7	51.4	69.3	27.4	28.0	8.71	7.10	7.67	26.7
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	0.09	0.31	0.69	2.33	4.55	3.90	1.81	3.72	0.60	0.44	0.10	0.15	18.69
1954	.07	.08	.23	3.56	.81	3.44	1.24	1.83	.36	.21	.12	.09	12.04
1955	.09	.11	.91	.91	5.50	9.58	2.32	.69	.24	.19	.13	.06	20.73
1956	.16	.25	.58	1.11	8.22	6.24	5.31	1.94	.94	1.56	.28	.29	26.88
1957	.22	.39	2.29	6.84	6.81	2.46	3.56	.57	.32	.16	.16	.25	24.03
1958	.25	1.98	4.80	1.64	2.88	3.17	5.60	5.25	.52	.75	.59	.22	27.65
1959	.20	.21	.59	2.41	2.47	2.56	3.35	1.37	1.35	.43	.35	.37	15.66
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	1556	595	December 1950	-	-	-	-	-	-
1952	1556	164	Mar. 23, 1952	-	-	-	-	-	-
1953	1276	782	Feb. 21, 1953	1.4	31.8	1.38	18.69	30.6	17.98
1954	1336	702	Jan. 16, 1954	1.1	20.5	.887	12.04	21.7	12.77
1955	1386	766	Mar. 16, 1955	1.1	35.3	1.53	20.73	35.1	20.61
1956	1436	800	Apr. 15, 1956	1.3	45.6	1.97	26.88	48.9	28.79
1957	1506	789	Jan. 28, 1957	1.7	40.9	1.77	24.03	47.9	28.16
1958	1556	811	May 6, 1958	3.8	47.1	2.04	27.65	36.8	21.62
1959	1626	702	Jan. 21, 1959	-	26.7	1.16	15.66	-	-
1960	-	-	-	-	-	-	-	-	-

5280. Clinch River above Tazewell, Tenn.

Location.--Lat 36°25'30", long 83°23'54", on right bank 0.4 mile upstream from Grissom Island, 4.6 miles downstream from Big War Creek, 10 miles east of Tazewell, Claiborne County, and at mile 159.8.

Drainage area.--1,474 sq mi.

Records available.--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 23.3 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 (1918-60), 2,078 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	357	715	2,917	2,143	4,826	4,271	4,305	2,081	1,028	742	373	577	2,009
1952	266	1,768	4,334	5,411	3,031	5,144	2,050	2,385	762	401	376	265	2,169
1953	181	775	1,450	2,588	4,790	3,978	1,825	4,251	1,322	1,119	272	204	1,882
1954	148	174	322	3,210	1,124	3,232	1,781	2,196	906	597	341	218	1,193
1955	219	327	1,486	1,433	5,148	11,730	2,177	1,057	390	465	318	136	2,063
1956	223	293	576	814	7,383	5,401	6,335	2,063	859	1,189	581	429	2,152
1957	379	531	2,331	6,793	9,426	2,875	3,650	759	822	360	296	571	2,353
1958	620	2,171	4,663	2,134	3,287	3,255	5,601	6,189	826	1,222	2,030	440	2,703
1959	259	280	777	2,599	2,497	2,938	4,415	1,360	798	340	308	291	1,396
1960	1,114	2,458	3,567	2,906	3,481	3,754	2,925	850	630	1,412	656	417	2,011

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.28	0.54	2.28	1.68	3.41	3.34	3.26	1.63	0.78	0.58	0.29	0.44	18.51
1952	.21	1.34	3.39	4.23	2.22	4.02	1.55	1.87	.58	.31	.29	.20	20.21
1953	.14	.59	1.13	2.02	3.38	3.11	1.38	3.33	1.00	.88	.21	.15	17.32
1954	.12	.13	.26	2.51	.79	2.53	1.35	1.72	.69	.47	.27	.16	11.00
1955	.17	.25	1.16	1.12	3.64	9.17	1.65	.83	.29	.36	.25	.10	18.99
1956	.17	.22	.45	.64	5.40	4.22	4.80	1.61	.65	.93	.45	.32	19.86
1957	.30	.40	1.82	5.31	6.66	2.25	2.76	.59	.62	.28	.23	.43	21.65
1958	.49	1.64	3.65	1.67	2.32	2.55	4.24	4.84	.63	.96	1.59	.33	24.91
1959	.20	.21	.61	2.03	1.76	2.30	3.34	1.06	.60	.27	.24	.22	12.84
1960	.87	1.86	2.79	2.27	2.55	2.94	2.21	.66	.48	1.10	.51	.32	18.56

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	2,773	25.53
1951	1206	15,200	Dec. 8, 1950	239	2,009	1.36	18.51	2,208	20.35
1952	1236	20,100	Mar. 24, 1952	166	2,189	1.49	20.21	1,856	17.13
1953	1276	25,500	May 21, 1953	163	1,882	1.28	17.32	1,735	15.97
1954	1336	13,900	Jan. 17, 1954	138	1,193	0.809	11.00	1,310	12.07
1955	1386	29,700	Mar. 18, 1955	113	2,063	1.40	18.99	1,983	18.25
1956	1436	33,100	Apr. 16, 1956	141	2,152	1.46	19.86	2,334	21.54
1957	1506	51,100	Jan. 31, 1957	125	2,353	1.60	21.65	2,706	24.91
1958	1556	35,900	May 7, 1958	278	2,703	1.83	24.91	2,187	20.15
1959	1626	18,200	Jan. 23, 1959	146	1,396	0.947	12.84	1,884	17.34
1960	1706	16,100	Nov. 29, 1959	209	2,011	1.36	18.56	-	-

5295. Powell River at Big Stone Gap, Va.

Location.--Lat 36°52'08", long 82°46'32", on right bank 10 ft upstream from bridge on U.S. Highway 23 at Big Stone Gap, Wise County, 1 mile upstream from South Fork Powell River, and 2.5 miles downstream from Pigeon Creek.

Drainage area.--112 sq mi.

Records available.--October 1944 to September 1959, water year 1960 (annual maximum).

Gage.--Crest-stage gage. Datum of gage is 1,459.07 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Apr. 27, 1948, staff gage at present site and datum. Aug. 27, 1948, to Oct. 1, 1959, water-stage recorder at same site and datum.

Average discharge.--15 years (1944-59), 202 cfs (revised).

Extremes.--1944-60: Maximum discharge, 16,500 cfs Jan. 7, 1946 (gage height, 9.8 ft, from floodmarks).
1944-59: Minimum discharge, 4.0 cfs Sept. 16, 17, 19, 1955.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	36.5	113	350	285	512	403	373	315	153	71.0	28.1	53.3	223
1952	20.2	223	622	537	311	492	225	233	100	33.0	29.4	19.8	238
1953	13.5	46.0	113	283	437	320	142	461	64.4	47.8	18.8	10.0	162
1954	7.25	9.47	26.4	274	65.5	316	137	206	84.8	41.5	17.2	13.7	101
1955	10.9	18.9	148	107	630	1,054	225	89.6	35.1	50.5	35.4	9.27	199
1956	21.1	25.0	46.5	105	840	655	621	174	64.8	133	55.2	39.3	229
1957	21.7	56.1	213	632	609	188	301	62.7	127	37.8	20.8	41.8	190
1958	32.3	177	536	169	334	289	501	486	73.3	152	136	33.6	243
1959	27.3	29.7	88.2	312	222	280	351	129	134	40.6	35.3	36.2	140
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.38	1.13	3.60	2.93	4.76	4.15	3.72	3.24	1.53	0.73	0.29	0.53	26.99
1952	.21	2.22	6.40	5.52	3.00	5.06	2.24	2.40	1.00	.34	.30	.20	28.89
1953	.14	.46	1.16	2.92	4.06	3.30	1.42	4.75	.64	.49	.19	.10	19.63
1954	.07	.09	.27	2.82	.61	3.25	1.36	2.12	.84	.43	.18	.14	12.18
1955	.11	.19	1.52	1.10	5.85	10.85	2.24	.92	.35	.52	.36	.09	24.10
1956	.22	.25	.48	1.08	8.09	6.74	6.18	1.79	.65	1.37	.57	.39	27.81
1957	.22	.56	2.19	6.50	5.66	1.94	3.00	.65	1.26	.39	.21	.42	23.00
1958	.33	1.76	5.52	1.74	3.10	2.97	4.99	5.00	.73	1.57	1.40	.33	29.44
1959	.28	.30	.91	3.21	2.07	2.88	3.49	1.33	1.34	.42	.36	.36	16.95
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	261	31.62
1951	1206	4,800	Dec. 7, 1950	14	223	1.99	26.99	253	30.71
1952	1236	5,920	Dec. 15, 1951	10	238	2.12	28.89	179	21.82
1953	1276	6,000	Feb. 21, 1953	5.3	162	1.45	19.63	151	18.30
1954	1336	2,880	Jan. 16, 1954	5.3	101	.902	12.18	112	13.57
1955	1386	5,360	Mar. 16, 1955	5.0	199	1.78	24.10	192	23.23
1956	1436	7,800	Apr. 15, 1956	9.0	229	2.04	27.81	245	29.83
1957	1506	11,000	Jan. 29, 1957	10	190	1.70	23.00	228	27.64
1958	1556	3,980	May 6, 1958	22	243	2.17	29.44	192	23.32
1959	1626	5,520	Jan. 21, 1959	17	140	1.25	16.95	-	-
1960	1706	4,400	Mar. 30, 1960	-	-	-	-	-	-

5305. North Fork Powell River at Pennington Gap, Va.

Location.--Lat 36°46'26", long 83°01'59", in center span on downstream side of highway bridge, 0.8 mile north of town of Pennington Gap, Lee County, 1.3 miles downstream from Straight Creek, and 4.5 miles upstream from Powell River.

Drainage area.--70 sq mi, approximately.

Records available.--October 1944 to September 1951, water years 1952-60 (annual maximum).

Gage.--Crest-stage gage. Altitude of gage is 1,365 ft (by barometer). Prior to Oct. 1, 1951, wire-weight or staff gage at same site and datum.

Average discharge.--7 years (1944-51), 133 cfs.

Extremes.--1944-60: Maximum discharge, 9,700 cfs Jan. 7, 1946 (gage height, 12.1 ft, from floodmarks), from rating curve extended above 2,300 cfs on basis of slope-area measurements at gage heights 8.7 and 12.1 ft.
1944-51: Minimum discharge, no flow Sept. 4, 5, 1951.

Remarks.--Occasional diurnal fluctuations caused by powerplant 2.1 miles above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	7.23	36.7	154	209	348	251	201	105	83.6	9.59	1.94	11.8	117

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.12	0.58	2.54	3.45	5.18	4.14	3.20	1.73	1.33	0.16	0.03	0.19	22.65

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	154	29.93
1951	1206,1436	3,460	Feb. 1, 1951	0	117	1.67	22.65	79.3	26.02
1952	1556	4,250	Dec. 15, 1951	-	-	-	-	-	-
1953	1556	4,150	Jan. 22, 1953	-	-	-	-	-	-
1954	1556	3,000	Jan. 16, 1954	-	-	-	-	-	-
1955	1556	3,800	Mar. 16, 1955	-	-	-	-	-	-
1956	1556	4,100	Apr. 16, 1956	-	-	-	-	-	-
1957	1556	4,430	Jan. 29, 1957	-	-	-	-	-	-
1958	1556	4,050	May 6, 1958	-	-	-	-	-	-
1959	1626	†4,420	Jan. 22, 1959	-	-	-	-	-	-
1960	1706	3,280	Nov. 28, 1959	-	-	-	-	-	-

† Corrected.

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 (1931-60), 508 cfs.

Extremes.--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 and time-ratio transition; minimum, 17 cfs Sept. 19, 20, 1954.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	82.9	260	838	766	1,451	1,054	996	603	325	150	60.6	108	552
1952	51.2	602	1,605	1,542	807	1,384	502	508	227	65.0	63.0	43.3	619
1953	32.7	134	309	770	1,227	937	372	1,119	177	137	49.0	33.1	438
1954	24.5	29.7	79.7	929	200	828	330	485	181	117	52.9	31.9	276
1955	22.9	39.6	407	309	1,601	2,586	557	205	88.5	129	89.8	24.5	500
1956	56.5	75.7	162	277	2,244	1,569	1,509	418	209	444	142	87.7	592
1957	44.9	116	595	1,836	1,772	526	889	148	290	86.2	49.6	119	531
1958	73.3	577	1,295	418	758	685	1,378	1,257	209	362	324	84.3	618
1959	63.2	60.6	235	791	702	784	933	333	310	95.6	88.2	76.3	370
1960	247	700	1,030	846	940	1,040	619	168	169	534	298	219	567

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.30	0.91	3.03	2.77	4.74	3.80	3.48	2.18	1.14	0.54	0.22	0.38	23.49
1952	.19	2.11	5.80	5.57	2.73	5.00	1.75	1.83	.79	.24	.23	.15	26.39
1953	.12	.47	1.12	2.78	4.01	3.39	1.30	4.05	.62	.49	.18	.12	18.65
1954	.09	.10	.29	3.36	.65	3.00	1.15	1.75	.63	.42	.19	.11	11.74
1955	.08	.14	1.48	1.12	5.23	9.35	1.95	.74	.31	.47	.33	.09	21.29
1956	.20	.26	.59	1.00	7.58	5.67	5.28	1.51	.73	1.60	.51	.31	25.24
1957	.16	.41	2.16	6.64	5.78	1.90	3.11	.53	1.01	.31	.18	.42	22.61
1958	.27	2.02	4.68	1.51	2.48	2.48	4.82	4.54	.73	1.30	1.18	.29	26.30
1959	.23	.21	.85	2.86	2.29	2.83	3.26	1.20	1.08	.35	.32	.27	15.75
1960	.89	2.45	3.72	3.06	3.18	3.76	2.16	.61	.59	1.93	1.08	.77	24.20

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	711	30.25
1951	1206	9,010	Dec. 8, 1950	43	552	1.73	23.49	643	27.35
1952	1236	14,000	Dec. 15, 1951	27	619	1.94	26.39	469	20.00
1953	1276	11,400	Feb. 21, 1953	26	438	1.37	18.65	409	17.42
1954	1336	7,680	Jan. 16, 1954	18	276	.865	11.74	305	12.96
1955	1386	11,400	Mar. 16, 1955	18	500	1.57	21.29	485	20.64
1956	1436	15,800	Apr. 16, 1956	30	592	1.86	25.24	633	27.02
1957	1506	19,800	Jan. 30, 1957	25	531	1.66	22.61	631	26.85
1958	1556	10,700	Dec. 8, 1957	44	618	1.94	26.30	485	20.62
1959	1626	10,900	Jan. 22, 1959	37	370	1.16	15.75	506	21.52
1960	1706	9,220	Nov. 28, 1959	55	567	1.78	24.20	-	-

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 (1919-60), 1,133 cfs.

Extremes.--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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	173	437	1,436	1,449	3,519	2,395	2,187	965	598	326	144	274	1,142
1952	142	1,511	3,606	3,368	1,924	3,269	960	871	412	165	166	119	1,380
1953	91.4	258	669	1,544	2,690	1,973	781	2,081	485	348	131	97.8	921
1954	86.6	100	210	2,318	521	1,702	728	782	317	186	124	85.8	601
1955	75.5	102	889	747	2,882	5,686	1,180	460	236	275	236	79.7	1,063
1956	130	188	454	554	4,887	3,350	3,258	913	428	674	293	188	1,260
1957	126	236	1,240	3,407	4,164	1,215	1,852	370	424	218	200	486	1,141
1958	316	1,409	3,009	971	1,532	1,611	2,798	2,924	432	508	471	169	1,346
1959	137	146	514	1,766	1,510	1,431	1,898	586	573	246	177	146	756
1960	455	1,275	2,162	1,689	1,851	2,033	1,299	371	540	1,259	462	399	1,149

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.29	0.71	2.42	2.44	5.35	4.03	3.56	1.62	0.97	0.55	0.24	0.45	22.63
1952	.24	2.46	6.07	5.67	3.03	5.50	1.56	1.47	.67	.28	.28	.19	27.42
1953	.15	.42	1.13	2.60	4.09	3.32	1.27	3.50	.79	.59	.22	.16	18.24
1954	.15	.16	.35	3.90	.79	2.86	1.19	1.32	.52	.31	.21	.14	11.90
1955	.13	.17	1.50	1.26	4.38	9.57	1.92	.77	.38	.46	.40	.13	21.07
1956	.22	.31	.76	.93	7.69	5.64	5.31	1.54	.70	1.14	.49	.31	25.04
1957	.21	.38	2.09	5.73	6.33	2.04	3.02	.62	.69	.37	.34	.79	22.61
1958	.53	2.30	5.06	1.63	2.33	2.71	4.56	4.92	.70	.85	.79	.28	26.66
1959	.23	.24	.87	2.97	2.30	2.41	3.09	.99	.93	.41	.30	.24	14.98
1960	.77	2.08	3.64	2.84	2.91	3.42	2.12	.62	.88	2.12	.78	.65	22.83

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,472	29.18
1951	1206	13,200	Feb. 1, 1951	109	1,142	1.67	22.63	1,412	27.98
1952	1236	15,200	Dec. 16, 1951	92	1,380	2.01	27.42	1,024	20.35
1953	1276	13,300	Feb. 22, 1953	84	921	1.34	18.24	868	17.20
1954	1336	10,400	Jan. 17, 1954	65	601	0.877	11.90	657	13.04
1955	1386	14,800	Mar. 17, 1955	60	1,063	1.55	21.07	1,038	20.56
1956	1436	18,500	Apr. 17, 1956	84	1,260	1.84	25.04	1,330	26.43
1957	1506	23,500	Jan. 30, 1957	80	1,141	1.67	22.61	1,404	27.82
1958	1556	15,800	Dec. 9, 1957	132	1,346	1.96	26.66	1,015	20.11
1959	1626	13,200	Jan. 23, 1959	93	756	1.10	14.98	1,015	20.13
1960	1706	10,800	Dec. 29, 1959	122	1,149	1.68	22.83	-	-

5325. Norris Lake at Norris Dam, Tenn.

Location.--Lat 36°13'29", long 84°05'29", at Norris Dam on Clinch River, 2½ miles northwest of Norris, Anderson County, 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.

Extremes.--1935-60: Maximum contents, 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).

Remarks.--Lake 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 lake 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). Lake is used for navigation, flood control, and power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, at end of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	727.1	586.6	520.5	494.7	652.1	740.9	973.8	942.4	879.4	791.8	650.0	556.7
1952	408.4	507.1	508.9	625.1	545.0	760.4	747.4	804.4	772.1	697.6	647.5	568.3
1953	459.0	424.7	382.0	463.4	609.3	684.8	682.9	888.9	841.0	739.6	571.3	423.0
1954	319.9	253.5	195.1	358.3	379.4	553.5	591.8	637.7	557.3	468.2	392.5	298.8
1955	251.8	222.4	277.6	233.4	462.1	889.1	937.7	901.0	807.0	718.1	626.7	450.5
1956	289.0	174.4	155.2	121.3	583.5	682.9	951.9	946.7	874.8	812.2	674.2	539.1
1957	417.9	325.9	373.6	617.1	575.6	588.4	737.8	686.0	655.7	603.5	518.4	491.8
1958	438.3	488.7	487.5	399.4	421.3	568.6	859.1	1,045.3	861.4	808.0	683.0	533.7
1959	384.0	257.6	191.1	308.6	416.3	494.3	712.5	718.7	728.2	668.5	588.5	510.2
1960	421.6	412.1	463.2	428.6	531.7	699.0	767.9	745.2	688.1	647.7	525.3	425.7

5330. Clinch River below Norris Dam, Tenn.

Location.--Lat 36°12'56", long 84°04'56", 0.5 mile upstream from Clear Creek, 1.0 mile downstream from Norris Dam, 1.5 miles north of Norris, Anderson County, and at mile 78.8.

Drainage area.--2,913 sq mi.

Records available.--October 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 1943 are contained in reports of U.S. Weather Bureau.

Gage.--Water-stage recorder at present site and datum since Jan. 28, 1937. Datum of gage is 819.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Oct. 1, 1903, to June 30, 1920, staff gage at railroad bridge 19.6 miles downstream at datum 42.49 ft lower. July 1, 1920, to Sept. 30, 1927, chain gage at highway bridge 19.8 miles downstream (1,000 ft downstream from previous site) at datum 42.59 ft lower. May 27 to Sept. 8, 1927, staff gage and Sept. 9, 1927, to Sept. 30, 1935, water-stage recorder, at site 2.9 miles downstream at datum 10.50 ft lower. Oct. 1, 1935, to Sept. 30, 1937, water-stage recorder at site 2.9 miles downstream at datum 13.50 ft lower. Apr. 16, 1936, to Jan. 27, 1937, staff gage at present site and datum.

Average discharge.--57 years (1903-60), 4,320 cfs (unadjusted).

Extremes.--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 (revised).

Flood of Mar. 11, 1826, reached a stage of 43.5 ft (discharge, 130,000 cfs); floods of Feb. 24, 1862, and Mar. 31, 1886, reached a stage of 41.3 ft, revised (discharge, 117,000 cfs, revised); at railroad bridge at Clinton, from reports by Tennessee Valley Authority.

Remarks.--Flow completely regulated by Norris Lake.

Monthly and yearly mean discharge, in cubic feet per second (observed), of Clinch River below Norris Dam, Tenn.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	5,913	6,016	7,244	5,788	6,856	6,688	906	4,931	4,667	4,621	5,264	4,262	5,264
1952	5,592	1,600	11,850	7,635	9,400	4,656	4,267	2,032	2,497	3,148	2,359	3,233	4,852
1953	3,918	2,584	4,234	2,999	4,696	5,209	3,599	857	3,942	5,201	6,033	5,483	4,059
1954	3,812	2,739	2,820	2,581	1,520	883	1,963	1,908	4,253	3,974	3,121	3,663	2,776
1955	2,036	1,636	1,887	4,463	1,662	7,968	2,855	3,191	4,048	3,877	3,645	6,188	3,637
1956	5,819	4,793	2,351	3,193	226	8,266	3,228	3,897	4,260	4,494	5,807	5,618	4,350
1957	4,762	4,058	3,264	5,100	19,180	4,892	2,096	3,249	2,650	2,435	3,400	2,641	4,713
1958	3,377	4,142	10,610	6,910	5,141	1,616	1,675	5,519	7,940	3,820	6,909	6,003	5,311
1959	5,480	5,004	3,887	2,143	1,615	2,883	592	2,253	1,391	2,595	3,203	3,067	2,856
1960	4,631	4,584	5,600	6,913	3,209	2,420	2,790	2,499	4,081	4,489	5,655	4,522	4,292

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	5,587	5,720	26.65
1951	1206	9,280	Apr. 9, 1951	84	5,264	4,353	1.49	20.29	5,265	5,233	24.38
1952	1236	26,600	Dec. 23, 1951	84	4,852	4,884	1.68	22.82	4,146	3,799	17.75
1953	1276	12,500	Feb. 24, 1953	64	4,059	3,661	1.26	17.06	3,943	3,431	15.99
1954	1336	8,650	June 7, 1954	50	2,776	2,435	..836	11.35	2,455	2,681	12.49
1955	1386	22,100	Mar. 20, 1955	57	3,637	4,052	1.39	18.88	4,257	3,922	18.27
1956	1436	17,200	Mar. 15, 1956	28	4,350	4,592	1.58	21.46	4,278	4,874	22.78
1957	1506	26,600	Feb. 12, 1957	64	4,713	4,584	1.57	21.36	5,227	5,539	25.81
1958	1556	20,100	Dec. 26, 1957	80	5,311	5,425	1.86	25.28	4,989	4,177	19.46
1959	1626	8,530	Aug. 11, 1959	54	2,856	2,792	.958	13.01	2,895	3,641	16.97
1960	1706	9,160	Apr. 19, 1960	68	4,292	4,061	1.39	18.97	-	-	-

a Adjusted for change in contents in Norris Lake.

5345. Buffalo Creek at Norris, Tenn.

Location.--Lat 36°11'05", long 84°03'41", 50 ft downstream from State Highway 71, 1.0 mile southeast of Norris, Anderson County, and 4½ miles upstream from mouth.

Drainage area.--9.45 sq mi.

Records available.--August 1947 to December 1950, water years 1954-60 (annual maximum only).

Gage.--Crest-stage gage. Datum of gage is 901.71 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Jan. 1, 1951, water-stage recorder at same site and datum.

Extremes.--1947-50, 1954-60: Maximum discharge, 1,130 cfs Jan. 31, 1957 (gage height, 9.03 ft), from rating curve extended above 610 cfs.
1947-50: Minimum discharge, 0.3 cfs Sept. 17, 1948; minimum gage height, 0.68 ft Oct. 7, 8, 10, 11, 1947, and Sept. 17, 1948.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.82	3.20	17.7	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.22	0.38	2.16	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	1173	-	-	-	-	-	-	15.8	22.63
1951	1173	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1556	700	Dec. 29, 1954	-	-	-	-	-	-
1956	1556,1706	640	Apr. 15, 1956	-	-	-	-	-	-
1957	1556,1706	1,130	Jan. 31, 1957	-	-	-	-	-	-
1958	1556	1,100	Nov. 17, 1957	-	-	-	-	-	-
1959	1626	370	Jan. 21, 1959	-	-	-	-	-	-
1960	1706	385	Dec. 18, 1959	-	-	-	-	-	-

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, 2.1 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.--1957-60: Maximum discharge, 3,360 cfs Nov. 18, 1957 (gage height, 10.26 ft); minimum, 6.0 cfs Oct. 1, 1959; minimum gage height, 1.37 ft Sept. 5, Oct. 6, 1959.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	54.7	322	289	83.6	97.5	143	248	228	28.8	28.5	22.3	10.1	130
1959	9.26	11.8	24.8	117	132	105	165	51.5	36.8	14.2	11.5	7.52	56.6
1960	13.6	72.6	163	119	161	207	83.2	34.2	35.1	38.3	52.2	25.7	83.6

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	0.92	5.25	4.86	1.41	1.48	2.40	4.03	3.84	0.47	0.48	0.37	0.16	25.67
1959	.16	.19	.42	1.97	2.01	1.77	2.70	.87	.60	.24	.19	.12	11.24
1960	.23	1.18	2.74	2.00	2.53	3.49	1.36	.58	.57	.64	.88	.42	16.62

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1958	1556	3,360	Nov. 18, 1957	8.2	130	1.90	25.67	77.8	15.41
1959	1626	1,850	Jan. 22, 1959	6.6	56.6	0.826	11.24	73.7	14.62
1960	1706	1,380	Dec. 19, 1959	6.4	83.6	1.22	16.62	-	-

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 (1936-60), 4,564 cfs (unadjusted).

Extremes.--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 29,000 cfs; minimum, 111 cfs Oct. 27, 28, 1947; minimum daily, 131 cfs Jan. 23, 1941.

Remarks.--Flow regulated by Norris Lake, 41 miles upstream. The town of Oak Ridge diverts an average of about 25 cfs for municipal supply, 2½ miles above station.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	6,056	6,252	7,986	6,559	9,125	8,565	2,109	5,096	4,594	4,676	5,367	4,559	5,903
1952	5,558	2,516	13,350	8,703	10,370	6,236	4,345	2,162	2,340	3,138	2,465	3,092	5,354
1953	3,939	2,734	4,513	3,808	5,953	6,162	3,792	1,524	3,897	5,330	5,955	5,387	4,409
1954	3,857	2,742	2,967	4,486	1,769	1,983	2,486	2,051	4,395	4,044	3,102	3,666	3,138
1955	2,127	1,685	2,842	4,826	3,148	9,830	3,733	3,344	4,116	4,098	3,678	6,363	4,159
1956	5,927	4,893	2,844	3,736	2,691	9,758	5,220	4,191	4,299	4,471	5,650	5,410	4,936
1957	4,781	4,104	4,226	6,434	21,920	5,550	3,071	3,486	2,946	2,517	3,442	3,206	5,362
1958	3,684	6,253	12,480	7,780	5,931	2,411	3,111	6,556	8,141	3,958	6,936	5,932	6,101
1959	5,516	5,112	4,182	2,807	2,351	3,673	1,548	2,706	1,550	2,827	3,420	3,280	3,259
1960	4,676	5,041	6,513	7,779	4,023	3,692	3,388	2,753	4,289	4,491	5,839	4,764	4,779

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30								Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/		
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	6,441	6,573	27.04
1951	1206	26,700	Feb. 2, 1951	283	5,903	4,992	1.51	20.53	6,009	5,977	24.59
1952	1236	27,300	Dec. 24, 1951	302	5,354	5,386	1.63	22.22	4,496	4,139	17.07
1953	1276	14,200	Mar. 4, 1953	405	4,409	4,010	1.22	16.50	4,271	3,759	15.46
1954	1336	11,300	Jan. 22, 1954	378	3,138	2,798	.848	11.51	2,894	3,120	12.83
1955	1386	25,600	Mar. 20, 1955	204	4,159	4,575	1.39	18.82	4,746	4,411	18.14
1956	1436	20,800	Mar. 16, 1956	314	4,936	5,178	1.57	21.36	4,891	5,488	22.64
1957	1506	28,600	Feb. 12, 1957	194	5,362	5,232	1.59	21.52	6,146	6,458	26.57
1958	1556	23,000	Dec. 27, 1957	218	6,101	6,216	1.88	25.57	5,459	4,647	19.11
1959	1626	9,390	Jan. 22, 1959	193	3,259	3,195	.968	13.14	3,380	4,126	16.97
1960	1706	14,000	Dec. 19, 1959	240	4,779	4,548	1.38	18.76	-	-	-

a Adjusted for change in contents in Norris Lake.

5365. Whiteoak Creek at Oak Ridge National Laboratory, near Oak Ridge, Tenn.

Location.--Lat 35°55'34", long 84°18'49", on right bank 500 ft southeast of Oak Ridge National Laboratory, Roane County, 1.2 miles upstream from Melton Branch, and 6 miles south of Oak Ridge.

Drainage area.--2.08 sq mi.

Records available.--June 1950 to July 1955.

Gage.--Water-stage recorder. Datum of gage is 775.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--1950-55: Maximum discharge, 616 cfs Aug. 2, 1950 (gage height, 4.31 ft), from rating curve extended above 170 cfs; minimum daily, 0.7 cfs Nov. 2, 1950; Aug. 2, 8, 12, 13, 21, 26-28, 30, 31, 1951; Sept. 8, 9, 1951; Oct. 14, 1951; and July 25, 26, 1953.

Remarks.--Natural flow affected by operations of Oak Ridge National Laboratory above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	-	2.20	4.85	7.60	5.00	-
1951	1.07	2.18	6.35	6.82	12.4	12.0	7.99	2.56	1.51	1.41	.897	2.05	4.72
1952	1.35	4.53	9.38	5.69	4.03	10.5	2.17	1.95	2.56	2.49	2.26	1.60	4.06
1953	1.51	2.23	2.34	4.14	9.40	5.68	3.14	3.74	2.11	1.77	1.35	1.57	3.21
1954	1.30	1.29	2.36	13.8	4.01	7.04	3.27	2.56	1.91	2.03	1.66	1.52	3.57
1955	1.25	1.22	6.21	2.93	7.83	9.94	5.41	2.45	2.63	-	-	-	-

Yearly discharge, in cubic feet per second, of Whiteoak Creek at Oak Ridge National Laboratory, near Oak Ridge, Tenn.

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	1276	a616	Aug. 2, 1950	-	-	-	-	-	-
1951	1276	312	Feb. 1, 1951	0.7	4.72	-	-	5.20	-
1952	1276	391	July 1, 1952	.7	4.06	-	-	3.29	-
1953	1276	163	Feb. 21, 1953	.7	3.21	-	-	3.11	-
1954	1336	216	Jan. 20, 1954	.8	3.57	-	-	3.89	-
1955	1386	291	Dec. 29, 1954	-	-	-	-	-	-

a Maximum during period June to September.

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.--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.--Natural flow of stream affected by operations of Oak Ridge National Laboratory.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	-	-	-	-	-	4.31	9.87	15.6	9.55	-
1951	3.35	5.15	12.5	13.6	23.2	23.6	15.3	4.88	4.13	3.91	3.29	5.52	9.79
1952	4.51	9.53	18.8	12.0	8.32	20.2	5.21	4.61	4.98	5.04	4.65	4.14	8.53
1953	3.45	4.47	5.46	8.95	18.7	10.5	6.90	7.47	4.71	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	5.09	5.37	-
1956	4.66	5.19	7.33	7.70	24.6	15.5	18.2	5.89	5.17	6.50	5.77	5.38	9.25
1957	5.60	5.34	15.5	16.0	25.8	9.40	10.2	4.45	5.99	5.85	5.28	14.6	10.2
1958	9.47	23.1	17.8	8.63	8.31	10.5	16.5	9.43	5.24	6.28	6.32	6.41	10.7
1959	3.94	3.88	4.54	11.9	12.8	9.76	12.8	5.75	6.69	6.33	9.33	5.72	7.75
1960	6.38	8.39	11.4	9.75	13.0	14.0	7.10	4.40	7.93	9.64	5.26	5.25	8.53

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	1276	a642	Aug. 30, 1950						
1951	1276	595	Feb. 1, 1951	2.4	9.79	-	-	10.8	-
1952	1276	437	Mar, 10, 1952	3.0	8.53	-	-	6.89	-
1953	1276	303	Feb. 21, 1953	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1436	-	-	-	-	-	-	-	-
1956	1436	321	Apr. 4, 1956	3.8	9.25	-	-	10.0	-
1957	1506	511	Sept.16, 1957	3.2	10.2	-	-	12.2	-
1958	1556	511	Nov. 16, 1957	4.0	10.7	-	-	7.48	-
1959	1626	355	Aug. 5, 1959	2.6	7.75	-	-	8.91	-
1960	1706	587	July 11, 1960	3.0	8.53	-	-	-	-

a Maximum recorded during period June to September, but may have been higher on Aug. 2.

5375. Melton Branch near Oak Ridge, Tenn.

Location.--Lat 35°54'38", 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 (1955-60), 2.24 cfs.

Extremes.--1955-60: Maximum discharge, 152 cfs July 11, 1960, from rating curve extended above 70 cfs; no flow for many days during August, September, October, and November 1955.

Remarks.--Natural flow affected by operations of Oak Ridge National Laboratory.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	-	0.04	-
1956	0.02	0.15	0.89	2.20	8.07	4.64	5.62	0.94	0.15	0.17	0.12	.13	1.90
1957	.24	.26	4.59	5.69	8.99	2.70	3.03	.44	.61	.20	.19	3.15	2.46
1958	2.73	7.52	5.96	2.54	2.62	3.73	6.19	2.52	.74	.74	.84	.80	3.07
1959	.54	.58	.77	3.67	3.80	3.82	3.39	.69	.87	.70	1.11	.53	1.69
1960	.51	1.70	3.86	3.42	4.99	4.95	1.76	.44	1.47	.66	.44	.64	2.06

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1436	-	-	-	-	-	-	-	-
1956	1436	98	Feb. 3, Apr. 4	0	1.90	-	-	2.24	-
1957	1506	117	Sept. 16, 1957	.1	2.46	-	-	3.39	-
1958	1556	120	Nov. 16, 1957	.3	3.07	-	-	1.88	-
1959	1626	121	Jan. 21, 1959	.3	1.69	-	-	2.04	-
1960	1706	152	July 11, 1960	.2	2.06	-	-	-	-

5380. Whiteoak Creek at Whiteoak Dam near Oak Ridge, Tenn.

Location.--Lat 35°53'17", long 84°19'15", at Whiteoak Dam, on White Wing Ferry Road, 0.9 mile downstream from Melton Branch, 2 miles south of Oak Ridge National Laboratory, Roane County, and 8 miles south of Oak Ridge.

Drainage area.--6.01 sq mi.

Records available.--July 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 740.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Extremes.--1953-55: Maximum discharge, 669 cfs Dec. 29, 1955 (gage height, 12.04 ft); no flow July 17-20, 1953, Dec. 1, May 18, 19, 1954, Sept. 3-6, 1955.

Remarks.--Flow affected by operations of Oak Ridge National Laboratory above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	-	-	-	-	-	-	41.4	3.05	3.75	-
1954	3.46	3.98	8.73	42.6	9.07	20.2	10.2	7.10	4.29	4.01	4.43	4.33	10.3
1955	4.17	3.69	20.8	7.76	24.8	29.2	14.4	6.12	5.53	5.80	4.98	4.69	10.9

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1953	1336	-	-	-	-	-	-	-	-
1954	1336	499	Jan. 15, 1954	0	10.3	-	-	11.3	-
1955	1386	669	Dec. 29, 1954	0	10.9	-	-	-	-

5385. Emory River near Wartburg, Tenn.

Location.--Lat 36°06'46", long 84°36'54", on right bank 50 ft downstream from highway bridge on Wartburg-Lancing road, 1.1 miles downstream from Rock Creek, 1¼ miles northwest of Wartburg, Morgan County, 6.1 miles upstream from Obed River, and at mile 34.5.

Drainage area.--83.2 sq mi.

Records available.--May 1934 to September 1957. Operated as a crest-stage partial-record station since Oct. 1, 1958.

Gage.--Water-stage recorder. Datum of gage is 1,003.06 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--23 years (1934-57), 146 cfs.

Extremes.--1934-60: Maximum discharge, 18,700 cfs Feb. 3, 1939 (gage height, 25.62 ft), from rating curve extended above 7,700 cfs.
1934-57: No flow at times.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	7.98	51.4	213	305	695	451	303	149	9.87	20.2	2.43	1.31	181
1952	1.24	129	811	354	174	382	68.0	37.4	22.3	.83	.64	.03	166
1953	0	4.02	58.4	272	370	217	176	188	33.1	91.0	4.98	.197	117
1954	0	.02	24.1	525	159	303	198	111	11.0	1.29	.25	.01	111
1955	.69	2.29	311	111	373	620	160	38.9	100	66.4	52.9	9.38	153
1956	40.1	84.3	201	218	769	370	381	156	13.3	31.3	7.26	5.79	187
1957	20.3	36.4	453	622	488	169	255	42.7	50.2	10.1	3.13	57.7	182
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.11	0.69	2.96	4.23	8.70	6.25	4.07	2.06	0.13	0.28	0.03	0.02	29.53
1952	.02	1.73	11.24	4.91	2.25	5.29	.91	.52	.30	.01	.009	.0004	27.19
1953	0	.05	.81	3.76	4.63	3.01	2.36	2.61	.44	1.26	.07	.003	19.00
1954	0	.0003	.33	7.28	1.99	4.19	2.66	1.54	.15	.02	.003	.0002	18.16
1955	.01	.03	4.31	1.54	4.67	8.59	2.14	.54	1.35	.92	.73	.13	24.96
1956	.56	1.13	2.79	3.02	9.96	5.13	5.11	2.16	.18	.43	.10	.08	30.65
1957	.28	.49	6.28	8.63	6.11	2.34	3.42	.59	.67	.14	.04	.77	29.76
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	225	36.77
1951	1206	16,600	Feb. 1, 1951	0	181	2.18	29.53	238	38.76
1952	1236	8,980	Dec. 15, 1951	0	166	2.00	27.19	92.1	15.06
1953	1276	3,780	Feb. 21, 1953	0	117	1.41	19.00	113	18.47
1954	1336	7,380	Jan. 21, 1954	0	111	1.33	18.16	136	22.18
1955	1386	12,900	Mar. 22, 1955	.2	153	1.84	24.96	154	25.09
1956	1436	5,540	Feb. 18, 1956	.2	187	2.25	30.65	203	33.22
1957	1506	11,900	Jan. 28, 1957	0	182	2.19	29.76	-	-
1958	1626	13,900	Nov. 18, 1957	-	-	-	-	-	-
1959	1626	6,800	Jan. 21, 1959	-	-	-	-	-	-
1960	1706	8,110	Dec. 19, 1959	-	-	-	-	-	-

5395. Daddys Creek near Crab Orchard, Tenn.

Location.--Lat 35°55'33", long 84°54'47", on left bank 0.6 mile upstream from North Creek, 1.5 miles downstream from bridge on U.S. Highway 70, 1.5 miles downstream from Bird Creek, and 2 miles northwest of Crab Orchard, Cumberland County.

Drainage area.--93.5 sq mi.

Records available.--October 1930 to September 1958. Prior to October 1952, published as Daddy Creek near Crab Orchard.

Gage.--Water-stage recorder. Datum of gage is 1,569.19 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to May 17, 1934, staff gage at same site and datum.

Average discharge.--28 years (1930-58), 174 cfs.

Extremes.--1930-58: Maximum discharge, 11,600 cfs Feb. 13, 1948 (gage height, 21.30 ft); no flow Sept. 23, 24, 1936, Sept. 11-22, 1954.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	8.61	47.5	261	386	699	465	376	86.8	8.62	38.6	1.47	2.19	195
1952	1.10	182	604	370	201	501	82.4	42.4	20.1	2.16	0.442	0.685	168
1953	.049	1.91	43.3	333	512	311	190	232	16.5	24.3	2.71	.427	137
1954	.063	.33	40.9	731	175	333	214	220	55.6	.810	.442	.093	148
1955	.414	1.18	320	178	405	552	248	106	147	18.0	20.9	5.57	166
1956	3.73	38.9	214	210	847	344	492	126	32.6	161	23.0	3.29	205
1957	35.3	82.5	636	492	728	220	285	170	122	13.0	0.68	51.8	233
1958	171	834	478	175	164	263	491	338	20.4	14.8	40.5	7.65	249
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.11	0.57	3.21	4.76	7.78	5.73	4.49	1.07	0.10	0.48	0.02	0.03	28.35
1952	.01	2.17	7.44	4.56	2.32	6.17	.98	.52	.24	.03	.005	.008	24.45
1953	.0006	.02	.53	4.11	5.71	3.84	2.27	2.86	.20	.30	.03	.005	19.88
1954	.0008	.0044	.50	9.01	1.95	4.11	2.56	2.72	.66	.01	.005	.001	21.53
1955	.0055	.01	3.94	2.20	4.51	6.81	2.96	1.31	1.75	.22	.26	.07	24.04
1956	.05	.46	2.64	2.59	9.77	4.25	5.87	1.56	.39	1.98	.28	.04	29.88
1957	.44	.98	7.85	6.06	8.11	2.71	3.40	2.10	1.45	.16	.008	.62	33.89
1958	2.11	9.95	5.89	2.15	1.82	3.24	5.86	4.17	.24	.18	.50	.09	36.20
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	261	37.86
1951	1206	5,790	Feb. 1, 1951	0.2	195	2.09	28.35	235	34.08
1952	1236	5,440	Mar. 11, 1952	.04	168	1.80	24.45	106	15.38
1953	1276	3,600	Feb. 21, 1953	.02	137	1.47	19.88	137	19.83
1954	1336	6,880	Jan. 21, 1954	0	148	1.58	21.53	172	24.98
1955	1386	8,030	Mar. 22, 1955	.07	166	1.78	24.04	160	23.24
1956	1436	4,580	Feb. 18, 1956	1.5	205	2.19	29.88	247	36.00
1957	1506	6,290	Dec. 13, 1956	.03	233	2.49	33.89	293	42.57
1958	1556	6,670	Nov. 18, 1957	.8	249	2.66	36.20	-	-
1959	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-

5396. Daddys Creek near Hebbertsburg, Tenn.

Location.--Lat 35°59'53", long 84°49'24", on upstream end of left abutment of Antioch Bridge, 2.1 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.--October 1956 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.--1956-60: 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, 19, 1957.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	‡20.0	‡51.0	‡735	‡825	‡1,000	‡340	‡470	337	163	19.7	1.66	55.1	‡331
1958	220	1,271	696	266	230	398	726	512	28.3	18.8	45.3	10.3	368
1959	3.23	20.8	52.4	469	440	355	391	126	93.3	77.0	140	55.5	184
1960	31.6	233	756	427	534	647	226	215	13.6	10.3	18.5	209	276

‡ Not previously published; estimated on basis of records for Emory River at Oakdale, Tenn.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	‡0.17	‡0.41	‡6.10	‡6.84	‡7.49	‡2.82	‡3.77	2.79	1.31	0.16	0.01	0.44	‡32.31
1958	1.83	10.20	5.77	2.20	1.72	3.30	5.83	4.25	.23	.16	.38	.08	35.95
1959	.03	.17	.43	3.89	3.29	2.95	3.14	1.05	.75	.64	1.16	.45	17.95
1960	.26	1.87	6.27	3.54	4.14	5.37	1.81	1.78	.11	.09	.15	1.68	27.07

‡ Not previously published; estimated on basis of records for Emory River at Oakdale, Tenn.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1957	-	-	-	-	‡331	‡2.38	‡32.31	‡445	‡43.43
1958	1556	11,100	Nov. 18, 1957	1.6	368	2.65	35.95	192	18.78
1959	1626	6,630	Jan. 21, 1959	1.9	184	1.32	17.95	263	25.72
1960	1706	7,560	Dec. 19, 1959	2.0	276	1.99	27.07	-	-

‡ Not previously published; estimated on basis of records for Emory River at Oakdale, Tenn.

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.--October 1956 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.--1957-60: Maximum discharge, 40,600 cfs Nov. 18, 1957 (gage height, 18.95 ft), from rating curve extended above 20,000 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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	‡73.0	‡182	‡2,620	‡2,950	‡3,530	‡1,220	‡1,720	735	665	57.0	10.9	101	‡1,141
1958	587	3,829	2,655	991	873	1,514	2,399	1,948	70.7	39.3	104	20.9	1,252
1959	10.5	65.8	187	1,442	1,686	1,551	1,454	387	404	152	295	147	641
1960	113	742	2,848	1,594	1,913	2,503	885	912	128	241	66.4	813	1,063

‡ Not previously published; estimated on basis of correlation with Emory River at Oakdale, Tenn.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	‡0.16	‡0.39	‡5.83	‡6.57	‡7.10	‡2.72	‡3.70	1.64	1.43	0.13	0.22	0.22	‡29.91
1958	1.31	8.25	5.91	2.21	1.75	3.37	5.17	4.33	.15	.09	.23	.04	32.81
1959	.02	.14	.42	3.21	3.39	3.45	3.13	.86	.87	.34	.66	.32	16.81
1960	.25	1.60	6.34	3.55	3.98	5.57	1.91	2.03	.28	.54	.15	1.75	27.95

‡ Not previously published; estimated on basis of correlation with Emory River at Oakdale, Tenn.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1957	1506	-	-	-	‡1,141	‡2.20	‡29.91	‡1,487	‡39.00
1958	1556	40,600	Nov. 18, 1957	2.0	1,252	2.42	32.81	684	17.92
1959	1626	18,000	Jan. 22, 1959	2.4	641	1.24	16.81	932	24.42
1960	1706	34,300	Dec. 19, 1959	14	1,063	2.05	27.95	-	-

‡ Not previously published; estimated on basis of correlation with Emory River at Oakdale, Tenn.

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 (1927-60), 1,404 cfs.

Extremes.--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 flood-marks), 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 reports of Tennessee Valley Authority.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	63.5	496	2,254	3,296	6,200	3,993	3,058	1,040	86.4	190	32.8	5.80	1,698
1952	10.1	1,091	5,519	3,465	1,757	4,179	731	339	271	16.1	11.6	3.77	1,458
1953	1.19	12.4	351	2,427	3,751	2,498	1,692	2,080	212	357	34.9	2.63	1,104
1954	.57	.37	167	5,361	1,432	2,744	1,870	1,318	514	23.4	11.2	.91	1,123
1955	37.6	20.6	3,139	1,433	3,496	5,752	1,991	632	1,004	262	105	11.6	1,482
1956	92.7	416	1,493	1,791	6,948	3,095	4,020	890	119	545	156	36.9	1,610
1957	108	272	3,964	4,465	5,390	1,840	2,582	945	857	95.0	20.1	389	1,722
1958	1,005	6,214	3,900	1,465	1,283	2,282	3,548	2,745	85.2	59.8	132	23.2	1,894
1959	15.4	69.3	242	2,271	2,511	2,204	2,177	594	526	211	597	213	959
1960	141	1,155	4,148	2,331	2,819	3,590	1,268	1,241	279	350	125	1,049	1,541

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.10	0.72	3.40	4.97	8.45	6.03	4.47	1.57	0.13	0.29	0.05	0.01	30.19
1952	.02	1.59	8.33	5.23	2.48	6.31	1.07	.51	.40	.02	.02	.006	25.99
1953	.002	.02	.53	3.66	5.11	3.77	2.47	3.14	.31	.54	.05	.004	19.61
1954	.0009	.0005	.25	8.09	1.95	4.14	2.73	1.99	.75	.04	.02	.001	19.96
1955	.06	.03	4.74	2.16	4.76	8.68	2.91	.95	1.47	.39	.16	.02	26.33
1956	.14	.61	2.25	2.70	9.81	4.67	5.87	1.34	.17	.82	.24	.05	28.67
1957	.16	.40	5.98	6.74	7.35	2.78	3.77	1.43	1.25	.14	.03	.57	30.60
1958	1.52	9.07	5.89	2.21	1.75	3.44	5.18	4.14	.12	.09	.20	.03	33.64
1959	.02	.10	.36	3.43	3.42	3.33	3.18	.90	.77	.32	.90	.31	17.04
1960	.21	1.69	6.26	3.52	3.98	5.42	1.85	1.87	.41	.53	.19	1.53	27.46

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	2,107	37.43
1951	1206	77,500	Feb. 1, 1951	1.8	1,698	2.22	30.19	2,020	35.91
1952	1236	56,000	Dec. 15, 1951	2.4	1,458	1.91	25.99	931	16.60
1953	1276	27,000	Feb. 21, 1953	0	1,104	1.45	19.61	1,087	19.31
1954	1336	62,900	Jan. 21, 1954	0	1,123	1.47	19.96	1,380	24.54
1955	1386	79,700	Mar. 22, 1955	3.7	1,482	1.94	26.33	1,379	24.50
1956	1436	41,600	Feb. 18, 1956	7.4	1,610	2.11	28.67	1,809	32.21
1957	1506	53,300	Jan. 28, 1957	3.2	1,722	2.25	30.60	2,281	40.54
1958	1556	76,700	Nov. 19, 1957	2.5	1,894	2.48	33.64	994	17.64
1959	1626	33,500	Jan. 22, 1959	4.4	959	1.26	17.04	1,391	24.72
1960	1708	56,300	Dec. 19, 1959	13	1,541	2.02	27.46	-	-

5415. Whites Creek near Glen Alice, Tenn.

Location.--Lat 35°47'49", long 84°45'37", on left bank a quarter of a mile upstream from Black Creek (also known as Hines Creek), half a mile upstream from Southern Railway bridge, and 1½ (revised) miles southwest of Glen Alice, Roane County.

Drainage area.--123 sq mi.

Records available.--May 1934 to September 1955. Operated as crest-stage station October 1955 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 758.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--21 years (1934-55), 215 cfs.

Extremes.--1934-60: Maximum discharge, 51,000 cfs Nov. 18, 1957 (gage height, 25.1 ft). 1934-55: Minimum discharge, 0.06 cfs Sept. 11, 1954 (gage height, 0.56 ft); minimum gage height, 0.55 ft Oct. 3-5, 1936.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	11.3	23.6	275	429	840	615	422	192	14.1	53.8	10.2	4.25	237
1952	3.07	164	811	464	229	684	92.6	30.1	16.3	.92	2.65	.71	210
1953	.22	2.13	51.5	404	694	441	236	328	19.6	44.3	6.21	.47	183
1954	.24	1.21	90.2	884	197	396	223	212	28.1	1.60	.13	.141	170
1955	.21	1.77	568	239	562	655	369	215	97.8	46.2	9.47	.25	229

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.11	0.21	2.58	4.02	7.11	5.77	3.83	1.80	0.13	0.50	0.10	0.04	26.20
1952	.03	1.49	7.61	4.35	2.00	6.41	.84	.28	.15	.01	.02	.01	23.20
1953	.002	.02	.48	3.79	5.88	4.13	2.14	3.07	.18	.42	.06	.004	20.18
1954	.002	.01	.85	8.29	1.67	3.71	2.02	1.99	.25	.01	.001	.001	18.80
1955	.002	.02	5.32	2.24	4.75	6.14	3.35	2.02	.89	.43	.09	.002	25.25

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	305	33.69
1951	1206	14,000	Feb. 1, 1951	0.8	237	1.93	26.20	294	32.43
1952	1236	16,700	Mar. 10, 1952	.2	210	1.71	23.20	132	14.57
1953	1276	8,460	Feb. 21, 1953	.1	183	1.49	20.18	186	20.54
1954	1336	12,200	Jan. 21, 1954	.07	170	1.38	18.80	211	23.28
1955	1386	17,300	Mar. 22, 1955	.2	229	1.86	25.25	-	-
1956	1556	11,000	Mar. 14, 1956	-	-	-	-	-	-
1957	1556	8,000	Jan. 28, 1957	-	-	-	-	-	-
1958	1556	51,000	Nov. 18, 1957	-	-	-	-	-	-
1959	1626	13,300	Jan. 22, 1959	-	-	-	-	-	-
1960	1706	5,440	Dec. 19, 1959	-	-	-	-	-	-

5430. Watts Bar Lake near Spring City, Tenn.

Location.--Lat 35°37'13", long 84°47'00", at Watts Bar Dam on Tennessee River, 6.5 miles southeast of Spring City, Rhea County, 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.

Extremes.--1941-60: Maximum elevation, 745.12 ft Mar. 9, 1942; minimum (after first filling), 733.44 ft Mar. 20, 1945. Contents based on backwater profile.

Remarks.--Lake 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 lake 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). Lake is used for navigation, flood control, and power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month, of Watts Bar Lake near Spring City, Tenn.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	433	411	396	419	392	475	477	496	490	485	454	434
1952	414	399	384	408	391	395	482	519	500	477	463	443
1953	430	409	390	397	391	410	512	498	470	493	451	451
1954	423	394	385	402	407	421	494	487	491	480	453	440
1955	420	396	508	387	413	428	497	507	483	472	459	444
1956	421	392	386	453	403	400	484	485	478	474	488	478
1957	453	401	399	435	399	388	489	488	471	480	483	481
1958	440	408	395	387	407	392	545	494	467	484	471	481
1959	435	411	388	390	391	419	495	501	478	488	476	494
1960	445	435	396	390	391	420	491	488	485	469	482	487

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 (1934-60), 188 cfs.

Extremes.--1934-60: Maximum discharge, 29,000 cfs Jan. 7, 1946 (gage height, 23.97 ft, from floodmarks), from rating curve extended above 6,700 cfs on basis of contracted-opening measurements 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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	53.7	87.0	257	284	661	645	395	100	82.7	73.8	30.7	33.8	223
1952	39.2	219	499	366	232	562	106	51.4	52.7	26.4	43.4	25.9	186
1953	20.0	35.1	82.0	270	628	282	153	221	52.3	40.2	30.8	20.3	150
1954	18.1	21.5	51.1	618	133	340	164	104	55.4	22.5	22.5	16.7	131
1955	17.2	18.9	232	150	382	429	416	109	47.1	62.8	21.0	18.7	157
1956	17.8	27.2	71.3	81.6	764	405	333	120	38.6	56.6	17.0	21.1	160
1957	20.5	25.7	359	424	868	205	428	90.8	76.7	31.5	20.3	471	247
1958	152	664	458	224	196	259	592	286	51.9	41.0	38.1	25.7	248
1959	25.1	27.3	27.6	196	224	240	337	72.8	93.6	46.4	105	96.1	123
1960	54.1	107	354	253	369	379	180	57.6	43.9	36.9	37.1	54.4	160

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.53	0.83	2.54	2.79	5.89	6.35	3.76	0.99	0.79	0.73	0.30	0.32	25.82
1952	.39	2.09	4.92	3.60	2.14	5.53	1.01	.51	.50	.26	.43	.25	21.63
1953	.20	.33	.81	2.66	5.59	2.78	1.46	2.18	.50	.40	.30	.19	17.40
1954	.18	.20	.50	6.09	1.18	3.35	1.56	1.03	.53	.22	.22	.16	15.22
1955	.17	.18	2.28	1.48	3.40	4.23	3.97	1.08	.45	.62	.21	.18	18.25
1956	.18	.26	.70	.80	7.04	3.99	3.18	1.18	.37	.56	.17	.20	18.63
1957	.20	.24	3.54	4.18	7.73	2.02	4.09	.89	.73	.31	.20	4.49	28.62
1958	1.49	6.33	4.52	2.21	1.75	2.55	5.64	2.82	.49	.40	.38	.25	28.83
1959	.25	.26	.27	1.93	1.99	2.37	3.22	.72	.89	.46	1.03	.92	14.31
1960	.53	1.02	3.49	2.49	3.40	3.73	1.72	.57	.42	.36	.37	.52	18.62

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	272	31.59
1951	1206	9,730	Feb. 1, 1951	24	223	1.91	25.82	253	29.32
1952	1236	5,350	Mar. 11, 1952	20	186	1.59	21.63	134	15.57
1953	1276	5,420	Feb. 21, 1953	16	150	1.28	17.40	146	16.94
1954	1336	6,380	Jan. 21, 1954	16	131	1.12	15.22	146	16.97
1955	1386	3,900	Dec. 29, 1954	13	157	1.34	18.25	144	16.76
1956	1436	6,360	Feb. 3, 1956	15	160	1.37	18.63	185	21.47
1957	1506	13,000	Sept.16, 1957	16	247	2.11	28.62	319	36.98
1958	1556	8,760	Apr. 29, 1958	23	248	2.12	28.83	149	17.27
1959	1626	4,480	Mar. 27, 1959	20	123	1.05	14.31	160	18.57
1960	1706	2,520	Dec. 19, 1959	21	160	1.37	18.62	-	-

• 5445. Richland Creek near Dayton, Tenn.

Location.--Lat 35°30'17", long 85°01'20", on left bank at Morgantown, 0.4 mile upstream from bridge on State Highway 30, 1 mile northwest of Dayton, Rhea County, and 1¾ miles downstream from Payne Creek (formerly Gooch Creek).

Drainage area.--50.2 sq mi.

Records available.--June 1927 to September 1931, June 1934 to September 1955. Operated as crest-stage station October 1955 to September 1960. Published as "at Dayton" 1927-31.

Gage.--Water-stage recorder. Datum of gage is 728.59 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. June 22, 1927, to September 1931, staff gage at bridge 1 mile downstream at datum 43.61 ft lower.

Average discharge.--25 years (1927-31, 1934-55), 107 cfs.

Extremes.--1927-31, 1934-60: Maximum discharge, 11,000 cfs Nov. 18, 1957 (gage height, 10.2 ft), from rating curve extended above 4,600 cfs by logarithmic plotting.
1927-31, 1934-55: No flow July 28, Aug. 19 to Sept. 12, 1929, Sept. 14-30, 1931.

Remarks.--City of Dayton diverts an average of about 1 cfs 3 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	6.41	27.5	183	169	290	291	188	48.3	30.0	31.5	1.51	1.86	105
1952	2.01	137	339	159	125	312	46.6	15.8	40.6	.91	1.01	3.30	98.8
1953	.26	1.27	35.9	215	343	164	89.8	91.9	2.74	30.7	5.24	.180	80.2
1954	.060	.126	69.2	382	102	203	123	110	8.90	.462	.97	.120	83.7
1955	.024	.172	172	102	257	253	253	76.8	44.4	17.0	7.46	.114	97.5

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.15	0.61	4.21	3.89	6.02	6.67	4.18	1.11	0.67	0.72	0.03	0.04	28.30
1952	.05	3.04	7.78	3.65	2.68	7.16	1.03	.36	.90	.02	.02	.07	26.76
1953	.006	.03	.82	4.94	7.12	3.78	2.00	2.11	.06	.71	.12	.004	21.70
1954	.001	.003	1.59	8.77	2.12	4.67	2.74	2.52	.20	.01	.02	.003	22.65
1955	.0005	.004	3.95	2.34	5.33	5.80	5.63	1.76	.99	.39	.17	.003	26.37

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	146	39.48
1951	1206	3,170	Feb. 1, 1951	0.1	105	2.09	28.30	127	34.20
1952	1236	8,600	Mar. 10, 1952	.2	98.8	1.97	26.76	61.8	16.75
1953	1276	3,170	Feb. 21, 1953	.03	80.2	1.60	21.70	82.9	22.44
1954	1336	5,370	Jan. 21, 1954	.01	83.7	1.67	22.65	92.5	25.01
1955	1386	4,880	Dec. 29, 1954	.02	97.5	1.94	26.37	-	-
1956	1556	6,650	Mar. 14, 1956	-	-	-	-	-	-
1957	1556	7,830	December 1956	-	-	-	-	-	-
1958	1556	11,000	Nov. 18, 1957	-	-	-	-	-	-
1959	1626	5,150	Jan. 21, 1959	-	-	-	-	-	-
1960	1706	2,510	Feb. 5, 1960	-	-	-	-	-	-

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 (1941-60), 128 cfs.

Extremes.--1941-60: Maximum discharge, 5,700 cfs Mar. 11, 1952 (gage height, 15.24 ft), from rating curve extended above 3,000 cfs on basis of slope-area and contracted-opening measurements at gage heights 12.80 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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	95.7	68.9	135	90.3	117	197	225	145	114	80.9	44.3	44.9	113
1952	43.2	104	197	145	177	427	180	107	83.3	49.3	60.7	45.8	135
1953	35.9	53.8	79.0	212	285	216	135	151	77.6	94.5	51.1	59.0	120
1954	40.8	51.3	141	284	167	207	197	122	157	73.1	48.6	28.7	126
1955	24.9	35.1	74.2	69.9	155	143	197	216	114	115	88.2	45.6	106
1956	45.3	45.9	48.5	43.2	183	168	245	123	69.7	83.2	52.2	46.0	95.6
1957	50.0	53.3	*113	*146	*273	*170	*329	128	*104	67.9	36.8	41.2	*125
1958	82.2	*224	202	176	207	170	212	214	92.8	110	70.5	45.7	*150
1959	39.5	37.0	40.4	110	114	124	159	201	219	81.9	52.8	87.9	105
1960	173	117	141	167	301	206	248	111	71.0	54.6	114	92.8	149

* Revised.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.43	1.69	3.43	2.29	2.69	4.99	5.53	3.67	2.80	2.05	1.12	1.10	33.79
1952	1.09	2.56	4.99	3.67	4.20	10.83	4.40	2.72	2.04	1.25	1.54	1.12	40.41
1953	.91	1.32	2.00	5.38	6.51	5.48	3.31	3.83	1.90	2.40	1.30	1.45	35.79
1954	1.03	1.26	3.57	7.21	3.81	5.24	4.82	3.10	3.86	1.85	1.23	.70	37.68
1955	.63	.86	1.88	1.77	3.54	3.63	4.83	5.48	2.80	2.92	2.23	1.12	31.69
1956	1.15	1.12	1.23	1.09	4.33	4.27	6.00	3.13	1.71	2.11	1.32	1.13	28.59
1957	1.27	1.31	*2.86	*3.70	*6.24	*4.31	*8.06	3.26	*2.55	1.72	.93	1.01	*37.22
1958	2.08	*5.50	5.13	4.47	4.75	4.31	5.21	5.42	2.28	2.78	1.79	1.12	*44.84
1959	1.00	.91	1.02	2.80	2.60	3.14	3.89	5.09	5.37	2.08	1.34	2.16	31.40
1960	4.40	2.87	3.58	4.24	7.13	5.21	6.07	2.82	1.74	1.38	2.90	2.28	44.62

* Revised.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	135	40.34
1951	1206	1,310	Dec. 7, 1950	30	113	2.48	33.79	117	34.88
1952	1236	5,700	Mar. 11, 1952	29	135	2.97	40.41	120	36.00
1953	1276	2,720	Feb. 21, 1953	30	120	2.64	35.79	125	37.42
1954	1336	1,960	Jan. 16, 1954	23	126	2.77	37.68	118	35.19
1955	1386	1,220	Feb. 6, 1955	23	106	2.33	31.69	107	31.82
1956	1436	1,900	Apr. 15, 1956	33	95.6	2.10	28.59	102	*30.53
1957	1506	*2,040	Apr. 5, 1957	23	*125	*2.75	*37.22	*149	*44.49
1958	1506 (a)	*1,310	Dec. 20, 1957	39	*150	*3.30	*44.84	117	35.06
1959	1556 (a)	*3,020	May 31, 1959	25	105	2.31	31.40	132	39.32
1960	1706	*978	Apr. 3, 1960	45	149	3.27	44.62	-	-

* Revised.
a Revised figure of daily discharge will be published in a future water-supply paper.

5460. Shooting Creek near Hayesville, N. C.

Location.--Lat 35°01'29" (revised), long 83°42'27" (revised), 400 ft downstream from Hothouse Branch, half a mile upstream from Chatuge Lake, and 6.5 miles east of Hayesville, Clay County.

Drainage area.--37.6 sq mi.

Records available.--August 1922 to March 1924, October 1941 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,930.33 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Aug. 15, 1922, to Mar. 13, 1924, chain gage at bridge 0.7 mile downstream at datum 16.82 ft lower.

Average discharge.--15 years (1922-23, 1941-55), 88.7 cfs.

Extremes.--1922-24, 1941-55: Maximum discharge, 6,820 cfs June 16, 1949 (gage height, 9.20 ft), from rating curve extended above 1,300 cfs on basis of slope-area measurement of peak flow; minimum, 9.6 cfs Sept. 19, 1954 (gage height, 1.22 ft).
Revisions.--The momentary maximum discharge for the water year 1923, published in WSP 1306, has been revised to 3,500 cfs.

Remarks.--Slight diurnal fluctuation caused by small mill above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	47.6	46.7	91.0	67.3	86.6	153	159	81.5	97.4	60.5	30.4	36.0	79.7
1952	26.5	65.8	151	138	119	234	114	78.4	66.2	30.2	38.2	30.6	91.0
1953	19.5	31.6	58.8	115	183	121	83.9	103	53.0	45.6	28.5	26.9	71.8
1954	19.9	24.9	72.5	216	91.4	170	135	70.8	58.1	29.4	26.0	15.7	77.6
1955	14.4	23.3	45.0	44.8	111	116	150	117	70.4	70.5	65.4	29.2	71.1

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.46	1.39	2.79	2.06	2.40	4.70	4.72	2.50	2.89	1.85	0.93	1.07	28.76
1952	.81	1.95	4.63	4.22	3.43	7.17	3.37	2.40	1.96	.93	1.17	.91	32.95
1953	.60	.94	1.80	3.52	5.08	3.72	2.49	3.14	1.57	1.40	.87	.80	25.93
1954	.61	.74	2.22	6.64	2.53	5.20	4.00	2.17	1.72	.90	.80	.46	27.99
1955	.44	.69	1.38	1.37	3.08	3.55	4.45	3.59	2.09	2.16	2.01	.87	25.68

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	107	38.70
1951	1206	920	Mar. 29, 1951	22	79.7	2.12	28.76	84.5	30.51
1952	1236	1,210	Mar. 23, 1952	19	91.0	2.42	32.95	79.8	28.90
1953	1276	1,140	Feb. 21, 1953	16	71.8	1.91	25.93	72.5	26.16
1954	1336	1,800	Jan. 16, 1954	12	77.6	2.06	27.99	74.6	26.93
1955	1386	1,450	May 22, 1955	13	71.1	1.89	25.68	-	-

5465. Chatuge Lake near Hayesville, N. C.

Location.--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 (revised) miles southeast of Hayesville, Clay County, and at mile 121.0.

Drainage area.--189 sq mi.

Records available.--February 1942 to September 1960. Prior to 1954, published as "Chatuge Reservoir."

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.

Extremes.--1942-60: Maximum contents, 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.

Remarks.--Lake is formed by a rolled earthfill dam with side channel spillway equipped with flashboards. Storage began Feb. 12, 1942; water in lake 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). Lake is used for navigation, flood control, and power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in cfs-days, on last day of month, of Chatuge Lake near Hayesville, N. C.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	60,000	65,600	65,600	63,500	46,600	57,500	78,500	81,200	75,100	66,500	45,700	31,500
1952	33,900	43,000	62,800	79,400	77,300	103,000	86,100	72,900	60,500	25,700	9,800	11,200
1953	14,400	19,300	24,200	38,500	60,400	78,500	38,900	9,700	17,600	25,700	29,600	34,800
1954	37,800	41,800	54,000	86,100	100,400	111,800	117,400	122,000	115,400	109,000	108,800	108,500
1955	108,400	109,100	84,100	55,000	63,400	66,300	58,300	48,300	30,000	29,800	36,200	36,000
1956	24,200	18,900	10,300	10,300	31,100	48,500	68,400	73,300	65,900	63,100	41,500	42,800
1957	46,600	48,500	50,100	58,500	84,100	92,900	103,400	94,400	76,600	55,000	46,800	45,300
1958	51,600	65,600	71,900	70,100	68,900	70,400	80,600	93,900	78,400	68,700	49,500	42,600
1959	44,600	47,800	41,200	43,100	52,500	61,400	58,200	63,400	53,200	42,400	32,400	34,100
1960	45,800	53,400	63,800	71,700	81,400	92,900	98,400	92,000	80,200	67,500	54,900	45,700

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.--1942-60: Maximum discharge, 3,040 cfs Dec. 31, 1942 (gage height, 8.00 ft); minimum, 0.6 cfs Oct. 21, 1952; minimum gage height, 0.30 ft Aug. 3, 1942, Oct. 21, 1952.

1907-9, 1922-23, 1942-60: Maximum stage recorded, 11.9 ft Mar. 13, 1909, site and datum then in use (discharge not determined).

Remarks.--Flow completely regulated beginning Feb. 12, 1942, by Chatuge Lake.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	330	2.02	447	387	1,072	320	4.27	304	675	571	864	698	469
1952	60.9	2.23	4.14	4.42	664	495	1,184	839	747	1,404	795	122	526
1953	1.07	1.28	99.8	125	72.2	3.32	1,846	1,555	14.9	2.90	2.12	1.72	311
1954	1.36	1.39	2.69	7.25	3.41	439	507	219	665	397	154	64.3	206
1955	47.0	108	1,109	1,266	256	437	973	1,080	1,034	376	39.3	142	575
1956	613	392	529	195	14.2	22.5	86.1	257	498	392	939	100	339
1957	13.3	132	275	239	28.4	240	779	681	1,004	920	400	197	411
1958	16.1	135	422	570	810	503	338	256	803	707	856	391	482
1959	50.2	18.5	368	299	14.4	101	603	440	881	614	527	161	342
1960	30.1	19.8	20.8	210	468	291	524	531	639	600	771	552	387

Monthly and yearly runoff, in inches (adjusted) a/

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.17	1.11	2.71	1.94	2.57	4.07	4.14	2.37	2.77	1.78	1.17	1.32	27.66
1952	.84	1.79	3.90	3.28	3.36	8.03	3.64	2.51	1.96	1.71	1.71	.99	33.72
1953	.63	.97	1.56	3.56	4.68	3.56	3.09	3.72	1.63	1.60	.78	1.03	26.81
1954	.60	.79	2.40	6.33	2.82	4.90	4.07	2.23	2.61	1.16	.89	.32	29.12
1955	.27	.77	1.84	1.98	3.05	3.22	4.14	4.60	2.49	2.24	1.49	.80	26.89
1956	1.41	1.26	1.52	1.19	4.15	3.54	4.40	2.52	1.47	1.83	1.47	.80	25.56
1957	.86	.76	2.37	3.09	5.17	3.18	6.63	2.37	2.41	1.35	.82	.86	29.87
1958	1.33	3.53	3.79	3.11	4.21	3.35	3.98	4.15	1.68	2.39	1.44	.95	33.91
1959	.70	.73	.94	2.18	1.92	2.36	2.92	3.69	3.18	1.61	1.24	1.28	22.75
1960	2.47	1.60	2.16	2.82	4.55	4.02	4.15	1.97	1.44	1.16	2.21	1.44	29.99

a Adjusted for change in contents in Chatuge Lake.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	500	483	34.51
1951	1206	2,070	June 26, 1951	1.4	469	387	2.04	27.66	409	401	28.66
1952	1236	1,570	Apr. 15, 1952	1.2	526	471	2.48	33.72	529	424	30.35
1953	1276	2,220	Apr. 17, 1953	.8	311	375	1.97	26.81	302	384	27.44
1954	1336	1,670	June 25, 1954	1.2	206	407	2.14	29.12	312	395	28.21
1955	1386	1,550	Dec. 10, 1954	1.9	575	376	1.98	26.89	597	395	28.20
1956	1436	1,480	June 25, 1956	2.1	339	357	1.88	25.56	245	354	25.36
1957	1506	1,590	May 8, 1957	6.8	411	418	2.20	29.87	424	484	34.53
1958	1556	1,500	June 30, 1958	10	482	475	2.50	33.91	471	387	27.63
1959	1626	1,480	Mar. 23, 1959	1.9	342	318	1.67	22.75	311	372	26.61
1960	1706	1,570	May 11, 1960	4.0	387	419	2.21	29.99	-	-	-

a Adjusted for change in contents in Chatuge Lake.

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" 1897-1940. Records published for both sites August 1939 to April 1940. Monthly discharge only for some periods, published in WSP 1306.

Gage.--Water-stage recorder at present site since Aug. 29, 1939. 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.--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.--Considerable diurnal fluctuation caused by Mission powerplant at Andrews Dam (normal regulated storage, about 75 cfs-days) beginning Dec. 2, 1924. Flow regulated by Chatuge Lake (see p. 190) beginning Feb. 12, 1942.

Revisions.--Some periods for water years 1899 and 1907 were revised in WSP 1706, and the momentary maximum for water year 1917 is revised herein; the revised records, as summarized herewith, supersede those published in WSP 1306.

Month	Mean	Per square mile	Runoff in inches	Momentary maximum	
				Discharge	Date
March 1899.....	3,313	-	9.07	-	-
Water year 1898-99....	1,277	3.03	41.18	-	-
Calendar year 1899....	1,018	2.42	32.82	-	-
November 1906.....	1,758	-	4.66	-	-
Calendar year 1906....	1,344	3.19	43.34	-	-
Water year 1906-7.....	1,259	2.99	40.62	-	-
Water year 1917.....	-	-	-	16,200	Mar. 4, 24

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	512	178	682	661	1,448	1,099	674	667	1,095	885	1,011	868	811
1952	199	267	730	730	1,130	1,451	1,524	1,116	1,043	1,487	965	255	908
1953	98.8	138	375	699	963	533	2,155	2,033	238	228	120	141	641
1954	103	106	348	1,360	408	1,282	1,127	618	1,056	586	307	151	623
1955	128	216	1,304	1,456	987	1,046	1,636	1,526	1,304	669	355	242	906
1956	777	621	829	417	1,130	851	876	759	754	702	1,069	228	750
1957	139	250	799	918	1,461	788	1,673	1,020	1,393	1,118	519	322	861
1958	219	627	985	892	1,545	959	978	1,002	1,045	1,209	1,051	535	918
1959	193	168	544	701	493	497	1,182	873	1,356	853	685	303	654
1960	301	351	419	709	1,104	1,014	1,085	827	888	788	1,070	749	774

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30								Calendar year		
		Observed				Adjusted a/				Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches		Mean	Mean	Runoff in inches
		Discharge	Date									
1950	-	-	-	-	-	-	-	-		946	929	31.06
1951	1206	10,100	Mar. 29, 1951	139	811	729	1.80	24.37		796	788	26.35
1952	1236	7,380	Dec. 21, 1951	111	908	853	2.10	28.60		859	754	25.27
1953	1276	5,700	Feb. 21, 1953	62	641	705	1.74	23.58		636	718	24.00
1954	1336	14,100	Jan. 16, 1954	64	623	825	2.03	27.58		715	798	26.67
1955	1386	8,230	Feb. 6, 1955	69	906	707	1.74	23.64		954	752	25.13
1956	1436	8,920	Apr. 15, 1956	100	750	768	1.89	25.76		663	772	25.88
1957	1506	15,300	Jan. 31, 1957	65	861	869	2.14	29.04		915	975	32.58
1958	1556	7,030	Feb. 6, 1958	115	918	911	2.24	30.45		841	757	25.30
1959	1626	5,620	June 2, 1959	73	654	631	1.55	21.10		668	730	24.40
1960	1706	4,680	Mar. 3, 1960	101	774	805	1.98	27.00		-	-	-

a Adjusted for change in contents in Chatuge Lake since 1942; no regulation prior to that date.

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.--1904-9, 1914-17, 1918-60: Maximum discharge, 18,000 (revised) 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 of chemical analyses and water temperatures for the period October 1952 to September 1953 are published in report of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	81.7	87.7	150	194	266	578	428	180	197	151	78.2	74.7	205
1952	56.9	143	451	500	305	557	218	158	181	70.7	142	86.6	240
1953	52.5	80.9	174	395	615	335	239	332	105	79.5	46.6	52.9	207
1954	36.5	46.1	163	733	206	470	309	193	180	69.5	59.8	29.5	209
1955	25.2	44.4	141	121	448	379	405	186	119	160	144	60.6	184
1956	97.3	128	194	133	733	530	429	262	124	130	60.5	48.9	237
1957	49.5	55.2	295	475	1,022	344	492	184	263	131	83.5	69.9	283
1958	117	374	452	270	511	331	381	428	129	235	111	67.7	282
1959	71.0	79.3	97.7	271	307	270	408	206	258	125	73.9	69.8	185
1960	118	282	306	344	406	430	324	153	117	81.1	126	79.6	230

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.91	0.94	1.66	2.15	2.66	6.41	4.59	2.00	2.11	1.67	0.87	0.80	26.77
1952	.63	1.53	5.00	5.54	3.16	6.17	2.33	1.75	1.94	.78	1.57	.93	31.33
1953	.58	.87	1.93	4.38	6.16	3.71	2.56	3.68	1.12	.88	.52	.57	26.96
1954	.40	.49	1.81	8.12	2.06	5.21	3.31	2.13	1.94	.77	.66	.32	27.22
1955	.28	.48	1.56	1.35	4.48	4.21	4.35	2.06	1.28	1.77	1.59	.65	24.06
1956	1.08	1.37	2.15	1.47	7.60	5.88	4.60	2.91	1.33	1.44	.67	.52	31.02
1957	.55	.59	3.27	5.26	10.24	3.81	5.28	2.04	2.82	1.45	.93	.75	36.99
1958	1.30	4.01	5.01	2.99	5.11	3.67	4.09	4.75	1.38	2.60	1.24	.73	36.88
1959	.79	.85	1.08	3.00	3.07	2.99	4.38	2.28	2.76	1.38	.82	.75	24.15
1960	1.31	3.02	3.39	3.82	4.21	4.77	3.48	1.70	1.25	.90	1.40	.85	30.10

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	296	38.68
1951	1206	6,910	Mar. 29, 1951	46	205	1.97	26.77	233	30.42
1952	1236	4,330	Dec. 20, 1951	42	240	2.31	31.33	211	27.55
1953	1276	3,820	Feb. 21, 1953	27	207	1.99	26.96	201	26.28
1954	1336	6,450	Jan. 16, 1954	23	209	2.01	27.22	206	26.84
1955	1386	3,860	Feb. 6, 1955	21	184	1.77	24.06	202	26.34
1956	1436	3,750	Apr. 16, 1956	32	237	2.28	31.02	236	30.83
1957	1506	8,320	Jan. 31, 1957	36	283	2.72	36.99	329	42.90
1958	1556	3,070	Apr. 29, 1958	50	282	2.71	36.88	224	29.28
1959	1626	3,020	Jan. 22, 1959	50	185	1.78	24.15	223	29.15
1960	1706	2,520	Nov. 28, 1959	44	230	2.21	30.10	-	-

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, 0.2 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 (1942-60), 170 cfs.

Extremes.--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.--Slight diurnal fluctuation at low flow caused by mills above station. Occasional regulation by Lake Trahlyta in Vogel State Park.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	115	84.8	160	119	164	299	323	210	148	142	65.5	67.0	158
1952	59.2	128	295	218	232	639	239	148	102	57.7	108	70.0	192
1953	51.8	80.4	129	310	415	262	174	204	93.8	113	63.2	72.7	163
1954	47.8	56.0	179	441	200	291	262	150	218	87.5	58.0	36.9	169
1955	31.5	51.1	127	102	243	228	259	329	136	133	107	49.0	149
1956	61.9	69.4	74.1	61.2	291	240	384	166	89.6	108	62.5	51.7	137
1957	53.4	61.9	167	212	366	220	475	170	137	102	53.6	57.1	171
1958	120	297	275	212	265	217	260	285	113	157	90.6	60.1	196
1959	52.7	50.6	56.8	168	157	159	195	219	200	102	64.8	74.2	125
1960	202	123	172	205	378	282	316	145	85.4	72.1	125	95.8	183

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.77	1.27	2.46	1.83	2.29	4.61	4.82	3.24	2.21	2.19	1.01	1.00	28.70
1952	.91	1.91	4.55	3.36	3.34	9.85	3.56	2.28	1.52	.89	1.66	1.04	34.87
1953	.80	1.20	1.98	4.78	5.77	4.04	2.59	3.15	1.40	1.74	.97	1.08	29.50
1954	.74	.84	2.76	6.80	2.79	4.48	3.92	2.32	3.25	1.35	.89	.55	30.69
1955	.49	.76	1.95	1.57	3.38	3.51	3.86	5.06	2.03	2.06	1.66	.73	27.06
1956	.95	1.03	1.14	.94	4.20	3.70	5.73	2.56	1.34	1.67	.96	.77	24.99
1957	.82	.92	2.58	3.27	5.09	3.38	7.08	2.63	2.05	1.57	.83	.85	31.07
1958	1.85	4.44	4.24	3.26	3.69	3.35	3.87	4.39	1.68	2.42	1.40	.90	35.49
1959	.81	.75	.88	2.58	2.18	2.45	2.91	3.37	2.98	1.58	1.00	1.11	22.60
1960	3.11	1.83	2.66	3.15	5.45	4.34	4.71	2.24	1.27	1.11	1.92	1.43	33.22

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	178	32.27
1951	1206	2,140	Mar. 29, 1951	46	158	2.11	28.70	168	30.57
1952	1236	8,500	Mar. 11, 1952	39	192	2.57	34.87	173	31.48
1953	1276	3,460	Feb. 21, 1953	36	163	2.18	29.50	164	29.86
1954	1336	4,080	Jan. 16, 1954	32	169	2.26	30.69	163	29.55
1955	1386	4,430	May 22, 1955	30	149	1.99	27.06	149	26.98
1956	1436	4,530	Apr. 15, 1956	37	137	1.83	24.99	144	26.19
1957	1506	3,630	Apr. 5, 1957	36	171	2.29	31.07	205	37.28
1958	1556	2,310	Dec. 20, 1957	47	196	2.62	35.49	151	27.40
1959	1626	3,850	Jan. 21, 1959	42	125	1.67	22.60	153	27.76
1960	1706	2,120	Feb. 10, 1960	50	183	2.45	33.22	-	-

5530. Nottely Lake near Ivylog, Ga.

Location.--Lat 34°57'29", long 84°05'22", at Nottely Dam on Nottely River, 1.3 miles upstream from Dooley Creek, 1.7 (revised) miles southwest of Ivylog, Union County, 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. Prior to 1954, published as "Nottely Reservoir."

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

Extremes.--1942-60: Maximum contents, 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).

Remarks.--Lake is formed by rock and rolled earthfill dam with side channel spillway equipped with flashboards. Storage began Jan. 24, 1942; water in lake 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). Lake is used for navigation, flood control, and power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	28,500	34,800	34,800	5,200	15,700	27,600	47,200	53,400	48,500	42,800	24,500	11,400
1952	12,900	21,900	41,500	43,800	42,100	64,800	45,800	29,600	26,100	8,900	2,200	2,100
1953	6,400	12,000	18,800	31,100	50,800	41,800	41,200	54,500	42,200	37,200	5,800	1,400
1954	700	4,400	10,100	28,400	32,700	28,300	31,600	2,400	400	400	6,100	9,400
1955	12,300	16,700	25,200	32,400	47,600	63,700	79,000	84,000	83,500	83,600	85,000	83,900
1956	83,400	83,500	83,500	61,400	51,800	48,900	57,300	49,800	44,400	41,000	22,400	24,500
1957	25,300	17,500	22,300	30,400	47,800	54,200	68,000	59,400	43,500	27,700	21,800	24,400
1958	28,200	36,900	37,400	32,700	45,700	60,600	57,700	65,300	51,400	41,400	24,300	14,600
1959	17,100	21,200	16,400	17,400	26,400	32,300	31,500	35,800	41,400	36,500	17,800	11,400
1960	21,600	28,800	35,400	35,800	46,200	55,500	67,200	63,600	50,600	39,800	29,800	18,500

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.--215 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 (1942-60), 396 cfs (adjusted for storage).

Extremes.--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.--Flow completely regulated by Nottely Lake.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	477	0.85	351	1,272	0.61	302	1.04	234	573	539	791	688	438
1952	122	.70	1.23	459	569	510	1,179	932	440	760	527	218	476
1953	.80	.90	80.1	189	111	804	435	.84	619	483	1,200	371	360
1954	171	26.2	183	442	288	860	499	1,367	556	254	9.49	.33	390
1955	.70	1.14	1.04	1.41	1.88	1.91	1.78	449	298	305	192	149	118
1956	191	202	213	918	1,080	644	540	648	437	397	814	86.0	513
1957	133	434	230	225	166	276	582	693	915	777	378	90.4	409
1958	134	333	532	579	164	2.12	701	393	743	753	790	531	473
1959	85.1	25.2	317	317	157	152	459	316	183	397	800	409	292
1960	38.8	20.1	111	383	318	311	197	419	659	570	669	603	358

Monthly and yearly runoff, in inches, a/ of Nottely River at Nottely Dam, near Ivylog, Ga.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.55	1.09	1.88	1.70	1.82	3.68	3.40	2.33	2.13	1.90	1.08	1.30	23.86
1952	.91	1.56	3.40	2.66	2.56	6.66	2.83	2.20	1.68	1.10	1.67	1.11	28.54
1953	.75	.97	1.61	3.14	3.94	2.76	2.15	2.31	1.09	1.72	1.00	1.16	22.60
1954	.80	.78	1.97	5.53	2.14	3.85	3.16	2.28	2.54	1.36	1.04	.57	26.02
1955	.51	.77	1.48	1.25	2.64	2.80	2.66	3.27	1.46	1.65	1.27	.58	20.34
1956	.94	1.06	1.14	1.10	3.75	2.95	4.25	2.18	1.33	1.54	1.15	.81	22.20
1957	.85	.90	2.07	2.61	3.81	2.59	5.41	2.23	2.00	1.43	1.00	.92	25.82
1958	1.38	3.24	2.94	2.29	3.04	2.59	3.13	3.42	1.45	2.31	1.28	1.08	28.15
1959	.89	.84	.87	1.88	1.63	1.84	2.24	2.44	1.92	1.28	1.06	1.02	17.91
1960	1.97	1.35	1.74	2.13	3.39	3.27	3.05	1.62	1.18	1.18	1.88	1.16	23.92

a Figures of runoff are adjusted for change in contents in Nottely Lake.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	441	434	27.41
1951	1206	2,290	Jan. 8, 1951	0.4	438	378	1.76	23.86	381	399	25.21
1952	1236	1,530	May 12, 1952	.4	476	451	2.10	28.54	473	411	26.00
1953	1276	1,800	Aug. 19, 1953	.4	360	358	1.67	22.60	385	361	22.82
1954	1336	2,290	May 5, 1954	.2	390	412	1.92	26.02	358	399	25.23
1955	1386	3,130	May 23, 1955	.2	118	322	1.50	20.34	169	328	20.72
1956	1436	1,800	Aug. 14, 1956	7.1	513	351	1.63	22.20	529	362	22.88
1957	1506	2,070	Mar. 29, 1957	.7	409	409	1.90	25.82	427	468	29.56
1958	1556	1,990	Jan. 3, 1958	1.3	473	446	2.07	28.15	425	367	23.19
1959	1626	1,830	Mar. 25, 1959	9.1	292	283	1.32	17.91	270	322	20.37
1960	1706	1,870	Feb. 4, 1960	9.6	358	378	1.76	23.92	-	-	-

a Adjusted for change in contents in Nottely Lake.

5545. Hiwassee Lake at Hiwassee Dam, N. C.

Location.--Lat 35°09'01" (revised), long 84°10'40", at Hiwassee Dam on Hiwassee River, a third of a mile northwest of village of Hiwassee Dam, Cherokee County, 3.9 miles upstream from Shoal Creek, and at mile 75.8.

Drainage area.--968 sq mi.

Records available.--September 1939 to September 1960. Prior to October 1939 month-end contents only, published in WSP 1306. Prior to 1954, published as "Hiwassee Reservoir."

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.

Extremes.--1939-60: Maximum contents, 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).

Remarks.--Lake 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 lake 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). Lake is used for navigation, flood control, and power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	157,100	92,800	67,600	76,800	94,400	157,800	200,300	200,200	201,600	203,400	200,000	197,200
1952	142,800	100,200	86,300	90,500	92,300	135,500	189,100	204,500	199,000	199,400	192,100	147,800
1953	92,500	69,100	58,900	80,600	102,700	110,400	173,300	202,300	201,700	201,100	185,400	140,700
1954	128,000	97,900	67,300	95,400	72,000	122,500	183,900	197,200	198,200	176,000	143,300	106,400
1955	66,300	52,800	68,200	72,700	82,000	108,800	170,200	198,900	203,300	173,800	149,600	156,300
1956	119,600	86,800	59,900	54,300	109,500	115,400	170,500	197,200	200,500	198,600	194,200	145,200
1957	103,900	68,800	72,300	84,900	86,900	95,800	165,600	180,800	200,800	201,400	197,500	165,300
1958	116,100	104,800	74,000	60,000	81,000	84,000	162,500	200,000	198,700	207,700	201,000	169,600
1959	117,700	68,300	46,600	59,100	63,200	66,000	136,400	165,200	198,500	201,300	198,100	169,200
1960	137,100	101,100	62,500	71,100	81,900	110,000	152,700	177,100	200,600	209,800	204,400	179,100

5555. Apalachia Lake at Apalachia Dam, N. C.

Location.--Lat 35°10'04", long 84°17'49", at Apalachia Dam on Hiwassee River in Cherokee County, 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. Prior to 1954, published as "Apalachia Reservoir."

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

Extremes.--1943-60: Maximum contents, 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).

Remarks.--Lake is formed by concrete gravity dam. Spillway equipped with 10 radial gates. Storage began Feb. 14, 1943; water in lake 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). Lake is used for navigation, flood control, and power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	28,100	27,400	28,100	27,000	25,300	28,400	28,200	27,100	26,400	27,000	26,300	27,700
1952	26,000	26,100	25,000	27,600	28,100	28,200	27,900	28,100	27,000	27,900	26,900	28,500
1953	28,100	28,600	26,000	27,600	28,100	28,500	28,500	28,100	28,800	26,800	27,600	28,400
1954	28,200	29,200	27,800	28,700	26,800	28,900	20,700	27,300	25,300	26,200	26,300	26,000
1955	25,900	26,400	26,600	26,300	26,500	27,600	28,200	28,100	28,300	28,300	15,900	23,000
1956	28,000	27,900	28,000	25,300	29,300	27,100	28,600	28,100	28,700	28,500	28,200	28,800
1957	28,200	28,500	26,600	28,300	28,200	29,100	28,600	26,500	28,800	28,400	28,200	28,700
1958	28,700	28,200	28,200	28,900	27,800	29,300	28,600	28,400	28,000	28,200	28,500	29,000
1959	28,200	27,900	28,400	27,700	27,300	26,900	28,400	28,700	28,800	28,300	28,900	28,800
1960	28,300	28,800	25,400	27,900	28,300	28,400	28,000	28,700	28,500	28,300	28,100	28,700

5560. Turtletown Creek at Turtletown, Tenn.

Location.--Lat 35°07'57", long 84°20'37", on left bank half a mile north of town, 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 (1933-60), 49.2 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	28.2	28.1	42.2	39.6	59.1	102	94.2	58.5	51.4	33.9	26.6	34.7	49.8
1952	26.0	50.1	74.7	79.8	65.5	114	70.3	54.8	87.0	37.0	41.3	27.4	60.6
1953	18.9	26.2	36.4	68.2	93.8	69.1	66.8	78.5	43.8	47.2	26.4	25.9	49.8
1954	20.0	19.6	31.9	103	48.9	71.9	68.3	50.9	50.9	27.1	25.4	15.5	44.5
1955	15.4	21.4	37.6	29.9	74.6	59.9	70.7	48.1	34.5	32.7	19.8	17.5	38.3
1956	26.1	25.5	31.4	26.5	104	89.1	80.8	62.8	45.3	46.0	25.1	19.7	48.3
1957	19.5	20.6	41.9	52.4	132	71.7	89.8	64.3	61.2	34.4	27.5	33.3	53.4
1958	30.5	62.4	63.3	54.7	89.1	73.1	93.6	103	57.4	67.8	42.1	31.1	63.8
1959	29.8	27.9	28.2	51.2	49.1	49.0	74.7	55.0	54.1	45.0	29.9	37.4	44.2
1960	44.7	70.1	71.5	66.3	80.6	93.9	74.1	53.2	44.6	32.8	34.2	22.9	57.3

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.21	1.16	1.81	1.70	2.29	4.36	3.91	2.51	2.13	1.45	1.14	1.44	25.11
1952	1.12	2.08	3.20	3.42	2.63	4.88	2.92	2.35	3.61	1.59	1.77	1.14	30.71
1953	.81	1.09	1.56	2.92	3.63	2.96	2.77	3.36	1.82	2.02	1.13	1.07	25.14
1954	.86	.81	1.37	4.41	1.89	3.08	2.83	2.18	2.11	1.16	1.09	.64	22.43
1955	.66	.89	1.61	1.28	2.89	2.57	2.93	2.06	1.43	1.40	.85	.73	19.30
1956	1.12	1.06	1.34	1.14	4.17	3.82	3.35	2.69	1.88	1.97	1.08	.82	24.44
1957	.84	.85	1.79	2.24	5.10	3.07	3.72	2.76	2.54	1.47	1.18	1.38	26.94
1958	1.31	2.59	2.71	2.34	3.45	3.13	3.88	4.40	2.38	2.91	1.80	1.29	32.19
1959	1.28	1.16	1.21	2.20	1.90	2.10	3.10	2.36	2.24	1.93	1.28	1.55	22.31
1960	1.91	2.91	3.06	2.84	3.23	4.02	3.07	2.28	1.85	1.41	1.46	.95	28.99

Yearly discharge, in cubic feet per second, of Turtletown Creek at Turtletown, Tenn.

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	62.4	31.52
1951	1206	936	Mar. 29, 1951	20	49.8	1.85	25.11	54.1	27.33
1952	1236	1,120	June 13, 1952	16	60.6	2.25	30.71	54.8	27.74
1953	1276	525	Feb. 21, 1953	15	49.8	1.85	25.14	49.0	24.72
1954	1336	784	Jan. 16, 1954	13	44.5	1.65	22.43	44.7	22.55
1955	1386	659	Feb. 6, 1955	11	38.3	1.42	19.30	39.0	19.66
1956	1436	461	Apr. 16, 1956	16	48.3	1.80	24.44	48.2	24.40
1957	1506	867	Feb. 1, 1957	16	53.4	1.99	26.94	59.6	30.07
1958	1556	476	Apr. 29, 1958	22	63.8	2.37	32.19	57.9	29.23
1959	1626	513	Jan. 22, 1959	22	44.2	1.64	22.31	52.6	26.54
1960	1706	615	Nov. 28, 1959	18	57.3	2.13	28.99	-	-

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 (1942-60), 2,327 cfs (unadjusted).

Extremes.--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.--Flow regulated by Chatuge, Nottely, Hiwassee, and Apalachia Lakes.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2,910	2,985	2,663	2,518	2,107	1,785	1,096	1,881	2,631	2,041	2,377	2,197	2,268
1952	2,567	2,551	3,124	2,928	3,184	3,085	2,085	2,470	3,144	2,711	2,552	2,384	2,732
1953	2,283	1,380	1,628	1,889	2,748	2,679	1,725	2,789	1,420	1,370	2,164	2,464	2,042
1954	936	1,379	2,262	4,097	2,584	2,298	1,237	2,232	2,551	1,905	1,739	1,601	2,068
1955	1,627	912	1,459	1,882	2,521	1,643	1,165	1,842	1,986	2,566	2,258	189	1,670
1956	2,557	2,629	2,798	2,267	3,172	3,488	1,336	1,671	1,691	1,732	2,375	2,317	2,335
1957	2,042	2,235	1,999	2,347	5,238	2,265	2,029	2,213	2,694	2,452	1,440	2,003	2,392
1958	2,619	2,966	4,354	3,085	3,260	2,372	965	2,080	2,624	2,759	2,707	2,608	2,700
1959	2,466	2,377	2,061	1,782	1,540	1,644	877	1,204	1,384	1,833	2,052	2,251	1,792
1960	2,163	2,981	3,216	2,181	2,798	2,371	1,170	1,171	1,354	1,451	2,641	2,627	2,175

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	2,765	2,722	32.53
1951	1206	10,900	Mar. 29, 1951	104	2,268	2,118	1.86	25.31	2,242	2,295	27.43
1952	1236	22,500	June 13, 1952	650	2,732	2,518	2.22	30.17	2,485	2,245	26.90
1953	1276	8,610	Feb. 21, 1953	92	2,042	2,085	1.84	24.92	1,982	2,067	24.70
1954	1336	10,900	Jan. 21, 1954	75	2,068	2,192	1.93	26.19	2,020	2,144	25.61
1955	1386	6,620	Feb. 23, 1955	30	1,670	1,804	1.59	21.56	2,004	1,943	23.22
1956	1436	6,880	Feb. 3, 1956	168	2,335	2,177	1.92	26.08	2,192	2,163	25.92
1957	1506	11,700	Jan. 31, 1957	82	2,392	2,454	2.16	29.32	2,701	2,811	33.59
1958	1556	9,330	Dec. 26, 1957	280	2,700	2,678	2.36	32.00	2,444	2,228	26.62
1959	1626	5,120	Jan. 22, 1959	112	1,792	1,759	1.55	21.01	1,914	2,063	24.66
1960	1706	7,830	Nov. 28, 1959	74	2,175	2,253	1.98	27.00	-	-	-

a Adjusted for change in contents in Chatuge, Nottley, Hiwassee, and Apalachie 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 (1912-60), 482 cfs.

Extremes.--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 September 1925 (gage height, 0.40 ft).
Flood in 1898 reached a stage about 2.8 ft higher than that of Mar. 11, 1952.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	312	256	379	343	451	793	947	632	509	400	236	238	458
1952	192	296	717	687	709	1,423	813	523	374	232	264	206	537
1953	155	194	311	663	860	707	509	514	295	286	182	194	403
1954	143	153	392	925	541	626	667	488	426	267	209	140	414
1955	119	155	270	257	614	611	688	761	484	425	304	180	404
1956	213	217	212	194	761	699	959	600	373	352	213	187	413
1957	158	155	361	470	1,025	653	1,256	591	450	318	198	223	483
1958	302	663	698	567	709	648	706	691	380	533	334	252	539
1959	208	191	192	361	420	461	614	515	550	336	254	261	363
1960	442	356	441	512	808	738	783	460	295	300	286	280	474

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.03	1.61	2.47	2.23	2.65	5.17	5.97	4.12	3.21	2.60	1.54	1.50	35.10
1952	1.25	1.86	4.67	4.48	4.32	9.27	5.12	3.41	2.36	1.51	1.72	1.30	41.27
1953	1.01	1.22	2.03	4.32	5.06	4.60	3.21	3.35	1.86	1.86	1.19	1.22	30.93
1954	.93	.97	2.55	6.02	3.18	4.08	4.20	3.18	2.69	1.74	1.36	.88	31.78
1955	.77	.98	1.76	1.67	3.61	3.98	4.34	4.95	3.05	2.77	1.98	1.13	30.99
1956	1.39	1.37	1.38	1.26	4.64	4.55	6.04	3.91	2.35	2.29	1.39	1.18	31.75
1957	1.03	.98	2.35	3.06	6.03	4.26	7.92	3.85	2.83	2.07	1.29	1.40	37.07
1958	1.97	4.18	4.54	3.69	4.17	4.22	4.45	4.50	2.40	3.47	2.17	1.59	41.35
1959	1.36	1.20	1.25	2.35	2.47	3.01	3.87	3.35	3.46	2.19	1.65	1.65	27.81
1960	2.88	2.25	2.87	3.33	4.92	4.80	4.94	3.00	1.86	1.96	1.86	1.77	36.44

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	531	40.70
1951	1206	7,410	Mar. 29, 1951	182	458	2.59	35.10	479	36.77
1952	1238	10,800	Mar. 11, 1952	156	537	3.03	41.27	491	37.75
1953	1276	4,850	Feb. 21, 1953	126	403	2.28	30.93	406	31.12
1954	1336	7,840	Jan. 16, 1954	122	414	2.34	31.78	402	30.84
1955	1386	5,170	Mar. 22, 1955	109	404	2.28	30.99	412	31.62
1956	1436	4,650	Apr. 16, 1956	150	413	2.33	31.75	416	31.97
1957	1506	5,490	Apr. 5, 1957	128	483	2.73	37.07	566	43.40
1958	1556	3,190	Dec. 20, 1957	191	539	3.05	41.35	449	34.47
1959	1626	3,530	Jan. 21, 1959	162	363	2.05	27.81	417	32.00
1960	1706	3,100	July 27, 1960	169	474	2.68	36.44	-	-

5585. Blue Ridge Lake near Blue Ridge, Ga.

Location.--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, and at mile 53.0.

Drainage area.--232 sq mi.

Records available.--December 1930 to September 1960.

Gage.--Water-stage recorder. Datum of gage is Tennessee Electric Power Co. datum. To convert elevations given herein to datum of 1929, supplementary adjustment of 1936, subtract 0.18 ft.

Extremes.--1930-60: Maximum 12 p.m. contents, 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).

Remarks.--Lake 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 (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). Lake is used for power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	49.6	46.6	44.5	40.1	45.1	67.1	93.6	91.5	94.1	88.1	76.6	67.4
1952	49.6	42.3	60.8	73.5	80.2	98.2	98.9	98.5	94.6	82.9	79.4	67.3
1953	43.6	33.8	32.6	48.3	73.6	78.6	86.5	93.2	84.5	78.6	63.1	48.8
1954	29.3	15.6	14.7	43.2	49.4	68.8	87.5	94.4	91.0	86.3	72.1	52.6
1955	31.9	18.9	23.6	16.0	29.3	45.8	62.9	76.3	74.3	70.7	60.9	44.6
1956	30.4	21.5	11.0	8.2	36.3	60.6	90.1	94.7	92.4	90.2	76.6	62.8
1957	47.9	30.8	31.3	35.6	65.5	77.9	96.8	89.5	79.8	72.2	57.7	48.8
1958	43.1	57.9	61.7	57.7	66.2	72.9	92.6	98.1	86.0	92.8	75.9	60.8
1959	41.0	26.2	15.0	17.0	21.5	28.0	45.5	53.1	59.6	55.2	46.0	38.3
1960	47.2	47.7	54.0	52.7	71.7	83.0	90.8	92.4	85.6	74.9	66.7	47.5

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.--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.--Flow regulated by Blue Ridge Lake beginning Dec. 6, 1930.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	500	383	510	552	367	321	192	808	523	671	644	625	510
1952	807	606	294	432	596	1,066	940	674	614	674	498	682	657
1953	948	571	465	326	154	683	354	402	663	575	728	732	553
1954	796	634	522	274	420	165	197	357	619	492	724	850	504
1955	808	641	233	563	309	231	245	432	592	631	690	760	512
1956	679	603	583	328	69.4	82.5	124	544	508	520	692	704	455
1957	677	740	452	467	182	383	852	957	936	639	739	609	638
1958	557	356	721	820	562	575	216	671	903	461	985	836	640
1959	924	731	587	403	369	365	187	404	437	547	620	575	514
1960	256	418	332	648	329	526	637	480	608	722	664	995	551

Yearly discharge, in cubic feet per second, of Toccoa River near Blue Ridge, Ga.

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	768	640	37.26
1951	1206	2,030	June 13, 1951	15	510	547	2.35	31.89	536	581	33.83
1952	1236	4,520	Mar. 23, 1952	12	657	656	2.82	38.35	680	603	35.24
1953	1276	1,970	May 25, 1953	12	553	502	2.15	29.26	550	501	29.20
1954	1336	1,900	June 4, 1954	3.5	504	515	2.21	29.98	481	506	29.46
1955	1386	1,870	July 20, 1955	5.3	512	490	2.10	28.57	528	493	28.75
1956	1436	1,970	June 25, 1956	4.0	455	505	2.17	29.47	455	510	29.81
1957	1506	2,010	Apr. 24, 1957	12	638	600	2.58	34.95	619	703	40.94
1958	1556	1,900	May 12, 1958	17	640	673	2.89	39.20	690	563	32.77
1959	1626	1,730	Oct. 3, 1958	3.9	514	452	1.94	26.35	410	517	30.10
1960	1706	1,900	May 26, 1960	12	551	576	2.47	33.67	-	-	-

a 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.--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.--Sixty-six percent of drainage area regulated by Blue Ridge Lake beginning Dec. 6, 1930. Record includes diversion from this stream by Tennessee Copper Co.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1914	‡297	‡285	‡512	-	-	-	-	-	-	-	-	-	-
1951	603	497	661	702	549	779	546	1,062	752	856	768	860	722
1952	947	818	713	834	952	1,745	1,293	910	835	785	635	781	937
1953	1,033	680	603	576	534	987	598	624	784	741	807	749	728
1954	847	717	680	779	654	544	528	607	853	602	825	935	714
1955	882	745	433	725	686	554	524	679	766	813	845	859	709
1956	821	757	742	480	573	472	619	846	735	735	818	849	704
1957	807	852	661	690	727	680	1,384	1,159	1,138	775	815	757	870
1958	705	652	1,052	1,075	994	923	703	1,083	1,075	717	1,108	980	923
1959	1,024	876	761	644	611	632	519	659	710	722	743	712	719
1960	419	638	527	893	630	963	951	672	752	874	868	1,178	780

‡ Not previously published.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	1,002	874	33.70
1951	1206	10,500	Mar. 29, 1951	122	722	759	2.16	29.27	781	826	31.86
1952	1236	6,120	Mar. 23, 1952	144	937	937	2.66	36.23	924	847	32.75
1953	1276	2,420	July 22, 1953	127	728	677	1.92	26.12	722	673	25.95
1954	1336	6,100	Jan. 16, 1954	126	714	725	2.06	27.95	699	723	27.88
1955	1386	4,900	Feb. 6, 1955	155	709	687	1.95	26.51	731	697	26.87
1956	1436	6,080	Apr. 16, 1956	185	704	754	2.14	29.15	704	759	29.37
1957	1506	5,480	Feb. 1, 1957	117	870	831	2.36	32.06	878	961	37.07
1958	1556	6,350	Apr. 29, 1958	160	923	955	2.71	36.84	943	815	31.45
1959	1626	3,260	Aug. 19, 1959	140	719	657	1.87	25.34	628	735	28.34
1960	1706	3,460	July 10, 1960	120	780	805	2.29	31.13	-	-	-

a 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 (1942-60), 195 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	99.9	95.7	127	145	212	399	398	213	164	115	76.0	135	181
1952	85.3	150	366	352	309	521	289	181	157	87.5	142	81.1	227
1953	61.3	74.1	131	307	388	307	201	212	115	108	70.1	63.3	168
1954	48.3	48.1	119	387	191	295	291	218	162	97.0	82.2	46.0	165
1955	46.5	59.1	149	130	313	267	242	163	112	102	83.4	50.1	142
1956	71.4	85.6	88.7	79.6	375	355	411	224	147	129	82.0	68.6	175
1957	60.2	62.2	174	209	584	255	353	197	218	171	90.4	122	205
1958	139	344	338	254	357	273	378	381	175	201	120	103	254
1959	78.2	81.3	86.1	198	199	190	269	182	166	120	93.8	91.5	146
1960	136	229	229	228	288	341	258	162	105	79.0	98.5	87.1	186

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1.62	1.51	2.07	2.35	3.11	6.49	6.26	3.46	2.58	1.87	1.24	2.12	34.68
1952	1.39	2.37	5.96	5.73	4.70	8.48	4.56	2.94	2.47	1.42	2.30	1.28	43.60
1953	1.00	1.17	2.12	5.00	5.71	4.99	3.16	3.45	1.81	1.76	1.14	1.00	32.31
1954	.78	.76	1.93	6.29	2.80	4.80	4.59	3.54	2.55	1.58	1.34	.72	31.68
1955	.76	.93	2.43	2.11	4.60	4.34	3.81	2.65	1.76	1.66	1.36	.79	27.20
1956	1.16	1.35	1.44	1.29	5.70	5.78	6.47	3.65	2.31	2.10	1.33	1.08	33.66
1957	.98	.98	2.83	3.41	8.58	4.15	5.55	3.20	3.44	2.77	1.47	1.93	39.29
1958	2.27	5.41	5.50	4.12	5.24	4.44	5.95	6.20	2.76	3.26	1.95	1.62	48.72
1959	1.27	1.28	1.40	3.22	2.92	3.09	4.23	2.96	2.62	1.95	1.52	1.44	27.90
1960	2.21	3.61	3.73	3.71	4.38	5.54	4.06	2.63	1.66	1.28	1.60	1.37	35.78

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	209	39.98
1951	1206	5,420	Mar. 29, 1951	60	181	2.55	34.68	205	39.20
1952	1236	2,380	Mar. 11, 1952	65	227	3.20	43.60	199	38.16
1953	1276	1,940	Feb. 21, 1953	44	168	2.37	32.31	165	31.49
1954	1336	3,380	Jan. 16, 1954	38	165	2.33	31.68	169	32.33
1955	1386	2,600	Feb. 5, 1955	37	142	2.00	27.20	141	27.03
1956	1436	3,150	Apr. 16, 1956	47	175	2.47	33.66	180	34.50
1957	1506	3,800	Feb. 1, 1957	50	205	2.89	39.29	249	47.68
1958	1556	2,690	Apr. 28, 1959	78	254	3.58	48.72	206	39.49
1959	1626	1,520	Jan. 21, 1959	65	146	2.06	27.90	175	33.50
1960	1706	1,330	Nov. 28, 1959	59	186	2.62	35.78	-	-

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 & Nashville Railroad station, 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.--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.--Flow includes an unknown amount of diversion from other drainage basins through the sulphuric acid plant of the Tennessee Copper Co. Some fluctuation due to irregular release of wastes by Tennessee Copper Co. just above gage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	25.4	24.6	26.1	23.4	25.1	42.2	38.6	34.0	42.6	41.1	37.9	41.7	33.6
1952	28.9	27.3	34.8	37.6	34.0	47.5	35.7	34.0	33.5	30.4	39.4	29.3	34.4
1953	26.7	28.1	28.8	36.1	41.6	33.0	35.9	38.3	32.0	39.1	32.3	37.7	34.1
1954	35.5	29.7	31.1	40.3	32.4	39.6	35.2	33.8	34.7	30.7	32.6	29.9	33.8
1955	29.3	28.0	27.6	25.3	35.4	35.6	33.8	34.3	37.9	46.2	45.3	38.6	34.8
1956	37.8	31.5	26.7	24.1	42.1	40.7	44.8	44.3	44.4	43.0	36.1	30.3	37.1
1957	32.5	26.7	30.2	31.1	48.5	41.8	49.3	43.8	49.5	43.5	37.5	41.1	39.5
1958	37.0	47.3	43.5	38.1	42.4	39.8	54.2	49.2	43.8	54.6	43.9	43.5	44.7
1959	42.9	40.0	29.2	32.6	33.8	32.3	42.9	44.2	44.1	46.9	46.1	42.1	39.8
1960	48.8	45.3	34.9	34.9	39.3	41.4	37.8	35.3	45.2	40.0	45.6	42.1	40.9

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	30.7	-
1951	1206	1,380	June 9, 1951	18	33.6	-	-	34.9	-
1952	1236	2,840	Aug. 18, 1952	18	34.4	-	-	33.8	-
1953	1276	1,890	Feb. 21, 1953	23	34.1	-	-	35.2	-
1954	1336	1,360	Aug. 21, 1954	23	33.8	-	-	32.9	-
1955	1386	1,940	July 20, 1955	21	34.8	-	-	35.7	-
1956	1436	1,670	July 4, 1956	19	37.1	-	-	36.6	-
1957	1506	1,670	July 15, 1957	17	39.5	-	-	42.7	-
1958	1556	2,120	Apr. 29, 1958	29	44.7	-	-	43.4	-
1959	1636	830	Aug. 31, 1959	19	39.8	-	-	41.2	-
1960	1706	1,390	June 3, 1960	28	40.9	-	-	-	-

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 (1934-60) 29.3 cfs.

Extremes.--1934-60: Maximum discharge, 7,080 cfs Apr. 6, 1936 (gage height, 7.2 ft), from rating curve, then in use, extended above 1,100 cfs; minimum daily, 2.8 cfs June 16, 17, 1941.

Remarks.--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.

Monthly and yearly mean discharge, in cubic feet per second, of North Potato Creek near Ducktown, Tenn.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	24.5	23.9	25.0	22.1	25.4	51.9	44.1	35.6	35.7	27.9	26.0	36.8	31.6
1952	21.7	28.5	41.7	42.2	35.6	71.1	35.8	33.9	49.1	24.5	46.1	24.7	38.0
1953	18.3	23.1	27.4	39.6	47.9	38.7	37.9	38.6	25.1	36.2	20.8	23.1	31.3
1954	17.3	18.9	28.5	62.8	29.6	40.8	34.3	31.0	36.9	20.8	24.5	13.9	30.0
1955	15.5	21.3	30.2	19.2	36.6	30.0	31.3	27.8	23.6	31.6	21.2	16.5	25.3
1956	24.2	19.9	23.2	21.1	65.1	47.6	40.3	36.7	35.1	35.6	26.0	24.5	33.1
1957	22.8	17.5	33.1	35.8	59.2	40.0	57.6	36.0	44.7	26.5	22.7	28.9	35.2
1958	21.4	37.7	32.0	30.3	46.0	36.2	56.3	54.3	31.2	50.4	31.4	25.9	37.7
1959	21.3	21.2	19.9	30.1	30.4	29.4	36.6	37.1	31.6	43.6	36.5	28.7	30.5
1960	36.2	46.1	36.3	39.3	45.1	51.1	39.6	28.1	36.0	20.1	35.0	23.3	36.3

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	37.8	-
1951	1206	1,120	May 1, 1951	14	31.6	-	-	33.1	-
1952	1236	2,650	June 16, 1952	16	38.0	-	-	36.0	-
1953	1276	1,310	July 18, 1953	15	31.3	-	-	31.0	-
1954	1336	1,330	June 1, 1954	9.8	30.0	-	-	30.2	-
1955	1386	1,360	July 23, 1955	11	25.3	-	-	25.3	-
1956	1436	1,070	Sept.23, 1956	14	33.1	-	-	33.7	-
1957	1506	1,160	July 15, 1957	13	35.2	-	-	36.6	-
1958	1556	1,350	Apr. 29, 1958	14	37.7	-	-	35.3	-
1959	1626	2,010	July 1, 1959	17	30.5	-	-	35.2	-
1960	1706	1,500	June 8, 1960	15	36.3	-	-	-	-

5625. Ocoee No. 3 Lake near Ducktown, Tenn.

Location.--Lat 35°02'25", long 84°28'00", at Ocoee No. 3 Dam on Ocoee River, 5 miles west of Ducktown, Polk County, 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 mean sea level.

Extremes.--1942-60: Maximum contents, 7,800 cfs-days Jan. 8, 1946 (elevation, 1,436.7 ft, estimated); minimum (after first filling), 800 cfs-days Oct. 4, 1959 (elevation, 1,410.90 ft).

Remarks.--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, and Dec. 31, 1959. Total capacity at elevation, 1,435.00 ft (top of gates) is 4,400 (revised) cfs-days, of which 3,000 (revised) cfs-days is controlled storage above elevation, 1,413.00 ft (minimum pool). Reservoir is used for power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	5.7	5.2	5.4	5.2	4.7	5.6	4.4	5.7	5.7	4.8	4.9	4.6
1952	4.4	4.5	4.2	5.1	5.3	5.0	4.3	4.0	4.4	4.3	4.8	4.9
1953	5.2	3.7	3.5	3.7	3.5	3.7	4.3	3.7	4.2	4.6	4.4	4.2
1954	4.5	3.9	3.7	3.0	4.0	3.4	2.8	4.0	4.0	3.9	4.1	3.6
1955	3.2	3.9	2.6	2.0	2.4	3.2	3.2	2.7	3.5	3.6	3.8	3.8
1956	3.7	3.3	3.4	2.7	3.8	3.4	3.2	3.1	4.1	4.0	3.9	2.1
1957	3.5	3.2	3.0	4.4	3.4	4.0	4.2	3.6	4.1	4.1	4.2	3.7
1958	4.1	2.6	3.8	3.2	2.9	3.4	4.2	4.0	2.6	3.3	3.0	3.9
1959	3.0	3.2	3.1	2.6	2.4	2.3	2.9	3.2	3.1	2.6	2.4	1.1
1960	2.6	2.4	2.3	2.8	1.8	2.0	2.3	2.4	1.9	2.1	1.6	1.7

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 (1912-60) 1,225 cfs (unadjusted).

Extremes.--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.--Flow regulated by Blue Ridge and Ocoee No. 3 Lakes and by powerplant above station.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	837	740	990	1,012	1,058	1,669	1,322	1,444	1,091	1,117	918	1,118	1,111
1952	1,092	1,137	1,460	1,472	1,465	2,695	1,763	1,251	1,156	964	947	939	1,362
1953	1,125	878	881	1,214	1,384	1,515	1,019	1,116	982	964	950	960	1,081
1954	950	846	958	1,652	969	1,170	1,081	919	1,143	780	1,007	1,022	1,042
1955	976	858	796	990	1,306	1,035	1,040	997	923	1,004	979	959	986
1956	971	953	957	683	1,481	1,174	1,330	1,240	970	1,013	981	986	1,059
1957	882	976	1,047	1,167	1,946	1,179	2,048	1,579	1,650	1,088	987	1,073	1,295
1958	938	1,473	1,636	1,565	1,762	1,449	1,560	1,864	1,448	1,215	1,368	1,160	1,451
1959	1,182	1,031	925	1,101	1,023	982	1,092	1,034	1,066	1,006	976	978	1,033
1960	700	1,225	1,017	1,363	1,307	1,703	1,464	976	987	995	1,135	1,356	1,184

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	1,547	1,421	36.82
1951	1206	19,800	Mar. 29, 1951	130	1,111	1,146	2.19	29.68	1,205	1,246	32.28
1952	1236	14,500	Mar. 11, 1952	30	1,362	1,363	2.60	35.40	1,295	1,216	31.58
1953	1276	8,140	Feb. 21, 1953	49	1,081	1,029	1.96	26.64	1,070	1,022	26.47
1954	1336	14,900	Jan. 16, 1954	48	1,042	1,052	2.01	27.26	1,031	1,053	27.27
1955	1386	13,600	Feb. 6, 1955	44	986	965	1.84	25.00	1,008	975	25.26
1956	1436	12,600	Apr. 16, 1956	373	1,059	1,105	2.11	28.69	1,061	1,116	28.98
1957	1506	13,200	Feb. 1, 1957	10	1,295	1,261	2.41	32.67	1,391	1,476	38.24
1958	1556	19,100	Apr. 28, 1958	137	1,451	1,484	2.83	38.45	1,375	1,248	32.32
1959	1626	10,500	Jan. 21, 1959	87	1,033	966	1.84	25.03	1,016	1,121	29.03
1960	1706	14,600	Nov. 28, 1959	9.0	1,184	1,211	2.31	31.45	-	-	-

a Adjusted for change in contents in Blue Ridge and Ocoee No. 3 Lakes.

5640. Parksville Lake at Parksville, Tenn.

Location.--Lat 35°05'44", long 84°38'51", at Parksville Dam on Ocoee River at Parksville, Polk County, 13⅔ 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."

Gage.--Indicator gage. Datum of gage is 6.89 (revised) ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Gage readings have been reduced to elevations above mean sea level.

Extremes.--1914-60: Maximum 12 p.m. contents, 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.

Remarks.--Reservoir is formed by concrete dam with 347 ft of spillway. Spillway is equipped with four floodgates 7 ft high by 20 ft wide and 265 ft of flashboards about 5 2/3 ft high. Crest of spillway is 1.0 ft lower under gates. Dam completed and storage began in 1911. Capacity of reservoir has been considerably reduced by silting; revised capacity table used after Oct. 31, 1952. Total capacity at elevation 837.55 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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month, of Parksville Lake at Parksville, Tenn.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	42.3	42.2	37.9	36.2	36.8	41.0	42.2	42.3	44.1	43.2	42.8	44.5
1952	43.8	41.7	42.8	43.0	37.4	45.1	41.0	45.0	45.1	44.0	45.2	44.4
1953	43.4	42.1	34.6	34.8	38.5	36.1	35.2	41.9	41.2	40.1	41.2	40.8
1954	40.9	39.9	34.3	39.1	36.2	40.1	39.1	42.1	41.5	41.7	41.5	41.2
1955	42.3	36.3	36.2	35.1	38.6	41.2	41.0	42.3	41.0	42.7	41.5	40.6
1956	41.2	35.3	33.8	30.0	37.6	39.5	38.4	41.1	41.6	41.2	40.5	42.3
1957	40.1	36.1	34.6	44.3	38.8	39.4	40.3	40.0	41.5	41.2	41.7	40.2
1958	37.6	38.2	35.0	32.7	34.7	38.4	41.7	41.6	42.9	41.6	41.6	40.0
1959	41.5	38.6	35.2	34.9	35.0	36.6	42.2	43.3	42.1	42.6	42.7	42.6
1960	41.7	39.8	35.0	35.4	35.0	36.7	42.1	42.1	42.2	42.7	42.5	41.7

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 (1911-16, 1921-60), 1,284 cfs (unadjusted).

Extremes.--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.--Flow regulated by Blue Ridge, Ocoee No. 3, and Parksville Lakes.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	771	781	1,238	1,159	1,244	1,921	1,461	1,476	1,095	1,149	955	1,090	1,196
1952	1,126	1,297	1,698	1,759	1,839	2,780	2,066	1,232	1,030	1,043	944	1,000	1,500
1953	1,227	885	1,223	1,452	1,607	1,736	1,175	1,137	1,064	1,056	931	978	1,204
1954	950	891	1,192	1,953	1,187	1,288	1,258	883	1,235	797	1,060	1,060	1,146
1955	961	1,113	933	1,117	1,523	1,175	1,282	1,050	1,019	1,051	1,057	1,038	1,107
1956	1,002	1,255	1,111	899	1,729	1,380	1,649	1,307	1,017	1,082	1,059	962	1,201
1957	979	1,174	1,240	1,183	2,697	1,321	2,264	1,697	1,747	1,134	983	1,243	1,460
1958	1,117	1,826	2,004	1,816	2,017	1,534	1,758	2,019	1,452	1,388	1,402	1,237	1,628
1959	1,144	1,164	1,055	1,259	1,141	1,001	1,143	1,036	1,145	1,057	963	970	1,089
1960	792	1,473	1,332	1,533	1,582	1,928	1,394	1,049	1,034	1,018	1,221	1,453	1,316

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	1,621	1,486	33.90
1951	1206	21,700	Mar. 29, 1951	118	1,196	1,243	2.09	28.36	1,307	1,362	31.07
1952	1236	7,280	Mar. 24, 1952	215	1,500	1,501	2.52	34.33	1,435	1,334	30.51
1953	1276	3,140	Feb. 25, 1953	195	1,204	1,142	1.92	26.05	1,179	1,129	25.77
1954	1336	10,500	Jan. 22, 1954	144	1,146	1,157	1.94	26.40	1,143	1,170	26.69
1955	1386	3,160	Feb. 8, 1955	139	1,107	1,084	1.82	24.72	1,137	1,098	25.05
1956	1436	9,130	Apr. 16, 1956	118	1,201	1,251	2.10	28.62	1,203	1,260	28.82
1957	1506	14,400	Feb. 1, 1957	122	1,460	1,421	2.39	32.41	1,591	1,677	28.26
1958	1556	13,500	Apr. 28, 1958	152	1,628	1,661	2.79	37.90	1,496	1,569	31.23
1959	1626	5,030	Apr. 20, 1959	108	1,089	1,030	1.73	23.49	1,108	1,212	27.66
1960	1706	4,550	Aug. 13, 1960	120	1,316	1,340	2.25	30.66	-	-	-

a 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 (1953-60), 3,796 cfs, unadjusted.

Extremes.--1953-60: Maximum discharge, 32,700 cfs Feb. 1, 1957; maximum gage height, 24.26 ft Feb. 1, 1957; minimum discharge, 312 cfs Oct. 4, 1959 (gage height, 1.38 ft); minimum daily, 355 cfs Nov. 14, 1954.

Remarks.--Flow regulated by seven reservoirs on the Hiwassee and Ocoee Rivers.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	1,980	2,302	3,683	7,675	4,139	4,386	3,042	3,362	4,157	2,823	2,978	2,710	3,605
1955	2,626	2,127	2,815	3,278	4,520	3,740	3,584	3,294	3,293	4,028	3,525	1,299	3,173
1956	3,533	3,890	3,959	3,267	6,490	5,562	3,982	3,422	2,830	2,908	3,421	3,286	3,869
1957	2,984	3,442	3,472	4,132	9,508	3,910	4,869	4,205	4,798	3,720	2,540	3,466	4,212
1958	3,901	5,733	7,010	5,368	6,080	4,506	3,413	4,834	4,278	4,368	4,264	3,952	4,804
1959	3,686	3,612	3,219	3,366	3,024	2,973	2,790	2,457	2,698	2,987	3,070	3,271	3,097
1960	3,017	4,848	5,047	4,152	4,967	5,094	2,925	2,435	2,498	2,605	3,948	4,237	3,810

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-
1954	1336	25,800	Jan. 22, 1954	500	3,605	3,738	1.87	25.36	3,571	3,721	25.24
1955	1386	12,700	Apr. 7, 1955	355	3,173	3,284	1.64	22.28	3,492	3,392	23.01
1956	1436	15,800	Apr. 16, 1956	898	3,869	3,760	1.88	25.58	3,745	3,773	25.66
1957	1506	32,700	Feb. 1, 1957	857	4,212	4,234	2.12	28.72	4,779	4,975	33.75
1958	1556	18,000	Apr. 29, 1958	970	4,804	4,815	2.41	32.66	4,289	3,943	26.75
1959	1626	11,900	Apr. 20, 1959	627	3,097	3,003	1.50	20.37	3,297	3,550	24.08
1960	1706	14,200	Mar. 3, 1960	879	3,810	3,912	1.96	26.61	-	-	-

a Adjusted for change in contents in Hiwassee, Nottely, Chatuge, Apalachia, Blue Ridge, Ocoee No. 3, and Parksville Lakes.

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.--1957-60: Maximum discharge, 2,070 cfs Mar. 3, 1960 (gage height, 7.98 ft); minimum, 2.2 cfs Dec. 15, 1958 (gage height, 0.58 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	19.9	183	118	62.9	104	77.0	89.1	51.0	11.1	21.7	8.26	5.06	62.2
1959	4.89	5.61	5.50	37.8	36.9	30.5	96.3	23.9	19.1	16.2	10.2	22.3	25.6
1960	11.9	51.8	60.6	60.5	110	124	32.6	12.9	9.92	9.46	18.4	14.6	42.8

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	0.72	6.42	4.28	2.28	3.42	2.79	3.12	1.85	0.39	0.79	0.30	0.18	26.54
1959	.18	.20	.20	1.37	1.21	1.11	3.38	.87	.67	.59	.37	.78	10.93
1960	.43	1.82	2.20	2.19	3.73	4.49	1.14	.47	.35	.34	.67	.51	18.34

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1957	-	-	-	-	-	-	-	-	-
1958	1556	1,790	Nov. 18, 1957	4.0	62.2	1.96	26.54	36.8	15.70
1959	1626	900	Apr. 19, 1959	3.5	25.6	.805	10.93	34.6	14.80
1960	1706	2,070	Mar. 3, 1960	4.0	42.8	1.35	18.34	-	-

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 (1954-60), 80.6 cfs.

Extremes.--1954-60: Maximum discharge, 2,020 cfs Nov. 18, 1957 (gage height, 8.77 ft); minimum, 16 cfs Oct. 13-28, 1954, Sept. 27, 1959; minimum gage height observed, 2.12 ft Oct. 28, 1954.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	18.8	25.8	85.2	73.2	128	156	219	90.0	60.9	56.5	36.4	25.9	80.9
1956	26.5	30.4	35.1	34.0	337	161	158	73.4	39.8	37.8	22.6	24.7	80.6
1957	19.4	26.4	65.4	103	348	123	154	63.3	71.6	40.9	26.3	63.1	90.1
1958	54.1	220	166	105	126	116	149	175	63.6	58.6	47.7	30.8	109
1959	24.6	24.3	23.1	59.4	80.2	121	136	60.2	48.5	31.6	25.4	23.1	54.6
1960	29.3	45.3	100	98.3	127	160	84.3	45.6	36.8	34.9	28.2	29.9	68.2

Monthly and yearly runoff, in inches, of Oostanaula Creek near Sanford, Tenn.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	0.38	0.50	1.72	1.48	2.33	3.16	4.29	1.82	1.19	1.14	0.74	0.51	19.26
1956	.54	.60	.71	.69	6.38	3.27	3.09	1.48	.78	.76	.46	.48	19.24
1957	.39	.52	1.32	2.08	6.36	2.49	3.01	1.28	1.40	.83	.53	1.23	21.44
1958	1.09	4.30	3.36	2.12	2.30	2.35	2.93	3.55	1.24	1.19	.96	.60	25.99
1959	.50	.48	.47	1.20	1.47	2.45	2.67	1.22	.95	.64	.51	.45	13.01
1960	.59	.89	2.02	1.99	2.40	3.23	1.65	.92	.72	.71	.57	.59	16.28

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1386	1,260	Apr. 7, 1955	16	80.9	1.42	19.26	77.7	18.51
1956	1436	924	Apr. 16, 1956	19	80.6	1.41	19.24	82.2	19.62
1957	1506	1,910	Feb. 1, 1957	18	90.1	1.58	21.44	117	27.96
1958	1556	2,020	Nov. 18, 1957	26	109	1.91	25.99	78.5	18.69
1959	1626	1,770	Mar. 27, 1959	17	54.6	0.958	13.01	63.2	15.06
1960	1706	482	Mar. 4, 1960	18	68.2	1.20	16.28	-	-

5665. Chickamauga Lake near Chattanooga, Tenn.

Location.--Lat 35°06'07", long 85°13'42", at Chickamauga Dam on Tennessee River, 5⅞ miles northeast of Chattanooga, Hamilton County, 58.9 miles downstream from Watts Bar Dam, and at mile 471.0.

Drainage area.--20,790 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.

Extremes.--1939-60: Maximum elevation, 685.37 ft May 20, 1950; minimum (after first filling), 673.27 ft Jan. 21, 1942. Contents based on backwater profile.

Remarks.--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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousand of cfs-days, at end of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	225	230	206	213	197	270	298	306	303	265	269	246
1952	239	220	207	211	198	212	300	298	288	286	258	265
1953	232	213	204	202	212	196	316	297	296	271	264	249
1954	227	208	194	208	204	222	317	303	283	272	266	250
1955	231	201	232	193	204	215	305	320	294	291	261	254
1956	224	209	195	213	202	203	299	302	299	276	255	242
1957	230	214	205	250	211	195	303	301	300	280	265	256
1958	236	203	210	201	209	206	336	301	299	266	277	274
1959	243	204	197	203	198	242	303	302	303	269	276	274
1960	237	253	200	201	203	221	318	302	286	283	263	276

5670. South Chickamauga Creek below Georgia-Tennessee State line

Location.--Lat 34°59'52", long 85°10'36", on right bank 1,200 ft downstream from Mackey Branch, 1.0 mile downstream from Georgia-Tennessee State line, and 16.3 miles upstream from mouth.

Drainage area.--249 sq mi.

Records available.--July 1952 to September 1957.

Gage.--Water-stage recorder. Datum of gage is 659.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Average discharge.--5 years (1952-57), 330 cfs.

Extremes.--1952-57: Maximum discharge, 10,700 cfs Jan. 17, 1954 (gage height, 18.78 ft), from rating curve extended above 8,500 cfs on basis of velocity-area study; minimum, 44 cfs Oct. 5, 1954; minimum gage height, 1.46 ft Sept. 3, 1954.
Revisions.--The maximum discharge for the water year 1953, as published in WSP 1276, is revised to 7,310 cfs.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	145	110	-
1953	79.1	109	273	785	1,202	569	281	434	122	283	99.3	70.3	354
1954	62.8	62.9	157	1,403	277	583	349	156	131	74.1	99.8	53.9	286
1955	51.3	66.5	316	271	819	589	796	572	172	249	130	71.5	339
1956	68.8	119	156	129	1,500	721	698	236	97.0	90.5	127	72.8	329
1957	63.2	80.3	255	458	1,588	449	642	142	183	93.4	62.5	214	343
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	0.67	0.49	-
1953	0.37	0.49	1.26	3.63	5.03	2.63	1.26	2.01	0.54	1.31	.46	.31	19.30
1954	.29	.28	.73	6.49	1.16	2.70	1.56	.72	.59	.34	.46	.24	15.56
1955	.24	.30	1.46	1.25	3.42	2.73	3.57	2.65	.77	1.15	.60	.32	18.46
1956	.32	.53	.72	.60	6.50	3.34	3.13	1.09	.43	.42	.59	.33	18.00
1957	.29	.36	1.18	2.12	6.64	2.08	2.88	.66	.82	.43	.29	.96	18.71
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	1276	-	-	-	-	-	-	-	-
1953	1276	*7,310	Feb. 21, 1953	60	354	1.42	19.30	339	18.48
1954	1336	10,700	Jan. 17, 1954	49	286	1.15	15.56	298	16.26
1955	1386	5,740	Feb. 7, 1955	44	339	1.36	18.46	331	18.03
1956	1436	5,020	Feb. 4, 1956	58	329	1.32	18.00	334	18.26
1957	1506	10,000	Feb. 1, 1957	51	343	1.38	18.71	-	-
1958	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-

* Revised.

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 November and 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.--32 years (1928-60), 682 cfs.

Extremes.--1928-60: Maximum discharge, 27,600 cfs Mar. 30, 1951 (gage height, 20.73 ft); minimum, 61 cfs Oct. 8, 1941; minimum gage height, 0.39 ft Sept. 7, 1960.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	308	241	466	617	1,067	2,464	1,620	332	304	379	198	174	679
1952	152	499	2,095	1,525	956	2,202	457	216	200	209	235	222	751
1953	137	194	519	1,452	2,109	1,043	449	811	186	475	157	120	630
1954	110	103	302	2,631	476	1,006	624	299	230	132	151	82.7	515
1955	87.1	130	657	508	1,511	1,072	1,593	918	279	394	200	119	616
1956	114	201	281	229	2,783	1,260	1,243	396	175	183	224	131	591
1957	122	143	500	781	2,749	769	1,238	247	356	168	104	544	627
1958	489	2,399	1,182	896	1,089	948	1,308	861	222	330	192	226	841
1959	152	148	144	743	576	733	1,167	380	334	157	139	141	399
1960	171	516	719	924	1,260	1,767	625	300	159	142	183	264	584

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.83	0.63	1.25	1.66	2.60	6.64	4.22	0.90	0.79	1.02	0.53	0.45	21.52
1952	.41	1.30	5.64	4.11	2.41	5.93	1.19	.58	.52	.56	.63	.58	23.86
1953	.37	.51	1.40	3.91	5.13	2.81	1.17	2.18	.49	1.28	.42	.31	19.98
1954	.30	.27	.81	7.09	1.16	2.71	1.63	.80	.60	.36	.41	.22	16.36
1955	.23	.34	1.77	1.37	3.68	2.89	4.15	2.47	.73	1.06	.54	.31	19.54
1956	.31	.52	.76	.62	7.01	3.40	3.24	1.07	.46	.49	.60	.34	18.82
1957	.33	.37	1.35	2.10	6.89	2.07	3.23	.66	.93	.45	.28	1.42	19.88
1958	1.32	6.25	3.18	2.41	2.65	2.55	3.41	2.32	.58	.89	.52	.59	26.67
1959	.41	.39	.39	2.00	1.40	1.97	3.04	1.02	.87	.42	.37	.37	12.65
1960	.46	1.35	1.94	2.49	3.18	4.76	1.63	.81	.41	.38	.49	.69	18.59

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	957	30.35
1951	1206	27,600	Mar. 30, 1951	138	679	1.59	21.52	825	26.16
1952	1236	15,800	Mar. 12, 1952	128	751	1.75	23.86	591	18.79
1953	1276	10,800	Feb. 22, 1953	103	630	1.47	19.98	602	19.08
1954	1336	14,900	Jan. 17, 1954	66	515	1.20	16.36	546	17.32
1955	1386	9,050	Feb. 7, 1955	64	616	1.44	19.54	592	18.79
1956	1436	9,290	Feb. 4, 1956	95	591	1.38	18.82	606	19.28
1957	1506	14,200	Feb. 2, 1957	88	627	1.46	19.88	901	28.58
1958	1556	13,600	Nov. 19, 1957	116	841	1.96	26.67	539	17.11
1959	1626	6,980	Apr. 20, 1959	103	399	0.932	12.65	480	15.21
1960	1706	13,400	Mar. 3, 1960	98	584	1.36	18.59	-	-

5680. Tennessee River at Chattanooga, Tenn.

Location.--Lat 35°05'12", long 85°16"43", 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.--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 2¼ 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.--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, 1,200 cfs Nov. 1, 1953; minimum gage height, 0.0 ft Sept. 11-14, 1881, Sept. 19, 1883 (before filling of Hales Bar pool).
Maximum stage known, 57.9 ft Mar. 11, 1867, present datum at Walnut Street (discharge, about 459,000 cfs).

Remarks.--Since 1936, flow regulated by increasing number of reservoirs above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	37,810	38,610	48,790	40,360	56,130	50,360	35,620	27,660	27,320	24,420	26,620	27,170	36,630
1952	28,680	28,890	72,280	51,930	48,930	54,100	24,430	21,400	24,660	23,950	23,960	21,660	35,450
1953	23,970	20,220	29,180	35,990	57,900	43,570	25,030	29,410	27,710	25,870	26,630	22,640	30,530
1954	18,990	19,970	24,640	65,330	30,870	35,470	20,910	23,580	26,200	25,570	23,770	20,950	28,060
1955	18,040	19,170	27,380	35,470	36,820	55,450	30,510	26,390	29,260	29,070	31,700	25,440	30,390
1956	26,060	26,410	26,350	21,550	65,400	48,490	33,230	25,380	23,220	25,310	28,470	28,950	31,420
1957	28,080	30,550	38,350	44,410	132,800	42,450	34,540	29,750	28,710	24,930	26,410	31,680	40,400
1958	35,120	68,330	80,280	47,520	46,140	34,760	26,960	51,480	38,460	28,740	33,190	34,300	43,770
1959	34,810	29,430	23,800	34,150	29,590	28,550	20,940	20,980	21,610	24,490	23,780	25,820	26,490
1960	37,650	41,350	60,950	44,230	43,690	41,770	24,510	21,750	26,680	23,170	28,270	39,360	36,110

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	44,460	28.20
1951	1206	140,000	Mar. 30, 1951	15,900	36,630	1.71	23.23	37,050	23.50
1952	1236	135,000	Dec. 22, 1951	18,100	35,450	1.66	22.55	30,690	19.52
1953	1276	107,000	Feb. 22, 1953	7,000	30,530	1.43	19.36	29,700	18.84
1954	1336	185,000	Jan. 22, 1954	11,200	28,060	1.31	17.80	28,150	17.86
1955	1386	118,000	Mar. 23, 1955	5,100	30,390	1.42	19.27	31,580	20.03
1956	1436	187,000	Feb. 4, 1956	6,700	31,420	1.47	19.99	32,950	20.96
1957	1506	208,000	Feb. 2, 1957	9,600	40,400	1.89	25.63	47,670	30.24
1958	1556	189,000	Nov. 19, 1957	7,900	43,770	2.05	27.77	85,750	22.68
1959	1626	110,000	Jan. 23, 1959	7,900	26,490	1.24	16.80	30,870	19.58
1960	1706	108,000	Dec. 20, 1959	10,600	36,110	1.69	22.97	-	-

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.--October 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.--10 years (1950-60), 77.9 cfs.

Extremes.--1950-60: Maximum discharge, 5,320 cfs (revised) 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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	‡30.5	‡19.8	‡56.0	91.5	191	*283	210	44.8	26.9	43.0	10.4	8.03	84.0
1952	8.04	50.1	264	203	124	294	50.9	17.0	10.9	16.0	7.48	11.3	88.5
1953	8.42	14.6	59.3	184	263	131	49.9	102	17.2	44.4	9.81	5.44	73.1
1954	3.88	4.95	31.8	297	68.5	109	73.2	56.3	18.7	6.57	2.98	2.39	56.5
1955	2.72	5.90	78.0	75.8	205	155	274	107	29.6	26.5	9.74	4.57	80.1
1956	4.41	17.8	39.2	21.2	396	156	165	51.6	12.2	9.40	14.2	9.00	74.0
1957	7.46	19.2	67.2	16.6	329	109	187	22.9	43.5	17.8	5.26	98.6	87.5
1958	105	294	157	118	150	170	261	108	17.2	11.7	11.8	15.8	118
1959	8.86	10.4	15.1	130	97.5	101	134	38.0	36.4	11.6	9.27	8.01	49.6
1960	10.7	37.9	89.0	128	182	200	83.2	29.9	12.3	8.17	7.97	24.3	67.5

* Revised.
‡ Not previously published; estimated on basis of records for South Chickamauga Creek near Chickamauga, Tenn.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	‡0.69	‡0.44	‡1.28	2.08	3.94	*6.46	4.64	1.02	0.59	0.98	0.24	0.18	22.54
1952	.18	1.10	6.02	4.61	2.64	6.71	1.12	.39	.24	.36	.17	.25	23.79
1953	.19	.32	1.35	4.18	5.41	2.99	1.10	2.32	.38	1.01	.22	.12	19.59
1954	.09	.11	.72	6.78	1.41	2.48	1.61	1.28	.41	.15	.07	.05	15.16
1955	.06	.13	1.78	1.73	4.22	3.52	6.04	2.44	.65	.60	.22	.10	21.49
1956	.10	.39	.89	.71	8.43	3.56	3.64	1.18	.27	.21	.32	.20	19.90
1957	117	.42	1.53	3.79	6.77	2.48	4.13	.52	.96	.40	.12	2.17	23.46
1958	2.39	6.49	3.57	2.68	3.09	3.88	5.76	2.46	.38	.27	.27	.35	31.59
1959	.20	.23	.34	2.96	2.01	2.30	2.95	.87	.80	.26	.21	.18	13.31
1960	.24	.84	2.03	2.92	3.88	4.56	1.83	.68	.27	.19	.18	.54	18.16

* Revised.
‡ Not previously published; estimated on basis of records for South Chickamauga Creek near Chickamauga, Tenn.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	1206	*5,320	Mar. 29, 1951	-	‡84.0	‡1.66	‡22.54	*102	*27.43
1952	1236	3,610	Mar. 11, 1952	4.9	88.5	1.75	23.79	68.3	18.35
1953	1276	2,360	Feb. 21, 1953	4.1	73.1	1.44	19.59	69.5	18.65
1954	1336	2,820	Jan. 16, 1954	1.3	56.5	1.12	15.16	60.4	16.21
1955	1386	2,850	Feb. 6, 1955	2.0	80.1	1.58	21.49	78.0	20.90
1956	1436	2,130	Feb. 3, 1956	3.9	74.0	1.46	19.90	76.7	20.64
1957	1508	2,600	Feb. 1, 1957	3.9	87.5	1.73	23.46	126	33.79
1958	1556	2,590	Apr. 29, 1958	6.1	118	2.33	31.59	74.2	19.91
1959	1628	2,300	Jan. 22, 1959	5.6	49.6	.980	13.31	58.3	15.65
1960	1706	1,680	Mar. 3, 1960	4.9	67.5	1.33	18.16	-	-

* Revised.
‡ Not previously published.

5695. Hales Bar Lake near Chattanooga, Tenn.

Location.--Lat 35°02'48", long 85°22'19" (revised), at Hales Bar Dam on Tennessee River, 5½ miles southeast of Jasper, Marion County, 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.

Extremes.--1914-60: Maximum elevation, 642.8 ft Mar. 8, 1917; minimum (after first filling) 619.0 ft Apr. 16, 1918. Contents based on backwater profile.

Remarks.--Reservoir is formed by concrete dam with earth embankments containing concrete core walls. Spillway with crest at 616.0 ft equipped with 17 taintor gates 19 ft high by 40 ft wide, and 1 trash gate 5.5 ft high by 15 ft wide (prior to July 1948 spillway, with crest elevation at 626.25 ft, equipped with flashboards 3 ft high prior to July 1944 and 5 ft high thereafter). Dam completed and storage began Oct. 13, 1913. Capacity of reservoir has been considerably reduced by silting. Total level pool capacity at elevation 634.0 ft (maximum allowable pool) is 77,800 cfs-days; of which 6,600 cfs-days is controlled flood storage above elevation 632.0 ft (minimum navigation pool). Reservoir is used for navigation, flood control, and power.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last days of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	71.0	72.0	71.0	74.0	71.0	86.0	76.0	76.0	75.0	75.0	76.0	67.0
1952	70.0	71.0	79.0	81.0	71.0	76.0	75.0	75.0	72.0	76.0	73.0	75.0
1953	74.0	73.0	71.0	71.0	75.0	71.0	74.0	74.0	76.0	76.0	69.0	74.0
1954	74.0	75.0	73.0	73.0	71.0	74.0	75.0	74.0	75.0	75.0	72.0	72.0
1955	74.0	72.0	78.0	70.0	72.0	73.0	73.0	74.0	76.0	72.0	76.0	73.0
1956	76.0	76.0	71.0	75.0	75.0	73.0	76.0	75.0	74.0	74.0	76.0	76.0
1957	75.0	76.0	74.0	105.0	79.0	71.0	76.0	75.0	71.0	74.0	74.0	75.0
1958	76.0	78.0	84.0	75.0	73.0	72.0	90.0	77.0	75.0	75.0	73.0	73.0
1959	77.0	74.0	72.0	72.0	72.0	70.0	74.0	73.0	72.0	76.0	72.0	76.0
1960	79.0	74.0	73.0	72.0	72.0	74.0	74.0	76.0	75.0	71.0	76.0	77.0

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 (1930-60), 64,470 cfs.

Extremes.--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.--Since 1936, flow regulated by increasing number of reservoirs above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	37,650	38,800	49,210	41,900	58,940	53,710	38,440	27,810	26,810	24,290	27,100	27,120	37,530
1952	28,880	30,400	75,140	54,030	50,280	57,200	24,330	19,260	23,470	23,390	23,670	20,610	35,930
1953	24,150	20,890	30,580	39,050	62,000	47,080	26,330	30,470	27,990	27,310	29,050	23,050	32,170
1954	20,690	21,040	26,440	67,950	33,550	38,220	22,420	24,960	26,260	25,560	24,810	21,320	29,470
1955	18,100	19,850	29,380	38,610	40,700	58,250	34,750	27,630	29,640	29,690	32,280	26,020	32,050
1956	26,090	27,350	28,200	22,090	69,740	51,200	35,340	25,240	22,620	25,460	28,500	29,820	32,480
1957	28,130	30,930	38,780	45,860	134,400	43,770	37,150	30,010	29,330	24,440	26,300	32,520	41,140
1958	35,940	74,390	80,590	49,400	48,500	37,350	28,150	53,430	38,450	29,240	33,260	35,410	45,330
1959	34,880	30,220	23,940	36,470	31,820	29,560	23,120	20,580	21,050	24,550	24,320	26,380	27,230
1960	38,130	42,320	63,150	47,870	46,800	43,760	26,080	20,890	25,600	23,500	29,020	40,790	37,320

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	45,670	28.44
1951	1206	155,000	Mar. 30, 1951	15,900	37,530	1.72	23.37	38,290	23.84
1952	1236	141,000	Mar. 12, 1952	16,500	35,930	1.65	22.44	30,980	19.34
1953	1276	120,000	Feb. 22, 1953	6,500	32,170	1.48	20.03	31,540	19.64
1954	1336	199,000	Jan. 23, 1954	2,900	29,470	1.35	18.35	29,410	18.31
1955	1386	122,000	Mar. 23, 1955	5,500	32,050	1.47	19.96	33,250	20.70
1956	1436	168,000	Feb. 4, 1956	4,600	32,480	1.49	20.28	33,840	21.13
1957	1506	217,000	Feb. 2, 1957	10,200	41,140	1.89	25.62	48,930	30.47
1958	1556	195,000	Nov. 19, 1957	9,200	45,330	2.08	28.23	36,800	22.91
1959	1626	116,000	Jan. 22, 1959	4,500	27,230	1.25	16.95	31,830	19.82
1960	1706	114,000	Dec. 20, 1959	10,700	37,320	1.71	23.30	-	-

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 and 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 (1920-60), 726 cfs.

Extremes.--1920-60: Maximum discharge, 22,600 cfs Nov. 19, 1957 (gage height, 16.71 ft); minimum, 16 cfs at times in September 1925.
Flood in March 1867 reached a stage of about 19 ft, from reports of Tennessee Valley Authority.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	163	212	866	1,235	2,426	2,020	1,695	503	185	183	77.4	68.5	792
1952	56.0	567	2,407	1,412	1,028	2,324	529	194	303	77.4	81.7	63.7	756
1953	38.3	42.8	147	1,039	2,328	1,259	667	740	133	179	104	49.5	550
1954	37.6	37.9	177	2,407	642	1,131	832	607	153	76.6	225	43.9	533
1955	41.6	34.1	610	665	1,739	1,896	1,904	533	523	194	111	49.4	684
1956	71.6	221	602	423	3,408	1,701	1,728	545	174	354	131	77.3	775
1957	105	103	1,861	1,368	3,515	920	1,555	280	174	91.6	46.9	205	834
1958	508	3,471	1,790	838	912	1,128	1,755	1,243	186	152	99.6	62.7	1,009
1959	47.5	55.7	79.8	1,004	929	987	1,333	412	388	522	437	406	547
1960	122	403	1,629	1,076	1,723	1,797	774	376	128	113	97.8	535	729

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.49	0.62	2.60	3.71	6.58	6.06	4.92	1.51	0.54	0.55	0.23	0.20	28.01
1952	.17	1.65	7.23	4.24	2.89	6.98	1.54	.58	.88	.23	.25	.19	26.83
1953	.11	.12	.44	3.12	6.31	3.78	1.94	2.22	.39	.54	.31	.14	19.42
1954	.11	.11	.53	7.23	1.74	3.40	2.42	1.82	.44	.23	.68	.13	18.84
1955	.12	.10	1.83	2.00	4.72	5.69	5.53	1.60	1.52	.58	.33	.14	24.16
1956	.21	.64	1.81	1.27	9.57	5.11	5.02	1.64	.51	1.06	.39	.23	27.46
1957	.32	.30	5.59	4.11	9.53	2.76	4.52	.84	.51	.28	.14	.60	29.50
1958	1.52	10.08	5.37	2.52	2.47	3.39	5.10	3.73	.54	.46	.30	.18	35.66
1959	.14	.16	.24	3.01	2.52	2.96	3.87	1.24	1.13	1.57	1.31	1.18	19.33
1960	.37	1.17	4.89	3.23	4.84	5.39	2.25	1.13	.37	.34	.29	1.55	25.82

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,001	35.40
1951	1206	12,600	Feb. 1, 1951	51	792	2.06	28.01	943	33.35
1952	1236	13,400	Mar. 11, 1952	41	756	1.97	26.83	520	18.45
1953	1276	10,100	Feb. 12, 1953	35	550	1.43	19.42	552	19.50
1954	1336	14,600	Jan. 21, 1954	34	533	1.39	18.84	570	20.14
1955	1386	9,370	Mar. 22, 1955	30	684	1.78	24.16	701	24.77
1956	1436	14,500	Feb. 3, 1956	48	775	2.02	27.46	874	31.01
1957	1506	17,600	Feb. 1, 1957	33	834	2.17	29.50	1,139	40.26
1958	1556	22,600	Nov. 19, 1957	48	1,009	2.63	35.66	544	19.23
1959	1626	9,140	Jan. 22, 1959	41	547	1.42	19.33	713	25.22
1960	1706	7,520	Dec. 19, 1959	46	729	1.90	25.82	-	-

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.--1957-60: Maximum discharge, 10,600 cfs Nov. 18, 1957 (gage height, 15.6 ft); minimum, no flow Sept. 6-13, 1957, July 17, 19-21, 24-29, 1960.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	-	1.42	46.3	-
1958	235	1,102	556	225	394	353	504	294	62.7	480	70.4	18.2	357
1959	5.91	938	20.3	311	356	346	295	158	119	491	10.2	25.0	141
1960	4.80	103	288	391	441	751	232	73.4	11.6	.903	15.6	20.1	194

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	-	0.01	0.37	-
1958	1.92	8.72	4.54	1.84	2.91	2.89	3.98	2.40	0.50	3.92	.58	.14	34.34
1959	.05	.07	.17	2.54	2.63	2.83	2.34	1.29	.94	.40	.08	.20	13.54
1960	.04	.81	2.36	3.19	3.37	6.14	1.84	.60	.09	.007	.13	.16	18.74

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1957	1556	-	-	-	-	-	-	-	-
1958	1556	10,600	Nov. 18, 1957	0.7	357	2.53	34.34	202	19.45
1959	1626	4,620	Jan. 21, 1959	1.8	141	1.00	13.54	171	16.46
1960	1706	2,120	Mar. 3, 1960	0	194	1.38	18.74	-	-

5730. Short Creek near Albertville, Ala.

Location.--Lat 34°18'05", long 86°10'53", in NE¼ sec.35, T.8 S., R.4 E., on left bank 325 ft downstream from county highway bridge, 800 ft downstream from Turkey Creek, 3 miles northeast of Albertville, and 4.4 miles upstream from Scarham Creek.

Drainage area.--91.6 sq mi.

Records available.--May 1945 to September 1953, water years 1954-58 (annual maximum only).

Gage.--Crest-stage gage. Datum of gage is 865.80 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Sept. 30, 1953, water-stage recorder at same site and datum.

Average discharge.--8 years (1945-53), 194 cfs.

Extremes.--1945-60: Maximum discharge, 14,800 cfs Jan. 5, 1949 (gage height, 16.37 ft).
1945-53: Minimum discharge, 0.01 cfs Aug. 22, 1947, Sept. 1-4, 1953.
Flood of December 1942 reached a stage of 21.2 ft, from floodmark (discharge, about 25,000 cfs).

Remarks.--City of Albertsville diverts water for municipal supply 3½ miles above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	9.17	†11.7	139	251	367	689	410	44.9	58.6	70.1	15.7	2.83	171
1952	2.43	130	657	372	279	356	72.6	31.8	21.0	2.99	41.2	32.2	167
1953	13.2	13.5	191	518	494	271	124	243	159	55.4	2.75	.291	172

† Corrected.

Monthly and yearly runoff, in inches, of Short Creek near Albertville, Ala.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.12	0.14	1.75	3.16	4.18	8.67	4.99	0.56	0.71	0.88	0.20	0.03	25.39
1952	.03	1.59	8.27	4.68	3.29	4.48	.88	.40	.26	.04	.52	.39	24.83
1953	.17	.16	2.40	6.52	5.62	341	1.51	3.06	1.94	.70	.03	.004	25.52

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	180	26.62
1951	1206	13,200	Mar. 29, 1951	0.1	171	1.87	25.39	225	33.27
1952	1236	4,800	Dec. 21, 1951	.02	167	1.82	24.83	119	17.67
1953	1276	4,890	June 16, 1953	.01	172	1.88	25.52	-	-
1954	1556	2,700	Jan. 16, 1954	-	-	-	-	-	-
1955	1556	3,660	Feb. 6, 1955	-	-	-	-	-	-
1956	1556	4,760	Apr. 16, 1956	-	-	-	-	-	-
1957	1556	6,430	June 9, 1957	-	-	-	-	-	-
1958	1556	3,760	Nov. 14, 1957	-	-	-	-	-	-
1959	-	(a)	-	-	-	-	-	-	-
1960	-	(a)	-	-	-	-	-	-	-

a No peak above 2,770 cfs.

5740. Guntersville Lake near Guntersville, Ala.

Location.--Lat 34°25'17", long 86°23'34" (revised), in powerhouse at Guntersville Dam on Tennessee River in sec.14, T.7 S., R.2 E., 11 miles northwest of Guntersville, 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. Published as Guntersville Reservoir prior to October 1953.

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

Extremes.--1939-60: Maximum elevation, 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.

Remarks.--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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	448	444	444	453	443	532	493	494	491	466	437	453
1952	458	449	479	473	446	436	504	503	497	447	474	448
1953	459	445	454	454	452	452	509	488	470	417	417	411
1954	409	411	442	442	456	462	493	495	499	486	470	463
1955	445	445	503	445	443	453	492	506	474	474	457	451
1956	470	450	438	461	459	449	494	492	485	460	437	444
1957	463	449	446	591	468	444	493	502	506	452	449	479
1958	469	462	476	445	452	449	566	506	503	491	475	453
1959	460	456	445	444	445	464	500	497	483	442	456	437
1960	454	471	452	453	446	469	499	498	479	466	462	471

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.--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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	63.3	86.4	291	875	2,048	2,108	1,684	181	79.6	359	66.9	55.3	649
1952	47.0	787	2,461	1,432	807	2,367	361	76.9	78.9	14.2	14.3	26.2	710
1953	30.9	62.0	235	1,470	2,026	1,017	529	981	62.9	270	45.0	282	576
1954	39.5	23.4	948	3,119	468	576	746	416	234	50.4	11.5	4.40	557
1955	2.92	12.2	683	536	1,838	1,282	1,344	662	233	84.6	33.5	8.95	551
1956	8.16	143	256	242	2,926	1,205	1,578	832	49.3	119	33.9	19.6	607
1957	10.7	30.8	975	1,149	3,184	666	941	123	135	53.8	19.8	28.3	592
1958	171	3056	1,545	811	1,294	838	1,191	900	66.9	631	96.0	132	889
1959	32.7	152	127	1,289	991	872	1,270	179	214	102	51.8	60.2	441
1960	58.1	193	1,361	1,130	1,142	1,648	586	300	52.6	34.0	122	233	572

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.23	0.30	1.05	3.15	6.67	7.59	5.87	0.65	0.28	1.29	0.24	0.19	27.51
1952	.17	2.75	8.87	5.16	2.72	8.53	1.26	.28	.27	.05	.05	.09	30.20
1953	.11	.22	.85	5.30	6.59	3.67	1.85	3.53	.22	.97	.16	.98	24.45
1954	.14	.08	3.42	11.24	1.52	2.08	2.60	1.50	.82	.18	.04	.02	23.64
1955	.01	.04	2.46	1.93	5.98	4.62	4.69	2.39	.81	.30	.12	.03	23.38
1956	.03	.50	.92	.87	9.86	4.34	5.50	3.00	.17	.43	.12	.07	25.81
1957	.04	.11	3.51	4.14	10.36	2.40	3.28	.44	.47	.19	.07	.10	25.11
1958	.62	10.66	5.57	2.92	4.21	3.02	4.15	3.24	.23	2.27	.35	.46	37.70
1959	.12	.53	.46	4.64	3.22	3.14	4.43	.65	.75	.37	.19	.21	18.71
1960	.21	.67	4.90	4.07	3.85	5.94	2.04	1.08	.18	.12	.44	.81	24.31

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	834	35.37
1951	1206	27,500	Mar. 29, 1951	13	649	2.03	27.51	889	37.72
1952	1236	15,300	Mar. 11, 1952	5.9	710	2.22	30.20	460	19.59
1953	1276	7,990	Feb. 22, 1953	6.2	576	1.80	24.45	634	26.91
1954	1336	22,800	Jan. 16, 1954	1.9	557	1.74	23.64	530	22.51
1955	1386	9,640	Mar. 22, 1955	1.4	551	1.72	23.38	526	22.32
1956	1436	23,600	Feb. 4, 1956	4.2	607	1.90	25.81	659	28.02
1957	1506	25,900	Feb. 1, 1957	7.8	592	1.85	25.11	903	38.30
1958	1556	22,700	Nov. 19, 1957	21	889	2.78	37.70	518	21.96
1959	1626	13,900	Jan. 22, 1959	20	441	1.38	18.71	551	23.38
1960	1706	12,200	Dec. 20, 1959	16	572	1.79	24.31	-	-

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.

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 (1929-60), 517 cfs.

Extremes.--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.--Some diuranl fluctuation caused by small mills above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	155	196	247	615	1,968	1,550	1,003	271	346	494	157	146	586
1952	121	546	1,856	1,226	778	1,278	373	182	150	159	132	138	580
1953	161	159	295	1,062	1,722	898	511	635	130	308	105	126	502
1954	82.9	89.0	248	2,129	511	340	425	283	304	122	78.5	59.3	390
1955	66.1	89.0	639	403	1,118	1,352	906	739	311	238	120	73.9	501
1956	85.3	289	362	294	2,017	699	1,137	458	221	223	105	105	492
1957	83.2	94.0	676	1,134	2,310	628	631	205	199	105	90.5	146	513
1958	166	1,842	960	508	858	514	1,284	972	204	497	175	339	689
1959	136	214	213	603	696	582	539	260	352	340	209	105	352
1960	130	195	1,314	919	882	1,369	408	306	187	322	146	318	542

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.52	0.64	0.83	2.07	5.99	5.23	3.27	0.91	1.13	1.66	0.53	0.48	23.26
1952	.41	1.78	6.26	4.13	2.45	4.31	1.22	.61	.49	.53	.45	.45	23.09
1953	.54	.52	.99	3.58	5.24	3.03	1.67	2.14	.43	1.04	.36	.41	19.95
1954	.28	.29	.84	7.18	1.56	1.15	1.39	.96	.99	.41	.26	.19	15.50
1955	.22	.29	2.15	1.36	3.40	4.56	2.96	2.49	1.01	.80	.41	.24	19.89
1956	.29	.94	1.22	.99	6.36	2.36	3.71	1.54	.72	.75	.36	.34	19.58
1957	.28	.31	2.28	3.82	7.03	2.12	2.06	.69	.65	.35	.31	.48	20.38
1958	.56	6.01	3.24	1.71	2.61	1.73	4.19	3.28	.67	1.68	.59	1.11	27.38
1959	.46	.70	.72	2.03	2.12	1.96	1.76	.88	1.15	1.15	.70	.34	13.97
1960	.44	.64	4.43	3.10	2.78	4.61	1.33	1.03	.61	1.09	.49	1.04	21.59

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	678	26.90
1951	1206	32,300	Feb. 1, 1951	100	586	1.71	23.26	749	29.72
1952	1236	8,950	Mar. 11, 1952	77	580	1.70	23.09	419	16.69
1953	1276	10,200	Feb. 21, 1953	70	502	1.47	19.95	486	19.31
1954	1336	42,000	Jan. 21, 1954	55	390	1.14	15.50	422	16.75
1955	1386	20,200	Mar. 22, 1955	58	501	1.46	19.89	496	19.68
1956	1436	14,900	Feb. 3, 1956	70	492	1.44	19.58	502	20.00
1957	1506	25,900	Feb. 1, 1957	67	513	1.50	20.38	688	†27.32
1958	1556	17,200	Nov. 19, 1957	100	689	2.01	27.38	490	19.45
1959	1626	5,620	July 18, 1959	82	352	1.03	13.97	443	17.60
1960	1706	18,400	Dec. 19, 1959	82	542	1.58	21.59	-	-

† Corrected.

5755. Tennessee River at Whitesburg, Ala.

Location.--Lat 34°34'27", long 86°32'42", in NE¼ (corrected) 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 (1924-60), 42,230 cfs.

Extremes.--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.--Since 1936, flow regulated by increasing number of reservoirs above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	39,390	41,830	54,570	51,300	80,660	73,040	62,950	30,510	28,550	28,400	28,160	26,830	45,290
1952	29,370	38,590	100,700	71,730	62,350	79,490	26,720	21,640	25,330	24,790	24,460	23,160	44,100
1953	26,420	23,420	35,350	52,810	82,690	57,910	29,960	41,140	28,610	31,430	29,270	24,270	38,380
1954	20,000	20,190	29,350	97,010	37,790	44,850	27,900	27,210	27,280	26,450	26,740	23,100	34,060
1955	18,710	21,260	32,250	46,330	58,410	73,970	48,580	33,180	34,110	31,470	33,170	25,650	37,990
1956	26,790	30,420	31,300	23,000	100,000	64,550	48,140	30,030	23,610	27,310	29,140	28,890	38,330
1957	27,270	32,610	49,290	53,900	176,900	52,320	46,830	30,930	32,830	26,680	26,260	31,990	48,070
1958	38,830	107,200	97,030	58,340	58,580	46,300	39,220	69,460	42,590	38,370	36,870	36,660	55,750
1959	35,570	31,280	26,120	45,000	40,820	38,900	33,190	25,630	23,430	26,640	23,590	26,520	31,340
1960	37,840	44,370	75,160	58,850	60,000	62,620	32,490	25,350	27,640	24,250	28,650	42,180	43,260

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	55,100	29.20
1951	1206	249,000	Mar. 30, 1951	5,300	45,290	1.77	24.00	48,090	25.49
1952	1236	180,000	Mar. 13, 1952	700	44,100	1.72	23.44	37,070	19.70
1953	1276	157,000	Feb. 24, 1953	800	38,380	1.50	20.34	37,050	19.64
1954	1336	258,000	Jan.23-24,1954	700	34,060	1.33	18.05	34,290	18.17
1955	1386	173,000	Mar. 24, 1955	1,200	37,990	1.48	20.13	39,340	20.85
1956	1436	230,000	Feb. 6, 1956	1,300	38,330	1.50	20.37	40,070	21.30
1957	1506	293,000	Feb. 2, 1957	1,100	48,070	1.88	25.48	59,240	31.40
1958	1556	268,000	Nov. 20, 1957	6,200	55,750	2.18	29.55	43,210	22.90
1959	1626	130,000	Jan.22 or 23, 1959	1,500	31,340	1.22	16.61	36,780	19.49
1960	1706	136,000	Dec. 21, 1959	1,300	43,260	1.69	22.99	-	-

5761. Indian Creek near Madison, Ala.

Location.--Lat 34°41'50", long 86°42'00", in NE¼ sec.14, T.4 S., R.2 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.--1959-60: Maximum discharge, 1,640 cfs Dec. 18, 1959 (gage height, 8.34 ft); minimum, 6.0 cfs Aug. 18, 1960 (gage height, 0.71 ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1960	9.10	14.5	140	119	114	187	56.3	37.5	14.3	19.5	9.98	24.9	62.2

Monthly and yearly runoff, in inches, of Indian Creek near Madison, Ala.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1960	0.21	0.33	3.29	2.80	2.51	4.39	1.28	0.88	0.33	0.46	0.23	0.57	17.28

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1960	1706	1,640	Dec. 18, 1959	6.3	62.2	1.27	17.28	-	-

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, three-quarters of a mile upstream from Johnson Branch, 1¾ 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.--1959-60: Maximum discharge, 3,760 cfs Dec. 18, 1959 (gage height, 9.61 ft); minimum, 0.6 cfs Sept. 9, 1960.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1959	-	-	-	-	-	-	-	-	-	-	-	11.1	-
1960	22.5	41.0	362	175	138	213	48.7	49.4	24.2	8.85	3.81	8.81	91.6

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1959	-	-	-	-	-	-	-	-	-	-	-	0.22	-
1960	0.46	0.82	7.47	3.63	2.66	4.40	0.97	1.02	0.48	0.18	0.08	.18	22.35

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1959	1706	-	-	-	-	-	-	-	-
1960	1706	3,670	Dec. 18, 1959	0.7	91.6	1.64	22.35	-	-

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.--86.3 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 (1952-60), 125 cfs.

Extremes.--1952-60: Maximum discharge, 9,200 cfs Mar. 21, 1955 (gage height, 14.6 ft); no flow for many days 1952-57.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	31.9	4.56	-
1953	4.15	9.06	67.0	350	514	250	137	262	11.0	24.6	.86	1.21	134
1954	.02	.08	63.1	629	113	119	107	30.2	17.9	16.4	5.08	.21	92.3
1955	.06	1.52	131	152	432	563	178	52.7	23.0	9.33	3.07	.11	127
1956	.02	1.27	1.28	1.42	468	187	292	69.7	32.2	33.2	3.80	.56	87.9
1957	.14	1.22	149	261	595	128	170	14.8	16.4	18.8	4.58	33.0	113
1958	60.3	761	276	132	232	262	510	142	30.8	156	21.6	8.89	215
1959	5.12	22.5	21.7	351	223	197	229	58.8	124	21.2	6.95	11.2	105
1960	15.5	34.3	92.8	246	301	522	101	48.4	8.69	6.55	67.2	75.7	126

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	0.43	0.06	-
1953	0.06	0.12	0.89	4.68	6.20	3.34	1.77	3.50	0.14	0.33	.01	.02	21.06
1954	.0003	.001	.84	8.40	1.36	1.60	1.38	.40	.23	.22	.07	.003	14.50
1955	.0008	.02	1.75	2.03	5.22	7.47	2.30	.70	.30	.12	.04	.001	19.95
1956	.0003	.02	.02	.02	5.64	2.50	3.78	.93	.42	.44	.05	.007	13.83
1957	.002	.02	2.00	3.48	7.18	1.70	2.20	.20	.21	.25	.06	.43	17.73
1958	.80	9.84	3.69	1.76	2.80	3.50	6.60	1.90	.40	2.08	.29	.11	33.77
1959	.07	.29	.29	4.68	2.69	2.63	2.96	.79	1.60	.28	.09	.14	16.51
1960	.21	.44	1.24	3.28	3.76	6.97	1.31	.65	.11	.09	.90	.98	19.94

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	1276	-	-	-	-	-	-	-	-
1953	1276,1556	3,160	Feb. 21, 1953	0	134	1.55	21.06	132	20.83
1954	1336,1556	7,200	Jan. 16, 1954	0	92.3	1.07	14.50	98.2	15.43
1955	1386,1556	9,200	Mar. 21, 1955	0	127	1.47	19.95	116	18.22
1956	1436,1556	a1,930	Feb. 4, 1956	0	87.9	1.02	13.83	100	15.81
1957	1506,1556	5,300	Feb. 1, 1957	0	113	1.31	17.73	191	30.04
1958	1556	7,800	Nov. 19, 1957	1.5	215	2.49	33.77	128	20.09
1959	1626	6,600	Jan. 22, 1959	.9	105	1.22	16.51	113	17.75
1960	1706	5,920	Mar. 3, 1960	.1	126	1.46	19.94	-	-

a Maximum daily discharge.

5770. West Flint Creek near Oakville, Ala.
(Formerly published as West Fork Flint Creek near Oakville)

Location.--Lat 34°28'35", long 87°08'30", in SW¼ sec.35, T.6 S., R.6 W., on left bank at upstream side of bridge on county road, 0.9 mile east of Five Points, 0.9 mile upstream from Shoal Creek, 1¼ miles downstream from McDaniel Branch, and 2¾ miles northeast of Oakville.

Drainage area.--87.6 sq mi.

Records available.--August 1952 to September 1957, water year 1958 (annual maximum), published as West Fork Flint Creek near Oakville.

Gage.--Crest-stage gage. Datum of gage is 576.59 ft above mean sea level, datum of 1929. Prior to Sept. 30, 1957, water-stage recorder at same site and datum.

Average discharge.--5 years (1952-57), 105 cfs.

Extremes.--1952-58: Maximum discharge, 4,210 cfs Feb. 1, 1957 (gage height, 21.3 ft).
1952-57: No flow on some days.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	4.23	-
1953	1.49	6.24	32.8	245	488	221	179	178	8.96	2.59	5.19	.05	112
1954	0	0	6.85	411	72.2	57.4	130	56.3	25.5	.98	0	0	63.6
1955	4.02	2.86	184	152	346	368	158	46.1	17.1	30.7	24.1	.40	110
1956	0	4.77	12.9	10.3	525	213	340	74.7	70.6	44.1	3.58	1.63	106
1957	4.90	14.88	252	279	535	164	143	20.3	28.4	39.7	5.68	124	132
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	0.05	-
1953	0.02	0.08	0.43	3.22	5.80	2.91	2.28	2.34	0.11	0.03	0.07	.0007	17.29
1954	0	0	.09	5.41	.86	.76	1.66	.74	.32	.01	0	0	9.85
1955	.05	.04	2.42	2.01	4.11	4.84	2.01	.61	.22	.40	.32	.005	17.04
1956	0	.06	.17	.14	6.46	2.80	4.33	.98	.90	.58	.05	.02	16.49
1957	.06	.19	3.32	3.67	6.36	2.15	1.82	.27	.36	.52	.07	1.58	20.37
1958	-	-	-	-	-	-	-	-	-	-	-	-	-
1959	-	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	1276	-	-	-	-	-	-	-	-
1953	1276	2,100	Feb. 21, 1953	0	112	1.28	17.29	109	16.85
1954	1336,1506	3,540	Jan. 22, 1954	0	63.6	.726	9.85	79.2	12.27
1955	1586,1506	3,760	Mar. 22, 1955	0	110	1.26	17.04	95.2	14.76
1956	1436,1506	3,160	Feb. 4, 1956	0	106	1.21	16.49	128	19.83
1957	1506	4,210	Feb. 1, 1957	0	132	1.51	20.37	-	-
1958	-	*3,540	Nov. 18, 1957	-	-	-	-	-	-
1959	-	(a)	-	-	-	-	-	-	-
1960	-	‡2,800	Mar. 3, 1960	-	-	-	-	-	-

* Revised.
‡ Not previously published.
a No peak above 1,430 cfs.

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 194.2.

Drainage area.--65.6 sq mi.

Records available.--October 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.--9 years (1951-60), 128 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	‡7.0	‡82.0	385	300	200	315	95.6	30.2	70.2	6.21	4.14	7.68	‡126
1953	2.32	4.11	51.9	261	410	245	202	208	11.7	10.9	5.05	3.79	116
1954	2.15	2.43	52.7	504	120	156	174	127	21.8	3.66	8.18	1.69	98.1
1955	2.09	2.72	184	124	324	394	440	125	94.2	35.2	19.9	3.17	144
1956	2.35	25.4	140	98.8	601	261	231	41.3	15.1	104	5.43	3.07	125
1957	2.05	2.24	194	346	562	148	320	83.9	39.0	7.35	2.48	19.0	141
1958	60.4	562	305	142	196	137	329	241	27.6	95.3	76.8	28.6	183
1959	10.3	78.9	58.7	241	198	199	242	70.7	54.5	41.4	11.5	20.6	101
1960	6.24	46.3	324	215	247	276	92.1	83.8	15.6	12.7	19.0	57.8	116

‡ Not previously published; estimated on basis of correlation with station "Duck River below Manchester."

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	‡0.12	‡1.39	6.77	5.28	3.29	5.53	1.63	0.53	1.19	0.11	0.07	0.13	‡26.04
1953	.04	.07	.91	4.59	6.50	4.31	3.44	3.66	.20	.19	.09	.06	24.06
1954	.04	.04	.93	8.85	1.90	2.74	2.96	2.23	.37	.06	.14	.03	20.29
1955	.04	.05	3.24	2.18	5.14	6.92	7.48	2.20	1.60	.62	.35	.05	29.87
1956	.04	.43	2.46	1.74	9.88	4.58	3.93	.73	.26	1.82	.10	.05	26.02
1957	.04	.04	3.41	6.09	8.92	2.60	5.44	1.47	.66	.13	.04	.32	29.16
1958	1.06	9.56	5.36	2.49	3.11	2.40	5.59	4.24	.47	1.68	1.35	.49	37.80
1959	.18	1.34	1.03	4.24	3.14	3.50	4.11	1.24	.93	.73	.20	.35	20.99
1960	.11	.79	5.70	3.77	4.05	4.84	1.57	1.47	.27	.22	.33	.98	24.10

‡ Not previously published; estimated on basis of correlation with station "Duck River below Manchester."

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	1236	2,310	Dec. 15, 1951	-	‡126	‡1.92	‡26.04	90.5	18.78
1953	1276	3,130	Feb. 12, 1953	1.1	116	1.77	24.06	116	24.05
1954	1336	4,520	Jan. 21, 1954	1.0	98.1	1.50	20.29	109	22.61
1955	1386	3,780	Dec. 29, 1954	1.2	144	2.20	29.87	143	29.47
1956	1436	3,810	Feb. 3, 1956	1.7	125	1.91	26.02	128	26.58
1957	1506	4,950	Feb. 1, 1957	1.3	141	2.15	29.16	201	41.65
1958	1556	4,730	Nov. 19, 1957	5.1	183	2.79	37.80	118	24.37
1959	1626	2,290	Jan. 22, 1959	5.2	101	1.54	20.99	121	25.04
1960	1706	4,110	Dec. 19, 1959	4.5	116	1.77	24.10	-	-

‡ Not previously published; estimated on basis of correlation with station "Duck River below Manchester."

5785. Bradley Creek near Prairie Plains, Tenn.

Location.--Lat 35°21'21", long 85°58'45", on left bank 165 ft downstream from highway bridge, 1.1 miles northwest of Prairie Plains, Coffee County, and 3.6 miles upstream from mouth.

Drainage area.--41.3 sq mi.

Records available.--October 1951 to November 1959, water year 1960 (annual maximum only).

Gage.--Crest-stage gage. Datum of gage is 968.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to December 1959 water-stage recorder at same site and datum.

Average discharge.--8 years (1951-59), 65.9 cfs.

Extremes.--1951-60: Maximum discharge, 4,320 cfs Nov. 18, 1959 (gage height, 12.17 ft), from rating curve extended above 2,100 cfs on basis of slope-conveyance study.
1951-59: Minimum discharge, 3.2 cfs Nov. 23, 24, 1954; minimum gage height, 1.01 ft Nov. 17, 18, 1952.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	‡10.5	‡42.5	226	226	117	142	45.1	16.4	14.1	7.00	7.86	8.50	‡72.2
1953	4.28	3.93	5.08	73.9	212	132	76.2	60.9	17.1	18.7	11.1	10.5	51.1
1954	4.73	4.20	18.8	224	76.4	63.2	97.8	54.5	30.4	12.1	6.88	4.79	49.8
1955	4.30	3.88	101	74.2	173	255	212	69.4	110	25.9	12.1	6.48	86.7
1956	5.22	11.3	67.3	49.6	321	123	132	27.2	9.88	57.0	10.5	15.9	68.1
1957	5.67	3.62	90.7	191	291	79.8	62.7	26.0	20.6	10.2	6.28	9.63	65.0
1958	13.9	269	160	72.1	94.9	65.2	127	138	36.8	141	42.5	14.2	97.7
1959	8.68	8.08	10.2	61.7	87.7	77.0	99.5	33.4	24.3	15.4	11.6	10.4	36.9
1960	6.86	9.88	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; estimated on basis of correlation with station "Duck River below Manchester."

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	‡0.29	‡1.15	6.31	6.30	3.05	3.98	1.22	0.46	0.38	0.20	0.22	0.23	‡23.79
1953	.12	.11	.14	2.06	5.34	3.68	2.06	1.70	.46	.52	.31	.28	16.78
1954	.13	.11	.52	6.25	1.93	1.76	2.64	1.52	.82	.34	.19	.13	16.34
1955	.12	.10	2.83	2.07	4.37	7.12	5.73	1.94	2.97	.72	.34	.17	28.48
1956	.15	.31	1.88	1.39	8.37	3.43	3.57	.76	.27	1.59	.29	.43	22.44
1957	.16	.10	2.53	5.32	7.34	2.29	1.69	.73	.56	.28	.18	.26	21.38
1958	.39	7.26	4.46	2.01	2.39	1.82	3.43	3.86	.99	3.94	1.19	.38	32.12
1959	.24	.22	.29	1.72	2.21	2.15	2.69	.93	.66	.43	.32	.28	12.14
1960	.19	.27	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; estimated on basis of correlation with station "Duck River below Manchester."

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	1586,1236	3,780	Jan. 27, 1952	-	‡72.2	‡1.75	‡23.79	49.7	16.41
1953	1276	1,640	Feb. 12, 1953	3.3	51.1	1.24	16.78	52.3	17.17
1954	1336	2,070	Jan. 21, 1954	3.9	49.8	1.21	16.34	56.7	18.36
1955	1386	4,050	Mar. 22, 1955	3.2	86.7	2.10	28.48	84.4	27.77
1956	1436	3,070	Feb. 18, 1956	4.3	68.1	1.65	22.44	69.4	22.89
1957	1506	3,550	Jan. 31, 1957	3.3	65.0	1.57	21.38	93.4	30.70
1958	1556	4,320	Nov. 18, 1957	10	97.7	2.37	32.12	63.2	20.76
1959	1626	700	Apr. 19, 1959	6.2	36.9	0.893	12.14	-	-
1960	1706	2,770	Dec. 19, 1959	-	-	-	-	-	-

‡ Not previously published; estimated on basis of correlation with station "Duck River below Manchester."

5790. Woods Reservoir at Elk River Dam near Estill Springs, Tenn.

Location.--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, 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.

Extremes.--1952-60: Maximum contents, 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).

Remarks.--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.

Cooperation.--Records furnished by U.S. Air Force.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1952	-	-	-	-	-	-	-	4.3	8.0	8.6	8.3	8.8
1953	9.1	9.7	12.5	32.6	34.5	35.3	38.2	38.8	39.0	39.4	26.4	26.5
1954	26.4	26.7	29.6	33.0	33.2	34.1	39.4	40.3	40.2	38.7	37.7	37.5
1955	36.3	34.7	36.3	34.7	34.6	35.1	39.8	40.3	38.6	32.9	29.6	29.1
1956	29.1	29.1	29.0	30.4	34.7	34.8	39.3	38.9	38.8	38.4	38.3	36.4
1957	34.6	34.5	34.6	33.8	29.8	29.6	37.3	39.7	39.5	38.5	37.2	34.6
1958	34.7	34.8	34.7	29.5	29.9	37.2	40.4	40.2	39.0	38.0	37.6	34.7
1959	34.9	35.2	35.1	29.6	29.7	37.9	40.0	39.9	38.4	38.2	37.8	35.1
1960	34.8	34.8	34.9	29.6	29.8	37.2	40.2	39.7	39.9	39.9	38.5	37.1

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 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.--40 years (1920-60), 473 cfs (unadjusted).

Extremes.--1920-60: 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.--Prior to August 1949, diurnal fluctuation caused by powerplant upstream. Flow regulated by Woods Reservoir since 1952.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	121	259	343	729	1,775	1,230	1,037	272	183	138	78.9	78.5	512
1952	64.0	307	1,562	1,002	991	1,108	358	57.2	42.3	45.8	98.4	63.1	458
1953	38.0	37.0	33.5	50.9	1,300	839	504	618	73.9	131	486	96.1	345
1954	41.9	29.6	116	1,588	487	462	387	363	222	130	82.6	32.5	329
1955	74.1	110	557	545	1,159	1,568	1,369	471	606	447	258	59.0	598
1956	49.9	127	487	249	1,942	901	665	213	82.0	400	45.1	120	434
1957	119	34.4	585	1,083	2,313	653	813	211	175	80.0	68.0	201	516
1958	‡192	‡1,920	‡1,030	‡620	‡682	‡320	‡952	‡975	‡265	‡565	‡228	‡310	‡669
1959	‡88	‡160	‡172	‡748	‡655	‡432	‡630	‡292	‡298	‡195	‡142	‡185	‡331
1960	65.1	139	1,041	895	818	810	254	233	113	91.3	135	268	405

‡ Not previously published; estimated on basis of correlations with station "Elk River above Fayetteville" and reported discharges for Elk River Dam.

Monthly and yearly runoff, in inches (adjusted)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.50	1.03	1.40	2.98	6.56	5.03	4.10	1.11	0.72	0.56	0.32	0.31	24.62
1952	.26	1.22	5.57	4.10	3.79	4.53	1.42	(†)	-	-	-	-	-

† Subject to regulation in Woods Reservoir beginning May 1, 1952.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	690	-	33.21
1951	1206	12,400	Feb. 2, 1951	58	512	-	1.82	24.62	597	-	28.74
1952	1236	2,980	Dec. 22, 1951	34	458	482	1.71	2.33	321	356	17.16
1953	1276	5,180	Feb. 12, 1953	26	345	393	1.39	18.93	351	398	19.17
1954	1336	9,310	Jan. 22, 1954	22	329	359	1.27	17.28	376	394	18.97
1955	1386	7,520	Mar. 21, 1955	30	598	575	2.04	27.68	591	571	27.51
1956	1436	5,480	Feb. 4, 1956	28	434	454	1.61	21.91	441	456	22.00
1957	1506	12,500	Feb. 1, 1957	22	516	511	1.81	24.59	‡715	‡715	‡34.42
1958	-	‡b12,000	Nov.18-19, 1957	-	‡669	‡670	‡2.38	‡32.24	‡443	‡444	‡21.38
1959	-	‡c2,700	Dec.19 or 20,1958	-	‡331	‡332	‡1.18	‡15.97	‡401	‡400	‡19.26
1960	1706	5,330	Dec. 19, 1959	44	405	411	1.46	19.82	-	-	-

‡ Not previously published; estimated on basis of correlations with station "Elk River above Fayetteville" and reported discharge from Elk River Dam.

a Adjusted for change in contents in Woods Reservoir beginning May 1, 1952.
b From floodmarks.
c Determined by correlation.

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 miles southwest of Mulberry, Lincoln County, and 1.7 miles upstream from confluence with East Fork.

Drainage area.--41.2 sq mi.

Records available.--October 1953 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 687.72 ft above mean sea level, datum of 1929.

Average discharge.--7 years (1953-60), 73.7 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	‡0.51	‡0.76	‡4.8	263	41.8	43.6	121	39.0	8.33	27.7	0.337	1.73	‡46.2
1955	2.21	2.58	119	59.6	206	281	207	52.5	13.0	5.12	6.38	0.08	78.8
1956	.366	30.7	153	81.8	349	84.7	157	25.7	9.10	40.3	.985	2.67	76.8
1957	1.06	1.59	139	258	275	74.8	125	8.61	5.01	.302	.001	82.0	79.6
1958	82.1	365	175	65.0	103	67.4	194	122	5.88	56.1	3.61	72.4	109
1959	4.06	334.9	15.6	99.0	98.4	73.9	92.8	36.1	78.8	52.4	12.7	7.46	50.1
1960	11.5	54.3	261	120	145	176	32.8	45.1	9.53	6.88	6.65	36.9	75.7

‡ Not previously published; estimated on basis of correlation with station "Richland Creek near Pulaski."

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	‡0.001	‡0.002	‡0.13	7.37	1.06	1.22	3.27	1.09	0.23	0.78	0.009	0.05	‡15.21
1955	.06	.07	3.33	1.67	5.22	7.87	5.61	1.47	.35	.14	.18	.0002	25.97
1956	.01	.83	4.29	2.29	9.14	2.37	4.24	.72	.25	1.13	.03	.07	25.37
1957	.03	.04	3.89	7.23	6.95	2.09	3.39	.24	.14	.008	.00003	2.22	26.23
1958	2.30	9.89	4.88	1.82	2.61	1.88	5.25	3.40	.16	1.57	.10	1.96	35.82
1959	.11	.95	.44	2.77	2.49	2.07	2.51	1.01	2.13	1.47	.36	.20	16.51
1960	.32	1.47	7.32	3.36	3.81	4.93	.89	1.26	.26	.19	1.19	1.00	25.00

‡ Not previously published; estimated on basis of correlation with station "Richland Creek near Pulaski."

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	1386,1506	6,400	Apr. 16, 1954	-	‡46.2	‡1.12	‡15.21	56.2	18.54
1955	1386,1506	7,790	Mar. 21, 1955	0	78.8	1.91	25.97	83.9	27.64
1956	1436	8,140	Dec. 4, 1955	0	76.8	1.86	25.37	73.2	24.20
1957	1508	4,780	Sept.15, 1957	0	79.6	1.93	26.23	119	39.34
1958	1556	12,800	Nov. 17, 1957	.2	109	2.65	35.82	61.5	20.25
1959	1626	4,870	June 1, 1959	1.2	50.1	1.22	16.51	73.2	24.12
1960	1706	6,290	Dec. 28, 1959	.2	75.7	1.84	25.00	-	-

‡ Not previously published; estimated on basis of correlation with station "Richland Creek near Pulaski."

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 (1934-60), 1,379 cfs (unadjusted).

Extremes.--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.--Prior to August 1949, diurnal fluctuation at low flow caused by powerplants upstream. Flow regulated by Woods Reservoir since 1952. Records of water temperatures for the period June to September 1960 are published in report of the Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	392	764	876	2,065	5,359	3,405	2,998	895	688	551	281	290	1,520
1952	274	1,067	4,309	3,469	2,475	3,430	1,063	373	285	190	256	261	1,457
1953	215	192	356	1,640	3,964	2,539	1,495	1,830	301	454	613	282	1,140
1954	164	143	4,458	4,951	1,525	1,291	1,480	930	823	421	221	129	1,047
1955	199	226	1,617	1,577	3,322	4,433	3,797	1,482	1,278	753	465	188	1,600
1956	182	525	1,610	745	5,976	2,315	2,272	830	427	739	233	293	1,326
1957	244	169	1,765	2,628	6,941	1,839	2,428	750	592	281	196	509	1,491
1958	667	5,803	3,005	1,688	2,075	1,208	2,895	2,770	651	1,604	633	1,047	1,997
1959	319	509	545	1,849	1,923	1,432	2,058	775	808	556	399	464	962
1960	266	415	3,241	2,346	2,374	2,886	1,070	840	376	294	294	656	1,256

Monthly and yearly runoff, in inches (adjusted)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.55	1.03	1.22	2.88	6.75	4.75	4.04	1.25	0.93	0.77	0.39	0.39	24.95
1952	.38	1.44	6.01	4.84	3.23	4.78	1.43	(a)	-	-	-	-	-

a Adjusted for change in contents in Woods Reservoir beginning May 1, 1952.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	1,956	-	32.10
1951	1206	26,400	Feb. 1, 1951	194	1,520	-	1.84	24.95	1,826	-	29.98
1952	1236	13,000	Dec. 8, 1951	160	1,457	1,481	1.79	24.38	1,046	1,080	17.78
1953	1276	11,500	Feb. 12, 1953	139	1,140	1,189	1.44	19.51	1,138	1,185	19.44
1954	1336	28,700	Jan. 22, 1954	116	1,047	1,077	1.30	17.68	1,155	1,173	19.26
1955	1386	25,000	Mar. 22, 1955	145	1,600	1,577	1.91	25.88	1,623	1,603	26.30
1956	1436	18,700	Feb. 4, 1956	145	1,326	1,345	1.63	22.15	1,315	1,330	21.89
1957	1506	33,700	Feb. 2, 1957	137	1,491	1,486	1.80	24.39	2,095	2,095	34.39
1958	1556	29,500	Nov. 18, 1957	273	1,997	1,997	2.41	32.78	1,323	1,324	21.74
1959	1626	7,130	Jan. 22, 1959	218	962	963	1.16	15.81	1,179	1,178	19.34
1960	1706	14,000	Dec. 20, 1959	177	1,256	1,261	1.52	20.76	-	-	-

a Adjusted for change in contents in Woods Reservoir beginning May 1, 1952.

5830. Bradshaw Creek at Frankewing, Tenn.

Location.--Lat 35°11'31", long 86°50'48", on downstream side of second pier from right abutment of bridge on U.S. Highway 64, 0.4 mile east of Frankewing, 2.2 miles downstream from Little Bradshaw Creek, and 10.5 miles east of Pulaski, Giles County.

Drainage area.--36.5 sq mi.

Records available.--October 1954 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 655.61 ft above mean sea level, datum of 1929.

Average discharge.--6 years (1954-60), 62.5 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	‡2.10	‡1.69	130	43.0	213	357	160	41.3	10.5	3.82	6.97	0.081	‡80.2
1956	0.053	7.12	92.8	74.0	344	70.9	93.9	8.95	15.2	41.1	1.75	.372	61.3
1957	.320	.837	112	213	223	56.7	70.0	13.0	4.40	.635	.125	19.59	58.5
1958	54.3	197	123	56.3	61.4	46.1	154	109	6.06	14.0	5.08	39.0	71.9
1959	3.68	45.7	16.5	74.0	89.9	103	94.5	28.5	16.5	30.8	27.0	7.29	44.4
1960	11.4	50.5	188	82.6	100	183	40.9	32.6	6.94	1.49	.716	3.08	58.6

‡ Not previously published; estimated on basis of stations "West Fork Mulberry Creek at Mulberry", and "Big Rock Creek at Lewisburg."

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	‡0.07	‡0.05	4.11	1.36	6.09	11.27	4.90	1.30	0.32	0.12	0.22	0.002	‡29.81
1956	.002	.22	2.93	2.34	10.16	2.24	2.87	.28	.47	1.30	.06	.01	22.88
1957	.01	.03	3.55	6.73	6.37	1.79	2.14	.41	.13	.02	.004	.60	21.78
1958	1.71	6.03	3.87	1.78	1.75	1.46	4.70	3.45	.19	.44	.16	1.19	26.73
1959	.12	1.40	.52	2.34	2.56	3.24	2.89	.90	.50	.97	.85	.22	16.51
1960	.36	1.54	5.94	2.61	2.96	5.77	1.25	1.03	.21	.05	.02	.09	21.83

‡ Not previously published; see footnote to table 1.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1386	12,600	Mar. 21, 1955	0	‡80.2	‡2.20	‡29.81	77.3	28.73
1956	1436	7,290	Dec. 3, 1955	0	61.3	1.68	22.88	62.5	23.32
1957	1506	3,730	Jan. 31, 1957	0	58.5	1.60	21.78	80.1	29.80
1958	1556	3,500	Nov. 18, 1957	.05	71.9	1.97	26.73	46.1	17.16
1959	1626	3,110	Mar. 26, 1959	1.0	44.4	1.22	16.51	60.0	22.31
1960	1706	4,790	Dec. 28, 1959	.04	58.6	1.61	21.83	-	-

‡ Not previously published; see footnote to table 1.

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 (1955-60), 36.3 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	7.20	4.96	-
1956	5.75	27.0	23.3	38.9	166	57.0	44.2	18.5	30.1	8.95	7.31	5.00	35.4
1957	6.74	6.92	47.4	120	136	64.1	49.8	31.1	28.1	7.36	5.43	7.58	42.0
1958	13.5	101	78.7	46.3	43.7	41.0	92.9	66.2	15.3	9.18	7.29	14.7	44.0
1959	7.37	11.4	10.2	39.3	48.5	62.5	58.2	19.9	15.5	11.2	8.90	11.2	25.2
1960	8.77	15.8	74.9	50.4	75.5	98.4	40.5	16.8	12.1	8.70	7.13	9.31	34.8

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-	-	-	-	-
1955	-	-	-	-	-	-	-	-	-	-	0.34	0.23	-
1956	0 '7	1.23	1.10	1.84	7.33	2.69	2.02	0.87	1.38	0.42	.35	.23	19.73
1957	.32	.32	2.24	5.68	5.80	3.03	2.28	1.47	1.28	.35	.26	.35	23.38
1958	.64	4.63	3.72	2.19	1.86	1.94	4.25	3.13	.70	.43	.34	.67	24.50
1959	.35	.52	.48	1.85	2.07	2.96	2.66	.94	.71	.53	.42	.51	14.00
1960	.41	.72	3.54	2.38	3.34	4.65	1.85	.79	.55	.41	.34	.43	19.41

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	-	-	-	-	-	-	-	-	-
1955	1506	-	-	-	-	-	-	-	-
1956	1506	1,720	Jan. 29, 1956	3.9	35.4	1.45	19.73	35.9	20.01
1957	1506	1,440	Jan. 31, 1957	4.8	42.0	1.72	23.38	53.0	29.49
1958	1556	2,440	Nov. 17, 1957	4.8	44.0	1.80	24.50	30.3	16.86
1959	1626	739	Mar. 26, 1959	5.4	25.2	1.03	14.00	31.1	17.32
1960	1706	675	Dec. 28, 1959	5.4	34.8	1.43	19.41	-	-

5840. Richland Creek near Pulaski, Tenn.

Location.--Lat 35°12'51", 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 (1934-60), 587 cfs.

Extremes.--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 1842 and 1856, from reports by Tennessee Valley Authority.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	104	841	604	1,133	2,695	1,422	1,184	225	202	133	47.8	61.7	706
1952	48.9	166	1,681	2,209	1,043	2,066	389	155	64.3	33.3	86.1	74.1	671
1953	64.2	85.6	251	1,085	2,091	1,561	1,089	918	119	238	73.0	32.6	625
1954	26.8	37.2	78.0	1,330	830	382	968	501	124	51.6	14.9	20.6	361
1955	63.1	42.4	419	382	1,637	3,101	1,455	479	183	68.3	43.5	21.1	652
1956	30.5	238	367	608	2,648	865	722	163	220	121	49.6	33.6	496
1957	32.6	43.5	1,066	1,796	2,489	773	618	406	307	77.8	31.1	181	641
1958	243	2,058	1,343	657	622	561	1,576	1,117	133	113	76.0	226	725
1959	74.4	193	160	693	870	1,004	1,011	260	258	112	86.5	110	399
1960	74.6	329	1,387	809	1,335	1,563	593	234	116	59.5	37.8	53.8	548

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.33	2.56	1.90	3.57	7.67	4.48	3.61	0.71	0.62	0.42	0.15	0.19	26.21
1952	.15	.51	5.30	6.96	3.07	6.51	1.19	.49	.20	.10	.27	.23	24.98
1953	.20	.26	.79	3.42	5.95	4.92	3.32	2.89	.36	.75	.23	.10	23.19
1954	.08	.11	.25	4.19	2.36	1.20	2.95	1.58	.38	.16	.05	.06	13.37
1955	.20	.13	1.32	1.20	4.66	9.77	4.44	1.51	.56	.22	.14	.06	24.21
1956	.10	.73	1.16	1.92	7.80	2.72	2.20	.51	.67	.38	.16	.10	18.45
1957	.10	.13	3.36	5.66	7.08	2.44	1.89	1.28	.94	.24	.10	.55	23.77
1958	.77	6.27	4.23	2.07	1.77	1.77	4.80	3.52	.41	.35	.24	.69	26.89
1959	.23	.59	.50	2.18	2.48	3.16	3.08	.82	.79	.35	.27	.33	14.78
1960	.24	1.00	4.37	2.55	3.94	4.92	1.81	.74	.35	.19	.12	.16	20.39

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	999	37.03
1951	1206,1386	22,400	Feb. 1, 1951	26	706	1.93	26.21	738	27.38
1952	1236	23,000	Jan. 27, 1952	17	671	1.83	24.98	545	20.27
1953	1276	15,700	Feb. 12, 1953	16	625	1.71	23.19	603	22.38
1954	1336	8,940	Jan. 22, 1954	8.2	361	.986	13.37	393	14.58
1955	1386	75,000	Mar. 21, 1955	16	652	1.78	24.21	661	24.55
1956	1436	12,200	Feb. 18, 1956	19	496	1.36	18.45	539	20.05
1957	1506	22,400	Jan. 31, 1957	18	641	1.75	23.77	848	31.45
1958	1556	19,500	Nov. 18, 1957	25	725	1.98	26.89	457	16.94
1959	1626	8,080	Mar. 27, 1959	45	399	1.09	14.78	514	19.07
1960	1706	7,350	Mar. 3, 1960	18	548	1.50	20.39	-	-

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 11¾ miles downstream at datum 13.52 ft lower.

Average discharge.--44 years (1904-7, 1919-60), 2,995 cfs (unadjusted).

Extremes.--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 the flood in March 1897, from reports by Tennessee Valley Authority.

Remarks.--Prior to August 1949, diurnal fluctuation at low flow caused by powerplants upstream. Flow regulated by Woods Reservoir since 1952.

Monthly and yearly mean discharge, in cubic feet per second (observed)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	639	2,444	2,187	4,635	12,670	6,869	6,320	1,344	1,199	1,045	412	410	3,279
1952	412	1,964	10,430	8,998	5,140	8,431	1,934	719	472	246	483	586	3,331
1953	435	451	1,352	4,357	10,040	6,278	3,644	4,145	576	1,123	785	354	2,752
1954	209	200	667	9,240	2,994	2,249	4,162	2,588	1,228	595	259	142	2,043
1955	314	290	2,998	3,115	7,579	11,570	7,187	2,574	1,714	946	626	202	3,234
1956	209	1,057	3,270	1,852	13,270	4,157	4,559	1,186	918	1,162	327	359	2,647
1957	300	247	4,379	5,818	15,210	3,711	4,164	1,325	974	384	239	1,082	3,071
1958	1,134	11,350	6,388	3,290	3,987	2,724	7,089	6,351	970	2,055	824	1,747	3,978
1959	482	1,123	969	3,893	4,183	3,555	4,695	1,511	1,498	1,432	915	690	2,062
1960	502	1,411	7,670	4,928	5,769	6,984	2,362	1,586	618	447	387	939	2,800

Monthly and yearly runoff, in inches (adjusted)

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.41	1.53	1.41	3.00	7.39	4.44	3.95	0.87	0.75	0.68	0.27	0.26	24.96
1952	.27	1.23	6.74	5.82	3.11	5.45	1.21	(a)	-	-	-	-	-

a Subject to regulation in Woods Reservoir beginning May 1, 1952.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30							Calendar year		
		Observed				Adjusted a/			Observed	Adjusted a/	
		Momentary maximum		Minimum day	Mean	Mean	Per square mile	Runoff in inches	Mean	Mean	Runoff in inches
		Discharge	Date								
1950	-	-	-	-	-	-	-	-	4,552	-	34.63
1951	1206	56,200	Feb. 2, 1951	231	3,279	-	1.84	24.96	3,920	-	29.85
1952	1236	37,700	Jan. 28, 1952	156	3,331	3,355	1.88	25.60	2,440	2,474	18.87
1953	1276	32,000	Feb. 13, 1953	160	2,752	2,801	1.57	21.31	2,649	2,695	20.51
1954	1336	43,600	Jan. 23, 1954	117	2,043	2,073	1.16	15.78	2,258	2,276	17.32
1955	1386	104,000	Mar. 22, 1955	150	3,234	3,211	1.80	24.43	3,311	3,291	25.04
1956	1436	36,600	Feb. 5, 1956	155	2,647	2,666	1.49	20.34	2,682	2,697	20.58
1957	1506	65,600	Feb. 2, 1957	165	3,071	3,066	1.72	23.33	4,223	4,224	32.14
1958	1556	53,200	Nov. 19, 1957	296	3,978	3,979	2.23	30.27	2,622	2,623	19.96
1959	1626	17,400	Apr. 19, 1959	298	2,062	2,063	1.16	15.70	2,657	2,656	20.21
1960	1706	23,400	Dec. 20, 1959	214	2,800	2,805	1.57	21.40	-	-	-

a Adjusted for change in contents in Woods Reservoir.

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.--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).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	45.6	25.5	83.1	-
1958	92.0	850	568	282	320	267	722	617	91.4	77.5	46.4	93.4	335
1959	52.6	100	83.2	250	322	420	522	168	255	114	60.8	52.4	199
1960	62.6	121	684	372	471	639	272	115	88.2	43.8	36.2	49.0	246

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	0.36	0.19	0.61	-
1958	0.70	6.24	4.31	2.14	2.19	2.02	5.30	4.68	0.67	.59	.35	.69	29.88
1959	.40	.74	.63	1.90	2.21	3.18	3.83	1.27	1.87	.86	.46	.38	17.73
1960	.47	.89	5.19	2.82	3.34	4.84	1.99	.87	.65	.33	.27	.36	22.02

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1957	1556	-	-	-	-	-	-	-	-
1958	1556	10,500	Nov. 18, 1957	25	335	2.20	29.88	228	20.40
1959	1626	7,820	Mar. 27, 1959	32	199	1.31	17.73	252	22.51
1960	1706	7,820	Dec. 19, 1959	22	246	1.62	22.02	-	-

5860. Wheeler Lake at Wheeler Dam, Ala.

Location.--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, 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.

Extremes.--1936-60: Maximum elevation, 557.32 ft Nov. 1, 1944; minimum (after start of operation plan in August 1937), 548.92 ft Nov. 1, 1937.

Remarks.--Contents based on backwater profile. Reservoir is formed by concrete dam with 60 tainter 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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	445	446	416	459	423	707	574	559	565	536	502	478
1952	466	436	454	459	429	481	572	574	545	521	455	422
1953	426	423	420	422	445	488	581	548	546	538	493	499
1954	458	426	418	448	434	546	588	572	561	529	489	458
1955	454	420	514	413	470	510	571	574	567	507	482	463
1956	454	435	412	457	424	462	568	573	557	511	512	492
1957	450	440	431	562	468	493	573	565	536	528	489	511
1958	483	457	452	422	429	495	642	566	537	559	478	499
1959	460	452	414	417	419	523	557	566	549	541	480	480
1960	442	452	459	446	432	503	560	559	564	508	486	479

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, 12⅔ 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 (1935-40, 1945-60), 262 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	29.8	104	143	375	1,225	1,119	483	75.1	75.8	439	15.4	13.4	336
1952	7.32	221	1,388	705	384	569	126	31.6	78.5	12.1	113	19.0	306
1953	5.34	19.9	98.9	459	1,012	367	306	564	46.3	49.1	15.9	6.72	241
1954	1.94	2.31	24.1	813	170	974	335	140	43.5	1.68	3.26	1.43	136
1955	1.16	3.68	350	216	761	725	321	72.1	33.5	38.5	6.24	1.24	208
1956	.52	2.40	9.16	8.56	720	295	758	132	89.5	72.8	13.3	9.95	173
1957	4.43	9.42	410	473	1,109	293	250	40.0	26.3	12.5	17.7	48.1	219
1958	37.2	1,170	443	232	391	298	597	382	50.0	476	87.1	138	357
1959	20.2	105	70.8	357	391	262	365	54.7	90.0	9.49	59.0	20.4	148
1960	47.7	55.6	572	584	529	890	174	131	42.3	8.22	47.3	100	266

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.21	0.70	1.00	2.61	7.68	7.77	3.24	0.52	0.51	3.05	0.11	0.09	27.49
1952	.05	1.49	9.64	4.89	2.49	3.95	.85	.22	.53	.08	.78	.13	25.10
1953	.04	.13	.69	3.18	6.35	2.55	2.06	3.91	.31	.34	.11	.05	19.72
1954	.01	.02	.17	5.65	1.07	.68	2.25	.97	.29	.01	.02	.01	11.15
1955	.01	.02	2.43	1.50	4.77	5.04	2.16	.50	.22	.27	.04	.01	16.97
1956	.004	.02	.06	.06	4.68	2.05	5.10	.92	.60	.51	.09	.07	14.16
1957	.03	.06	2.85	3.28	6.96	2.03	1.68	.28	.18	.09	.12	.32	17.88
1958	.26	7.86	3.08	1.61	2.45	2.07	4.01	2.65	.34	3.31	.60	.93	29.17
1959	.14	.70	.49	2.48	2.45	1.82	2.45	.38	.60	.07	.41	.14	12.13
1960	.33	.37	3.97	4.06	3.44	6.18	1.17	.91	.28	.06	.33	.68	21.78

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	431	35.28
1951	1206	11,300	Feb. 1, 1951	4.4	336	2.02	27.49	449	36.76
1952	1236	8,140	Dec. 9, 1951	2.4	306	1.84	25.10	180	14.78
1953	1276	4,520	Feb. 22, 1953	2.0	241	1.45	19.72	233	19.06
1954	1336	7,620	Jan. 23, 1954	.4	136	.819	11.15	164	13.41
1955	1386	7,160	Mar. 22, 1955	.5	208	1.25	16.97	179	14.59
1956	1436	4,080	Apr. 7, 1956	.4	173	1.04	14.16	207	17.02
1957	1506	9,330	Feb. 1, 1957	.5	219	1.32	17.88	320	26.14
1958	1556	6,190	Nov. 18, 1957	11	357	2.15	29.17	236	19.30
1959	1626	2,400	Apr. 19, 1959	3.2	148	.892	12.13	189	15.47
1960	1706	5,610	Mar. 3, 1960	3.2	266	1.60	21.78	-	-

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 (1925-60), 627 cfs.

Extremes.--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).

The flood in March 1902 reached a stage of about 3 ft higher than that of Mar. 21, 1955, from information by local residents.

Remarks.--Prior to January 1951, diurnal fluctuation at low flow caused by powerplant near Lawrenceburg.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	228	805	804	1,470	2,972	1,546	1,270	410	320	251	155	165	852
1952	152	247	1,648	1,623	954	1,959	647	324	195	148	183	160	689
1953	142	179	229	719	2,051	1,642	1,202	1,101	234	230	160	163	662
1954	119	136	217	1,280	907	520	1,018	467	219	163	106	83.6	433
1955	120	123	230	253	1,340	3,332	1,162	803	259	233	140	91.6	671
1956	118	280	301	606	2,389	704	676	313	280	188	137	89.9	498
1957	111	131	599	1,310	2,131	710	766	366	371	179	125	136	568
1958	196	1,867	1,170	703	579	654	1,369	1,010	297	305	200	279	718
1959	157	202	193	653	733	833	993	357	534	396	199	182	450
1960	175	312	1,532	912	1,032	1,465	800	312	261	183	160	159	609

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.76	2.58	2.66	4.87	8.89	5.12	4.07	1.36	1.03	0.83	0.51	0.53	33.21
1952	.50	.79	5.46	5.38	2.96	6.49	2.07	1.07	.63	.49	.61	.51	26.96
1953	.47	.57	.76	2.38	6.14	5.44	3.85	3.65	.75	.76	.53	.52	25.82
1954	.40	.44	.72	4.24	2.72	1.72	3.26	1.55	.70	.54	.35	.27	16.91
1955	.40	.39	.76	.84	4.01	11.04	3.73	2.66	.83	.77	.46	.29	26.18
1956	.39	.90	1.00	2.01	7.40	2.33	2.17	1.04	.90	.62	.45	.29	19.50
1957	.37	.42	1.98	4.34	6.38	2.35	2.45	1.21	1.19	.59	.41	.43	22.12
1958	.65	5.99	3.88	2.33	1.73	2.17	4.39	3.35	.95	1.01	.66	.90	28.01
1959	.52	.65	.64	2.16	2.19	2.76	3.18	1.18	1.71	1.31	.66	.58	17.54
1960	.58	1.00	5.08	3.02	3.20	4.85	2.57	1.03	.84	.61	.53	.51	23.82

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,056	41.17
1951	1206	27,200	Feb. 1, 1951	126	852	2.45	33.21	871	33.96
1952	1236	14,400	Dec. 8, 1951	107	689	1.98	26.96	563	22.01
1953	1276	20,600	Feb. 12, 1953	98	662	1.90	25.82	656	25.58
1954	1336	10,400	Feb. 20, 1954	70	433	1.24	16.91	433	16.90
1955	1386	132,000	Mar. 21, 1955	76	671	1.93	26.18	690	26.92
1956	1436	17,400	Feb. 18, 1956	77	498	1.43	19.50	511	19.98
1957	1506	19,100	Jan. 31, 1957	81	568	1.63	22.12	766	29.87
1958	1556	21,000	Nov. 18, 1957	123	718	2.06	28.01	495	19.30
1959	1626	6,000	Apr. 19, 1959	129	450	1.29	17.54	574	22.39
1960	1706	11,400	Dec. 19, 1959	100	609	1.75	23.82	-	-

5890. Wilson Lake near Florence, Ala.

Location.--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, 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. Published as Wilson Reservoir prior to 1954.

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

Extremes.--1924-60: Maximum contents, 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).

Remarks.--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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	273.8	274.8	266.0	270.9	260.3	268.3	279.4	280.2	279.5	278.2	271.1	280.0
1952	280.4	271.4	260.3	265.2	268.2	270.6	276.2	271.1	278.0	274.2	279.6	279.6
1953	271.3	278.0	262.4	268.8	268.8	269.7	283.6	277.7	276.4	268.1	271.2	277.4
1954	276.3	273.5	264.1	309.7	308.4	320.1	324.1	317.1	319.1	316.8	319.2	315.8
1955	317.6	320.2	309.4	307.0	310.9	316.0	322.6	324.9	311.6	322.6	322.3	319.3
1956	322.8	321.1	303.6	321.5	307.3	310.4	322.7	324.8	319.6	324.0	313.8	316.1
1957	319.1	308.4	309.5	311.8	305.6	306.3	326.6	321.8	325.2	321.0	317.6	325.1
1958	318.9	315.8	306.2	309.0	310.5	311.0	322.6	324.5	320.9	316.2	324.3	322.7
1959	326.4	325.2	311.1	310.2	310.0	309.3	324.1	324.8	321.4	312.4	320.5	325.1
1960	324.7	320.6	306.4	310.0	309.0	308.0	322.0	323.0	316.0	324.0	316.0	318.0

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, 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.--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. 18, 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.--Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station. Flow now almost completely regulated.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	41,200	47,170	61,950	62,940	114,800	88,870	78,530	34,640	32,890	34,100	30,540	29,800	53,380
1952	32,580	45,260	130,300	96,660	76,540	100,900	29,850	23,000	26,870	26,350	28,020	25,290	53,580
1953	26,080	22,740	38,530	65,140	111,600	73,230	35,250	51,270	30,140	32,950	27,840	24,240	44,550
1954	20,200	20,340	31,860	118,200	46,150	46,750	35,840	32,280	29,110	27,240	25,930	20,860	37,960
1955	16,900	20,070	34,440	54,850	75,430	98,630	56,540	36,880	34,690	33,120	32,820	25,190	43,130
1956	25,920	31,790	36,790	22,860	131,100	73,230	56,800	34,630	27,400	30,530	29,720	29,770	43,820
1957	29,150	32,540	60,310	67,050	207,300	60,540	52,120	34,900	34,020	27,460	27,560	34,140	54,530
1958	42,060	136,400	113,300	66,510	71,420	53,730	55,650	83,750	48,290	45,660	43,150	42,180	66,760
1959	37,890	33,710	29,140	55,340	52,490	44,910	43,340	29,370	31,550	30,550	28,610	28,840	37,050
1960	40,320	45,800	92,050	72,860	74,220	79,440	33,790	27,210	27,690	25,590	31,490	41,660	49,340

Yearly discharge, in cubic feet per second, of Tennessee River at Florence, Ala.

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	67,300	29.65
1951	1206	303,000	Mar. 29, 1951	17,000	54,380	1.77	23.96	59,290	26.12
1952	1236	223,000	Dec. 23, 1951	10,500	53,580	1.74	23.67	43,410	19.18
1953	1276	202,000	Feb. 23, 1953	250	44,550	1.45	19.63	43,290	19.07
1954	1336	311,000	Jan. 23, 1954	3,500	37,960	1.23	16.72	37,870	16.69
1955	1386	326,000	Mar. 22, 1955	6,700	43,130	1.40	19.00	45,060	19.85
1956	1436	288,000	Feb. 5, 1956	9,600	43,820	1.42	19.36	46,150	20.39
1957	1506	367,000	Feb. 2,4, 1957	11,700	54,530	1.77	24.03	68,670	30.25
1958	1556	337,000	Nov. 19, 1957	24,300	66,760	2.17	29.41	50,820	22.39
1959	1626	162,000	Jan. 22, 1959	11,700	37,050	1.20	16.32	43,590	19.21
1960	1706	153,000	Mar. 3, 1960	14,600	49,340	1.60	21.80	-	-

5900. Cypress Creek near Florence, Ala.

Location.--Lat 34°48'27", long 87°42'02", in NE¼ sec.9, T.3 S., R.11 W., on left bank 100 ft downstream from bridge on State Highway 2, 2 miles west of Florence, 4 miles downstream from Cox Creek, and 4 miles upstream from mouth.

Drainage area.--209 sq mi.

Records available.--October 1933 to September 1953. Prior to May 1934 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 423.78 ft above mean sea level, datum of 1929.

Average discharge.--20 years (1933-53), 375 cfs.

Extremes.--1933-53: Maximum discharge, 25,100 cfs Mar. 28, 1951 (gage height, 19.20 ft); minimum, 42 cfs Aug. 27, 1936 (gage height, 0.35 ft).

Flood of Mar. 21, 1955, reached a stage of 29.94 ft, from floodmark (discharge, 50,000 cfs, from contracted-opening measurement).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	154	338	515	863	1,574	1,328	777	256	207	238	107	121	533
1952	84.7	258	1,121	1,161	663	1,009	400	225	120	86.7	190	90.1	452
1953	78.2	108	158	429	1,372	1,085	739	594	189	186	78.7	76.0	418

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.85	1.81	2.84	4.76	7.84	7.33	4.15	1.41	1.10	1.31	0.59	0.64	34.63
1952	.47	1.38	6.18	6.41	3.42	5.57	2.13	1.24	.64	.48	1.05	.48	29.45
1953	.43	.58	.87	2.37	6.83	5.99	3.95	3.28	1.01	1.03	.43	.41	27.18

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	632	41.03
1951	1206	25,100	Mar. 28, 1951	74	533	2.55	34.63	572	37.16
1952	1236	9,190	Jan. 27, 1952	68	452	2.16	29.45	358	23.30
1953	1276	11,900	Feb. 12, 1953	59	418	2.00	27.18	-	-

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.--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 include diversion averaging 1 cfs for water supply for city of Tuscumbia.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	17.5	83.7	86.0	115	98.4	75.2	59.1	45.3	34.7	-
1957	24.2	18.7	52.9	79.9	119	117	108	90.0	64.5	46.9	30.5	22.0	64.1
1958	19.9	70.4	98.5	91.3	93.3	82.7	92.4	113	95.7	86.5	77.1	62.0	81.8
1959	47.8	28.6	23.1	39.3	66.0	73.1	87.1	80.2	60.5	47.4	37.8	22.9	51.0
1960	22.4	27.5	56.7	98.4	101	109	107	88.6	68.8	43.3	30.8	28.0	65.0

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1956	1436	-	-	-	-	-	-	59.0	-
1957	1506	124	(a)	13	64.1	-	-	71.9	-
1958	1556	150	Nov.19-20, 1957	13	81.8	-	-	74.4	-
1959	1626	94	Apr.20,21, 1959	17	51.0	-	-	51.6	-
1960	1706	120	Apr. 3, 1960	17	65.0	-	-	-	-

a Feb. 19-28, Mar, 6, 7, 1957.

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.--1956-60: Maximum discharge, 7,000 cfs Jan. 31, 1957 (gage height, 20.0 ft); minimum, 6.1 cfs Sept. 18, 19, 1956.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	-	53.0	29.2	10.1	-
1957	35.4	42.7	430	600	746	314	324	82.8	163	55.2	13.1	28.7	233
1958	52.2	950	413	257	403	389	549	357	68.8	450	103	243	351
1959	58.4	134	94.4	380	429	218	397	140	168	39.6	28.1	34.8	175
1960	66.2	81.4	454	529	478	800	267	155	43.0	14.3	50.6	37.6	247

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	-	0.43	0.24	0.08	-
1957	0.29	0.33	3.47	4.83	5.43	2.54	2.53	0.67	1.27	.44	.11	.22	22.13
1958	.42	7.41	3.33	2.07	2.93	3.13	4.28	2.88	.54	3.63	.83	1.89	33.34
1959	.47	1.04	.76	3.06	3.12	1.76	3.10	1.13	1.31	.32	.23	.27	16.57
1960	.53	.64	3.66	4.26	3.60	6.45	2.09	1.25	.34	.11	.33	.29	23.55

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1956	1506	-	-	-	-	-	-	-	-
1957	1506	7,000	Jan. 31, 1957	6.7	233	1.63	22.13	308	29.20
1958	1556	6,600	Nov. 18, 1957	17	351	2.45	33.34	258	24.45
1959	1626	2,520	Jan. 21, 1959	11	175	1.22	16.57	202	19.13
1960	1706	6,750	Mar. 2, 1960	9.2	247	1.73	23.55	-	-

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.--1913-20, 1958-60: Maximum discharge, 5,600 cfs Mar. 4, 1960 (gage height, 16.31 ft); minimum daily, 10 cfs Aug. 15-17, Sept. 17, 1918 (gage height, 1.2 ft, site and datum then in use).

Correction.--In WSP 1306, the monthly mean discharges for February to May 1920 were listed in error; the correct figures are given in the first table below.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1920	360	825	1,310	1,060	†410	†1,380	†1,640	†997	-	-	-	-	-
1958	-	-	-	-	-	-	-	-	-	669	178	394	-
1959	115	170	153	577	701	380	760	226	255	75.6	56.3	79.5	292
1960	104	141	729	884	772	1,271	483	256	87.7	45.4	78.9	81.0	411

† Corrected.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1958	-	-	-	-	-	-	-	-	-	2.93	0.78	1.67	-
1959	0.50	0.72	0.67	2.53	2.78	1.66	3.23	0.99	1.08	.33	.25	.34	15.08
1960	.46	.60	3.19	3.87	3.17	5.57	2.05	1.12	.37	.20	.35	.34	21.29

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1959	1626	2,950	Apr. 20, 1959	37	292	1.11	15.08	338	17.44
1960	1706	5,600	Mar. 4, 1960	32	411	1.56	21.29	-	-

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.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	-	-	26.8	-
1958	63.5	1,190	624	341	488	376	819	670	103	207	62.7	196	426
1959	47.9	90.0	64.8	363	519	319	674	123	160	39.6	33.2	34.7	203
1960	33.0	106	701	734	468	987	362	96.7	29.5	11.5	52.7	50.9	304

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	-	-	0.16	-
1958	0.39	7.02	3.80	2.08	2.69	2.30	4.83	4.09	0.61	1.27	0.38	1.15	30.61
1959	.29	.53	.40	2.22	2.86	1.95	3.98	.75	.95	.24	.20	.21	14.58
1960	.20	.63	4.28	4.48	2.67	6.02	2.14	.59	.17	.07	.32	.30	21.87

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1957	1506	-	-	-	-	-	-	-	-
1958	1556	6,860	Nov. 16, 1957	14	426	2.25	30.61	287	20.62
1959	1626	3,250	Apr. 19, 1959	12	203	1.07	14.58	257	18.47
1960	1706	6,560	Dec. 18, 1959	4.1	304	1.61	21.87	-	-

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., near 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.--1957-60: Maximum discharge, 4,130 cfs Nov. 18, 1957 (gage height, 12.1 ft); minimum daily, 5.6 cfs July 22, 1960.

Remarks.--Occasional slight diurnal fluctuation at low flow caused by mill above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	-	-	17.7	-
1958	32.6	510	242	148	182	169	275	312	51.8	120	52.6	92.3	182
1959	31.2	50.6	45.5	172	205	146	276	69.0	52.2	26.3	25.8	21.3	92.4
1960	24.5	55.4	282	284	199	400	161	57.9	23.6	12.4	23.8	27.6	130

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	-	-	-	-	-	-	-	-	-	-	-	0.25	-
1958	0.48	7.28	3.57	2.17	2.42	2.49	3.92	4.59	0.74	1.77	0.78	1.32	31.53
1959	.46	.72	.67	2.53	2.73	2.16	3.94	1.02	.74	.39	.38	.30	16.04
1960	.36	.79	4.16	4.18	2.75	5.90	2.30	.85	.34	.18	.35	.39	22.55

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1957	1556	-	-	-	-	-	-	-	-
1958	1556	4,130	Nov. 18, 1957	14	182	2.33	31.53	127	22.05
1959	1626	1,280	Apr. 19, 1959	9.0	92.4	1.18	16.04	112	19.50
1960	1706	3,640	Mar. 3, 1960	5.6	130	1.66	22.55	-	-

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 (formerly called Little Bear 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.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	241	892	1,186	1,908	4,570	4,122	2,635	504	208	527	96.4	90.1	1,394
1952	80.4	519	4,386	2,335	1,547	2,323	903	305	136	71.9	253	98.9	1,085
1953	66.2	179	411	1,582	3,882	1,882	1,473	2,340	221	390	113	88.8	1,035
1954	53.4	71.4	247	2,689	1,038	691	1,700	574	212	121	40.4	24.5	620
1955	46.3	76.5	797	1,304	2,970	4,218	2,037	854	267	651	170	52.4	1,111
1956	43.1	116	293	179	3,192	1,437	3,489	1,066	231	157	127	54.1	851
1957	82.7	135	1,572	1,915	4,614	1,451	1,518	499	681	323	104	132	1,062
1958	214	4,136	2,048	1,196	1,547	1,431	2,354	2,318	435	1,169	385	796	1,497
1959	260	369	343	1,425	1,851	1,125	2,132	522	604	198	138	143	750
1960	199	360	2,183	2,263	1,890	3,257	1,420	502	180	91.1	187	247	1,066

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.42	1.49	2.05	3.30	7.13	7.12	4.41	0.87	0.35	0.91	0.17	0.15	28.37
1952	.14	.87	7.58	4.04	2.50	4.02	1.51	.53	.23	.12	.44	.17	22.15
1953	.11	.30	.71	2.74	6.06	3.25	2.46	4.04	.37	.67	.20	.15	21.06
1954	.09	.12	.43	4.65	1.62	1.20	2.84	.99	.35	.21	.07	.04	12.61
1955	.08	.13	1.38	2.25	4.64	7.29	3.41	1.48	.45	1.13	.29	1.09	22.62
1956	.07	.19	.51	.31	5.16	2.48	5.84	1.84	.39	.27	.22	.09	17.37
1957	.14	.23	2.72	3.31	7.20	2.51	2.54	.86	1.14	.56	.18	.22	21.61
1958	.37	6.92	3.54	2.07	2.42	2.47	3.94	4.01	.73	2.02	.66	1.33	30.48
1959	.45	.62	.59	2.46	2.89	1.94	3.57	.90	1.01	.34	.24	.24	15.25
1960	.34	.60	3.77	3.91	3.06	5.63	2.38	.87	.30	.16	.32	.41	21.75

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,783	36.29
1951	1206	27,200	Mar. 29, 1951	54	1,394	2.09	28.37	1,622	33.00
1952	1236	11,500	Dec. 21, 1951	43	1,085	1.63	22.15	719	14.68
1953	1276	14,100	Feb. 21, 1953	37	1,035	1.55	21.06	1,011	20.58
1954	1336	15,500	Jan. 23, 1954	9.3	620	.930	12.61	666	13.56
1955	1386	37,000	Mar. 22, 1955	16	1,111	1.67	22.62	1,071	21.80
1956	1436	11,100	Feb. 5, 1956	24	851	1.28	17.37	965	19.69
1957	1506	28,900	Feb. 2, 1957	31	1,062	1.59	21.61	1,442	29.35
1958	1556	19,100	Nov. 19, 1957	103	1,497	2.24	30.48	1,047	21.31
1959	1626	5,980	Feb. 14, 1959	68	750	1.12	15.25	900	18.30
1960	1706	13,000	Dec. 19, 1959	52	1,066	1.60	21.75	-	-

5930. Pickwick Lake at Pickwick Landing Dam, Tenn.

Location.--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, 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.

Extremes.--1937-60: Maximum elevation, 419.49 ft Mar. 30, 1944; minimum (after first filling), 407.12 ft Dec. 18, 1944.

Remarks.--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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	358	376	352	399	358	517	474	458	465	438	421	391
1952	388	351	363	396	344	448	467	463	446	437	413	404
1953	379	367	341	353	358	448	517	466	445	419	418	390
1954	378	363	360	375	368	426	474	474	452	431	402	402
1955	380	354	384	359	386	475	457	530	461	425	413	393
1956	381	358	352	353	353	425	478	456	448	424	416	401
1957	382	358	356	443	377	447	464	466	442	431	408	404
1958	465	416	365	359	363	455	535	463	446	545	404	418
1959	373	359	347	356	355	448	464	470	447	440	400	398.5
1960	370	410	363	367	356	466	464	464	453	421	410	394

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 (1930-60), 52,120 cfs.

Extremes.--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.--Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station. Flow now almost completely regulated.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	45,610	50,270	67,390	69,710	129,900	91,500	90,970	38,370	36,530	39,200	35,260	35,220	60,340
1952	31,400	46,100	140,200	101,100	81,270	103,800	31,900	25,940	28,980	27,560	30,350	26,230	56,300
1953	27,000	23,540	39,180	67,080	121,100	77,770	40,410	63,070	33,360	36,470	29,850	25,020	48,260
1954	20,950	20,510	31,190	120,700	48,530	43,980	40,390	36,610	32,320	28,960	27,230	21,460	39,450
1955	18,820	21,430	33,580	55,450	79,840	110,600	66,440	39,250	39,990	38,320	34,610	26,310	46,880
1956	26,450	31,970	37,370	25,630	141,400	72,540	66,620	40,370	31,080	34,550	32,370	31,800	47,240
1957	30,810	33,400	61,960	68,280	228,100	61,950	58,370	39,070	40,180	31,750	30,220	36,660	58,880
1958	43,040	147,000	121,100	71,740	72,940	52,690	58,350	95,500	48,840	44,090	47,140	42,460	70,340
1959	39,010	35,110	30,180	56,840	57,030	44,160	49,290	33,660	37,380	32,610	30,840	30,030	39,550
1960	42,430	45,600	99,450	77,610	79,790	86,280	41,030	34,310	34,540	31,520	36,040	47,550	54,680

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	72,720	29.79
1951	1206	301,000	Mar. 30, 1951	24,400	60,340	1.82	24.72	64,980	26.62
1952	1236	229,000	Dec. 27, 1951	12,300	56,300	1.70	23.14	45,570	18.72
1953	1276	200,000	Feb. 25, 1953	6,300	48,260	1.46	19.77	46,820	19.18
1954	1336	291,000	Jan. 26, 1954	6,500	39,450	1.19	16.16	39,550	16.20
1955	1386	321,000	Mar. 22, 1955	10,400	46,880	1.41	19.20	48,710	19.95
1956	1436	282,000	Feb. 5, 1956	10,400	47,240	1.43	19.40	49,810	20.46
1957	1506	403,000	Feb. 6, 1957	16,400	58,880	1.78	24.12	74,270	30.42
1958	1556	316,000	Nov. 21, 1957	12,500	70,340	2.12	28.81	53,080	21.74
1959	1626	141,000	Jan. 24, 1959	14,400	39,550	1.19	16.20	46,590	19.08
1960	1706	168,000	Mar. 5, 1960	21,300	54,680	1.65	22.48	-	-

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, 3½ 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 (1934-60), 176 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	31.0	134	129	378	791	462	391	96.2	104	55.4	29.6	32.5	215
1952	26.6	108	739	559	285	459	152	51.0	39.6	21.5	22.4	23.4	208
1953	18.0	21.2	50.9	185	583	325	250	215	35.6	55.6	25.2	24.0	145
1954	19.8	21.9	33.2	603	170	202	306	172	120	37.7	24.6	11.7	144
1955	15.9	20.4	283	166	445	801	412	128	137	35.8	29.2	18.9	206
1956	22.5	63.3	135	240	803	234	407	79.5	36.0	80.2	26.3	21.5	176
1957	21.0	20.9	219	595	727	228	168	74.8	42.3	26.6	21.5	36.8	179
1958	56.9	652	445	206	255	179	409	297	50.1	169	44.7	83.1	236
1959	25.6	47.7	63.5	205	298	258	213	106	112	50.3	101	66.6	128
1960	28.1	78.5	418	260	274	392	114	194	44.3	46.1	30.7	96.2	165

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.33	1.40	1.39	4.07	7.70	4.98	4.07	1.04	1.08	0.60	0.32	0.34	27.32
1952	.29	1.13	7.96	6.02	2.87	4.94	1.58	.55	.41	.23	.24	.24	26.46
1953	.19	.22	.55	1.99	5.68	3.50	2.61	2.32	.37	.60	.27	.25	18.55
1954	.21	.23	.36	6.50	1.66	2.18	3.19	1.86	1.25	.41	.27	.12	18.24
1955	.17	.21	3.05	1.79	4.33	8.63	4.30	1.38	1.43	.39	.31	.20	26.19
1956	.24	.66	1.45	2.59	8.09	2.52	4.24	.86	.38	.86	.28	.22	22.39
1957	.23	.22	2.36	6.42	7.08	2.46	1.76	.81	.44	.29	.23	.38	22.68
1958	.61	6.79	4.79	2.22	2.48	1.93	4.26	3.20	.52	1.82	.48	.87	29.97
1959	.28	.50	.68	2.21	2.90	2.78	2.22	1.14	1.17	.54	1.09	.69	16.20
1960	.30	.82	4.51	2.80	2.76	4.23	1.19	2.09	.46	.50	.33	1.00	20.99

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	278	35.23
1951	1206	15,000	Feb. 1, 1951	19	215	2.01	27.32	265	33.58
1952	1236	7,260	Jan. 27, 1952	12	208	1.94	26.46	142	18.04
1953	1276	6,470	Feb. 12, 1953	16	146	1.36	18.55	145	18.39
1954	1336	6,500	Jan. 21, 1954	9.1	144	1.35	18.24	164	20.87
1955	1386	25,100	Mar. 22, 1955	14	206	1.93	26.19	198	25.11
1956	1436	6,760	Jan. 30, 1956	17	176	1.64	22.39	180	22.85
1957	1506	7,740	Jan. 28, 1957	13	179	1.67	22.68	253	32.06
1958	1556	8,580	Nov. 18, 1957	14	236	2.21	29.97	152	19.24
1959	1626	1,720	Jan. 22, 1959	19	128	1.20	16.20	161	20.37
1960	1706	4,770	Dec. 19, 1959	16	165	1.54	20.99	-	-

5970. Garrison Fork at Fairfield, Tenn.

Location.--Lat 35°33'59", long 86°17'00", near left bank on downstream side of center pier of highway bridge, 0.1 mile east of Fairfield, Bedford County, 0.6 mile downstream from Noah Fork, and 4.5 miles northeast of Wartrace.

Drainage area.--66.3 sq mi.

Records available.--October 1953 to December 1958. January 1959 to September 1960 (annual maximum only).

Gage.--Crest-stage gage. Datum of gage is 800.85 ft above mean sea level, datum of 1929. Prior to Dec. 20, 1958, water-stage recorder at same site and datum.

Average discharge.--5 years (1953-58), 111 cfs.

Extremes.--1953-60: Maximum discharge, 25,300 cfs Mar. 21, 1955 (gage height, 23.13 ft), from rating curve extended above 3,800 cfs on basis of slope-area measurement of peak flow.
1953-58: Minimum, 1.2 cfs Sept. 17-20, 1954; minimum gage height, 0.79 ft Sept. 7-9, 1957.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	‡8.10	‡9.40	21.6	424	110	136	164	73.7	35.5	26.1	5.83	3.01	‡84.9
1955	7.20	10.4	171	90.0	300	506	199	77.1	49.4	23.0	10.4	3.46	120
1956	11.8	86.2	101	187	460	109	156	23.6	16.2	35.4	20.6	10.6	99.8
1957	8.84	7.82	185	434	395	131	124	35.4	34.9	8.92	3.67	76.0	119
1958	79.9	324	245	116	130	98.3	240	172	23.2	78.0	27.0	55.3	132
1959	14.8	51.5	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; estimated on basis of records for Duck River below Manchester, Tenn.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	‡0.14	‡0.16	0.38	7.37	1.73	2.36	2.77	1.28	0.60	0.45	0.10	0.05	‡17.39
1955	.13	.18	2.97	1.57	4.71	8.79	3.35	1.34	.83	.40	.18	.06	24.51
1956	.20	1.45	1.76	3.25	7.49	1.89	2.62	.41	.27	.61	.36	.18	20.49
1957	.15	.13	3.22	7.55	6.20	2.28	2.08	.62	.59	.16	.06	1.28	24.32
1958	1.39	5.45	4.27	2.02	2.04	1.71	4.04	2.99	.39	1.36	.47	.93	27.06
1959	.28	.87	-	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

‡ Not previously published; estimated on basis of records for Duck River below Manchester, Tenn.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	1386	5,540	Jan. 20, 1954	-	‡84.9	‡1.28	‡17.39	97.6	19.99
1955	1386	25,300	Mar. 21, 1955	2.0	120	1.81	24.51	120	24.64
1956	1436	5,890	Jan. 29, 1956	3.9	99.8	1.51	20.49	100	20.58
1957	1506	6,300	Jan. 28, 1957	1.5	119	1.79	24.32	156	31.93
1958	1556	7,060	Nov. 17, 1957	5.9	132	1.99	27.06	-	-
1959	1626	3,900	Mar. 26, 1959	-	-	-	-	-	-
1960	1706	13,000	July 17, 1960	-	-	-	-	-	-

‡ Not previously published.

5975. Wartrace Creek at Bell Buckle, Tenn.

Location.--Lat 35°35'16", 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.--October 1953 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 822.74 ft above mean sea level, datum of 1929.

Average discharge.--7 years (1953-60), 28.1 cfs.

Extremes.--1953-60: 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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	‡0.10	‡0.08	‡0.87	128	21.5	29.7	45.8	21.5	3.22	0.263	2.21	0.515	‡21.2
1955	1.18	1.11	40.0	24.2	87.1	136	55.9	15.8	3.92	.238	.371	0	30.2
1956	.815	12.2	22.4	62.3	117	28.6	28.9	3.24	.427	12.5	4.40	2.08	24.2
1957	2.68	1.40	68.1	118	96.5	28.5	30.1	5.80	.803	.111	.069	17.2	30.5
1958	19.6	106	62.5	25.9	25.5	22.6	58.1	47.9	3.40	37.8	6.22	29.1	37.0
1959	2.66	17.9	7.34	42.9	58.2	58.0	38.4	6.22	30.2	2.66	21.9	6.35	24.1
1960	12.1	41.4	83.9	38.7	62.0	66.8	10.8	26.5	2.08	5.02	1.62	3.50	29.5

‡ Not previously published; estimated on basis of records for West Fork Stones River near Murfreesboro.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	‡0.01	‡0.01	‡0.06	9.06	1.37	2.10	3.14	1.52	0.22	0.02	0.16	0.04	‡17.71
1955	.08	.08	2.83	1.71	5.56	9.60	3.82	1.12	.27	.02	.03	0	25.12
1956	.06	.84	1.58	4.41	7.76	2.03	1.98	.23	.03	.89	.31	.14	20.26
1957	.19	.10	4.82	8.37	6.16	2.01	2.06	.41	.05	.008	.005	1.17	25.35
1958	1.39	7.22	4.42	1.83	1.63	1.60	3.98	3.39	.23	2.67	.44	1.99	30.79
1959	.19	1.22	.52	3.03	3.72	4.10	2.63	.44	2.06	.19	1.55	.43	20.08
1960	.85	2.84	5.93	2.74	4.10	4.72	.74	1.88	.14	.35	.11	.24	24.64

‡ Not previously published; estimated on basis of records for West Fork Stones River near Murfreesboro.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	1386	3,610	Jan. 20, 1954	0	‡21.2	‡1.30	‡17.71	24.7	20.62
1955	1386	8,240	Mar. 21, 1955	0	30.2	1.85	25.12	29.6	24.61
1956	1436	3,220	Jan. 29, 1956	0	24.2	1.48	20.26	27.4	22.89
1957	1506	4,220	Dec. 12, 1956	0	30.5	1.87	25.35	40.0	33.27
1958	1556	5,340	Nov. 17, 1957	.1	37.0	2.27	30.79	23.7	19.69
1959	1626	4,010	Mar. 26, 1959	.4	24.1	1.48	20.08	33.4	27.77
1960	1706	3,840	Dec. 28, 1959	.02	29.5	1.81	24.64	-	-

‡ Not previously published.

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 (1933-60), 792 cfs.

Extremes.--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.--Prior to 1948, diurnal fluctuation caused by powerplant upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	132	906	552	1,540	3,879	2,105	1,881	405	423	298	102	128	1,008
1952	149	685	3,091	2,531	1,154	2,079	577	256	193	102	93.9	158	927
1953	82.4	105	336	1,233	2,642	1,408	1,054	1,046	159	287	149	91.3	704
1954	77.1	80.4	178	2,674	774	799	1,263	647	405	137	105	56.3	600
1955	84.5	90.0	1,224	763	2,038	3,312	1,945	615	466	162	120	68.4	901
1956	87.8	418	719	1,037	3,539	960	1,537	330	166	368	123	102	770
1957	103	87.9	1,353	2,405	3,581	1,080	874	334	168	90.8	75.6	518	872
1958	528	2,941	1,903	918	1,123	894	1,915	1,491	239	599	181	489	1,098
1959	128	368	259	959	1,236	1,149	1,003	344	295	290	344	205	576
1960	178	550	1,911	1,166	1,415	1,785	568	727	242	292	258	329	786

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.32	2.10	1.32	3.69	8.40	5.05	4.36	0.97	0.98	0.71	0.24	0.30	28.44
1952	.36	1.59	7.41	6.07	2.59	4.98	1.34	.61	.45	.25	.22	.37	26.24
1953	.20	.24	.81	2.95	5.72	3.37	2.44	2.51	.37	.69	.36	.21	19.87
1954	.18	.19	.43	6.41	1.68	1.91	2.93	1.55	.94	.33	.25	.13	16.93
1955	.20	.21	2.93	1.83	4.41	7.94	4.51	1.47	1.08	.39	.29	.16	25.42
1956	.21	.97	1.72	2.49	7.93	2.30	3.56	.79	.39	.88	.29	.24	21.77
1957	.25	.20	3.24	5.76	7.75	2.59	2.03	.80	.39	.22	.18	1.20	24.61
1958	1.27	6.82	4.56	2.20	2.43	2.14	4.44	3.57	.55	1.44	.43	1.13	30.98
1959	.31	.85	.62	2.30	2.68	2.76	2.33	.82	1.61	.70	.82	.48	16.28
1960	.43	1.27	4.58	2.79	3.17	4.28	1.32	1.74	.56	.70	.62	.76	22.22

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,242	35.06
1951	1206	27,100	Feb. 1, 1951	75	1,008	2.10	28.44	1,207	34.06
1952	1236	17,600	Jan. 28, 1952	65	927	1.93	26.24	640	18.13
1953	1276	14,700	Feb. 12, 1953	69	704	1.46	19.87	688	19.42
1954	1336	17,700	Jan. 22, 1954	46	600	1.25	16.93	690	19.47
1955	1386	37,900	Mar. 22, 1955	58	901	1.87	25.42	885	24.98
1956	1436	15,400	Jan. 30, 1956	66	770	1.60	21.77	798	22.56
1957	1506	23,500	Feb. 1, 1957	49	872	1.81	24.61	1,190	33.57
1958	1556	23,400	Nov. 19, 1957	99	1,098	2.28	30.98	713	20.11
1959	1626	7,500	Mar. 27, 1959	100	576	1.20	16.28	736	20.78
1960	1706	9,720	Dec. 19 or 20	88	786	1.63	22.22	-	-

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.--October 1953 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 705.01 ft above mean sea level, datum of 1929.

Average discharge.--7 years (1953-60), 39.4 cfs.

Extremes.--1953-60: 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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	$0.002	$0.001	$0.26	$155	48.5	32.9	56.0	37.1	2.90	0.029	0.007	3.39	$28.0
1955	2.05	1.16	51.4	30.3	129	234	92.5	25.8	5.60	3.49	.044	.005	47.5
1956	.002	24.6	29.4	49.8	172	50.8	40.3	5.65	1.77	3.18	.733	.098	30.9
1957	1.21	1.57	99.3	174	155	47.9	38.0	16.5	3.92	.234	.590	74.3	50.4
1958	28.0	146	98.0	46.5	39.6	33.4	109	67.9	4.63	7.03	5.29	32.5	51.3
1959	2.21	23.8	9.08	54.0	61.9	85.5	63.0	20.0	17.4	6.67	5.66	2.22	29.0
1960	1.78	33.6	106	56.8	106	111	26.7	13.9	3.97	3.78	.82	1.64	38.7

$ Not previously published; estimated on basis of records for Bradley Creek near Prairie Plains.

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	($a)	($b)	$0.01	$7.18	2.03	1.52	2.51	1.72	0.13	0.001	0.0003	0.15	$15.25
1955	.09	.05	2.38	1.40	5.38	10.83	4.15	1.20	.25	.16	.002	.0002	25.89
1956	.0001	1.10	1.36	2.30	7.46	2.35	1.81	.26	.08	.15	.03	.004	16.90
1957	.06	.07	4.60	8.06	6.48	2.22	1.70	.76	.18	.01	.03	3.33	27.50
1958	1.30	6.52	4.54	2.15	1.66	1.54	4.89	3.14	.21	.33	.25	1.45	27.98
1959	.10	1.07	.42	2.50	2.59	3.96	2.82	.93	.78	.31	.26	.10	15.84
1960	.08	1.50	4.89	2.63	4.60	5.14	1.20	.64	.18	.18	.04	.07	21.15

$ Not previously published; estimated on basis of records for Bradley Creek near Prairie Plains.
a 0.00009 in.
b 0.00004 in.

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-
1954	1386	2,260	Jan. 20, 1954	0	$28.0	$1.12	$15.25	$32.6	$17.76
1955	1386	16,700	Mar. 21, 1955	0	47.5	1.91	25.89	47.4	25.83
1956	1436	2,910	Jan. 29, 1956	0	30.9	1.24	16.90	35.1	19.17
1957	1506	4,180	Dec. 12, 1956	0	50.4	2.02	27.50	64.4	35.13
1958	1556	5,220	Nov. 17, 1957	.08	51.3	2.06	27.98	31.6	17.21
1959	1626	2,820	Mar. 26, 1959	.3	29.0	1.16	15.84	38.0	20.72
1960	1706	2,630	Dec. 27, 1959	.1	38.7	1.55	21.15	-	-

$ Not previously published.

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 1920 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, 1920-60), 1,921 cfs.

Extremes.--1904-8, 1920-60: 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.--Occasional diurnal fluctuation and infrequent regulation at low flows caused by powerplants above station. Prior to about 1953, fluctuation and regulation were more frequent.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	167	2,171	1,316	4,053	9,602	4,516	4,473	555	634	608	105	135	2,307
1952	211	1,679	7,696	5,919	2,923	5,668	1,131	325	251	117	195	416	2,222
1953	227	263	894	3,799	6,256	3,654	2,703	3,174	251	935	308	95.8	1,855
1954	68.3	72.5	229	6,489	2,412	1,692	3,095	1,699	568	117	106	81.6	1,382
1955	266	119	2,695	2,010	6,109	8,784	4,652	1,418	710	206	232	62.5	2,250
1956	111	753	1,368	1,930	10,120	2,381	2,906	598	231	481	165	151	1,729
1957	127	105	3,972	5,002	9,440	2,527	2,036	1,204	420	131	99.2	903	2,118
1958	1,014	6,223	4,337	1,977	2,056	1,740	4,601	3,810	355	786	276	910	2,335
1959	202	736	588	2,615	3,546	3,236	2,614	654	1,245	915	799	421	1,449
1960	352	1,754	4,993	2,748	4,430	5,056	1,530	1,042	639	710	376	598	2,015

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.16	2.00	1.26	3.87	8.28	4.31	4.13	0.53	0.59	0.58	0.10	0.12	25.93
1952	.20	1.55	7.34	5.65	2.61	5.41	1.04	.31	.23	.11	.19	.38	25.02
1953	.22	.24	.85	3.63	5.39	3.49	2.50	3.03	.23	.89	.29	.09	20.85
1954	.07	.07	.22	6.19	2.08	1.62	2.86	1.62	.52	.11	.10	.08	15.54
1955	.25	.11	2.57	1.92	5.27	8.38	4.30	1.35	.66	.20	.22	.06	25.29
1956	.11	.70	1.31	1.84	9.04	2.27	2.68	.57	.21	.46	.16	.14	19.49
1957	.12	.10	3.79	4.77	8.14	2.41	1.88	1.15	.39	.13	.09	.83	23.80
1958	.97	5.75	4.14	1.89	1.77	1.66	4.25	3.64	.33	.75	.26	.84	26.25
1959	.19	.68	.56	2.50	3.06	3.09	2.41	.62	1.15	.87	.76	.39	16.28
1960	.34	1.62	4.77	2.62	3.96	4.83	1.41	.99	.59	.68	.36	.55	22.72

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	3,022	33.96
1951	1206	30,800	Feb. 3, 1951	53	2,307	1.91	25.93	2,812	31.60
1952	1236	26,000	Dec. 9, 1951	38	2,222	1.84	25.02	1,531	17.24
1953	1276	21,700	Feb. 13, 1953	63	1,855	1.54	20.85	1,770	19.90
1954	1336	28,200	Jan. 22, 1954	43	1,382	1.14	15.54	1,612	18.11
1955	1386	46,500	Mar. 23, 1955	56	2,250	1.86	25.29	2,176	24.48
1956	1436	27,800	Feb. 18, 1956	29	1,729	1.43	19.49	1,898	21.38
1957	1506	34,200	Feb. 2, 1957	46	2,118	1.75	23.80	2,727	30.65
1958	1556	26,100	Nov. 20, 1957	46	2,335	1.93	26.25	1,497	16.82
1959	1626	18,400	Feb. 15, 1959	106	1,449	1.20	16.28	1,920	21.58
1960	1706	17,300	Mar. 4, 1960	68	2,015	1.67	22.72	-	-

6000. Rutherford Creek near Carters Creek, Tenn.

Location.--Lat 35°40'23", long 86°58'42", on right bank at upstream side of county road bridge, 1 mile downstream from Double Branch, 3.2 miles south of town of Carters Creek, Maury County, 3.5 miles upstream from Carters Creek, and 5.1 miles northeast of courthouse in Columbia.

Drainage area.--68.8 sq mi.

Records available.--September 1953 to December 1958. January 1959 to September 1960 (annual maximum only).

Gage.--Crest-stage gage. Altitude of gage is 590 ft (from topographic map). Prior to Jan. 1, 1959, water-stage recorder at same site and datum.

Average discharge.--5 years (1953-58), 105 cfs.

Extremes.--1953-60: Maximum discharge, 11,800 cfs Mar. 22, 1955 (gage height, 24.38 ft, from high-water mark in gage house), from rating curve extended above 4,000 cfs on basis of slope-area measurement of peak flow.
1953-58: No flow for many days in 1953-57.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	0.016	0.029	9.18	468	242	121	194	58.9	18.3	0.906	0.003	2.56	92.1
1955	7.40	.420	66.7	56.0	336	526	213	95.1	26.1	6.01	14.9	.116	111
1956	.506	5.50	21.4	117	639	166	154	18.1	21.8	7.25	1.99	.445	93.7
1957	1.80	3.79	226	359	375	153	146	169	41.8	3.81	2.12	8.32	123
1958	22.6	234	210	104	105	100	241	148	12.5	34.1	9.30	44.0	105
1959	8.13	18.7	12.7	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	-	-
1954	0.0003	0.0005	0.15	7.84	3.66	2.03	3.15	0.99	0.30	0.02	0.00005	0.04	18.18
1955	.12	.007	1.12	.94	5.09	8.82	3.46	1.59	.42	.10	.25	.002	21.92
1956	.008	.09	.36	1.96	10.02	2.79	2.50	.30	.35	.12	.03	.007	18.54
1957	.03	.06	3.79	6.01	5.67	2.57	2.37	2.83	.68	.06	.04	.13	24.24
1958	.38	3.80	3.51	1.74	1.59	1.68	3.91	2.49	.20	.57	.16	.71	20.74
1959	.14	.30	.21	-	-	-	-	-	-	-	-	-	-
1960	-	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	1336	-	-	0	-	-	-	-	-
1954	1336	*8,640	Jan. 21, 1954	0	92.1	1.34	18.18	97.7	19.28
1955	1386	11,800	Mar. 22, 1955	0	111	1.61	21.92	107	21.13
1956	1436	*8,00	Feb. 17, 1956	0	93.7	1.36	18.54	111	21.96
1957	1506	4,730	Dec. 13, 1956	0	123	1.79	24.24	142	28.05
1958	1556	2,290	Sept.21, 1958	.2	105	1.53	20.74	69.5	13.70
1959	1556,1626	2,180	Feb. 14, 1959	a3.0	-	-	-	-	-
1960	1706	5,530	June 17, 1960	-	-	-	-	-	-

* Revised.
a Minimum during period October to December.

6005. Big Bigby Creek at Sandy Hook, Tenn.

Location.--Lat 35°29'19", long 87°13'59", on right bank 45 ft west of Louisville & Nashville Railroad track, 0.2 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 1953 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 (1953-60), 23.0 cfs.

Extremes.--1953-60: Maximum discharge, 2,550 cfs Mar. 21, 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 0.2 mile upstream; minimum natural discharge, 1.5 cfs Sept. 4-7, 1954; minimum gage height, 0.80 ft Sept. 17, 1956.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	3.94	-
1954	4.08	4.82	7.20	56.2	40.9	17.8	41.0	17.5	6.77	3.55	2.54	2.44	16.9
1955	3.11	4.07	13.1	10.0	63.9	84.9	52.9	24.9	11.1	6.50	5.38	4.08	23.4
1956	4.46	8.28	7.96	16.4	106	33.7	37.7	11.8	5.58	4.83	3.73	2.49	19.8
1957	2.93	4.44	36.3	71.9	77.6	31.1	41.3	60.4	41.4	9.40	5.53	6.86	32.2
1958	8.42	56.4	54.6	29.1	24.1	28.9	60.1	35.5	11.2	8.34	5.71	6.01	27.3
1959	5.74	7.70	6.75	23.4	31.6	34.6	27.3	10.6	12.1	5.97	5.85	5.57	14.6
1960	7.39	13.2	59.8	35.5	60.3	68.5	40.4	13.2	11.2	6.46	4.57	5.12	27.1

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	-	-	-	-	-	-	-	-	-	-	-	0.25	-
1954	0.27	0.31	0.47	3.70	2.44	1.17	2.61	1.15	0.43	0.23	0.17	.16	13.12
1955	.20	.26	.86	.66	3.80	5.59	3.37	1.64	.71	.43	.35	.26	18.13
1956	.29	.53	.52	1.08	6.51	2.22	2.40	.78	.36	.32	.25	.16	15.42
1957	.19	.28	2.39	4.73	4.62	2.05	2.63	3.98	2.64	.62	.36	.44	24.93
1958	.55	3.59	3.60	1.92	1.44	1.90	3.83	2.34	.71	.55	.38	.38	21.19
1959	.38	.49	.44	1.54	1.88	2.28	1.74	.70	.77	.39	.39	.36	11.36
1960	.49	.84	3.94	2.34	3.72	4.51	2.57	.87	.71	.43	.30	.33	21.05

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	-	-	-	-	-	-	-	-	-
1953	1336	-	-	-	-	-	-	-	-
1954	1336	1,520	Jan. 20, 1954	1.5	16.9	0.966	13.12	17.3	13.38
1955	1386	2,550	Mar. 21, 1955	2.2	23.4	1.34	18.13	23.4	18.15
1956	1436	1,630	Feb. 17, 1956	2.1	19.8	1.13	15.42	21.8	16.94
1957	1506	1,390	May 22, 1957	2.4	32.2	1.84	24.93	38.4	29.81
1958	1556	1,260	Nov. 17, 1957	3.1	27.3	1.56	21.19	19.0	14.76
1959	1626	419	Feb. 14, 1959	2.9	14.6	.834	11.36	19.7	15.32
1960	1706	1,040	Dec. 27, 1959	2.7	27.1	1.55	21.05	-	-

6010. Big Bigby Creek near Mount Pleasant, Tenn.

Location.--Lat 35°30'12", long 87°13'54", near midchannel on downstream side of pier of bridge on U.S. Highway 43, 400 ft downstream from small water-supply dam, 0.7 mile downstream from Dry Creek, 2.55 miles southwest of Mount Pleasant, Maury County, and 2.6 miles upstream from West Fork.

Drainage area.--25.8 sq mi.

Records available.--September 1953 to June 1957.

Gage.--Water-stage recorder. Datum of gage is 654.99 ft above mean sea level, datum of 1929.

Extremes.--1953-57: Maximum discharge, 3,740 cfs Mar. 21, 1955 (gage height, 10.20 ft), from rating curve extended above 2,200 cfs; minimum, 0.9 cfs Oct. 20-22, 1954; minimum gage height, 0.58 ft Sept. 23, 27-29, 1954.

Remarks.--Irregular discharge at low flow caused by removal and delayed return of ore-processing water upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	-	-	-	-	-	-	-	-	3.75	-
1954	3.55	4.53	11.2	110	69.3	29.5	72.3	27.4	6.66	3.06	2.15	1.74	28.1
1955	3.88	5.97	18.5	13.5	100	150	82.7	37.9	12.8	5.83	5.06	3.52	36.3
1956	3.50	8.76	8.80	24.6	172	49.9	52.5	16.5	5.88	8.35	4.36	2.26	29.1
1957	4.17	6.00	58.4	110	122	48.8	57.0	88.8	52.4	-	-	-	-

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	-	-	-	-	-	-	-	-	0.16	-
1954	0.16	0.20	0.50	4.89	2.80	1.32	3.13	1.22	0.29	0.14	0.10	.08	14.83
1955	.17	.26	.83	.60	4.04	6.72	3.58	1.69	.55	.26	.23	.15	19.08
1956	.16	.38	.39	1.10	7.19	2.23	2.27	.74	.25	.37	.19	.10	15.37
1957	.19	.26	2.61	4.91	4.91	2.18	2.47	3.97	2.27	-	-	-	-

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1953	1336	-	-	-	-	-	-	-	-
1954	1336	2,810	Jan. 20, 1954	1.2	28.1	1.09	14.83	28.9	15.23
1955	1386	3,740	Mar. 21, 1955	.9	36.3	1.41	19.08	35.6	18.75
1956	1436	2,720	Feb. 17, 1956	1.4	29.1	1.13	15.37	33.2	17.50
1957	1506	2,430	May 22, 1957	a2.0	-	-	-	-	-

a Minimum during period October to June.

6020. Duck River at Centerville, Tenn.

Location (revised).--Lat 35°47'16", long 87°27'56", on right bank 0.4 mile downstream from bridge on State Highways 48 and 100, 0.4 mile downstream from Defeated Creek, 0.6 mile north of Centerville, Hickman County, 1¼ miles upstream from Louisville & Nashville (formerly Nashville, Chattanooga & St. Louis) Railway bridge, 4 miles downstream from Big Swan Creek, and at mile 72.1.

Drainage area.--2,048 sq mi.

Records available.--March 1919 to September 1955. January and February 1920 monthly discharge only, published in WSP 1306.

Gage.--Water-stage recorder. Datum of gage is 450.74 ft above mean sea level, datum of 1929 (levels by Tennessee Valley Authority). Prior to Jan. 2, 1920, chain gage at site three-quarters of a mile downstream at different datum. Mar. 2, 1920, to July 1, 1925, chain gage at site 75 ft upstream at datum 1.00 ft higher. July 2, 1925, to Aug. 10, 1927, tape gage and Aug. 11, 1927, to Sept. 30, 1929, staff gage, at site 75 ft upstream at present datum.

Average discharge.--36 years (1919-55), 3,175 cfs.

Extremes.--1919-55: Maximum discharge, 97,700 cfs Feb. 14, 1948 (gage height, 37.58 ft); minimum, 68 cfs Aug. 30, 1925; minimum gage height recorded, 0.30 ft Sept. 21, 1954, but may have been less during period of no gage-height record, Aug. 23 to Sept. 20, 1954.

Remarks.--Some diurnal fluctuation at low flow caused by powerplants above station. Minor diversions for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	434	3,679	2,825	7,886	15,020	6,951	8,157	1,328	1,568	1,592	401	369	4,103
1952	450	3,164	13,240	9,708	4,913	10,190	2,321	896	537	350	359	712	3,922
1953	428	487	1,268	5,805	10,050	7,114	4,323	6,866	639	1,433	461	224	3,222
1954	224	259	515	10,550	4,800	2,924	5,295	2,700	876	285	227	156	2,389
1955	468	316	2,571	3,167	8,670	13,570	7,212	2,917	1,288	489	428	178	3,410

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.24	2.00	1.59	4.44	7.64	3.91	4.44	0.75	0.85	0.90	0.23	0.20	27.19
1952	.25	1.72	7.45	5.47	2.59	5.74	1.26	.50	.29	.20	.20	.39	26.06
1953	.24	.27	.71	3.27	5.11	4.00	2.36	3.87	.35	.81	.26	.12	21.37
1954	.13	.14	.29	5.94	2.44	1.65	2.88	1.52	.48	.16	.13	.09	15.85
1955	.26	.17	1.45	1.78	4.41	7.64	3.93	1.64	.70	.28	.24	.10	22.60

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	5,116	33.90
1951	1206	35,000	Feb. 2, 1951	283	4,103	2.00	27.19	4,947	32.78
1952	1236	37,400	Dec. 10, 1951	220	3,922	1.92	26.06	2,687	17.86
1953	1276	28,100	Feb. 14, 1953	187	3,222	1.57	21.37	3,122	20.71
1954	1336	37,600	Jan. 23, 1954	130	2,389	1.17	15.85	2,590	17.17
1955	1386	68,800	Mar. 22, 1955	a214	3,410	1.67	22.60	-	-

a Minimum during period October to June.

6025. Piney River at Vernon, Tenn.

Location (revised).--Lat 35°52'17", long 87°30'00", on left bank 350 ft upstream from county highway bridge, 400 ft upstream from Pretty Creek, 0.2 mile northwest of Vernon, Hickman County, 2.2 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 464.89 ft above mean sea level, datum of 1929. Prior to Aug. 30, 1927, tape gage and Aug. 30, 1927, to Feb. 8, 1931, chain gage, at same site and datum. Feb. 9, 1931, to May 10, 1934, staff gage at site half a mile downstream at datum 2.77 ft lower.

Average discharge.--35 years (1925-60), 300 cfs.

Extremes.--1925-60: Maximum discharge observed, 32,500 cfs Dec. 21, 1926 (gage height, 16.5 ft); minimum, 35 cfs Sept. 19, 20, 1936; minimum gage height observed, -0.09 ft Sept. 27, Oct. 16, 1951.

Flood in March 1897 reached a stage of 17.5 ft (discharge, 37,000 cfs), from reports by Tennessee Valley Authority.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	109	201	341	762	1,055	532	691	206	209	181	101	97.7	369
1952	89.4	277	1,308	579	578	1,147	337	174	110	93.0	104	88.1	408
1953	77.5	81.0	83.4	279	423	663	501	724	169	117	78.9	74.8	272
1954	73.7	82.0	91.2	533	325	336	341	284	111	77.4	63.9	61.5	198
1955	77.2	68.4	105	91.1	500	1,170	790	493	183	106	85.4	75.0	311
1956	90.8	94.1	93.4	547	1,561	424	447	175	102	88.1	83.4	57.4	308
1957	64.6	64.9	95.4	820	727	406	632	203	315	174	118	112	308
1958	140	749	600	271	252	337	617	707	180	132	110	106	350
1959	83.0	87.0	83.1	262	411	283	246	163	222	146	111	83.9	180
1960	79.0	115	311	283	390	481	315	193	140	170	83.9	79.4	220

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.65	1.16	2.04	4.55	5.69	3.18	3.99	1.23	1.21	1.08	0.60	0.56	25.94
1952	.53	1.60	7.81	3.46	3.23	6.85	1.95	1.04	.64	.56	.62	.51	28.80
1953	.46	.47	.50	1.67	2.28	3.96	2.90	4.32	.98	.70	.47	.43	19.14
1954	.44	.47	.54	3.19	1.75	2.01	1.97	1.69	.64	.46	.38	.36	13.90
1955	.46	.40	.63	.54	2.70	6.99	4.56	2.94	1.06	.64	.51	.43	21.86
1956	.54	.54	.56	3.27	8.73	2.53	2.59	1.05	.59	.53	.50	.33	21.76
1957	.39	.38	.57	4.90	3.92	2.42	3.65	1.21	1.82	1.04	.71	.65	21.86
1958	.84	4.33	3.58	1.62	1.36	2.01	3.57	4.22	1.04	.79	.66	.61	24.63
1959	.50	.50	.50	1.57	2.22	1.69	1.42	.98	1.29	.87	.66	.48	12.68
1960	.47	.67	1.86	1.69	2.18	2.88	1.82	1.15	.81	1.01	.50	.46	15.50

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-		-	-	-	-	502	35.29
1951	1206	7,800	Jan. 3, 1951	83	369	1.91	25.94	456	32.03
1952	1236	18,000	Dec. 14, 1951	71	408	2.11	28.80	287	20.29
1953	1276	6,110	Apr. 30, 1953	68	272	1.41	19.14	273	19.16
1954	1336	11,500	Jan. 20, 1954	51	198	1.03	13.90	198	13.94
1955	1386	18,600	Mar. 21, 1955	58	311	1.61	21.86	313	22.01
1956	1436	15,000	Jan. 29, 1956	54	308	1.60	21.76	304	21.46
1957	1506	14,000	Jan. 29, 1957	54	308	1.60	21.66	413	29.07
1958	1556	9,940	May 11, 1958	84	350	1.81	24.63	247	17.38
1959	1626	3,410	Jan. 21, 1959	73	180	.933	12.68	202	14.18
1960	1706	2,420	Dec. 28, 1959	69	220	1.14	15.50	-	-

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. At site used prior to Oct. 1, 1951, 2,571 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 2, 1927, tape gage, June 2, 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 (1925-60), 3,910 cfs.

Extremes.--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.--Occasional minor fluctuations at low flow from small dams upstream. Prior to about 1953, fluctuation and regulation were more frequent. Minor diversions for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	746	4,110	3,754	9,526	18,100	8,175	9,996	1,976	1,982	2,082	734	627	5,055
1952	696	3,777	16,580	10,610	7,228	13,040	3,293	1,410	891	632	589	1,022	4,998
1953	672	696	1,567	6,596	11,360	9,047	5,274	9,264	1,100	1,835	724	422	4,010
1954	436	455	726	12,000	5,654	3,693	6,064	3,460	1,218	515	420	301	2,899
1955	682	520	2,307	3,742	9,650	16,650	9,011	3,903	1,957	780	653	357	4,153
1956	522	1,236	1,875	2,815	20,440	5,277	5,645	1,705	739	1,087	600	463	3,458
1957	427	484	5,524	7,838	18,110	5,575	5,208	3,234	2,945	1,049	605	1,339	4,269
1958	1,817	10,730	8,497	4,012	3,915	4,003	8,189	7,708	1,171	1,715	876	1,436	4,501
1959	653	1,005	1,367	4,464	6,448	5,490	4,554	1,541	2,349	1,641	1,460	885	2,629
1960	927	2,720	8,051	5,231	7,953	8,645	4,797	2,014	1,925	1,696	859	1,076	3,815

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.33	1.78	1.68	4.27	7.33	3.67	4.34	0.89	0.86	0.93	0.33	0.27	26.68
1952	.31	1.65	7.48	4.78	3.05	5.88	1.44	.64	.39	.29	.27	.45	26.63
1953	.30	.30	.71	2.97	4.63	4.08	2.30	4.18	.48	.83	.33	.18	21.29
1954	.20	.20	.33	5.41	2.30	1.67	2.65	1.56	.53	.23	.19	.13	15.40
1955	.31	.23	1.04	1.69	3.93	7.51	3.93	1.76	.85	.35	.29	.16	22.05
1956	.24	.54	.85	1.27	8.62	2.38	2.46	.77	.32	.49	.27	.20	18.41
1957	.19	.21	2.49	3.53	7.37	2.51	2.27	1.46	1.29	.47	.27	.58	22.64
1958	.82	4.68	3.83	1.81	1.59	1.80	3.57	3.48	.51	.77	.40	.63	23.89
1959	.29	.44	.62	2.01	2.63	2.48	1.99	.69	1.02	.74	.66	.39	13.96
1960	.42	1.19	3.63	2.36	3.35	3.90	2.09	.91	.84	.76	.39	.47	20.31

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	6,154	32.48
1951	1206	35,800	Feb. 4, 1951	510	5,055	1.97	26.68	6,113	32.33
1952	1236	41,700	Dec. 11, 1951	440	4,998	1.95	26.63	3,472	18.50
1953	1276	30,000	Mar. 5, 1953	370	4,010	1.57	21.29	3,899	20.71
1954	1336	40,200	Jan. 23, 1954	265	2,899	1.13	15.40	3,060	16.25
1955	1386	76,900	Mar. 23, 1955	300	4,153	1.62	22.05	4,162	22.10
1956	1436	47,500	Feb. 20, 1956	325	3,458	1.35	18.41	3,697	19.67
1957	1506	54,800	Feb. 3, 1957	320	4,269	1.67	22.64	5,481	29.08
1958	1556	37,600	Nov. 20, 1957	430	4,501	1.76	23.89	2,997	15.91
1959	1626	26,800	Feb. 16, 1959	470	2,629	1.03	13.96	3,360	17.85
1960	1706	20,300	Mar. 5, 1960	470	3,815	1.49	20.31	-	-

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 (1920-60), 721 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	248	594	916	2,392	3,312	1,606	1,379	469	404	375	239	226	999
1952	241	508	2,533	2,153	903	2,091	782	439	271	224	256	205	889
1953	203	252	307	1,020	2,183	1,677	1,199	1,512	306	326	195	172	771
1954	169	202	266	1,830	1,117	594	954	589	314	187	164	136	540
1955	171	187	299	300	1,484	2,809	1,512	811	328	228	195	133	700
1956	174	280	261	491	2,732	777	887	622	272	216	179	139	576
1957	160	194	993	1,515	2,430	801	960	893	1,062	339	187	220	802
1958	256	2,554	1,278	752	614	653	1,314	1,177	331	355	239	264	814
1959	216	274	239	872	1,138	746	682	450	397	269	305	259	483
1960	241	389	1,264	817	1,103	1,643	1,259	386	468	271	233	208	689

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.64	1.48	2.36	6.17	7.72	4.14	3.44	1.21	1.01	0.97	0.62	0.56	30.32
1952	.62	1.27	6.53	5.55	2.18	5.39	1.95	1.13	.68	.58	.66	.51	27.05
1953	.52	.63	.79	2.63	5.08	4.33	2.99	3.90	.76	.84	.50	.43	23.40
1954	.43	.50	.69	4.72	2.60	1.53	2.38	1.52	.78	.48	.42	.34	16.39
1955	.44	.47	.77	.77	3.46	7.25	3.77	2.09	.82	.59	.50	.33	21.26
1956	.45	.70	.67	1.27	6.59	2.00	2.21	1.60	.68	.56	.46	.35	17.54
1957	.41	.48	2.56	3.91	5.66	2.07	2.40	2.30	2.65	.88	.48	.55	24.35
1958	.66	6.37	3.30	1.94	1.43	1.68	3.28	3.03	.83	.92	.62	.66	24.72
1959	.56	.68	.62	2.25	2.65	1.92	1.70	1.16	.99	.69	.79	.65	14.66
1960	.62	.97	3.26	2.11	2.66	4.24	3.14	1.00	1.17	.70	.60	.52	20.99

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,120	34.01
1951	1206	16,600	Feb. 1, 1951	200	999	2.23	30.32	1,128	34.26
1952	1236	20,600	Dec. 9, 1951	159	889	1.99	27.05	676	20.57
1953	1276	13,400	Feb. 12, 1953	145	771	1.72	23.40	761	23.08
1954	1336	15,300	Jan. 21, 1954	112	540	1.21	16.39	542	16.45
1955	1386	66,300	Mar. 22, 1955	111	700	1.57	21.26	705	21.40
1956	1436	13,800	Feb. 19, 1956	115	576	1.29	17.54	630	19.17
1957	1506	17,200	Feb. 1, 1957	125	802	1.79	24.35	1,028	31.23
1958	1556	16,100	Nov. 19, 1957	162	814	1.82	24.72	535	16.25
1959	1636	7,350	Jan. 22, 1959	168	483	1.08	14.66	581	17.65
1960	1706	10,800	Apr. 4, 1960	156	689	1.54	20.99	-	-

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 (1927-60), 1,139 cfs.

Extremes.--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, 142 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 in March 1902 reached a stage of about 21.8 ft, from flood profile by Tennessee Valley Authority.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	387	1,081	1,320	3,539	5,008	2,414	2,406	750	649	682	397	339	1,558
1952	337	1,131	4,204	2,905	1,623	3,494	1,297	708	443	343	378	326	1,438
1953	330	406	446	1,429	3,117	2,607	1,746	2,802	518	553	299	255	1,199
1954	263	295	381	3,041	1,859	1,000	1,406	1,014	494	281	243	196	868
1955	253	285	423	492	2,176	4,491	2,300	1,127	568	338	283	206	1,072
1956	279	433	420	693	4,378	1,266	1,485	849	378	333	289	213	902
1957	228	287	1,201	2,326	3,947	1,462	1,754	1,227	2,012	562	317	366	1,288
1958	457	3,195	2,106	1,177	1,047	1,131	2,113	2,031	543	534	358	428	1,258
1959	329	387	378	1,409	1,811	1,223	1,121	657	750	422	417	383	767
1960	384	611	1,992	1,370	1,559	2,244	1,931	619	658	449	332	317	1,038

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.63	1.71	2.15	5.77	7.38	3.94	3.80	1.22	1.02	1.11	0.65	0.53	29.91
1952	.55	1.78	6.85	4.74	2.48	5.70	2.05	1.15	.70	.56	.62	.52	27.70
1953	.54	.64	.73	2.33	4.59	4.25	2.75	4.57	.82	.90	.49	.40	23.01
1954	.43	.47	.62	4.96	2.74	1.63	2.22	1.65	.78	.46	.40	.31	16.67
1955	.41	.45	.69	.80	3.20	7.32	3.63	1.84	.90	.55	.46	.32	20.57
1956	.46	.68	.68	1.13	6.68	2.06	2.34	1.38	.60	.54	.47	.34	17.36
1957	.37	.45	1.96	3.79	5.81	2.38	2.77	2.00	3.18	.92	.52	.58	24.73
1958	.75	5.04	3.43	1.92	1.54	1.84	3.33	3.31	.86	.87	.58	.67	24.14
1959	.54	.61	.62	2.30	2.67	1.99	1.77	1.07	1.18	.69	.68	.60	14.72
1960	.63	.96	3.25	2.23	2.38	3.66	3.05	1.01	1.04	.73	.54	.50	19.98

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	1,769	33.97
1951	1206	19,000	Feb. 3, 1951	301	1,558	2.20	29.91	1,803	34.60
1952	1236	20,600	Dec. 10, 1951	278	1,438	2.03	27.70	1,080	20.43
1953	1276	13,400	Feb. 14, 1953	222	1,199	1.70	23.01	1,178	22.62
1954	1336	17,200	Jan. 22, 1954	176	868	1.23	16.67	870	16.70
1955	1386	58,000	Mar. 23, 1955	180	1,072	1.52	20.57	1,086	20.84
1956	1436	13,900	Feb. 20, 1956	182	902	1.28	17.36	952	18.32
1957	1506	21,100	Feb. 2, 1957	182	1,288	1.82	24.73	1,623	31.17
1958	1556	20,000	Nov. 20, 1957	269	1,258	1.78	24.14	870	16.69
1959	1626	8,440	Feb. 16, 1959	254	767	1.08	14.72	927	17.79
1960	1706	9,810	Apr. 5, 1960	242	1,038	1.47	19.98	-	-

6065. Big Sandy River at Bruceton, Tenn.

Location.--Lat 36°02'19", long 88°13'42", on downstream end of right abutment of county bridge, 700 ft downstream from bridge on U.S. Highway 70, 0.6 mile upstream from Cherry Creek, and 0.9 mile east of Bruceton, Carroll County.

Drainage area.--205 sq mi.

Records available.--July 1929 to September 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 (1929-60), 285 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	136	401	454	1,101	780	417	667	144	236	387	152	168	418
1952	134	671	968	511	545	719	359	179	92.7	77.6	119	164	378
1953	93.7	195	183	269	459	716	364	943	97.7	78.6	54.7	51.9	292
1954	59.8	88.5	129	607	287	191	233	181	115	47.6	46.1	42.4	168
1955	50.9	65.7	141	108	427	887	566	242	112	69.8	50.1	60.4	230
1956	143	114	94.8	689	1,216	342	422	149	83.1	48.3	39.7	42.6	278
1957	52.3	69.9	139	763	786	265	442	264	257	166	110	158	286
1958	118	995	459	219	186	397	315	237	88.0	302	57.9	86.8	288
1959	71.3	127	105	306	471	206	142	106	214	133	77.0	84.0	168
1960	115	128	283	188	204	301	171	106	88.2	93.4	79.5	50.6	151

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.77	2.18	2.55	6.19	3.96	2.34	3.63	0.81	1.28	2.18	0.86	0.91	27.66
1952	.75	3.65	5.44	2.87	2.87	4.04	1.96	1.01	.50	.44	.67	.89	25.09
1953	.53	1.06	1.03	1.51	2.33	4.03	1.98	5.30	.53	.44	.31	.28	19.33
1954	.34	.48	.72	3.41	1.46	1.08	1.27	1.02	.63	.27	.26	.23	11.17
1955	.29	.36	.79	.60	2.17	4.99	3.08	1.36	.61	.39	.28	.33	15.25
1956	.80	.62	.53	3.88	6.40	1.92	2.30	.84	.45	.27	.22	.23	18.46
1957	.29	.38	.78	4.29	3.99	1.49	2.40	1.49	1.40	.94	.62	.86	18.93
1958	.66	5.42	2.58	1.23	.95	2.23	1.72	1.33	.48	1.70	.33	.47	19.10
1959	.40	.69	.59	1.72	2.39	1.16	.77	.60	1.16	.75	.43	.46	11.12
1960	.65	.70	1.59	1.06	1.07	1.69	.93	.60	.48	.53	.45	.28	10.03

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	603	39.93
1951	1206	5,230	Jan. 4, 1951	79	418	2.04	27.66	483	32.00
1952	1236	4,260	Dec. 16, 1951	66	378	1.84	25.09	269	17.87
1953	1276	5,000	May 19, 1953	48	292	1.42	19.33	276	18.25
1954	1336	3,320	Jan. 22, 1954	38	168	.820	11.17	167	11.07
1955	1386	5,480	Mar. 22, 1955	39	230	1.12	15.25	238	15.76
1956	1436	11,800	Jan. 30, 1956	36	278	1.36	18.46	271	17.96
1957	1506	5,150	Jan. 30, 1957	40	286	1.40	18.93	395	26.14
1958	1556	3,350	Nov. 16, 1957	46	288	1.40	19.10	183	12.12
1959	1626	2,400	Feb. 16, 1959	50	168	.820	11.12	187	12.38
1960	1706	1,460	Dec. 12, 1959	40	151	.737	10.03	-	-

6090. Kentucky Lake at Gilbertsville, Ky.

Location.--Lat 37°00'45", long 88°16'12", at Kentucky Dam on Tennessee River at Gilbertsville, Marshall County, 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.

Extremes.--1944-60: Maximum elevation, 368.81 ft Jan. 24, 1950; minimum (after first filling) 349.20 ft Jan. 22, 1947. Contents based on backwater profile.

Remarks.--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 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.

Cooperation.--Records furnished by Tennessee Valley Authority.

Contents, in thousands of cfs-days, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1951	1,036	1,010	991	1,084	1,031	1,628	1,347	1,339	1,367	1,239	1,124	1,059
1952	1,051	1,019	1,277	1,263	1,031	1,136	1,351	1,347	1,255	1,180	1,130	1,082
1953	1,036	1,041	990	1,024	1,123	1,192	1,421	1,354	1,279	1,280	1,091	1,099
1954	1,031	1,010	990	1,167	1,037	1,112	1,363	1,377	1,253	1,204	1,142	1,107
1955	1,117	1,035	1,094	1,026	1,042	1,472	1,417	1,365	1,281	1,189	1,119	1,113
1956	1,047	999	1,007	1,289	1,038	1,078	1,365	1,347	1,270	1,211	1,124	1,060
1957	1,072	1,026	1,005	1,428	1,086	1,106	1,306	1,361	1,302	1,187	1,106	1,117
1958	1,157	1,455	1,097	1,031	1,030	1,074	1,451	1,380	1,268	1,380	1,115	1,063
1959	1,034	1,024	1,000	1,014	1,022	1,142	1,387	1,341	1,259	1,186	1,145	1,072
1960	1,023	1,093	1,079	1,068	1,042	1,045	1,325	1,336	1,255	1,193	1,141	1,058

6095. Tennessee River near Paducah, Ky. 1/

Location.--Lat 37°01'11", long 88°16'50" (revised), on left bank at Gilbertsville, Marshall County, 4,000 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 (revised).--Water-stage recorder at present site since Jan. 2, 1946. Datum of gage is 286.35 ft above mean sea level, datum of 1929. Prior to Oct. 21, 1926, U.S. Weather Bureau staff gages at various sites and datums in the vicinity of former Nashville, Chattanooga & St. Louis Railway bridge near Johnsonville. Oct. 21, 1926, to Sept. 30, 1931, water-stage recorder at site 3.9 miles downstream from present U.S. Highway 70 bridge (river mile 100.5) at datum 320.72 ft above mean sea level, datum of 1929. Oct. 1, 1931, to Sept. 30, 1939, water-stage recorder at U.S. Highway 70 bridge at datum 1.21 ft lower. Oct. 1, 1939, to Sept. 30, 1942, water-stage recorder at site 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 at site 500 ft upstream from present site at same datum. Auxiliary water-stage recorder at site 16.3 miles downstream at same datum since Oct. 1, 1942; 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).

July 15, 1930, to Aug. 20, 1944, staff and wire-weight gages and water-stage recorders used concurrently with those listed above as base and auxiliary gages at six different locations, ranging from Paducah to river mile 100.5, all at different datums.

Average discharge.--71 years (1889-1960), 63,790 cfs.

Extremes.--1889-1960: Maximum discharge, 500,000 cfs Feb. 17, 1948; maximum gage height, 62.43 ft Feb. 2, 1937, at Gilbertsville, present datum; minimum daily discharge, 150 cfs (based on lockages at Kentucky Dam) Apr. 11, 1960.

Remarks.--Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station. Flow now almost completely regulated.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	47,420	60,390	81,910	103,700	175,800	99,990	122,800	42,660	39,070	48,480	38,170	36,050	73,980
1952	35,020	62,410	177,600	131,200	109,400	140,000	35,940	30,890	33,850	31,270	34,100	29,960	71,080
1953	30,030	27,220	47,330	83,290	152,100	105,900	49,830	93,950	38,040	38,930	36,500	25,460	60,250
1954	25,710	25,410	37,490	156,900	73,850	54,830	45,080	43,330	38,820	31,600	31,090	23,580	48,940
1955	20,020	26,950	39,850	67,130	105,400	138,600	94,350	50,900	48,140	43,410	38,850	27,970	58,180
1956	30,380	38,010	43,050	30,800	204,100	88,270	74,810	43,960	34,390	36,820	35,450	33,380	57,120
1957	31,560	36,860	75,950	87,570	278,100	75,710	69,300	45,950	50,970	37,640	33,790	38,830	70,410
1958	44,030	178,700	161,300	87,220	88,060	68,480	68,760	115,900	55,060	44,610	55,670	48,250	84,610
1959	43,100	40,050	34,450	72,100	77,400	54,610	51,470	37,120	44,190	38,630	36,200	34,950	46,820
1960	48,310	50,750	122,800	94,840	99,570	111,700	43,980	35,810	38,550	35,060	37,390	52,350	64,260

1/ Published in WSP 1306 as "near Johnsonville" 1890-1944, as "near Buchannan" 1930-43 and as "near Paducah" 1939-50.

Yearly discharge, in cubic feet per second, of Tennessee River near Paducah, Ky.

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	91,680	30.96
1951	1206	307,000	Apr. 3, 1951	22,600	73,980	1.84	24.98	81,220	27.42
1952	1236	258,000	Mar. 13, 1952	9,200	71,080	1.77	24.07	56,750	19.21
1953	1276	254,000	Feb. 13, 1953	17,700	60,250	1.50	20.34	58,900	19.89
1954	1336	344,000	Jan.26,28, 1954	17,400	48,940	1.22	16.53	48,780	16.47
1955	1386	302,000	Mar. 22, 1955	7,200	58,180	1.45	19.65	60,240	20.34
1956	1436	322,000	Feb. 5, 1956	19,700	57,120	1.42	19.34	59,910	20.29
1957	1506	407,000	Feb. 5, 1957	25,300	70,410	1.75	23.78	90,370	30.52
1958	1556	336,000	Nov. 30, 1957	250	84,610	2.10	28.57	62,360	21.06
1959	1626	172,000	Jan. 24, 1959	15,900	46,820	1.16	15.81	55,650	18.79
1960	1706	194,000	Mar. 8, 1960	150	64,260	1.60	21.76	-	-

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 (1951-60), 92.8 cfs.

Extremes.--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.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	1.31	197	475	205	174	812	58.6	5.44	0.14	0.80	0	46.2	165
1953	.54	2.08	27.2	64.2	118	492	93.2	349	1.54	1.14	.19	0	96.4
1954	0	.93	7.27	117	87.1	88.6	60.0	32.2	36.5	1.49	.16	.09	35.7
1955	5.23	.30	11.4	4.22	234	343	259	20.3	20.5	13.8	.46	1.30	75.0
1956	2.22	1.32	1.78	189	613	105	138	20.3	.73	6.24	8.66	.28	88.3
1957	0	1.27	1.14	347	300	46.7	190	207	219	73.8	5.34	.17	115
1958	1.89	696	389	133	84.0	297	92.5	128	2.32	56.5	19.6	.67	159
1959	.28	.67	3.00	72.5	175	43.6	17.6	78.7	82.9	20.3	14.7	4.58	41.9
1960	18.9	9.87	118	142	76.1	157	49.3	60.6	59	13.4	.73	0	59.0

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	-	-	-
1952	0.02	2.44	6.10	2.63	2.09	10.44	0.73	0.07	0.002	0.01	0	0.57	25.10
1953	.01	.03	.35	.82	1.37	6.33	1.16	4.49	.02	.01	.002	0	14.59
1954	0	.01	.09	1.51	1.01	1.14	.75	.41	.45	.02	.002	.001	5.39
1955	.07	.004	.15	.05	2.72	4.41	3.22	.26	.26	.18	.006	.02	11.35
1956	.03	.02	.02	2.43	7.37	1.35	1.72	.26	.009	.08	.11	.003	13.40
1957	0	.02	.01	4.46	3.48	.60	2.36	2.66	2.73	.95	.07	.002	17.34
1958	.02	8.66	5.00	1.71	.98	3.82	1.15	1.64	.03	.73	.25	.008	24.00
1959	.004	.008	.04	.93	2.03	.56	.22	1.01	1.03	.26	.19	.06	6.34
1960	.24	.12	1.52	1.82	.91	2.02	.61	.78	.73	.17	.009	0	8.93

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	-	-
1951	-	-	-	-	-	-	-	-	-
1952	1236	32,300	Mar. 22, 1952	0	165	1.84	25.10	112	16.93
1953	1276	7,960	May 17, 1953	0	96.4	1.07	14.59	94.6	14.30
1954	1336	2,260	Jan. 20, 1954	0	35.7	.398	5.39	36.4	5.52
1955	1386	4,000	Mar. 21, 1955	0	75.0	.836	11.35	74.0	11.20
1956	1436	7,900	Feb. 18, 1956	0	88.3	.984	13.40	88.1	13.36
1957	1506	7,220	May 23, 1957	0	115	1.28	17.34	205	30.99
1958	1556	32,300	Nov. 18, 1957	0	159	1.77	24.00	68.5	10.37
1959	1626	4,080	June 11, 1959	0	41.9	.467	6.34	54.1	8.17
1960	1706	2,280	Jan. 14, 1960	0	59.0	.658	8.93	-	-

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 (revised) and State Highway 58 (revised), 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 (1938-60), 272 cfs.

Extremes.--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 of water temperatures for the period October 1949 to September 1951 are published in WSP 1186 and 1197.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	34.6	471	406	1,672	938	572	435	32.6	116	215	17.1	41.2	410
1952	9.63	629	1,340	560	457	1,489	227	40.5	9.88	6.69	2.92	58.5	404
1953	5.12	13.3	160	264	345	1,254	234	1,106	15.1	15.5	4.05	2.80	287
1954	3.24	4.94	29.5	284	221	223	237	158	106	12.7	9.29	40.5	110
1955	37.0	8.11	147	51.5	681	943	746	102	102	52.7	12.1	23.4	239
1956	27.6	24.4	26.9	406	1,423	367	355	69.7	21.6	36.2	23.5	4.18	227
1957	3.37	8.89	14.2	742	1,003	191	529	747	336	264	54.0	12.0	321
1958	15.8	2,115	1,076	363	199	780	259	402	25.1	170	35.5	17.8	455
1959	6.74	21.0	29.0	365	455	127	65.9	133	107	47.2	30.3	38.0	117
1960	78.8	74.3	417	342	200	410	134	198	144	54.3	7.94	5.28	175

Monthly and yearly runoff, in inches

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.18	2.31	2.06	8.49	4.30	2.91	2.14	0.17	0.57	1.09	0.09	0.20	24.51
1952	.05	3.09	6.81	2.84	2.17	7.56	1.11	.21	.05	.03	.01	.29	24.22
1953	.03	.07	.81	1.34	1.58	6.37	1.15	5.62	.07	.08	.02	.01	17.15
1954	.02	.02	.15	1.44	1.01	1.13	1.16	.80	.52	.06	.05	.20	6.56
1955	.19	.04	.75	.26	3.12	4.79	3.67	.52	.50	.27	.06	.12	14.29
1956	.14	.12	.14	2.06	6.76	1.86	1.75	.35	.11	.18	.12	.02	13.61
1957	.02	.04	.07	3.77	4.60	.97	2.60	3.79	1.65	1.34	.27	.06	19.18
1958	.08	10.40	5.47	1.84	.91	3.96	1.27	2.04	.12	.86	.18	.09	27.22
1959	.03	.10	.15	1.86	2.09	.64	.32	.67	.52	.24	.15	.19	6.96
1960	.40	.37	2.12	1.74	.95	2.08	.66	1.01	.71	.28	.04	.03	10.39

Yearly discharge, in cubic feet per second

Year	WSP	Water year ending Sept. 30						Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff in inches	Mean	Runoff in inches
		Discharge	Date						
1950	-	-	-	-	-	-	-	639	38.24
1951	1206	22,400	Jan. 15, 1951	5.4	410	1.81	24.51	500	29.91
1952	1236	27,600	Mar. 22, 1952	2.0	404	1.78	24.22	253	15.18
1953	1276	a12,000	May 17 or 18	2.6	287	1.26	17.15	275	16.43
1954	1336	2,350	Mar. 26, 1954	2.7	110	.485	6.56	123	7.35
1955	1386	7,300	Mar. 22, 1955	3.4	239	1.05	14.29	229	13.71
1956	1436	13,400	Feb. 18, 1956	3.6	227	1.00	13.61	223	13.34
1957	1506	12,800	May 24, 1957	2.7	321	1.41	19.18	585	35.00
1958	1556	36,000	Nov. 19, 1957	4.7	455	2.00	27.22	193	11.55
1959	1626	4,310	Jan. 21, 1959	5.8	117	.515	6.96	160	9.57
1960	1706	2,850	Jan. 16, 1960	3.5	173	.762	10.39	-	-

a About.

Published herewith are revisions and corrections of records published in WSP 1306 for stations discontinued prior to September 30, 1950.

4080. New River near New River, Tenn.

Location (revised).--Lat 36°23'03", long 84°31'43", at highway bridge, 1.1 miles east of town of New River, Scott County, 1.6 miles upstream from Brimstone Creek, and at mile 11.9.

Drainage area.--314 sq mi (revised).

Correction.--An error was made in computing the water year 1933. The figures given herewith supersede those published in WSP 1306:

Month	Mean	Per square mile	Runoff in inches
August 1933.....	125	0.398	0.46
Water year 1932-33.....	708	2.25	30.60
Calendar year 1933.....	550	1.75	23.77

4090. White Oak Creek at Sunbright, Tenn.

Drainage area.--13.5 sq mi (revised).

4185. Caney Fork at Clifty, Tenn.

Drainage area.--111 sq mi (revised).

4190. Bee Creek at Herbert, Tenn.

Drainage area.--101 sq mi (revised).

4630. North Toe River at Spruce Pine, N. C.

Location (correction).--Lat 35°55'08", long 82°04'40", 0.3 mile downstream from English Creek and 0.5 mile downstream from bridge on U.S. Highway 19E at Spruce Pine, Mitchell County.

4745. Middle Fork Holston River at Chilhowie, Va.

Revisions.--The momentary maximum and one figure of daily discharge, in cubic feet per second, in the water year 1909 were revised in WSP 1506; the records published in WSP 1306 thus affected are given herewith:

Month	Mean	Per square mile	Runoff in inches	Momentary maximum		Minimum day
				Discharge	Date	
April 1909.....	258	1.66	1.85	-	-	-
Water year 1908-9.....	277	1.79	24.25	4,100	Apr. 30, 1909	25
Calendar year 1909....	222	1.43	19.40	-	-	-

Correction.--In WSP 1306, the momentary maximum discharge for the water year 1907, was listed in error; it should be 9,300 cfs.

5540. Nottely River near Ranger, N. C.

The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in WSP 1306.

Water year	Date	Discharge (cfs)
1927	Dec. 28, 1926	4,800
1928	Mar. 30, 1928	6,320
1934	Mar. 3, 1934	5,980

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