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Floods of January–February 1957 in Southeastern Kentucky and Adjacent Areas

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1652-A

*Prepared in cooperation with the States
of Kentucky, Virginia, West Virginia,
and Tennessee and with agencies of the
Federal Government*



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UNITED STATES DEPARTMENT OF THE INTERIOR

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GEOLOGICAL SURVEY

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CONTENTS

	Page
Abstract.....	A1
Introduction.....	1
Acknowledgments.....	5
General description of floods.....	5
Rainfall.....	5
The floods.....	5
Big Sandy River basin.....	8
Little Sandy River, Tygarts Creek, and Licking River basins....	10
Kentucky River basin.....	10
Salt and Green River basins.....	13
Cumberland River basin.....	14
Tennessee River basin.....	18
Flood damage.....	19
Determination of flood discharges.....	25
Stages and discharges at stream-gaging stations.....	26
Explanation of data.....	26
Summary of flood stages and discharges.....	27
Flood frequencies.....	38
Streamflow data.....	40
Index.....	193

ILLUSTRATIONS

FIGURE		Page
1.	Map showing area of this report.....	A2
2.	Temperature variation at Hindman Settlement School, Hindman, Ky.....	2
3.	Map showing location of flood-determination points.....	4
4.	Rainfall map January 27–February 2, 1957.....	6
5.	Discharge at selected gaging stations in the Big Sandy River basin.....	8
6.	Discharge at gaging stations in the Kentucky River basin.....	11
7.	View of washed-out bridge across the North Fork Kentucky River at Hazard Airport, February 4, 1957.....	12
8.	Discharge at gaging stations on main stem upper Cumber- land River.....	14
9.	View of flooded Main Street and business district in Cumber- land, Ky., on January 29, 1957.....	15
10.	Aerial view of flooding in Barbourville, Ky., along Cumber- land River, at 2 p.m. January 30, 1957.....	16
11.	Daily mean discharge of Cumberland River at Rowena, Ky., and net inflow to Lake Cumberland.....	18
12.	Volume of water stored in TVA reservoir system.....	20
13.	Frequency of floods in Kentucky and Tennessee.....	39

TABLES

	Page
TABLE 1. Damage in the Big Sandy River basin, Kentucky, Virginia, and West Virginia.....	A21
2. Damage in the Licking, Kentucky, and Green River basins, in Kentucky.....	22
3. Rural damage along Ohio River main stem and in Wabash and Saline River basins, Ohio, Indiana, Illinois and Kentucky.....	23
4. Damage in the Cumberland River basin in Kentucky and Tennessee.....	23
5. Damage at selected locations in upper Tennessee River basin, in Virginia and Tennessee.....	24
6. Summary of damage by stream basin and by State, flood of January-February 1957.....	24
7. Expenditures by American Red Cross in southeastern Kentucky.....	25
8. Summary of flood stages and discharges during the flood of January-February 1957.....	28

FLOODS OF 1957

FLOODS OF JANUARY-FEBRUARY 1957 IN SOUTHEASTERN KENTUCKY AND ADJACENT AREAS

ABSTRACT

Heavy rains over an extensive area on January 27-February 2, caused extreme flooding in southeastern Kentucky and adjacent areas in West Virginia, Virginia, and Tennessee. Total rainfall for the storm period ranged from 6-9 inches over most of the report area and was 12½ inches at the eastern end of the Virginia-Kentucky State line.

The principal basins affected by the storm were those of the Big Sandy, Kentucky, Cumberland, and Tennessee Rivers.

Maximum discharge of record occurred in many streams. On Levisa Fork near Grundy, Va., the peak discharge of 33,200 cfs was 50 percent greater than the previous maximum in 17 years of record and was 3.3 times the mean annual flood. The peak discharges on tributaries of the Kentucky River and on the Holston and Clinch Rivers were also the greatest of record and those on the upper Cumberland River were nearly as great as those during the historic floods of 1918 and 1946.

Total flood damage was estimated at \$61 million of which \$39 million was in the Big Sandy River basin (mostly in Kentucky) and \$15 million was in the Kentucky River basin—\$52 million of the total damage was in Kentucky.

INTRODUCTION

Devastating floods occurred on the streams of southeastern Kentucky, southwestern West Virginia, western Virginia, and north-eastern Tennessee in late January and early February 1957. The areas hardest hit included the headwaters of the Big Sandy, Kentucky, Cumberland, and Tennessee River basins (fig. 1).

The first 3 weeks in January were drier than normal, but, just prior to the flood, streams were at near-median levels and the ground was saturated due to 1-2 inches of rain a week earlier. The flood was attributable to these antecedent conditions and to the runoff generated by precipitation ranging from 4-9 inches during the period January 27-February 2.

Temperatures at the beginning of the storm were above normal and remained so during the period of heavy rainfall. Figure 2 shows variation in temperature at the Weather Bureau station, Hindman Settlement School, Hindman, Ky., near the center of the

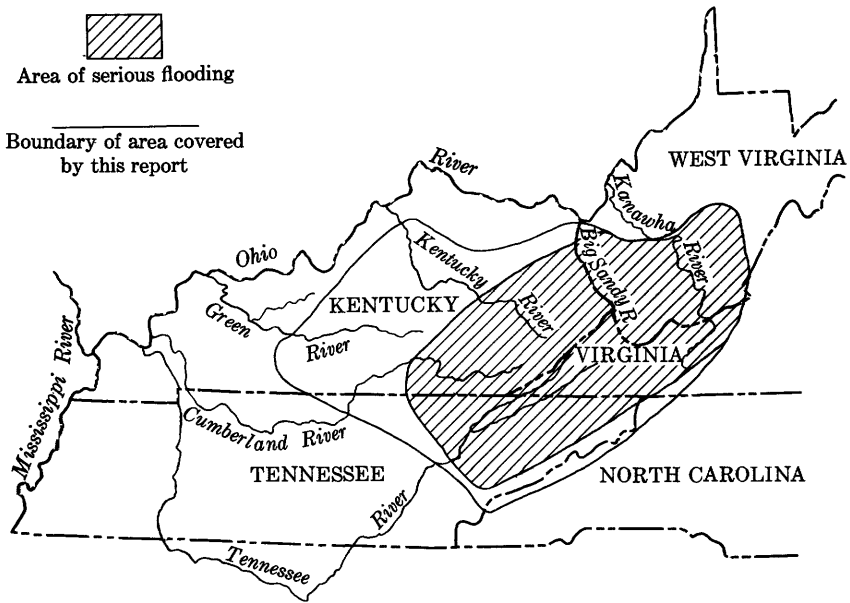


FIGURE 1.—Map showing area of this report.

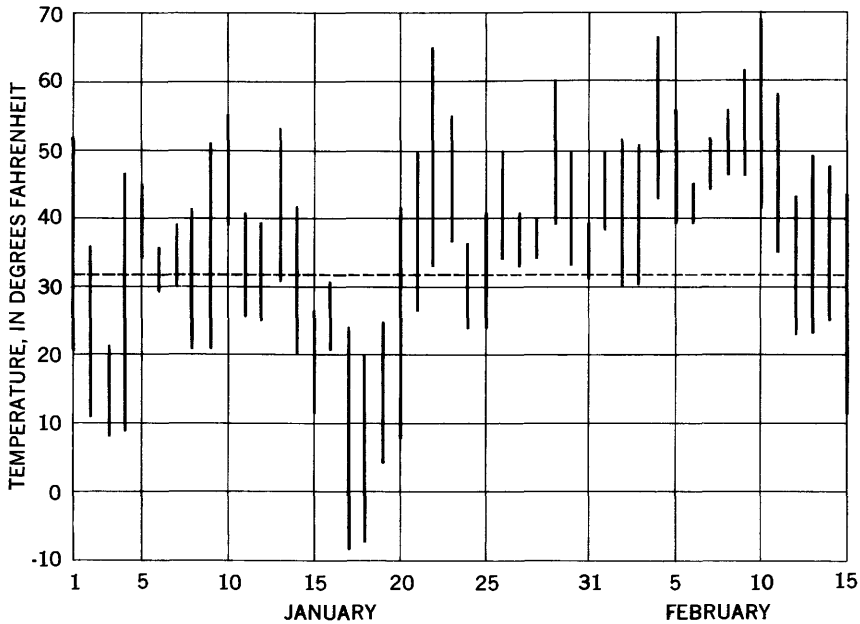


FIGURE 2.—Temperature variation of Hindman Settlement School, Hindman, Ky., January 1–February 15, 1957.

area of greatest flooding. Generally, temperatures began to rise on January 18 when the ground in most parts of the area was frozen to a shallow depth and there was $\frac{1}{2}$ -2 inches of snow on the ground. Thawing and melting occurred during the earlier rains on January 21-23.

Peak stages and discharges along Levisa Fork, the headwater tributary of the Big Sandy River, and its tributaries were the greatest of record except for those on tributaries in the Paintsville, Ky., area and downstream. Similarly, maximum discharges occurred along the North, Middle, and South Forks of the Kentucky River and most of their tributaries and in the Holston and Clinch Rivers. In the Green River basin precipitation was heavy in the area southeast of Bowling Green, Ky., and maximum stage and discharge were recorded on Drakes Creek. The upper Cumberland River reached stages that were nearly as great as the historic floods of 1918 and 1946. Poor Fork, the headwater tributary of the Cumberland, and Laurel River had peaks that exceeded all previously known peaks.

This report on the floods is made for the purpose of:

1. Presenting records of river stage and discharge in more detail than that published in the annual series of reports on surface water entitled "Surface-water supply of the United States."
2. Collecting and recording information, other than stages and discharges, pertinent to an analysis and understanding of the hydrology of the floods.
3. Recording the amounts of damages caused by the floods.
4. Recording the comparative magnitude of the subject floods and the known large floods of the past.

The Geological Survey maintains, in cooperation with State and Federal agencies, a network of stream-gaging stations where records of river stage and discharge are collected. The records thus collected for stations in the flood area (fig. 3) are published herein.

Data collection was under the supervision of the following district engineers: F. F. Schrader, Kentucky; D. S. Wallace, Virginia; W. R. Eaton, succeeded by J. S. Cragwall, Jr., Tennessee; and W. L. Doll, West Virginia. R. H. Tice, flood specialist assisted on indirect measurements of peak discharges and prepared the open-file release, "Floods of January-February 1957 in southwestern Virginia," which was incorporated in this report. Most of the text material, that for Kentucky, was contributed by N. O. Thomas. Data from the four districts was assembled and text material coordinated to cover the entire flood area by J. O. Rostvedt under the direct supervision of Tate Dalrymple, Chief of the Floods Section.

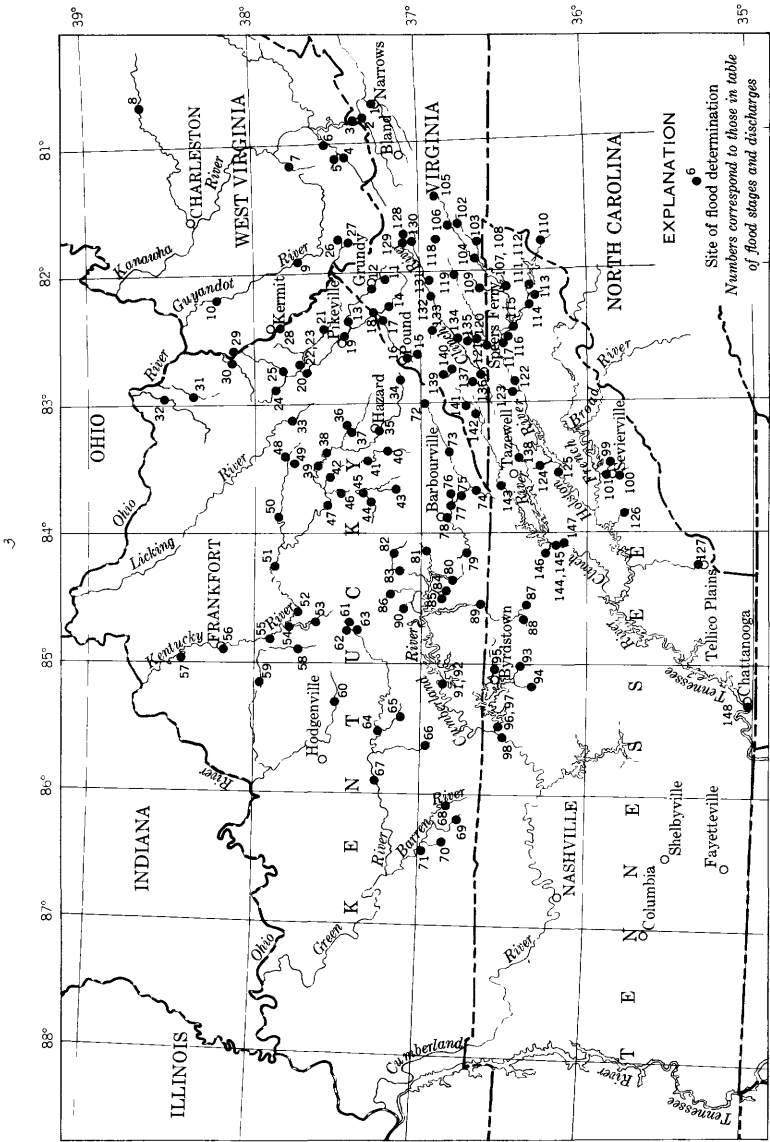


FIGURE 3.—Map of the flood area showing location of flood-determination points.

ACKNOWLEDGMENTS

Records of discharge in the area covered by this report were collected as part of the cooperative programs between the Geological Survey and the States of Kentucky, Virginia, Tennessee, and West Virginia; the Tennessee Valley Authority; and the Corps of Engineers.

The isohyetal map was prepared from data furnished by the Tennessee Valley Authority and by the Weather Bureau. Damage figures were furnished by the Corps of Engineers.

Acknowledgment of other data furnished is made where the data appears in the report.

GENERAL DESCRIPTION OF FLOODS

RAINFALL

The heaviest rainfall during the storm period, January 27-February 2, occurred in the Pikeville-Haysi area in Kentucky and along the Tennessee-North Carolina State line. Total rainfall for the period ranged from 6 to 9 inches over much of the area (fig. 4). Based on available records, bucket surveys, and other reports, the greatest total rainfall for the period January 27-February 1, was 12½ inches in the headwater area of the Middle Fork Kentucky River, a few miles from the Cumberland River drainage divide.

The low density of established rainfall stations in the area cannot be expected to define the variations resulting from strong orographic influences in the mountainous region. Bucket surveys were made in an attempt to fill the gaps, but these were only partly successful because catchments or other containers normally found on farms overflowed during the heavy storms. Also, it was difficult to distinguish rainfall caught antecedently, during the period January 21-23, from that of the main storm period. Similarly, trailing-off precipitation during the later general storm period, February 5-10, was difficult to distinguish in analyzing bucket-survey data.

THE FLOODS

The disastrous floods of January-February 1957 in southeastern Kentucky and adjacent areas were the result principally of heavy precipitation and of saturated ground at the beginning of the storm period on January 27. Severe flooding occurred in the headwater areas of the Big Sandy, Kentucky, Cumberland, and Tennessee Rivers.

The region of severest flooding was in Kentucky, which is characterized by narrow, deep valleys. The main highways, railroads, business establishments, and homes are built along the river banks or are confined to the relatively narrow floodplains. The flood rises were

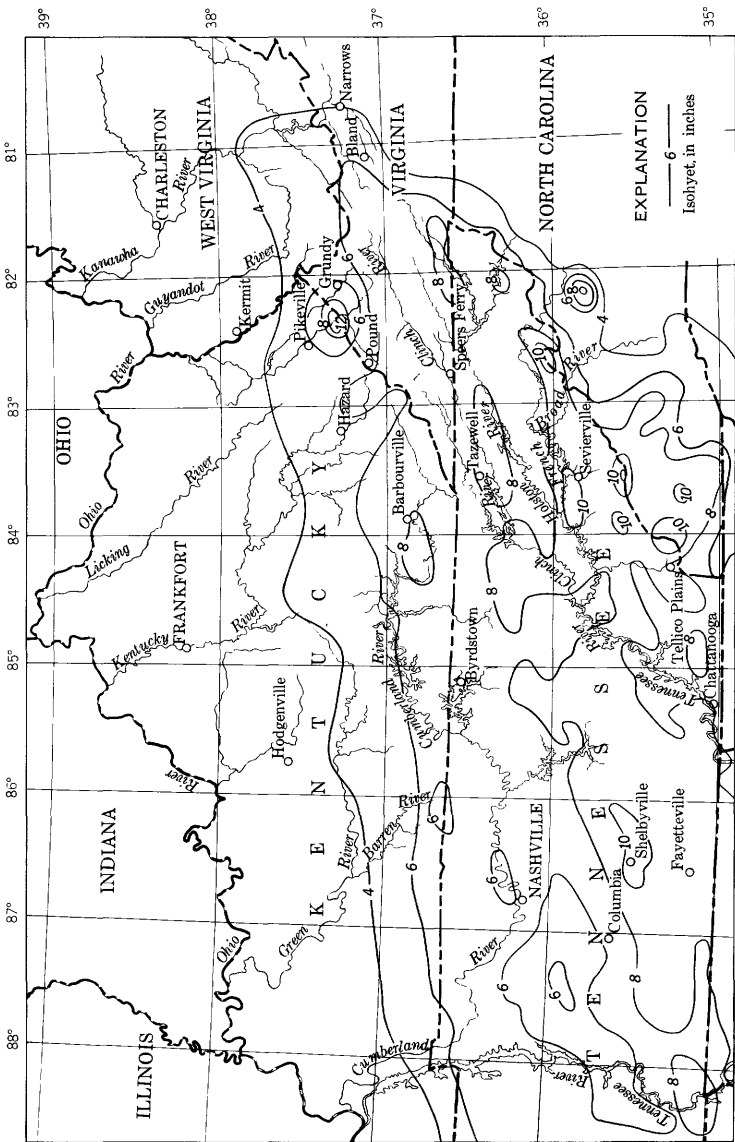


FIGURE 4.—Map of flood area showing isohyets, in inches, for the storm of January 27-February 2, 1957.

so rapid that many residents had to flee from their homes without their belongings. Communications were disrupted in many areas so that no flood warning was received or there was some question as to the reliability of the flood heights expected. Early warning might have prevented much damage to personal property, particularly to stocks and supplies in business houses. Food shortages developed as the result of extensive damage to stores. In some cities and towns, water supplies were contaminated and there was no gas for cooking. Approximately 7,700 telephones and 103 long-distance circuits were out of service. Electric power was disrupted, but generally, service was restored sooner than for other services.

In Kentucky the death toll was nine persons. The Red Cross reported that 597 homes were destroyed, 2,932 sustained major damage, and 8,740 suffered minor damage. At least 30 State and Federal highways were blocked by high water or rock and earth slides. Most of the secondary roads on hillsides above the flood levels were rendered impassable by the heavy rains.

Ample food and other relief supplies were made available by Federal and State agencies and by the Red Cross and other organizations. Flooding and damage to highways made it difficult to distribute the supplies to the people. The Army assigned a group of 14 helicopters to transport food, medical supplies, and clothing into the stricken area. The group was headquartered at London, Ky., along with Army Engineer and Transportation contingents from Fort Knox who were also employed in the distribution of supplies and in relief activities. Units of the National Guard were called to duty to distribute relief supplies, to perform security duties, and to assist in cleanup work.

President Eisenhower declared the flooded region a disaster area, thus mobilizing Federal agencies and making funds available for relief and rehabilitation. The Federal Civil Defense Administration coordinated the relief and rehabilitation work of Federal agencies.

States agencies reported that 90 percent of the coal mines in Pike, Floyd, Letcher, and Perry Counties in Kentucky were forced to close because of the water, disrupted communications, washed-out roads, or damaged railroad beds. Approximately 900 mines and manufacturing industries employing 28,000 persons in the 12 counties hardest hit either shut down or curtailed operations.

Many schools were closed due to damage or to the disruption of transportation. Several small rural school buildings were destroyed. The most serious school damage was that to the State Vocational School at Hazard, Ky., in Perry County, which was estimated by State officials to be \$373,000 and termed "almost a total loss." Damage to other schools in the county totaled about \$85,000. Damage to

schools in Floyd County was the next highest, being estimated at \$308,000.

Scores of cable-suspended footbridges, used to provide access to highways from residences located on the opposite bank of streams, were destroyed or damaged by the flood. Ninety-six of these bridges in the Kentucky River basin and approximately 140 in other basins of the area affected by severe flooding were lost.

BIG SANDY RIVER BASIN

In the upper reaches of Levisa Fork, the headwater tributary of Big Sandy River, the flood exceeded the previously known maximum of 1862. Levisa Fork and its large tributary, Russell Fork, have their sources in Virginia. The crests of both streams arrived at the mouth of Russell Fork at about the same time and contributed to the sharpness of the rise and extreme gage height downstream. The rapidity of the rise is illustrated by the discharge hydrograph for Levisa Fork at Pikeville, Ky. (fig. 5). The stream rose from about 18 feet on January 29 to a crest of 52.72 feet early on January 30, which exceeded the stage of about 52 feet recorded for the flood of 1862.

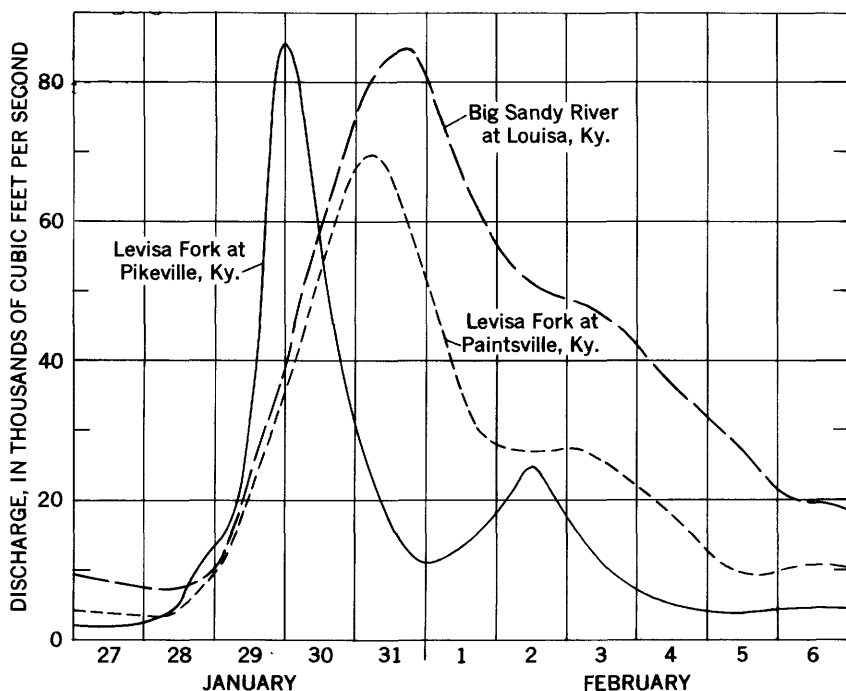


FIGURE 5.—Discharge at selected gaging stations in the Big Sandy River basin January 27–February 6, 1957.

The peak stage on January 31, 1957, at Paintsville, Ky., was about seven-tenths of a foot lower than that of the flood in 1862 but exceeded the previous maximum in 31 years of record by 3.8 feet.

Figure 5 also shows discharge hydrographs for Levisa Fork at Paintsville, Ky., and for Big Sandy River at Louisa, Ky. The time interval between peaks of the three gaging stations was not great.

Pikeville was almost entirely under water—for the first time since 1862—at the height of the flood. The maximum stage in 21 years of record (42.9 ft. in 1946) was exceeded by almost 10 feet. Water stood 3 feet deep or more in Main Street business houses and as much as 9 feet deep in some stores on other streets. Much food was contaminated and food shortages developed. Drinking water became polluted. Highways were submerged and the town was isolated. Police estimated that 400 automobiles were submerged. Telephone service was disrupted by the flood but was partially restored for emergency use as the waters receded.

More than 250 houses were destroyed in Pikeville and the immediate area. Approximately 2,400 houses were damaged and many families were evacuated. Pikeville city schools were closed, affecting 1,400 students. A month was required to repair flood damage to schools and return them to full operation.

To a lesser degree, Prestonsburg and Paintsville, Ky., and other smaller towns and communities on Levisa Fork and its tributaries suffered similar damage. Three-fourths of Prestonsburg (population 2,500) was under water, and approximately 1,000 persons were forced from their homes. As the waters receded, several fires broke out, which hampered rehabilitation work. The flooding in Prestonsburg is typical of the flooding that existed between the mainstream and hillsides in cities and towns along Levisa Fork.

About 700 residences in Paintsville were flooded. Advance warning received in Paintsville enabled 200 families to evacuate. The Prestonsburg and Paintsville (Johnson County) areas each suffered losses totaling \$4 million. Martin, Ky., a town of 1,100 population on Beaver Creek near its mouth, was damaged severely by backwater from Levisa Fork. Water reached the roofs of most business establishments in Martin. Elkhorn City, Ky., Fishtrap, Ky., and many communities suffered damage.

Two persons lost their lives in the Big Sandy River basin in Kentucky. A lineman was electrocuted at Pikeville, and a man was killed by exploding gas in Paintsville.

The greatest damage, by far, in any one area was at Pikeville and the surrounding area in Pike County—the largest county in Kentucky—damage exceeded \$15 million.

On the Pound River, the record flood at Pound, Va., and the near-record flood near Haysi, Va., caused extensive damage.

LITTLE SANDY RIVER, TYGARTS CREEK, AND LICKING RIVER BASINS

The Little Sandy River, Tygarts Creek, and Licking River basins are located on the fringe of the flood area. The magnitude of the floods were not outstanding in these basins and the headwater areas were affected to a small degree. There was some damage by flooding of the Licking River in Salyersville, Ky., but the principal damage was to agricultural lands in the upper part of the basin. The peak stage of 20.79 feet on Licking River near Salyersville had been exceeded 7 times since 1938.

KENTUCKY RIVER BASIN

The headwaters of the North, South, and Middle Forks of the Kentucky River were in or near the area of highest precipitation. The North Fork reached a peak stage of 37.54 feet at Hazard, Ky., as compared with the highest previous crest of about 34 feet on May 30, 1927. The three forks rose to unprecedented peak discharges, exceeding maximums recorded previously. The gaging stations have lengths of record as long as 24 years.

Discharges at the most downstream stations on the North Fork, Middle Fork, and South Fork Kentucky River are shown in figure 6. Although the maximum discharge at Jackson, Ky., was greater than any recorded previously, the peak stage was lower due to a cutoff, completed in 1956, half a mile below the gage. At the crest of the flood the cutoff was carrying approximately 75 percent of the flow. The Corps of Engineers estimated that the cutoff reduced the peak stage of the flood by about 4 feet.

On the Middle Fork Kentucky River at Buckhorn, Ky., the flood peak was 5.0 feet higher than the peak in 1939, and at Tallega, Ky., the crest stage was 2.83 feet higher than the historic flood of 1939.

In the South Fork Kentucky River basin the greatest flood previously recorded occurred in 1947. In January 1957 the peak discharge at Booneville, Ky., was 30 percent greater and the stage was 1.7 feet higher than that in 1947. Peak stage and discharge on the main stem of the Kentucky River at lock 14 at Heidelberg, Ky., 6 miles below the confluence of North and South Forks, were slightly less than that in 1939. Although most damage in the Kentucky River basin was to urban areas along the North, Middle, and South Forks, some damage was reported as far downstream as the mouth.

The worst hit town in the Kentucky River basin was Hazard, Ky., population 20,000. All highways leading into the town were blocked by the floodwaters, and all utilities were out of operation. The main

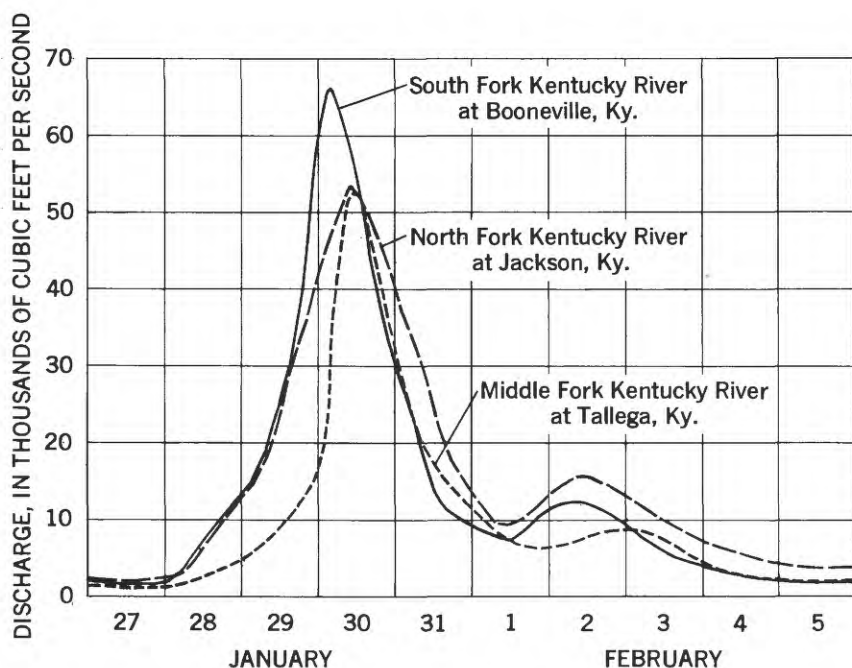


FIGURE 6.—Discharge at gaging stations in the Kentucky River basin.

streets of the town were inundated with as much as 17 feet of water. Five persons lost their lives in the Hazard area: three were drowned or died of exposure, and an elderly couple lost their lives at Darfork a few miles downstream when fire destroyed a house in which they had taken refuge. More than 300 residences and 180 commercial and industrial buildings were damaged in Hazard. At least 70 buildings of all types were destroyed. Total damages in the city amounted to about \$4½ million.

Most of the towns and communities located along the North Fork Kentucky River and its principal headwater tributaries, Rockhouse Creek, Line Fork, Leatherwood Creek, Carr Fork, and Troublesome Creek were damaged in some form. Damage was particularly notable at Whitesburg, Ky., and in the Neon-Fleming area upstream from Whitesburg on the North Fork; at Blackey, below the mouth of Rockhouse Creek; at Lothair, just upstream from Hazard; at Darfork, Airport Gardens, the airport, and Combs in the short reach below Hazard; and at Beattyville near the confluence of the North and South Forks. The greatest damage on tributary streams occurred along Leatherwood Creek.

The bridge serving the airport at Hazard was swept down river on January 29 (fig. 7). The photograph, taken on February 4, shows the erosive action of the waters on the far bank, which occurred before the bridge was lost.

The main business section of Beattyville, Ky., was inundated to a depth of about 6 feet, with 70 commercial establishments and 20 residences flooded. Thirty-five miles downstream at Irvine-Ravenna (lock 12) the peak stage was only eight-tenths of a foot below that of 1939, and about 25 residences in low-lying areas were flooded. In the 60-mile reach of the Kentucky River downstream from Irvine-Ravenna, wider flood plains exist and rural damage, particularly to cropland, was high.



FIGURE 7.—View of bridge at Hazard Airport, swept down by floodwaters of the North Fork Kentucky River. The airstrip paralleling the river in the background was submerged. Photograph by Louisville Courier-Journal and Times.

Many houses and other buildings were washed away, and some were lodged against bridges, partly obstructing the flow. This resulted in backwater and probably caused additional flooding and additional damage to bridges. Forty bridges were reported washed away in Letcher County, Ky.

In the Middle Fork Kentucky River basin, most of the urban damage was at Hyden and Buckhorn, Ky. There was much damage to rural residences and farm buildings along the Middle Fork and its principal tributary, Cutshin Creek. One person was drowned in Cutshin Creek at Wooton, Ky. In Hyden, a lumber company, the only industrial plant in town, lost a large amount of lumber, and 20 company residences were inundated. About half of the commercial properties and 30 percent of the residential properties in the town were affected.

At Buckhorn, Ky., the peak stage was 5.0 feet higher than that of 1939. Practically all properties in this town were inundated, some to a depth of 10 feet. Ten residences were destroyed.

In the South Fork Kentucky River basin, there was appreciable flood damage at Manchester and Oneida, Ky. Although Goose Creek at Manchester reached a stage about 2 feet lower than that of the historic flood of 1947, damage in the town was estimated at over \$200,000. Twenty-five residences and thirty-four commercial properties were flooded.

More than 50 residences and about 10 buildings of other types were flooded at Oneida, just below the confluence of Red Bird River and Goose Creek (head of the South Fork Kentucky River). Flow from Goose Creek cut across the town and approximately 80 percent of the property was inundated as much as 9 feet. At Booneville, Ky., the South Fork Kentucky River exceeded the peak stage of the flood of 1947 by 1.7 feet and damage was much less than that at Manchester. Thirty residences and one public building were flooded.

SALT AND GREEN RIVER BASINS

In the Salt and Green River basins, in the general fringe area of the flood, the most noteworthy peaks occurred in Barren River basin, which drains into the Green River from the south. Maximum discharge occurred at Drakes Creek near Alvaton, Ky. On Barren River at Bowling Green, Ky., the peak discharge was the second highest, and the peak stage was 2.56 feet lower than the previous maximum during the period of gaging-station record beginning in 1938, and its stage was about 10 feet less than the alltime high of 52.2 feet in 1913. Damage in the Green River basin was evaluated at \$788,000 by the Corps of Engineers, of which about two-thirds was noncrop agricultural damage.

Several of the peak flows recorded at gaging stations in the headwater areas of the Salt and Green Rivers did not occur during the main storm period, January 28–February 1, but were the result of other storms that passed over the State a week earlier or about 2 weeks later. Generally, the peaks at these stations were comparatively low and maximums were not approached.

CUMBERLAND RIVER BASIN

In the Cumberland River basin, the floods exceeded previously known maximum stages at four gaging stations. Poor Fork, the main headwater tributary, reached a maximum at Cumberland, Ky., exceeding by 1.3 feet the flood peak of 10.2 feet in 1927. A new maximum occurred at Laurel River at Corbin, Ky. The Cumberland River at Williamsburg, Ky., reached a stage of 33.78 feet, which is only four-tenths of a foot less than that of the flood in January 1946. Straight Creek had a discharge of 310 cfs per sq mi (cubic feet per second per square mile) from a drainage area of 53.8 square miles.

Discharge hydrographs at the Harlan, Pineville, and Williamsburg gaging stations on the main stem of the Cumberland River are shown in figure 8.

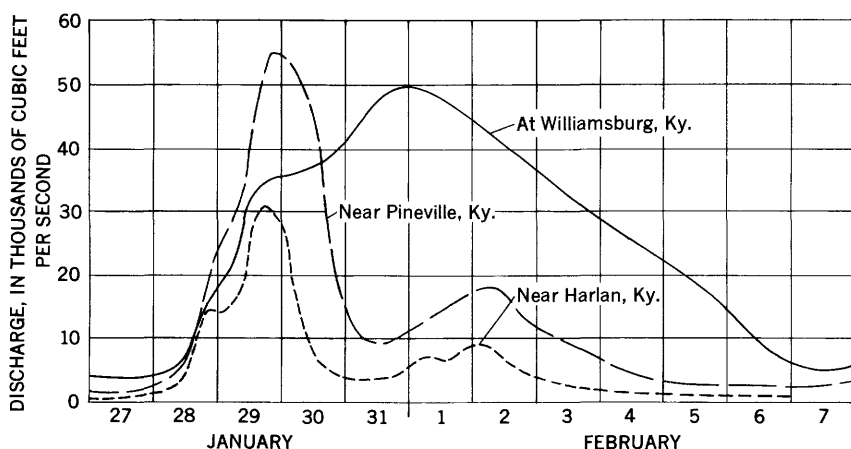


FIGURE 8.—Discharge at gaging stations on the main stem upper Cumberland River.

Based on records beginning about 1940, the floods of January 1946 are the greatest known, though floods in 1927 may have been somewhat greater along Poor Fork. It is noteworthy that the peak discharges during the January–February 1957 floods at most of the gaging stations missed reaching historical maximums by small amounts.

In the Cumberland River basin the greatest impact of the flood was upon the cities and towns along the main stem of the river. Poor Fork, the main headwater tributary, flooded an appreciable part of the business district of the town of Cumberland (fig. 9). There were 53



FIGURE 9.—View of flooded main street and business district in Cumberland, Ky., on January 29, 1957, at about 4 p.m. Bridge over Poor Fork in left foreground is partly blocked by submerged debris. Photograph by Vic Howard, Cumberland, Ky.

commercial establishments and 2 industrial enterprises moderately to severely damaged. More than 200 homes were flooded—17 were rendered unfit for further habitation. The flooding was aggravated by backwater from bridges that were blocked by debris. The peak stage of 11.50 feet at the gaging station downstream in the town was more than a foot higher than that of the flood of 1927 and almost 2 feet higher than that of the flood of 1946.

At Nolansburg, Ky., about 10 miles southwest of Cumberland, a man was drowned when a cable-suspended footbridge was washed out by the floodwaters. This was the only loss of life in the Cumberland River basin.

Near Harlan, just below the confluence of Poor and Clover Forks, the peak stage of the Cumberland River was 2.9 feet below the crest in 1946. Damage at Harlan was negligible although that in Harlan County, including Cumberland and Blair, Ky., was estimated at \$1 million.

The peak discharge at the gaging station near Pineville was slightly less than that during the flood of 1946, and the peak stage of 47.35 feet was about 2.0 feet lower. The pumps at a newly completed flood-wall at Pineville were not operational at the beginning of the floods, but emergency pumps were ready for use only a few hours before needed on January 29. Damage was relatively minor. Approximately 20–25 houses not protected by the wall were flooded.

At Barbourville, Ky., the peak stage was only half a foot below the known maximum of 42.8 feet in 1946. Approximately 80 percent of the city was inundated to depths as much as 10 feet, and about 200 families (600–800 persons) were evacuated. Damage to residential, commercial, and municipal properties exceeded \$1 million.

The aerial view in figure 10 shows flooding in the southern part of Barbourville in the vicinity of the stream-gaging station. The local flood-protection works, of which the levee shown in the photograph is a part, were not completed at a point downstream (off photograph to left) where Richland Creek enters the Cumberland River. Nevertheless, the completed part of the levee afforded considerable protection to the city with a corresponding reduction in damage, for it



FIGURE 10.—Aerial view of flooding in southern part of Barbourville, Ky., along the Cumberland River at 2 p.m. January 30, 1957. The levee that shows in this view looking north was not completed, but it prevented water from flowing through the city. Photograph by Louisville Courier-Journal and Times.

prevented the direct current of the river from flowing through Barbourville. The planned protected area of the city was subject only to backwater, and water elevations in the upstream end of town were less than those in the river near that area.

Williamsburg is on low rolling hills and was damaged much less than other areas. Water was 3 feet deep in some streets, but only a few families were forced to move. Damage totaled about \$70,000.

The hydrologic significance of the floods is demonstrated by the maximum discharge attained at Cumberland Falls, Ky., where 46 years of record are available. The discharge was only 4 percent less than the previous known maximum of 59,600 cfs in 1918.

Damage in Corbin was extensive. Approximately 400 residences, 90 business establishments, 2 industries, and several schools and churches were inundated to depths as much as 10 feet in parts of the city. Total damage exceeded \$2 million in the vicinity. Lynn Camp Creek, a tributary of Laurel River, flows through the city and numerous older residents in the city said that it was 5-6 feet higher than in any other flood during the past 50 years.

Rockcastle River did not reach a particularly high stage. Buck and Pitman Creeks approached the maximums of 5 years of record. The South Fork Cumberland River, with headwaters in Tennessee, had a discharge of 61,500 cfs near Stearns, Ky., which was about 12 percent less and had a stage about 2.2 feet less than the maximum during the period of gaging-station operation (1942-56). The peak stage of 36.25 feet was far below that of 52.9 feet in March 1929.

The flood was one of the greatest known in the Cumberland River basin, yet the discharge in the Cumberland River at Rowena, Ky., during the entire flood period was relatively small. The flow in the river at Rowena is regulated by Lake Cumberland (final closure of the dam was made August 1950) and the daily mean discharge during the period January 29-February 1 ranged from about 10,000-24,000 cfs, whereas the peak discharge during the flood of 1946 was 162,000 cfs.

The greatest daily increase in contents in Lake Cumberland was 282,500 cfs-days on January 29. The reservoir cannot be credited with reducing the flow at Rowena by an amount equal to the increase in storage at any given time.

Under natural uncontrolled stream conditions the rate of discharge at Rowena would not have been equivalent to the rate of increase that occurred in reservoir contents. The composite effect of the normal lag pattern of the individual streams, in such a long basin, could be considerably different than that of the various streams discharging directly into the reservoir.

A synthetic discharge hydrograph of unregulated discharge could be computed by flood routing studies, but that is beyond the scope of this report.

Figure 11 shows the great difference between the net inflow to the

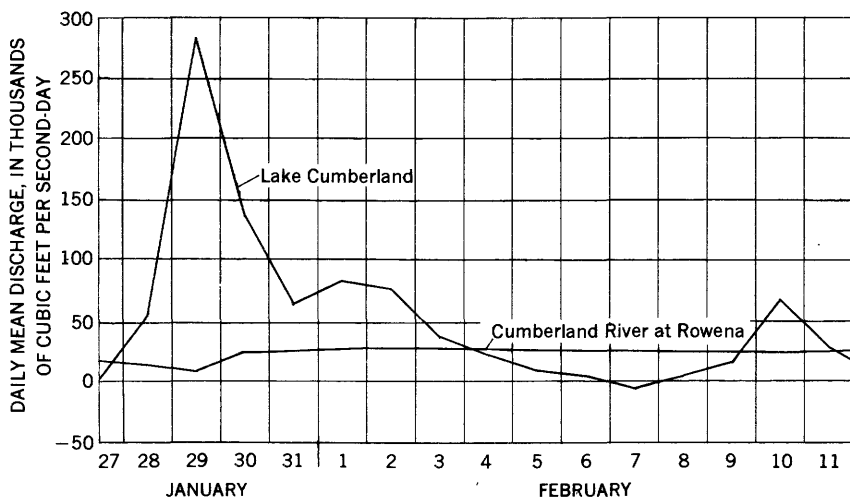


FIGURE 11.—Hydrograph of daily mean discharge of the Cumberland River at Rowena, Ky., and net inflow to Lake Cumberland.

reservoir and the discharge of the Cumberland River below the dam.

The peak discharge (22,600 cfs) in the Wolf River near Byrdstown, Tenn., was 60 percent greater than any other peak since at least 1943. The discharges of the Wolf River and the Obey River were regulated by Dale Hollow Reservoir near Celina, Tenn., and the peak discharge was modified to 6,160 cfs on January 29 below the reservoir.

TENNESSEE RIVER BASIN

In the Tennessee River basin in Virginia and Tennessee the flooding was most intense in the unregulated reaches in the Clinch and Holston River basins and in the small streams originating on the western slopes of the Great Smoky Mountains.

New maximums for the period of gaging-station record (33 and 39 years) occurred in the Clinch River above Tazewell, Tenn., and the Tellico River at Tellico Plains, Tenn. At Chattanooga, Tenn., the Tennessee River reached flood stage for the first time since 1948, and many families were evacuated from the low-lying sections of the city.

Although an unusually large amount of runoff was produced by the continued heavy rains most of the crests were relatively moderate.

More than 300 families were evacuated at Sevierville, Tenn., as floodwaters from the Little Pigeon River rose to a depth of 3 feet in the residential and business districts. Floods on the Elk River at Fayetteville and the Duck River at Columbia and at Shelbyville, Tenn., forced evacuation of many families from their homes. Discharges were not determined at these points. Lowlands and roads were flooded at scattered points across Tennessee except on the Cumberland Plateau.

A noteworthy feature of the floods was the large volume of runoff produced by the continued heavy rains. Inflow into reservoirs on Tennessee River tributaries was greater than at any time since the dams were built. The maximum volume stored in the reservoirs above Chattanooga was 3,700,000 acre-feet and the total in the entire Tennessee River reservoir system was 6,700,000 acre-feet.

Tennessee Valley Authority officials estimated that if the reservoirs had not been built the peak stage at Chattanooga would have been about 54 feet (412,000 cfs) on February 3, whereas the actual crest was 32.24 feet (208,000 cfs) on February 2. This flood under natural conditions would have been the second highest ever known at Chattanooga, being exceeded only by that of 1867.

Figure 12 shows the volume of water stored in the reservoir system during the flood period. Each graph shows the total storage in all reservoirs named below it. The vertical difference between any two graphs represents the storage in the reservoir or group of reservoirs indicated between them. For example: on February 10, the total storage in Norris Reservoir and the reservoir system upstream from it was 1,530,000 cfs-days, and that in Norris Reservoir alone was 390,000 (1,530,000-1,140,000) cfs-days.

FLOOD DAMAGE

The floods of January-February 1957 in southeastern Kentucky and adjacent areas in West Virginia, Virginia, and Tennessee caused record damage. Nine lives were lost in Kentucky.

Because the amounts of flood damage are frequently used as guides in the study of flood-control economics, and because some flood damage statistics are a measure of the relative magnitude of inundation, especially in urban areas, it has been the practice of the Geological Survey to compile available damage statistics in their special reports on floods. On-the-spot surveys of flood damage are not made by the Geological Survey.

Personnel of the Corps of Engineers from the Huntington, W. Va., Louisville, Ky., and Nashville, Tenn., district offices began collecting data on flood damage soon after the floodwaters receded (tables 1-5). The data in the tables are published as furnished by the Corps of

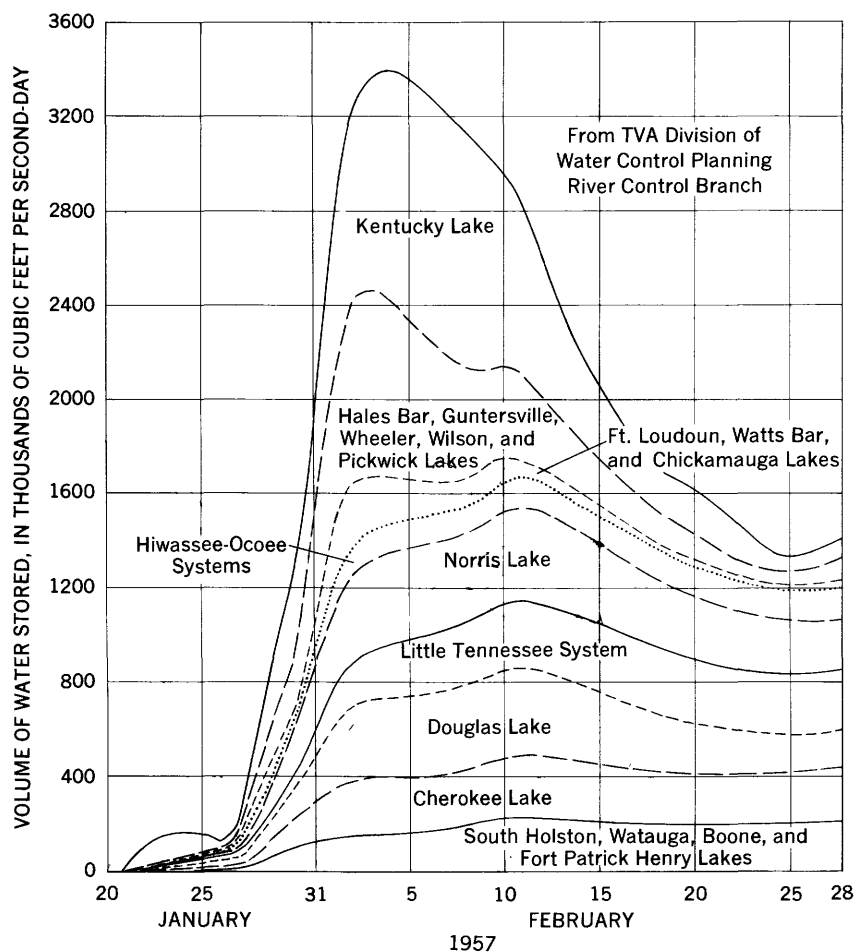


FIGURE 12.—Volume of water stored in the TVA reservoir system. Each line shows the total storage in all reservoir lakes named below it.

Engineers; except the breakdowns by stream reach or location were combined in some cases to permit shorter tables. In some instances, stage-damage curves that incorporated all direct damages in one total were used. These curves were constructed from data gathered in earlier floods but were checked and adjusted as necessary immediately following the January-February 1957 flood.

Table 1 lists direct damage to all improvements including dwellings, outbuildings, farm buildings, commercial and industrial property, and schools and churches in the Big Sandy River basin.

Flood losses in the Licking, Kentucky, and Green River basins shown in table 2 include the damage or destruction of real and personal property in urban and rural areas, crop and noncrop damage,

interruption of business activities, and damage to highways, railroads, and utilities. Under urban damage the following building units were flooded or destroyed:

	Residential	Public	Industrial and commercial	Other
Kentucky River Basin-----	1, 559	60	490	54
Green River basin-----	57	4	2	9
Total-----	1, 616	64	492	63

TABLE 1.—*Damage in the Big Sandy River basin, Kentucky, Virginia, and West Virginia*

[Compiled by the Corps of Engineers, Dept. of the Army, Huntington, W. Va., district]

Reach or location	Damage		
	Kentucky	Virginia	West Virginia
Headwater areas upstream from Fishtrap, Ky., on Levisa Fork and Elkhorn City, Ky., on Russell Fork:			
Grundy, Va.-----		\$800, 000	
Levisa Fork upstream from Fishtrap, Ky.-----	\$75, 000	690, 000	
Haysi, Va.-----		200, 000	
Pound, Va.-----		1, 085, 000	
Russell Fork upstream from Elkhorn City, Ky.-----		130, 000	
Railroads, Levisa Fork-----	92, 000	158, 000	
Highways, Levisa Fork-----	200, 000	300, 000	
Railroads, Russell Fork-----		0	
Highways, Russell Fork-----		60, 000	
Utilities, Levisa Fork-----		70, 000	
Utilities, Russell Fork-----		5, 000	
Levisa Fork and major tributaries downstream from Fishtrap, Ky., and Elkhorn City, Ky.:			
Levisa Fork, Fishtrap to Millard, Ky.-----	60, 000		
Russell Fork, Elkhorn City to Millard, Ky.-----	350, 000		
Millard to Pikeville, Ky.-----	2, 500, 000		
Pikeville, Ky. ¹ -----	8, 500, 000		
Pikeville to Allen, Ky.-----	3, 500, 000		
Allen, Ky.-----	400, 000		
Beaver Creek above mouth, including Martin, Ky.-----	650, 000		
Allen to Prestonsburg, Ky.-----	370, 000		
Prestonsburg, Ky. ¹ -----	2, 100, 000		
Prestonsburg to Johns Creek-----	50, 000		
Johns Creek to Paintsville, Ky.-----	70, 000		
Paintsville, Ky. ¹ -----	1, 000, 000		
Paintsville to Louisa, Ky.-----	42, 000		
Railroads-----	250, 000		
Highways-----	8, 000, 000		
Utilities-----	1, 000, 000		
Tug Fork and major tributaries:			
Tug Fork upstream from Welch, W. Va.-----			\$100, 000
Elkhorn Creek upstream from Welch, W. Va.-----			150, 000
Welch, W. Va. ¹ -----			325, 000
Dry Fork upstream from mouth-----			300, 000
Welch to Matewan, W. Va.-----	75, 000		450, 000
Matewan, W. Va.-----			850, 000
Matewan to Williamson, W. Va.-----	104, 000		196, 000
Pond Creek above mouth, including South Williamson, Ky.-----	146, 000		
Williamson, W. Va. ¹ -----			1, 250, 000
Rural reaches along Tug Fork, Williamson to Crum, W. Va.-----	300, 000		150, 000
Chattaroy, W. Va.-----			70, 000
Nolan, W. Va.-----			6, 500
Naugatuck, W. Va.-----			8, 000
Marrowbone Creek upstream from mouth-----			21, 000
Kermit, W. Va.-----			3, 000
Crum, W. Va.-----			6, 500
Crum to Fort Gay, W. Va.-----	30, 000		25, 000
Railroads, Tug Fork basin-----	100, 00		300, 000
Highways, Tug Fork basin-----	300, 000		400, 000
Utilities, Tug Fork basin-----	125, 000		200, 000
Total-----	30, 389, 000	3, 498, 000	4, 811, 000
Grand total-----			38, 698, 000

¹ Includes damage to utilities.

TABLE 2.—*Damage in the Licking, Kentucky, and Green River basins, in Kentucky*

[Compiled by the Corps of Engineers, Dept. of the Army, Louisville, Ky., district except as noted]

Stream	Tangible damage		
	Urban	Rural	Total
Licking River basin:			
Licking River.....	\$4, 000	\$36, 000	\$40, 000
Kentucky River basin:			
North Fork Kentucky River.....	8, 212, 000	3, 095, 000	11, 307, 000
Middle Fork Kentucky River.....	563, 000	1, 460, 000	2, 023, 000
South Fork Kentucky River.....	340, 000	220, 000	560, 000
Red River.....	0	34, 000	34, 000
Kentucky River main stem below North and South Forks.....	474, 000	572, 000	1, 046, 000
Railroads.....		1 473, 303	1 473, 303
Total for basin.....	9, 589, 000	5, 854, 303	15, 443, 303
Green River basin:			
Green River.....	5, 400	684, 000	689, 400
Barren River.....	5, 000	64, 000	69, 000
Rough River.....	0	30, 000	30, 000
Total for basin.....	10, 400	778, 000	788, 400
Grand Total.....	9, 603, 400	6, 668, 303	16, 271, 703

¹ Furnished by Louisville & Nashville Railroad.

The flood occurred during the winter—the low point of the crop season—and relatively light crop losses occurred in the inundated areas. Noncrop losses in rural areas were many times greater and consisted primarily of damage to buildings, building contents, lands, and stored crops. Land inundation amounted to 8,000 acres in the Licking River basin, 70,850 acres in Kentucky River basin, and 157,100 acres in Green River basin.

Rural damage in the Kentucky River basin (table 2) included damage to highways, roads, and bridges, \$662,000; to coal mines and business losses in coal mining operations, \$1,015,000, with 600–700 mines affected; and to suspension footbridges over streams. There were 96 suspension footbridges destroyed and replacement of these bridges cost approximately \$240,000. Railroad trackage (single) totaling 142 miles was damaged to some degree. In the Green River basin, highway damage was assessed at \$119,000 and railroad damage at \$31,000.

Table 3 summarizes damages of noncrop losses from inundation of 68,000 acres of farm land along the Ohio River, 76,700 acres in Wabash River basin, and 9,100 acres in Saline River basin.

In areas represented by table 4, acres of farm land inundated and corresponding damages in the reach from the mouth of the Cumber-

TABLE 3.—*Rural damage along Ohio River main stem and in Wabash and Saline River basins, Ohio, Indiana, Illinois, and Kentucky*

[Compiled by Corps of Engineers, Dept. of the Army, Louisville, Ky., district. Urban damage along Ohio River and in Wabash and Saline River basins was negligible]

	Rural damage			
	Ohio	Indiana	Illinois	Kentucky
Along Ohio River main stem, Neville, Ohio, to mouth.....	\$1,000	\$79,000	\$102,000	\$108,000
Wabash River basin.....	0	500	89,500	0
Saline River basin.....	0	0	37,000	0
Total.....	1,000	79,500	228,500	180,000
Grand total.....				489,000

land River to Wolf Creek dam were divided between Kentucky and Tennessee approximately as follows:

	<i>Flooded land (acres)</i>	<i>Damages</i>
Kentucky.....	66,700	\$86,720
Tennessee.....	46,600	60,580
Total.....	113,300	147,300

Damage figures for the upper Tennessee River basin (table 5) are not complete as damage was determined for a study of possible protection works at the towns listed and does not include rural damage. Red Cross expenditures of approximately \$50,000 in Tazewell County, Va., are not included in the table. The major part of this went to families in Richlands, Doran, and Raven.

Table 6 summarizes all damages by river basin and by State.

TABLE 4.—*Damage in the Cumberland River basin in Kentucky and Tennessee*

[Compiled by the Corps of Engineers, Dept. of the Army, Nashville, Tenn., district except as noted. Urban damage includes damage to residential, commercial, industrial, and publicly-owned property including streets. Rural damage includes damages to farm houses and other buildings, farm roads, and pasture, and losses of livestock and harvested crops]

Urban:	<i>Location or stream reach</i>	<i>Damage</i>
Cumberland Ky.....		\$819,000
Blair, Ky.....		59,000
Harlan, Ky.....		400
Pineville, Ky. (Protected area).....		12,000
Pineville, Ky. (Outside protected area).....		55,000
Middlesboro, Ky.....		1,000
Barbourville, Ky.....		1,291,800
Heidrick, Ky.....		46,800
Williamsburg, Ky.....		67,600
Corbin, Ky.....		2,032,400
Nashville, Tenn.....		64,000
Clarksville, Tenn.....		7,000
Eddyville, Ky.....		23,000
Kuttawa, Ky.....		500
Total urban damage.....		4,479,500

TABLE 4.—*Damage in the Cumberland River basin in Kentucky and Tennessee—Con.*

Rural:	Location or stream reach	Damage
	Wolf Creek Dam to end of flood plain on Poor Fork.....	253, 400
	Mouth of Cumberland River to Wolf Creek Dam.....	147, 300
	Total rural damage.....	400, 700
Highways in Kentucky, State maintained.....		68, 600
Railroad, Louisville & Nashville:		
	Cumberland Valley Diversion.....	¹ 84, 754
	Knoxville and Atlanta Division.....	¹ 20, 707
	Total railroad damage.....	105, 461
Federal loss of closure beam, lock at Old Hickory dam, Tenn.....		20, 000
Grand total.....		5, 074, 261

¹ Data furnished by Louisville & Nashville Railroad.TABLE 5.—*Damage at selected locations in upper Tennessee River basin, in Virginia and Tennessee*

[Compiled by Corps of Engineers, Dept. of the Army, Nashville, Tenn., district. Based on an investigation of a few points of interest and not intended as a complete damage survey]

Clinch River:	Location	Damage	
		Virginia	Tennessee
	Richlands, Va.....	\$189, 700	-----
	Doran, Va.....	70, 300	-----
	Raven, Va.....	44, 900	-----
	Cleveland, Va.....	64, 500	-----
	Clinchport, Va.....	121, 000	-----
	Fort Blackmore, Va. (on Stony Creek).....	12, 400	-----
	Lake City, Tenn. (on Coal Creek).....	-----	\$2, 000
Powell River:			
	Big Stone Gap, Va.....	3, 500	-----
	Total.....	506, 300	2, 000
Grand total.....			508, 300

TABLE 6.—*Summary of damage, by stream basin and by State, flood of January–February 1957*

	Flood damage, in dollars							Total
	Kentucky	Virginia	West Virginia	Ohio	Indiana	Illinois	Tennessee	
Big Sandy River.....	30, 389, 000	3, 498, 000	4, 811, 000	-----	-----	-----	-----	38, 698, 000
Licking River.....	40, 000	-----	-----	-----	-----	-----	-----	40, 000
Kentucky River.....	15, 443, 303	-----	-----	-----	-----	-----	-----	15, 443, 303
Green River.....	788, 400	-----	-----	-----	-----	-----	-----	788, 400
Along Ohio River main stem.....	180, 000	-----	-----	1, 000	79, 000	102, 000	-----	362, 000
Wabash River.....	-----	-----	-----	-----	500	89, 500	-----	90, 000
Saline River.....	-----	-----	-----	-----	-----	37, 000	-----	37, 000
Cumberland River.....	5, 035, 681	-----	-----	-----	-----	-----	151, 580	5, 187, 261
Upper Tennessee River ¹	-----	506, 300	-----	-----	-----	-----	2, 000	508, 300
Total.....	51, 876, 384	4, 004, 300	4, 811, 000	1, 000	79, 500	228, 500	153, 580	61, 154, 264

¹ Includes damage at only a few selected locations. See table 5.

Expenditures by the American Red Cross in southeastern Kentucky during and after the flood are tabulated by counties in table 7. Large expenditures were made in several counties. Listed below are the major river basins and counties in which all, or a greater part, of the expenditures were made:

<i>River basin</i>	<i>Counties</i>
Big Sandy-----	Floyd, Johnson, and Pike
Kentucky-----	Breathitt, Clay, Leslie, Letcher, and Perry
Cumberland-----	Bell, Corbin (city of), Harlan, and Knox

TABLE 7.—*Expenditures by American Red Cross in the southeastern Kentucky flood of January–February 1957*

[Expenditures are listed by counties, except those for the city of Corbin, which includes expenditures in small adjacent areas in Whitley, Knox, and Laurel Counties]

County	Mass care and emergency	Rehabilitation	Total
Bell-----	\$10,750.19	\$1,145.59	\$11,895.78
Breathitt-----	52,339.76	22,550.91	74,940.67
Clay-----	15,036.76	14,231.71	29,268.47
Corbin, City of-----	43,932.59	60,184.89	104,117.48
Estill-----	2,365.22	652.30	3,017.52
Floyd-----	153,118.13	298,422.35	451,540.48
Harlan-----	17,934.84	26,916.54	44,851.38
Johnson-----	50,014.40	47,865.72	97,880.12
Knott-----	335.98	0	335.98
Knox-----	95,961.67	16,062.27	112,023.94
Lee-----	1,570.21	0	1,570.21
Leslie-----	35,493.37	74,030.86	109,514.23
Letcher-----	25,200.39	23,986.04	49,186.43
Martin-----	3,854.55	0	3,854.55
Owsley-----	934.35	0	934.35
Perry-----	190,190.39	169,366.32	359,556.71
Pike-----	224,688.36	792,170.00	1,016,858.36
Whitley-----	4,796.54	1,305.29	6,101.83
Total-----	928,557.70	1,548,890.79	2,477,448.49

DETERMINATION OF FLOOD DISCHARGES

The operation of a stream-gaging station consists principally of the measurement of stage and discharge to define a stage-discharge relation from which discharge can be calculated for a given stage. The general method of determining discharge at gaging stations involves computing the stage-discharge relation from current-meter measurements of discharge at stages varying from low to high water and applying this relation to the records of stage. Short extensions of the stage-discharge relation curve are made by logarithmic plotting, from velocity-area studies, or by use of other measurable hydraulic factors.

In the area of major flooding (fig. 3), most of the stream channels are rocky or have numerous rock ledges, and thus are subject to relatively small amounts of scour or fill. At a few gaging stations in this report, fall (or slope) in the reach between two gages was a factor in establishing the relation between stage and discharge at medium and high stages and was considered in computing the discharge data.

During major floods it is often impossible to obtain current-meter measurements because of insufficient notice of flood stage on rapidly changing streams, impassable roads, heavy floating debris, or destruction of structures from which flood measurements are made. Because of this, the stage-discharge relation at a number of gaging stations affected by the flood was extended to peak flow by indirect measurements such as: Computation of flow over roadways or through contracted openings, slope-area measurement, or a combination of these methods. At several miscellaneous sites where high runoff occurred, the peak flow was also determined by indirect measurement.

STAGES AND DISCHARGES AT STREAM-GAGING STATIONS

EXPLANATION OF DATA

The purpose of this report is to present detailed information regarding stages and discharges of streams during the floods of January–February 1957. Much of the information is in addition to the records usually published in the annual series of Surface Water Supply Papers. The data are presented in sufficient detail to be used in studies relative to flood-control measures and watershed development.

The systematic collection of data at a stream-gaging station includes a record of stage, measurements of discharge, and any other general information pertinent to the determination of the daily flow of the stream at the gaging station. The record of stage is obtained either from periodic readings of some type of nonrecording gage or from an automatic water-stage-recorder installation, which provides a continuous graphic record of stage. Measurements of discharge are generally made by current meter.

The last section (Streamflow data) of this report consists, in general, of a description of the gaging station, a table showing the daily mean discharges for 2 months, January and February 1957, and a table of stages and discharges at indicated times for many of the stations during the flood period in late January and early February 1957.

The description of the gaging station gives information of location, datum, type of gage, and size of drainage area. The method of determining the stage and the definition of the stage-discharge relation throughout the ranges of stage experienced during the 1957 floods and the stage-discharge relation of the previously recorded maximum flood are described. The maximum stage and discharge are given for the January–February period and for the period of previous record. Information regarding floods outside the period of gaging-station record also is given in as much detail as is available.

Remarks on cooperation, regulation and diversion, and other pertinent information are included where applicable.

The table of daily mean discharges is presented for January and February 1957. This period was chosen so as to show the relation of the flood discharges to the discharges of the preceding and the following periods. The table also shows the monthly mean discharge and the volume of runoff, in inches.

The table of stages and discharges at indicated times is presented generally for the period starting January 27 until the recession reached the point where sufficient definition is furnished by the table of daily mean discharges and is not given for most stations outside of the areas flooded.

The stages at most stations were obtained from records of continuous water-stage recorders. If the water-stage recorder was not functioning properly, the interrupted stage graph was completed on the basis of a floodmark or supplemental gage readings, or by comparison with records on the same stream or nearby streams. For stations at which the records of stage consisted of one or more gage reading each day, a stage graph was drawn from these readings, from floodmarks, and by comparison with nearby stations. Details of the methods used in defining the stage record are given in the section of the description concerning the gage-height record.

The stations are numbered and arranged in downstream order from headwater to mouth, with stations on tributaries inserted in corresponding order, and following the order in which the tributaries enter the main stream. The reference number preceding the name of the gaging station is the same as that used on figure 3 and will aid in identifying the site.

SUMMARY OF FLOOD STAGES AND DISCHARGES

The maximum flood flows at stream-gaging stations and other sites on streams in the area covered by this report are summarized in table 8. The reference number is the same as that designating the site on figure 3 and will aid in identifying the location at which the discharge was determined.

In table 8, the first column under maximum floods shows the period of known floods prior to January 1957. This period does not necessarily correspond to that in which continuous records of discharge were obtained, and in some cases it extends back to an earlier date. More than one period of record are shown for some stations. Time periods are shown when they can be associated with a maximum stage even though the corresponding discharge is not known—a second period of known floods is then given in which the maximum discharge and stage are both known.

TABLE 8.—Summary of flood stages and discharges, southeastern Kentucky and adjacent areas

Station	Perma- nent station No.	Stream and place of determination	Drainage area (sq. mi.)	Maximum floods					
				Prior to January 1957		Jan.-Feb. 1957	Gage height (ft)	Discharge	
				Period	Year			Cfs	Ratio to Q _{2.33}
Kanawha River basin									
1	Part 3	Walker Creek at Bane, Va.	305	1878	1878	1878	23.5	(1)	
				1938-56	1949				14.44
				1908-16, 1938-56	1916				16.50
				1927-56	1940				13.0
				1944-52	1946				12.55
				1946-56	1948				27.50
				1950-56	1955				226,000
				1951-56	1955				57,800
2	1730	Wolf Creek near Narrows, Va.	223	1908-16, 1938-56	1916	Jan. 29	13.0	11,000	
				1927-56	1940				12.55
				1944-52	1946				27.50
				1946-56	1948				12.59
				1950-56	1955				18.36
				1951-56	1955				19.6
				1954	1954				7,900
				1955	1955				2,720
3	1755	New River at Glenlyn, Va.	3,768	1908-16, 1938-56	1916	Jan. 29	13.86	14,900	
				1927-56	1940				12.55
				1944-52	1946				27.50
				1946-56	1948				12.59
				1950-56	1955				18.36
				1951-56	1955				19.6
				1954	1954				7,900
				1955	1955				2,720
4	1765	Bluestone River near Spanishburg, W. Va.	199	1908-16, 1938-56	1916	Jan. 29	13.0	11,000	
				1927-56	1940				12.55
				1944-52	1946				27.50
				1946-56	1948				12.59
				1950-56	1955				18.36
				1951-56	1955				19.6
				1954	1954				7,900
				1955	1955				2,720
5	1785	Camp Creek near Camp Creek, W. Va.	32.0	1908-16, 1938-56	1916	Jan. 29	13.86	14,900	
				1927-56	1940				12.55
				1944-52	1946				27.50
				1946-56	1948				12.59
				1950-56	1955				18.36
				1951-56	1955				19.6
				1954	1954				7,900
				1955	1955				2,720
6	1790	Bluestone River near Pipestem, W. Va.	363	1908-16, 1938-56	1916	Jan. 29	13.86	14,900	
				1927-56	1940				12.55
				1944-52	1946				27.50
				1946-56	1948				12.59
				1950-56	1955				18.36
				1951-56	1955				19.6
				1954	1954				7,900
				1955	1955				2,720
7	1850	Piney Creek at Raleigh, W. Va.	52.2	1908-16, 1938-56	1916	Jan. 29	13.86	14,900	
				1927-56	1940				12.55
				1944-52	1946				27.50
				1946-56	1948				12.59
				1950-56	1955				18.36
				1951-56	1955				19.6
				1954	1954				7,900
				1955	1955				2,720
8	1955	Elk River at Sutton, W. Va.	543	1908-16, 1938-56	1916	Jan. 29	13.86	14,900	
				1927-56	1940				12.55
				1944-52	1946				27.50
				1946-56	1948				12.59
				1950-56	1955				18.36
				1951-56	1955				19.6
				1954	1954				7,900
				1955	1955				2,720
Guyandot River basin									
9	2030	Guyandot River at Man, W. Va.	762	1928-56	1934	Jan. 29	19.11	340,000	
				1907-1915-22	1907				22.25
10	2040	Guyandot River at Branchland, W. Va.	1,226	1928-56	1918	Jan. 30	44	43,500	
				1928-56	1955				42.57
							41.88	40,400	

Big Sandy River basin

11	2074	Prater Creek at Vansant, Va.	19.8	1951-56	1952	Jan. 29	9.45	1,500	---
12	2075	Levisa Fork near Grundy, Va.	235	1941-56	1946	Jan. 29	14.5	4,550	---
13	2080	Levisa Fork at Fishtrap, Ky.	386	1938-56	1946	Jan. 29	19.06	22,000	3.3
14	2085	Russell Fork at Haysi, Va.	286	1926-56	1929	Jan. 29	22.82	23,000	2.3
15	---	Potcamp Creek near Pound, Va.	1.5	---	---	Jan. 29	33.9	33,000	---
16	---	Pound River at Pound, Va.	61	---	---	Jan. 29	18.5	34,500	4.0
17	2090	Pound River near Haysi, Va.	212	1926-56	---	Jan. 29	23.17	46,000	---
18	2098	Russell Fork at Elkhorn City, Ky.	555	---	1929	do	(1)	15,300	---
19	2095	Levisa Fork at Pikeville, Ky.	1,237	1862-56	1946	Jan. 29	18.65	30,000	2.9
20	---	Levisa Fork at Prestonsburg, Ky.	1,700	1862	1862	do	52	27,300	2.7
21	2100	Johns Creek near Meta, Ky.	55.7	1937-56	1946	Jan. 30	42.90	50,300	---
22	2110	Dewey Reservoir near Van Lear, Ky.	207	1941-56	1955	do	52.72	85,500	2.4
23	2115	Johns Creek near Van Lear, Ky.	208	1950-56	1955	Jan. 29	48.78	69,700	1.6
24	2120	Paint Creek at Staffordsville, Ky.	101	1939-56	1946	Jan. 29	14.28	4,480	---
25	2125	Levisa Fork at Paintsville, Ky.	2,143	1862	1862	Feb. 3	14.54	4,680	1.9
26	2130	Tug Fork at Litwar, W. Va.	502	1915-16, 1928-56	1935	Jan. 30	4,682.30	81.4	---
27	2135	Panther Creek near Panther, W. Va.	30.8	1946-56	1955	Feb. 3	4,670.03	49.3	---
28	2140	Tug Fork near Kermit, W. Va.	1,185	1934-56	1955	Jan. 14	26.50	8,350	---
29	2150	Big Sandy River at Louisa, Ky.	3,870	1938-56	(9)	---	27.6	15,500	---
30	2155	Blaine Creek at Yatesville, Ky.	217	1915-18, 1938-56	1939	Jan. 30	16.05	4,320	.7

Little Sandy River basin

31	2165	Little Sandy River near Grayson, Ky.	398	1938-56	1950	Jan. 23	27.53	24,500	---
							17.09	6,400	.6

See footnotes at end of table.

TABLE 8.—Summary of flood stages and discharges, southeastern Kentucky and adjacent areas—Continued

Station	Perma- nent station No.	Stream and place of determination	Drainage area (sq. mi.)	Maximum floods					
				Prior to January 1957		Jan.-Feb. 1957	Gage height (ft)	Discharge	
				Period	Year			Cfs	Ratio to Q _{2.33}
Tygarts Creek basin									
32	2170	Tygarts Creek near Greenup, Ky.	241	1940-56	1948	Jan. 23	20.35 13.99	12,800 4,000	.5
Licking River basin									
33	2485	Licking River near Salyersville, Ky.	140	1938-56	1939	Jan. 30	25.4 20.79	14,300 5,880	1.4
Kentucky River basin									
34	2773	North Fork Kentucky River at Whitesburg, Ky.	66.4	1927	1927	Jan. 29	34	7,730	1.9
35	2775	North Fork Kentucky River at Hazard, Ky.	466	1940-56	1951	Jan. 29	27.2 37.54 3.01	28,100 47,800 375	2.8
36	2780	Bear Branch near Noble, Ky.	2.21	1955-56	1956	Jan. 29	3.20	375	1.2
37	2785	Troublesome Creek at Noble, Ky.	177	1939	1939	Jan. 29	29	15,900	1.7
38	2800	North Fork Kentucky River at Jackson, Ky.	1,101	1949-56	1951	Jan. 29	24.78 23.35 43.10	13,500 46,800 53,500	1.7
39	-----	North Fork Kentucky River near Airedale, Ky.	1,294	1928-31, 1936-56	1939	Jan. 30	40.41 45.6	53,500	1.7
40	-----	Middle Fork Kentucky River near Hyden, Ky.	226	1929-31, 1939-42	1939	Jan. 30	28.30 47.14	24,200	1.5
41	2809	Middle Fork Kentucky River at Buckhorn, Ky.	420	-----	1942	Jan. 29	55,000	67,500	6.8
42	2810	Middle Fork Kentucky River at Tallega, Ky.	537	1939	1939	Jan. 29	38.1	82,300	5.3
43	-----	Red Bird River near Big Creek, Ky.	117	1930-32, 1939-56	1951	Jan. 29	40.50	35,300	2.9
				1947	1947	Jan. 30	43.33	52,700	2.9
				-----	-----	Jan. 29	-----	944,000	8.1

[illegible]

See footnotes at end of table.

TABLE 8.—Summary of flood stages and discharges, southeastern Kentucky and adjacent areas—Continued

Station	Perma- nent station No.	Stream and place of determination	Drainage area (sq. mi.)	Maximum floods					
				Prior to January 1957		Jan.-Feb. 1957	Gage height (ft)	Discharge	
				Period	Year			Cfs	Ratio to Q _{2.5}
Green River basin									
61	3045	McGills Creek near McKinney, Ky	2.19	1951-56	1952	Jan. 22	5.40	950	.6
62	3050	Green River near McKinney, Ky	22.4	1951-56	1952	Jan. 22	2.80	176	1.0
63	3055	Green River near Mount Salem, Ky	36.3	1953-56	1955	Jan. 22	8.93	10,400	1.0
64	3065	Green River at Greensburg, Ky	742	1913 1939-56	1913 1952	Jan. 22	9.40	5,300	1.2
65	3070	Russell Creek near Columbia, Ky	186	1939-56	1952	Jan. 29	7.95	(1)	1.2
66	3075	South Fork Little Barren River at Edmonton, Ky	18.1	1941-56	1949	Jan. 30	36.2	47,000	1.1
67	3085	Green River at Mumfordsville, Ky	1,790	1913 1915-22, 1927-31, 1936-56	1913 1937	Jan. 22	33.50	21,500	1.1
68	3125	Barren River near Pageville, Ky	14 531	1939-56	1952	Jan. 29	23.8	15,900	.9
69	3135	West Bays Fork at Scottsville, Ky	7.52	1950-56	1952	Jan. 22	10.00	2,140	1.0
70	3140	Drakes Creek near Alvaton, Ky	14 478	1939-56	1948	Jan. 22	7.91	1,510	1.0
71	3145	Barren River at Bowling Green, Ky	14 1,848	1913-56 1938-56	1913 1952	Jan. 22	54.0	87,000	1.0
						Feb. 1	50.40	72,200	1.0
						Jan. 30	36.94	31,600	1.0
						Jan. 30	27.26	70,000	2.3
						Jan. 29	42.80	42,800	2.3
						Jan. 29	6.09	1,640	1.9
						Jan. 29	5.64	1,510	1.9
						Jan. 29	30.70	30,900	1.9
						Jan. 29	31.54	34,300	1.9
						Jan. 30	52.2	(1)	1.7
						Jan. 30	44.63	77,400	1.7
						Jan. 31	42.07	66,100	1.7
Cumberland River basin									
72	4005	Poor Fork at Cumberland, Ky	82.3	1927 1940-56	1927 1946	Jan. 29	10.2	12,000	2.9
						Jan. 29	9.65	7,500	2.9
						Jan. 29	11.50	11,800	2.9

73	4010	Cumberland River near Harlan, Ky.	1946	Jan. 29	22.81	37,900	2.2
74	4020	Yellow Creek near Middlesboro, Ky.	1946	Jan. 29	19.89	31,000	1.1
75	---	Cumberland River at Pineville, Ky.	1931	Jan. 29	20.92	6,160	2.0
76	---	Straight Creek at Jensen, Ky.	1946	Jan. 29	15.31	3,980	4.9
77	4030	Cumberland River near Pineville, Ky.	1946	Jan. 29	17.76	23,400	3.0
78	4035	Cumberland River at Barbourville, Ky.	1946	Jan. 29	32.62	45,000	1.5
79	4040	Cumberland River at Williamsburg, Ky.	1946	Jan. 30	49.31	57,900	1.8
80	4045	Cumberland River at Cumberland Falls, Ky.	1946	Jan. 31	47.35	54,900	1.6
81	4050	Laurel River at Corbin, Ky.	1946	Jan. 29	42.8	(1)	1.4
82	4060	Wood Creek near London, Ky.	1946	Jan. 30	40.25	43,000	1.2
83	4065	Rockcastle River at Billows, Ky.	1946	Jan. 30	32.28	(1)	1.2
84	4071	Cane Branch near Parkers Lake, Ky.	1946	Jan. 31	34.2	37,200	1.8
85	4073	Helton Branch at Greenwood, Ky.	1946	Jan. 29	28.85	49,700	1.6
86	4075	Buck Creek near Shopville, Ky.	1946	Jan. 29	33.78	59,600	1.4
87	4085	New River at New River, Tenn.	1946	Jan. 29	13.5	57,400	1.8
88	4095	Clear Fork near Robbins, Tenn.	1946	Jan. 29	14.55	(1)	1.2
89	4105	South Fork Cumberland River near Stearns, Ky.	1946	Jan. 29	19	(1)	1.2
90	4125	Pittman Creek at Somerset, Ky.	1946	Jan. 29	19.04	14,400	1.8
91	4135	Lake Cumberland near Jamestown, Ky.	1946	Jan. 29	17.30	16,200	1.4
92	4140	Cumberland River near Rowena, Ky.	1946	Jan. 29	6.23	46,800	1.4
93	4145	East Fork Obey River near Jamestown, Ky.	1946	Jan. 29	4.87	306	1.4

See footnotes at end of table.

TABLE 8.—Summary of flood stages and discharges, southeastern Kentucky and adjacent areas—Continued

Station	Perma- nent station No.	Stream and place of determination	Drainage area (sq. mi.)	Maximum floods					
				Prior to January 1957		Jan.-Feb. 1957	Gage height (ft)	Discharge	
				Period	Year			Cfs	Ratio to Q _{1.5}
Cumberland River basin—Continued									
94	4150	West Fork Obey River near Alpine, Tenn.	14 115	1942-56	1955	Jan. 29	16.30	15,100	1.8
95	4160	Wolf River near Byrdstown, Tenn.	105	1943-56	1955	Jan. 29	12.65	9,510	
96	4165	Dale Hollow Reservoir near Celina, Tenn.	935	1943-56	1950	Jan. 29	9.06	14,100	3.2
97		Obey River below Dale Hollow Dam, Tenn.	935	1938-56	1939	Feb. 10, 11.	10.84	22,600	
98	4175	Cumberland River at Celina, Tenn.	7,320	1826-1956	1826	Jan. 29	4 657.8	5 1,540	
				1922-56	1926	Jan. 29	4 650.68	5 1,340	
					1926	Jan. 29	19 43.40	41,400	
						Jan. 29	21.90	7 6,160	
						Jan. 29	59.2	(¹)	
						Jan. 29	145.000	145,000	
						Jan. 29	57.25	7 66,500	
						Jan. 29	30.44		
Tennessee River basin									
99		Little Pigeon River above West Fork Little Pigeon River at Sevier-ville, Tenn.	201	1954-56	1953	Jan. 31	13.76	10,800	1.3
100		West Fork Little Pigeon River near Pigeon Forge, Tenn.	76.2	1946-49, 1954-56	1947	Jan. 31	15.59	12,800	
101	4700	Little Pigeon River at Sevierville, Tenn.	353	1875-1956	1875	Jan. 31	10.30	5,640	1.4
102	4715	South Fork Holston River at Riverside near Chilhowie, Va.	76.1	1920-56	1928	Feb. 1	18	(¹)	
103	4725	Beaverdam Creek at Damascus, Va.	56.0	1920-31, 1942-56	1923	Feb. 1	15.4	32,000	1.9
104	4730	South Fork Holston River at Vestal, Va.	301	1947-56	1955	Jan. 29	14.71	28,300	
105	4735	Middle Fork Holston River at Groseclose, Va.	7.39	1931-56	1955	Jan. 29	10 9.0	6,000	
106	4740	Middle Fork Holston River at Sevenmile Ford, Va.	132	1947-56	1953	Jan. 29	8.32	3,800	
					1947	Jan. 29	5.75	5,280	
						Jan. 29	4.200	4,200	
						Jan. 29	13.73	11,400	
						Jan. 29	15.35	15,100	
						Jan. 29	7.42	813	
						Jan. 29	5.00	309	
						Jan. 29	9.86	6,370	
						Jan. 29	10.75	7,680	

107	4760	South Holston Lake near Bristol, Va.-Tenn.	703	1950-56.	1952	Feb. 11	41,721.40 41,723.36	552 596	
108	4765	South Fork Holston River below South Holston Dam, Tenn.	703	1867 1951-56.	1867 1953	Feb. 12	37.70 40.45 78,270	(1) 73,360 78,270	
109		Beaver Creek near Wallace, Va.	13.7	1945-56.	1948	Jan. 29	5.94 4.48	353 278	
110	4790	Watauga River near Sugar Grove, N.C.	90.8	1939-56.	1940	Jan. 31	29.6 6.45	50,800 2,200	
111	4835	Watauga Lake near Elizabethton, Tenn.	468	1948-56.	1950	Feb. 28	41,958.58 41,946.96	5465 5566	
112	4840	Watauga River below Wilbur Dam, Tenn.	471	1940 1902-8, 1948-56.	1940 1906	Jan. 31	(1) 35.38	20 71,500 21,500	
113	4855	Doe River at Elizabethton, Tenn.	137	1901 1911-16, 1920-56.	1901 1940	Feb. 1	10.5 6.75	72,890 7,300	
114	4860	Watauga River at Elizabethton, Tenn.	692	1901 1925-49, 1953-56.	1901 1940	Jan. 29	5.65 21	4,990 75,900	1.0
115	4868	Boone Lake at Spurgeon, Tenn.	1,840	1952-56.	1953	Feb. 1	41,384.52 41,370.36	8,61 114	
116	4870	Fort Patrick Henry Lake near Kingsport, Tenn.	1,903	1953-56.	1954	Jan. 16	41,263.80 41,262.42	27.7 26.5	
117	4875	South Fork Holston River at Kingsport, Tenn.	1,935	1901 1925-56.	1901 1940	Feb. 10	21.23 21 18.80	110,000 68,800	
118	4880	North Fork Holston River near Saltville, Va.	222	1907-8, 1920-56.	1944	Jan. 29	6.67 10.75	7 15,800 11,700	
119	4885	North Fork Holston River at Holston, Va.	402	1951-56.	1956	Jan. 29	13.20 12.93	16,500 13,100	
120	4899	Big Moccasin Creek near Gate City, Va.	79.6	1952-56.	1956	Jan. 29	16.50 7.95	24,300 3,310	
121	4900	North Fork Holston River near Gate City, Va.	672	1931-56.	1940	Jan. 29	8.36 14.75	3,340 23,700	
122	4905	Holston River at Sargolusville, Tenn.	2,874	1867 1940-56.	1867 1944	Jan. 30	16.73 31	28,700 (1)	
123	4910	Big Creek near Rogersville, Tenn.	47.3	1941-49, 1954-56.	1955	Jan. 30	17.48 14.32	56,600 7 45,100	
124	4935	Cherokee Lake near Jefferson City, Tenn.	3,429	1941-56.	1944	Jan. 31	6.83 6.73	3,280 3,180	1.3
125	4940	Holston River near Jefferson City, Tenn.	3,429	1867 1936-56.	1867 1940	Feb. 11	41,074.37 41,039.93	1,540 719	
126	4985	Little River near Maryville, Tenn.	269	1875 1951-56.	1875 1954	Feb. 11	60 41.82	(1) 58,700	
127	5185	Tallico River at Tallico Plains, Tenn.	118	1840 1925-56.	1840 1951	Feb. 1	32.19 31.0	25,900 (1)	
						Jan. 31	18.44 21.18	13,300 19,600	1.6
						Jan. 31	15 12.82	21,500 15,100	
						Jan. 31	13.60	17,500	

See footnotes at end of table.

TABLE 8.—Summary of flood stages and discharges, southeastern Kentucky and adjacent areas—Continued

Station	Perma- nent station No.	Stream and place of determination	Drainage area (sq. m)	Maximum floods				
				Prior to January 1957		Gage height (ft)	Discharge	
				Period	Year		Jan.-Feb. 1957	Cfs
Tennessee River basin—Continued								
128		Clinch River at Cedar Bluff, Va.....	125	1901- 1944-46.....	1901 1946	16 7.4	(1) 4,800	-----
129	5215	Clinch River at Richlands, Va.....	139	1946-56.....	1953	14.41 13.23	(1) 5,080	-----
130		Little River at Wardell, Va.....	103	1949-52.....	1950	19.3 8.05	9,640 1,830	-----
31	230	Cedar Creek near Lebanon, Va.....	51.5	1952-56.....	1953	14.34 4.27	(1) 2,650	-----
132	5240	Clinch River at Cleveland, Va.....	528	1920-56.....	1926	4.48 23.0	2,740 26,500	-----
133	5245	Guest River at Coeburn, Va.....	87.3	1949-56.....	1956	24.40 10.83	31,000 4,020	-----
134		Stony Creek at Fort Blackmore, Va.....	41.4	1918- 1949-56.....	1918 1956	14.20 9	6,360 12,000	-----
135	5260	Copper Creek near Gate City, Va.....	106	1947-56.....	1950	6.55 6.12	2,550 2,220	-----
136	5270	Clinch River at Speers Ferry, Va.....	1,126	1895-1956.....	1902	13.0 9.98	6,800 3,200	-----
137	5275	North Fork Clinch River at Duffield, Va.....	23.1	1952-56.....	1956	22 26.6	42,000 45,300	-----
138	5280	Clinch River above Tazewell, Tenn.....	1,474	1862- 1918-56.....	1862 1923	7.40 7.34	800 789	-----
139	5295	Powell River at Big Stone Gap, Va.....	112	1944-56.....	1946	24 (1)	66,000 39,700	-----
140		South Fork Powell River at Big Stone Gap, Va.....	40	1944-47, 1951-56.....	1946	21.00 9.8	51,100 16,500	2.0 -----
141		North Fork Powell River at Pennington Gap, Va.....	70	1944-56.....	1946	9.67 8.0	11,000 3,100	-----
142	5315	Powell River near Jonesville, Va.....	319	1931-56.....	1946	8.62 12.1	3,550 9,700	-----
					1946	8.70 26.87	4,430 19,800	-----

143	5320	Powell River near Arthur, Tenn.	685	1826 1910-56	1826 1946	Jan. 30	27.5	34,000
144	5325	Norris Lake near Norris, Tenn.	2,912	1935-56	1937	Feb. 4	27.15	33,000
145	5330	Clinch River below Norris Dam, Tenn.	2,913	1826 1903-56	1826 1917	Feb. 12	22.07	23,500
146		Coal Creek at Lake City, Tenn.	24.5	1929 1932-34, 1954-56	1929 1933	Jan. 31	41,031.10	2,450
147		Buffalo Creek at Norris, Tenn.	9.45	1947-50, 1954-56	1948	Jan. 31	41,002.21	1,500
148	5680	Tennessee River at Chattanooga, Tenn.	21,400	1867 1874-1956	1867 1875	Feb. 2	(1)	130,000
							(1)	87,000
							(1)	726,600
							(1)	8,400
							13.0	3,400
							12.02	2,580
							7.91	757
							9.03	1,130
							23 57.9	459,000
							23 53.8	410,000
							23 32.24	208,000

1 Not determined.
2 Maximum known since 1908.
3 Observed.
4 Elevation in ft.
5 Contents in thousands of acre-ft.
6 Affected by backwater from Levisa Fork.
7 Appreciably regulated by reservoir or reservoirs.
8 Prior to 1915.
9 At site three-fourths of a mile downstream.
10 Occurred in many years.
11 At site nine-tenths of a mile downstream.
12 Affected by backwater from Ohio River.

13 At site two-tenths of a mile downstream at same datum.

14 Part of drainage area is noncontributing, see station description.

15 Affected by backwater from ice.

16 Affected by backwater from debris.

17 At site 300 ft upstream at datum 1 ft higher.

18 Affected by backwater from Cumberland River.

19 At site 400 ft downstream at same datum.

20 At site upstream; drainage area, 427 sq mi.

21 At site 2 miles upstream at datum 8.47 ft higher.

22 At site 400 ft downstream at datum about 1 ft higher.

23 At Walnut St.

The second column under maximum floods shows the year in which the maximum stage or discharge occurred.

The third column under maximum floods gives the date of the maximum stage or discharge during the flood period January–February 1957.

Some of the stages and discharges listed in the table are affected by regulation, backwater, or other factors. These effects are indicated in footnotes and may be more fully described in the corresponding station description in the section of station data.

The discharges for gaging stations were determined as described in the preceding section, "Stages and discharges at stream-gaging stations." Discharges for points not regularly gaged have been determined by indirect measurements. These methods of measurement are named in the section, "Determination of flood discharges." The flood discharges and stages are given as observed; some may be affected by storage, backwater, or miscellaneous factors that would make the figures only partly representative of natural conditions. The user should consult the report (see section, "Streamflow data") to determine the degree of such factors at any station.

FLOOD FREQUENCIES

In table 8, the last column under maximum floods gives the ratio of the peak discharge of the floods of January–February 1957 to $Q_{2.33}$, the mean annual flood. By definition, the mean annual flood is an annual flood (highest momentary peak discharge in a water year) having a recurrence interval of 2.33 years.

The ratios given in the table were computed from two Geological Survey frequency studies: "Floods in Kentucky, Magnitude and Frequency," U.S. Geological Survey open-file report and "Floods in Tennessee, Magnitude and Frequency," Tennessee Department of Highways.

Throughout a region of uniform flood-frequency characteristics, a relation exists between the ratio of an annual flood to the mean annual flood and the recurrence interval of the annual flood. However, this does not apply to highly regulated streams and in many cases data are not available to compute the ratio for small drainage areas.

The streamflow stations in Kentucky and Tennessee used in this report lie in four regions, each having different flood-frequency characteristics:

Region 1 includes the basins of Big Sandy River, Tygart Creek, upper Licking River, Kentucky River and tributaries above the mouth of Red River, Green River above the mouth of Barren River, that part of Cumberland River that lies in Kentucky, and a few stations in the adjacent areas of Virginia and West Virginia.

Region 2 is the main stem of Kentucky River below the mouth of Red River.

Region 3 is that part of Kentucky not in regions 1 and 2.

Region 4 is the report area that lies in Tennessee.

An estimate of the recurrence interval of a given peak discharge at any station for which a ratio is known can be made from figure 13.

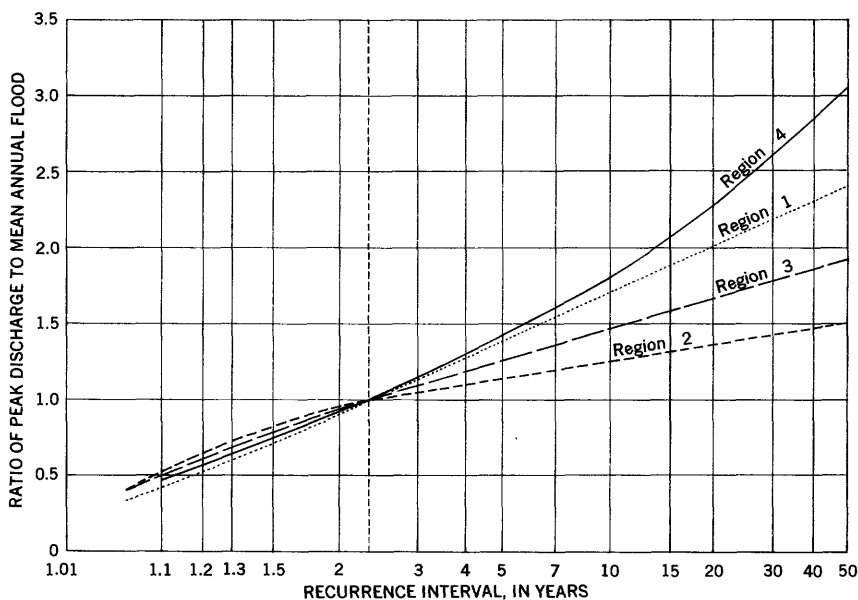


FIGURE 13.—Frequency of floods in Kentucky and Tennessee.

By using the ratio of a given flood to the mean annual flood of the same station (ordinate) and the frequency curve for the appropriate region, the recurrence interval may be determined on the abscissa.

STREAMFLOW DATA

KANAWHA RIVER BASIN

1. WALKER CREEK AT BANE, VA.

Location.—Lat 37°16'05", long 80°42'35", on left bank 0.2 mile downstream from bridge on State Highway 100 at Bane, Giles County, 0.2 mile downstream from Sugar Run, and 7.9 miles upstream from mouth.

Drainage area.—305 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,665.92 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 7,200 cfs and by slope-area measurement at 16,500 cfs.

Maxima.—January-February 1957: Discharge, 16,500 cfs 1 a.m. Jan. 30 (gage height, 16.50 ft).

1938 to December 1956: Discharge, 13,700 cfs June 17, 1949 (gage height, 14.44 ft).

Maximum stage known, about 23.5 ft in September 1878.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	230	4,190	12----	918	1,700	23----	424	790
2----	202	2,820	13----	700	1,260	24----	682	658
3----	156	1,960	14----	530	982	25----	547	564
4----	192	1,520	15----	406	790	26----	486	586
5----	189	1,220	16----	347	670	27----	393	820
6----	189	1,700	17----	270	569	28----	603	852
7----	177	1,630	18----	216	476	29----	6,340	-----
8----	175	2,040	19----	205	682	30----	7,600	-----
9----	448	5,340	20----	200	2,190	31----	3,260	-----
10----	2,120	3,440	21----	228	1,360			
11----	1,440	2,340	22----	240	1,020			
Monthly mean discharge, in cubic feet per second-----							971	1,577
Runoff, in inches -----							3.67	5.38

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Jan. 29—Con.			Jan. 31*		
12 p.m.---	4.53	388	8 p.m.---	14.55	12,800	6 a.m.---	8.00	2,820
Jan. 28*			10-----	15.65	14,800	12 m.---	7.98	2,800
			12 p.m.---	16.25	16,000	6 p.m.---	8.74	3,480
6 a.m.---	4.59	416	Jan. 30*			12 p.m.---	10.12	5,210
12 m.---	4.70	470				Feb. 1*		
6 p.m.---	5.10	700	1 a.m.---	16.50	16,500	6 a.m.---	9.87	4,830
12 p.m.---	6.05	1,330	2-----	16.10	15,700	12 m.---	9.50	4,320
Jan. 29			4-----	14.50	12,700	6 p.m.---	9.00	3,720
			6-----	13.10	10,300	12 p.m.---	8.61	3,360
2 a.m.---	6.44	1,620	8-----	12.10	8,570			
4-----	6.77	1,870	10-----	11.30	7,210	Feb. 2*		
6-----	7.05	2,080	12 m.---	10.60	6,020	6 a.m.---	8.35	3,120
8-----	7.45	2,380	2 p.m.---	10.08	5,150	12 m.---	8.05	2,860
10-----	8.24	3,030	4-----	9.67	4,550	6 p.m.---	7.68	2,560
12 m.---	9.45	4,260	6-----	9.30	4,070	12 p.m.---	7.37	2,320
2 p.m.---	10.60	6,020	8-----	9.00	3,720			
4-----	12.00	8,400	10-----	8.74	3,480			
6-----	13.45	10,900	12 p.m.---	8.50	3,260			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 3*			Feb. 4*			Feb. 5*		
6 a.m.----	7.11	2,120	6 a.m.----	6.44	1,620	6 a.m.----	5.89	1,210
12 m.-----	6.90	1,960	12 m.-----	6.30	1,520	12 m.-----	5.83	1,170
6 p.m.-----	6.73	1,840	6 p.m.-----	6.15	1,400	6 p.m.-----	5.84	1,180
12 p.m.-----	6.61	1,750	12 p.m.-----	6.02	1,300	12 p.m.-----	6.13	1,390

*Daily mean discharge cannot be computed exactly from data shown.

2. WOLF CREEK NEAR NARROWS, VA.

Location.—Lat 37°18'20", long 80°51', on right bank at downstream side of bridge on State Highway 61, 2.8 miles southwest of Narrows, Giles County, and 3.5 miles upstream from mouth.

Drainage area.—223 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,583.85 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 5,700 cfs and by contracted-opening measurement of 12,700 cfs.

Maxima.—January-February 1957: Discharge, 12,900 cfs 10 p.m. Jan. 29 (gage height, 12.55 ft in gage well and 13.8 ft, from floodmarks, at downstream side of bridge).

1908-16, 1938 to December 1956: Discharge, 11,000 cfs July 16, 1916 (gage height, 13.0 ft, from floodmarks).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	268	4,540	12-----	1,030	1,440	23-----	520	730
2-----	226	3,220	13-----	780	1,060	24-----	705	630
3-----	164	2,020	14-----	605	830	25-----	605	570
4-----	212	1,390	15-----	480	680	26-----	510	605
5-----	222	1,090	16-----	420	605	27-----	464	655
6-----	240	1,220	17-----	344	505	28-----	1,220	680
7-----	240	1,300	18-----	272	412	29-----	7,030	-----
8-----	236	1,990	19-----	256	792	30-----	7,360	-----
9-----	1,410	4,600	20-----	240	1,640	31-----	3,640	-----
10-----	2,980	3,610	21-----	252	1,060			
11-----	1,730	2,400	22-----	292	858			
Monthly mean discharge, in cubic feet per second -----							1,128	1,469
Runoff, in inches.-----							5.83	6.86

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Jan. 28—Con.			Jan. 29—Con.		
12 p.m.----	4.04	500	12 p.m.----	7.00	2,740	8 a.m.-----	7.56	3,430
Jan. 28			Jan. 29			10-----	7.87	3,830
6 a.m.-----	4.20	580	2 a.m.-----	7.21	2,990	12 m.-----	8.80	5,200
12 m.-----	4.97	978	4-----	7.36	3,170	2 p.m.-----	10.10	7,400
6 p.m.-----	5.97	1,700	6-----	7.44	3,270	4-----	11.35	10,000
						6-----	12.20	12,000
						8-----	12.40	12,500

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 29—Con.			Feb. 1			Feb. 3—Con.		
10 p.m.---	12.55	12,900	6 a.m.---	8.68	5,020	6 p.m.---	5.89	1,810
12 p.m.---	12.40	12,500	12 m.---	8.43	4,640	12 p.m.---	5.70	1,640
Jan. 30			6 p.m.---	8.10	4,150	Feb. 4		
			12 p.m.---	7.93	3,910			
4 a.m.---	11.75	10,900	Feb. 2			6 a.m.---	5.53	1,500
8.-----	10.69	8,580				12 m.---	5.37	1,380
12 m.---	9.75	6,780	6 a.m.---	7.75	3,680	6 p.m.---	5.21	1,270
4 p.m.---	8.91	5,360	12 m.---	7.41	3,230	12 p.m.---	5.08	1,180
8.-----	8.30	4,450	6 p.m.---	7.03	2,780	Feb. 5		
12 p.m.---	7.77	3,700	12 p.m.---	6.65	2,510			
Jan. 31			Feb. 3			6 a.m.---	4.95	1,090
						12 m.---	4.89	1,050
4 a.m.---	7.37	3,180	6 a.m.---	6.34	2,240	6 p.m.---	4.91	1,070
8.-----	7.12	2,880	12 m.---	6.07	1,970	12 p.m.---	4.96	1,100
12 m.---	7.11	2,870						
4 p.m.---	7.90	3,870						
8.-----	8.53	4,800						
12 p.m.---	8.55	4,820						

3. NEW RIVER AT GLENLYN, VA.

Location.—Lat 37°22'20", long 80°51'45", on right bank at upstream side of bridge on U.S. Highway 460 at Glenlyn, Giles County, 0.3 mile upstream from East River and 6.3 miles downstream from Wolf Creek.

Drainage area.—3,768 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,489.76 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 65,000 cfs and by slope-area measurement at peak stage.

Maxima.—January 1957: Discharge, 57,800 cfs 12 p.m. Jan. 29 (gage height, 12.59 ft). 1927 to December 1956: Discharge, 226,000 cfs Aug. 14, 1940 (gage height, 27.50 ft), from rating curve extended as described above.

Flood of Sept. 13, 1878, reached an estimated stage of 33.1 ft, at Narrows, 6.5 miles upstream at different datum (discharge, 240,000 cfs, from stage-discharge relation defined by current-meter measurements to 17,500 cfs and extended above by logarithmic plotting).

4. BLUESTONE RIVER NEAR SPANISHBURG, W. VA.

[Gaging station, discontinued 1952]

Location.—Lat 37°26'00", long 81°06'40", on right downstream abutment of bridge on U.S. Highways 19 and 21, 1.1 miles southeast of Spanishburg, Mercer County, 1.4 miles upstream from Rich Creek, 1.7 miles downstream from Blacklick Creek.

Drainage area.—199 sq mi.

Gage-height record.—Crest-stages only. Datum of gage is 2,051.13 ft above mean sea level, adjustment of 1912.

Discharge record.—Stage-discharge relation defined by current meter measurements below 5,000 cfs.

Maxima.—January-February 1957: Discharge, 7,900 cfs Jan. 29, crest-stage gage height, 19.6 ft.

1944 to September 1952 (discontinued). Discharge, 6,920 cfs Jan. 8, 1946 (gage height, 18.36).

5. CAMP CREEK NEAR CAMP CREEK, W. VA.

Location.—Lat 37°30'15", long 81°07'40", on left bank 1,500 ft downstream from Mash Fork and 2.1 miles upstream from town of Camp Creek, Mercer County.

Drainage area.—32.0 sq mi.

Gage-height record.—Water-stage recorder graph. Altitude of gage is 2,050 ft (from topographic map).

Discharge record.—Stage-discharge relation defined by current meter measurements.

Maxima.—January-February 1957: Discharge, 3,410 cfs 12:30 p.m. Jan. 29 (gage height, 6.35 ft).

1946 to December 1956: Discharge, 2,720 cfs Feb. 14, 1948 (gage height, 5.84 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	24	580	12-----	115	129	23-----	100	75
2-----	22	436	13-----	78	93	24-----	120	64
3-----	20	194	14-----	55	72	25-----	83	59
4-----	24	116	15-----	50	56	26-----	70	56
5-----	26	140	16-----	36	53	27-----	62	49
6-----	21	246	17-----	30	44	28-----	427	66
7-----	24	266	18-----	27	40	29-----	1,900	-----
8-----	23	367	19-----	25	128	30-----	556	-----
9-----	602	622	20-----	25	196	31-----	385	-----
10-----	512	447	21-----	30	131			
11-----	219	223	22-----	35	93			
Monthly mean discharge, in cubic feet per second-----							185	180
Runoff, in inches-----							6.65	5.86

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Jan. 31		
12 p.m.---	1.67	59	6 a.m.---	4.22	1,070	4 a.m.---	2.52	266
Jan. 27			7-----	4.70	1,450	8-----	2.45	242
			8-----	5.15	1,900	12 m-----	2.75	355
6 a.m.---	1.66	58	9-----	5.48	2,270	4 p.m.---	2.95	442
6 p.m.---	1.70	63	10-----	5.76	2,610	8-----	3.15	532
12 p.m.---	1.78	75	11-----	6.10	3,060	12 p.m.---	3.47	676
Jan. 28			12 m-----	6.32	3,370	Feb. 1		
			12:30 p.m.	6.35	3,410			
4 a.m.---	2.00	115	1-----	6.32	3,370	4 a.m.---	3.39	640
8-----	2.51	264	2-----	6.20	3,200	8-----	3.25	578
12 m-----	2.87	406	3-----	5.96	2,870	12 m-----	3.12	519
4 p.m.---	3.30	600	5-----	5.65	2,470	4 p.m.---	3.06	492
8-----	3.71	795	6-----	5.55	2,350	8-----	3.28	591
12 p.m.---	3.49	686	7-----	5.40	2,170	12 p.m.---	3.40	645
Jan. 29			9-----	5.00	1,740	Feb. 2		
			11-----	4.53	1,300			
1 a.m.---	3.43	658	12 p.m.---	4.33	1,150	6 a.m.---	3.17	542
2-----	3.38	636	Jan. 30			12 m-----	2.90	420
3-----	3.35	622	6 a.m.---	3.45	688	6 p.m.---	2.69	331
4-----	3.43	658	12 m-----	3.02	474	12 p.m.---	2.50	259
5-----	3.74	810	6 p.m.---	2.79	371			
			12 p.m.---	2.52	266			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 3			Feb. 4			Feb. 5		
6 a.m.-----	2.36	214	6 a.m.-----	2.03	129	6 a.m.-----	1.84	91
12 m -----	2.29	193	12 m -----	1.97	116	12 m -----	1.98	118
6 p.m.-----	2.19	166	6 p.m.-----	1.90	102	6 p.m.-----	2.28	191
12 p.m.-----	2.10	144	12 p.m.-----	1.85	93	12 p.m.-----	2.39	223

6. BLUESTONE RIVER NEAR PIPESTEM, W. VA.

Location.—Lat 37°32'45", long 81°00'30", on left bank 1.2 miles downstream from Mountain Creek, 2.5 miles west of Pipestem, Summers County, and 8 miles upstream from mouth. Drainage area.—363 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,527.35 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Discharge record.—Stage-discharge relation defined by current meter measurements. Maxima.—January-February 1957: Discharge, 16,100 cfs 6 p.m. Jan. 29 (gage height, 14.49 ft).

1950 to December 1956: Discharge, 14,900 cfs Feb. 28, 1955 (gage height, 13.86 ft). Maximum discharge known (since 1908), that of Jan. 29, 1957.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	306	6,890	12----	1,800	2,240	22-----	448	1,250
2-----	254	5,510	13----	1,100	1,480	23-----	2,520	950
3-----	183	3,190	14----	800	1,100	24-----	1,800	800
4-----	236	1,980	15----	620	875	25-----	1,160	700
5-----	269	1,570	16----	525	760	26-----	850	660
6-----	312	1,880	17----	406	680	27-----	723	640
7-----	371	2,150	18----	309	560	28-----	3,570	580
8-----	392	3,100	19----	274	995	29-----	12,300	-----
9-----	3,520	5,740	20----	291	2,600	30-----	13,800	-----
10-----	5,420	5,580	21----	324	1,800	31-----	6,900	-----
11-----	3,460	3,820						
Monthly mean discharge, in cubic feet per second -----							2,107	2,148
Runoff, in inches -----							6.69	6.16

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28			Jan. 28-Con.		
12 p.m.---	4.82	728	2 a.m.-----	5.38	990	6 p.m.-----	9.85	5,660
			4-----	5.77	1,200	8-----	10.08	6,080
Jan. 27			6-----	6.50	1,720	10-----	10.13	6,190
			8-----	7.25	2,370	12 p.m.---	10.13	6,190
6 a.m.-----	4.72	688	10-----	7.90	3,000			
12 m -----	4.70	680	12 m -----	8.34	3,510	Jan. 29		
6 p.m.-----	4.78	712	2 p.m.-----	8.70	3,940			
12 p.m.-----	5.19	895	4-----	9.22	4,650	3 a.m.-----	10.08	6,080

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 29—Con.			Jan. 30—Con.			Feb. 2		
4 a.m.---	10.13	6,190	2 p.m.---	13.68	14,300	6 a.m.---	10.18	6,300
5-----	10.40	6,780	4-----	13.26	13,300	12 m ---	9.70	5,420
6-----	10.95	7,990	8-----	12.23	10,900	6 p.m.---	9.32	4,810
7-----	11.52	9,300	10-----	11.82	9,990	12 p.m.---	8.91	4,190
8-----	11.87	10,100	12 p.m.---	11.49	9,230	Feb. 3		
9-----	12.15	10,700	Jan. 31			6 a.m.---	8.46	3,650
10-----	12.60	11,800	2 a.m.---	11.12	8,380	12 m ---	7.98	3,080
11-----	13.25	13,300	8-----	10.20	6,340	6 p.m.---	7.63	2,730
12 m ---	13.80	14,500	10-----	10.07	6,050	12 p.m.---	7.32	2,440
1 p.m.---	14.20	15,500	12 m ---	10.23	6,410	Feb. 4		
2-----	14.37	15,900	2 p.m.---	10.27	6,490	6 a.m.---	7.04	2,190
3-----	14.42	16,000	4-----	10.17	6,270	12 m ---	6.78	1,950
4-----	14.43	16,000	6-----	10.14	6,210	6 p.m.---	6.57	1,780
6-----	14.49	16,100	8-----	10.28	6,520	12 p.m.---	6.33	1,580
7-----	14.44	16,000	10-----	10.57	7,150	Feb. 5		
9-----	14.43	16,000	12 p.m.---	10.63	7,290	6 a.m.---	6.17	1,460
11-----	14.47	16,100	Feb. 1			12 m ---	6.13	1,430
12 p.m.---	14.38	15,900	8 a.m.---	10.48	6,960	6 p.m.---	6.47	1,700
Jan. 30			12 m ---	10.37	6,710	12 p.m.---	6.63	1,820
2 a.m.---	14.22	15,500	4 p.m.---	10.34	6,650			
4-----	14.13	15,300	8-----	10.43	6,850			
6-----	14.16	15,400	12 p.m.---	10.43	6,850			
8-----	14.21	15,500						
10-----	14.17	15,400						
12 m ---	14.00	15,000						

7. PINEY CREEK AT RALEIGH, W. VA.

Location.—Lat 37°45'40", long 81°09'50", on left bank at Raleigh, Raleigh County, 0.5 mile downstream from Whitestick Creek, 0.5 mile upstream from Beaver Creek, and $1\frac{1}{2}$ miles southeast of Beckley.

Drainage area.—52.2 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 2,087.24 ft above mean sea level, datum of 1929, supplementary adjustment of 1944.

Discharge record.—Stage-discharge relation defined by current meter measurements. Stage-discharge relation affected by ice, Jan. 3, 18–20.

Maxima.—January–February 1957: Discharge, 2,500 cfs 5:45 p.m., Jan. 29 (gage height, 5.78 ft).

1951 to December 1956: Discharge, 2,470 cfs Mar. 6, 1955 (gage height, 5.73 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	42	591	9-----	231	556	17-----	51	88
2-----	37	742	10-----	720	900	18-----	45	80
3-----	30	370	11-----	426	548	19-----	40	86
4-----	34	197	12-----	204	256	20-----	40	112
5-----	39	173	13-----	128	176	21-----	42	121
6-----	39	342	14-----	92	138	22-----	60	126
7-----	42	306	15-----	69	114	23-----	324	140
8-----	43	306	16-----	60	103	24-----	346	146

Mean discharge, in cubic feet per second, 1957—Continued

Day	January	February	Day	January	February	Day	January	February
25----	176	138	28----	258	115	30-----	1,350	-----
26----	110	123	29----	1,540	-----	31-----	450	-----
27----	90	105						
Monthly mean discharge, in cubic feet per second-----							231	257
Runoff, in inches-----							5.10	5.13

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30			Feb. 1—Con.		
12 p.m.---	2.01	94	1 a.m.---	5.55	2,270	4 p.m.---	3.45	645
			2-----	5.47	2,190	8-----	3.70	780
Jan. 27			3-----	5.30	2,020	12 p.m.---	3.79	834
6 a.m.---	1.99	90	4-----	5.25	1,970			
12 m.---	1.99	90	5-----	5.08	1,810	Feb. 2		
6 p.m.---	1.98	88	6-----	4.95	1,700			
12 p.m.---	1.98	88	8-----	4.75	1,520	4 a.m.---	3.82	852
Jan. 28			9-----	4.61	1,410	8-----	3.73	798
6 a.m.---	2.12	120	10-----	4.53	1,340	4 p.m.---	3.60	720
12 m.---	2.40	200	11-----	4.50	1,320	8-----	3.42	630
6 p.m.---	2.88	382	12 m.---	4.30	1,170	12 p.m.---	3.27	556
12 p.m.---	3.31	575	1 p.m.---	4.27	1,150			
Jan. 29			2-----	4.26	1,140	Feb. 3		
1 a.m.---	3.36	600	3-----	4.16	1,070	6 a.m.---	3.02	444
4-----	3.48	660	4-----	4.10	1,030	12 m.---	2.79	346
6-----	3.65	750	5-----	4.17	1,080	6 p.m.---	2.65	290
8-----	4.00	960	6-----	4.03	981	12 p.m.---	2.53	246
9-----	4.24	1,130	8-----	3.86	876			
11-----	4.57	1,380	9-----	3.84	864	Feb. 4		
1 p.m.---	4.90	1,650	10-----	3.72	792	6 a.m.---	2.45	218
2-----	5.00	1,740	12 p.m.---	3.57	705	12 m.---	2.38	194
3-----	5.42	2,140	Jan. 31			6 p.m.---	2.32	176
4-----	5.38	2,100	4 a.m.---	3.28	561	12 p.m.---	2.24	152
5-----	5.58	2,300	8-----	3.08	471			
5:45-----	5.78	2,500	12 m.---	2.93	404	Feb. 5		
6-----	5.75	2,470	4 p.m.---	2.82	358	6 a.m.---	2.18	135
7-----	5.66	2,380	8-----	2.84	366	12 m.---	2.22	146
8-----	5.68	2,400	12 p.m.---	2.89	386	6 p.m.---	2.39	197
10-----	5.73	2,450	Feb. 1			12 p.m.---	2.62	278
11-----	5.55	2,270	4 a.m.---	2.99	430			
12-----	5.61	2,330	8-----	3.19	520			
			12 m.---	3.28	561			

8. ELK RIVER AT SUTTON, W. VA.

Location.—Lat 38°39' 45", long 80°42' 35", near left bank on downstream side of pier of highway bridge at Sutton, Braxton County, half a mile upstream from Granny Creek and 2½ miles downstream from Wolf Creek.

Drainage area.—543 sq mi.

Gage-height record.—Water-stage recorder graph, except, Jan. 2-3, 15-20 for which graph was constructed from range of stage of recorder graph and from once-daily wire-weight gage readings by Weather Bureau. Datum of gage is 808.03 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current meter measurements below 29,000 cfs and extended above by logarithmic plotting.

Maxima.—January-February 1957: Discharge, 34,200 cfs 11 p.m. Jan 29 (gage height, 31.27 ft).

1938 to December 1956: Discharge, 32,300 cfs Oct. 16, 1954 (gage height, 29.42 ft).

Maximum stage known, 37.2 ft Mar. 13, 1918, from floodmarks (discharge, about 49,000 cfs).

Mean discharge, in cubic feet per second, 1957

[illegible]

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30			Feb. 1 Con.		
12 p.m. ---	5.80	1,620	1 a.m. ---	30.80	33,300	8 -----	9.82	5,120
Jan. 27			2 -----	30.10	32,100	12 p.m. ---	11.90	7,200
			3 -----	29.30	30,600	Feb. 2		
6 a.m. ---	5.65	1,520	4 -----	28.10	28,500			
12 m. ---	5.52	1,420	5 -----	27.00	26,700	4 a.m. ---	13.92	9,220
12 p.m. ---	5.31	1,280	7 -----	24.50	22,700	8 -----	14.57	9,870
Jan. 28			8 -----	23.30	20,800	12 m. ---	13.75	9,050
			9 -----	22.25	19,200	4 p.m. ---	12.70	8,000
6 a.m. ---	5.24	1,230	10 -----	21.25	17,700	8 -----	11.60	6,900
12 m. ---	5.47	1,390	11 -----	20.20	16,300	12 p.m. ---	10.67	5,970
6 p.m. ---	6.33	2,020	12 m. ---	18.85	14,700	Feb. 3		
12 p.m. ---	8.50	3,910	1 p.m. ---	17.60	13,200			
Jan. 29			2 -----	16.50	11,900	6 a.m. ---	9.60	4,900
			3 -----	15.50	10,800	12 m. ---	8.85	4,220
1 a.m. ---	9.40	4,720	4 -----	14.70	10,000	6 p.m. ---	8.27	3,700
3 -----	11.40	6,700	5 -----	14.10	9,400	12 p.m. ---	7.82	3,300
4 -----	12.10	7,400	6 -----	13.40	8,700	Feb. 4		
5 -----	12.70	8,000	8 -----	12.50	7,800	6 a.m. ---	7.50	3,010
6 -----	13.10	8,400	9 -----	12.10	7,400	12 m. ---	7.23	2,770
7 -----	13.60	8,900	10 -----	11.75	7,050	6 p.m. ---	6.98	2,540
8 -----	14.60	9,900	12 p.m. --	11.15	6,450	12 p.m. ---	6.72	2,340
9 -----	15.95	11,200	Jan. 31			Feb. 5		
10 a.m. ---	17.10	12,600	4 a.m. ---	10.22	5,520	6 a.m. ---	6.50	2,160
12 m. ---	19.50	15,500	8 -----	9.55	4,860	12 m. ---	6.34	2,030
1 p.m. ---	21.10	17,400	12 m. ---	9.02	4,380	6 p.m. ---	6.37	2,060
2 -----	22.50	19,600	4 p.m. ---	8.58	3,980	12 p.m. ---	6.50	2,160
3 -----	24.20	22,200	8 -----	8.37	3,790			
4 -----	25.80	24,800	12 p.m. --	8.03	3,490			
5 -----	27.00	26,700	Feb. 1					
6 -----	28.00	28,300						
8 -----	30.00	31,900	4 a.m. ---	7.88	3,350			
10 -----	31.15	34,000	8 -----	7.77	3,250			
11 -----	31.27	34,200	12 m. ---	7.92	3,390			
12 p.m. ---	31.15	34,000	4 p.m. ---	8.56	3,960			

GUYANDOT RIVER BASIN

9. GUYANDOT RIVER AT MAN, W. VA.

Location.—Lat 37°44'30", long 81°52'45", on right bank on downstream side of highway bridge at Man, Logan County, 500 ft upstream from Buffalo Creek and 0.7 mile downstream from Huff Creek. Records include flow of Buffalo Creek.

Drainage area.—762 sq mi (including that of Buffalo Creek).

Gage-height record.—Water-stage recorder graph, except for periods of doubtful gage-height record Jan. 31 to Feb. 1 and Feb. 3-14 for which graph was reconstructed from existing recorder record and engineers' readings. Datum of gage is 710.88 ft above mean sea level, adjustment of 1912.

Discharge record.—Stage-discharge relation defined by current meter measurements below 24,000 cfs.

Maxima.—January-February 1957: Discharge, 37,600 cfs 10:30 p.m. Jan. 29 (gage height, 22.25 ft).

1928 to December 1956: Discharge observed, 40,000 cfs Mar 3, 1934 (gage height, 19.11 ft from rating curve extended above 20,000 cfs.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1 ----	696	9,130	12 ----	3,470	5,080	23 ----	4,180	2,240
2 ----	636	12,500	13 ----	2,460	3,340	24 ----	5,400	2,080
3 ----	525	6,120	14 ----	1,840	2,740	25 ----	3,220	1,880
4 ----	555	3,830	15 ----	1,440	1,880	26 ----	2,290	1,740
5 ----	690	3,410	16 ----	1,210	1,560	27 ----	1,880	1,560
6 ----	708	6,590	17 ----	942	1,360	28 ----	4,480	1,440
7 ----	738	5,720	18 ----	773	1,140	29 ----	25,300	-----
8 ----	785	5,560	19 ----	745	1,450	30 ----	20,800	-----
9 ----	5,710	10,100	20 ----	717	3,280	31 ----	6,540	-----
10 ----	13,600	13,900	21 ----	766	3,160			
11 ----	6,410	9,100	22 ----	882	2,620			
Monthly mean discharge, in cubic feet per second -----							3,883	4,447
Runoff, in inches -----							5.88	6.08

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29			Jan. 29—Con.		
12 p.m.---	5.80	1,980	2 a.m.---	12.00	12,100	8 -----	22.00	36,900
			3 -----	12.32	12,800	9 -----	22.12	37,200
Jan. 27			4 -----	12.55	13,300	10 -----	22.22	37,500
			5 -----	12.85	14,000	10:30 ---	22.25	37,600
6 a.m.---	5.71	1,890	6 -----	13.20	14,800	11 -----	22.22	37,500
12 m.---	5.69	1,870	7 -----	13.70	15,900	12 p.m.---	22.12	37,200
6 p.m.---	5.64	1,830	8 -----	14.25	17,200			
12 p.m.---	5.63	1,820	10 -----	15.90	21,200	Jan. 30		
			12 m.---	17.90	26,200			
Jan. 28			1 p.m.---	18.90	28,800	2 a.m.---	21.40	35,300
			2 -----	19.70	30,900	4 -----	20.35	32,600
6 a.m.---	5.88	2,060	3 -----	20.20	32,200	6 -----	19.10	29,400
12 m.---	6.77	3,060	4 -----	20.60	33,300	10 -----	16.30	22,200
6 p.m.---	9.05	6,320	5 -----	21.10	34,600	12 m.---	14.80	18,500
12 p.m.---	11.50	11,100	6 -----	21.45	35,500	2 p.m.---	13.60	15,700

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 30—Con.			Feb. 1—Con.			Feb. 2—Con.		
4 p.m.---	12.65	13,500	4 a.m.---	9.08	6,370	12 p.m.---	10.22	8,540
6-----	11.93	12,000	6-----	9.30	6,770			
10-----	10.95	10,000	8-----	9.55	7,240	Feb. 3		
12 p.m.---	10.52	9,140	10-----	9.85	7,820			
			12 m.---	10.20	8,500	6 a.m.---	9.37	6,900
Jan. 31			2 p.m.---	10.62	9,340	12 m.---	8.78	5,860
			4-----	11.12	10,300	6 p.m.---	8.32	5,110
2 a.m.---	10.14	8,380	6-----	11.67	11,400	12 p.m.---	8.00	4,640
4-----	9.83	7,780	8-----	12.25	12,600			
6-----	9.56	7,260	10-----	12.60	13,400	Feb. 4		
8-----	9.32	6,810	12 p.m.---	12.88	14,000			
10-----	9.10	6,410				6 a.m.---	7.63	4,160
12 m.---	8.92	6,090	Feb. 2			12 m.---	7.34	3,780
2 p.m.---	8.77	5,840				6 p.m.---	7.10	3,470
4-----	8.63	5,610	2 a.m.---	13.00	14,300	12 p.m.---	6.85	3,160
6-----	8.62	5,590	4-----	13.08	14,500			
8-----	8.62	5,590	6-----	13.15	14,600	Feb. 5		
10-----	8.64	5,620	8-----	13.08	14,500			
12 p.m.---	8.72	5,750	10-----	12.88	14,000	6 a.m.---	6.68	2,960
			2 p.m.---	12.12	12,400	12 m.---	6.60	2,860
Feb. 1			4-----	11.70	11,500	6 p.m.---	7.22	3,630
			6-----	11.30	10,700	12 p.m.---	8.38	5,210
2 a.m.---	8.86	5,990	10-----	10.56	9,220			

10. GUYANDOT RIVER AT BRANCHLAND, W. VA.

Location.—Lat 38°13'15", long 82°12'10", on right bank at downstream side of highway bridge at Branchland, Lincoln County, 20 ft downstream from Fourmile Creek.

Drainage area.—1,226 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 547.91 ft above mean sea level, adjustment of 1912.

Discharge record.—Stage-discharge relation defined below 32,000 cfs by current meter measurements. For periods of backwater from the Ohio River Jan. 11-13, Jan. 31 to Feb. 5 and Feb. 10-13, the discharge is computed by the normal fall method between this station and the U.S. Corps of Engineers wire-weight gage at Midkiff, approximately 4 miles upstream.

Maxima.—January-February 1957: Discharge, 40,400 cfs 10:30 p.m. Jan. 30 (gage height, 41.88 ft).

1915-22, 1928 to December 1956: Discharge, 36,900 cfs Jan. 29, 1918 (gage height, 39.24 ft); maximum gage height, 42.57 ft on Mar. 1, 1955 (backwater from the Ohio River).

Maximum stage known, about 44 ft, from floodmark probably in 1907 (discharge, 43,500 cfs).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	1,050	16,000	7-----	938	9,450	13-----	4,600	6,400
2-----	938	17,000	8-----	986	7,980	14-----	3,210	4,760
3-----	838	12,800	9-----	2,240	9,800	15-----	2,250	3,640
4-----	755	7,470	10-----	13,600	17,700	16-----	1,770	2,940
5-----	815	5,450	11-----	18,100	20,400	17-----	1,490	2,470
6-----	914	7,420	12-----	9,000	11,800	18-----	1,210	2,140

Mean discharge, in cubic feet per second, 1957—Continued

Day	January	February	Day	January	February	Day	January	February
19----	1,020	1,870	24----	8,750	3,220	28---	3,210	2,230
20----	970	2,790	25----	6,860	3,010	29---	14,300	-----
21----	1,030	4,270	26----	4,200	2,790	30---	34,700	-----
22----	1,170	3,920	27----	2,830	2,470	31---	32,500	-----
23----	4,690	3,570						
Monthly mean discharge, in cubic feet per second -----							5,804	6,991
Runoff, in inches -----							5.46	5.94

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29			Jan. 30—Con.		
12 p.m.---	7.88	3,350	6 a.m.----	14.63	8,140	2 p.m.----	40.00	37,400
			12 m.----	22.30	14,800	3-----	40.45	38,100
Jan. 27			6 p.m.----	27.00	19,500	4-----	40.75	38,600
6 a.m.-----	7.49	3,040	12 p.m.----	31.55	24,300	5-----	41.10	39,200
12 m.-----	7.18	2,790				8-----	41.68	40,100
6 p.m.-----	6.93	2,590	Jan. 30			9-----	41.82	40,300
12 p.m.----	6.78	2,470				10-----	41.87	40,400
Jan. 28			1 a.m.----	32.25	25,200	10:30----	41.88	40,400
6 a.m.-----	6.74	2,440	2-----	33.00	26,200	11-----	41.87	40,400
12 m.-----	7.12	2,750	4-----	34.40	28,400	12 p.m.---	41.82	40,300
6 p.m.-----	8.42	3,790	5-----	35.10	29,600			
12 p.m.----	10.52	5,260	8-----	37.00	32,600			
			9-----	37.50	33,400			
			11-----	38.60	35,200			
			1 p.m.----	39.60	36,800			

BIG SANDY RIVER BASIN

11. PRATER CREEK AT VANSANT, VA.

[Crest-stage station]

Location.—Lat 37°13' 05", long 82°06' 10", at Virginia Highway 620 bridge just off Virginia Highway 83, 500 ft downstream from Trace Fork, and 1 mile south of Vansant, Buchanan County.

Drainage area.—19.8 sq mi.

Gage-height record.—Crest stages only. Altitude of gage is 1,180 ft (by topographic map).

Discharge record.—Stage-discharge relation defined by current-meter measurement at 260 cfs and by contracted-opening measurements at 1,140 and 4,550 cfs.

Maxima.—January 1957: Discharge, 4,550 cfs, Jan. 29 (gage height, 9.45 ft).

1951 to December 1956: Discharge, about 1,500 cfs, April 28, 1952.

12. LEVISA FORK NEAR GRUNDY, VA.

Location.—Lat 37°18', long 82°07'30", on left bank 50 ft downstream from wooden bridge to Appalachian Electric Power Co.'s substation, 2 miles northwest of Grundy, Buchanan County, 2.7 miles downstream from Slate Creek, and 2.8 miles upstream from Poplar Creek.

Drainage area.—235 sq. mi.

Gage-height record.—Water-stage recorder graph except Feb. 13–17 when faulty intake action occurred. Datum of gage is 986.17 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 6,500 cfs and by a slope-area measurement at 32,800 cfs and a contracted-opening measurement at 34,100 cfs. Discharge for the period Feb. 13–17 estimated on basis of reconstructed trace.

Maxima.—January–February 1957: Discharge, 33,200 cfs 1 p.m. Jan. 29 (gage height, 19.06 ft).

1941 to December 1956: Discharge, 17,400 cfs Jan. 7, 1946 (gage height, 14.5 ft, from graph based on twice daily gage readings).

Flood of March 1929 reached a stage of 16.0 ft (discharge, 21,800 cfs), from information by local residents.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	121	3,620	12----	720	1,080	23----	796	566
2----	106	3,360	13----	474	745	24----	970	470
3----	90	1,600	14----	336	550	25----	598	434
4----	154	1,010	15----	250	450	26----	402	422
5----	205	748	16----	220	390	27----	410	382
6----	302	710	17----	152	350	28----	1,590	378
7----	336	1,130	18----	152	305	29----	13,600	-----
8----	272	1,920	19----	143	502	30----	3,910	-----
9----	1,070	3,820	20----	140	1,220	31----	2,080	-----
10----	1,960	3,620	21----	151	945			
11----	1,240	1,930	22----	154	720			
Monthly mean discharge, in cubic feet per second-----							1,068	1,192
Runoff, in inches-----							5.23	5.28

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 29—Con.		
12 p.m.---	2.90	335	6 a.m.---	4.30	970	2 a.m.---	6.81	2,860
			8-----	4.51	1,080	3-----	6.81	2,860
Jan. 27			10-----	4.74	1,220	4-----	6.85	2,860
6 a.m.---	2.86	323	12 m.---	5.07	1,400	5-----	6.97	3,040
12 m.---	3.03	382	2 p.m.---	5.35	1,620	6-----	7.30	3,320
6 p.m.---	3.25	470	4-----	5.77	1,920	7-----	8.35	4,490
12 p.m.---	3.55	598	6-----	6.14	2,230	8-----	9.00	5,300
			8-----	6.48	2,590	9-----	11.60	10,000
Jan. 28			10 p.m.---	6.68	2,770	10-----	14.50	17,400
			12 p.m.---	6.78	2,860	11-----	16.50	23,500
2 a.m.---	3.79	720	Jan. 29			12 m.---	18.30	30,200
4-----	4.04	845	1 a.m.---	6.80	2,860	1 p.m.---	19.06	33,200
						2-----	17.90	28,600

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
<i>Jan. 29—Con.</i>			<i>Jan. 31—Con.</i>			<i>Feb. 3—Con.</i>		
3 p.m.---	17.50	27,100	8 p.m.---	5.67	1,840	12 m.---	5.29	1,580
4-----	17.00	25,200	12 m.---	5.61	1,800	6 p.m.---	5.04	1,400
5-----	15.60	20,600	4 p.m.---	5.80	1,960	12 p.m.---	4.80	1,240
6-----	14.50	17,400	8-----	6.20	2,320	<i>Feb. 4</i>		
7-----	13.60	14,900	12 p.m.---	6.97	3,040	6 a.m.---	4.57	1,100
8-----	13.25	13,800	<i>Feb. 1</i>			12 m.---	4.37	995
9-----	12.55	12,300	4 a.m.---	7.57	3,620	6 p.m.---	4.20	920
10-----	11.95	10,800	8-----	7.65	3,620	12 p.m.---	4.05	845
11-----	11.45	9,600	12 m.---	7.41	3,420	<i>Feb. 5</i>		
12 p.m.---	10.90	8,620	4 p.m.---	7.26	3,320	6 a.m.---	3.92	770
<i>Jan. 30</i>			8-----	7.80	3,820	12 m.---	3.84	745
2 a.m.---	9.80	6,640	12 p.m.---	8.56	4,740	6 p.m.---	3.80	720
4-----	9.15	5,620	<i>Feb. 2</i>			12 p.m.---	3.72	670
6-----	8.58	4,740	4 a.m.---	8.41	4,490	<i>Feb. 6</i>		
8-----	8.10	4,140	8-----	7.81	3,820	6 a.m.---	3.67	645
10-----	7.70	3,720	12 m.---	7.22	3,220	12 m.---	3.76	695
12 m.---	7.34	3,320	4 p.m.---	6.70	2,770	6 p.m.---	3.85	745
2-----	7.05	3,040	8-----	6.26	2,410	12 p.m.---	4.05	845
4-----	6.80	2,860	12 p.m.---	5.95	2,100	<i>Feb. 3</i>		
6-----	6.60	2,680	<i>Jan. 31</i>			6 a.m.---	5.56	1,760
8-----	6.39	2,500	4 a.m.---	5.83	2,000			
10-----	6.20	2,320						
12 p.m.---	6.04	2,140						

13. LEVISA FORK AT FISHTRAP, KY.

Location.—Lat 37°25'45", long 82°23'20", on right bank 300 ft south of U.S. Highway 460, 700 ft downstream from Hurricane Creek, 1 mile southeast of Fishtrap, Pike County, and 6.1 miles upstream from Russell Fork.

Drainage area.—386 sq mi.

Gage-height record.—Staff gage read twice daily, except Jan. 20–27, Jan. 30 to Feb. 1, Feb. 3–27; graph drawn Jan. 6, 9–12, 28, 29, and Feb. 2; and Jan. 27, Jan. 30 to Feb. 1, Feb. 3–5 using readings on adjacent days, floodmarks, time of peak, and recorder record for stations near Grundy and at Pikeville as a guide. Datum of gage is 688.10 ft above mean sea level, adjustment of 1912 (levels by Corps of Engineers).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 15,000 cfs and by slope-area measurement at 33,000 cfs. Discharge for Jan. 20–26, Feb. 6–27 estimated on basis of weather records and records for station near Grundy, W. Va.

Maxima.—January–February 1957: Discharge, 33,000 cfs 9:30 p.m. Jan. 29 (gage height, 33.9 ft, from floodmark).

1938 to December 1956: Discharge 23,000 cfs Jan. 7, 1946 (gage height, 22.82 ft, from floodmark), from rating curve extended above 15,000 cfs on basis of slope-area determinations at gage heights 20.26 and 22.82 ft.

Maximum stage known, about 26.5 ft in 1929.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	228	5,250	12-----	1,410	1,700	23-----	600	850
2-----	210	7,200	13-----	815	1,100	24-----	1,400	750
3-----	130	3,200	14-----	664	900	25-----	1,200	680
4-----	168	1,740	15-----	530	750	26-----	650	630
5-----	273	1,290	16-----	460	600	27-----	706	580
6-----	308	1,100	17-----	344	550	28-----	3,050	552
7-----	574	1,700	18-----	270	520	29-----	18,300	-----
8-----	502	3,100	19-----	220	700	30-----	15,800	-----
9-----	2,140	6,300	20-----	210	1,700	31-----	4,240	-----
10-----	4,640	5,700	21-----	230	1,400			
11-----	2,600	3,000	22-----	230	1,100			
Monthly mean discharge, in cubic feet per second-----							2,036	1,952
Runoff, in inches-----							6.08	5.26

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29-Con.			Feb. 1-Con.		
12 p.m.---	3.3	710	4 p.m.---	26.9	24,300	6 p.m.---	10.3	5,870
Jan. 27			6-----	30.7	28,800	12 p.m.---	11.7	7,130
6 a.m.---	3.2	645	8-----	33.6	32,600	Feb. 2		
12 m.---	3.1	585	9:30-----	33.9	33,000	6 a.m.---	13.6	8,900
6 p.m.---	3.3	710	10-----	33.8	32,800	12 m.---	12.5	7,850
12 p.m.---	3.8	1,060	12 p.m.---	32.5	31,200	6 p.m.---	10.6	6,140
Jan. 28			Jan. 30			12 p.m.---	8.9	4,720
4 a.m.---	4.4	1,480	4 a.m.---	27.0	24,400	Feb. 3		
8-----	5.3	2,110	8-----	22.2	18,600	6 a.m.---	7.7	3,790
12 m.---	6.4	2,880	12 m.---	18.4	14,100	12 m.---	6.6	3,020
4 p.m.---	7.6	3,720	4 p.m.---	15.4	10,700	6 p.m.---	5.9	2,530
8-----	8.8	4,640	8-----	13.0	8,300	12 p.m.---	5.4	2,180
12 p.m.---	10.3	5,870	12 p.m.---	11.2	6,680	Feb. 4		
Jan. 29			Jan. 31			12 m.---	4.7	1,690
2 a.m.---	11.2	6,680	6 a.m.---	9.1	4,480	12 p.m.---	4.3	1,410
4-----	12.2	7,580	12 m.---	7.5	3,650	Feb. 5		
6-----	13.3	8,600	6 p.m.---	7.0	3,300	12 m.---	4.0	1,200
8-----	14.8	10,100	12 p.m.---	7.4	3,580	12 p.m.---	4.2	1,340
10-----	17.2	12,600	Feb. 1					
12 m.---	20.2	16,200	6 a.m.---	8.6	4,480			
2 p.m.---	23.4	20,100	12 m.---	9.6	5,280			

14. RUSSELL FORK AT HAYS, VA.

Location.—Lat 37°12'25", long 82°17'45", on right bank 180 ft downstream from highway bridge at Haysi, Dickenson County, and 700 ft downstream from McClure River.

Drainage area.—286 sq mi.

Gage-height record.—Water-stage recorder graph except Jan. 2–7. Datum of gage is 1,237.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1944. Discharge record.—Stage-discharge relation defined by current-meter measurements below 12,000 cfs and by slope-area measurements at 46,600 cfs.

Maxima.—January–February 1957: Discharge, 46,600 cfs 2 p.m. Jan. 29 (gage height, 23.17 ft).

1926 to December 1956: Discharge, 34,500 cfs March 23, 1929 (gage height, 18.5 ft, from floodmarks).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	137	5,670	12-----	650	1,010	23-----	999	560
2-----	110	4,470	13-----	465	671	24-----	953	470
3-----	90	1,500	14-----	345	515	25-----	608	425
4-----	130	853	15-----	261	415	26-----	440	400
5-----	150	618	16-----	234	350	27-----	432	370
6-----	170	646	17-----	148	285	28-----	2,230	465
7-----	180	971	18-----	150	245	29-----	23,000	-----
8-----	186	1,450	19-----	140	904	30-----	6,270	-----
9-----	698	4,320	20-----	137	2,010	31-----	2,470	-----
10-----	1,880	4,680	21-----	145	1,120			
11-----	1,160	2,010	22-----	154	736			
Monthly mean discharge, in cubic feet per second-----							1,456	362
Runoff, in inches-----							5.87	4.96

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Jan. 29—Con.		
12 p.m.---	3.00	380	2 a.m.---	7.14	5,650	9 p.m.---	15.00	24,500
Jan. 27			3-----	7.05	5,490	10-----	14.10	22,100
4-----			4-----	6.98	5,360	11-----	13.30	19,900
6 a.m.---	2.96	360	5-----	7.00	5,400	12 p.m.---	12.55	17,900
12 m.---	3.06	410	6-----	7.22	5,800			
6 p.m.---	3.19	475	7-----	7.70	6,660	Jan. 30		
12 p.m.---	3.40	590	8-----	8.55	8,300	4 a.m.---	9.75	10,800
Jan. 28			9-----	10.00	11,400	8-----	7.58	6,440
6 a.m.---	3.80	890	10-----	14.50	23,200	12 m.---	6.52	4,540
12 m.---	4.60	1,650	11-----	17.00	29,900	4 p.m.---	5.78	3,250
6 p.m.---	5.76	3,220	12 m.---	19.50	36,600	8-----	5.32	2,570
12 p.m.---	7.18	5,720	1 p.m.---	22.10	43,700	12 p.m.---	5.03	2,180
Jan. 29			2-----	23.17	46,600			
1 a.m.---	7.19	5,740	3-----	22.80	45,600	Jan. 31		
			4-----	22.15	43,800	6 a.m.---	4.77	1,840
			5-----	21.15	41,100	12 m.---	4.77	1,840
			6-----	19.90	37,700	6 p.m.---	5.44	2,740
			7-----	18.35	34,000			
			8-----	16.60	28,800			

Gage height, in feet and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 31—Con.			Feb. 1—Con.			Feb. 4		
12 p.m.---	6.63	4,730	12 p.m.---	8.27	7,740	6 a.m.---	3.88	962
Feb. 1			Feb. 2			12 m.---	3.75	845
2 a.m.---	7.15	5,670				6 p.m.---	3.62	736
4-----	7.47	6,250				12 p.m.---	3.50	650
6-----	7.53	6,350	6 a.m.---	7.45	6,210	Feb. 5		
8-----	7.37	6,070	12 m.---	6.20	3,960			
10-----	7.11	5,600	6 p.m.---	5.47	2,780			
12 m.---	6.82	5,080	12 p.m.---	4.99	2,130	6 a.m.---	3.45	620
2 p.m.---	6.60	4,680	Feb. 3			12 m.---	3.43	608
4-----	6.52	4,540				6 p.m.---	3.45	620
6-----	6.75	4,950	6 a.m.---	4.65	1,700	12 p.m.---	3.42	602
8-----	7.15	5,670	12 m.---	4.40	1,450			
10-----	7.84	6,910	6 p.m.---	4.19	1,240			
			12 p.m.---	4.02	1,090			

15. POTCAMP CREEK NEAR POUND, VA.

[Miscellaneous site]

Location.—Lat 37°02'29", long 87°36', at culvert on U.S. Highway 23, 6.0 miles south of Pound, Wise County.

Drainage area.—1.5 sq mi.

Gage-height record.—Floodmarks only. Datum of 1929.

Maximum.—January 1957: Discharge, 292 cfs Jan. 29 (stage, 1,667.22 ft above mean sea level, from floodmarks) from computation of flow through culvert and overflow in ditch.

16. POUND RIVER AT POUND, VA.

[Miscellaneous site]

Location.—Lat 37°07'20", long 82°35'56", at Pound, Wise County, half a mile downstream from Indian Creek.

Drainage area.—61 sq mi.

Maximum.—January 1957: Discharge, 15,300 cfs Jan. 29 from slope-area measurement.

17. POUND RIVER NEAR HAYS, VA.

Location.—Lat 37°12'50", long 82°22'50", on left bank 0.2 mile downstream from Cranesnest River, 0.8 mile upstream from Twin Branch, and 4.7 miles west of Haysi, Dickenson County.

Drainage area.—212 sq mi.

Gage-height record.—Water-stage recorder graph.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 11,000 cfs and by slope-area measurement of 27,600 cfs.

Maxima.—January-February 1957: Discharge, 27,300 cfs 5 p.m. Jan. 29 (gage height, 18.65 ft).

1926 to December 1956: Discharge, 30,000 cfs Mar. 23, 1929 (gage height, 16.5 ft, from floodmarks, at site 0.8 mile downstream at different datum).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	148	3,790	12----	705	955	23-----	853	545
2-----	128	3,610	13----	465	665	24-----	835	449
3-----	96	1,540	14----	330	485	25-----	545	390
4-----	134	937	15----	258	369	26-----	375	363
5-----	165	612	16----	231	318	27-----	367	328
6-----	192	605	17----	156	277	28-----	1,720	378
7-----	214	790	18----	152	236	29-----	16,100	-----
8-----	207	1,320	19----	150	488	30-----	5,270	-----
9-----	940	3,370	20----	141	1,380	31-----	1,850	-----
10-----	2,420	3,650	21----	148	905			
11-----	1,380	1,860	22----	170	685			
Monthly mean discharge, in cubic feet per second-----							1,189	1,118
Runoff, in inches-----							6.47	5.49

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29-Con.			Feb. 1-Con.		
12 p.m.---	4.16	320	4 p.m.---	18.55	27,000	8 a.m.---	9.17	3,890
Jan. 27			5-----	18.65	27,300	12 m.---	9.13	3,830
4 a.m.---	4.12	311	6-----	18.55	27,000	4 p.m.---	9.00	3,650
8-----	4.13	313	7-----	18.40	26,500	8-----	9.45	4,280
12 m.---	4.17	323	8-----	17.90	24,900	12 p.m.---	9.90	4,910
4 p.m.---	4.33	369	9-----	17.25	22,800	Feb. 2		
8-----	4.54	441	10-----	16.50	20,400	4 a.m.---	9.95	4,980
12 p.m.---	4.87	572	11-----	15.65	17,800	8-----	9.55	4,420
Jan. 28			12 p.m.---	14.75	15,200	12 m.---	8.96	3,590
4 a.m.---	5.29	741	Jan. 30			4 p.m.---	8.40	2,870
8-----	5.84	1,000	2 a.m.---	13.15	10,900	8-----	7.90	2,330
12 m.---	6.48	1,370	4-----	12.00	8,150	12 p.m.---	7.48	2,020
4 p.m.---	7.45	2,000	6-----	11.15	6,660	Feb. 3		
8-----	8.48	2,970	8-----	10.45	5,680	6 a.m.---	6.98	1,670
12 p.m.---	9.14	3,850	10-----	9.85	4,830	12 m.---	6.56	1,420
Jan. 29			12 m.---	9.37	4,170	6 p.m.---	6.25	1,230
1 a.m.---	9.23	3,970	2 p.m.---	8.96	3,590	12 p.m.---	6.98	1,670
2-----	9.30	4,070	4-----	8.60	3,110	Feb. 4		
3-----	9.34	4,110	6-----	8.31	2,760	6 a.m.---	5.73	945
4-----	9.38	4,180	8-----	8.05	2,470	12 m.---	5.55	858
5-----	9.50	4,350	10-----	7.82	2,270	6 p.m.---	5.35	768
6-----	9.90	4,910	12 p.m.---	7.60	2,100	12 p.m.---	5.15	685
7-----	10.60	5,890	Jan. 31			Feb. 5		
8-----	11.90	7,970	4 a.m.---	7.25	1,860	6 a.m.---	4.98	617
9-----	13.40	11,500	8-----	7.04	1,710	12 m.---	4.91	589
10-----	14.97	15,800	12 m.---	6.92	1,630	6 p.m.---	4.94	601
11-----	16.00	18,900	4 p.m.---	7.02	1,690	12 p.m.---	4.94	601
12 m.---	16.90	21,700	8-----	7.35	1,920			
1 p.m.---	17.60	23,900	12 p.m.---	8.10	2,520			
2-----	18.05	25,400	Feb. 1					
3-----	18.40	26,500	4 a.m.---	8.80	3,370			

18. RUSSELL FORK AT ELKHORN CITY, KY.

[Miscellaneous site]

Location.—Lat 37°18'20", long 82°20'55", 1,500 ft upstream from bridge on State Highway 80 at Elkhorn City, Pike County, 0.3 mile downstream from Lower Branch, and 0.6 mile upstream from Elkhorn Creek.

Drainage area.—555 sq mi.

Discharge record.—Peak discharge by slope-area measurement.

Maximum.—January-February 1957: Discharge, 51,200 cfs Jan. 29.

19. LEVISA FORK AT PIKEVILLE, KY.

Location.—Lat 37°28'35", long 82°31'05", on left bank at foot of Huffman Avenue in Pikeville, Pike County, one-quarter of a mile upstream from bridge on U.S. Highway 119, 0.5 mile upstream from Ferguson Fork, and 7.6 miles downstream from Shelby Creek.

Drainage area.—1,237 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 633.18 ft above mean sea level, unadjusted.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 45,000 cfs and by slope-area measurement at 85,500 cfs.

Maxima.—January-February 1957: Discharge, 85,500 cfs 12:30 a.m. Jan. 30 (gage height, 52.72 ft).

1937 to December 1956: Discharge, 50,300 cfs Jan. 8, 1946 (gage height, 42.90 ft).

Maximum stage known, about 52 ft in February 1862. Flood of January 1918 reached a stage of 44.7 ft, from floodmark.

Mean discharge in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1 ----	582	13,900	12 ----	4,480	6,490	23 ----	3,370	3,260
2 ----	522	21,800	13 ----	2,960	4,210	24 ----	5,520	2,820
3 ----	418	11,900	14 ----	2,110	3,230	25 ----	3,620	2,500
4 ----	382	5,620	15 ----	1,520	2,590	26 ----	2,620	2,300
5 ----	530	4,150	16 ----	1,220	2,140	27 ----	2,120	2,100
6 ----	738	4,660	17 ----	888	1,870	28 ----	6,980	1,900
7 ----	1,010	5,140	18 ----	606	1,540	29 ----	40,500	
8 ----	1,080	6,790	19 ----	598	1,670	30 ----	58,700	
9 ----	3,370	16,400	20 ----	570	5,420	31 ----	18,400	
10 ----	12,700	23,600	21 ----	598	5,110			
11 ----	9,930	15,700	22 ----	690	3,940			
Monthly mean discharge, in cubic feet per second -----							6,107	6,527
Runoff, in inches -----							5.69	5.49

Gage height, in feet, and discharge, in cubic feet per second, and indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 27—Con.			Jan. 28—Con.		
12 p.m.---	5.77	2,220	12 p.m. --	6.07	2,460	12 p.m. --	18.05	13,200
Jan. 27			Jan. 28			Jan. 29		
6 a.m.---	5.60	2,080	4 a.m. ---	7.16	3,330	2 a.m.---	19.18	14,400
12 m.---	5.50	2,000	12 m.---	10.97	6,380	4 a.m.---	20.35	15,600
6 p.m.---	5.55	2,040	4 p.m.---	13.38	8,580	5 a.m.---	21.10	16,300

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 29			Jan. 30—Con.			Feb. 2—Con.		
6 a.m.---	22.00	17,300	12 m.---	44.08	57,400	4 p.m.---	26.77	23,400
7 -----	23.15	18,600	2 p.m.---	42.00	51,800	8 -----	25.00	20,900
8 -----	24.28	20,000	4 -----	39.90	46,500	12 p.m.---	22.94	18,300
9 -----	25.82	22,000	6 -----	37.85	42,000	Feb. 3		
10 -----	27.42	24,300	8 -----	35.75	38,000	4 a.m.---	20.65	15,800
11 a.m.---	29.59	27,600	9 -----	34.70	36,100	8 -----	18.30	13,500
12 m.---	31.25	30,300	10 -----	33.75	34,400	12 m.---	16.12	11,300
1 p.m.---	33.50	34,000	11 -----	32.80	32,800	4 p.m.---	14.35	9,550
2 -----	36.04	38,500	12 p.m.---	31.93	31,400	8 -----	12.98	8,180
3 -----	39.07	44,700	Jan. 31			12 p.m.---	11.94	7,250
4 -----	41.80	51,300	Feb. 1			Feb. 4		
5 -----	44.65	59,000	4 a.m.---	28.43	25,800	4 a.m.---	11.18	6,560
6 -----	47.02	66,200	8 -----	24.85	20,700	12 m.---	9.93	5,540
7 -----	48.65	71,400	12 m.---	21.58	16,800	4 p.m.---	9.34	5,070
8 -----	49.98	75,900	4 p.m.---	18.85	14,000	8 -----	8.89	4,710
9 -----	51.15	79,900	8 -----	16.85	12,000	12 p.m.---	8.48	4,380
10 -----	51.87	82,400	12 p.m.---	15.90	11,100	Feb. 5		
11 -----	52.38	84,300	Feb. 1			4 a.m.---	8.17	4,140
12 p.m.---	52.68	85,300	4 a.m.---	16.13	11,300	8 -----	7.92	3,940
Jan. 30			12 m.---	18.57	13,800	12 m.---	7.85	3,880
12:30 a.m.---	52.72	85,500	8 p.m.---	20.92	16,100	4 p.m.---	8.08	4,060
2 -----	52.50	84,700	12 p.m.---	22.42	17,800	8 -----	8.47	4,380
3 -----	52.13	83,400	Feb. 2			12 p.m.---	8.76	4,610
4 -----	51.56	81,400	4 a.m.---	24.50	20,200			
5 -----	50.93	79,200	8 -----	26.58	23,100			
6 -----	50.13	76,400	12 m.---	27.80	24,900			
7 -----	49.15	73,100						
8 -----	48.20	70,000						
9 -----	47.20	66,700						
10 -----	46.20	63,600						

20. LEVISA FORK AT PRESTONSBURG, KY.

[Miscellaneous site]

Location.—Lat 37°39'50", long 82°46'08", on right bank at water plant in Prestonsburg, Floyd County, 900 ft upstream from Town Brook, and 1,300 ft upstream from highway bridge.

Drainage area.—1,700 sq mi, approximately.

Gage-height record.—Staff gage. Datum of gage is 588.12 ft above mean sea level, datum of 1929.

Discharge record.—Peak discharge by extension of rating curve above 63,000 cfs.

Maximum.—January-February 1957: Discharge, 69,700 cfs 5 p.m. Jan. 30 (gage height, 48.78 ft, from floodmark).

21. JOHNS CREEK NEAR META, KY.

Location.—Lat 37°33'50", long 82°27'20", on left bank 100 ft upstream from Ford Branch, 1,000 ft upstream from U.S. Highway 119 bridge, 1.0 mile upstream from Raccoon Creek, and 1.1 miles southwest of Meta, Pike County.

Drainage area.—55.7 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 717.66 ft above mean sea level, unadjusted.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 1,900 cfs and by contracted-opening measurement of 4,680 cfs.

Maxima.—January-February 1957: Discharge, 4,680 cfs 3 p.m. Jan. 29 (gage height, 14.54 ft).

1941 to December 1956: Discharge, 4,480 cfs Feb. 27, 1955 (gage height, 14.28 ft).

Flood in 1939 reached a stage of 13.6 ft, from floodmarks 600 ft downstream.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	32	815	12----	214	214	23----	662	186
2----	19	793	13----	142	148	24----	300	174
3----	16	289	14----	100	114	25----	192	141
4----	31	181	15----	74	84	26----	130	117
5----	38	170	16----	65	72	27----	114	93
6----	36	305	17----	33	59	28----	693	92
7----	42	268	18----	30	51	29----	2,770	-----
8----	43	312	19----	31	99	30----	977	-----
9----	1,310	1,060	20----	33	178	31----	363	-----
10----	1,110	1,220	21----	41	160			
11----	368	390	22----	65	174			
Monthly mean discharge, in cubic feet per second-----							325	284
Runoff, in inches-----							6.73	5.31

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29			Jan. 30—Con.		
12 p.m.---	4.24	111	2 a.m.---	9.05	1,450	4 a.m.---	9.30	1,550
			3-----	8.86	1,370	6-----	8.78	1,340
Jan. 27			4-----	8.73	1,320	8-----	8.19	1,120
6 a.m.---	4.21	106	5-----	8.63	1,280	10-----	7.65	935
12 m.---	4.27	116	6-----	8.67	1,300	12 m.---	7.15	785
6 p.m.---	4.27	116	7-----	8.89	1,390	2 p.m.---	6.74	675
12 p.m.---	4.30	120	8-----	9.33	1,560	4-----	6.38	585
Jan. 28			9-----	10.00	1,830	6-----	6.14	525
2 a.m.---	4.39	134	10-----	10.86	2,300	8-----	5.95	478
4-----	4.51	152	11-----	11.88	2,910	10-----	5.82	445
6-----	4.69	188	12 m.---	12.83	3,480	12 p.m.---	5.72	420
8-----	5.03	256	1 p.m.---	13.75	4,100			
10-----	5.49	362	2-----	14.27	4,470	Jan. 31		
12 m.---	5.88	460	3-----	14.54	4,680	12 m.---	5.39	338
2 p.m.---	6.50	615	4-----	14.49	4,640	6 p.m.---	5.36	330
4-----	7.66	938	6-----	13.85	4,180	12 p.m.---	5.60	390
6-----	8.63	1,280	8-----	12.91	3,530			
8-----	9.16	1,490	10-----	11.93	2,940	Feb. 1		
10-----	9.42	1,600	12 p.m.---	11.03	2,400	4 a.m.---	5.73	422
12 p.m.---	9.35	1,570	Jan. 30			8-----	6.21	542
			2 a.m.---	10.11	1,880	12 m.---	6.96	730

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge			
Feb. 1—Con.			Feb. 2—Con.			Feb. 4—Con.					
4 p.m.---	7.66	938	12 p.m.---	5.56	380	6 p.m.---	4.54	158			
8-----	8.75	1,330	Feb. 3	5.32	320	12 p.m.---	4.45	142			
12 p.m.---	9.10	1,470				Feb. 5					
Feb. 2						6 a.m.---	5.32	320	Feb. 4	4.76	202
4 a.m.---	8.52	1,240	12 m-----	5.15	280	6 a.m.---	4.38	132			
8-----	7.65	935	12 p.m.---	4.88	226	12 m-----	4.44	141			
12 m-----	6.82	695	Feb. 4	4.76	202	6 p.m.---	4.76	202			
4 p.m.---	6.17	532				12 p.m.---	5.11	272			
8-----	5.77	432									

22. DEWEY RESERVOIR NEAR VAN LEAR, KY.

Location—Lat 37°44'16", long 82°43'50", in intake structure of Dewey Dam on Johns Creek, 1.0 mile upstream from Daniels Creek and 2½ miles southeast of Van Lear, Johnson County.

Drainage area.—207 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage at mean-sea level (levels by Corps of Engineers).

Maxima.—January-February 1957: Contents, 49,270 acre-feet 4 p.m., Feb. 3 (elevation, 670.03 ft).

1950 to December 1956: Contents, 81,400 acre-feet Mar. 9, 1955 (elevation, 682.30 ft).

Remarks.—Reservoir is formed by rolled earth-fill dam with discharge tunnel, controlled by concrete gravity weir, crest elevation, 644.5 ft, 3 gated sluices, and uncontrolled side channel concrete spillway. Dam completed July 22, 1949 and filling of pool began May 15, 1950. Conservation pool (elevation, 645.0 ft) first reached June 14, 1950. Total capacity at elevation 686.0 ft (spillway crest) is 93,300 acre-feet, of which 81,000 acre-feet above elevation 645.0 ft is reversed for flood control and 12,300 acre-feet below elevation 645.0 ft is for conservation. Figures given herein represent total contents, of which 69 acre-feet below gate sill, elevation, 608.25 ft, is dead storage. Gage-height record and contents furnished by Corps of Engineers.

Elevation, in feet, and contents, in acre-feet at 12 p.m. of indicated day, 1957

Day	January		February		Day	January		February	
	Elevation	Contents	Elevation	Contents		Elevation	Contents	Elevation	Contents
1----	645.37	12,600	666.63	42,210	17---	645.04	12,310	645.16	12,410
2----	645.44	12,670	669.48	48,080	18---	645.11	12,370	645.37	12,600
3----	645.35	12,590	669.56	48,250	19---	645.22	12,470	645.38	12,610
4----	645.22	12,470	667.36	43,660	20---	645.23	12,480	645.50	12,720
5----	645.35	12,590	665.00	39,060	21---	645.30	12,450	645.41	12,640
6----	645.42	12,650	663.02	35,480	22---	645.69	12,890	645.29	12,530
7----	645.42	12,650	660.62	31,450	23---	647.14	14,260	645.14	12,400
8----	645.40	12,630	658.35	27,940	24---	645.72	12,920	645.07	12,330
9----	646.27	13,430	657.45	26,620	25---	645.34	12,580	645.03	12,300
10---	649.82	17,030	660.10	30,610	26---	645.30	12,540	645.10	12,360
11---	648.09	15,210	660.46	31,119	27---	645.17	12,420	645.17	12,420
12---	645.38	12,610	657.89	27,260	28---	646.78	13,910	645.33	12,570
13---	645.69	12,890	654.07	22,040	29---	654.60	22,720	-----	-----
14---	645.30	12,540	649.49	16,680	30---	662.68	34,890	-----	-----
15---	645.22	12,470	645.48	12,700	31---	664.78	38,650	-----	-----
16---	645.19	12,440	645.10	12,360					

Supplemental record.—Dec. 31, 1956, 12 p.m., 645.32 ft, 12,560 acre-feet.

23. JOHNS CREEK NEAR VAN LEAR, KY.

Location.—Lat 37°44'37", long 82°43'27", on right bank 100 ft upstream from Long Branch, 0.3 mile upstream from Daniels Creek, 0.5 mile downstream from Dewey Dam, and 2½ miles southeast of Van Lear, Johnson County.

Drainage area.—208 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 597.28 ft above mean sea level (levels by Corps of Engineers).

Discharge record.—Stage-discharge relation defined by current-meter measurements. Backwater from Levisa Fork, Jan. 29 to Feb. 3, Feb. 10–12; discharge computed on basis of releases from Dewey Reservoir.

Maxima.—January to February 1957: Discharge, 3,150 cfs 11 a.m. Feb. 14 (gage height, 14.96 ft); gage height, 27.88 ft 11 p.m. Jan. 30 (backwater from Levisa Fork).

1939 to December 1956: Discharge, 8,350 cfs Jan. 9, 1946 (gage height, 26.50 ft, from rating curve extended above 3,100 cfs by logarithmic plotting).

Remarks.—Flow regulated by Dewey Reservoir (capacity, 93,300 acre-feet).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	56	0	12----	2,540	2,800	23----	1,130	630
2----	34	0	13----	527	3,070	24----	2,090	584
3----	96	1,200	14----	500	3,090	25----	946	495
4----	119	3,060	15----	278	2,420	26----	446	379
5----	28	3,060	16----	195	437	27----	460	289
6----	50	3,060	17----	190	193	28----	797	297
7----	84	3,070	18----	71	88	29----	1,730	-----
8----	120	3,030	19----	59	320	30----	0	-----
9----	713	3,070	20----	88	484	31----	0	-----
10----	2,200	2,400	21----	88	578			
11----	2,690	2,000	22----	174	636			
Monthly mean discharge, in cubic feet per second-----						-----	597	1,455

24. PAINT CREEK AT STAFFORDSVILLE, KY.

Location.—Lat 37°50'05", long 82°52'15", near center of span on downstream side of bridge on U.S. Highway 460, 100 ft downstream from Barnetts Creek, 0.8 mile upstream from Mudlick Creek, 1.7 miles west of Staffordsville, Johnson County, 4 miles upstream from Jenny Creek, and 7.6 miles upstream from mouth.

Drainage area.—101 sq mi.

Gage-height record.—Wire-weight gage read twice daily and peak from crest-stage indicator. Graph drawn for days of changing stage. Datum of gage is 600.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1944.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 4,150 cfs 5 p.m. Jan. 29 (gage height, 16.50 ft, from crest-stage indicator).

1950 to December 1956: Discharge, 11,700 cfs Sept. 20, 1950, Mar. 22, 1952, from rating curve extended above 5,500 cfs by logarithmic plotting; gage height, 24.11 ft Mar. 22, 1952.

The flood of July 5, 1939, reached a stage of about 25 ft, from information by local residents.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	66	966	12-----	265	432	23-----	1,530	119
2-----	51	1,060	13-----	190	245	24-----	465	118
3-----	38	481	14-----	141	170	25-----	290	119
4-----	45	293	15-----	105	136	26-----	186	119
5-----	55	284	16-----	99	121	27-----	166	108
6-----	50	488	17-----	72	102	28-----	777	124
7-----	59	390	18-----	76	94	29-----	2,900	-----
8-----	70	660	19-----	64	99	30-----	1,730	-----
9-----	1,060	1,960	20-----	76	94	31-----	1,990	-----
10-----	1,410	2,110	21-----	76	88			
11-----	480	675	22-----	146	103			
Monthly mean discharge, in cubic feet per second-----							475	420
Runoff, in inches-----							5.42	4.33

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Jan. 30-Con.			Feb. 2-Con.		
12 p.m.---	3.40	190.	8 a.m.---	8.6	1,360	4 p.m.---	6.0	840
			9-----	8.5	1,340	8-----	5.6	740
Jan. 28			12 m.---	8.8	1,400	12 p.m.---	5.2	640
			4 p.m.---	9.7	1,620			
4 a.m.---	3.5	215	8-----	10.9	1,940	Feb. 3		
8-----	3.6	240	12 p.m.---	11.9	2,240			
12 m.---	5.0	590				6 a.m.---	4.8	540
4 p.m.---	7.4	1,120	Jan. 31			12 m.---	4.5	465
8-----	9.3	1,520				6 p.m.---	4.3	415
12 p.m.---	10.3	1,760	4 a.m.---	12.5	2,440	12 p.m.---	4.1	365
			8-----	12.2	2,340			
Jan. 29			12 m.---	11.5	2,120	Feb. 4		
			4 p.m.---	10.6	1,850			
2 a.m.---	10.6	1,850	8-----	9.2	1,490	6 a.m.---	3.9	315
4-----	11.0	1,970	12 p.m.---	7.5	1,140	12 m.---	3.8	290
6-----	11.5	2,120				6 p.m.---	3.7	265
8-----	12.4	2,410	Feb. 1			12 p.m.---	3.6	240
10-----	13.4	2,780						
12 m.---	14.6	3,260	4 a.m.---	5.5	715	Feb. 5		
2 p.m.---	15.7	3,720	8-----	4.8	540			
4-----	16.4	4,090	12 m.---	5.8	790	6 a.m.---	3.5	215
5-----	16.5	4,150	4 p.m.---	7.2	1,080	12 m.---	3.6	240
6-----	16.4	4,090	8-----	8.5	1,340	6 p.m.---	4.0	340
8-----	15.3	3,540	12 p.m.---	9.3	1,520	12 p.m.---	4.4	440
10-----	13.7	2,900	Feb. 2					
12 p.m.---	12.4	2,410						
			4 a.m.---	9.0	1,440			
Jan. 30			8-----	8.0	1,240			
4 a.m.---	10.3	1,760	12 m.---	6.9	1,020			

25. LEVISA FORK AT PAINTSVILLE, KY.

Location.—Lat 37°48'55", long 82°47'30", on left bank 400 ft downstream from bridge on State Highway 40 at Paintsville, Johnson County, and 1,100 ft downstream from Paint Creek.

Drainage area.—2,143 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 566.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1944.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 69,700 cfs 5 a.m. Jan. 31 (gage height, 45.92 ft).

1915-16, 1928 to December 1956: Discharge, 62,300 cfs Feb. 4, 1939 (gage height, 42.15 ft, observed at crest).

Flood of Jan. 29, 1918, reached a gage height of 42.0 ft, determined by Corps of Engineers from floodmarks at site and datum then in use. Flood of 1862 reached a stage of 46.6 ft, from levels to floodmark by Corps of Engineers.

Remarks.—Slight regulation by Dewey Reservoir (capacity 93,300 acre ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	1,160	37,300	12----	15,000	22,900	23----	6,320	5,680
2----	962	27,300	13----	6,480	12,400	24----	10,100	4,890
3----	860	25,600	14----	3,980	8,120	25----	8,550	4,220
4----	880	17,500	15----	2,900	6,540	26----	4,920	3,710
5----	740	10,200	16----	2,230	3,670	27----	3,680	3,250
6----	920	10,300	17----	1,870	2,790	28----	5,350	2,980
7----	1,210	10,700	18----	1,460	2,260	29----	21,300	-----
8----	1,450	11,200	19----	1,090	2,180	30----	51,900	-----
9----	3,920	17,100	20----	1,140	3,620	31----	64,300	-----
10----	14,700	27,400	21----	1,150	7,120			
11----	19,100	30,900	22----	1,280	6,720			
Monthly mean discharge, in cubic feet per second-----							8,416	11,730
Runoff, in inches-----							4.53	5.70

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28-Con.			Jan. 30-Con.		
12 p.m.---	8.47	4,100	8 p.m.---	12.72	8,020	8 a.m.---	38.12	45,800
			12 p.m.---	14.35	9,780	12 m.---	40.58	52,000
Jan. 27						4 p.m.---	42.80	58,400
6 a.m.---	8.16	3,850	Jan. 29			8-----	44.45	64,100
12 m.---	7.91	3,650				12 p.m.---	45.45	67,800
6 p.m.---	7.72	3,500	2 a.m.---	15.22	10,800			
12 p.m.---	7.51	3,330	8-----	20.00	16,500	Jan. 31		
			12 m.---	23.82	21,100			
			4 p.m.---	27.37	25,500	1 a.m.---	45.62	68,500
Jan. 28			8-----	30.48	29,700	2-----	45.76	69,000
4 a.m.---	7.53	3,340	12 p.m.---	33.17	34,800	3-----	45.84	69,400
8-----	7.82	3,580				4-----	45.90	69,600
12 m.---	8.85	4,400	Jan. 30			5-----	45.92	69,700
4 p.m.---	10.86	6,190	4 a.m.---	35.67	39,800	6-----	45.91	69,600
						8-----	45.78	69,100

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 31-Con.			Feb. 1-Con.			Feb. 3-Con.		
10 a.m.---	45.51	68,000	6 p.m.---	30.73	30,100	4 p.m.---	26.93	24,900
12 m.---	45.13	66,500	8-----	30.13	29,200	12 p.m.---	24.80	22,300
2 p.m.---	44.60	64,600	10-----	29.63	28,500			
4-----	44.00	62,500	12 p.m.---	29.30	28,000	Feb. 4		
6-----	43.29	60,000						
8-----	42.54	57,600	Feb. 2			4 a.m.---	23.66	20,900
10-----	41.65	55,000				8-----	22.33	19,300
12 p.m.---	40.70	52,200	6 a.m.---	28.84	27,400	12 m.---	20.90	17,600
			12 m.---	28.51	27,000	4 p.m.---	19.40	15,800
Feb. 1			6 p.m.---	28.54	27,000	12 p.m.---	16.72	12,600
			12 p.m.---	28.77	27,300			
2 a.m.---	39.61	49,500				Feb. 5		
4-----	38.53	46,800						
8-----	36.12	40,800	Feb. 3			6 a.m.---	15.00	10,500
10-----	34.82	38,100	4 a.m.---	28.76	27,300	12 m.---	14.29	9,720
12 m.---	33.63	35,800	8-----	28.41	26,800	6 p.m.---	14.02	9,420
2 p.m.---	32.53	33,600	12 m.---	27.75	26,000	12 p.m.---	14.15	9,560
4-----	31.55	31,600						

26. TUG FORK AT LITWAR, W. VA.

Location.—Lat 37°29'05", long 81°50'40", on left bank 200 ft downstream from War Branch, 0.5 mile downstream from Litwar, McDowell County, 2.2 miles northwest of laeger, and 2.7 miles downstream from Dry Fork.

Drainage area.—502 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 936.36 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current meter measurements below 30,000 cfs and extended above. Stage-discharge relation affected by ice Jan. 17-21.

Maxima.—January-February 1957: Discharge, 35,700 cfs 7:30 p.m. Jan. 29 (gage height, 21.60 ft).

1930 to December 1956: Discharge, 27,600 cfs Mar. 25, 1935 (gage height, 19.0 ft).

Mean discharge, in cubic feet per second, 1957

[illegible]

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 2		
12 p.m.---	2.81	748	6 p.m.---	20.80	34,100	2 a.m.---	7.93	8,560
			7-----	21.59	35,700	4-----	7.88	8,460
Jan. 27			7:30-----	21.60	35,700	8-----	7.42	7,560
6 a.m.---	2.79	732	8-----	21.55	35,600	12 m-----	6.92	6,610
12 m-----	2.82	756	9-----	21.00	34,500	2 p.m.---	6.65	6,120
6 p.m.---	2.93	847	10-----	20.00	32,500	4-----	6.45	5,760
12 p.m.---	3.25	1,150	11-----	18.60	29,700	8-----	6.11	5,170
			12 p.m.---	17.25	27,000	10-----	5.95	4,900
						12 p.m.---	5.78	4,610
Jan. 28			Jan. 30			Feb. 3		
6 a.m.---	3.84	1,780	4 a.m.---	12.50	17,700	6 a.m.---	5.42	4,030
12 m-----	4.90	3,110	8-----	9.45	11,600	12 m-----	5.19	3,680
6 p.m.---	6.20	5,150	12 m-----	7.80	8,300	6 p.m.---	4.92	3,280
12 p.m.---	6.77	6,160	4 p.m.---	6.82	6,430	12 p.m.---	4.70	2,970
			8-----	6.29	5,470			
Jan. 29			12 p.m.---	5.93	4,860	Feb. 4		
1 a.m.---	6.80	6,210	Jan. 31			6 a.m.---	4.53	2,740
2-----	6.82	6,250				12 m-----	4.38	2,550
3-----	6.78	6,170	4 a.m.---	5.67	4,430	6 p.m.---	4.24	2,380
4-----	6.78	6,170	8-----	5.46	4,100	12 p.m.---	4.12	2,230
5-----	6.88	6,350	12 m-----	5.37	3,960			
6-----	7.05	6,660	4 p.m.---	5.40	4,000	Feb. 5		
7-----	7.30	7,140	8-----	6.05	5,060	6 a.m.---	4.00	2,090
8-----	7.65	7,800	12 p.m.---	6.28	5,460	12 m-----	4.05	2,150
9-----	8.35	9,200	Feb. 1			6 p.m.---	4.16	2,280
10-----	9.35	11,200				12 p.m.---	4.16	2,280
11-----	10.60	13,700	4 a.m.---	6.98	6,720			
12 m-----	12.20	16,900	8-----	7.22	7,180			
1 p.m.---	14.00	20,500	12 m-----	6.97	6,700			
2-----	15.70	23,900	4 p.m.---	6.83	6,440			
3-----	17.15	26,800	8-----	7.14	7,030			
4-----	18.50	29,500	12 p.m.---	7.68	8,060			
5-----	19.60	31,700						

27. PANTHER CREEK NEAR PANTHER, W. VA.

Location.—Lat 37°26'45", long 81°52'15", on left bank, 200 ft downstream from Cub Branch, 2.1 miles upstream from Trace Fork and 3 miles southwest of Panther, McDowell County.

Drainage area.—30.8 sq mi.

Gage-height record.—Water-stage recorder graph. Altitude of gage is 1,050 ft (from topographic map).

Discharge record.—Stage-discharge relation defined by current meter measurements below 2,800 cfs and extended above. Stage-discharge relation affected by ice, Jan. 18–21.

Maxima.—January–February 1957: Discharge, 4,900 cfs 11:30 a.m. Jan. 29 (gage height, 9.50 ft).

1946 to December 1956: Discharge, 4,200 cfs Mar. 6, 1955 (gage height, 8.98 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	19	580	12-----	107	126	23---	196	65
2-----	16	475	13-----	75	81	24---	143	54
3-----	18	182	14-----	55	60	25---	86	49
4-----	21	97	15-----	40	44	26---	60	45
5-----	27	92	16-----	32	39	27---	69	37
6-----	38	148	17-----	24	30	28---	418	39
7-----	43	171	18-----	18	26	29---	2,250	-----
8-----	35	254	19-----	16	72	30---	478	-----
9-----	361	645	20-----	17	155	31---	239	-----
10-----	398	630	21-----	20	110			
11-----	198	258	22-----	26	80			
Monthly mean discharge, in cubic feet per second-----							179	166
Runoff, in inches-----							6.69	5.61

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29-Con.			Feb. 1-Con.		
12 p.m.---	2.43	49	4 p.m.---	7.95	2,740	4 p.m.---	5.00	555
			6-----	7.42	2,100	8-----	6.08	1,030
Jan. 27			7-----	7.31	1,970	12 p.m.---	5.82	904
			8-----	7.10	1,760			
6 a.m.---	2.43	49	9-----	6.75	1,460	Feb. 2		
12 m.---	2.52	57	10-----	6.55	1,300			
6 p.m.---	2.67	70	11-----	6.23	1,100	6 a.m.---	5.09	586
12 p.m.---	3.30	148	12 p.m.---	6.02	1,000	12 m.---	4.52	415
						6 p.m.---	4.15	322
Jan. 28			Jan. 30			12 p.m.---	3.85	254
6 a.m.---	4.19	332	4 a.m.---	5.38	706	Feb. 3		
12 m.---	4.68	455	8-----	4.87	511			
6 p.m.---	5.00	555	12 m.---	4.47	402	6 a.m.---	3.64	212
12 p.m.---	4.87	511	4 p.m.---	4.22	340	12 m.---	3.47	179
			8-----	4.00	285	6 p.m.---	3.30	148
Jan. 29			12 p.m.---	3.82	248	12 p.m.---	3.13	122
1 a.m.---	4.86	508	Jan. 31			Feb. 4		
3-----	4.93	530						
4-----	5.13	602	8 a.m.---	3.65	214	12 m.---	2.92	96
5-----	5.90	940	4 p.m.---	3.65	214	6 p.m.---	2.82	85
6-----	6.95	1,620	8-----	3.92	268	12 p.m.---	2.75	78
7-----	7.70	2,440	12 p.m.---	4.22	340			
9-----	8.50	3,500				Feb. 5		
11-----	9.48	4,870	Feb. 1					
11:30	9.50	4,900				6 a.m.---	2.69	72
12 m.---	9.38	4,730	4 a.m.---	4.43	392	12 m.---	2.83	86
1 p.m.---	9.00	4,200	8-----	4.58	430	6 p.m.---	3.02	108
2-----	8.52	3,530	12 m.---	4.66	450	12 p.m.---	3.18	129

28. TUG FORK NEAR KERMIT, W. VA.

Location.—Lat 37°49'05", long 82°23'20", on right bank 2 miles upstream from Wolf Creek, 3 miles upstream from Kermit, Mingo County, and 3 miles downstream from Pigeon Creek.

Drainage area.—1,185 sq. mi.

Gage-height record.—Water-stage recorder graph except 2 a.m. to 4 p.m. Jan. 30 for which graph was reconstructed on the basis of high-water mark. Datum of gage is 581.82 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current meter measurements below 30,000 cfs and by slope-area measurement of 61,600 cfs.

Maxima.—January-February 1957: Discharge, 61,300 cfs 1 p.m. Jan. 30 (gage height, 43.88 ft, high water mark in gage well).

1934 to December 1956: Discharge, 44,600 cfs Feb. 28, 1955 (gage height, 40.6 ft).

Stage previously known: About 43.3 ft on unknown date prior to 1915.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	740	12,100	12-----	4,930	7,940	23-----	4,380	3,410
2-----	670	19,200	13-----	3,200	4,930	24-----	5,470	3,100
3-----	582	12,500	14-----	2,350	3,800	25-----	3,850	2,800
4-----	582	6,270	15-----	1,750	3,100	26-----	2,750	2,500
5-----	688	4,380	16-----	1,430	2,600	27-----	2,150	2,300
6-----	740	5,980	17-----	1,160	2,250	28-----	3,970	2,150
7-----	880	5,900	18-----	940	1,950	29-----	22,900	-----
8-----	980	6,120	19-----	840	1,950	30-----	52,900	-----
9-----	4,030	12,200	20-----	820	3,360	31-----	23,000	-----
10-----	17,200	21,800	21-----	860	4,570			
11-----	11,400	17,200	22-----	940	3,910			
Monthly mean discharge, in cubic feet per second-----							5,777	6,438
Runoff, in inches-----							5.62	5.66

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29			Jan. 30—Con.		
12 p.m.---	7.12	2,360	6 a.m.-----	22.64	14,200	10 a.m.---	43.70	60,200
			12 m.-----	27.90	20,400	11-----	43.80	60,800
Jan. 27			6 p.m.-----	35.15	30,800	12 m.---	43.87	61,200
			12 p.m.---	40.00	42,500	1 p.m.---	43.88	61,300
6 a.m.-----	6.83	2,210				2-----	43.87	61,200
12 m.---	6.67	2,140	Jan. 30			3-----	43.80	60,800
12 p.m.---	6.40	2,000				4-----	43.65	59,900
			1 a.m.-----	40.40	43,900	5-----	43.20	57,200
Jan. 28			2-----	40.90	45,600	7-----	42.00	50,000
			4-----	41.70	48,800	9-----	41.00	46,000
6 a.m.-----	6.63	2,120	6-----	42.60	53,600	10-----	40.50	44,200
12 m.---	7.94	2,770	7-----	43.00	56,000	12 p.m.---	39.00	39,500
6 p.m.---	11.80	4,930	8-----	43.30	57,800			
12 p.m.---	18.30	10,100	9-----	43.55	59,300			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
<i>Jan. 31</i>			<i>Feb. 2</i>			<i>Feb. 3—Con.</i>		
6 a.m.---	34.30	29,400	2 a.m.---	25.65	17,600	12 p.m.---	16.00	8,100
12 m.---	28.80	21,500	4-----	26.30	18,400			
6 p.m.---	23.70	15,400	6-----	26.80	19,000	<i>Feb. 4</i>		
12 p.m.---	20.00	11,600	8-----	27.25	19,500			
			10-----	27.55	19,900	6 a.m.---	14.63	7,000
<i>Feb. 1</i>			12 m.---	27.75	20,200	12 m.---	13.53	6,150
2 a.m.---	19.25	10,900	2 p.m.---	27.82	20,300	6 p.m.---	12.55	5,440
4-----	18.72	10,400	4-----	27.75	20,200	12 p.m.---	11.68	4,860
6-----	18.50	10,200	6-----	27.58	20,000			
8-----	18.58	10,300	8-----	27.25	19,500	<i>Feb. 5</i>		
10-----	18.75	10,500	10-----	26.70	18,800			
12 m.---	19.23	10,900	12 p.m.---	26.00	18,000	4 a.m.---	11.28	4,620
2 p.m.---	19.82	11,400				8-----	10.85	4,360
4-----	20.73	12,300	<i>Feb. 3</i>			12 m.---	10.52	4,160
8-----	22.90	14,500	6 a.m.---	23.40	15,000	4 p.m.---	10.38	4,080
10-----	24.00	15,700	12 m.---	20.65	12,200	8-----	10.74	4,290
12 p.m.---	24.90	16,700	6 p.m.---	18.00	9,800	12 p.m.---	11.35	4,660

29. BIG SANDY RIVER AT LOUISA, KY.

Location.—Lat 38°10'16", long 82°38'05', on left bank, 1.6 miles upstream from Blaine Creek, 4.3 miles northwest of Louisa, Lawrence County, and at mile 21.2.

Drainage area.—3,870 sq mi, approximately.

Gage-height record.—Water-stage recorder graphs, except for Feb. 9, 10 at auxiliary gage, 5.0 miles upstream. Datum of gage is 512.81 ft above mean sea level, datum of 1929.

Discharge record.—Stage-fall-discharge relation or stage-discharge relation defined by current-meter measurements. Fall used as a factor Jan. 12, 13, Jan. 24–28, Jan. 30 to Feb. 8, Feb. 11–15. Discharge for Feb. 9, 10 estimated on basis of recorded range in stage, weather records and summation of records for Levisa Fork at Paints-ville, Ky., and Tug Fork near Kermit, W. Va.

Maxima.—January-February 1957: Discharge, 84,900 cfs 6 p.m. Jan. 31 (gage height, 44.42 ft); gage height, 44.43 ft at 7 p.m. Jan. 31.

1938 to December 1956: Discharge, 89,400 cfs Mar. 2, 1955; gage height, 46.36 ft Mar. 2, 1955.

Flood of Apr. 3, 1908, reached a stage of 48.4 ft, former site and datum.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	2,450	68,200	12----	28,100	45,300	23----	9,180	11,100
2-----	2,200	52,000	13----	19,000	31,200	24----	18,200	9,730
3-----	1,880	46,400	14----	10,500	18,600	25----	17,700	8,670
4-----	1,760	36,700	15----	7,240	14,600	26----	12,800	7,720
5-----	1,780	26,700	16----	5,480	10,600	27----	8,750	6,970
6-----	1,800	19,800	17----	4,450	7,320	28----	8,210	6,320
7-----	2,030	19,300	18----	3,760	6,100	29----	23,200	-----
8-----	2,410	19,800	19----	3,100	5,360	30----	58,600	-----
9-----	3,610	26,000	20----	2,800	6,130	31----	82,000	-----
10-----	21,400	45,000	21----	2,850	10,300			
11-----	38,200	52,000	22----	3,220	12,800			
Monthly mean discharge, in cubic feet per second-----							13,180	22,530
Runoff, in inches-----							3.93	6.06

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Jan. 31			Feb. 3		
12 p.m.---	11.83	7,790	1 a.m.---	41.49	76,100	4 a.m.---	35.70	48,700
Jan. 28			3-----	42.09	77,900	8-----	35.46	48,100
			4-----	42.41	78,800	12 m.---	35.15	46,800
			5-----	42.80	80,000	4 p.m.---	34.74	45,900
			7-----	43.36	81,700	8-----	34.21	43,600
			9-----	43.68	82,600	12 p.m.---	33.53	42,100
4 a.m.---	11.52	7,710	11-----	43.92	83,400	Feb. 4		
8-----	11.24	7,590	1 p.m.---	44.22	84,300			
12 m.---	11.11	7,780	3-----	44.31	84,500			
4 p.m.---	11.38	8,320	4-----	44.36	84,700			
8-----	11.96	8,960	6-----	44.42	84,900			
12 p.m.---	12.92	10,100	7-----	44.43	84,400	4 a.m.---	32.77	40,400
Jan. 29			8-----	44.36	84,300	8-----	31.83	38,300
			9-----	44.27	83,600	12 m.---	30.80	36,600
			10-----	44.20	82,500	4 p.m.---	29.68	34,300
			12 p.m.---	44.02	80,300	8-----	28.52	33,600
			Feb. 1			12 p.m.---	27.24	32,000
4 a.m.---	43.27	76,500				12 m.---	23.26	27,100
8-----	42.30	72,200				6 p.m.---	21.54	23,800
12 m.---	41.26	67,800				12 p.m.---	20.24	21,300
4 p.m.---	40.26	63,800				Feb. 5		
8-----	39.31	60,100						
12 p.m.---	38.38	57,600						
Feb. 2			6 a.m.---	19.49	19,900			
			12 m.---	19.54	20,000			
			6 p.m.---	19.90	19,200			
			12 p.m.---	20.26	18,700			
			2 a.m.---	30.96	43,900	Feb. 6		
4-----	32.41	46,600						
6-----	33.32	50,600						
10-----	35.06	56,600						
2 p.m.---	36.81	61,800						
4-----	37.76	64,600	Feb. 6					
6-----	38.64	67,100						
8-----	39.49	70,000						
10-----	40.45	72,300						
12 p.m.---	41.12	75,000						

30. BLAINE CREEK AT YATESVILLE, KY.

Location.—Lat 38°08'40", long 82°41'05", on upstream wall near center of span of covered bridge at Yatesville, Lawrence County, 5 miles northwest of Louisa, 5.8 miles upstream from Cat Creek, and 10.2 miles downstream from Little Blaine Creek.

Drainage area.—217 sq mi.

Gage-height record.—Wire-weight gage and peak from crest-stage indicator. Graph drawn for days of changing stage. Datum of gage is 561.57 ft above mean sea level, unadjusted.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 4,320 cfs 7-8 a.m. Jan. 30 (gage height, 16.05 ft, from crest-stage indicator).

1915-18, 1938 to December 1956: Discharge, 15,500 cfs Feb. 4, 1939 (gage height, 26.55 ft).

Maximum stage known, 27.6 ft, on unknown date prior to 1915.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1 ----	137	1,230	12 ----	540	864	23 ----	1,430	220
2 ----	111	2,700	13 ----	390	640	24 ----	872	208
3 ----	87	1,130	14 ----	290	479	25 ----	670	208
4 ----	94	719	15 ----	226	364	26 ----	430	220
5 ----	97	594	16 ----	203	312	27 ----	314	220
6 ----	101	857	17 ----	198	254	28 ----	468	231
7 ----	101	737	18 ----	176	213	29 ----	2,630	-----
8 ----	105	594	19 ----	162	203	30 ----	3,790	-----
9 ----	560	1,210	20 ----	121	226	31 ----	1,160	-----
10 ----	2,460	3,400	21 ----	376	175			
11 ----	1,400	2,120	22 ----	2,600	203			
Monthly mean discharge, in cubic feet per second -----							719	733
Runoff, in inches -----							3.82	3.52

LITTLE SANDY RIVER BASIN

31 LITTLE SANDY RIVER NEAR GRAYSON, KY

Location.—Lat 38°20'25", long 82°55'10", on downstream side of center pier of highway bridge, 0.3 mile upstream from Lower Stinson Creek, 1.3 miles downstream from U.S. Highway 60, and 1.7 miles northeast of Grayson, Carter County.

Drainage area.—398 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 557.95 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 6,400 cfs 10 p.m. Jan. 23 (gage height, 17.09 ft).

1938 to December 1956: Discharge, 24,500 cfs Sept. 22, 1950; gage height, 27.53 ft Sept. 22, 1950.

Mean discharge, in cubic feet per second, 1957

[illegible]

TYGARTS CREEK BASIN

32. TYGARTS CREEK NEAR GREENUP, KY

Location.—Lat 38°33'51", long 82°57'08", on downstream side of center pier of bridge on State Highway 7, 100 ft downstream from Lick Run, 0.4 mile upstream from White Oak Creek, and 6½ miles west of Greenup, Greenup County.

Drainage area.—241 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 547.14 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 4,000 cfs 11:30 p.m. Jan. 23 (gage height, 13.99 ft).

1940 to December 1957; Discharge, 12,800 cfs Apr. 13, 1948 (gage height, 20.35 ft).

Mean discharge, in cubic feet per second, 1957

[illegible]

LICKING RIVER BASIN

33. LICKING RIVER NEAR SALYERSVILLE, KY

Location.—Lat 37°45'03", long 83°05'04", on left bank at upstream side of bridge on State Highway 30, 0.2 mile upstream from Gardner Branch, 1.2 miles west of Salyersville, Magoffin County, and 3.1 miles downstream from State Road Fork.

Drainage area.—140 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 823.80 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 5,880 cfs 12:30 a.m. Jan. 30 (gage height, 20.79 ft).

1938 to December 1956: Discharge, 14,300 cfs Feb. 3, 1939 (gage height, 25.4 ft, from floodmark).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	97	1,220	12----	409	596	23----	1,280	257
2----	78	2,120	13----	284	386	24----	815	246
3----	63	1,100	14----	211	283	25----	423	228
4----	62	597	15----	164	218	26----	339	206
5----	76	528	16----	139	184	27----	318	182
6----	74	904	17----	107	152	28----	883	184
7----	74	728	18----	96	132	29----	3,520	-----
8----	71	918	19----	81	148	30----	4,360	-----
9----	669	1,420	20----	78	219	31----	1,370	-----
10----	1,960	1,820	21----	83	206			
11----	1,040	1,530	22----	115	239			
Monthly mean discharge, in cubic feet per second-----							624	605
Runoff, in inches-----							5.14	4.50

KENTUCKY RIVER BASIN

34. NORTH FORK KENTUCKY RIVER AT WHITESBURG, KY

[Miscellaneous site]

Location.—Lat 37°07'12", long 82°49'50", at first railroad bridge downstream from railroad station in Whitesburg, Letcher County, 0.7 mile downstream from bridge on U.S. Highway 119, and 1.3 miles downstream from Solomon Branch.

Drainage area.—66.4 sq mi.

Discharge record.—Peak discharge by contracted-opening measurement.

Maximum.—January-February 1957: Discharge, 7,730 cfs Jan. 29.

35. NORTH FORK KENTUCKY RIVER AT HAZARD, KY.

Location.—Lat 37°14'45", long 83°11'00", near right bank on downstream side of Woodland Park bridge on eastern limits of Hazard, Perry County, 150 ft upstream from city waterworks dam, and 4.0 miles upstream from Lotts Creek.

Drainage area.—466 sq mi.

Gage-height record.—Wire-weight gage read twice daily and peak from floodmarks. Graph drawn for days of changing stage. Datum of gage is 839.76 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 20,000 cfs and by contracted-opening measurement at 47,800 cfs.

Maxima.—January-February 1957: Discharge, 47,800 cfs 7 p.m. Jan. 29 (gage height, 37.54, from floodmarks).

1940 to December 1956: Discharge, 28,100 cfs Feb. 1, 1951 (gage height, 27.2 ft).

Flood of May 30, 1927, reached a stage of about 34 ft (from information by local resident, U.S. Weather Bureau gage reading and relation of 1927 and 1939 floods). Flood of Feb. 3, 1939, reached a stage of 29.95 ft, from floodmark.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	216	4,980	12----	1,120	1,730	23----	2,620	992
2-----	189	6,180	13----	821	1,230	24----	1,570	876
3-----	138	2,530	14----	620	920	25----	1,090	788
4-----	189	1,560	15----	500	766	26----	755	733
5-----	230	1,260	16----	382	660	27----	824	680
6-----	382	1,480	17----	216	540	28----	4,590	650
7-----	440	1,740	18----	180	470	29----	32,300	-----
8-----	400	2,380	19----	180	1,100	30----	15,700	-----
9-----	680	6,150	20----	200	1,910	31----	3,110	-----
10-----	3,150	9,160	21----	210	1,350			
11-----	2,000	3,340	22----	246	1,140			
Monthly mean discharge, in cubic feet per second-----							2,427	2,046
Runoff, in inches-----							6.01	4.57

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 29—Con.		
12 p.m.---	5.00	700	12 p.m.---	10.60	8,280	12 p.m.---	33.80	41,800
Jan. 27			Jan. 29			Jan. 30		
6 a.m.---	4.90	600	2 a.m.---	11.50	9,450	4 a.m.---	26.60	30,500
12 m.---	5.00	700	4-----	13.00	11,400	8-----	19.30	19,800
6 p.m.---	5.20	920	6-----	16.40	15,800	12 m.---	11.60	9,580
12 p.m.---	5.60	1,450	8-----	21.60	23,000	4 p.m.---	9.00	6,200
Jan. 28			10-----	27.20	31,400	8-----	8.10	5,030
			12 m.---	31.60	38,300	12 p.m.---	7.60	4,340
			2 p.m.---	35.60	44,700			
4 a.m.---	6.00	2,030	4-----	37.20	47,200	Jan. 31		
8-----	6.90	3,340	6-----	37.52	47,700			
12 m.---	7.80	4,620	7-----	37.54	47,800	6 a.m.---	6.98	3,450
4 p.m.---	8.70	5,810	8-----	37.40	47,500	12 m.---	6.59	2,890
8-----	9.50	6,850	10-----	36.60	46,300	6 p.m.---	6.30	2,460

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 31—Con.			Feb. 2—Con.			Feb. 4		
12 p.m.---	6.61	2,910	8 a.m.---	10.45	8,080	6 a.m.---	5.78	1,710
			12 m.---	8.58	5,650	6 p.m.---	5.55	1,380
Feb. 1			4 p.m.---	7.85	4,690	12 p.m.---	5.47	1,270
			8-----	7.37	4,020			
6 a.m.---	7.20	3,770	12 p.m.---	6.96	3,420	Feb. 5		
12 m.---	7.87	4,720						
6 p.m.---	8.84	5,990	Feb. 3			6 a.m.---	5.40	1,170
12 p.m.---	10.38	7,990				12 m.---	5.43	1,210
			6 a.m.---	6.53	2,800	12 p.m.---	5.58	1,420
Feb. 2			12 m.---	6.30	2,460			
			6 p.m.---	6.10	2,180			
4 a.m.---	11.12	8,960	12 p.m.---	5.94	1,940			

36. BEAR BRANCH NEAR NOBLE, KY.

Location.—Lat 37°27'02", long 83°11'43", on right bank 800 ft upstream from mouth, a quarter of a mile west of Noble, Breathitt County, 1.4 miles east of former site of Noble Postoffice, and 3½ miles north of Stacy.

Drainage area.—2.21 sq mi.

Gage-height record.—Water-stage recorder graph, except for periods of lagging intake action, Jan. 10-14, 23-26, 29-31, Feb. 2, 3, 10-14, when graph was drawn using shape of recorder trace, occasional staff-gage readings, and floodmark. Datum of gage is 807.81 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 150 cfs.

Maxima.—January-February 1957: Discharge, 375 cfs 9 a.m. Jan. 29 (gage height, 3.20 ft, from floodmark).

1954 to December 1956: Discharge, 328 cfs Feb. 18, 1956 (gage height, 3.01 ft).

Mean discharge, in cubic feet per second, 1957

[illegible]

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 1—Con.		
12 p.m.---	1.25	3.3	12 m.-----	2.71	252	6 p.m.-----	2.03	88
			2 p.m.-----	2.47	192	12 p.m.---	1.82	49
Jan. 27			4-----	2.26	140			
6 a.m.-----	1.27	3.7	6-----	2.15	114	Feb. 2		
12 m.-----	1.29	4.3	8-----	2.04	90	6 a.m.-----	1.70	34
6 p.m.-----	1.35	6.6	10-----	1.95	72	12 m.-----	1.63	26
12 p.m.---	1.40	8.8	12 p.m.---	1.88	59	12 p.m.---	1.51	15
Jan. 28			Jan. 30			Feb. 3		
			6 a.m.-----	1.67	31			
6 a.m.-----	1.62	25	12 m.-----	1.57	20	12 m.-----	1.41	9.3
12 m.-----	1.80	46	6 p.m.-----	1.52	16	12 p.m.---	1.37	7.4
6 p.m.-----	1.95	72	12 p.m.---	1.51	15			
12 p.m.---	1.88	59	Jan. 31			Feb. 4		
Jan. 29			12 m.-----	1.53	17	12 m.-----	1.32	5.4
2 a.m.-----	1.97	75	12 p.m.---	1.61	24	12 p.m.---	1.29	4.3
4-----	2.02	85				Feb. 5		
6-----	2.24	135	Feb. 1					
8-----	3.08	345	6 a.m.-----	1.63	26	12 m.-----	1.29	4.3
9-----	3.20	375	12 m.-----	1.69	33	12 p.m.---	1.31	5.0
10-----	3.10	350						

37. TROUBLESOME CREEK AT NOBLE, KY.

Location.—Lat 37°26'36", long 83°13'06", on left bank adjacent to State Highway 15, at former site of Noble Post Office, 0.2 mile downstream from Buckhorn Creek, 1.5 miles west of Noble, Breathitt County, and 14 miles upstream from mouth.

Drainage area.—177 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage 768.5 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 10,000 cfs.

Maxima.—January-February 1957: Discharge, 13,500 cfs 5 p.m., Jan. 29 (gage height, 23.35 ft).

1949 to December 1956: Discharge, 15,600 cfs Feb. 1, 1951 (gage height, 24.78 ft).

Maximum stage known, about 29 ft in February 1939, from information by local residents.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	79	2,430	12-----	562	685	23-----	2,360	553
2-----	58	2,300	13-----	370	475	24-----	882	493
3-----	45	984	14-----	270	342	25-----	529	415
4-----	64	594	15-----	206	260	26-----	348	350
5-----	94	500	16-----	130	217	27-----	374	282
6-----	98	688	17-----	65	174	28-----	2,520	330
7-----	110	730	18-----	60	150	29-----	9,230	-----
8-----	108	882	19-----	70	322	30-----	2,970	-----
9-----	1,460	2,460	20-----	89	493	31-----	1,210	-----
10-----	3,070	3,680	21-----	122	457			
11-----	1,080	1,350	22-----	217	529			
Monthly mean discharge, in cubic feet per second-----							931	826
Runoff, in inches-----							6.06	4.86

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29-Con.			Feb. 1-Con.		
12 p.m.---	3.08	300	1 p.m.---	22.45	12,400	12 m.---	8.45	2,080
			3-----	23.10	13,200	4 p.m.---	10.20	2,790
Jan. 27			4-----	23.30	13,400	8-----	12.30	3,800
6 a.m.---	3.12	310	5-----	23.35	13,500	12 p.m.---	12.40	3,850
12 m.---	3.24	340	6-----	23.02	13,100			
6 p.m.---	3.44	397	8-----	22.03	11,900	Feb. 2		
12 p.m.---	4.11	598	10-----	20.37	10,100	4 a.m.---	11.46	3,380
			11-----	19.30	9,000	8-----	9.68	2,570
Jan. 28			12 p.m.---	18.18	7,990	12 m.---	8.39	2,060
2 a.m.---	4.61	748	Jan. 30			4 p.m.---	7.45	1,720
4-----	5.34	984	2 a.m.---	16.08	6,260	8-----	6.81	1,500
6-----	6.20	1,280	4-----	13.73	4,640	12 p.m.---	6.35	1,340
8-----	7.40	1,700	6-----	12.06	3,680			
10-----	8.40	2,060	8-----	10.65	2,990	Feb. 3		
12 m.---	9.17	2,370	10-----	9.62	2,550	6 a.m.---	5.73	1,120
2 p.m.---	10.40	2,880	12 m.---	8.90	2,260	12 m.---	5.26	956
4-----	11.65	3,480	2 p.m.---	8.29	2,020	6 p.m.---	4.86	823
6-----	12.48	3,890	4-----	7.78	1,840	12 p.m.---	4.56	733
8-----	12.95	4,170	6-----	7.36	1,690			
10-----	13.15	4,290	8-----	7.02	1,570	Feb. 4		
12 p.m.---	12.96	4,180	10-----	6.72	1,470	6 a.m.---	4.31	658
			12 p.m.---	6.49	1,390	12 m.---	4.08	589
Jan. 29			Jan. 31			6 p.m.---	3.87	526
1 a.m.---	12.85	4,110	6 a.m.---	6.02	1,220	12 p.m.---	3.70	475
2-----	12.85	4,110	12 m.---	5.70	1,110			
3-----	12.98	4,190	6 p.m.---	5.75	1,130	Feb. 5		
4-----	13.26	4,360	12 p.m.---	6.52	1,400	6 a.m.---	3.60	445
5-----	13.70	4,620				12 m.---	3.63	454
6-----	14.38	5,070				6 p.m.---	3.89	532
7-----	16.10	6,280	Feb. 1			12 p.m.---	4.32	661
8-----	18.00	7,830	4 a.m.---	6.89	1,530			
9-----	19.47	9,170	8-----	7.50	1,740			
11-----	21.25	11,000						

38. NORTH FORK KENTUCKY RIVER AT JACKSON, KY.

Location.—Lat 37°33'05", long 83°23'05", near center of span on upstream side of bridge on State Highways 30 and 52 at Jackson, Breathitt County, 3 miles downstream from Quicksand Creek.

Drainage area.—1,101 sq mi.

Gage-height record.—Graph drawn from twice-daily wire-weight gage readings, except Jan. 29 to Feb. 1, when graph was based on numerous extra readings and observations at crest. Datum of gage is 697.67 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Rate of change in stage used as a factor Jan. 9–11, 23, 24, Jan. 28 to Feb. 4, Feb. 8–12. Maxima.—January-February 1957: Discharge, 53,500 cfs 10 a.m. Jan. 30 (gage height, 39.34 ft); gage height, 40.41 ft 3:15 p.m. Jan. 30.

1928–31, 1936–37, 1938 to December 1956: Discharge, 46,800 cfs Feb. 4, 1939, (gage height, 43.10 ft).

Maximum stage known, that of Feb. 4, 1939. Flood of May 30, 1927, reached a stage of 42.9 ft.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	504	10,800	12-----	4,330	6,800	23-----	6,850	3,120
2-----	434	14,500	13-----	2,660	4,200	24-----	6,040	2,790
3-----	300	9,900	14-----	1,700	2,840	25-----	3,700	2,460
4-----	330	5,640	15-----	1,330	2,300	26-----	2,530	2,250
5-----	390	3,780	16-----	1,060	1,900	27-----	2,080	1,950
6-----	455	4,200	17-----	700	1,480	28-----	6,250	1,950
7-----	665	4,350	18-----	525	1,310	29-----	25,300	-----
8-----	770	4,960	19-----	490	1,150	30-----	47,800	-----
9-----	4,090	8,470	20-----	504	2,200	31-----	25,100	-----
10-----	9,480	16,300	21-----	581	3,450			
11-----	7,770	14,400	22-----	958	3,340			
Monthly mean discharge, in cubic feet per second-----							5,344	5,100
Runoff, in inches-----							5.60	4.82

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29			Jan. 30—Con.		
12 p.m.---	5.4	2,200	4 a.m.---	17.6	14,900	2 p.m.---	40.34	51,500
			8-----	20.5	18,400	3:15-----	40.41	40,100
Jan. 27			12 m-----	24.3	25,100	4-----	40.37	49,100
			4 p.m.---	27.7	30,100	6-----	40.19	47,300
12 m-----	5.1	1,900	8-----	30.7	35,600	8-----	39.77	44,700
12 p.m.---	5.5	2,310	12 p.m.---	33.8	42,300	10-----	39.21	42,500
						12 p.m.---	38.50	39,000
Jan. 28			Jan. 30			Jan. 31		
4 a.m.---	5.7	2,530	2 a.m.---	35.02	44,500			
8-----	6.4	3,360	4-----	36.24	47,200	8 a.m.---	34.5	30,000
12 m-----	8.7	6,190	6-----	37.34	49,000	4 p.m.---	28.9	19,100
4 p.m.---	11.0	8,090	8-----	38.34	51,500	12 p.m.---	22.2	13,500
8-----	13.2	10,100	10-----	39.34	53,500			
12 p.m.---	15.3	12,100	12 m-----	40.00	52,300			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 1			Feb. 2—Con.			Feb. 4		
4 a.m.---	19.0	11,200	6 p.m.---	19.4	14,600	6 a.m.---	10.3	6,550
8-----	15.8	9,420	12 p.m.---	18.5	13,300	12 m ----	9.0	5,630
12 m ----	14.1	9,310				6 p.m.---	7.7	4,750
4 p.m.---	14.1	10,100	Feb. 3			12 p.m.---	6.9	3,950
12 p.m.---	16.6	13,000						
			6 a.m.---	17.1	11,700	Feb. 5		
Feb. 2			12 m ----	14.9	9,430	12 m ----	6.6	3,650
6 a.m.---	18.4	14,800	6 p.m.---	12.7	8,180	12 p.m.---	6.8	3,850
12 m ----	19.6	15,400	12 p.m.---	11.4	7,310			

39. NORTH FORK KENTUCKY RIVER NEAR AIREDALE, KY.

[Gaging station, discontinued 1942]

Location (revised).—Lat 37°36'25", long 83°37'50", on right bank 0.3 mile downstream from Laurel Branch, half a mile northeast of Airedale, Lee County, 3.8 miles upstream from confluence with Middle Fork, and 5 miles northeast of Beattyville.

Drainage area.—1,294 sq mi (revised).

Gage-height record.—Floodmark only. Datum of gage is 632.29 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 22,000 cfs made in 1929–31, 1940–42.

Maxima.—January–February 1957: Discharge, about 55,000 cfs Jan. 30, 1957 (gage height, 47.14 ft, from floodmark).

1929–31, 1939–42: Discharge, 24,200 cfs July 10, 1942 (gage height, 28.30 ft).

Flood of Feb. 4, 1939, reached a stage of 45.6 ft, from data furnished by Corps of Engineers.

40. MIDDLE FORK KENTUCKY RIVER NEAR HYDEN, KY.

[Miscellaneous site]

Location.—Lat 37°10'45", long 83°22'20", 0.8 mile downstream from Owlsnest Branch and 1.2 miles north of Hyden, Leslie County.

Drainage area.—226 sq mi.

Discharge record.—Peak discharge by slope-area measurement.

Maximum.—January–February 1957: Discharge, 67,500 cfs Jan. 29.

41. MIDDLE FORK KENTUCKY RIVER AT BUCKHORN, KY.

Location.—Lat 37°20'45", long 83°28'07", on right bank 25 ft upstream from Squabble Creek, 250 ft upstream from suspension highway bridge on county road, at Buckhorn, Perry County, about 2,000 ft downstream from flood control dam, and at mile 42.9. Drainage area.—420 sq mi.

Gage-height record.—Water-stage recorder graph except for periods 12 m. Jan. 29 to 3 p.m. Jan. 31 and Feb. 5-28. Graph for first period was drawn on basis of floodmark, time of peak, and shape of recorder graph on adjacent days, and for Feb. 5 on basis of recorder graph for station at Tallega. Datum of gage is 717.52 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurement below 15,000 cfs and by slope-area measurement at 82,300 cfs. Discharge for Feb. 6-28 estimated on basis of weather records and records for station at Tallega.

Maxima.—January-February 1957: Discharge 82,300 cfs 8:30 p.m. Jan. 29 (gage height, 43.1 ft from floodmark).

Flood of January 1939 reached a stage of 38.1 ft, from levels to high-water mark by Corps of Engineers.

Remarks.—Station established Sept. 12, 1956.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	227	4,060	12-----	1,230	1,550	23-----	4,750	1,100
2-----	192	6,540	13-----	824	1,100	24-----	2,310	950
3-----	152	2,530	14-----	602	850	25-----	1,210	800
4-----	136	1,370	15-----	460	700	26-----	809	750
5-----	206	1,160	16-----	396	550	27-----	728	650
6-----	346	1,400	17-----	305	450	28-----	3,470	600
7-----	410	1,500	18-----	220	450	29-----	37,400	-----
8-----	402	2,500	19-----	190	1,000	30-----	21,000	-----
9-----	1,200	5,000	20-----	200	1,900	31-----	3,000	-----
10-----	3,320	7,500	21-----	244	1,600			
11-----	2,650	5,000	22-----	519	1,300			
Monthly mean discharge, in cubic feet per second-----							2,874	1,959
Runoff, in inches-----							7.89	4.86

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28-Con.			Jan. 29-Con.		
12 p.m.---	4.56	673	8 p.m.---	13.07	5,510	12 m.---	29.4	25,200
			12 p.m.---	15.00	6,910	1 p.m.---	31.4	30,300
Jan. 27			Jan. 29			2-----	33.4	36,200
6 a.m.---	4.51	655				3-----	35.5	43,700
12 m.---	4.50	651	1 a.m.---	15.70	7,460	5-----	39.7	62,800
6 p.m.---	4.75	743	2-----	16.50	8,100	6-----	41.6	73,300
12 p.m.---	5.52	1,050	3-----	17.40	8,820	7-----	42.9	81,100
Jan. 28			4-----	18.20	9,460	8-----	43.09	82,200
			6-----	20.00	11,000	8:30----	43.1	82,300
4 a.m.---	6.55	1,520	7-----	21.27	12,200	9-----	43.09	82,200
8-----	7.89	2,230	8-----	22.66	13,600	10-----	42.8	80,500
12 m.---	9.32	3,060	9-----	24.10	15,300	11-----	41.8	74,500
4 p.m.---	11.64	4,510	10-----	25.65	17,600	12 p.m.---	40.4	66,600
			11-----	27.50	21,000			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 30			Jan. 31—Con.			Feb. 2—Con.		
2 a.m.---	37.3	51,200	8 p.m.---	8.06	2,330	12 p.m.---	10.52	3,780
4-----	34.1	38,600	12 p.m.---	8.11	2,360	Feb. 3		
6-----	31.0	29,200	Feb. 1			6 a.m.---	9.13	2,950
8-----	28.0	22,000	4 a.m.---			12 m.---	8.17	2,380
10-----	25.2	16,900	8-----			6 p.m.---	7.52	2,030
12 m.---	22.7	13,700	12 m.---			12 p.m.---	7.00	1,760
2 p.m.---	20.6	11,500	4 p.m.---			Feb. 4		
4-----	18.8	9,940	8-----			6 a.m.---	6.59	1,540
6-----	17.2	8,660	12 p.m.---			12 m.---	6.18	1,340
8-----	15.7	7,460	4 p.m.---			6 p.m.---	5.86	1,200
10-----	14.3	6,400	8-----			12 p.m.---	5.57	1,070
12 p.m.---	13.0	5,460	Feb. 2			Feb. 5		
Jan. 31			4 a.m.---			12 m.---	5.5	1,040
4 a.m.---	10.7	3,900	8-----			12 p.m.---	6.5	1,500
8-----	9.1	2,930	12 m.---					
12 m.---	8.45	2,540	4 p.m.---					
4 p.m.---	8.16	2,380	8-----					
			11.95					
			4,720					

42. MIDDLE FORK KENTUCKY RIVER AT TALLEGA, KY.

Location.—Lat 37°33'18", long 83°35'38", on downstream side of left pier of highway bridge, 100 ft upstream from Lynam Creek, 0.5 mile southwest of Tallega, Lee County, and 7.9 miles upstream from confluence with North Fork.

Drainage area.—537 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 642.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 15,000 cfs and by contracted-opening measurement at 52,700 cfs.

Maxima.—January-February 1957: Discharge, 52,700 cfs 11 a.m. Jan. 30 (gage height, 43.33 ft).

1930–32, 1939 to December 1956: Discharge, 35,300 cfs Feb. 2, 1951 (gage height, 40.07 ft).

Flood of February 1939 reached a stage of 40.5 from information by Corps of Engineers.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	274	7,860	12-----	2,760	4,720	23-----	3,800	1,680
2-----	218	7,770	13-----	1,550	2,120	24-----	5,320	1,450
3-----	175	7,100	14-----	1,030	1,500	25-----	2,660	1,220
4-----	148	3,130	15-----	744	1,100	26-----	1,550	1,060
5-----	168	1,910	16-----	596	874	27-----	1,160	946
6-----	286	1,920	17-----	474	740	28-----	2,770	825
7-----	470	1,940	18-----	339	609	29-----	9,390	-----
8-----	519	2,140	19-----	278	658	30-----	40,600	-----
9-----	1,880	3,370	20-----	230	1,740	31-----	18,700	-----
10-----	4,110	7,120	21-----	274	2,460			
11-----	4,470	9,120	22-----	682	1,980			
Monthly mean discharge, in cubic feet per second-----							3,472	2,824
Runoff, in inches-----							7.45	5.48

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30--Con.			Feb. 1--Con.		
12 p.m.---	6.88	1,260	2 a.m.---	36.00	20,300	4 p.m.---	21.55	6,530
			3-----	37.63	25,200	8-----	21.55	6,530
Jan. 27			4-----	39.00	30,500	12 p.m.---	21.80	6,680
			6-----	41.34	41,500			
6 a.m.---	6.68	1,180	7-----	42.14	45,800	Feb. 2		
12 m.---	6.57	1,130	9-----	43.05	51,000			
6 p.m.---	6.51	1,100	10-----	43.25	52,200	4 a.m.---	22.30	6,980
12 p.m.---	6.65	1,160	11-----	43.33	52,700	12 m.---	23.55	7,730
			12 m.---	43.30	52,500	4 p.m.---	24.27	8,190
Jan. 28			1 p.m.---	43.20	51,900	8-----	24.90	8,630
			2-----	43.05	51,000	12 p.m.---	25.16	8,810
2 a.m.---	6.80	1,230	3-----	42.80	49,500			
4-----	7.15	1,370	5-----	42.10	45,600	Feb. 3		
6-----	7.73	1,570	6-----	41.70	43,400			
8-----	8.65	1,840	7-----	41.40	41,800	4 a.m.---	24.90	8,630
10-----	9.95	2,190	8-----	41.00	39,800	8-----	24.06	8,040
2 p.m.---	13.55	3,120	9-----	40.50	37,300	12 m.---	22.83	7,300
4-----	14.95	3,580	10-----	40.13	35,600	8 p.m.---	19.65	5,520
6-----	15.95	3,930	11-----	39.66	33,500	12 p.m.---	17.80	4,630
10-----	17.53	4,520	12 p.m.---	39.24	21,600			
12 p.m.---	18.25	4,820	Jan. 31			Feb. 4		
			2 a.m.---	38.38	28,000	4 a.m.---	16.00	3,950
Jan. 29			4-----	37.50	24,700	8-----	14.43	3,400
2 a.m.---	18.93	5,160	8-----	35.87	20,000	12 m.---	13.04	2,970
4-----	19.75	5,580	10-----	35.06	18,600	4 p.m.---	11.84	2,660
6-----	21.00	6,200	12 m.---	34.16	17,400	8-----	10.82	2,400
8-----	22.60	7,160	4 p.m.---	32.60	15,400	12 p.m.---	9.99	2,200
10-----	24.20	8,140	6-----	31.65	14,300			
12 m.---	25.82	9,270	10-----	29.75	12,400	Feb. 5		
4 p.m.---	28.20	11,100	12 p.m.---	28.66	11,400			
8-----	30.34	12,900				6 a.m.---	9.06	1,960
10-----	31.54	14,200	Feb. 1			12 m.---	8.51	1,800
12 p.m.---	33.26	16,200	4 a.m.---	26.45	9,720	6 p.m.---	8.60	1,830
			8-----	24.33	8,230	12 p.m.---	8.79	1,890
Jan. 30			12 m.---	22.50	7,100			
1 a.m.---	34.50	17,900						

43. RED BIRD RIVER NEAR BIG CREEK, KY.

[Miscellaneous site]

Location.—Lat 37°09'10", long 83°35'10", 700 ft upstream from Elk Creek, 0.4 mile upstream from bridge on U.S. Highway 421, and 1.1 miles southwest of Big Creek, Clay County.

Drainage area.—117 sq mi.

Discharge record.—Peak discharge by slope-area measurement.

Maximum.—January-February 1957: Discharge, 48,500 cfs Jan. 29.

44. GOOSE CREEK AT MANCHESTER, KY.

[Miscellaneous site]

Location.—Lat 37°09', long 83°45'40", 600 ft upstream from Louisville and Nashville Railroad station at Manchester, Clay County, and 1.1 miles upstream from Little Goose Creek.

Drainage area.—163 sq mi.

Discharge record.—Peak discharge by slope-area measurement.

Maximum.—January-February 1957: Discharge, 29,800 cfs Jan. 29.

45. SOUTH FORK KENTUCKY RIVER NEAR ONEIDA, KY.

[Miscellaneous site]

Location.—Lat 37°20'45", long 83°41', 0.8 mile downstream from Road Run Branch, 1.0 mile upstream from Sexton Creek, and 5.5 miles northwest of Oneida, Clay County.

Drainage area.—549 sq mi.

Discharge record.—Peak discharge from slope-area measurement.

Maximum.—January-February 1957: Discharge, 58,200 cfs Jan. 29.

46. SOUTH FORK KENTUCKY RIVER AT BOONEVILLE, KY.

Location.—Lat 37°28'45", long 83°40'38", on right bank 600 ft downstream from Buck Creek, 900 ft downstream from bridge on State Highway 30 at Booneville, Owsley County, and 0.5 mile downstream from Meadow Creek.

Drainage area.—722 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage 642.49 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 35,000 cfs and by slope-area measurement at 60,100 cfs. Rate of change in stage is a factor Jan. 9–11, 23–24, Jan. 28 to Feb. 3, Feb. 9–12.

Maxima.—January-February 1957: Discharge, 66,100 cfs 4 a.m. Jan. 30 (gage height, 42.50 ft); gage height, 43.40 ft 9 a.m. Jan. 30.

1925–31, 1939 to December 1956: Discharge, 50,700 cfs June 29, 1947 (gage height, 41.70 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	360	8,800	12----	2,820	3,880	23----	12,500	1,880
2-----	295	11,300	13----	1,690	2,070	24----	8,870	1,580
3-----	239	6,150	14----	1,210	1,480	25----	2,880	1,390
4-----	213	2,890	15----	876	1,100	26----	1,750	1,230
5-----	255	1,930	16----	706	876	27----	1,410	1,080
6-----	545	2,200	17----	525	722	28----	6,630	909
7-----	709	2,540	18----	402	585	29----	27,900	-----
8-----	673	3,150	19----	348	730	30----	51,300	-----
9-----	3,620	6,990	20----	335	2,570	31----	16,900	-----
10-----	10,200	13,800	21----	345	2,710			
11-----	6,820	9,870	22----	1,020	2,240			
Monthly mean discharge, in cubic feet per second-----							5,301	3,452
Runoff, in inches-----							8.47	4.98

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30-Con.			Feb. 1-Con.		
12 p.m.---	6.34	1,430	3 a.m.---	41.94	66,000	6 p.m.---	17.22	9,310
			4-----	42.50	66,100	12 p.m.---	19.31	11,100
Jan. 27			5-----	43.00	65,600			
			6-----	43.23	62,900	Feb. 2		
6 a.m.---	6.19	1,380	7-----	43.33	61,400			
12 m.---	6.15	1,360	9-----	43.40	60,100	6 a.m.---	20.93	12,200
6 p.m.---	6.23	1,390	10-----	43.36	58,400	12 m.---	21.56	12,000
12 p.m.---	6.75	1,640	11-----	43.27	56,200	6 p.m.---	20.66	10,800
			12 m.---	43.08	53,400	12 p.m.---	18.51	9,140
Jan. 28			1 p.m.---	42.82	50,800			
			3-----	42.16	46,200	Feb. 3		
4 a.m.---	7.95	2,370	5-----	41.36	42,300			
8-----	10.39	3,970	7-----	40.46	38,400	6 a.m.---	15.72	7,430
12 m.---	13.64	6,560	8-----	39.97	36,700	12 m.---	13.28	5,880
4 p.m.---	16.60	8,990	9-----	39.48	35,200	6 p.m.---	11.54	4,780
8-----	18.82	10,900	11-----	38.46	32,400	12 p.m.---	10.26	3,880
12 p.m.---	20.62	12,400	12 p.m.---	37.94	31,000			
						Feb. 4		
Jan. 29			Jan. 31					
4 a.m.---	22.60	14,600	4 a.m.---	35.67	25,500	6 a.m.---	9.34	3,270
8-----	26.00	19,200	8-----	32.92	20,000	12 m.---	8.63	2,810
12 m.---	29.35	25,400	12 m.---	29.57	13,700	6 p.m.---	8.09	2,460
4 p.m.---	31.67	31,000	4 p.m.---	25.81	11,200	12 p.m.---	7.61	2,150
8-----	34.69	42,100	8-----	22.57	10,400			
12 p.m.---	39.00	58,300	12 p.m.---	19.98	9,540	Feb. 5		
Jan. 30			Feb. 1			6 a.m.---	7.27	1,930
1 a.m.---	40.10	62,200	6 a.m.---	16.85	8,160	12 m.---	7.06	1,810
2-----	41.10	65,600	12 m.---	15.28	7,410	6 p.m.---	7.25	1,920
						12 p.m.---	7.34	1,970

47. KENTUCKY RIVER AT LOCK 14, AT HEIDELBERG, KY.

Location.—Lat 37°33'19", long 83°46'06", on right bank 1,000 ft upstream from lock 14 at Heidelberg, Lee County, 0.5 mile upstream from Sturgeon Creek, and at mile 249.2. Drainage area.—2,657 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage 626.66 ft above mean sea level, Ohio River datum (Corps of Engineers benchmark).

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 116,000 cfs 10 p.m. Jan. 30 (gage height, 35.00 ft).

1925-31, 1936-37, 1938 to December 1956: Discharge, 120,000 cfs Feb. 4, 1939 (gage height, 35.6 ft, from floodmarks).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	1,530	52,900	12----	15,200	26,700	23----	20,300	7,510
2-----	1,280	36,200	13----	8,200	12,100	24----	26,400	6,780
3-----	1,040	31,800	14----	5,540	7,630	25----	13,800	6,040
4-----	920	18,000	15----	4,000	5,620	26----	7,810	5,300
5-----	989	9,670	16----	3,080	4,420	27----	5,640	4,640
6-----	1,390	9,560	17----	2,380	3,610	28----	12,400	4,090
7-----	2,030	10,200	18----	1,680	3,060	29----	39,400	-----
8-----	2,260	11,500	19----	1,330	2,860	30----	94,300	-----
9-----	8,350	17,600	20----	1,380	5,730	31----	100,000	-----
10-----	24,000	32,800	21----	1,460	9,750			
11-----	24,600	39,800	22----	2,910	8,560			
Monthly mean discharge, in cubic feet per second-----							14,050	14,090
Runoff, in inches-----							6.10	5.52

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29-Con.			Jan. 31-Con.		
12 p.m.---	12.03	6,350	12 p.m.---	23.46	57,800	4 p.m.---	30.69	94,000
Jan. 27			Jan. 30			8-----	29.09	85,800
6 a.m.-----	11.87	5,900	2 a.m.-----	24.28	61,600	12 p.m.---	27.11	75,700
12 m.-----	11.73	5,510	4-----	25.37	66,900	Feb. 1		
6 p.m.-----	11.66	5,320	6-----	26.87	74,400	6 a.m.-----	24.35	62,000
12 p.m.-----	11.64	5,270	8-----	28.57	83,100	12 m.-----	21.94	50,700
Jan. 28			10-----	30.47	92,800	6 p.m.-----	20.15	42,200
6 a.m.-----	12.01	6,290	2 p.m.-----	33.19	108,000	12 p.m.---	19.26	37,400
12 m.-----	13.45	10,700	6-----	34.54	114,000	Feb. 2		
6 p.m.-----	15.56	18,300	8-----	34.89	116,000	6 a.m.-----	18.98	35,800
12 p.m.-----	16.69	23,300	10-----	35.00	116,000	12 m.-----	19.01	36,000
Jan. 29			12 p.m.---	34.96	116,000	6 p.m.-----	19.09	36,400
6 a.m.-----	17.86	29,400	Jan. 31			12 p.m.---	19.05	36,200
12 m.-----	19.71	39,900	2 a.m.-----	34.77	115,000	Feb. 3		
6 p.m.-----	21.31	47,800	6-----	34.03	111,000	6 a.m.-----	18.82	34,900
			8-----	33.53	109,000			
			12 m.-----	32.21	102,000			

49. STILLWATER CREEK AT STILLWATER, KY.

Location.—Lat 37°45'24", long 83°29'12", on right bank 15 ft downstream from bridge on Highway 15 at Stillwater, Wolfe County, 90 ft downstream from Trace Fork, and 2.1 upstream from Laurel Fork.

Drainage area.—24.0 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 883.83 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 1,500 cfs and by slope-area measurement at 2,960 cfs.

Maxima.—January-February 1957: Discharge, 1,510 cfs 10:30 a.m. Jan. 29 (gage height, 8.36 ft).

1954 to December 1956: Discharge, 3,890 cfs Dec. 14, 1956 (gage height, 12.91 ft).

Mean discharge, in cubic feet per second, 1057

Day	January	February	Day	January	February	Day	January	February
1----	15	366	12----	104	108	23----	410	32
2----	17	236	13----	69	71	24----	150	33
3----	17	128	14----	44	50	25----	96	33
4----	16	76	15----	34	36	26----	48	33
5----	20	98	16----	25	30	27----	45	29
6----	18	136	17----	20	24	28----	374	32
7----	20	108	18----	22	21	29----	813	-----
8----	21	170	19----	18	30	30----	202	-----
9----	460	308	20----	17	22	31----	130	-----
10----	317	407	21----	20	23			
11----	156	170	22----	171	30			
Monthly mean discharge, in cubic feet per second-----							125	101
Runoff, in inches-----							6.03	4.40

50. RED RIVER AT CLAY CITY, KY.

Location.—Lat 37°51'52", long 83°55'59", on downstream side of pier on left bank at bridge on State Highway 15 at Waltersville, 500 ft upstream from Brush Creek, half a mile west of Clay City, Powell County, and 4.8 miles upstream from Hardwick Creek.

Drainage area.—362 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 600.47 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Rate of change in stage used as a factor, Jan. 9–12, 22–25, Jan. 28 to Feb. 4, Feb. 8–12.

Maxima.—January-February 1957: Discharge, 9,110 cfs 11 a.m. Jan. 30 (gage height, 17.38 ft); gage height, 17.49 ft 2 p.m. Jan. 30.

1930–32, 1938 to December 1956: Discharge, 21,100 cfs July 15, 1938 (gage height, 22.8 ft).

Mean discharge, in cubic feet per second, 1957

[illegible]

51. KENTUCKY RIVER AT LOCK 10, NEAR WINCHESTER, KY.

Location.—Lat 37°53'41", long 84°15'44", on left bank at lock 10, 0.9 mile downstream from Otter Creek, 8 miles southwest of Winchester, Clark County, and at mile 176.4. Drainage area.—3,955 sq mi.

Gage-height record.—Graph drawn from twice-daily upper staff gage readings and flood-marks at lock 10, except Feb. 2-5 when estimates of gage height by observer were used. Graph drawn for auxiliary gage, 18.9 miles downstream, from twice-daily readings. Datum of gage is 557.37 ft above mean sea level, Ohio River datum.

Discharge record.—Stage-fall-discharge relation or stage-discharge relation defined by current-meter measurements. Fall used as a factor 12 m. Jan. 31 to 6 p.m. Feb. 4. Maxima.—January-February 1957: Discharge, 85,400 cfs 9 p.m. Feb. 1 (gage height, 33.60 ft); gage height, 33.65 ft 12 p.m. Feb. 1 (from floodmarks).

1907 to December 1956: Discharge, 92,400 cfs Feb. 5, 1939; gage height, 35.1 ft (Mar. 29, 1913).

Remarks.—Gage-height readings furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, 1957

[illegible]

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Feb. 1			Feb. 4		
12 p.m.---	13.40	7,800	2 a.m.---	29.35	74,900	6 a.m.---	25.20	57,000
			6-----	30.25	77,000	12 m ----	23.60	53,500
Jan. 28			10-----	31.25	79,800	6 p.m.---	22.00	50,800
			12 m ----	31.75	81,000	12 p.m.---	20.40	45,100
6 a.m.---	13.40	7,800	4 p.m.---	32.95	84,100			
12 m ----	14.40	11,300	6-----	33.35	84,700	Feb. 5		
6 p.m.---	16.55	21,200	8-----	33.55	85,200			
12 p.m.---	17.20	25,000	9-----	33.60	85,400	6 a.m.---	18.70	34,000
			10-----	33.62	84,900	12 m ----	17.00	23,800
Jan. 29			12 p.m.---	33.65	84,200	6 p.m.---	15.90	17,900
						12 p.m.---	15.50	15,900
6 a.m.---	17.70	28,000	Feb. 2					
12 m ----	19.20	37,500				Feb. 6		
6 p.m.---	20.30	44,500	4 a.m.---	33.45	82,200			
12 p.m.---	20.70	46,900	6-----	33.20	80,700	6 a.m.---	15.30	14,900
			10-----	32.70	78,900	12 m ----	15.20	14,500
Jan. 30			12 m ----	32.45	77,400	12 p.m.---	15.10	14,100
			4 p.m.---	31.95	75,700			
6 a.m.---	21.00	48,700	8-----	31.45	73,900	Feb. 7		
12 m ----	21.50	51,200	12 p.m.---	30.85	72,000			
6 p.m.---	22.15	54,100				12 m ----	15.10	14,100
12 p.m.---	22.90	56,400	Feb. 3			12 p.m.---	15.00	13,700
Jan. 31			8 a.m.---	29.60	68,000			
			4 p.m.---	28.20	63,900			
6 a.m.---	24.00	59,700	12 p.m.---	26.45	59,700			
6 p.m.---	27.40	69,800						
12 p.m.---	28.85	73,400						

52. KENTUCKY RIVER AT LOCK 8, NEAR CAMP NELSON, KY.

Location.—Lat 37°44'43", long 84°35'12", on wall of lock 8 near right bank, 2.4 miles southeast of Camp Nelson, Jessamine County, 2.7 miles downstream from Sugar Creek, 4.5 miles upstream from Hickman Creek, and at mile 139.9.

Drainage area.—4,414 sq mi.

Gage-height record.—Graph drawn from twice-daily upper staff gage readings, except Feb. 2 when numerous readings were made near crest. Water-stage recorder graph for auxiliary gage 4.8 miles downstream. Datum of gage is 520.50 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Discharge record.—Stage-discharge relation defined by current-meter measurements. Fall used as factor 12 p.m., Jan. 29 to 12 m., Feb. 5, Feb. 10.

Maxima.—January-February 1957: Discharge, 89,700 cfs 2 p.m., Feb. 2 (gage height, 38.52 ft).

1939 to December 1956: Discharge, 85,400 cfs Feb. 17, 1948 (gage height, 37.6 ft).

Flood of Mar. 28, 1913, reached a stage of 40.0 ft (discharge 103,000 cfs). Flood of Jan. 23, 1937, reached a stage of 41.2 ft (discharge, 91,500 cfs). Flood of Feb. 6, 1939, reached a stage of 38.6 ft (discharge, 94,800 cfs).

Remarks.—Gage-height record furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	3,120	79,800	12----	31,700	48,300	23----	28,800	9,890
2----	2,560	88,800	13----	19,400	39,800	24----	32,200	8,920
3----	2,160	82,600	14----	10,700	16,600	25----	32,600	8,090
4----	1,890	68,700	15----	7,240	9,260	26----	18,900	7,550
5----	1,890	39,000	16----	5,540	7,300	27----	10,100	7,770
6----	2,160	17,500	17----	4,350	5,980	28----	15,100	6,880
7----	2,320	15,000	18----	3,500	5,010	29----	41,100	-----
8----	2,980	18,100	19----	2,840	4,420	30----	52,400	-----
9----	15,200	31,700	20----	2,420	4,480	31----	61,400	-----
10----	29,000	45,200	21----	2,460	7,010			
11----	33,000	44,700	22----	7,030	10,500			
Monthly mean discharge, in cubic feet per second-----							15,680	26,390
Runoff, in inches-----							4.10	6.23

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Feb. 1			Feb. 4		
12 p.m.---	14.40	8,580	4 a.m.---	32.00	71,200	4 a.m.---	34.10	74,800
			8-----	33.20	76,300	8-----	33.30	72,200
Jan. 28			12 m.---	34.55	81,000	12 m.---	32.40	69,400
			4 p.m.---	36.00	85,200	4 p.m.---	31.40	66,500
4 a.m.---	14.35	8,420	8-----	37.00	87,100	8-----	30.20	62,300
8-----	14.40	8,580	12 p.m.---	37.66	87,600	12 p.m.---	28.70	56,700
12 m.---	15.10	11,000						
4 p.m.---	17.40	19,600	Feb. 2			Feb. 5		
8-----	18.75	25,000						
12 p.m.---	19.30	27,300	2 a.m.---	37.87	87,900	4 a.m.---	27.00	51,600
			4-----	38.06	88,300	8-----	25.00	47,100
Jan. 29			8-----	38.35	89,100	12 m.---	22.40	39,300
			12 m.---	38.50	89,600	4 p.m.---	20.40	32,200
4 a.m.---	19.90	29,900	2 p.m.---	38.52	89,700	8-----	18.75	25,000
12 m.---	22.70	42,600	4-----	38.49	89,500	12 p.m.---	17.80	21,200
4 p.m.---	24.10	48,300	8-----	38.35	88,800			
8-----	24.65	50,500	10-----	38.22	88,200	Feb. 6		
12 p.m.---	24.90	51,000	12 p.m.---	38.06	87,400			
						6 a.m.---	17.10	18,500
Jan. 30			Feb. 3			12 m.---	16.75	17,100
						6 p.m.---	16.45	16,000
6 a.m.---	25.05	51,100	4 a.m.---	37.70	85,900	12 p.m.---	16.30	15,400
12 m.---	25.45	51,900	8-----	37.27	84,500			
6 p.m.---	26.00	53,400	12 m.---	36.76	82,800	Feb. 7		
12 p.m.---	26.70	55,500	4 p.m.---	36.20	81,000			
			8-----	35.56	79,000	12 m.---	16.20	15,000
Jan. 31			12 p.m.---	34.88	76,900	12 p.m.---	16.10	14,700
12 m.---	28.70	61,000						
12 p.m.---	31.00	68,300						

53. DIX RIVER NEAR DANVILLE, KY.

Location.—Lat 37°38'31", long 84°39'39", on right bank 50 ft downstream from bridge on State Highway 52, 1.4 miles downstream from Hanging Fork, and 6 miles east of Danville, Boyle County.

Drainage area.—318 sq mi.

Gage-height record.—Water-stage recorder graph. Graph drawn for auxiliary staff gage 2 miles downstream, from twice-daily readings. Altitude of gage is 750 ft (from topographic map).

Discharge record.—Stage-fall-discharge relation or stage-discharge relation defined by current-meter measurements. Fall used as a factor Feb. 11 to 14.

Maxima.—January-February 1957: Discharge, 10,300 cfs 3:30 p.m. Jan. 29 (gage height, 9.97 ft).

1942 to December 1956: Discharge, 20,900 cfs Mar. 5, 1945 (gage height, 16.28 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	134	3,700	12----	794	1,040	23----	6,430	560
2-----	112	3,730	13----	560	754	24----	1,930	465
3-----	89	1,410	14----	415	591	25----	854	395
4-----	91	890	15----	300	440	26----	608	400
5-----	120	1,190	16----	227	345	27----	490	788
6-----	184	2,110	17----	160	276	28----	3,150	680
7-----	160	1,140	18----	120	227	29----	7,910	-----
8-----	149	1,510	19----	115	231	30----	5,210	-----
9-----	2,780	2,860	20----	118	465	31----	1,680	-----
10-----	3,980	5,500	21----	127	405			
11-----	1,410	2,680	22----	1,130	536			
Monthly mean discharge, in cubic feet per second-----							1,340	1,261
Runoff, in inches-----							4.86	4.13

54. HERRINGTON LAKE NEAR BURGIN, KY.

Location.—Lat 37°47'08", long 84°42'14", at Dix Dam on Dix River, 2.9 miles upstream from mouth and 8 miles east of Burgin, Mercer County.

Drainage area.—439 sq mi.

Gage-height record.—Indicator gage read hourly. Datum of gage is at mean sea level (levels by Kentucky Utilities Co.).

Maxima.—January-February 1957: Contents, 106,300 acre-feet 12 p.m. Feb. 11 (elevation, 754.7 ft).

1925 to December 1956: Contents, 123,200 acre-feet, many times (elevation, 760.0 ft).

Remarks.—Reservoir is formed by earth and rock-fill dam with side channel spillway controlled by 10 vertical lift gates 35 ft long and 10 to 12 ft high. Storage began Nov. 4, 1925; water in reservoir first reached minimum pool elevation Nov. 26, 1925. Total usable capacity between elevations 760 ft (top of spillway gates) and 680 ft (minimum pool, dead storage unknown) is 123,200 acre-feet. Reservoir is used for power. Gage-height record furnished by Kentucky Utilities Co.

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Jan. 31			Feb. 4		
12 p.m.---	12.78	12,000	6 a.m.---	21.64	56,300	6 a.m.---	32.13	80,900
Jan. 28			12 m.---	22.31	58,200	6 p.m.---	30.22	74,200
4 a.m.---	12.62	11,300	6 p.m.---	23.12	60,500	12 p.m.---	28.92	70,200
8-----	12.38	10,100	12 p.m.---	24.03	63,100	Feb. 5		
12 m.---	12.45	10,400	Feb. 1			4 a.m.---	27.91	67,000
4 p.m.---	12.83	12,300	6 a.m.---	25.15	65,400	8-----	26.68	63,500
8-----	13.65	16,500	12 m.---	26.60	69,100	12 m.---	25.26	59,800
12 p.m.---	14.64	22,000	6 p.m.---	28.40	74,500	4 p.m.---	23.40	55,400
Jan. 29			12 p.m.---	30.32	80,200	8-----	21.10	48,900
4 a.m.---	15.45	26,600	Feb. 2			12 p.m.---	18.42	39,900
8-----	15.94	29,500	Feb. 3			Feb. 6		
12 m.---	16.75	34,400	4 a.m.---	31.32	83,500	4 a.m.---	16.40	32,300
4 p.m.---	17.90	41,300	8-----	32.12	85,300	8-----	15.46	26,700
8-----	18.67	45,900	4 p.m.---	33.22	87,700	12 m.---	14.87	23,200
12 p.m.---	19.18	49,000	12 p.m.---	33.78	88,500	4 p.m.---	14.50	21,200
Jan. 30			Feb. 7			8-----	14.23	19,700
4 a.m.---	19.52	50,700	4 a.m.---	33.90	88,600	12 p.m.---	14.08	18,800
8-----	19.76	50,800	5-----	33.91	88,700			
12 m.---	20.04	51,800	8-----	33.89	88,400			
4 p.m.---	20.44	53,400	4 p.m.---	33.49	86,400	12 m.---	13.86	17,600
12 p.m.---	21.07	54,800	8-----	33.17	85,100	12 p.m.---	13.79	17,300
			12 p.m.---	32.83	83,500			

56. KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.

Location.—Lat 38°12'06", long 84°52'54", on left bank at downstream side of Broadway Street Bridge at Frankfort, Franklin County, 300 ft upstream from Benson Creek, 0.9 mile upstream from lock 4, and at mile 65.9. Records include flow of Benson Creek. Drainage area.—5,412 sq mi, includes that of Benson Creek.

Gage-height record.—Water-stage recorder graph. Graph drawn for auxiliary staff gage, 16.3 miles upstream, from twice-daily readings. Datum of gage is 462.10 ft above mean sea level, datum of 1929.

Discharge record.—Stage-fall-discharge relation or stage-discharge relation defined by current-meter measurements. Fall used as a factor Jan. 12, 13, 24–26, Feb. 1–6, 10–14.

Maxima.—January-February 1957: Discharge, 84,200 cfs 2 p.m. Feb. 3 (gage height, 35.35 ft); gage height, 35.46 ft 7:30 p.m. Feb. 3.

1925 to December 1956: Discharge, 115,000 cfs Jan. 25, 1937; gage height, 47.46 ft Jan. 25, 1937, from floodmarks, at site 0.9 mile downstream.

Remarks.—Auxiliary gage-height readings furnished by Corps of Engineers. Flow regulated by Herrington Lake (see station 53) and by hydroelectric plant at lock 7.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	4,020	66,000	12----	34,900	50,200	23----	26,800	11,200
2-----	3,430	79,100	13----	27,500	48,700	24----	33,200	9,560
3-----	3,240	83,600	14----	15,500	31,000	25----	35,800	9,070
4-----	2,440	78,800	15----	10,500	14,900	26----	29,400	8,780
5-----	2,170	65,600	16----	7,940	11,000	27----	15,700	8,540
6-----	2,170	36,000	17----	6,420	9,120	28----	13,000	8,450
7-----	2,300	19,200	18----	5,300	7,890	29----	30,600	-----
8-----	2,650	18,600	19----	4,060	6,860	30----	49,000	-----
9-----	9,510	30,700	20----	3,050	6,560	31----	56,600	-----
10-----	29,700	46,900	21----	2,830	6,780			
11-----	34,600	50,300	22----	6,780	10,300			
Monthly mean discharge, in cubic feet per second-----							16,490	29,780
Runoff, in inches-----							3.63	5.74

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Jan. 31-Con.			Feb. 4-Con.		
12 p.m.---	9.65	12,800	6 p.m.---	23.61	58,500	8 a.m.---	35.10	80,100
			12 p.m.---	24.56	60,700	12 m.---	34.83	78,700
Jan. 28			Feb. 1			4 p.m.---	34.52	77,800
4 a.m.---	9.54	12,200				8-----	34.11	76,000
8-----	9.38	11,300	6 a.m.---	25.62	62,800	12 p.m.---	33.61	74,500
12 m.---	9.30	10,900	12 m.---	26.71	65,100			
4 p.m.---	9.52	12,100	6 p.m.---	28.30	69,100	Feb. 5		
8-----	10.06	15,100	12 p.m.---	29.78	73,200	6 a.m.---	32.68	71,200
12 p.m.---	10.82	19,600				12 m.---	31.44	66,700
Jan. 29			Feb. 2			6 p.m.---	29.82	61,000
4 a.m.---	11.57	23,800	6 a.m.---	31.16	76,900	12 p.m.---	27.41	52,700
8-----	12.16	26,700	12 m.---	32.42	79,300			
12 m.---	12.88	29,400	6 p.m.---	33.52	82,100	Feb. 6		
4 p.m.---	14.30	33,800	12 p.m.---	34.32	83,300	4 a.m.---	25.17	47,200
8-----	16.04	38,900				8-----	22.38	41,100
12 p.m.---	17.54	43,000	Feb. 3			12 m.---	19.48	35,600
Jan. 30			4 a.m.---	34.73	83,500	4 p.m.---	16.59	30,000
6 a.m.---	19.12	47,100	8-----	35.07	83,800	8-----	13.92	24,800
12 m.---	20.07	49,600	2 p.m.---	35.35	84,200	12 p.m.---	11.88	21,300
12 p.m.---	21.44	53,000	4-----	35.40	83,800			
Jan. 31			7:30-----	35.46	83,500	Feb. 7		
6 a.m.---	22.10	54,700	8-----	35.45	83,400	6 a.m.---	10.85	19,800
12 m.---	22.83	56,500	12 p.m.---	35.40	82,600	12 m.---	10.69	18,900
			Feb. 4			6 p.m.---	10.63	18,500
			4 a.m.---	35.27	81,400	12 p.m.---	10.57	18,200

57. KENTUCKY RIVER AT LOCK 2, AT LOCKPORT, KY.

Location.—Lat 38°26'20", long 84°57'48", on left bank at lock 2 at Lockport, Henry County, 0.1 mile downstream from Sixmile Creek, and at mile 31.0.

Drainage area.—6,180 sq mi.

Gage-height record.—Graph drawn from twice-daily upper staff gage readings, except Feb. 4 when several readings were made. Graph drawn for auxiliary staff gage, 11.0 miles upstream, from twice-daily readings. Datum of gage 433.36 ft above mean sea level, datum of 1929.

Discharge record.—Stage-fall-discharge relation or stage-discharge relation defined by current-meter measurements below 100,000 cfs. Fall used as a factor Jan. 10–14, 24–27, Jan. 30 to Feb. 17.

Maxima.—January-February 1957: Discharge, 86,300 cfs 11 a.m. Feb. 4 (gage height, 40.18 ft); gage height, 40.20 ft 11:30 a.m. to 5 p.m. Feb. 4.

1925 to December 1956: Discharge, 123,000 cfs Jan. 26, 1937; gage height, 56.85 ft Jan. 24, 1937 (backwater from Ohio River).

Remarks.—Gage-height record furnished by Corps of Engineers. Flow regulated by Herrington Lake (see station 53) and hydroelectric plant at lock 7.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	5,010	64,400	12----	41,300	58,600	23----	25,700	11,700
2----	4,050	75,600	13----	37,200	57,500	24----	40,300	10,300
3----	3,870	84,400	14----	20,100	46,300	25----	41,300	9,420
4----	3,210	85,100	15----	12,000	23,700	26----	38,300	9,860
5----	2,860	80,400	16----	9,230	16,900	27----	21,500	10,100
6----	2,660	60,100	17----	7,270	11,200	28----	41,100	9,540
7----	2,860	29,500	18----	6,150	8,950	29----	33,600	-----
8----	2,860	21,600	19----	4,950	7,900	30----	48,800	-----
9----	7,380	33,100	20----	3,900	7,200	31----	56,200	-----
10----	31,100	52,800	21----	3,450	7,020			
11----	39,400	59,600	22----	8,950	9,500			
Monthly mean discharge, in cubic feet per second (unadjusted)---							19,570	34,370
Runoff, in inches -----							3.75	5.80

SALT RIVER BASIN

58. SALT RIVER NEAR HARRODSBURG, KY.

Location.—Lat 37°45'26", long 84°52'23", near center of span on downstream side of bridge on State Highway 152, 1½ miles west of Harrodsburg, Mercer County, and 11 miles downstream from Quirks Run.

Drainage area.—41.4 sq mi.

Gage-height record.—Graph drawn from twice-daily wire-weight gage readings. Datum of gage is 810.60 ft above mean sea level, unadjusted.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,500 cfs.

Maxima.—January-February 1957: Discharge, 2,420 cfs 4 a.m. Feb. 10 (gage height 10.8 ft).

1952 to December 1956: Discharge, 4,140 cfs July 24, 1956 (gage height, 15.0 ft).

Remarks.—Some diversion and regulation above station by City of Harrodsburg for municipal water supply.

60. ROLLING FORK NEAR LEBANON, KY.

Location.—Lat 37°21'50", long 85°19'26", on left bank at downstream side of bridge on U.S. Highway 68 and State Highway 55, 2.2 miles downstream from Buckhorn Creek, 5.4 miles southwest of city limits of Lebanon, Marion County, and 14½ miles downstream from confluence of North and South Forks.

Drainage area.—240 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 580.74 ft above sea level, unadjusted.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 14,000 cfs.

Maxima.—January-February 1957: Discharge, 11,000 cfs 6 a.m. Jan. 23 (gage height, 18.39 ft).

1938 to December 1956: Discharge, 26,500 cfs Jan. 1, 1945 (gage height, 22.4 ft).

Maximum stage known, 24.7 ft in 1913, from information by local residents.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	86	3,100	12----	484	686	23----	5,530	192
2----	70	2,270	13----	360	516	24----	1,020	190
3----	60	954	14----	272	395	25----	627	196
4----	60	613	15----	186	317	26----	464	206
5----	88	727	16----	140	267	27----	358	355
6----	95	1,120	17----	89	222	28----	1,860	372
7----	89	673	18----	85	194	29----	7,350	-----
8----	82	894	19----	74	234	30----	2,070	-----
9----	500	1,780	20----	79	265	31----	1,110	-----
10----	1,700	3,500	21----	91	212			
11----	738	1,290	22----	1,650	202			
Monthly mean discharge, in cubic feet per second-----							886	784
Runoff, in inches-----							4.27	3.41

GREEN RIVER BASIN

61. MCGILLS CREEK NEAR MCKINNEY, KY.

Location.—Lat 37°26'40", long 84°41'55", on right bank 0.3 mile upstream from mouth, 3.2 miles northeast of Arabia, and 3.2 miles east of McKinney, Lincoln County.

Drainage area.—2.19 sq mi.

Gage-height record.—Water-stage recorder graph. Altitude of gage is 970 ft (from topographic map).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 200 cfs and by slope-area measurement at 950 cfs.

Maxima.—January-February 1957: Discharge, 176 cfs 6:30 p.m. Jan. 22 (gage height, 2.80 ft).

1951 to December 1956: Discharge, 950 cfs Mar. 22, 1952 (gage height, 5.40 ft).

63. GREEN RIVER NEAR MOUNT SALEM, KY.

Location.—Lat 37°24'40", long 84°45'11", on left bank 20 ft upstream from bridge on private road, about 300 ft downstream from South Fork, 0.8 mi downstream from gaging station near McKinney, and 2.6 miles east of Mount Salem, Lincoln County.

Drainage area.—36.3 sq mi.

Gage-height record.—Water-stage recorder graph. Altitude of gage is 880 ft (from topographic map).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,000 cfs and by slope-area measurement at 11,700 cfs.

Maxima.—January-February 1957: Discharge, 2,900 cfs 8:15 p.m. Jan. 22 (gage height, 7.95 ft).

1953 to December 1956: Discharge, 5,300 cfs Mar. 21, 1955 (gage height, 9.40 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	10	559	12----	58	117	23----	389	103
2----	6.4	332	13----	38	81	24----	121	81
3----	5.6	147	14----	28	55	25----	87	67
4----	7.4	100	15----	22	42	26----	58	70
5----	14	242	16----	14	36	27----	64	87
6----	14	216	17----	12	28	28----	537	81
7----	12	129	18----	11	26	29----	1,290	-----
8----	11	221	19----	10	71	30----	340	-----
9----	442	576	20----	10	67	31----	184	-----
10----	298	741	21----	13	78			
11----	93	219	22----	609	100			
Monthly mean discharge, in cubic feet per second-----							155	167
Runoff, in inches-----							4.93	4.79

64. GREEN RIVER AT GREENSBURG, KY.

Location.—Lat 37°15'13", long 85°30'11", on left bank 75 ft downstream from bridge on U.S. Highway 68, 300 ft upstream from Clover Lick Creek, a quarter of a mile south of Greensburg, Green County, and 2.6 miles upstream from Russell Creek.

Drainage area.—742 sq mi.

Gage-height record.—Water-stage recorder graph. Graph drawn for auxiliary wire-weight gage, 1.8 miles upstream, from twice-daily readings. Datum of gage is 531.81 ft above mean sea level, datum of 1929.

Discharge record.—Stage-fall-discharge relation or stage-discharge relation defined by current-meter measurements. Fall used as a factor Jan. 10–14, Jan. 23 to Feb. 28.

Maxima.—January-February 1957: Discharge, 21,500 cfs 10 p.m. Jan. 30 (gage height, 25.63 ft); gage height, 25.65 ft 8–9 p.m. Jan. 30.

1939 to December 1956: Discharge, 47,000 cfs Mar. 23, 1952 (gage height, 33.50 ft).

Maximum stage known, 36.2 ft in 1913, from floodmark.

Mean discharge, in cubic feet per second, 1957

[illegible]

65. RUSSELL CREEK NEAR COLUMBIA, KY.

Location.—Lat 37°07'09", long 85°23'38", on left bank of downstream side of bridge on State Highway 61, 0.2 mile upstream from Butlers Fork and 5 miles west of Columbia, Adair County. Records include flow of Butlers Fork.

Drainage area.—186 sq mi. includes that of Butlers Fork.

Gage-height record.—Water-stage recorder graph. Datum of gage is 610.96 ft above mean sea level, unadjusted.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 7,900 cfs, and extended above by logarithmic plotting.

Maxima.—January-February 1957: Discharge, 7,790 cfs 9 p.m. Jan. 29 (gage height, 17.28 ft).

1939 to December 1956: Discharge, 15,900 cfs Mar. 22, 1952 (gage height, 23.8 ft, from floodmark).

Flood of January 1937 reached a stage of about 23 ft, from information by local residents.

Mean discharge, in cubic feet per second, 1957

[illegible]

66. SOUTH FORK LITTLE BARREN RIVER AT EDMONTON, KY.

Location.—Lat 36°58'27", long 85°36'11", on right bank 13 ft downstream from bridge on State Highway 496, three-quarters of a mile southeast of Edmonton, Metcalfe County, and 3.0 miles upstream from Rogers Creek.

Drainage area.—18.1 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 742.83 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 1,200 cfs and extended above by logarithmic plotting.

Maxima.—January-February 1957: Discharge, 1,510 cfs 10:30 p.m. Jan. 22 (gage height, 7.91 ft).

1941 to December 1956: Discharge, 2,140 cfs June 15, 1949 (gage height, 10.00 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	4.1	249	12----	25	41	23----	177	30
2----	3.2	100	13----	18	30	24----	54	31
3----	3.0	55	14----	14	22	25----	37	31
4----	18	36	15----	11	18	26----	26	51
5----	46	111	16----	6.2	17	27----	61	58
6----	21	76	17----	5.0	14	28----	475	56
7----	15	63	18----	4.4	13	29----	760	-----
8----	13	182	19----	4.1	168	30----	111	-----
9----	79	133	20----	5.7	78	31----	86	-----
10----	126	250	21----	9.5	48			
11----	39	69	22----	614	40			
Monthly mean discharge, in cubic feet per second-----							92.6	73.9
Runoff, in inches-----							5.83	4.21

67. GREEN RIVER AT MUNFORDVILLE, KY.

Location.—Lat 37°16'05", long 85°53'10", on right bank at downstream side of pier of bridge on U.S. Highway 31W at Munfordsville, Hart County.

Drainage area.—1,790 sq mi, approximately.

Gage-height record.—Water-stage recorder graph. Datum of gage is 451.70 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 31,600 cfs 6 a.m. Feb. 1 (gage height, 36.94 ft).

1915-22, 1927-31, 1936-37, 1937 to December 1956: Discharge, 72,200 cfs Jan. 23, 1937 (gage height, 50.40 ft, from floodmarks, at site 0.2 mile downstream at same datum).

Maximum stage known, 54.0 ft in January 1913, at former site (discharge 87,000 cfs).

Mean discharge, in cubic feet per second, 1957

[illegible]

68. BARREN RIVER NEAR PAGEVILLE, KY.

Location.—Lat 36°51'09", long 86°04'37", near right bank on downstream side of bridge pier on U.S. Highway 31E, 100 ft upstream from Hurricane Creek, 1.8 miles south of Pageville, Barren County, and 2.3 miles upstream from Peter Creek.

Drainage area.—531 sq mi, of which about 20 sq mi does not contribute directly to surface runoff.

Gage-height record.—Water-stage recorder graph. Datum of gage is 505.47 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 40,000 cfs.

Maxima.—January-February 1957: Discharge, 42,800 cfs 2 a.m. Jan. 30 (gage height, 23.76 ft).

1939 to December 1956: Discharge, 70,000 cfs Mar. 23, 1952 (gage height, 27.26 ft).

Mean discharge, in cubic feet per second, 1957

[illegible]

69. WEST BAYS FORK AT SCOTTSVILLE, KY.

Location.—Lat 36°44'53", long 86°11'47", on downstream side of left abutment of bridge on U.S. Highway 31E, 0.5 mile southwest of Scottsville, Allen County, and 6.4 miles upstream from mouth.

Drainage area.—7.52 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 637.61 ft above mean sea level, datum of 1929, supplemental adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 1,100 cfs and by slope-area measurement at 1,640 cfs.

Maxima.—January-February 1957: Discharge, 1,510 cfs 4 a.m. Jan. 29 (gage height, 5.64 ft).

1950 to December 1956: Discharge, 1,640 cfs Mar. 22, 1952 (gage height, 6.09 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1 ----	2.9	103	12 ----	9.9	25	23 ----	82	15
2 ----	2.4	66	13 ----	8.2	19	24 ----	38	13
3 ----	2.2	41	14 ----	6.8	15	25 ----	23	13
4 ----	3.9	26	15 ----	5.7	13	26 ----	16	19
5 ----	6.4	24	16 ----	4.5	11	27 ----	20	22
6 ----	5.7	22	17 ----	3.7	9.9	28 ----	236	22
7 ----	5.0	20	18 ----	3.4	9.0	29 ----	528	-----
8 ----	4.5	29	19 ----	3.2	62	30 ----	91	-----
9 ----	5.5	38	20 ----	2.9	46	31 ----	58	-----
10 ----	26	66	21 ----	3.4	28			
11 ----	13	38	22 ----	215	19			
Monthly mean discharge, in cubic feet per second -----							46.3	29.8
Runoff, in inches -----							7.15	4.15

70. DRAKES CREEK NEAR ALVATON, KY.

Location.—Lat 36°53'42", long 86°23'21", on right bank at downstream side of abandoned bridge, 0.5 mile upstream from State Highway 71, 2.5 miles northwest of Alvaton, Warren County, and 4.8 miles downstream from Trammel Fork.

Drainage area.—478 sq mi, of which about 120 sq mi does not contribute directly to surface runoff.

Gage-height record.—Water-stage recorder graph. Datum of gage is 443.07 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 34,300 cfs 11 p.m. Jan. 29 (gage height, 31.54 ft).

1939 to December 1956: Discharge, 30,900 cfs Feb. 14, 1948 (gage height, 30.70 ft).

CUMBERLAND RIVER BASIN

72. POOR FORK AT CUMBERLAND, KY.

Location.—Lat 36°58'26", long 82°59'35", at left 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,415.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 3,500 cfs and slope-area measurement of 11,700 cfs.

Maxima.—January-February 1957: Discharge, 11,800 cfs 3 p.m. Jan. 29 (gage height, 11.50 ft).

1940 to December 1956: Discharge, 7,500 cfs Jan. 7, 1946 (gage height, 9.65 ft).

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

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	93	1,860	12-----	347	386	23-----	398	228
2-----	86	1,640	13-----	251	281	24-----	293	190
3-----	75	608	14-----	192	215	25-----	230	170
4-----	103	374	15-----	160	172	26-----	182	160
5-----	131	285	16-----	135	153	27-----	202	153
6-----	175	246	17-----	103	131	28-----	906	145
7-----	178	284	18-----	93	113	29-----	6,750	-----
8-----	151	446	19-----	82	302	30-----	2,280	-----
9-----	254	815	20-----	82	466	31-----	852	-----
10-----	880	1,540	21-----	82	335			
11-----	582	685	22-----	93	272			
Monthly mean discharge, in cubic feet per second-----							530	452
Runoff, in inches-----							7.42	5.72

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29			Jan. 30		
12 p.m.---	0.99	165	2 a.m.-----	4.20	1,800	6 a.m.-----	5.83	2,850
			4-----	4.50	2,070	12 m.-----	5.00	1,760
Jan. 27			6-----	5.89	3,520	6 p.m.-----	4.48	1,200
12 m.-----	1.12	200	8-----	7.70	5,780	12 p.m.---	4.16	910
6 p.m.-----	1.19	218	10-----	9.00	7,600			
12 p.m.---	1.31	251	12 m.-----	10.20	9,460	Jan. 31		
			2 p.m.-----	11.22	11,300			
			3-----	11.50	11,800	6 a.m.-----	3.97	790
Jan. 28			4-----	11.18	11,200	12 m.-----	3.91	735
6 a.m.-----	1.58	344	6-----	10.21	9,480	6 p.m.-----	4.05	830
12 m.-----	2.47	715	8-----	9.30	8,020	12 p.m.---	4.48	1,200
6 p.m.-----	3.95	1,600	10-----	8.39	6,750			
12 p.m.---	4.05	1,680	12 p.m.---	7.65	5,710			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 1			Feb. 3			Feb. 5		
6 a.m.----	4.82	1,580	6 a.m.----	3.78	660	12 m.-----	2.87	287
12 m.-----	4.82	1,580	12 m.-----	3.61	586	12 p.m.-----	2.78	260
6 p.m.-----	5.42	2,270	12 p.m.-----	3.33	474			
12 p.m.-----	5.92	2,840				Feb. 6		
			Feb. 4			12 m.-----	2.74	242
Feb. 2			12 m.-----	3.09	358	12 p.m.-----	2.73	239
6 a.m.----	5.38	2,140	12 p.m.-----	2.92	305			
12 m.-----	4.75	1,480						
6 p.m.-----	4.34	1,080						
12 p.m.-----	4.02	840						

73. CUMBERLAND RIVER NEAR HARLAN, KY.

Location.—Lat 36°50'48", long 83°21'21", on left bank 10 ft downstream from bridge on U.S. Highway 119 at Loyall, 1.6 miles upstream from Fourmile Branch, 2.0 miles downstream from Poor and Clover Forks, and 2 miles west of Harlan, Harlan County. Drainage area.—374 sq mi.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 22,000 cfs. Discharge for Jan. 17-19 estimated on basis of records for nearby stations.

Maxima.—January-February 1957: Discharge, 31,000 cfs 6 p.m. Jan. 29 (gage height, 19.89 ft).

1940 to December 1956: Discharge, 37,900 cfs Jan. 8, 1946 (gage height, 22.81 ft).

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

Mean discharge, in cubic feet per second, 1957

[illegible]

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 2		
12 p.m.-----	2.30	775	7 p.m.-----	19.76	30,700	4 a.m.-----	8.86	9,130
			8-----	19.49	30,100	8-----	8.38	8,360
Jan. 27			10-----	19.00	29,000	12 m-----	7.47	6,960
			12 p.m.-----	18.54	28,000	4 p.m.-----	6.59	5,680
6 a.m.-----	2.27	756				8-----	5.94	4,770
12 m-----	2.42	860	Jan. 30			12 p.m.-----	5.45	4,140
6 p.m.-----	2.70	1,080						
12 p.m.-----	3.12	1,460	2 a.m.-----	17.34	25,300	Feb. 3		
			4-----	15.32	21,100			
Jan. 28			8-----	10.74	12,300	6 a.m.-----	4.89	3,410
			12 m-----	8.19	8,050	12 m-----	4.51	2,940
6 a.m.-----	3.82	2,160	4 p.m.-----	6.86	6,050	6 p.m.-----	4.19	2,560
10-----	4.76	3,250	8-----	6.11	5,000	12 p.m.-----	3.92	2,260
12 m-----	5.55	4,260	12 p.m.-----	5.59	4,320			
2 p.m.-----	7.18	6,520				Feb. 4		
6-----	10.99	12,700	Jan. 31					
8-----	11.76	14,100				12 m-----	3.53	1,870
10-----	12.04	14,600	4 a.m.-----	5.28	3,910	12 p.m.-----	3.22	1,560
12 p.m.-----	11.93	14,400	8-----	5.09	3,670			
			12 m-----	5.25	3,880	Feb. 5		
Jan. 29			4 p.m.-----	5.46	4,150			
			8-----	5.85	4,660	12 m-----	3.08	1,430
2 a.m.-----	11.86	14,200	12 p.m.-----	6.62	5,710	12 p.m.-----	3.00	1,350
4-----	12.06	14,600						
6-----	12.45	15,400	Feb. 1			Feb. 6		
8-----	13.19	16,800						
10-----	14.29	19,000	4 a.m.-----	7.37	6,800	12 m-----	2.88	1,240
12 m-----	16.28	23,100	8-----	7.69	7,280	12 p.m.-----	2.85	1,210
2 p.m.-----	18.31	27,500	4 p.m.-----	7.39	6,840			
4-----	19.43	30,000	8-----	8.06	7,850			
5-----	19.78	30,800	12 p.m.-----	8.77	8,980			
6-----	19.89	31,000						

74. YELLOW CREEK NEAR MIDDLESBORO, KY.

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

Drainage area.—58.2 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,104.20 ft above mean sea level, Sandy Hook datum.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 3,980 cfs 8 p.m. Jan. 28 (gage height, 15.31 ft).

1940 to December 1956: Discharge, 6,160 cfs Jan. 7, 1946 (gage height, 20.92 ft).

Flood of March 1929 reached a stage of about 19.6 ft; flood of Feb. 3, 1939 reached a stage of 18.5 ft, from floodmarks.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	49	1,360	12-----	246	302	23-----	362	129
2-----	42	1,010	13-----	167	214	24-----	260	111
3-----	36	452	14-----	122	156	25-----	182	101
4-----	64	298	15-----	100	125	26-----	130	101
5-----	204	323	16-----	84	111	27-----	210	93
6-----	190	191	17-----	64	95	28-----	2,070	90
7-----	141	120	18-----	55	84	29-----	3,010	-----
8-----	109	482	19-----	50	211	30-----	1,150	-----
9-----	414	420	20-----	45	298	31-----	799	-----
10-----	696	932	21-----	68	228			
11-----	416	497	22-----	84	165			
Monthly mean discharge, in cubic feet per second-----							375	315
Runoff, in inches-----							7.42	5.63

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 2		
12 p.m.---	1.99	117	12 p.m.---	12.04	2,440	4 a.m.---	9.07	1,470
						8-----	7.85	1,160
Jan. 27			Jan. 30			12 m.---	6.80	910
6 a.m.---	2.00	119	4 a.m.---	10.30	1,810	4 p.m.---	5.97	745
6 p.m.---	2.96	275	8-----	8.25	1,260	8-----	5.40	644
12 p.m.---	3.70	380	12 m.---	6.94	938	12 p.m.---	4.93	569
			4 p.m.---	6.06	762			
Jan. 28			8-----	5.41	646	Feb. 3		
			12 p.m.---	5.04	586	12 m.---	4.12	443
4 a.m.---	5.65	687				12 p.m.---	3.51	352
8-----	6.95	940	Jan. 31					
12 m.---	9.02	1,460				Feb. 4		
4 p.m.---	13.72	3,180	4 a.m.---	5.04	586			
6-----	15.00	3,820	8-----	5.66	689	12 m.---	3.09	294
8-----	15.31	3,980	12 m.---	6.32	814	12 p.m.---	2.81	252
10-----	15.16	3,900	4 p.m.---	6.38	826			
12 p.m.---	14.81	3,720	8-----	7.10	975	Feb. 5		
			12 p.m.---	8.08	1,220	12 m.---	2.69	234
Jan. 29			Feb. 1			12 p.m.---	2.52	207
4 a.m.---	14.26	3,450						
8-----	13.30	2,970	4 a.m.---	8.41	1,300	Feb. 6		
10-----	12.84	2,760	8-----	8.41	1,300			
12 m.---	12.71	2,700	12 m.---	4.12	1,230	12 m.---	2.42	190
2 p.m.---	13.08	2,860	4 p.m.---	8.36	1,290	12 p.m.---	2.35	178
4 p.m.---	13.36	3,000	8-----	9.54	1,580			
6-----	13.38	3,010	12 p.m.---	9.95	1,700			
8-----	13.12	2,880						

75. CUMBERLAND RIVER AT PINEVILLE, KY.

[Gaging station, discontinued 1931]

Location.—Lat 36°44'48", long 83°41'34", on left bank 300 ft upstream from bridge on U.S. Highway 119, 300 ft downstream from Clear Creek, and 1 mile south of Pineville, Bell County.

Drainage area.—676 sq mi (revised).

Gage-height record.—Floodmarks only. Datum of gage is 984.28 ft above mean sea level.

Discharge record.—Stage-discharge relation defined by current-meter measurements in 1929-31 below 23,000 cfs.

Maxima.—January-February 1957: Discharge, 45,000 cfs Jan. 29 (gage height, 32.62 ft, from floodmarks).

1929-31: Discharge, 23,400 cfs Apr. 22, 1931 (gage height, 17.76 ft).

76. STRAIGHT CREEK AT JENSEN, KY.

[Miscellaneous site]

Location.—Lat 36°46'20", long 83°38'55", 0.9 miles downstream from Elliott Branch, 1.0 mile west of Jensen, 1.1 miles east of town of Straight Creek, Bell County, and 1.3 miles upstream from Left Fork Straight Creek.

Drainage area.—53.8 sq mi.

Discharge record.—Peak discharge by slope-area measurement.

Maximum.—January-February 1957: Discharge, 16,700 cfs Jan. 29.

77. CUMBERLAND RIVER NEAR PINEVILLE, KY.

Location.—Lat 36°48'48", long 93°45'58", on downstream side of bridge on U.S. Highway 25 E, 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.

Gage-height record.—Water-stage recorder graph, except Jan. 1-11, Jan. 29 to Feb. 1, when graph was drawn from twice-daily wire-weight gage readings, floodmarks, and shape of graph for auxiliary gage. Graph drawn for auxiliary staff gage, 1.9 miles upstream, from once or twice daily readings, except Jan. 28 to Feb. 2, when hourly readings were made. Datum of gage is 955.45 ft above mean sea level, Sandy Hook datum.

Discharge record.—Stage-fall-discharge relation or stage-discharge relation defined by current-meter measurements below 36,000 cfs and by slope-area measurements at gage heights 44.34, 47.3, 47.35, and 49.31 ft. Fall used as a factor Jan. 10-12, 24, 25, 9 p.m. Jan. 29 to Feb. 12, Feb. 20-22.

Maxima.—January-February 1957: Discharge, 54,900 cfs 11 p.m. Jan. 29 (gage height, 47.35 ft, from floodmarks).

1938 to December 1956: Discharge, 57,900 cfs Jan. 8, 1946 (gage height, 49.31 ft).

Flood of March 1929 reached a stage of 47.3 ft (discharge 51,000 cfs).

Remarks.—Auxiliary gage readings Jan. 28 to Feb. 2, furnished by Kentucky Utilities Co.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1	790	14,600	12	3,810	4,760	23	2,990	2,230
2	682	16,200	13	2,750	3,220	24	3,980	1,820
3	570	9,250	14	1,970	2,430	25	2,650	1,580
4	554	4,870	15	1,520	1,920	26	2,730	1,470
5	970	2,920	16	1,270	1,610	27	2,010	1,400
6	1,280	2,650	17	1,020	1,380	28	9,690	1,270
7	1,420	2,740	18	808	1,180	29	40,100	-----
8	1,320	4,610	19	727	2,320	30	39,400	-----
9	2,370	5,950	20	704	5,480	31	10,600	-----
10	9,700	12,500	21	740	3,750			
11	8,220	10,200	22	790	2,650			
Monthly mean discharge, in cubic feet per second							5,101	4,534
Runoff, in inches							7.27	5.84

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 2—Con.		
12 p.m.	9.80	1,830	11 p.m.	47.35	54,900	6 p.m.	31.66	14,200
			12 p.m.	47.33	54,800	12 p.m.	29.46	11,800
Jan. 27			Jan. 30			Feb. 3		
6 a.m.	9.66	1,750	2 a.m.	47.30	54,000	6 a.m.	26.87	10,300
12 m	9.79	1,820	6	47.10	51,000	12 m	24.36	9,210
6 p.m.	10.34	2,150	8	46.95	50,000	12 p.m.	19.69	7,000
12 p.m.	11.38	2,780	10	46.65	48,000			
Jan. 28			12 m	46.30	44,500	Feb. 4		
4 a.m.	12.37	3,390	2 p.m.	45.80	40,400	12 m	15.71	4,660
8	13.90	4,430	6	44.00	25,400	6 p.m.	14.21	3,830
12 m	16.28	6,450	8	42.70	21,000	12 p.m.	13.12	3,300
2 p.m.	18.50	8,450	12 p.m.	40.00	15,500			
6	26.50	15,600	Jan. 31			Feb. 5		
10	32.28	21,600	4 a.m.	37.40	11,500	6 a.m.	12.41	3,040
12 p.m.	34.08	23,800	8	34.80	9,400	12 m	11.96	2,840
Jan. 29			12 m	32.75	9,240	12 p.m.	11.50	2,740
4 a.m.	36.55	27,100	4 p.m.	31.30	9,360			
6	37.85	29,000	12 p.m.	30.00	11,600	Feb. 6		
8	39.45	31,500				12 m	11.19	2,660
10	41.05	34,300	Feb. 1			12 p.m.	10.96	2,530
12 m	42.80	38,200	12 m	30.75	14,600			
4 p.m.	46.05	49,400	12 p.m.	32.80	17,600	Feb. 7		
5	46.55	51,700				6 a.m.	10.89	2,480
6	46.80	52,800	Feb. 2			12 m	10.98	2,540
7	47.00	53,700	6 a.m.	33.40	18,200	6 p.m.	11.64	2,880
8	47.20	54,700	12 m	32.87	17,500	12 p.m.	12.92	3,600
9	47.30	54,800						

78. 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.

Gage-height record.—Graph drawn from twice-daily wire-weight gage readings, except Jan. 29–31, when hourly readings were made, and Jan. 28, Feb. 1–3 when 4 to 8 readings a day were made. Datum of gage is 942.97 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 30,000 cfs and extended above on basis of runoff comparison with nearby stations. Rate of change in stage used as a factor Jan. 9–13, 23–25, Jan. 28 to Feb. 5, Feb. 8–13, 19–22.

Maxima.—January-February 1957: Discharge, 43,000 cfs 9 a.m. Jan. 30 (gage height, 42.15 ft); gage height, 42.28 ft 12 m. Jan. 30.

1922–31, 1948 to December 1956: Discharge, 47,900 cfs May 31, 1927; gage height, 40.25 ft Feb. 2, 1951.

Flood of January 1946 reached a stage of 42.8 ft, present datum.

Remarks.—Gage readings Jan. 28 to Feb. 3, 1957, furnished by Corps of Engineers.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	882	23,400	12----	5,280	6,290	23----	3,740	2,440
2----	770	23,500	13----	3,070	3,950	24----	5,850	2,090
3----	651	15,600	14----	2,160	2,620	25----	3,500	1,840
4----	606	8,530	15----	1,690	2,120	26----	2,340	1,660
5----	938	5,060	16----	1,200	1,810	27----	2,060	1,540
6----	1,310	3,060	17----	1,210	1,570	28----	7,040	1,440
7----	1,520	2,840	18----	1,310	1,350	29----	30,600	-----
8----	1,520	4,750	19----	910	2,440	30----	39,200	-----
9----	2,580	6,020	20----	812	6,520	31----	25,800	-----
10----	9,060	10,400	21----	847	4,950			
11----	9,830	12,000	22----	917	3,330			
Monthly mean discharge, in cubic feet per second-----							5,458	5,826
Runoff, in inches-----							6.55	6.32

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29			Jan. 30—Con.		
12 p.m.---	4.52	2,090	4 a.m.-----	27.04	20,400	6 a.m.-----	41.66	40,900
			8-----	31.00	26,100	8-----	41.95	42,500
Jan. 27			12 m-----	25.00	32,200	9-----	42.15	43,000
			2 p.m.-----	36.55	35,000	10-----	42.25	42,500
12 m-----	4.40	1,980	4-----	37.85	36,800	12 m-----	42.28	41,700
6 p.m.-----	4.48	2,050	6-----	39.10	38,600	2 p.m.-----	42.26	40,800
12 p.m.-----	4.75	2,300	8-----	39.95	39,500	4-----	42.20	39,800
			10-----	40.60	39,900	6-----	42.06	37,800
Jan. 28			12 p.m.-----	41.01	40,400	8-----	41.80	35,500
						12 p.m.-----	41.15	30,000
6 a.m.-----	6.03	3,380	Jan. 30					
12 m-----	8.62	5,320				Jan. 31		
6 p.m.-----	15.40	10,200	2 a.m.-----	41.30	40,600			
12 p.m.-----	23.12	16,200	4-----	41.55	40,700	4 a.m.-----	40.15	27,900

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 31—Con.			Feb. 2—Con.			Feb. 5		
8 a.m.----	39.35	26,600	12 m.----	33.68	24,400	12 m.----	11.64	4,960
12 m.----	38.40	25,400	6 p.m.----	33.22	22,500	12 p.m.----	7.00	3,700
8 p.m.----	36.42	23,600	12 p.m.----	32.65	20,300			
12 p.m.----	35.62	23,000				Feb. 6		
Feb. 1			Feb. 3			12 m.----	5.53	2,940
			12 m.----	30.20	15,400	12 p.m.----	5.16	2,650
6 a.m.----	34.52	22,900	12 p.m.----	26.60	11,200			
12 m.----	33.85	23,200				Feb. 7		
12 p.m.----	33.40	24,500	Feb. 4			12 m.----	5.20	2,680
Feb. 2			6 a.m.----	24.30	9,410	12 p.m.----	6.10	3,360
			12 m.----	21.80	8,320			
6 a.m.----	33.42	24,800	12 p.m.----	16.74	6,640			

79. 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 25 W and State Highway 92 at Williamsburg, Whitley County, and 2.1 miles downstream from Clear Fork.

Drainage area.—1,607 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 891.52 ft above sea level, unadjusted.

Discharge record.—Stage-discharge relation defined by current-meter measurements.
Maxima.—January-February 1957: Discharge, 49,700 cfs 11 p.m. Jan. 31 (gage height, 33.78 ft).

1950 to December 1956: Discharge, 37,200 cfs Feb. 2, 1951 (gage height, 29.85 ft).

Maximum stage since at least 1918, 34.2 ft Jan. 10, 1946, 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.

Mean discharge, in cubic feet per second, 1957

[illegible]

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30—Con.			Feb. 3—Con.		
12 p.m.---	7.92	4,220	12 m.-----	29.38	37,200	6 p.m.-----	26.15	30,500
			6 p.m.-----	30.10	38,600	12 p.m.---	25.11	28,500
Jan. 27			12 p.m.---	31.03	41,200			
6 a.m.-----	7.60	3,900	Jan. 31			Feb. 4		
12 m.-----	7.46	3,760				6 a.m.-----	24.15	26,800
6 p.m.-----	7.56	3,860	4 a.m.-----	31.77	43,300	12 m.-----	23.32	25,300
12 p.m.---	7.92	4,220	8-----	32.52	45,500	12 p.m.---	21.59	22,400
			12 m.-----	33.13	47,400			
Jan. 28			4 p.m.-----	33.52	48,800	Feb. 5		
4 a.m.-----	8.41	4,750	8-----	33.74	49,500	12 m.-----	19.38	19,000
8-----	9.09	5,500	10-----	33.77	49,600	6 p.m.-----	18.05	17,000
12 m.-----	9.89	6,380	11-----	33.78	49,700	12 p.m.---	16.42	14,600
4 p.m.-----	11.48	8,180	12 p.m.---	33.76	49,600			
8-----	16.87	15,200	Feb. 1			Feb. 6		
12 p.m.---	18.55	17,700				12 m.-----	12.59	9,510
			4 a.m.-----	33.68	49,300	6 p.m.-----	10.92	7,510
Jan. 29			8-----	33.49	48,700	12 p.m.---	9.77	6,250
4 a.m.-----	20.25	20,300	4 p.m.-----	32.95	46,800			
8-----	23.00	24,700	12 p.m.---	32.23	44,600	Feb. 7		
12 m.-----	26.75	31,700	Feb. 2			6 a.m.-----	9.14	5,550
4 p.m.-----	28.00	34,200				12 m.-----	8.84	5,220
8-----	28.47	35,200	12 m.-----	30.86	40,800	6 p.m.-----	8.87	5,260
12 p.m.---	28.63	35,600	12 p.m.---	29.31	37,100	12 p.m.---	9.26	5,690
Jan. 30			Feb. 3					
6 a.m.-----	28.91	36,200	12 m.-----	27.28	32,800			

80. 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.

Gage-height record.—Water-stage recorder graph, except Jan. 1–7. Datum of gage is 825.49 ft above mean sea level, Sandy Hook datum.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Discharge for period Jan. 1–7 estimated on basis of recorded range in stage and records for stations on nearby streams.

Maxima.—January–February 1957: Discharge, 57,400 cfs 3 p.m. Jan. 29 (gage height, 14.55 ft).

1907–11, 1915 to December 1956: Discharge, 59,600 cfs Jan. 28, 1918 (gage height, 15.5 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	1,650	49,500	12-----	13,700	17,000	23-----	6,290	6,260
2-----	1,450	45,600	13-----	9,590	13,000	24-----	8,630	4,730
3-----	1,250	35,700	14-----	5,400	7,210	25-----	8,960	3,900
4-----	1,150	27,400	15-----	3,740	4,860	26-----	6,150	3,500
5-----	1,800	20,700	16-----	2,930	3,900	27-----	4,750	3,360
6-----	3,200	12,400	17-----	2,410	3,340	28-----	11,800	3,180
7-----	3,200	6,590	18-----	2,010	2,820	29-----	48,500	-----
8-----	3,040	8,020	19-----	1,660	4,570	30-----	43,800	-----
9-----	3,470	11,000	20-----	1,420	11,100	31-----	43,400	-----
10-----	8,990	15,600	21-----	1,460	11,800			
11-----	13,800	18,400	22-----	1,670	9,090			
Monthly mean discharge, in cubic feet per second-----							8,751	13,020
Runoff, in inches-----							5.10	6.86

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 3		
12 p.m.---	4.09	4,990	12 p.m.---	13.64	51,100	12 m.---	11.28	35,800
						12 p.m.---	10.47	31,100
Jan. 27			Jan. 30			Feb. 4		
12 m.---	3.92	4,550	8 a.m.---	12.90	46,100			
6 p.m.---	3.95	4,630	12 m.---	12.45	43,100	12 m.---	9.73	27,100
12 p.m.---	4.14	5,130	4 p.m.---	12.06	40,600	12 p.m.---	9.14	24,100
			8-----	11.87	39,400			
Jan. 28			12 p.m.---	11.88	39,500	Feb. 5		
4 a.m.---	4.36	5,730				12 m.---	8.44	20,800
8-----	4.74	6,820	Jan. 31			12 p.m.---	7.59	17,100
12 m.---	5.29	8,530	6 a.m.---	12.10	40,900			
4 p.m.---	6.78	13,900	12 m.---	12.45	43,100	Feb. 6		
8-----	8.50	12,100	6 p.m.---	12.86	45,800	12 m.---	6.38	12,300
12 p.m.---	9.28	24,800	12 p.m.---	13.18	47,900	6 p.m.---	5.73	10,000
						12 p.m.---	5.18	8,180
Jan. 29			Feb. 1					
2 a.m.---	9.86	27,800	6 a.m.---	13.36	49,200	Feb. 7		
4-----	10.98	34,000	12 m.---	13.47	49,900			
6-----	12.42	42,900	6 p.m.---	13.49	50,100	6 a.m.---	4.78	6,940
8-----	13.49	50,100	12 p.m.---	13.46	49,800	12 m.---	4.54	6,240
10-----	14.17	54,700				6 p.m.---	4.46	6,010
12 m.---	14.44	56,600	Feb. 2			12 p.m.---	4.52	6,180
2 p.m.---	14.53	57,200						
3-----	14.55	57,400	6 a.m.---	13.25	48,400			
4-----	14.52	57,200	12 m.---	12.87	45,900			
6-----	14.37	56,100	6 p.m.---	12.41	42,900			
10-----	13.85	52,500	12 p.m.---	12.00	40,200			

81. LAUREL RIVER AT CORBIN, KY.

Location.—Lat 36°51'09", long 84°07'38", on left bank 200 ft downstream from bridge on State Highway 312, three-quarters of a mile northwest of Corbin city boundary, Whitley County, and 1.0 mile downstream from Lynn Camp Creek.

Drainage area.—201 sq mi.

Gage-height record.—Water-stage recorder graph except Feb. 4–7; graph for Feb. 4–5 drawn from one staff gage reading Feb. 5, trend of recorder graph, and shape of recession. Datum of gage is 965.05 ft above mean sea level, Sandy Hook datum.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 9,000 cfs and contracted-opening measurement at 16,200 cfs. Discharge for Feb. 6, 7 estimated on basis of weather records and records for stations on nearby streams.

Maxima.—January-February 1957: Discharge, 16,200 cfs 3:30 p.m. Jan. 29 (gage height, 19.30 ft).

1922–24, 1942 to December 1956: Discharge, 14,400 cfs Jan. 8, 1946 (gage height, 17.94 ft).

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

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	153	2,160	12----	1,020	1,140	23----	3,460	502
2----	120	2,590	13----	580	606	24----	2,420	418
3----	93	1,740	14----	412	439	25----	1,090	370
4----	106	1,010	15----	312	340	26----	610	382
5----	381	658	16----	267	302	27----	716	412
6----	406	700	17----	188	252	28----	2,330	361
7----	345	850	18----	164	212	29----	13,000	-----
8----	294	940	19----	126	586	30----	9,120	-----
9----	930	1,640	20----	128	1,320	31----	2,590	-----
10----	2,270	3,000	21----	204	840			
11----	1,900	2,290	22----	463	642			
Monthly mean discharge, in cubic feet per second-----							1,490	954
Runoff, in inches-----							8.55	4.94

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 29—Con.		
12 p.m.---	3.91	504	6 p.m.---	8.55	3,100	2 p.m.---	19.14	16,000
			12 p.m.---	8.86	3,350	3:30-----	19.30	16,200
Jan. 27			Jan. 29			5-----	19.25	16,100
6 a.m.---	3.92	508				6-----	19.11	16,000
12 m-----	4.11	584	1 a.m.---	9.13	3,570	8-----	18.75	15,500
6 p.m.---	4.75	875	2-----	10.13	4,530	10-----	18.34	15,000
12 p.m.---	5.58	1,290	3-----	12.55	7,420	12 p.m.---	17.83	14,300
			4-----	13.94	9,230			
Jan. 28			6-----	15.56	11,300	Jan. 30		
			8-----	17.11	13,400	6 a.m.---	15.90	11,800
6 a.m.---	6.21	1,630	10-----	18.06	14,600	6 p.m.---	11.76	6,400
12 m-----	7.30	2,280	12 m-----	18.66	15,400	12 p.m.---	9.69	4,080

83. ROCKCASTLE RIVER AT BILLOWS, KY.

Location.—Lat 37°10'16", long 84°17'46", on left bank 200 ft upstream from bridge on State Highway 80 at Billows, Rockcastle County, 1.0 mile downstream from Hawk Creek, 1.0 mile upstream from Pine Creek, and 13 miles west of London.

Drainage area.—604 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 802.90 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 25,000 cfs 3:30 a. m. Jan. 30 (gage height, 31.90 ft).

1936 to December 1956: Discharge, 46,800 cfs June 29, 1947 (gage height, 45.48 ft).

Flood of January 1913 reached a stage of about 40 ft, from information by Corps of Engineers.

Mean discharge: cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1 ----	400	4,020	12 ----	2,280	2,840	23 ----	15,300	1,520
2 ----	331	7,850	13 ----	1,570	1,930	24 ----	7,630	1,360
3 ----	265	3,840	14 ----	1,110	1,380	25 ----	2,460	1,210
4 ----	252	2,370	15 ----	832	1,040	26 ----	1,660	1,190
5 ----	337	1,720	16 ----	688	860	27 ----	1,320	1,430
6 ----	451	2,390	17 ----	522	708	28 ----	4,270	1,300
7 ----	433	2,340	18 ----	439	588	29 ----	17,800	-----
8 ----	439	2,340	19 ----	373	784	30 ----	21,100	-----
9 ----	1,310	4,640	20 ----	355	1,760	31 ----	5,420	-----
10 ----	7,090	11,200	21 ----	376	1,560			
11 ----	4,570	7,560	22 ----	1,660	1,580			
Monthly mean discharge, in cubic feet per second -----							3,324	2,618
Runoff, in inches -----							6.34	4.51

84. CANE BRANCH NEAR PARKERS LAKE, KY.

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

Drainage area.—0.67 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 979.4 ft above mean sea level, datum of 1929 (levels by U.S. Forest Service).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 40 cfs.

Maxima.—January-February 1957: Discharge, 198 cfs 3:30 a.m. Jan. 29 (gage height, 2.43 ft, backwater from ice).

February to December 1956: Discharge, 98 cfs Apr. 6 (gage height, 1.57 ft).

86. BUCK CREEK NEAR SHOPVILLE, KY.

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

Drainage area.—165 sq mi.

Gage-height record.—Water-stage recorder graph except Jan. 18, 19, Feb. 4–14. Datum of gage is 835.35 ft above mean sea level, unadjusted.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 7,000 cfs and by contracted-opening measurement at 14,900 cfs in November 1957. Discharge for Jan. 18, 19, Feb. 8–14 estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for stations on nearby streams.

Maxima.—January-February 1957: Discharge, 9,710 cfs 3:45 p.m. Jan. 29 (gage height, 15.19 ft).

1952 to December 1956: Discharge, 10,800 cfs Feb. 18, 1956 (gage height, 15.72 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	115	1,830	12----	492	660	23----	3,860	438
2----	92	1,910	13----	362	474	24----	877	384
3----	78	872	14----	270	362	25----	564	331
4----	88	578	15----	218	284	26----	407	380
5----	149	660	16----	172	256	27----	484	412
6----	131	1,040	17----	115	211	28----	2,300	394
7----	115	775	18----	105	183	29----	7,060	-----
8----	105	828	19----	90	444	30----	2,950	-----
9----	1,360	2,000	20----	98	456	31----	1,080	-----
10----	2,100	3,500	21----	134	380			
11----	780	1,000	22----	1,430	448			
Monthly mean discharge, in cubic feet per second-----							909	768
Runoff, in inches-----							6.35	4.84

87. 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.

Gage-height record.—Water-stage recorder graph except 6 a.m. Jan. 30 to 9 a.m. Feb. 8 for which graph was estimated on basis of recorded range in stage, floodmark in well, weather records, and records for Clear Fork near Robbins. Datum of gage is 1,092.67 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 26,000 cfs.

Maxima.—January-February 1957: Discharge, 29,200 cfs 5:30 a.m. Jan. 29 (gage height, 26.00 ft).

1934 to December 1956: Discharge, 44,300 Feb. 3, 1939 (gage height, 33.58 ft).

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.

Flood of March 1902 was approximately 7 ft lower than that of Mar. 23, 1929, from profile by Corps of Engineers.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	260	12,000	12-----	700	1,710	23-----	3,230	795
2-----	218	10,000	13-----	605	1,130	24-----	2,040	655
3-----	178	5,000	14-----	510	845	25-----	1,190	570
4-----	376	2,500	15-----	442	670	26-----	875	690
5-----	3,130	1,700	16-----	386	605	27-----	1,300	1,030
6-----	2,010	1,200	17-----	312	506	28-----	14,600	1,160
7-----	1,200	1,800	18-----	264	430	29-----	25,100	-----
8-----	825	2,780	19-----	228	1,150	30-----	10,000	-----
9-----	720	3,480	20-----	212	2,210	31-----	4,000	-----
10-----	955	5,160	21-----	241	1,380			
11-----	865	3,340	22-----	315	1,010			
Monthly mean discharge, in cubic feet per second-----							2,493	2,340
Runoff, in inches-----							7.52	6.38

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 2		
12 p.m.-----	4.19	755	8 p.m.-----	22.44	22,400	6 a.m.-----	-----	11,000
			10-----	22.59	22,700	12 m-----	-----	10,200
Jan. 27			12 p.m.-----	22.44	22,400	6 p.m.-----	-----	9,100
3 a.m.-----	4.17	745				12 p.m.-----	-----	7,600
8-----	4.30	810	Jan. 30					
2 p.m.-----	4.80	1,060	2 a.m.-----	21.75	21,200	Feb. 3		
6-----	5.62	1,560	4-----	20.36	18,800	6 a.m.-----	-----	6,000
9-----	6.50	2,070	6-----	18.25	15,500	12 m-----	-----	4,700
12 p.m.-----	8.30	3,670	12 m-----	-----	6,600	6 p.m.-----	-----	3,800
			6 p.m.-----	-----	4,300	12 p.m.-----	-----	3,400
			12 p.m.-----	-----	3,400			
Jan. 28			Jan. 31			Feb. 4		
6 a.m.-----	13.70	9,110				6 a.m.-----	-----	2,700
12 m-----	17.96	15,000	6 a.m.-----	-----	3,200	12 m-----	-----	2,400
6 p.m.-----	21.07	20,000	12 m-----	-----	3,200	6 p.m.-----	-----	2,200
12 p.m.-----	24.02	25,300	6 p.m.-----	-----	3,600	12 p.m.-----	-----	2,000
			12 p.m.-----	-----	8,600			
Jan. 29			Feb. 1			Feb. 5		
4 a.m.-----	25.83	28,900				6 a.m.-----	-----	1,900
5:30-----	26.00	29,200	6 a.m.-----	-----	12,700	12 m-----	-----	1,700
8-----	25.53	28,300	12 m-----	-----	12,700	6 p.m.-----	-----	1,600
12 m-----	23.70	24,700	6 p.m.-----	-----	12,400	12 p.m.-----	-----	1,200
4 p.m.-----	22.27	22,100	12 p.m.-----	-----	11,800			
6-----	22.30	22,100						

88. 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.

Gage-height record.—Water-stage recorder graph except 6 a.m. Jan. 29 to 9 a.m. Jan. 31 for which graph was estimated on basis of weather records and records for New River at New River. Datum of gage is 1,081.46 ft above mean sea level, Sandy Hook datum.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Affected by ice Jan. 18–20.

Maxima.—January–February 1957: Discharge, 15,000 cfs 8 p.m. Jan. 28 (gage height, 12.90 ft).

1930 to December 1956: Discharge, 34,000 cfs Feb. 3, 1939 (gage height, 18.5 ft, at site 300 ft upstream and at datum 1.00 ft higher), on basis of slope-area measurement.

Maximum stage known, 22.1 ft Mar. 23, 1929, at site 300 ft upstream and datum 1.00 ft higher, from information by local residents.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1 ----	232	6,560	12 ----	576	1,280	23 ----	1,860	718
2 ----	198	5,240	13 ----	485	907	24 ----	1,320	571
3 ----	165	2,250	14 ----	407	676	25 ----	934	490
4 ----	234	1,470	15 ----	343	530	26 ----	718	571
5 ----	1,400	1,160	16 ----	318	604	27 ----	1,000	637
6 ----	1,110	976	17 ----	259	525	28 ----	8,850	598
7 ----	790	1,130	18 ----	223	446	29 ----	11,400	-----
8 ----	571	1,520	19 ----	205	1,140	30 ----	4,900	-----
9 ----	560	1,880	20 ----	205	2,200	31 ----	3,830	-----
10 ----	842	2,310	21 ----	256	1,400			
11 ----	742	1,950	22 ----	432	969			
Monthly mean discharge, in cubic feet per second -----							1,463	1,454
Runoff, in inches -----							6.20	5.57

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28			Jan. 29—Con.		
12 p.m.---	3.31	620	2 a.m.-----	6.25	2,980	6 a.m.-----	12.30	13,500
			4 -----	7.15	4,120	8 -----		12,800
			6 -----	7.95	5,280	10 -----		12,200
Jan. 27			8 -----	8.52	6,190	12 m -----		11,400
2 a.m.-----	3.28	604	10 -----	8.97	6,910	2 p.m.-----		11,000
6 -----	3.30	615	12 m -----	9.55	7,900	4 -----		10,200
8 -----	3.36	648	2 p.m.-----	10.35	9,320	6 -----		9,230
10 -----	3.44	694	4 -----	11.35	11,300	8 -----		8,580
12 m -----	3.56	766	6 -----	12.55	14,100	10 -----		8,060
2 p.m.-----	3.76	894	8 -----	12.90	15,000	12 p.m.-----		7,470
4 -----	4.02	1,070	10 -----	12.78	14,700			
6 -----	4.30	1,280	12 p.m.-----	12.78	14,700	Jan. 30		
8 -----	4.69	1,570				6 a.m.-----		5,840
10 -----	5.04	1,840	Jan. 29			12 m -----		4,580
12 p.m.---	5.58	2,290	2 a.m.-----	12.67	14,500			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 30—Con.			Feb. 1—Con.			Feb. 2—Con.		
6 p.m.-----		3,780	2 p.m.-----	8.60	6,320	10 p.m.-----	6.52	3,290
12 p.m.-----		3,290	4-----	8.90	6,800	12 p.m.-----	6.32	3,050
			6-----	9.20	7,300			
Jan. 31			8-----	9.44	7,710	Feb. 3		
			11-----	9.67	8,100			
3 a.m.-----		3,150	12 p.m.-----	9.54	7,880	6 a.m.-----	5.84	2,540
5-----		3,150				12 m -----	5.44	2,170
7-----		3,220	Feb. 2			6 p.m.-----	5.14	1,920
9-----	6.60	3,390				12 p.m.-----	4.88	1,710
3 p.m.-----	7.10	4,050	2 a.m.-----	9.42	7,670			
8-----	7.39	4,460	4-----	9.12	7,160	Feb. 4		
12 p.m.-----	7.83	5,100	6-----	8.80	6,640			
			8-----	8.44	6,060	12 m -----	4.54	1,450
Feb. 1			10-----	8.09	5,500	12 p.m.-----	4.31	1,280
			12 m -----	7.74	4,970			
2 a.m.-----	7.99	5,340	2 p.m.-----	7.46	4,550	Feb. 5		
6-----	8.48	6,130	4-----	7.17	4,150			
8-----	8.58	6,290	6-----	6.96	3,860	12 m -----	4.15	1,160
1 p.m.-----	8.58	6,290	8-----	6.72	3,550	12 p.m.-----	3.99	1,050

89. SOUTH FORK CUMBERLAND RIVER NEAR STEARNS, KY.

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

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

Gage-height record.—Water-stage recorder graph, except Jan. 28–30, when graph was reconstructed from numerous radio gage readings and floodmark. Datum of gage is 764.81 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January–February 1957: Discharge, 61,500 cfs 12:30 p.m. Jan. 29 (gage height, 36.25 ft, from floodmark).

1942 to December 1956: Discharge, 69,600 cfs Feb. 13, 1948 (gage height, 38.50 ft).

Maximum stage known, 52.9 ft in March 1929, from information by local residents.

Mean discharge, in cubic feet per second, 1957

[illegible]

90. 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 at Somerset, Pulaski County.

Drainage area.—31.3 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 867.34 ft above mean sea level, datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 1,500 cfs.

Maxima.—January-February 1957: Discharge, 2,260 cfs 9:15 p.m. Jan. 22 (gage height, 7.43 ft).

1953 to December 1956: Discharge, 2,430 cfs Mar. 21, 1955 (gage height, 7.58 ft).

Mean discharge, in cubic feet per second, 1957

[illegible]

91. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, Sandy Hook datum.

Maxima.—January-February 1957: Contents, 2,313,200 cfs-days 3 a.m. to 10 a.m. Feb. 13 (elevation 734.40 ft).

1950 to December 1956: Contents, 2,505,800 cfs-days Dec. 23, 1951 (elevation, 741.32 ft).

Remarks.—Reservoir is formed by earth embankment and concrete gravity dam surmounted by 10 taintor gates 37 ft high by 50 ft wide. Final closure of dam made Aug. 7, 1950. Total capacity at elevation 760.00 ft (top of gates) is 3,070,000 cfs-days, of which 1,056,000 cfs-days above elevation 723.00 ft (crest of spillway) are reserved for flood control and 1,080,000 cfs-days between elevations 673.00 ft (minimum power pool) and 723.0 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. Gage-height record and contents furnished by Corps of Engineers.

Elevation, in feet, and contents, in cfs-days at 12 p.m. of indicated day, 1957

Day	January		February		Day	January		February	
	Elevation	Contents	Elevation	Contents		Elevation	Contents	Elevation	Contents
1----	697.13	1,409,800	724.97	2,064,200	17---	696.38	1,393,800	732.01	2,248,600
2----	696.42	1,394,600	728.00	2,142,600	18---	695.62	1,377,600	731.15	2,225,700
3----	695.78	1,381,000	729.46	2,180,900	19---	694.96	1,363,600	731.10	2,224,300
4----	695.44	1,373,800	730.28	2,202,600	20---	694.54	1,354,700	731.32	2,230,200
5----	695.25	1,369,700	730.70	2,213,700	21---	693.88	1,340,900	731.30	2,229,700
6----	695.32	1,371,200	730.81	2,216,600	22---	694.89	1,362,100	731.07	2,223,500
7----	695.19	1,368,500	730.67	2,212,900	23---	697.38	1,415,100	730.66	2,212,600
8----	694.86	1,361,500	730.77	2,215,600	24---	698.32	1,435,400	730.12	2,198,300
9----	695.51	1,375,300	731.38	2,231,800	25---	698.71	1,443,800	729.53	2,182,700
10----	696.87	1,404,200	733.07	2,277,200	26---	698.76	1,444,900	728.92	2,166,600
11----	697.55	1,418,800	734.10	2,305,100	27---	698.79	1,445,500	728.35	2,151,700
12----	698.02	1,428,900	734.38	2,312,700	28---	701.33	1,501,100	727.78	2,136,800
13----	698.53	1,439,900	734.32	2,311,000	29---	713.64	1,783,600	-----	-----
14----	698.31	1,435,200	733.92	2,300,200	30---	719.22	1,919,300	-----	-----
15----	697.81	1,424,400	733.35	2,284,700	31---	721.70	1,981,200	-----	-----
16----	697.19	1,411,100	732.70	2,267,200					

Supplemental record.—Dec. 31, 1956, 12 p.m., 697.49 ft, 1,417,500 cfs-days.

92. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 540.81 ft above mean sea level, Sandy Hook datum.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 50,000 cfs.

Maxima.—January-February 1957: Discharge, 27,500 cfs 1–6 a.m. Feb. 22 (gage height, 21.43 ft).

1939 to December 1956: Discharge, 162,000 cfs Jan. 9, 1946; gage height, 64.82 ft Jan. 9, 1946.

Maximum stage known, 69.5 ft in March 1826 from Cumberland River profile.

Remarks.—Flow regulated by Lake Cumberland (see station 90).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	11,700	24,000	12----	17,400	27,300	23----	17,100	27,300
2----	18,900	26,000	13----	7,780	27,300	24----	20,800	27,300
3----	16,500	25,800	14----	17,200	27,300	25----	16,200	27,200
4----	12,400	25,600	15----	19,200	27,200	26----	15,400	27,100
5----	13,400	25,400	16----	20,200	27,300	27----	17,600	27,100
6----	8,910	25,400	17----	22,400	27,300	28----	14,900	27,100
7----	12,300	25,400	18----	21,300	27,200	29----	9,870	-----
8----	15,400	25,400	19----	19,800	26,400	30----	21,200	-----
9----	11,900	25,600	20----	13,300	26,700	31----	23,800	-----
10----	14,600	25,700	21----	18,300	27,400			
11----	21,000	25,800	22----	16,600	27,400			
Monthly mean discharge, in cubic feet per second-----							16,370	26,500
Adjusted monthly discharge, in cubic feet per second-----							34,550	32,060

93. EAST FORK OBEY RIVER NEAR JAMESTOWN, TENN.

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

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

Gage-height record.—Water-stage recorder graph except 6 p.m. Feb. 10 to 11 a.m. Feb. 17 for which graph was constructed based on bi-hourly radio gage readings. Datum of gage is 680.30 ft above mean sea level, Sandy Hook datum.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 16,900 cfs 4:30 p.m. Jan. 29 (gage height, 19.41 ft).

1942 to December 1956: Discharge, 28,300 cfs Feb. 13, 1948 (gage height, 27.20 ft).

Flood of March 1929 reached a stage of about 30 ft, from profile by Corps of Engineers.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	174	5,190	12-----	492	856	23-----	1,930	541
2-----	145	3,370	13-----	410	640	24-----	990	458
3-----	123	1,460	14-----	345	514	25-----	680	407
4-----	163	940	15-----	291	420	26-----	522	424
5-----	927	779	16-----	256	489	27-----	688	451
6-----	752	671	17-----	210	454	28-----	7,110	471
7-----	541	797	18-----	183	410	29-----	12,800	-----
8-----	413	1,040	19-----	156	1,210	30-----	4,370	-----
9-----	437	1,320	20-----	150	1,590	31-----	2,590	-----
10-----	666	2,100	21-----	185	935			
11-----	601	1,370	22-----	513	684			
Monthly mean discharge, in cubic feet per second-----							1,284	1,071
Runoff, in inches-----							7.33	5.52

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30			Feb. 2		
12 p.m.---	2.96	464	3 a.m.-----	11.75	7,080	3 a.m.---	9.54	4,940
Jan. 27			6-----	10.00	5,350	6-----	8.63	4,150
6 a.m.---	2.92	451	9-----	8.95	4,410	9-----	7.82	3,520
9-----	2.97	468	12 m -----	8.00	3,650	12 m ----	7.22	3,060
12 m ----	3.29	588	3 p.m.---	7.35	3,160	3 p.m.---	6.72	2,690
6 p.m.---	3.93	875	6-----	6.85	2,780	6-----	6.38	2,450
10-----	4.37	1,100	9-----	6.43	2,500	9-----	6.02	2,200
12 p.m.---	4.80	1,360	12 p.m.---	6.15	2,290	12 p.m.---	5.71	1,980
Jan. 28			Jan. 31			Feb. 3		
3 a.m.---	5.90	2,120	3 a.m.---	5.95	2,140	6 a.m.---	5.24	1,650
6-----	8.35	3,930	6-----	5.91	2,120	12 m ----	4.90	1,420
12 m ----	10.65	5,950	9-----	6.09	2,250	6 p.m.---	4.62	1,240
3 p.m.---	11.85	7,180	12 m -----	6.35	2,430	12 p.m.---	4.41	1,120
6-----	14.70	10,400	3 p.m.---	6.54	2,560	Feb. 4		
8-----	16.95	13,300	6-----	6.91	2,830	6 a.m.---	4.17	995
9:30 ----	18.00	14,800	9-----	7.59	3,340	12 m ----	4.01	915
11-----	17.65	14,300	12 p.m.---	8.23	3,830	6 p.m.---	3.92	870
12 p.m.---	17.35	13,800	Feb. 1			12 p.m.---	3.85	838
Jan. 29			6 a.m.---	9.45	4,840	Feb. 5		
3 a.m.---	16.19	12,300	9-----	9.57	4,960	12 m ----	3.72	779
6-----	15.15	11,000	9-----	9.58	4,970	12 p.m.---	3.59	720
9-----	13.47	8,970	12 m ----	9.38	4,790			
12 m ----	15.93	11,900	1 p.m.---	9.36	4,770			
3 p.m.---	19.00	16,200	3-----	9.66	5,040			
4:30 ----	19.41	16,900	6-----	10.78	6,080			
6-----	19.15	16,500	8-----	11.28	6,580			
12 p.m.---	14.17	9,800	9-----	11.25	6,550			
			12 p.m.---	10.58	5,880			

94. WEST FORK OBEY RIVER NEAR ALPINE, TENN.

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

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

Gage-height record.—Water-stage recorder graph. Datum of gage is 684.28 ft above mean sea level, unadjusted datum of 1929.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 9,510 cfs 2 p.m. Jan. 29 (gage height, 12.65 ft).

1942 to December 1956: Discharge, 15,100 cfs Mar. 21, 1955 (gage height, 16.30 ft).

Flood of March 1929 was about 3 ft lower than that of Mar. 21, 1955, from profile by Corps of Engineers.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	55	2,210	12----	222	418	23----	1,240	249
2----	48	1,370	13----	189	299	24----	499	206
3----	44	658	14----	143	232	25----	329	183
4----	94	435	15----	114	183	26----	242	179
5----	476	329	16----	94	196	27----	415	176
6----	302	275	17----	71	173	28----	2,760	163
7----	229	394	18----	61	153	29----	5,440	-----
8----	173	547	19----	51	832	30----	1,740	-----
9----	186	615	20----	47	770	31----	1,120	-----
10----	295	1,040	21----	50	469			
11----	262	636	22----	526	326			
Monthly mean discharge, in cubic feet per second-----							565	490
Runoff, in inches-----							5.66	4.44

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 29—Con.		
12 p.m.---	1.80	209	12 m-----	5.97	2,140	6-----	11.00	7,300
			2 p.m.---	6.42	2,450	8-----	9.80	5,860
Jan. 27			4-----	7.08	2,980	10-----	8.70	4,630
6 a.m.---	1.81	212	6-----	8.48	4,390	12 p.m.---	7.80	3,660
10-----	1.87	232	8-----	8.83	4,770			
12 m-----	2.08	302	9:30-----	9.10	5,070	Jan. 30		
3 p.m.---	2.60	479	12 p.m.---	8.67	4,600	2 a.m.---	6.94	2,860
6-----	3.00	615				4-----	6.29	2,360
9-----	3.24	704	Jan. 29			6-----	5.79	2,030
12 p.m.---	3.81	955	2 a.m.---	8.10	3,970	8-----	5.44	1,820
			4-----	7.70	3,560	10-----	5.19	1,680
Jan. 28			7-----	6.98	2,890	12 m-----	4.95	1,550
4 a.m.---	5.07	1,620	9-----	7.35	3,220	4 p.m.---	4.55	1,330
6-----	5.52	1,870	10-----	8.00	3,860	6-----	4.40	1,250
8-----	5.60	1,920	12 m-----	11.40	7,820	8-----	4.27	1,180
10-----	5.61	1,930	2 p.m.---	12.65	9,510	10-----	4.10	1,100
			4-----	12.08	8,640	12 p.m.---	4.00	1,050

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 31			Feb. 1—Con.			Feb. 3		
6 a.m.---	3.84	970	2 p.m.---	5.95	2,130	6 a.m.---	3.29	724
8.-----	3.86	980	3.-----	6.45	2,480	12 m.---	3.08	643
12 m.---	4.00	1,050	6.-----	7.23	3,120	6 p.m.---	2.89	578
5 p.m.---	4.01	1,060	9.-----	6.84	2,780	12 p.m.---	2.70	513
6.-----	4.14	1,120	12 p.m.---	6.15	2,260			
10.-----	4.93	1,540				Feb. 4		
12 p.m.---	5.10	1,640	Feb. 2			12 m.---	2.45	428
			3 a.m.---	5.55	1,890	12 p.m.---	2.28	370
Feb. 1			6.-----	5.12	1,650			
3 a.m.---	5.24	1,710	12 m.---	4.48	1,290	Feb. 5		
6.-----	5.60	1,920	6 p.m.---	3.96	1,030	12 m.---	2.15	326
12 m.---	5.60	1,920	12 p.m.---	3.60	860	12 p.m.---	2.05	292
1 p.m.---	5.67	1,960						

95. WOLF RIVER NEAR BYRDSTOWN, TENN.

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

Drainage area.—105 sq mi.

Gage-height record.—Water-stage recorder graph except 8 a.m. to 9 p.m., Feb. 19 for which graph was constructed based on bi-hourly radio gage readings. Datum of gage is 707.54 ft above mean sea level, Sandy Hook datum.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 7,300 cfs and extended above on basis of velocity-area study.

Maxima.—January-February 1957: Discharge, 22,600 cfs 1 p.m. January 29 (gage height, 10.84 ft).

1943 to December 1956: Discharge, 14,100 cfs Mar. 22, 1955 (gage height, 9.06 ft).
Remarks.—Some regulation at low flow caused by small mills above station.

Mean discharge, in cubic feet per second, 1957

[illegible]

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29-Con.			Feb. 1-Con.		
12 p.m.---	2.58	235	3 p.m.---	9.39	14,700	9 p.m.---	5.61	2,830
			7-----	8.80	11,900	12 p.m.---	5.41	2,540
Jan. 27			12 p.m.---	6.42	4,330			
6 a.m.---	2.58	235	Jan. 30			Feb. 2		
12 m.---	2.86	332				4 a.m.---	5.00	2,040
6 p.m.---	3.42	632	6 a.m.---	5.29	2,380	8-----	4.62	1,640
12 p.m.---	3.65	775	12 m.---	4.72	1,740	12 m.---	4.40	1,420
			6 p.m.---	4.32	1,340	6 p.m.---	4.12	1,150
Jan. 28			12 p.m.---	4.07	1,100	12 p.m.---	3.92	976
6 a.m.---	3.92	976	Jan. 31			Feb. 3		
8-----	4.05	1,080						
9-----	4.15	1,180	5 a.m.---	3.99	1,030	12 m.---	3.57	722
12 m.---	5.90	3,310	6-----	4.05	1,080	12 p.m.---	3.36	596
6 p.m.---	7.51	7,250	10-----	4.14	1,170			
12 p.m.---	6.46	4,420	12 m.---	4.27	1,290	Feb. 4		
			5 p.m.---	4.23	1,250			
Jan. 29			8-----	4.30	1,320	12 m.---	3.17	488
1 a.m.---	6.38	4,250	12 p.m.---	4.50	1,520	12 p.m.---	3.01	405
3-----	6.40	4,290						
6-----	7.50	7,230	Feb. 1			Feb. 5		
8-----	8.60	11,000	6 a.m.---	4.70	1,720	6 a.m.---	2.96	380
10-----	9.80	16,700	12 m.---	4.92	1,950	2 p.m.---	2.95	375
12 m.---	10.65	21,500	1 p.m.---	5.00	2,040	6-----	3.01	405
1 p.m.---	10.84	22,600	6-----	5.56	2,750	12 p.m.---	3.00	400
2-----	9.50	15,200	8-----	5.61	2,830			

96. 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, Tenn., and 7.3 miles upstream from mouth.

Drainage area.—935 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, Sandy Hook datum.

Maxima.—January-February 1957: Contents at 12 p.m., 677,800 cfs-days Feb. 10, 11 (elevation, 650.68 ft).

1943 to December 1956: Contents, 780,000 cfs-days Feb. 10, 1950 (elevation, 657.8 ft).

Remarks.—Storage capacity, 860,000 cfs-days (elevation 663.0 ft) of which 428,000 cfs-days is controlled storage. Records furnished by Corps of Engineers.

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 28			Feb. 6*—Con.			Feb. 18*		
12 p.m.---	10.55	315	12 p.m.---	16.30	5,720	6 a.m.---	16.52	5,830
Jan. 29*			Feb. 7*			12 m.---	16.52	5,830
6 a.m.---	16.50	2,320	6 a.m.---	16.33	5,750	8:30 p.m.---	16.52	5,830
9-----	21.90	6,160	12 m.---	16.36	5,750	9-----	12.77	2,640
9:30-----	20.48	1,850	6 p.m.---	16.38	5,760	10-----	10.08	0
11-----	21.60	1,520	12 p.m.---	16.42	5,800	11-----	9.92	365
12 m.---	22.00	991				12 p.m.---	9.58	133
2 p.m.---	22.70	756	Feb. 8*			Feb. 19*		
3-----	24.50	5,530	6 a.m.---	16.42	5,810	4 a.m.---	9.05	81
4-----	24.85	5,520	12 m.---	16.49	5,880	6-----	9.10	162
7-----	25.20	5,710	9:30 p.m.---	16.62	5,950	8-----	15.12	4,690
8-----	23.20	0	11-----	10.48	1,090	10-----	16.54	5,640
12 p.m.---	22.23	0	12 p.m.---	10.44	1,170	12 m.---	17.09	5,830
Jan. 30*			Feb. 9*			6 p.m.---	17.80	5,940
6 a.m.---	19.65	0	2 a.m.---	10.02	951	12 p.m.---	18.00	5,950
10-----	17.54	0	3-----	15.25	4,900	Feb. 20*		
10:30-----	19.40	3,780	4:30-----	16.20	5,680	4 a.m.---	17.99	5,970
12 m.---	16.46	192	6-----	13.80	3,430	8-----	17.94	6,100
6 p.m.---	13.69	1,130	7-----	15.95	5,320	12 m.---	17.70	5,990
12 p.m.---	11.40	576	9-----	16.52	5,830	6 p.m.---	17.34	5,860
Jan. 31*			12 m.---	16.70	5,910	12 p.m.---	17.14	5,840
6:30 a.m.---	9.82	284	6 p.m.---	16.74	5,840	Feb. 21*		
8-----	15.03	4,660	12 p.m.---	16.75	5,730	6 a.m.---	17.00	5,830
10-----	15.63	5,110	Feb. 10*			12 m.---	16.90	5,810
12 m.---	16.36	5,770	1 a.m.---	11.06	225	6 p.m.---	16.82	5,800
6 p.m.---	16.34	5,730	2-----	10.76	209	12 p.m.---	16.77	5,790
12 p.m.---	16.42	5,760	6-----	10.24	161	Feb. 22*		
Feb. 4*			7-----	15.10	4,480	1 a.m.---	11.16	0
12 p.m.---	16.40	5,750	8-----	16.14	5,370	2-----	10.80	199
Feb. 5*			10-----	16.64	5,730	5-----	10.05	0
6 a.m.---	16.37	5,750	12 m.---	16.81	5,800	7-----	15.37	4,870
12 m.---	16.39	5,770	6 p.m.---	17.04	5,830	9-----	16.27	5,620
6 p.m.---	16.41	5,800	12 p.m.---	17.12	5,910	10-----	15.90	5,210
11-----	16.40	5,790	Feb. 11*			11-----	15.82	5,110
12 p.m.---	12.20	2,070	3 a.m.---	17.10	5,980	5 p.m.---	15.82	5,090
Feb. 6*			3:30-----	15.62	4,440	6-----	15.93	5,200
1 a.m.---	9.75	0	4-----	16.50	5,340	8-----	15.94	5,210
2-----	9.60	0	5-----	16.84	5,710	9-----	12.15	1,800
3-----	9.20	0	6-----	16.94	5,810	10-----	10.18	0
5-----	15.30	5,030	12 m.---	16.90	5,890	11-----	10.14	250
6-----	15.87	5,510	6 p.m.---	16.79	5,890	12 p.m.---	9.80	0
8-----	16.17	5,700	12 p.m.---	16.64	5,820	Feb. 23*		
12 m.---	16.30	5,780	Feb. 17*			5 a.m.---	9.15	0
6 p.m.---	16.30	5,720	12 p.m.---	16.55	5,850	6-----	12.36	2,710
						7-----	14.80	4,590

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26*			Jan. 30*—Con.			Feb. 7*—Con.		
12 p.m.---	11.88	15,200	12 m.-----	26.90	32,300	12 m.-----	20.90	33,500
Jan. 27*			3 p.m.-----	25.00	36,600	12 p.m.-----	20.90	33,500
			6-----	23.70	35,400	Feb. 8*		
			12 p.m.-----	21.60	32,700			
6 a.m.-----	12.86	18,000				12 m.-----	20.90	33,500
10-----	13.60	19,100	Jan. 31*			9 p.m.-----	21.10	33,900
12 m.-----	13.77	18,900				10-----	20.30	29,800
6 p.m.-----	13.90	19,200	7 a.m.-----	20.00	32,400	12 p.m.-----	19.92	30,400
9-----	14.09	20,100	9-----	20.60	34,100			
12 p.m.-----	14.47	21,100	12 m.-----	20.80	33,300	Feb. 9*		
			6 p.m.-----	20.90	33,500			
Jan. 28*			12 p.m.-----	21.10	33,900	2 a.m.-----	19.70	32,500
						4-----	20.50	34,400
8 a.m.-----	16.00	25,100	Feb. 1*			8-----	21.10	34,900
1 p.m.-----	18.86	32,000				12 m.-----	21.50	34,800
2-----	19.02	30,500	6 a.m.-----	21.30	34,300	6 p.m.-----	21.80	35,400
5:30-----	19.30	32,100	12 m.-----	21.70	36,500	12 p.m.-----	22.10	36,000
7-----	19.90	31,400	6 p.m.-----	22.90	38,900			
9-----	20.00	32,700	12 p.m.-----	23.60	39,200	Feb. 10*		
12 p.m.-----	20.92	36,800						
Jan. 29*			Feb. 5*			2 a.m.-----	21.20	32,400
						4-----	20.80	31,900
6 a.m.-----	26.10	56,200	12 p.m.-----	20.90	33,500	6-----	20.60	34,400
9:30-----	30.44	66,500	Feb. 6*			8-----	21.40	36,600
12 m.-----	32.25	64,200				12 m.-----	22.10	37,300
5 p.m.-----	34.05	61,700	2 a.m.-----	20.10	30,400	4 p.m.-----	22.50	36,800
6-----	34.10	61,800	4-----	19.70	31,000	6-----	22.60	37,100
8-----	34.00	58,900	6-----	20.00	32,900	12 p.m.-----	22.60	37,100
12 p.m.-----	32.80	54,800	8-----	20.40	33,300			
			12 m.-----	20.60	32,900	Feb. 11*		
Jan. 30*			6 p.m.-----	20.80	33,300			
			12 p.m.-----	20.80	33,300	2 a.m.-----	22.60	37,100
						4-----	22.40	36,600
6 a.m.-----	30.30	47,100	Feb. 7*			6-----	22.40	36,600
10-----	28.10	50,600				6 p.m.-----	21.80	35,400
11-----	29.00	42,800	6 a.m.-----	20.80	33,300	12 p.m.-----	21.60	35,000

*Affected by rate of change in stage; daily means cannot be computed exactly from data shown.

TENNESSEE RIVER BASIN

99. LITTLE PIGEON RIVER ABOVE WEST FORK LITTLE PIGEON RIVER AT SEVIERVILLE, TENN.

[Crest-stage station]

Location.—Lat 35°52'12", long 83°34'04", on right bank at State Highway 66 bridge, in Sevierville, Sevier County, 150 ft upstream from West Fork, and 4¼ miles downstream from East Fork.

Drainage area.—201 sq mi (determined by Tennessee Valley Authority from 7½-minute planimetric maps, scale, 1:24,000).

Gage-height record.—Crest stages only.

Discharge record.—Peak discharges from rating curve extended above 11,700 cfs.

Maxima.—January-February 1957: Discharge, 12,800 cfs Jan. 31 (gage height, 15.59 ft).

February 1954 to December 1956: Discharge, 10,800 cfs Apr. 16, 1956 (gage height, 13.76 ft).

100. WEST FORK LITTLE PIGEON RIVER NEAR PIGEON FORGE, TENN.

[Crest-stage station]

Location.—Lat 35°48'21", long 83°34'28", on left bank at old State Highway 71 bridge, 1.4 miles upstream from Waldon Creek, 1.6 miles northwest of Pigeon Forge, Sevier County, and 9 miles upstream from mouth.

Drainage area.—76.2 sq mi (determined by Tennessee Valley Authority from 7½-minute planimetric maps, scale, 1:24,000).

Gage-height record.—Crest stages only.

Discharge record.—Peak discharges from rating curve extended above 4,900 cfs.

Maxima.—January-February 1957: Discharge, 6,400 cfs Jan. 31 (gage height, 10.98 ft).

February 1946 to July 1949, February 1954 to December 1956: Discharge, 5,640 cfs Jan. 20, 1947 (gage height, 10.30 ft).

101. LITTLE PIGEON RIVER AT SEVIERVILLE, TENN.

Location.—Lat 35°52'34", long 83°34'36", on left bank at Eckel farmhouse, 0.5 mile downstream from city limits of Sevierville, Sevier County, and 0.5 mile downstream from West Fork Little Pigeon River.

Drainage area.—353 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 881.44 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 20,000 cfs.

Maxima.—January-February 1957: Discharge, 28,300 cfs 12:30 a.m. Feb. 1 (gage height, 14.71 ft).

1920 to December 1956: Discharge, 32,000 cfs June 29, 1928 (gage height, 15.4 ft).

Flood of Feb. 25, 1875 reached a stage of about 18 ft (discharge, about 55,000 cfs) and the floods of 1896 and 1867, reached stages of about 16.8 and 16.5 ft, respectively, from reports by Tennessee Valley Authority.

Remarks.—Some regulation at low flow caused by powerplants on forks.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	280	18,700	12-----	358	1,790	23-----	1,240	500
2-----	248	8,000	13-----	325	1,320	24-----	663	470
3-----	215	3,060	14-----	290	1,040	25-----	495	454
4-----	240	3,590	15-----	266	860	26-----	451	470
5-----	396	4,220	16-----	258	793	27-----	2,040	488
6-----	402	2,900	17-----	223	660	28-----	5,670	765
7-----	385	2,670	18-----	181	595	29-----	2,760	-----
8-----	336	4,130	19-----	178	628	30-----	3,860	-----
9-----	320	4,600	20-----	188	702	31-----	14,600	-----
10-----	402	4,370	21-----	188	588			
11-----	440	2,940	22-----	195	543			
Monthly mean discharge, in cubic feet per second-----							1,229	2,566
Runoff, in inches-----							4.01	7.57

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30—Con.			Feb. 3		
12 p.m.---	1.68	429	4 a.m.-----	7.34	5,410	6 a.m.-----	5.01	3,350
			12 m.-----	5.85	3,790	12 m.-----	4.61	2,950
Jan. 27			6 p.m.-----	4.85	2,680	6 p.m.-----	4.38	2,720
			11-----	4.42	2,250	12 p.m.-----	4.10	2,440
5 a.m.-----	1.66	418	12 p.m.-----	4.45	2,280			
6-----	1.69	434				Feb. 4		
12 m.-----	3.90	2,130	Jan. 31			7 a.m.-----	3.82	2,160
6 p.m.-----	5.59	3,490				8-----	3.89	2,230
8-----	5.69	3,600	2 a.m.-----	4.70	2,530	11-----	4.61	2,950
10:30-----	5.65	3,560	6-----	7.54	5,650	3 p.m.-----	5.71	4,060
12 p.m.-----	6.23	4,190	12 m.-----	11.85	13,800	6-----	6.65	5,100
			4 p.m.-----	13.98	25,000	7-----	6.85	5,320
Jan. 28			6-----	13.96	24,900	10-----	7.00	5,480
			8-----	13.68	23,700	12 p.m.-----	6.90	5,370
2 a.m.-----	7.00	5,040	9-----	13.74	23,900			
6-----	7.80	5,960	12 p.m.-----	14.66	28,100	Feb. 5		
8-----	8.05	6,260				6 a.m.-----	6.30	4,710
10-----	9.20	7,740	Feb. 1			11:30-----	5.46	3,800
2 p.m.-----	8.28	6,540	12:30 a.m.---	14.71	28,300	1:30-----	6.22	4,620
6-----	7.29	5,360	6-----	13.30	22,000	6-----	5.33	3,670
12 p.m.-----	5.54	3,430	12 m.-----	11.66	14,600	8-----	5.06	3,400
			2 p.m.-----	11.57	14,200	12 p.m.-----	5.04	3,380
Jan. 29			8-----	11.91	15,700			
6 a.m.-----	4.48	2,310	11-----	12.38	17,800	Feb. 6		
12 m.-----	3.82	1,660	12 p.m.-----	12.30	17,400	6 a.m.-----	4.80	3,140
2 p.m.-----	3.72	1,570				12 m.-----	4.50	2,840
6-----	5.10	2,950	Feb. 2			8 p.m.-----	4.23	2,570
12 p.m.-----	7.28	5,350	6 a.m.-----	10.20	10,000	10-----	4.26	2,600
			12 m.-----	7.80	6,440	12 p.m.-----	4.39	2,730
Jan. 30			6 p.m.-----	6.40	4,820			
1:30 a.m.---	7.52	5,620	12 p.m.-----	5.67	4,020			

102. SOUTH FORK HOLSTON RIVER AT RIVERSIDE, NEAR CHILHOWIE, VA.

Location.—Lat 36°45'37", long 81°37'52", 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 2,106.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 3,800 cfs 10 p.m. Jan. 29 (gage height, 8.32 ft).

1920-31, 1942 to December 1956: Discharge, 6,000 cfs June 12, 1923 (gage height, 9.0 ft, from graph based on gage readings, at site 400 ft downstream).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1	79	1,770	12	317	525	23	134	146
2	68	1,070	13	230	382	24	179	134
3	63	657	14	176	295	25	163	127
4	64	511	15	145	243	26	142	149
5	77	450	16	122	215	27	182	170
6	80	434	17	106	187	28	794	187
7	88	777	18	88	162	29	2,530	-----
8	86	1,200	19	84	173	30	1,970	-----
9	238	1,450	20	79	187	31	1,340	-----
10	601	1,420	21	79	176			
11	476	875	22	77	162			
Monthly mean discharge, in cubic feet per second							350	508
Runoff, in inches							5.30	6.94

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Jan. 31—Con.		
12 p.m.	2.41	299	10 p.m.	8.32	3,800	8 p.m.	5.61	1,730
			12 p.m.	8.17	3,660	12 p.m.	6.08	2,020
Jan. 28			Jan. 30			Feb. 1		
4 a.m.	2.61	356						
8	2.81	419	4 a.m.	7.19	2,830	4 a.m.	6.15	2,060
12 m	3.05	491	8	6.26	2,140	8	6.00	1,960
4 p.m.	3.70	696	12 m	5.63	1,740	12 m	5.68	1,770
8	5.50	1,600	4 p.m.	5.25	1,510	4 p.m.	5.42	1,610
12 p.m.	6.26	2,110	8	4.73	1,220	8	5.28	1,530
			12 p.m.	4.50	1,100	12 p.m.	5.05	1,390
Jan. 29			Jan. 31			Feb. 2		
4 a.m.	6.22	2,110						
8	6.15	2,060	4 a.m.	4.36	1,030	4 a.m.	4.82	1,260
12 m	6.02	1,970	8	4.34	1,020	8	4.63	1,160
4 p.m.	6.80	2,520	12 m	4.79	1,240	12 m	4.43	1,060
8	8.00	3,510	4 p.m.	5.20	1,480	4 p.m.	4.24	970

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 21—Con.			Feb. 1—Con.		
12 p.m.---	1.13	142	2 p.m.---	4.71	2,770	12 p.m.---	3.82	1,620
			4-----	4.95	3,080			
Jan. 27			6-----	5.65	4,050	Feb. 2		
			8-----	5.75	4,200			
6 a.m.---	1.11	138	10-----	5.66	4,060	4 a.m.---	3.75	1,530
12 m.---	1.25	172	12 p.m.---	5.61	3,990	8-----	3.60	1,730
6 p.m.---	1.50	240				12 m.---	3.40	1,190
12 p.m.---	1.80	340	Jan. 30			4 p.m.---	3.23	1,050
						8-----	3.03	914
Jan. 28			4 a.m.---	4.80	2,890	12 p.m.---	2.84	794
			8-----	4.37	2,330			
2 a.m.---	1.94	391	12 m.---	4.06	1,930	Feb. 3		
4-----	2.07	443	4 p.m.---	3.74	1,520			
6-----	2.22	503	8-----	3.37	1,170	6 a.m.---	2.60	665
8-----	2.42	584	12 p.m.---	3.15	995	12 m.---	2.45	598
10-----	2.67	700				6 p.m.---	2.34	551
12 m.---	2.99	888	Jan. 31			12 p.m.---	2.36	459
2 p.m.---	3.30	1,110						
4-----	3.75	1,530	4 a.m.---	3.00	895	Feb. 4		
6-----	4.18	2,080	8-----	2.98	882			
8-----	4.52	2,530	12 m.---	3.30	1,110	6 a.m.---	2.46	602
10-----	4.72	2,790	4 p.m.---	3.84	1,640	12 m.---	2.65	690
12 p.m.---	4.80	2,890	8-----	4.20	2,110	6 p.m.---	2.76	748
			12 p.m.---	4.40	2,370	12 p.m.---	2.76	748
Jan. 29			Feb. 1			Feb. 5		
2 a.m.---	5.05	3,220						
4-----	5.18	3,390	4 a.m.---	4.45	2,440	6 a.m.---	2.68	705
6-----	5.18	3,390	8-----	4.36	2,320	12 m.---	2.61	670
8-----	5.10	3,280	12 m.---	4.18	2,080	6 p.m.---	2.57	563
10-----	4.95	3,080	4 p.m.---	3.98	1,820	12 p.m.---	2.47	603
12 m.---	4.75	2,820	8-----	3.90	1,720			

104. SOUTH FORK HOLSTON RIVER AT VESTAL, VA.

Location.—Lat 36°39'06", long 81°50'39", on right bank 500 ft upstream from bridge on U.S. Highway 58 at Vestal, Washington County, 0.7 mile downstream from Laurel Creek, 3.2 miles northwest of Damascus, and 4.9 miles upstream from Middle Fork Holston River.

Drainage area.—301 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,792.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 10,000 cfs and by contracted-opening measurement at 15,100 cfs.

Maxima.—January-February 1957: Discharge, 15,100 cfs 8 p.m. Jan. 29 (gage height, 15.35 ft).

1931 to December 1956: Discharge, 11,400 cfs Mar. 18, 1955 (gage height, 13.73 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	305	6,810	12-----	1,180	2,180	23-----	690	560
2-----	275	4,290	13-----	880	1,500	24-----	775	540
3-----	276	2,800	14-----	700	1,180	25-----	700	520
4-----	291	2,720	15-----	565	940	26-----	600	540
5-----	462	2,600	16-----	498	825	27-----	848	560
6-----	466	2,310	17-----	422	728	28-----	4,740	655
7-----	490	3,210	18-----	363	660	29-----	11,200	-----
8-----	454	4,560	19-----	335	682	30-----	7,390	-----
9-----	965	4,560	20-----	325	682	31-----	5,060	-----
10-----	2,400	5,360	21-----	320	620			
11-----	1,900	3,430	22-----	320	600			
Monthly mean discharge, in cubic feet per second-----							1,490	2,022
Runoff, in inches-----							5.71	7.00

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Jan. 31		
12 p.m.---	4.10	550	8 a.m.-----	12.35	9,760	4 a.m.-----	8.05	3,680
			9-----	12.17	9,470	8-----	8.13	3,770
Jan. 27			10-----	11.95	9,120	12 m.-----	8.88	4,660
			11-----	11.82	8,910	4 p.m.-----	9.67	5,740
6 a.m.-----	4.08	542	12 m.-----	11.91	9,060	8-----	10.35	6,690
12 m.-----	4.43	725	1 p.m.-----	12.05	9,280	12 p.m.---	11.12	7,790
6 p.m.-----	5.13	1,110	2-----	12.35	9,760			
12 p.m.---	5.68	1,480	3-----	12.80	10,500	Feb. 1		
			4-----	13.25	11,200			
Jan. 28			5-----	13.90	12,400	4 a.m.-----	11.27	8,030
			6-----	14.55	13,600	8-----	11.00	7,600
2 a.m.-----	5.95	1,720	7-----	15.05	14,500	12 m.-----	10.45	6,830
4-----	6.20	1,950	8-----	15.35	15,100	4 p.m.-----	9.90	6,060
6-----	6.47	2,190	9-----	15.25	14,900	8-----	9.67	5,740
8-----	6.79	2,480	10-----	15.00	14,400	12 p.m.---	9.40	5,360
10-----	7.18	2,830	11-----	14.65	13,800			
12 m.-----	7.60	3,230	12 p.m.---	14.32	13,200	Feb. 2		
2 p.m.-----	8.30	3,960						
4-----	9.45	5,430	Jan. 30			6 a.m.-----	9.00	4,800
6-----	11.10	7,760				12 m.-----	8.57	4,280
8-----	12.12	9,390	2 a.m.-----	13.65	12,000	6 p.m.-----	8.10	3,740
10-----	12.45	9,920	4-----	13.00	10,800	12 p.m.---	7.68	3,310
12 p.m.---	12.62	10,200	6-----	12.28	9,650			
			8-----	11.65	9,640	Feb. 3		
Jan. 29			10-----	10.82	7,350			
			12 m.-----	10.24	6,540	6 a.m.-----	7.30	2,940
1 a.m.-----	12.67	10,300	2 p.m.-----	9.70	5,780	12 m.-----	7.08	2,740
2-----	12.75	10,400	4-----	9.28	5,190	6 p.m.-----	6.94	2,620
3-----	12.82	10,500	6-----	8.93	4,730	12 p.m.---	6.79	2,480
4-----	12.79	10,500	8-----	8.63	4,360			
5-----	12.68	10,300	10-----	8.42	4,100	Feb. 4		
6-----	12.62	10,200	12 p.m.---	8.27	3,930	6 a.m.-----	6.96	2,630
7-----	12.48	9,970						

FLOODS OF 1957

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 4—Con.			Feb. 5			Feb. 5—Con.		
12 m ----	7.09	2,630	6 a.m.-----	6.98	2,650	6 p.m.----	6.89	2,570
6 p.m.-----	7.21	2,860	12 m -----	6.89	2,570	12 p.m.---	6.79	2,480
12 p.m.---	7.10	2,760						

105. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 2,442.86 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 300 cfs and by slope-area measurement at 819 cfs.

Maxima.—January-February 1957: Discharge, 309 cfs 6 p.m. Jan. 29 (gage height, 5.00 ft).
1947 to December 1956: Discharge, 813 cfs July 6, 1953 (gage height, 7.42 ft).

Mean discharge, in cubic feet per second, 1957

[illegible]

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Jan. 30—Con.		
12 p.m.---	1.93	9.5	2 a.m.---	3.13	77	4 p.m.---	3.00	67
			3-----	3.22	85	8-----	2.89	58
Jan. 27			4-----	3.39	101	12 p.m.---	2.90	59
			5-----	3.45	107			
4 a.m.---	1.93	9.5	6-----	3.60	123	Jan. 31		
8-----	2.03	12	7-----	3.80	145			
12 m.---	2.22	20	8-----	3.87	153	2 a.m.---	2.95	63
4 p.m.---	2.23	20	9-----	3.87	153	4-----	3.01	68
8-----	2.25	21	10-----	3.81	146	6-----	3.03	69
12 p.m.---	2.28	22	11-----	3.77	142	8-----	3.30	92
			12 m.---	3.88	154	10-----	3.76	141
Jan. 28			1 p.m.---	4.16	187	12 m.---	4.13	183
			2-----	4.35	213	2 p.m.---	4.06	174
2 a.m.---	2.35	26	3-----	4.70	264	4-----	3.81	146
4-----	2.50	33	4-----	4.85	286	6-----	3.77	142
6-----	2.54	35	5-----	4.98	306	8-----	4.10	179
8-----	2.62	39	6-----	5.00	309	10-----	4.29	205
10-----	2.66	42	7-----	4.90	294	12 p.m.---	4.12	182
12 m.---	2.67	42	8-----	4.70	264			
2 p.m.---	2.80	51	9-----	4.52	237	Feb. 1		
4-----	3.08	73	10-----	4.33	210			
6-----	3.15	79	11-----	4.15	186	4 a.m.---	3.80	145
8-----	3.20	83	12 p.m.---	4.02	169	8-----	3.58	121
10-----	3.15	79				12 m.---	3.50	112
12 p.m.---	3.12	77	Jan. 30			4 p.m.---	3.39	101
			4 a.m.---	3.61	124	8-----	3.36	98
Jan. 29			8-----	3.34	96	12 p.m.---	3.16	80
1 a.m.---	3.15	79	12 m.---	3.14	78			

106. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,960.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 7,680 cfs 8 p.m. Jan. 29 (gage height, 10.75 ft).

1942 to December 1956: Discharge, 6,570 cfs Aug. 4, 1947 (gage height, 9.86 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	98	2,970	12-----	455	735	23-----	350	252
2-----	86	1,480	13-----	325	545	24-----	325	222
3-----	78	912	14-----	243	435	25-----	238	207
4-----	84	828	15-----	189	350	26-----	194	226
5-----	121	845	16-----	162	311	27-----	391	222
6-----	133	1,010	17-----	136	262	28-----	1,860	316
7-----	145	1,540	18-----	118	230	29-----	5,020	-----
8-----	142	2,130	19-----	108	306	30-----	2,600	-----
9-----	1,710	3,370	20-----	102	450	31-----	4,100	-----
10-----	1,460	2,360	21-----	112	350			
11-----	735	1,190	22-----	115	293			
Monthly mean discharge, in cubic feet per second-----							708	870
Runoff, in inches-----							6.18	6.86

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 1		
12 p.m.---	2.78	185	6 p.m.---	10.48	7,320	2 a.m.---	7.92	4,070
			8-----	10.75	7,680	4-----	7.72	3,790
Jan. 27			10-----	10.50	7,350	6-----	7.41	3,370
			12 p.m.---	9.70	6,310	8-----	7.11	3,010
6 a.m.---	2.77	181				10-----	6.83	2,750
12 m.---	3.08	311	Jan. 30			12 m.---	6.61	2,550
6 p.m.---	3.63	586				2 p.m.---	6.46	2,420
12 p.m.---	4.00	790	2 a.m.---	8.83	5,260	4-----	6.36	2,340
			4-----	7.98	4,150	6-----	6.31	2,300
Jan. 28			6-----	7.28	3,210	8-----	6.25	2,250
			8-----	6.75	2,680	10-----	6.13	2,150
2 a.m.---	4.14	867	10-----	6.30	2,290	12 p.m.---	6.00	2,050
4-----	4.38	999	12 m.---	5.97	2,030			
6-----	4.60	1,130	2 p.m.---	5.66	1,810	Feb. 2		
8-----	4.95	1,340	4-----	5.44	1,660			
10-----	5.30	1,560	6-----	5.25	1,520	6 a.m.---	5.53	1,720
12 m.---	5.58	1,760	8-----	5.06	1,410	12 m.---	5.09	1,420
2 p.m.---	5.86	1,950	10-----	4.95	1,340	6 p.m.---	4.75	1,220
4-----	6.29	2,280	12 p.m.---	4.89	1,300	12 p.m.---	4.48	1,060
6-----	6.69	2,620						
8-----	7.00	2,900	Jan. 31			Feb. 3		
10-----	7.14	3,040						
12 p.m.---	7.06	2,960	2 a.m.---	4.86	1,290	6 a.m.---	4.27	938
			4-----	4.86	1,290	12 m.---	4.20	900
Jan. 29			6-----	4.91	1,320	6 p.m.---	4.12	856
			8-----	5.30	1,560	12 p.m.---	4.11	850
2 a.m.---	6.89	2,800	10-----	6.06	2,100			
4-----	6.84	2,760	12 m.---	7.03	2,930	Feb. 4		
6-----	7.02	2,920	2 p.m.---	7.69	3,750			
8-----	7.49	3,480	4-----	7.95	4,110	6 a.m.---	4.13	862
10-----	7.98	4,150	6-----	7.94	4,100	12 m.---	4.10	845
12 m.---	8.55	4,920	8-----	7.91	4,050	6 p.m.---	4.03	806
2 p.m.---	9.19	5,690	10-----	7.90	4,040	12 p.m.---	3.93	752
4-----	9.85	6,500	12 p.m.---	7.94	4,100			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 5			Feb. 5—Con.			Feb. 5—Con.		
6 a.m.----	3.86	713	6 p.m.-----	4.29	950	12 p.m.----	4.54	1,090
12 m.-----	4.01	796						

107. 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, Virginia-Tennessee, and at mile 49.8.

Drainage area.—703 sq mi.

Gage-height record.—Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936.

Maxima.—January-February 1957: Contents at 12 p.m., 300,800 cfs-days Feb. 11 (elevation, 1,723.36 ft).

1950 to December 1956: Contents, 293,800 cfs-days, Apr. 14, 1952 (elev., 1,721.40 ft).

Remarks.—Storage capacity, 375,100 cfs-days (elevation, 1,742.00 ft) of which 315,200 cfs-days is controlled storage. Records furnished by Tennessee Valley Authority.

Elevation, in feet, and contents, in cfs-days at 12 p.m. of indicated day, 1957

Day	January		February		Day	January		February	
	Elevation	Contents	Elevation	Contents		Elevation	Contents	Elevation	Contents
1----	1,672.54	155,000	1,708.16	249,600	17---	1,679.77	171,600	1,715.08	272,000
2----	1,672.35	154,500	1,710.45	256,800	18---	1,679.28	170,400	1,713.47	266,700
3----	1,672.21	154,200	1,711.39	259,900	19---	1,679.10	170,000	1,712.02	261,900
4----	1,672.51	154,900	1,712.17	262,400	20---	1,679.37	170,600	1,711.11	259,000
5----	1,672.91	155,800	1,712.74	264,300	21---	1,679.16	170,100	1,710.60	257,300
6----	1,673.35	156,800	1,713.23	265,900	22---	1,679.33	170,500	1,710.03	255,500
7----	1,673.74	157,600	1,714.71	270,800	23---	1,679.43	170,800	1,709.61	254,200
8----	1,673.87	157,900	1,716.98	278,400	24---	1,679.51	171,000	1,709.56	254,000
9----	1,674.94	160,300	1,719.60	287,500	25---	1,679.57	171,100	1,709.45	253,600
10---	1,677.33	165,800	1,722.45	297,500	26---	1,679.77	171,600	1,709.31	253,200
11---	1,678.67	169,000	1,723.36	300,800	27---	1,680.68	173,700	1,709.48	253,700
12---	1,679.65	171,300	1,722.43	297,500	28---	1,684.85	184,000	1,709.85	254,900
13---	1,680.32	172,900	1,721.21	293,100	29---	1,693.60	206,900	-----	-----
14---	1,680.37	173,000	1,719.76	288,000	30---	1,699.67	224,000	-----	-----
15---	1,680.39	173,000	1,718.21	282,600	31---	1,703.62	235,600	-----	-----
16---	1,680.17	172,500	1,716.63	277,200					

108. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,450.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 8,270 cfs 4:10 p.m. Feb. 12 (gage height, 40.45 ft).

1951 to December 1956: Discharge, 3,360 cfs Sept. 13, 1953 (gage height, 37.70 ft).

Maximum stage known since at least 1791, about 55 ft in March 1867, from profile by Tennessee Valley Authority.

Remarks.—Flow regulated by South Holston Lake.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	136	2,690	12-----	9.3	7,990	23----	1,290	2,890
2-----	927	2,530	13-----	8.9	7,780	24----	1,440	1,500
3-----	870	3,160	14-----	1,320	7,880	25----	1,230	1,770
4-----	8.9	3,510	15-----	1,060	7,800	26----	762	1,830
5-----	8.9	3,490	16-----	1,650	7,530	27----	59	771
6-----	8.5	3,490	17-----	1,830	7,120	28----	50	681
7-----	8.9	3,390	18-----	1,910	7,070	29----	51	-----
8-----	621	3,300	19-----	1,070	6,690	30----	31	-----
9-----	13	3,290	20-----	10	4,920	31----	958	-----
10-----	43	3,150	21-----	1,380	3,450			
11-----	446	3,800	22-----	357	3,490			
Monthly mean discharge, in cubic feet per second-----							631	4,177

Gage height, in feet, and discharge, in cubic, feet per second, at indicated time 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 30			Feb. 1*			Feb. 2*—Con.		
12 p.m.---	32.71	13	6 a.m.-----	37.00	2,480	11 a.m.---	33.60	145
			7:30 -----	37.01	2,490	12 m ----	33.00	38
Jan. 31*			8-----	37.24	2,780	1 p.m.---	32.83	21
			9:30 -----	37.25	2,800	2-----	37.10	2,600
6 a.m.-----	32.75	15	10-----	37.43	3,040	3-----	37.46	3,080
9-----	32.83	21	2 p.m.-----	37.47	3,090	6-----	37.52	3,160
10-----	32.98	35	3-----	35.47	967	12 p.m.---	37.52	3,160
12 m ----	32.99	37	4-----	37.29	2,850			
12:30 p.m	36.85	2,300	8-----	37.30	2,860			
1-----	36.05	1,450	12 p.m.---	37.25	2,800	Feb. 3*		
2-----	33.53	128				6 a.m.-----	37.51	3,150
3:30 -----	33.02	40	Feb. 2*			12:30 p.m	37.52	3,160
4:30 -----	37.00	2,480				2-----	37.68	3,390
5-----	37.05	2,540	6 a.m.-----	37.25	2,800	3-----	37.52	3,160
12 p.m.---	37.02	2,500	10-----	37.23	2,770	4-----	34.77	565

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 3—Con.			Feb. 11			Feb. 16*		
5 p.m.---	37.52	3,160	6 a.m.---	37.46	3,080	6 a.m.---	40.20	7,780
7-----	37.52	3,160	7 p.m.---	37.50	3,140	1 p.m.---	40.25	7,880
8-----	37.68	3,390	8-----	39.00	5,640	1:30-----	39.90	7,210
12 p.m.---	37.75	3,490	9-----	39.00	5,640	6 p.m.---	39.88	7,170
			9:30-----	39.85	7,120	12 p.m.---	39.86	7,140
Feb. 4			11-----	39.84	7,100			
6 a.m.---	37.76	3,500	12 p.m.---	40.33	8,030	Feb. 17		
12 m.---	37.77	3,510				6 a.m.---	39.85	7,120
6 p.m.---	37.78	3,530	Feb. 12*			12 m.---	39.87	7,160
12 p.m.---	37.76	3,500	2 a.m.---	40.34	8,050	6 p.m.---	39.83	7,080
			2:30-----	39.50	6,490	12 p.m.---	39.82	7,070
Feb. 5			3-----	40.24	7,860	Feb. 18		
6 a.m.---	37.75	3,490	4-----	40.32	8,010			
12 p.m.---	37.75	3,490	8-----	40.28	7,930	12 p.m.---	39.82	7,070
			12 m.---	40.28	7,930			
Feb. 6			1 p.m.---	40.30	7,970	Feb. 19*		
6 a.m.---	37.75	3,490	1:30-----	40.14	7,670	6 a.m.---	39.79	7,010
12 p.m.---	37.75	3,490	2-----	40.14	7,670	12 m.---	39.80	7,030
			2:30-----	40.27	7,910	1:15 p.m.---	39.82	7,070
Feb. 7*			3:30-----	40.31	7,990	1:30-----	39.34	6,220
3 a.m.---	37.75	3,490	3:45-----	40.14	7,670	2:30-----	39.28	6,120
4-----	37.66	3,360	4:10-----	40.45	8,270	3-----	39.37	6,270
12 m.---	37.65	3,350	4:30-----	40.24	7,860	6-----	39.39	6,300
6 p.m.---	37.68	3,390	4:45-----	40.42	8,210	12 p.m.---	39.36	6,250
12 p.m.---	37.66	3,360	5-----	40.25	7,880			
			12 p.m.---	40.24	7,860	Feb. 20*		
Feb. 8*			Feb. 13*			6 a.m.---	39.40	6,320
2:30 a.m.---	37.66	3,360	8:30 a.m.---	40.22	7,820	11:45-----	39.42	6,350
3-----	36.05	1,450	9-----	40.08	7,550	12 m.---	38.72	5,190
3:30-----	37.50	3,140	12:30 p.m.---	40.12	7,630	12:30 p.m.---	38.57	4,950
4-----	37.68	3,390	12:45-----	40.40	8,170	1:45-----	38.54	4,900
4:30-----	36.65	2,070	1-----	40.13	7,650	2:30-----	37.55	3,450
5-----	37.62	3,300	5-----	40.10	7,590	6-----	37.53	3,420
6-----	37.65	3,350	5:15-----	40.27	7,910	12 p.m.---	37.53	3,420
11 p.m.---	37.66	3,360	6 p.m.---	40.27	7,910			
12 p.m.---	37.71	3,430	9-----	40.23	7,840	Feb. 21*		
			12 p.m.---	40.24	7,860	12 m.---	37.53	3,420
Feb. 9*			Feb. 14*			6 p.m.---	37.57	3,480
1 a.m.---	37.64	3,330	4 a.m.---	40.26	7,890	12 p.m.---	37.57	3,480
6-----	37.65	3,350	8-----	40.32	8,010			
4 p.m.---	37.65	3,350	8:30-----	40.20	7,780	Feb. 22		
5-----	37.55	3,210	10-----	40.14	7,670	6 a.m.---	37.58	3,490
12 p.m.---	37.55	3,210	10:30-----	40.30	7,970	12 p.m.---	37.58	3,490
			12 m.---	40.24	7,860			
Feb. 10*			12 p.m.---	40.22	7,820	Feb. 23*		
6 a.m.---	37.50	3,140	Feb. 15*			6 a.m.---	37.57	3,480
5 p.m.---	37.50	3,140	6 a.m.---	40.20	7,780	10-----	37.57	3,480
6-----	37.60	3,280	6 p.m.---	40.22	7,820	10:30-----	36.90	2,580
9:30-----	37.60	3,280	12 p.m.---	40.20	7,780	1:30 p.m.---	36.89	2,570
10-----	37.50	3,140				2-----	36.81	2,460
12 p.m.---	37.45	3,070				12 p.m.---	36.79	2,440

*Flow affected by regulation; daily means cannot be computed exactly from data shown.

109. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,808.93 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 278 cfs 4 p.m. Jan. 29 (gage height, 4.48 ft). 1945 to December 1956: Discharge, 383 cfs July 15, 1948 (gage height, 5.94 ft), from rating curve extended above 230 cfs on basis of velocity-area studies.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	11	232	12-----	22	84	23-----	20	31
2-----	10	175	13-----	20	72	24-----	15	30
3-----	10	120	14-----	18	62	25-----	15	28
4-----	10	119	15-----	17	56	26-----	14	28
5-----	12	102	16-----	17	52	27-----	25	26
6-----	11	92	17-----	15	46	28-----	97	39
7-----	11	163	18-----	14	44	29-----	226	-----
8-----	11	178	19-----	14	49	30-----	161	-----
9-----	23	168	20-----	13	40	31-----	214	-----
10-----	32	173	21-----	13	37			
11-----	24	112	22-----	13	34			
Monthly mean discharge, in cubic feet per second-----							36.4	85.4
Runoff, in inches-----							3.07	6.49

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 30		
12 p.m.---	1.65	14	6 p.m.---	4.23	217	4 a.m.---	3.80	198
			8-----	4.10	195	8-----	3.57	175
Jan. 27			10-----	3.95	174	12 m-----	3.36	154
			12 p.m.---	3.75	146	4 p.m.---	3.19	137
6 a.m.---	1.66	14				8-----	3.05	123
12 m-----	1.92	29	Jan. 29			12 p.m.---	3.14	132
6 p.m.---	2.01	35						
12 p.m.---	1.94	30	2 a.m.---	3.98	170	Jan. 31		
			4-----	4.27	224			
Jan. 28			6-----	4.09	193	2 a.m.---	3.22	140
			8-----	4.10	195	4-----	3.30	148
2 a.m.---	1.96	32	10-----	4.26	222	6-----	3.43	161
4-----	2.06	38	12 m-----	4.35	240	8-----	3.88	206
6-----	2.11	41	2 p.m.---	4.44	259	10-----	4.18	242
8-----	2.16	44	4-----	4.48	278	12 m-----	4.36	263
10-----	2.20	46	6-----	4.40	268	2 p.m.---	4.26	251
12 m-----	2.23	48	8-----	4.25	250	4-----	4.08	230
2 p.m.---	2.60	70	10-----	4.13	236	6-----	4.11	233
4-----	3.90	168	12 p.m.---	4.01	221	8-----	4.23	248

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 31			Feb. 2			Feb. 4		
10 p.m.---	4.29	255	6 a.m.----	3.78	196	6 a.m.----	3.28	146
12 p.m.---	4.25	250	12 m.-----	3.55	173	12 m.-----	2.95	114
			6 p.m.-----	3.35	153	6 p.m.-----	2.88	108
Feb. 1			12 p.m.-----	3.14	132	12 p.m.-----	2.80	102
4 a.m.-----	4.16	239	Feb. 3			Feb. 5		
8-----	4.08	230						
12 m.-----	4.01	221	6 a.m.-----	2.97	116	6 a.m.-----	2.70	94
4 p.m.-----	4.05	226	12 m.-----	2.94	113	12 m.-----	2.76	99
8-----	4.18	242	6 p.m.-----	3.10	128	6 p.m.-----	2.98	116
12 p.m.---	4.03	224	12 p.m.-----	2.95	114	12 p.m.-----	2.78	100

110. WATAUGA RIVER NEAR SUGAR GROVE, N. C.

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

Drainage area.—90.8 sq mi.

Gage-height record.—Water stage recorder graph. Datum of gage is 2,607.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,100 cfs and by slope-area measurement at 50,800 cfs.

Maxima.—January-February 1957: Discharge, 2,200 cfs 10:30 p.m. Jan. 31 (gage height, 6.45 ft).

1940 to December 1956: Discharge, 50,800 cfs Aug. 13, 1940 (gage height, 29.6 ft).

Mean discharge, in cubic feet per second, 1957

[illegible]

111. WATAUGA LAKE NEAR ELIZABETHTON, TENN.

Location.—Lat 36°19'20", long 82°07'06", at Watauga Dam on Watauga River, 5 miles east of Elizabethton, Carter County, Tenn., and at mile 36.7.

Drainage area.—468 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936.

Maxima.—January-February 1957: Contents at 12 p.m., 249,800 cfs-days Feb. 28 (elevation, 1,946.96 ft).

1948 to December 1956: Contents, 285,900 cfs-days June 24, 1950 (elevation, 1,958.58 ft).

Remarks.—Storage capacity, 342,200 cfs-days (elevation, 1,975.00 ft) of which 316,200 cfs-days is controlled storage. Records furnished by Tennessee Valley Authority.

Elevation, in feet, and contents, in cfs-days at 12 p.m. of indicated day, 1957

Day	January		February		Day	January		February	
	Elevation	Contents	Elevation	Contents		Elevation	Contents	Elevation	Contents
1---	1,910.01	153,500	1,925.58	190,900	17---	1,911.11	156,000	1,943.72	240,300
2---	1,909.61	152,600	1,927.92	196,900	18---	1,910.26	154,000	1,943.98	241,100
3---	1,909.42	152,200	1,929.20	200,300	19---	1,909.81	153,000	1,944.21	241,700
4---	1,909.61	152,600	1,930.50	203,700	20---	1,909.99	153,400	1,944.39	242,300
5---	1,909.91	153,200	1,931.70	206,900	21---	1,909.65	152,700	1,944.56	242,800
6---	1,910.22	154,000	1,932.99	210,300	22---	1,909.87	153,200	1,944.63	243,000
7---	1,910.54	154,700	1,934.19	213,600	23---	1,910.10	153,700	1,944.83	243,600
8---	1,910.62	154,900	1,935.60	217,400	24---	1,909.90	153,200	1,945.06	244,200
9---	1,911.00	155,700	1,937.87	223,700	25---	1,909.80	153,000	1,945.28	244,900
10---	1,911.48	156,800	1,939.86	229,300	26---	1,909.91	153,200	1,945.92	246,800
11---	1,911.80	156,600	1,940.91	232,200	27---	1,910.44	154,400	1,946.41	248,200
12---	1,912.12	158,300	1,941.68	234,400	28---	1,913.08	160,500	1,946.96	249,800
13---	1,912.40	158,900	1,942.25	236,100	29---	1,916.78	169,200	-----	-----
14---	1,912.57	159,300	1,942.69	237,300	30---	1,919.05	174,700	-----	-----
15---	1,912.48	159,100	1,943.09	238,500	31---	1,922.05	182,000	-----	-----
16---	1,911.94	157,900	1,943.43	239,500					

112. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,550.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 2,890 cfs 7:30 p.m. Jan. 3 (gage height, 35.38 ft).

1902-8, 1948 to December 1956: Discharge, 21,500 cfs Jan. 22, 1906 (gage height, 13.6 ft, at site 2 miles downstream at different datum), from rating curve extended above 2,500 cfs.

The flood of Aug. 13, 1940 (discharge, 71,500 cfs at former gaging station at Butler, drainage area, 427 sq mi) is believed to have exceeded all other known floods, including that of March 1867, from profile and report of Tennessee Valley Authority.

Remarks.—Flow completely regulated by Watauga Lake.

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis- charge	Hour	Gage height	Dis- charge	Hour	Gage height	Dis- charge
Jan. 26			Jan. 31—Con.			Feb. 6		
12 p.m.---	1.23	199	12 p.m.---	5.63	4,950	6 a.m.---	2.90	1,150
Jan. 27			Feb. 1			12 m.---	3.04	1,270
6 a.m.---	1.23	199	12:30 a.m.---	5.65	4,990	6 p.m.---	2.95	1,190
12 m.---	1.33	228	6-----	5.00	3,690	12 p.m.---	2.91	1,160
6 p.m.---	1.85	418	12 m.---	4.40	2,630	Feb. 7		
12 p.m.---	2.43	702	3 p.m.---	4.20	2,380	6 a.m.---	2.87	1,120
Jan. 28			8-----	4.60	2,930	2 p.m.---	2.75	1,030
6 a.m.---	3.03	1,070	10-----	4.83	3,360	8-----	2.86	1,110
12 m.---	3.89	2,020	12 p.m.---	4.88	3,450	10-----	2.98	1,210
2 p.m.---	4.10	2,290	Feb. 2			12 p.m.---	2.98	1,210
4-----	4.15	2,350	6 a.m.---	4.46	2,760	Feb. 8		
6-----	4.13	2,320	12 m.---	4.00	2,100	6 a.m.---	2.86	1,110
12 p.m.---	4.79	3,280	6 p.m.---	3.60	1,630	12 m.---	2.82	1,070
Jan. 29			12 p.m.---	3.33	1,360	6 p.m.---	3.01	1,230
2 a.m.---	4.80	3,300	Feb. 3			12 p.m.---	3.00	1,220
6-----	4.47	2,710	6 a.m.---	3.08	1,310	Feb. 9		
12 m.---	3.86	2,000	12 m.---	2.94	1,190	6 a.m.---	3.46	1,600
2 p.m.---	3.73	1,730	6 p.m.---	2.87	1,130	10-----	3.75	1,930
4-----	3.80	1,810	12 p.m.---	2.75	1,040	4 p.m.---	3.69	1,860
8-----	4.88	3,450	Feb. 4			12 p.m.---	3.41	1,540
10:30---	5.26	4,210	8 a.m.---	2.68	987	Feb. 10		
12 p.m.---	5.17	4,030	2 p.m.---	3.10	1,300	2 a.m.---	3.34	1,480
Jan. 30			9-----	3.26	1,390	8:30---	4.38	2,630
6 a.m.---	4.30	2,520	12 p.m.---	3.25	1,380	6 p.m.---	3.87	2,170
12 m.---	3.73	1,790	Feb. 5			12 p.m.---	3.08	1,280
6 p.m.---	3.35	1,440	8 a.m.---	3.09	1,320	Feb. 11		
12 p.m.---	3.15	1,360	4 p.m.---	2.94	1,190	6 a.m.---	3.33	1,620
Jan. 31			6-----	2.95	1,190	12 m.---	3.10	1,390
5 a.m.---	3.17	1,370	8-----	3.04	1,270	6 p.m.---	2.90	1,190
12 m.---	3.78	1,910	9-----	3.00	1,240	12 p.m.---	2.75	1,040
6 p.m.---	4.50	2,840	12 p.m.---	3.01	1,250			

114. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,486.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 8,000 cfs 5 a.m. Jan. 29 (gage height, 8.61 ft).

1925-49, 1953 to December 1956: 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.

Maximum stage known, about 21 ft in May 1901 (discharge, 75,900 cfs), from high-water profile by Tennessee Valley Authority. Floods of 1886 and 1902 each reached a stage of about 19 ft and the flood of 1867 reached a stage of about 18 ft, from report by Tennessee Valley Authority.

Remarks.—Flow partly regulated by Watauga Lake, 10 miles upstream.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	287	5,680	12----	524	1,580	23----	912	430
2----	1,140	3,910	13----	465	1,170	24----	1,430	406
3----	917	2,050	14----	620	939	25----	1,180	397
4----	290	2,090	15----	902	779	26----	718	440
5----	480	2,230	16----	1,800	709	27----	552	425
6----	460	2,230	17----	2,550	608	28----	3,730	518
7----	435	1,980	18----	2,500	553	29----	5,620	-----
8----	712	2,260	19----	1,640	670	30----	3,950	-----
9----	518	3,500	20----	363	788	31----	3,860	-----
10----	716	3,730	21----	1,400	675			
11----	907	2,800	22----	287	634			
Monthly mean discharge, in cubic feet per second-----							1,350	1,578

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28*—Con.			Jan. 29*—Con.		
12 p.m.---	2.97	465	12 m-----	6.30	3,670	7 a.m.-----	7.65	5,860
			6 p.m.-----	6.96	4,640	10-----	7.00	4,700
Jan. 27*			7-----	7.20	5,020	2 p.m.-----	6.42	3,840
3 a.m.-----	2.73	352	8-----	8.19	7,020	6-----	7.17	4,970
6-----	2.70	339	9-----	8.00	6,600	10-----	8.02	6,640
12 m-----	2.83	397	12 p.m.-----	8.28	7,220	11-----	8.06	6,730
6 p.m.-----	3.32	674				12 p.m.---	8.01	6,620
12 p.m.---	4.14	1,330	Jan. 29*			Jan. 30*		
			1 a.m.-----	8.30	7,260			
Jan. 28*			2-----	8.28	7,220	5 a.m.-----	7.10	4,860
6 a.m.---	4.92	2,070	4-----	8.12	6,860	7-----	7.67	5,900
			5-----	8.16	8,000	9-----	6.46	3,890

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 30*—Con			Feb. 4*			Feb. 9*—Con.		
10 a.m.---	6.77	4,340	8 a.m.---	4.60	1,760	6 a.m.---	6.07	3,370
12 m.---	6.22	3,570	12 m.---	4.88	2,030	9-----	6.40	3,810
6 p.m.---	5.58	2,780	3 p.m.---	5.10	2,250	10-----	7.18	4,990
9-----	5.32	2,490	6-----	5.28	2,450	11-----	6.82	4,420
12 p.m.---	5.22	2,380	9-----	5.32	2,490	12 m.---	6.58	4,060
			12 p.m.---	5.32	2,490	6 p.m.---	6.29	3,660
Jan. 31*			Feb. 5			Feb. 10*		
5 a.m.---	5.22	2,380						
8-----	5.42	2,600	6 a.m.---	5.18	2,340			
12 m.---	6.00	3,280	12 m.---	5.00	2,150	3 a.m.---	5.70	2,920
6 p.m.---	7.05	4,780	6 p.m.---	4.92	2,070	6-----	6.35	3,740
8-----	8.27	7,190	8-----	5.00	2,150	8-----	6.67	4,200
9-----	8.15	6,930	10-----	5.05	2,200	10-----	6.79	4,380
12 p.m.---	8.43	7,570	12 p.m.---	5.05	2,200	11-----	7.52	5,600
Feb. 1*			Feb. 6*			1 p.m.---	6.75	4,320
1 a.m.---	8.46	7,640	6 a.m.---	4.95	2,100	3-----	6.48	3,920
10-----	7.34	5,270	10-----	5.04	2,190	6-----	6.26	3,620
11-----	7.90	6,380	12 m.---	6.12	3,440	12 p.m.---	5.83	3,080
12 m.---	7.52	5,600	1 p.m.---	5.50	2,690	Feb. 11*		
2 p.m.---	6.96	4,640	3-----	5.11	2,260	6 a.m.---	5.46	2,650
3-----	6.86	4,480	6-----	4.98	2,130	9-----	5.32	2,490
5-----	6.86	4,480	12 p.m.---	4.88	2,030	10-----	6.45	3,880
6-----	7.34	5,270				11-----	6.00	3,280
7-----	7.24	5,090	Feb. 7			12 m.---	5.50	2,690
8-----	7.24	5,090	6 a.m.---	4.80	1,950	1 p.m.---	6.35	3,740
11-----	7.42	5,420	11-----	4.79	1,940	2-----	6.88	4,510
12 p.m.---	7.42	5,420	2 p.m.---	4.71	1,860	3-----	6.50	3,950
Feb. 2*			6-----	4.81	1,960	4-----	6.02	3,310
2 a.m.---	7.34	5,270	10-----	5.00	2,150	6-----	5.50	2,690
12 m.---	6.35	3,740	12 p.m.---	5.04	2,190	8-----	4.94	2,090
1 p.m.---	7.09	4,840	Feb. 8*			10-----	4.79	1,940
2-----	6.50	3,950				12 p.m.---	4.70	1,850
3-----	6.17	3,500	6 a.m.---	5.00	2,150	Feb. 12*		
6-----	5.76	2,990	12 m.---	4.95	2,100	6 a.m.---	4.52	1,680
12 p.m.---	5.34	2,510	4 p.m.---	5.10	2,250	10-----	4.42	1,580
Feb. 3			5-----	5.50	2,690	11-----	4.67	1,820
			7-----	5.30	2,470	12 m.---	4.55	1,710
			12 p.m.---	5.27	2,440	2 p.m.---	4.37	1,540
6 a.m.---	5.03	2,180	Feb. 9*			6-----	4.26	1,440
6 p.m.---	4.70	1,850				12 p.m.---	4.15	1,340
12 p.m.---	4.65	1,800	3 a.m.---	5.53	2,720			

*Flow affected by regulation; daily means cannot be computed exactly from data shown.

115. BOONE LAKE AT SPURGEON, TENN.

Location.—Lat 36°26'26", long 82°26'16", at Boone Dam on South Fork Holston River in Sullivan County, Tenn., 0.7 mile northeast of Spurgeon, Washington County, Tenn., 1.3 miles downstream from Watauga River, and at mile 18.6.

Drainage area.—1,840 sq mi.

Gage-height record.—Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936.

Maxima.—January-February 1957: Contents at 12 p.m., 70,800 cfs-days Feb. 1 (elev., 1,370.36 ft).

1952 to December 1956: Contents, 98,100 cfs-days June 10, 1953 (elev., 1,384.52 ft).

Remarks.—Storage capacity, 99,200 cfs-days (elevation, 1,385.0 ft) of which 75,700 cfs-days is controlled storage. Records furnished by Tennessee Valley Authority.

Elevation, in feet, and contents, in cfs-days at 12 p.m. of indicated day, 1957

Day	January		February		Day	January		February	
	Elevation	Contents	Elevation	Contents		Elevation	Contents	Elevation	Contents
1----	1,358.30	52,600	1,370.36	70,800	17---	1,354.70	48,000	1,366.77	65,000
2----	1,357.66	51,800	1,369.32	69,100	18---	1,353.60	46,700	1,366.84	65,100
3----	1,357.25	51,300	1,366.64	64,700	19---	1,353.08	46,100	1,366.80	65,000
4----	1,356.99	50,900	1,367.55	66,200	20---	1,353.45	46,500	1,367.55	66,200
5----	1,357.33	51,400	1,366.64	64,700	21---	1,352.76	45,700	1,367.31	65,800
6----	1,357.60	51,700	1,365.69	63,300	22---	1,353.08	46,100	1,366.95	65,200
7----	1,357.67	51,800	1,365.81	63,400	23---	1,352.75	45,700	1,367.45	66,000
8----	1,358.11	52,400	1,366.26	64,200	24---	1,352.69	45,600	1,368.69	68,000
9----	1,359.20	53,900	1,365.48	62,900	25---	1,353.10	46,100	1,369.37	69,100
10---	1,359.95	54,900	1,365.15	62,400	26---	1,353.82	47,000	1,369.24	68,900
11---	1,359.34	54,000	1,362.69	58,800	27---	1,354.92	48,300	1,369.00	68,500
12---	1,358.39	52,800	1,361.80	57,500	28---	1,361.08	56,500	1,369.62	69,600
13---	1,358.66	53,100	1,363.50	60,000	29---	1,367.86	66,700	-----	-----
14---	1,358.11	52,400	1,365.02	62,200	30---	1,366.83	65,000	-----	-----
15---	1,357.85	52,100	1,366.12	63,900	31---	1,368.08	67,000	-----	-----
16---	1,355.82	49,400	1,366.65	64,800					

116. FORT PATRICK HENRY LAKE NEAR KINGSFORT, TENN.

Location.—Lat 36°29'53", long 82°30'32", at Fork 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936.

Maxima.—January-February 1957: Contents at 12 p.m., 13,400 cfs-days Jan. 16 (elev., 1,262.42 ft).

1953 to December 1956: Contents, 14,000 cfs-days Feb. 11, 1954 (elev., 1,263.80 ft).

Remarks.—Storage capacity, 13,700 cfs-days (elevation, 1,263.00 ft) of which 2,200 cfs-days is controlled storage. Records furnished by Tennessee Valley Authority.

Elevation, in feet, and contents, in cfs-days at 12 p.m. of indicated day, 1957

Day	January		February		Day	January		February	
	Elevation	Contents	Elevation	Contents		Elevation	Contents	Elevation	Contents
1----	1,259.36	12,100	1,261.56	13,000	17---	1,261.75	13,100	1,258.83	11,800
2----	1,259.80	12,300	1,261.59	13,000	18---	1,259.66	12,200	1,258.65	11,800
3----	1,260.85	12,700	1,260.54	12,600	19---	1,259.07	11,900	1,258.72	11,800
4----	1,261.00	12,800	1,259.79	12,200	20---	1,258.38	11,600	1,259.50	12,100
5----	1,260.75	12,700	1,259.84	12,300	21---	1,259.14	12,000	1,258.55	11,700
6----	1,260.28	12,500	1,259.01	11,900	22---	1,258.93	11,900	1,259.70	12,200
7----	1,260.46	12,500	1,259.60	12,200	23---	1,259.90	12,300	1,259.51	12,100
8----	1,259.91	12,300	1,259.46	12,100	24---	1,260.09	12,400	1,260.06	12,400
9----	1,259.97	12,300	1,258.46	11,700	25---	1,261.49	13,000	1,260.03	12,400
10---	1,259.75	12,200	1,258.59	11,700	26---	1,261.65	13,100	1,259.36	12,100
11---	1,258.92	11,900	1,259.07	11,900	27---	1,261.15	12,800	1,259.46	12,100
12---	1,258.63	11,800	1,259.33	12,000	28---	1,260.50	12,600	1,260.44	12,500
13---	1,258.72	11,800	1,259.45	12,100	29---	1,260.90	12,700	-----	-----
14---	1,259.51	12,100	1,258.49	11,700	30---	1,260.37	12,500	-----	-----
15---	1,260.42	12,500	1,258.45	11,700	31---	1,260.75	12,700	-----	-----
16---	1,262.42	13,400	1,258.50	11,700					

117. SOUTH FORK HOLSTON RIVER AT KINGSFORT, TENN.

Location.—Lat 36°31'51", long 82°33'29", on left bank 1,000 ft downstream from new bridge on State Highway 81, 1¼ miles upstream from Reedy Creek, and 3-3/4 miles upstream from confluence with North Fork Holston River.

Drainage area.—1,935 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,175.84 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 15,800 cfs 4-5 a.m. Feb. 10 (gage height, 6.67 ft).

1925 to December 1956: Discharge, 68,800 cfs Aug. 14, 1940 (gage height, 18.80 ft, at site 2 miles upstream at datum 8.47 ft higher).

Flood of May 1901 reached a stage of about 23 ft, original site and datum (discharge, 110,000 cfs), the flood of March 1867 was about 0.5 ft lower and the flood of March 1791 was about 3 ft lower than the flood of May 1901, from reports by Tennessee Valley Authority.

Remarks.—Flow regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes. Some diversion upstream by city of Kingsport, Tennessee Eastman Corporation, and Holston Ordnance Works.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	704	14,300	12-----	2,720	14,100	23-----	2,520	3,870
2-----	2,820	15,200	13-----	818	9,120	24-----	3,130	870
3-----	2,060	15,200	14-----	2,270	8,910	25-----	1,870	1,800
4-----	1,300	9,240	15-----	2,570	8,700	26-----	1,300	3,590
5-----	720	10,100	16-----	4,720	9,000	27-----	894	2,740
6-----	736	12,100	17-----	6,500	9,030	28-----	2,360	1,390
7-----	710	9,180	18-----	6,750	9,030	29-----	5,030	-----
8-----	1,190	9,450	19-----	4,240	9,060	30-----	12,600	-----
9-----	968	15,600	20-----	1,220	6,440	31-----	10,200	-----
10-----	1,320	15,200	21-----	3,260	5,840			
11-----	3,330	14,300	22-----	1,180	5,080			
Monthly mean discharge, in cubic feet per second-----							2,968	8,873

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 28			Jan. 31*—Con.			Feb. 4		
12 p.m.---	1.70	1,690	5 a.m.---	4.42	7,560	2 a.m.---	5.02	9,360
			6-----	4.56	7,980	4-----	4.93	9,090
Jan. 29*			7-----	4.40	7,500	10-----	4.91	9,030
			8-----	4.58	8,040	12 m-----	4.80	8,700
2 a.m.---	1.21	1,040	9-----	4.68	8,340	2 p.m.---	4.85	8,850
3-----	1.74	1,750	11-----	4.76	8,580	6-----	4.96	9,180
4-----	1.55	1,470	1 p.m.---	5.91	12,300	12 p.m.---	4.96	9,180
6-----	2.57	3,220	2-----	6.04	12,900			
7-----	2.81	3,680	6-----	6.04	12,900	Feb. 5*		
8-----	3.37	4,910	12 p.m.---	6.08	13,000			
9-----	3.15	4,410				1:30 a.m.---	2.52	3,130
10-----	4.78	8,640	Feb. 1			3-----	4.42	7,560
12 m-----	3.33	4,810				5-----	4.58	8,040
3:30 p.m.---	3.35	4,860	1 a.m.---	6.15	13,300	7-----	4.65	8,250
5:30-----	4.75	8,550	10-----	6.19	13,500	2 p.m.---	4.70	8,400
9-----	4.75	8,550	1 p.m.---	6.51	15,000	4-----	6.09	13,100
11-----	3.20	4,520	4-----	6.53	15,000	5-----	6.28	13,900
12 p.m.---	5.00	9,300	6-----	6.59	15,400	8-----	6.38	14,400
			12 p.m.---	6.57	15,200	9-----	6.48	14,800
Jan. 30*						12 p.m.---	6.48	14,800
			Feb. 2			Feb. 6*		
1 a.m.---	5.84	12,100						
3-----	5.96	12,500	7 a.m.---	6.52	15,000	6 a.m.---	6.49	14,900
9-----	5.96	12,500	10-----	6.50	14,900	12 m-----	6.49	14,900
10-----	6.04	12,900	12 m-----	6.59	15,400	2 p.m.---	4.99	9,270
6 p.m.---	6.03	12,800	6 p.m.---	6.59	15,400	4-----	4.95	9,150
11:30-----	6.01	12,700	12 p.m.---	6.58	15,300	12 p.m.---	4.93	9,090
12 p.m.---	5.60	11,200						
Jan. 31*			Feb. 3			Feb. 7		
			6 a.m.---	6.57	15,200			
2 a.m.---	4.50	7,800	12 m-----	6.58	15,300	6 a.m.---	4.93	9,090
3-----	4.01	6,470	11 p.m.---	6.56	15,200	12 m-----	5.00	9,300
4-----	4.41	7,530	12 p.m.---	6.12	13,200	6 p.m.---	4.98	9,240

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 7—Con.			Feb. 12			Feb. 17—Con.		
12 p.m.---	4.94	9,120	6 a.m.-----	6.32	14,100	12 m.-----	4.90	9,000
Feb. 8*			12 p.m.-----	6.32	14,100	6 p.m.-----	4.92	9,060
			Feb. 13*			12 p.m.-----	4.92	9,060
6 a.m.-----	4.95	9,150				Feb. 18		
12 m.-----	4.94	9,120	2 a.m.-----	5.10	9,600			
2 p.m.-----	4.96	9,180	4-----	4.91	9,030	6 a.m.-----	4.91	9,030
4-----	4.98	9,240	6-----	4.85	8,850	12 m.-----	4.90	9,000
10-----	5.00	9,300	11-----	4.85	8,850	6 p.m.-----	4.92	9,060
11-----	6.13	13,200	12 m.-----	4.75	8,550	12 p.m.-----	4.90	9,000
12 p.m.-----	6.56	15,200	1 p.m.-----	4.83	8,790			
Feb. 9			2-----	4.85	8,850	Feb. 19		
			6-----	4.86	8,880	6 a.m.-----	4.90	9,000
1 a.m.-----	6.62	15,500	12 p.m.-----	4.84	8,820	6 p.m.-----	4.94	9,120
6-----	6.66	15,700				12 p.m.-----	4.94	9,120
12 m.-----	6.66	15,700	Feb. 14					
6-----	6.64	15,600	4 a.m.-----	4.84	8,820	Feb. 20*		
12 p.m.-----	6.58	15,300	8-----	4.88	8,940	1 a.m.-----	4.94	9,120
Feb. 10			10-----	4.85	8,850	3-----	3.00	4,080
			5 p.m.-----	4.89	8,970	6-----	.65	445
2 a.m.-----	6.58	15,300	6-----	4.91	9,030	8-----	4.30	7,220
3-----	6.66	15,700	12 p.m.-----	4.88	8,940	9-----	4.50	7,800
4-----	6.67	15,800				12 m.-----	4.51	7,830
5-----	6.67	15,800	Feb. 15*			1 p.m.-----	4.47	7,710
6-----	6.66	15,700	8 a.m.-----	4.89	8,970	3-----	4.47	7,710
11-----	6.65	15,600	11-----	4.60	8,100	5-----	4.52	7,860
3 p.m.-----	6.59	15,400	2 p.m.-----	4.60	8,100	11-----	4.52	7,860
4-----	6.47	14,800	4-----	4.82	8,760	12 p.m.-----	3.25	4,630
5-----	6.42	14,500	5-----	4.82	8,760			
12 p.m.-----	6.42	14,500	6-----	4.77	8,610	Feb. 21*		
Feb. 11*			8-----	4.88	8,940	1 a.m.-----	2.70	3,470
			12 p.m.-----	4.89	8,970	3-----	.62	418
6 a.m.-----	6.42	14,500	Feb. 16			5-----	2.05	2,270
10-----	6.41	14,500				6:30-----	1.10	910
11-----	6.33	14,100	6 a.m.-----	4.89	8,970	8-----	4.10	6,700
11:30-----	6.55	15,200	12 m.-----	4.90	9,000	9-----	4.50	7,800
12 m.-----	6.29	14,000	12 p.m.-----	4.92	9,060	10-----	4.18	6,910
1:30 p.m.---	6.30	14,000				11-----	4.37	7,420
2-----	6.26	13,800	Feb. 17			12 m.-----	4.56	7,980
3-----	6.30	14,000				6 p.m.-----	4.60	8,100
12 p.m.-----	6.31	14,000	6 a.m.-----	4.90	9,000	11-----	4.61	8,130
						12 p.m.-----	3.50	5,220

*Flow affected by regulation; daily means cannot be computed exactly from data shown.

118. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,703.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements to 7,200 cfs and by slope-area measurement at 16,500 cfs.

Maxima.—January-February 1957: Discharge, 16,500 cfs 9 p.m. Jan. 29 (gage height, 13.20 ft).

1907-8, 1920 to December 1956: Discharge, 13,100 cfs Feb. 18, 1944 (gage height, 10.75 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	213	5,580	12----	1,320	1,320	23----	635	506
2----	181	3,300	13----	1,020	980	24----	770	430
3----	138	1,760	14----	488	735	25----	565	387
4----	174	1,310	15----	376	578	26----	440	382
5----	228	1,370	16----	322	485	27----	483	387
6----	292	2,000	17----	260	415	28----	2,890	410
7----	304	1,950	18----	220	365	29----	10,300	-----
8----	284	2,970	19----	210	435	30----	7,190	-----
9----	1,820	5,290	20----	200	1,160	31----	4,220	-----
10----	3,340	3,730	21----	206	840			
11----	1,500	2,280	22----	228	644			
Monthly mean discharge, in cubic feet per second-----							1,317	1,500
Runoff, in inches-----							6.84	7.04

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29			Jan. 29—Con.		
12 p.m.---	1.80	390	1 a.m.---	6.90	5,810	6 p.m.---	12.52	15,100
			2-----	6.92	5,840	7-----	12.90	15,900
Jan. 27			3-----	6.92	5,840	8-----	13.15	16,400
			4-----	6.92	5,840	9-----	13.20	16,500
6 a.m.---	1.77	376	5-----	6.93	5,850	10-----	13.15	16,400
12 m.---	1.84	410	6-----	6.99	5,930	11-----	12.90	15,900
6 p.m.---	2.09	558	7-----	7.15	6,140	12 p.m.---	12.63	15,400
12 p.m.---	2.42	784	8-----	7.42	6,490			
			9-----	7.70	6,880	Jan. 30		
Jan. 28			10-----	8.08	7,420			
			11-----	8.60	8,200	2 a.m.---	11.90	13,900
4 a.m.---	2.80	1,050	12 m.---	9.25	9,200	4-----	10.95	12,000
8-----	3.46	1,600	1 p.m.---	9.85	10,200	6-----	9.80	10,100
12 m.---	4.37	2,580	2-----	10.52	11,300	8-----	8.65	8,280
4 p.m.---	5.38	3,830	3-----	11.05	12,200	10-----	7.60	6,740
8-----	6.30	5,030	4-----	11.65	13,400	12 m.---	6.90	5,810
12 p.m.---	6.87	5,770	5-----	12.10	14,300	2 p.m.---	6.27	4,990

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30			Feb. 1—Con.		
12 p.m.---	3.45	665	2 a.m.---	16.30	23,700	12 m.---	11.53	11,000
			4-----	15.87	22,400	4 p.m.---	11.07	9,950
Jan. 27			6-----	15.10	20,100	8-----	10.60	9,000
			8-----	14.15	17,400	12 p.m.---	10.25	8,300
6 a.m.---	3.44	658	10-----	13.12	14,700			
12 m.---	3.85	945	12 m.---	12.17	12,400	Feb. 2		
6 p.m.---	4.36	1,330	2 p.m.---	11.50	10,900	6 a.m.---	9.50	7,000
12 p.m.---	4.65	1,560	4-----	10.89	9,580	12 m.---	8.85	6,020
			6-----	10.30	8,400	6 p.m.---	8.08	4,910
Jan. 28			8-----	9.78	7,440	12 p.m.---	7.45	4,140
			10-----	9.32	6,730			
4 a.m.---	5.35	2,120	12 p.m.---	8.95	6,180	Feb. 3		
8-----	6.45	3,040				6 a.m.---	6.85	3,460
12 m.---	7.58	4,300	Jan. 31			12 m.---	6.50	3,080
4 p.m.---	9.47	6,960	2 a.m.---	8.44	5,420	6 p.m.---	6.31	2,910
8-----	10.26	8,320	4-----	8.13	4,980	12 p.m.---	6.15	2,760
12 p.m.---	10.56	8,920	6-----	7.96	4,750			
			8-----	7.99	4,790	Feb. 4		
Jan. 28			10-----	8.26	5,160	6 a.m.---	6.10	2,720
			12 m.---	8.88	6,070	12 m.---	5.95	2,600
2 a.m.---	10.81	9,420	2 p.m.---	9.70	7,300	6 p.m.---	5.83	2,500
4-----	11.10	10,000	4-----	10.36	8,520	12 p.m.---	5.65	2,360
6-----	11.50	10,900	6-----	10.65	9,100			
8-----	12.00	12,000	8-----	10.81	9,420	Feb. 5		
10-----	12.55	13,300	10-----	11.13	10,100	6 a.m.---	5.46	2,210
12 m.---	13.19	14,900	12 p.m.---	11.54	11,000	12 m.---	5.60	2,320
2 p.m.---	13.88	16,700				6 p.m.---	6.17	2,770
4-----	14.65	18,800	Feb. 1			12 p.m.---	6.63	3,210
6-----	15.45	21,200	4 a.m.---	12.18	12,400			
8-----	15.98	22,700	8-----	11.93	11,800			
10-----	16.42	24,100						
12 p.m.---	16.50	24,300						

120. 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, 1.6 miles upstream Little Moccasin Creek, and 1.6 miles east of Gate City Scott County.

Drainage area.—79.6 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,267.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 3,340 cfs 10 p.m. Jan. 29 (gage height, 8.36 ft).

1952 to December 1956: Discharge, 3,110 cfs Apr. 16, 1956 (gage height, 7.95 ft).

FLOODS OF 1957

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	70	2,390	12-----	275	490	23-----	179	164
2-----	62	1,680	13-----	200	342	24-----	195	142
3-----	52	774	14-----	157	262	25-----	137	131
4-----	49	502	15-----	129	212	26-----	121	131
5-----	80	412	16-----	113	182	27-----	217	129
6-----	88	525	17-----	97	155	28-----	1,380	230
7-----	83	742	18-----	76	135	29-----	2,850	-----
8-----	80	1,080	19-----	65	159	30-----	2,160	-----
9-----	328	1,000	20-----	60	312	31-----	1,620	-----
10-----	810	1,400	21-----	65	225			
11-----	508	930	22-----	78	188			
Monthly mean discharge, in cubic feet per second-----							399	537
Runoff, in inches-----							5.78	7.03

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 1—Con.		
12 p.m.---	2.00	113	12 p.m.---	8.17	3,190	8 p.m.---	6.85	2,240
Jan. 27			Jan. 30			12 p.m.---	6.77	2,190
6 a.m.---	2.00	113	4 a.m.---	7.81	2,920	Feb. 2		
12 m.---	2.30	177	8-----	7.47	2,680	4 a.m.---	6.60	2,070
6 p.m.---	2.85	315	12 m.---	6.75	2,180	8-----	6.46	1,980
12 p.m.---	3.17	411	4 p.m.---	6.00	1,700	12 m.---	6.10	1,760
Jan. 28			8-----	5.38	1,340	4 p.m.---	5.58	1,450
2 a.m.---	3.35	472	12 p.m.---	4.96	1,130	8-----	5.15	1,220
4-----	3.55	542	Jan. 31			12 p.m.---	4.80	1,050
6-----	3.85	650	2 a.m.---	4.85	1,080	Feb. 3		
8-----	4.18	782	4-----	4.78	1,040	6 a.m.---	4.39	866
10-----	4.50	910	6-----	4.90	1,100	12 m.---	4.10	750
12 m.---	4.70	1,000	8-----	5.10	1,250	6 p.m.---	3.87	658
2 p.m.---	5.70	1,520	10-----	5.60	1,460	12 p.m.---	3.70	595
4-----	6.32	1,890	12 m.---	5.93	1,660	Feb. 4		
6-----	7.02	2,360	2 p.m.---	6.07	1,740	6 a.m.---	3.55	542
8-----	7.02	2,360	4-----	6.32	1,890	12 m.---	3.43	500
10-----	7.25	2,520	6-----	6.52	1,890	6 p.m.---	3.30	455
12 p.m.---	7.34	2,590	8-----	6.70	2,140	12 p.m.---	3.21	424
Jan. 29			10-----	6.95	2,320	Feb. 5		
4 a.m.---	7.42	2,640	12 p.m.---	7.20	2,490	6 a.m.---	3.15	405
8-----	7.45	2,660	Feb. 1			12 m.---	3.10	390
12 m.---	7.40	2,630	4 a.m.---	7.37	2,610	6 p.m.---	3.15	405
4 p.m.---	7.92	2,990	8-----	7.15	2,460	12 p.m.---	3.35	472
8-----	8.30	3,290	12 m.---	7.11	2,430			
10-----	8.36	3,340	4 p.m.---	6.90	2,280			

121. NORTH FORK HOLSTON RIVER NEAR GATE CITY, VA.

Location.—Lat 36°36'31", long 82°34'05", on left bank 100 ft. upstream from bridge on U.S. Highway 23, 1.6 miles downstream from Big Moccasin Creek and 2.1 miles south-east of Gate City, Scott County.

Drainage area.—672 sq mi.

Gage-height record.—Water-stage recorder graph except Jan. 14–23, 26. Datum of gage is 1,197.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Discharge for periods of no gage-height record estimated on basis of records for nearby streams.

Maxima.—January-February 1957: Discharge, 28,700 cfs 12 m Jan. 30 (gage height, 16.73 ft).

1931 to December 1956: Discharge, 23,700 cfs Aug. 14, 1940 (gage height, 14.75 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	666	19,500	12-----	3,000	4,740	23-----	1,210	1,470
2-----	592	14,400	13-----	2,020	3,120	24-----	1,970	1,250
3-----	509	7,460	14-----	1,490	2,360	25-----	1,610	1,130
4-----	454	4,980	15-----	1,170	1,860	26-----	1,350	1,050
5-----	598	4,110	16-----	945	1,520	27-----	1,690	1,020
6-----	805	5,300	17-----	745	1,340	28-----	7,250	1,290
7-----	875	7,090	18-----	600	1,130	29-----	20,600	-----
8-----	875	10,300	19-----	580	1,130	30-----	26,200	-----
9-----	1,900	10,800	20-----	685	2,020	31-----	14,000	-----
10-----	7,900	13,600	21-----	740	2,410			
11-----	6,260	9,160	22-----	770	1,810			
Monthly mean discharge, in cubic feet per second-----							3,550	4,905
Runoff, in inches-----							6.09	7.60

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 29—Con.		
12 p.m.---	3.50	1,290	12 m-----	6.68	5,440	2 p.m.-----	13.57	20,600
			2 p.m.-----	7.10	6,260	4-----	14.03	21,800
Jan. 27			4-----	8.05	8,220	6-----	14.55	23,100
			6-----	9.20	10,600	8-----	14.90	24,000
6 a.m.-----	3.50	1,290	8-----	10.30	12,900	10-----	15.33	25,100
12 m-----	3.65	1,420	10-----	11.05	14,600	12 p.m.---	15.68	26,000
6 p.m.-----	4.25	2,020	12 p.m.---	11.77	16,200			
12 p.m.---	4.90	2,760				Jan. 30		
Jan. 28			Jan. 29			2 a.m.-----	15.93	26,600
			2 a.m.-----	12.27	17,400	4-----	16.10	27,100
2 a.m.-----	5.17	3,080	4-----	12.57	18,200	6-----	16.30	27,600
4-----	5.47	3,460	6-----	12.73	18,600	8-----	16.50	28,100
6-----	5.74	3,840	8-----	12.78	18,700	10-----	16.65	28,500
8-----	6.03	4,290	10-----	12.80	18,700	12 m-----	16.73	28,700
10-----	6.34	4,810	12 m-----	13.10	19,400	2 p.m.---	16.63	28,400

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 30—Con.			Feb. 1			Feb. 3		
4 p.m.---	16.30	27,600	4 a.m.---	12.88	18,900	6 a.m.---	8.24	8,610
6-----	15.80	26,300	8-----	13.23	19,800	12 m-----	7.56	7,190
8-----	15.10	24,500	12 m-----	13.42	20,200	6 p.m.---	7.07	6,200
10-----	14.00	21,700	4 p.m.---	13.40	20,200	12 p.m.---	6.74	5,560
12 p.m.---	12.85	18,800	8-----	13.23	19,800			
			12 p.m.---	12.90	19,000	Feb. 4		
Jan. 31			Feb. 2			6 a.m.---	6.54	5,180
2 a.m.---	11.70	16,100				12 m-----	6.42	4,960
4-----	10.80	14,000	4 a.m.---	12.38	17,700	6 p.m.---	6.32	4,780
6-----	10.22	12,800	8-----	11.64	15,900	12 p.m.---	6.14	4,470
8-----	9.88	12,100	12 m-----	10.90	14,200			
10-----	9.88	12,100	4 p.m.---	10.20	12,700	Feb. 5		
12 m-----	10.04	12,400	6-----	9.85	12,000	6 a.m.---	5.97	4,220
2 p.m.---	10.25	12,800	8-----	9.58	11,400	12 m-----	5.79	3,990
4-----	10.50	13,400	10-----	9.30	10,800	6 p.m.---	5.72	3,900
6-----	10.80	14,000	12 p.m.---	9.03	10,300	12 p.m.---	5.93	4,180
8-----	11.18	14,900						
10-----	11.68	16,000						
12 p.m.---	12.09	17,000						

122. HOLSTON RIVER AT SURGOINSVILLE, TENN.

Location.—Lat 36°28'19", long 82°50'50", on right bank, 1,500 ft upstream from Surgoinsville Creek and county bridge at Surgoinsville, Hawkins County, 9.8 miles upstream from Big Creek, and at mile 118.4. Records include flow of Surgoinsville Creek.

Drainage area.—2,874 sq mi, includes that of Surgoinsville Creek.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,088.46 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 45,100 cfs 3–5 p.m. Jan. 30 (gage height, 14.32 ft).

1940 to December 1956: Discharge, 59,600 cfs Feb. 18, 1944 (gage height, 17.48 ft).

Floods of 1867 and 1901 reached stages of about 31 ft and 28 ft, respectively, from profile by Tennessee Valley Authority. Flood of 1867 exceeded all other known floods, including that of 1791.

Remarks.—Flow partly regulated by South Holston, Watauga, Boone, and Fort Patrick Henry Lakes.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	1,300	38,100	12----	7,520	20,400	23----	3,240	6,820
2----	2,940	36,700	13----	4,460	14,900	24----	5,480	3,900
3----	2,570	25,600	14----	3,940	12,300	25----	4,540	3,020
4----	1,950	17,400	15----	4,010	11,500	26----	3,770	4,150
5----	1,690	14,500	16----	4,980	11,200	27----	3,070	4,980
6----	1,580	19,200	17----	8,240	11,000	28----	10,000	3,870
7----	1,690	16,700	18----	8,210	10,700	29----	26,700	-----
8----	1,870	21,800	19----	5,910	10,700	30----	42,800	-----
9----	3,260	25,100	20----	3,830	9,280	31----	33,400	-----
10----	7,330	31,400	21----	2,790	8,860			
11----	11,400	26,100	22----	3,640	7,710			
Monthly mean discharge, in cubic feet per second-----							7,358	15,280

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Jan. 31			Feb. 3—Con.		
12 p.m.---	3.54	4,660	3 a.m.-----	13.70	42,200	12 p.m.---	9.15	22,600
			6-----	12.80	38,100			
Jan. 28			9-----	11.45	32,200	Feb. 4		
			12 m.-----	10.74	29,100			
3 a.m.-----	3.73	5,140	3 p.m.-----	10.33	27,400	3 a.m.-----	9.00	22,000
6-----	4.52	7,220	4-----	10.31	27,300	6-----	8.31	19,400
8-----	5.04	8,660	6-----	10.58	28,400	9-----	7.58	16,700
11-----	4.86	8,160	9-----	11.22	31,100	12 m.-----	7.36	16,000
3 p.m.-----	5.90	11,100	12 p.m.---	11.68	33,200	6 p.m.-----	7.15	15,200
6-----	6.70	13,500				12 p.m.---	7.10	15,100
9-----	7.25	15,300	Feb. 1					
12 p.m.---	7.88	17,300				Feb. 5		
Jan. 29			6 a.m.-----	12.33	36,000			
			12 m.-----	12.83	38,200	4 a.m.-----	7.00	14,700
6 a.m.-----	9.00	21,100	3 p.m.-----	13.03	39,100	7-----	6.40	12,700
12 m.-----	10.40	26,200	6-----	13.40	40,800	8-----	6.42	12,800
6 p.m.-----	12.10	33,400	8-----	13.54	41,500	12 m.-----	6.76	13,900
7-----	12.15	33,700	9-----	13.57	41,600	7 p.m.-----	6.82	14,100
9-----	12.21	33,900	10-----	13.57	41,600	9-----	7.37	16,000
12 p.m.---	12.57	35,600	12 p.m.---	13.52	41,400	12 p.m.---	8.09	18,600
Jan. 30			Feb. 2			Feb. 6		
			6 a.m.-----	13.21	39,900	3 a.m.-----	8.34	19,500
3 a.m.-----	13.04	39,200	12 m.-----	12.66	37,500	6-----	8.45	19,900
6-----	13.30	40,400	6 p.m.-----	11.80	33,700	12 m.-----	8.58	20,400
12 m.-----	14.25	44,800	12 p.m.---	10.91	29,800	3 p.m.-----	8.66	20,700
2 p.m.-----	14.30	45,000				4-----	8.63	20,600
3-----	14.32	45,100	Feb. 3			6-----	8.23	19,100
5-----	14.32	45,100				9-----	7.50	16,500
8-----	14.30	45,000	6 a.m.-----	10.30	27,200	10-----	7.42	16,200
10-----	14.24	44,700	12 m.-----	9.82	25,300	12 p.m.---	7.37	16,000
12 p.m.---	14.13	44,200	6 p.m.-----	9.45	23,800			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957--Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 7			Feb. 14--Con.			Feb. 21*--Con.		
6 a.m.---	7.29	15,700	12 m.---	6.28	12,400	3 p.m.---	5.38	9,620
12 m.---	7.32	15,800	6 p.m.---	6.19	12,100	5-----	5.72	10,600
6 p.m.---	7.79	17,500	12 p.m.---	6.17	12,000	7-----	5.81	10,900
12 p.m.---	8.44	19,900				12 p.m.---	5.80	10,900
Feb. 8			Feb. 15			Feb. 22*		
6 a.m.---	8.97	21,900	6 a.m.---	6.15	11,900	3 a.m.---	5.74	10,700
12 m.---	9.17	22,700	12 m.---	6.10	11,800	8-----	4.05	5,970
6 p.m.---	8.97	21,900	2 p.m.---	6.00	11,500	11:30---	3.25	3,940
12 p.m.---	8.80	21,200	6-----	5.78	10,800	3 p.m.---	4.20	6,360
			8-----	5.77	10,800	5-----	4.33	6,710
			12 p.m.---	5.87	11,100	8-----	5.35	9,540
Feb. 9			Feb. 16			10-----	5.53	10,100
2 a.m.---	8.78	21,100				12 p.m.---	5.56	10,100
6-----	9.57	24,300	4 a.m.---	5.95	11,300			
9-----	9.94	25,700	8-----	5.95	11,300	Feb. 23*		
12 m.---	9.99	25,900	12 m.---	5.93	11,200	3 a.m.---	5.54	10,100
6 p.m.---	10.00	26,000	6 p.m.---	5.91	11,200	6-----	4.63	7,520
12 p.m.---	10.50	28,100	12 p.m.---	5.88	11,100	9-----	3.48	4,510
Feb. 10			Feb. 17			1 p.m.---	2.83	2,980
6 a.m.---	11.29	31,500	12 m.---	5.84	11,000	5:30---	5.20	9,110
9-----	11.51	32,400	12 p.m.---	5.79	10,800	11-----	4.08	6,050
10-----	11.55	32,600				12 p.m.---	4.12	6,150
12 m.---	11.55	32,600	Feb. 18			Feb. 24*		
6 p.m.---	11.43	32,100	6 a.m.---	5.78	10,800	2:30 a.m.---	4.72	7,770
12 p.m.---	11.00	30,200	6 p.m.---	5.73	10,600	6-----	3.87	5,500
Feb. 11			12 p.m.---	5.72	10,600	10-----	2.80	2,920
6 a.m.---	10.42	27,700	Feb. 19			1 p.m.---	2.53	2,360
12 m.---	9.99	25,900	6 a.m.---	5.72	10,600	2-----	2.53	2,360
6 p.m.---	9.57	24,300	6 p.m.---	5.79	10,800	4-----	2.64	2,580
12 p.m.---	9.14	22,500	12 p.m.---	5.85	11,000	6-----	2.64	2,580
Feb. 12						8-----	2.67	2,650
6 a.m.---	8.82	21,300	Feb. 20*			10-----	2.63	2,560
12 m.---	8.54	20,200				12 p.m.---	2.65	2,600
6 p.m.---	8.36	19,600	5 a.m.---	5.88	11,100			
12 p.m.---	8.19	18,900	8-----	5.13	8,910	Feb. 25*		
			12 m.---	3.47	4,480	2 a.m.---	2.63	2,560
Feb. 13			3 p.m.---	5.25	9,250	4-----	2.65	2,600
4 a.m.---	8.09	18,600	4-----	5.49	9,940	6-----	2.60	2,500
10-----	6.83	14,200	5-----	5.59	10,200	8-----	2.60	2,500
12 m.---	6.63	13,500	12 p.m.---	5.73	10,600	10-----	2.53	2,360
6 p.m.---	6.45	12,900				3 p.m.---	2.38	2,060
12 p.m.---	6.39	12,700	Feb. 21*			6-----	3.43	4,380
			2 a.m.---	5.77	10,800	8-----	3.69	5,040
Feb. 14			3-----	5.72	10,600	10-----	3.53	4,640
6 a.m.---	6.32	12,500	10-----	3.69	5,040	12 p.m.---	3.16	3,720
			11:30---	3.50	4,560			

*Affected by regulation; daily means cannot be computed exactly from data shown.

123. BIG CREEK NEAR ROGERSVILLE, TENN.

[Crest-stage station]

Location.—Lat 36°25'34", long 82°57'07", on left bank 300 ft upstream from county highway bridge, 2.0 miles upstream from mouth, and 3.0 miles northeast of Rogersville, Hawkins County.

Drainage area.—47.3 sq mi (measured by Tennessee Valley Authority on 7½-minute planimetric maps, scale, 1:34,000).

Gage-height record.—Crest stages only.

Discharge record.—Peak discharges from rating curve extended above 2,000 cfs.

Maxima.—January-February 1957: Discharge, 3,180 cfs Jan. 31 (gage height, 6.73 ft). April 1941 to June 1949, December 1954 to December 1956: Discharge, 3,060 cfs Jan. 20, 1947 (gage height, 6.59 ft).

124. 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 bridge on State Highway 92, 2.7 miles upstream from Mill Spring Creek, 2.8 miles north of Jefferson City, Jefferson County, Tenn., and at mile 52.3.

Drainage area.—3,429 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1936.

Maxima.—January-February 1957: Contents at 12 p.m., 363,100 cfs-days Feb. 11 (elevation, 1,039.93 ft).

1941 to December 1956: Contents, 779,400 cfs-days May 11, 1944 (elevation, 1,074.37 ft).

Remarks.—Storage capacity, 789,200 cfs-days (elevation, 1,075.0 ft) of which 742,700 cfs-days is controlled storage. Records furnished by Tennessee Valley Authority.

Elevation, in feet, and contents, in cfs-days at 12 p.m. of indicated day, 1957

Day	January		February		Day	January		February	
	Elevation	Contents	Elevation	Contents		Elevation	Contents	Elevation	Contents
1----	1,007.73	144,400	1,032.90	302,900	17---	997.60	100,600	1,035.65	325,500
2----	1,005.60	134,400	1,036.18	330,000	18---	996.56	96,700	1,034.84	318,700
3----	1,003.86	126,500	1,037.30	339,700	19---	995.41	92,400	1,034.22	313,600
4----	1,002.39	120,100	1,036.88	336,000	20---	996.41	96,100	1,033.99	311,700
5----	1,002.54	120,800	1,036.15	329,800	21---	995.44	92,500	1,033.83	310,300
6----	1,003.17	123,500	1,036.16	329,900	22---	996.18	95,200	1,033.73	309,600
7----	1,002.70	121,400	1,035.94	328,000	23---	996.27	95,600	1,034.32	314,400
8----	1,000.99	114,200	1,036.43	332,200	24---	996.59	96,800	1,034.69	317,500
9----	999.92	109,800	1,037.34	340,000	25---	998.28	103,300	1,034.79	318,300
10----	999.57	108,400	1,039.17	356,200	26---	999.53	108,200	1,034.72	317,800
11----	1,000.68	112,900	1,039.93	363,100	27---	1,001.02	114,300	1,035.27	322,300
12----	1,001.05	114,400	1,039.68	360,800	28---	1,005.86	135,600	1,035.83	327,100
13----	1,001.40	115,900	1,039.00	354,700	29---	1,014.30	178,300	-----	-----
14----	1,001.00	114,200	1,038.06	346,300	30---	1,022.46	227,100	-----	-----
15----	1,000.41	111,800	1,037.18	338,600	31---	1,028.55	269,400	-----	-----
16----	998.82	105,400	1,036.42	332,100					

125. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 900.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 25,900 cfs 5:30 p.m. Feb. 11 (gage height, 32.19 ft).

1936 to December 1956: Discharge, 58,700 cfs Aug. 15, 1940 (gage height, 41.82 ft).

Floods of 1867 and 1901 reached stages of about 60 ft and 53 ft, respectively, from profile by Tennessee Valley Authority. Flood of 1867 exceeded all other known floods, including that of 1791.

Remarks.—Flow regulated by South Holston, Watauga, Boone, Fort Patrick Henry, and Cherokee Lakes.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	9,670	17,800	12-----	7,580	25,800	23-----	3,540	3,680
2-----	11,400	19,000	13-----	5,390	24,400	24-----	3,680	3,490
3-----	10,900	20,900	14-----	5,910	22,400	25-----	65	3,230
4-----	10,100	25,700	15-----	6,790	20,900	26-----	62	4,980
5-----	2,860	23,700	16-----	10,300	19,000	27-----	65	1,600
6-----	71	22,200	17-----	11,900	18,900	28-----	80	1,170
7-----	4,200	22,100	18-----	11,900	18,900	29-----	96	-----
8-----	9,370	22,100	19-----	11,900	17,600	30-----	112	-----
9-----	7,860	22,000	20-----	2,070	14,200	31-----	5,840	-----
10-----	9,460	22,300	21-----	6,550	11,500			
11-----	8,120	24,000	22-----	1,840	9,990			
Monthly mean discharge, in cubic feet per second-----							5,796	16,560

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 30			Jan. 31*—Con.			Feb. 2—Con.		
12 p.m.---	20.48	112	10 p.m.---	28.93	16,400	6 p.m.---	29.88	19,100
			12 p.m.---	28.95	16,500	12 p.m.---	29.90	19,100
Jan. 31*			Feb. 1			Feb. 3*		
6 a.m.---	20.50	120						
12 m.---	20.52	128	4 a.m.---	28.95	16,500	8 a.m.---	29.92	19,200
1 p.m.---	26.68	10,500	8-----	28.95	16,500	9-----	29.80	18,800
2-----	21.60	920	10-----	29.65	18,400	1:30 p.m.---	29.77	18,800
3:30-----	20.65	185	11-----	29.70	18,600	2-----	30.50	20,800
4-----	27.00	11,300	6 p.m.---	29.73	18,600	3-----	30.80	21,700
5-----	28.62	15,600	12 p.m.---	29.80	18,800	4:30-----	30.85	21,800
6-----	28.78	16,000				5-----	31.03	22,400
7-----	28.81	16,100	Feb. 2			7:30-----	31.07	22,500
9:30-----	28.80	16,000	6 a.m.---	29.83	18,900	8-----	31.85	24,800

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 3—Con.			Feb. 11—Con.			Feb. 18—Con.		
9 p.m.-----	32.08	25,500	1 p.m.-----	31.10	22,600	12 p.m.-----	29.82	18,900
11-----	32.12	25,700	2-----	32.00	25,300			
12 p.m.-----	32.13	25,700	3-----	32.13	25,700	Feb. 19*		
			4-----	32.16	25,800			
Feb. 4			5:30-----	32.19	25,900	3:30 a.m.---	29.80	18,800
			8-----	32.18	25,800	4-----	27.49	12,600
1 a.m.-----	32.14	25,700	12 p.m.-----	32.18	25,800	4:30-----	27.84	13,500
12 m-----	32.12	25,700				6-----	27.81	13,400
6 p.m.-----	32.11	25,600	Feb. 12			7-----	26.02	8,900
12 p.m.-----	32.12	25,700				8-----	29.20	17,200
			6 a.m.-----	32.18	25,800	11-----	29.44	17,800
Feb. 5			12 p.m.-----	32.17	25,800	12 m-----	29.73	18,600
						12 p.m.-----	29.73	18,600
6 a.m.-----	32.12	25,700	Feb. 13					
10-----	31.40	23,500				Feb. 20*		
11-----	31.10	22,600	6 a.m.-----	32.14	25,700			
12 m-----	31.08	22,500	2 p.m.-----	32.11	25,600	1 a.m.-----	29.68	18,500
6 p.m.-----	31.06	22,500	3-----	31.16	22,800	2-----	26.40	9,810
12 p.m.-----	31.02	22,400	4-----	31.10	22,600	3-----	25.98	8,800
			6-----	31.08	22,500	6-----	25.94	8,710
Feb. 6			12 p.m.-----	31.07	22,500	7-----	27.30	12,100
						9:30-----	29.42	17,800
2 a.m.-----	30.98	22,200	Feb. 14			11-----	28.92	16,400
2 p.m.-----	30.96	22,200				1 p.m.-----	28.88	16,300
6-----	30.94	22,100	6 a.m.-----	31.06	22,500	2-----	27.52	12,600
12 p.m.-----	30.94	22,100	12 m-----	31.05	22,400	3-----	27.33	12,100
			12 p.m.-----	31.02	22,400	5:30-----	27.34	12,200
Feb. 7						8-----	29.69	18,500
			Feb. 15			9-----	28.93	16,400
6 a.m.-----	30.93	22,100				10-----	28.90	16,300
12 p.m.-----	30.94	22,100	6 a.m.-----	31.01	22,300	11-----	24.50	5,500
			1 p.m.-----	31.00	22,300	12 p.m.-----	23.88	4,270
Feb. 8			2-----	30.05	19,500			
			3-----	29.93	19,200	Feb. 21*		
6 a.m.-----	30.92	22,100	5-----	29.90	19,100			
12 p.m.-----	30.92	22,100	12 p.m.-----	29.90	19,100	5 a.m.-----	23.66	3,870
						6-----	25.46	7,600
Feb. 9			Feb. 16			7-----	27.20	11,800
						9-----	29.33	17,500
6 a.m.-----	30.91	22,000	6 a.m.-----	29.90	19,100	10-----	29.02	16,700
6 p.m.-----	30.91	22,000	12 m-----	29.83	18,900	11:30-----	29.02	16,700
12 p.m.-----	30.92	22,100	12 p.m.-----	29.84	19,000	12 m-----	29.42	17,800
						1 p.m.-----	29.50	18,000
Feb. 10			Feb. 17			2-----	27.50	12,600
						3-----	27.38	12,300
3 a.m.-----	30.95	22,200	6 a.m.-----	29.83	18,900	5:30-----	27.40	12,300
6-----	30.95	22,200	12 m-----	29.83	18,900	6-----	28.40	15,000
8-----	31.00	22,300	6 p.m.-----	29.83	18,900	7:30-----	29.50	18,000
12 m-----	31.02	22,400	12 p.m.-----	29.82	18,900	8-----	29.00	16,600
12 p.m.-----	31.08	22,500				9-----	27.40	12,300
			Feb. 18			10:30-----	27.30	12,100
Feb. 11						11-----	25.80	8,380
			6 a.m.-----	29.82	18,900	12 p.m.-----	23.70	3,940
6 a.m.-----	31.09	22,600	12 m-----	29.82	18,900			

*Flow affected by regulation; daily means cannot be computed exactly from data shown.

126. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 850.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 12,600 cfs 1:30 a.m. Feb. 1 (gage height, 21.18 ft).

1951 to December 1956: Discharge, 13,300 cfs Jan. 16, 1954 (gage height, 18.44 ft).

Floods of March 1875 and April 1920 reached stages of 31.0 and 24.1 ft, respectively.

Flood of Mar. 29, 1951, reached a stage of 21.05 ft (discharge, 19,200 cfs) from flood-marks.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	295	13,500	12-----	312	1,720	23----	1,210	528
2-----	255	7,130	13-----	295	1,310	24----	816	486
3-----	229	3,130	14-----	275	1,050	25----	629	458
4-----	241	3,370	15-----	255	866	26----	559	507
5-----	423	3,840	16-----	250	826	27----	1,870	514
6-----	404	2,900	17-----	221	682	28----	4,520	842
7-----	398	2,850	18-----	184	594	29----	2,590	-----
8-----	362	3,680	19-----	177	714	30----	3,570	-----
9-----	339	3,640	20-----	202	802	31----	10,600	-----
10-----	362	3,410	21-----	198	650			
11-----	344	2,540	22-----	198	578			
Monthly mean discharge, in cubic feet per second-----							1,051	2,254
Runoff, in inches-----							4.50	8.73

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 30		
12 p.m.---	8.05	510	10 a.m.---	13.02	5,320	2 a.m.---	12.39	4,630
			11-----	13.20	5,540	3:30-----	12.47	4,720
Jan. 27			12:30 p.m.---	13.26	5,610	5-----	12.39	4,630
			2-----	13.15	5,480	8-----	11.90	4,090
5 a.m.---	8.05	510	6-----	12.65	4,920	12 m-----	11.35	3,500
7-----	8.11	552	12 p.m.---	11.30	3,450	6 p.m.---	10.70	2,850
12 m-----	9.60	1,790				9-----	10.53	2,680
5 p.m.---	11.02	3,170	Jan. 29			12 p.m.---	10.40	2,550
7-----	11.18	3,330						
11-----	11.12	3,270	4 a.m.---	10.50	2,650	Jan. 31		
12 p.m.---	11.14	3,290	8-----	10.15	2,300			
			3 p.m.---	9.75	1,920	1 a.m.---	10.39	2,540
Jan. 28			7-----	10.40	2,550	2-----	10.42	2,570
			12 p.m.---	11.84	4,020	6-----	11.50	3,650
3 a.m.---	11.23	3,380				12 m-----	17.60	11,200

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
<i>Jan. 31—Con.</i>			<i>Feb. 2</i>			<i>Feb. 4—Con.</i>		
4 p.m.-----	20.45	17,300	6 a.m.-----	16.30	9,390	6 a.m.-----	10.50	2,650
5-----	20.55	17,600	12 m-----	14.00	6,500	12 m-----	10.88	3,030
6-----	20.45	17,300	6 p.m.-----	12.55	4,800	5 p.m.-----	11.90	4,090
9-----	19.95	15,900	12 p.m.-----	11.72	3,890	9-----	12.08	4,290
12 p.m.-----	20.85	18,500				12 p.m.-----	12.10	4,310
<i>Feb. 1</i>			<i>Feb. 3</i>			<i>Feb. 5</i>		
			6 a.m.-----	11.10	3,250			
1:30 a.m.---	21.18	19,600	12 m-----	10.80	2,950	6 a.m.-----	11.67	3,840
3-----	21.03	19,100	3 p.m.-----	10.70	2,850	10:30-----	11.33	3,480
6-----	19.82	15,500	9-----	10.86	3,010	1 p.m.-----	11.87	4,060
12 m-----	17.70	11,300	12 p.m.-----	10.66	2,810	2-----	11.68	3,850
4 p.m.-----	17.38	10,800				4-----	11.66	3,830
8-----	17.70	11,300	<i>Feb. 4</i>			7-----	11.52	3,670
11:30-----	18.15	12,000				10:30-----	11.67	3,840
12 p.m.-----	18.00	11,800	3 a.m.-----	10.55	2,700	12 p.m.-----	11.59	3,750

127. 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.

Gage-height record.—Water-stage recorder graph except 10 p.m. Jan. 31 to 12 m. Feb. 1 for which graph was drawn on basis of adjacent graph. Ice affected gage-height records on Jan. 19. Datum of gage is 846.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 9,600 cfs.

Maxima.—January-February 1957: Discharge, 17,500 cfs 8 p.m. Jan. 31 (gage height, 13.60 ft).

1925 to December 1956: Discharge, 15,100 cfs Mar. 29, 1951 (gage height, 12.82 ft).

Flood of May 1840 reached a stage of about 15 ft (discharge, 21,500 cfs) from reports from Tennessee Valley Authority.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	161	4,820	12-----	183	695	23-----	1,040	328
2-----	145	2,420	13-----	174	595	24-----	460	310
3-----	142	1,510	14-----	164	520	25-----	380	296
4-----	147	2,040	15-----	155	466	26-----	340	351
5-----	282	1,680	16-----	155	484	27-----	1,110	396
6-----	212	1,450	17-----	131	408	28-----	976	516
7-----	236	1,660	18-----	128	375	29-----	1,300	-----
8-----	209	1,200	19-----	136	439	30-----	1,320	-----
9-----	197	1,090	20-----	142	452	31-----	6,690	-----
10-----	221	1,070	21-----	128	396			
11-----	197	880	22-----	142	359			
Monthly mean discharge, in cubic feet per second-----							561	972
Runoff, in inches-----							5.48	8.57

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30			Feb. 3		
12 p.m.---	2.17	332	6 a.m.-----	4.47	1,500	6 a.m.-----	4.23	1,340
Jan. 27			12 m-----	4.06	1,280	8-----	4.16	1,300
5 a.m.-----	2.16	325	6 p.m.-----	3.72	1,090	10-----	4.13	1,280
8-----	2.40	420	12 p.m.-----	3.52	981	12 m-----	4.31	1,380
10-----	3.60	1,020	Jan. 31			2 p.m.-----	4.86	1,710
12 m-----	5.00	1,800	1 a.m.-----	3.52	981	4-----	5.00	1,800
1 p.m.-----	5.51	2,100	4-----	3.80	1,140	6-----	4.73	1,630
4-----	4.95	1,770	6-----	4.80	1,680	8-----	4.70	1,620
6-----	4.65	1,600	8-----	7.40	3,360	12 p.m.---	5.09	1,850
12 p.m.---	4.03	1,260	10-----	8.85	5,090	Feb. 4		
Jan. 28			1 p.m.-----	11.05	9,840	Feb. 5		
3 a.m.-----	3.83	1,150	1:30-----	11.10	9,980	1 a.m.-----	5.35	2,000
6-----	3.67	1,060	2-----	10.85	9,300	4-----	5.00	1,800
9-----	3.50	970	6-----	10.60	8,650	8-----	4.80	1,680
12 m-----	3.37	898	8-----	13.60	17,500	12 m-----	5.28	1,960
5 p.m.-----	3.20	805	10-----	11.20	10,300	4 p.m.-----	6.11	2,460
6-----	3.21	810	12 p.m.---	10.20	7,730	6-----	6.00	2,400
11-----	3.55	998	Feb. 1			12 p.m.---	5.48	2,080
12 p.m.---	3.80	1,140	6 a.m.-----	8.35	4,340	Feb. 5		
Jan. 29			12 m-----	7.88	3,800	6 a.m.-----	4.93	1,750
1 a.m.-----	4.00	1,240	2 p.m.-----	7.87	3,790	10-----	4.66	1,590
4-----	3.70	1,080	6-----	8.95	5,250	1 p.m.-----	4.65	1,580
6-----	3.60	1,020	7-----	9.15	5,590	3-----	4.71	1,620
12 m-----	3.47	954	12 p.m.---	8.03	3,960	6-----	4.52	1,510
2 p.m.-----	3.43	932	Feb. 2			9-----	4.69	1,610
6-----	4.50	1,520	6 a.m.-----	6.76	2,880	11-----	4.61	1,560
8-----	5.52	2,110	12 m-----	5.78	2,260	12 p.m.---	4.61	1,560
9-----	5.65	2,180	6 p.m.-----	5.05	1,820			
12 p.m.---	5.10	1,860	12 p.m.---	4.50	1,500			

128. CLINCH RIVER AT CEDAR BLUFF, VA.

[Gaging station discontinued in 1946]

Location.—Lat 37°05'20", long 81°46', at highway bridge at mouth of Indian Creek in town of Cedar Bluff, Tazewell County, 400 ft upstream from Middle Creek, and 1.1 miles east of Richlands.

Drainage area.—125 sq mi, includes that of Indian Creek.

Gage-height record.—Floodmarks only. Altitude of gage is 1,940 ft (from topographic map).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 800 cfs and extended above by logarithmic plotting.

Maxima.—January 1957: Gage height, 14.41 ft Jan. 29.

1944 to September 1946: Discharge, 4,800 cfs about 6 a.m. Jan. 8, 1946 (gage height, 7.4 ft, from floodmark).

Flood in 1901 reached a stage of about 16 ft from floodmark in old mill.

129. 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.

Gage-height record.—Water-stage recorder graph except Jan. 1–6, Jan. 29 to Feb. 1 and Feb. 12–21. A stage graph was drawn for period Jan. 29 to Feb. 1 on basis of crest stage from floodmark and records for nearby stations. Datum of gage is 1,923.99 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 4,800 cfs and by contracted-opening measurement at 9,650 cfs. Discharge for periods Jan. 1-6 and Feb. 12-21 estimated on basis of records for nearby station.

Maxima.—January-February 1957: Discharge, 9,640 cfs 6 p.m. Jan. 29 (gage height, 19.3 ft, from floodmark in gage house).

1946 to December 1956: Discharge, 5,080 cfs May 19, 1953 (gage height, 13.23 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	140	2,660	12-----	516	1,000	23-----	502	407
2-----	120	2,170	13-----	366	600	24-----	461	340
3-----	110	1,190	14-----	279	450	25-----	340	303
4-----	120	771	15-----	231	380	26-----	270	303
5-----	160	608	16-----	190	320	27-----	392	279
6-----	210	582	17-----	170	290	28-----	2,110	407
7-----	211	630	18-----	155	250	29-----	7,000	-----
8-----	189	1,270	19-----	140	600	30-----	5,160	-----
9-----	901	2,360	20-----	135	1,200	31-----	2,150	-----
10-----	1,550	2,320	21-----	159	700			
11-----	832	1,430	22-----	169	502			
Monthly mean discharge, in cubic feet per second-----							821	869
Runoff, in inches -----							6.81	6.51

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 1—Con.		
12 p.m.---	2.03	243	2 p.m.---	18.5	9,000	12 p.m.---	8.39	2,630
			4-----	19.1	9,480			
Jan. 27			6-----	19.3	9,640	Feb. 2		
6 a.m.---	2.18	275	8-----	19.2	9,560	4 a.m.---	8.41	2,630
12 m.---	2.64	391	10-----	18.8	9,240	8-----	8.03	2,460
6 p.m.---	2.93	469	12 p.m.---	18.2	8,760	12 m.---	7.38	2,170
12 p.m.---	3.46	618				4 p.m.---	6.85	1,930
			Jan. 30			8-----	6.43	1,740
Jan. 28			4 a.m.---	16.6	7,520	12 p.m.---	6.00	1,550
			8-----	14.9	6,330			
2 a.m.---	4.08	808	12 m.---	12.8	4,930	Feb. 3		
4-----	4.72	1,040	4 p.m.---	10.8	3,800	6 a.m.---	5.43	1,320
6-----	5.20	1,230	8-----	9.0	2,900	12 m.---	5.05	1,170
8-----	5.69	1,430	12 p.m.---	7.4	2,180	6 p.m.---	4.72	1,040
10-----	6.41	1,730				12 p.m.---	4.47	944
12 m.---	7.41	2,180	Jan. 31					
2 p.m.---	8.46	2,660	4 a.m.---	6.6	1,820	Feb. 4		
4-----	9.20	3,000	8-----	6.7	1,860	6 a.m.---	4.16	836
6-----	9.49	3,140	12 m.---	7.2	2,090	12 m.---	3.94	762
8-----	9.50	3,150	4 p.m.---	7.9	2,400	6 p.m.---	3.71	693
10-----	9.46	3,130	8-----	7.9	2,400	12 p.m.---	3.53	639
12 p.m.---	9.27	3,040	12 p.m.---	8.1	2,500			
						Feb. 5		
Jan. 29			Feb. 1					
2 a.m.---	9.60	3,200	4 a.m.---	8.6	2,720	6 a.m.---	3.37	592
4-----	10.40	3,600	8-----	8.8	2,810	12 m.---	3.44	612
6-----	11.70	4,280	12 m.---	8.5	2,680	6 p.m.---	3.43	609
8-----	13.30	5,240	4 p.m.---	8.28	2,580	12 p.m.---	3.40	600
10-----	15.54	6,780	8-----	8.28	2,580			
12 m.---	17.4	8,120						

130. LITTLE RIVER AT WARDELL, VA.

[Gaging station discontinued in 1952]

Location.—Lat 37°02'16", long 81°47'52", on right bank 50 ft upstream from Katies 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.

Gage-height record.—Floodmarks only. Datum of gage is 2,033.01 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 960 cfs and by slope-area measurements of 1,840 cfs.

Maxima.—January 1957: Gage height, 14.34 ft Jan. 29.

1949 to September 1952: Discharge, 1,830 cfs at 7 a.m. Feb. 2, 1950 (gage height, 8.05 ft).

131. CEDAR CREEK NEAR LEBANON, VA.

Location.—Lat 36°54'29", long 82°02'20", on right bank 800 ft upstream from Roaring Spring Creek, 1.9 miles upstream from Little Cedar Creek, and 2.3 miles east of Lebanon, Russell County.

Drainage area.—51.5 sq mi.

Gage-height record.—Water-stage recorder graph. Stage outside of gage well was up to 0.6 ft higher than recorded. Datum of gage is 1,928.96 ft above mean sea level (Tennessee Valley Authority bench mark).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,300 cfs and by contracted-opening measurement at 2,710 cfs.

Maxima.—January-February 1957: Discharge, 2,740 cfs 4 p.m. Jan. 29 (gage height, 4.48 ft in gage well, 4.7 ft outside).

1952 to December 1956: Discharge, 2,650 cfs Mar. 16, 1955 (gage height, 4.27 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	39	1,550	12----	172	300	23----	150	120
2----	32	895	13----	115	208	24----	103	103
3----	29	412	14----	86	166	25----	78	89
4----	30	284	15----	65	130	26----	65	89
5----	46	327	16----	58	110	27----	149	86
6----	53	345	17----	46	96	28----	1,010	119
7----	51	557	18----	39	86	29----	2,230	-----
8----	48	714	19----	34	244	30----	1,220	-----
9----	317	1,060	20----	34	252	31----	1,390	-----
10----	580	1,490	21----	41	172			
11----	292	580	22----	44	140			
Monthly mean discharge, in cubic feet per second-----							279	383
Runoff, in inches-----							6.25	7.75

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 29—Con.		
12 p.m.---	1.84	61	2 p.m.---	3.03	1,140	6 p.m.---	4.45	2,720
Jan. 27			4-----	3.16	1,360	8-----	4.32	2,660
6 a.m.---	1.84	61	6-----	3.30	1,630	10-----	4.10	2,550
12 m.---	1.98	103	8-----	3.26	1,550	12 p.m.---	3.78	2,370
6 p.m.---	2.25	260	10-----	3.13	1,300	Jan. 30		
12 p.m.---	2.28	284	12 p.m.---	3.06	1,190	4 a.m.---	3.44	1,920
Jan. 28			Jan. 29			8-----	3.15	1,340
2 a.m.---	2.36	354	2 a.m.---	3.05	1,170	12 m.---	2.91	964
4-----	2.55	530	4-----	3.13	1,300	4 p.m.---	2.85	880
6-----	2.73	726	6-----	3.39	1,810	8-----	2.71	702
8-----	2.79	798	8-----	3.69	2,290	12 p.m.---	2.68	668
10-----	2.88	922	10-----	3.80	2,390	Jan. 31		
12 m.---	2.95	1,020	12 m.---	4.30	2,650	4 a.m.---	2.68	668
			2 p.m.---	4.44	2,720			
			4-----	4.48	2,740			

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis- charge	Hour	Gage height	Dis- charge	Hour	Gage height	Dis- charge
<i>Jan. 26</i>			<i>Jan. 29—Con</i>			<i>Feb. 1—Con.</i>		
12 p.m.---	3.58	908	12 p.m.---	24.35	30,900	12 m.-----	14.07	11,600
<i>Jan. 27</i>			<i>Jan. 30</i>			4 p.m.-----	13.75	11,200
6 a.m.-----	3.51	866	1 a.m.-----	24.40	31,000	8-----	13.61	11,000
12 m.-----	3.63	938	2-----	24.29	30,700	12 p.m.-----	13.66	11,000
6 p.m.-----	4.14	1,240	4-----	23.90	29,900	<i>Feb. 2</i>		
12 p.m.-----	4.76	1,630	6-----	23.30	28,600	4 a.m.-----	13.29	10,500
<i>Jan. 28</i>			8-----	22.60	27,000	8-----	12.84	9,890
2 a.m.-----	5.23	1,960	10-----	21.65	25,000	12 m.-----	12.34	9,240
4-----	5.66	2,280	12 m.-----	20.60	22,900	4 p.m.-----	11.75	8,500
6-----	6.30	2,790	2 p.m.-----	19.50	20,800	8-----	11.06	7,670
8-----	6.95	3,360	4-----	18.20	18,500	12 p.m.-----	10.34	6,870
10-----	7.54	3,940	6-----	16.80	16,000	<i>Feb. 3</i>		
12 m.-----	8.15	4,550	8-----	15.45	13,700	6 a.m.-----	9.31	5,740
2 p.m.-----	9.00	5,400	10-----	14.30	12,000	12 m.-----	8.54	4,940
4-----	10.10	6,610	12 p.m.-----	13.40	10,700	6 p.m.-----	8.04	4,440
6-----	11.30	7,960	<i>Jan. 31</i>			12 p.m.-----	7.48	3,880
8-----	12.35	9,260	2 a.m.-----	12.65	9,640	<i>Feb. 4</i>		
10-----	13.00	10,100	4-----	12.03	8,840	6 a.m.-----	7.08	3,480
12 p.m.-----	13.50	10,800	6-----	11.56	8,270	12 m.-----	6.71	3,140
<i>Jan. 29</i>			8-----	11.25	7,900	6 p.m.-----	6.40	2,870
2 a.m.-----	13.74	11,100	10-----	11.13	7,760	12 p.m.-----	6.11	2,640
4-----	14.13	11,700	12 m.-----	11.29	7,950	<i>Feb. 5</i>		
6-----	14.90	12,800	2 p.m.-----	11.62	8,340	6 a.m.-----	5.82	2,410
8-----	16.10	14,800	4-----	11.85	8,620	12 m.-----	5.79	2,380
10-----	17.30	16,800	6-----	11.95	8,740	6 p.m.-----	5.99	2,540
12 m.-----	18.80	19,500	8-----	12.14	8,980	12 p.m.-----	6.02	2,560
2 p.m.-----	20.30	22,300	10-----	12.50	9,450			
4-----	21.60	24,900	12 p.m.-----	13.05	10,200			
6-----	22.70	27,200	<i>Feb. 1</i>					
8-----	23.40	28,800	4 a.m.-----	13.95	11,400			
10-----	24.05	30,200	8-----	14.11	11,700			

133. 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.

Gage-height record.—Water-stage recorder graph except for Jan. 29 (6 p.m.) to Feb. 1 (8 p.m.) and Feb. 21–28. Graph was drawn for Jan. 29 to Feb. 1 on basis of flood crest, shape of recorder trace, and records for nearby streams. Datum of gage is 1,925.00 ft above mean sea level (Interstate Railway bench mark).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 3,500 cfs and by slope-area measurement at 5,900 cfs. Discharge for period of no gage-height record estimated on basis of records for nearby stations.

Maxima.—January-February 1957: Discharge, 6,360 cfs 12 p.m. Jan. 29 (gage height, 14.20 ft, from floodmarks).

1949 to December 1956: Discharge, 4,020 cfs Apr. 16, 1956 (gage height, 10.83 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	90	1,500	12-----	335	415	23-----	618	220
2-----	83	1,520	13-----	225	278	24-----	505	190
3-----	78	688	14-----	167	216	25-----	285	170
4-----	78	398	15-----	132	179	26-----	201	160
5-----	80	295	16-----	118	163	27-----	220	150
6-----	90	288	17-----	103	147	28-----	1,120	180
7-----	103	292	18-----	100	134	29-----	4,000	-----
8-----	101	400	19-----	90	303	30-----	3,280	-----
9-----	211	895	20-----	85	565	31-----	1,270	-----
10-----	895	1,240	21-----	92	370			
11-----	685	790	22-----	101	250			
Monthly mean discharge, in cubic feet per second-----							501	443
Runoff, in inches-----							6.62	5.28

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 29—Con.		
12 p.m.---	2.69	175	6 a.m.---	3.93	469	8 a.m.---	9.30	2,810
			8-----	4.29	577	12 m-----	10.80	3,860
Jan. 27			10-----	4.66	706	4 p.m.---	12.10	4,770
			12 m-----	5.31	934	8-----	13.50	5,800
6 a.m.---	2.67	172	2 p.m.---	6.05	1,220	12 p.m.---	14.20	6,360
12 m-----	2.84	201	4-----	6.83	1,530			
6 p.m.---	3.15	260	6-----	7.50	1,810	Jan. 30		
12 p.m.---	3.38	315	8-----	7.93	2,020			
			10-----	8.25	2,180	4 a.m.---	12.90	5,330
Jan. 28			12 p.m.---	8.44	2,280	8-----	10.60	3,720
						12 m-----	9.20	2,740
2 a.m.---	3.54	355	Jan. 29			4 p.m.---	8.30	2,210
4-----	3.70	400	4 a.m.---	8.69	2,430	8-----	7.40	1,760

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 30—Con.			Feb. 1—Con.			Feb. 3—Con.		
12 p.m.---	6.80	1,520	8 p.m.---	6.70	1,480	12 p.m.---	4.03	499
Jan. 31			12 p.m.---	7.29	1,720	Feb. 4		
			Feb. 2			6 a.m.---	3.83	439
4 a.m.---	6.35	1,340				12 m.---	3.68	394
8-----	6.10	1,240	4 a.m.---	7.53	1,820	6 p.m.---	3.52	350
12 m.---	5.90	1,160	8-----	7.40	1,760	12 p.m.---	3.38	315
4 p.m.---	5.90	1,160	12 m.---	6.97	1,590			
8-----	6.20	1,280	4 p.m.---	6.47	1,390	Feb. 5		
12 p.m.---	6.50	1,400	8-----	5.95	1,180	6 a.m.---	3.27	288
			12 p.m.---	5.49	1,000	12 m.---	3.28	290
Feb. 1			Feb. 3			6 p.m.---	3.30	295
4 a.m.---	6.80	1,520				12 p.m.---	3.32	300
8-----	6.80	1,520	6 a.m.---	4.89	786			
12 m.---	6.70	1,480	12 m.---	4.50	650			
4 p.m.---	6.60	1,440	6 p.m.---	4.25	565			

134. STONY CREEK AT FORT BLACKMORE, VA.

[Crest-stage stations; gaging station discontinued 1952]

Location.—Lat 36°46'30", long 82°34'50", at Fort Blackmore, Scott County, 2,000 ft up-stream from mouth, and 9.5 miles north of Gate City.

Drainage area.—41.4 sq mi.

Gage-height record.—Crest stages only. Datum of gage is 1,270.17 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 1,200 cfs and extended above by logarithmic plotting.

Maxima.—January 1957: Discharge, 2,220 cfs Jan. 29 (gaging height, 6.12 ft).

1949 to December 1956: Discharge, 2,550 cfs Apr. 16, 1956, (gage height, 6.55 ft).

Flood of Jan. 28, 1918, reached a stage of about 9 ft (discharge, 12,000 cfs) and flood of Feb. 14, 1948, was lower than that of 1918 by 1.3 to 2.0 ft at points 1 to 4 miles up-stream, from Tennessee Valley Authority, Division of Water Control Planning Report No. 0-5981.

135. COPPER CREEK NEAR GATE CITY, VA.

Location.—Lat 36°40'26", long 82°33'57", at 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.

Gage-height record.—Water-stage recorder graph except Feb. 10–28. Altitude of gage is 1,290 ft (from topographic map).

Discharge record.—Stage-discharge relation defined by current-meter measurements. Discharge for period of no gage-height record estimated on basis of records for near-by stations.

Maxima.—January–February 1957: Discharge, 3,200 cfs 4 a.m. Jan. 30 (gage height, 9.98 ft).

1947 to December 1956: Discharge, 6,800 cfs Jan. 30, 1950 (gage height, 13.0 ft from graph based on gage readings).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	105	2,690	12-----	305	600	23-----	261	230
2-----	98	1,910	13-----	225	450	24-----	261	210
3-----	84	956	14-----	175	350	25-----	186	200
4-----	69	704	15-----	142	300	26-----	157	190
5-----	107	609	16-----	126	240	27-----	254	200
6-----	115	772	17-----	115	210	28-----	1,580	300
7-----	107	810	18-----	112	200	29-----	2,960	-----
8-----	93	1,040	19-----	104	210	30-----	2,280	-----
9-----	390	1,160	20-----	96	400	31-----	1,860	-----
10-----	910	1,500	21-----	102	300			
11-----	585	1,100	22-----	113	250			
Monthly mean discharge, in cubic feet per second-----							454	646
Runoff, in inches-----							4.93	6.34

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 30			Feb. 1—Con.		
12 p.m.---	3.15	144	2 a.m.-----	9.96	3,180	8 p.m.-----	9.09	2,450
			4-----	9.98	3,200	12 p.m.-----	9.01	2,390
Jan. 27			6-----	9.88	3,110			
			8-----	9.63	2,890	Feb. 2		
4 a.m.-----	3.13	140	10-----	9.25	2,580			
8-----	3.17	147	12 m-----	8.87	2,280	6 a.m.-----	8.88	2,280
12 m-----	3.67	239	2 p.m.-----	8.53	2,000	12 m-----	8.58	2,040
4 p.m.-----	4.08	321	4-----	8.21	1,750	6 p.m.-----	7.86	1,500
8-----	4.35	375	6-----	7.93	1,540	12 p.m.-----	7.35	1,220
12 p.m.---	4.78	480	8-----	7.69	1,390			
			10-----	7.50	1,290	Feb. 3		
Jan. 28			12 p.m.---	7.34	1,210			
						6 a.m.-----	6.91	1,020
2 a.m.-----	5.20	585	Jan. 31			12 m-----	6.58	930
4-----	5.66	700				6 p.m.-----	6.30	860
6-----	6.12	815	2 a.m.-----	7.23	1,160	12 p.m.---	6.09	808
8-----	6.60	935	4-----	7.16	1,120			
10-----	6.87	1,010	6-----	7.19	1,140	Feb. 4		
12 m-----	7.22	1,150	8-----	7.45	1,260			
2 p.m.---	7.75	1,430	10-----	7.94	1,550	6 a.m.-----	5.80	735
4-----	8.85	2,260	12 m-----	8.37	1,880	12 m-----	5.66	700
6-----	9.30	2,620	2 p.m.---	8.60	2,060	6 p.m.---	5.52	665
8-----	9.62	2,880	4-----	8.74	2,170	12 p.m.---	5.35	622
10-----	9.69	2,940	6-----	8.93	2,320			
12 p.m.---	9.65	2,900	8-----	9.28	2,600	Feb. 5		
			10-----	9.65	2,900			
Jan. 29			12 p.m.---	9.89	3,120	6 a.m.-----	5.19	582
						12 m-----	5.13	568
4 a.m.-----	9.66	2,910	Feb. 1			6 p.m.---	5.30	610
8-----	9.64	2,900				12 p.m.---	5.78	730
12 m-----	9.48	2,760	4 a.m.-----	9.72	2,970			
4 p.m.---	9.79	3,030	8-----	9.55	2,820			
8-----	9.92	3,150	12 m-----	9.39	2,690			
12 p.m.---	9.92	3,150	4 p.m.---	9.07	2,440			

136. CLINCH RIVER AT SPEERS FERRY, VA.

Location.—Lat 36°38'55", long 82°45'02", on right bank 100 ft downstream from bridge on U.S. Highway 58, 0.5 mile downstream from Copper Creek, 0.8 mile northwest of Speers Ferry, Scott County, and 1.8 miles downstream from Clinchport.

Drainage area.—1,126 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,196.52 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 45,300 cfs 3 p.m. Jan. 30 (gage height, 28.92 ft).

1920 to December 1956: Discharge, 37,200 cfs Feb. 3, 1923 (gage height, 25.85 ft).

1895 to December 1956: Discharge, about 42,000 cfs Feb. 28, 1902 (gage height, 26.6 ft, observed by U.S. Weather Bureau, site 400 ft downstream and at datum about 1 ft higher).

Flood in February 1862 reached a stage of 33 ft, from information furnished by Tennessee Valley Authority.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	940	23,200	12-----	5,240	8,120	23-----	3,360	3,000
2-----	828	22,300	13-----	3,320	5,120	24-----	4,460	2,500
3-----	720	12,800	14-----	2,450	3,870	25-----	3,320	2,200
4-----	720	7,420	15-----	1,930	3,100	26-----	2,460	2,060
5-----	910	5,400	16-----	1,620	2,700	27-----	2,450	1,980
6-----	1,080	5,600	17-----	1,420	2,350	28-----	9,600	2,160
7-----	1,260	6,320	18-----	1,140	1,980	29-----	26,500	-----
8-----	1,220	8,600	19-----	882	1,980	30-----	42,500	-----
9-----	2,540	11,900	20-----	910	5,720	31-----	29,300	-----
10-----	7,280	17,700	21-----	1,000	5,840			
11-----	9,080	14,600	22-----	1,020	3,870			
Monthly mean discharge, in cubic feet per second-----							5,531	6,940
Runoff, in inches-----							5.66	6.42

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 27			Jan. 28—Con.			Jan. 29—Con.		
4 a.m.-----	5.00	2,100	10 a.m.-----	9.10	6,680	12 m-----	20.55	25,300
8-----	4.96	2,070	12 m-----	10.00	7,760	4 p.m.-----	21.90	28,400
12 m-----	5.12	2,220	2 p.m.-----	11.20	9,200	8-----	23.55	32,200
4 p.m.-----	5.54	2,640	4-----	13.00	11,600	12 p.m-----	25.20	36,100
8-----	5.87	2,970	6-----	15.00	14,600			
12 p.m-----	6.15	3,260	8-----	16.35	16,900	Jan. 30		
			10-----	17.25	18,600			
Jan. 28			12 p.m-----	18.00	20,000	2 a.m.-----	25.95	37,900
						4-----	26.60	39,500
2 a.m.-----	6.44	3,580	Jan. 29			6-----	27.25	41,100
4-----	6.90	4,090				8-----	27.87	42,700
6-----	7.57	4,840	4 a.m.-----	18.89	21,800	10-----	28.35	43,900
8-----	8.30	5,720	8-----	19.51	23,100	12 m-----	28.73	44,800

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 30—Con.			Feb. 1—Con.			Feb. 3		
2 p.m.-----	28.90	45,200	12 m.-----	19.53	23,100	4 a.m.-----	15.62	15,700
3-----	28.92	45,500	4 p.m.-----	19.62	23,300	8-----	14.57	13,900
4-----	28.88	45,200	8-----	20.10	24,300	12 m.-----	13.60	12,400
6-----	28.66	44,600	12 p.m.-----	20.38	24,900	4 p.m.-----	12.70	11,200
8-----	28.33	43,800				8-----	11.92	10,100
10-----	27.80	42,500	Feb. 2			12 p.m.-----	11.24	9,250
12 p.m.-----	27.10	40,800	2 a.m.-----	20.42	25,000	Feb. 4		
			4-----	20.34	24,800			
Jan. 31			6-----	20.18	24,500	6 a.m.-----	10.39	8,230
4 a.m.-----	25.40	36,600	8-----	19.87	23,800	12 m.-----	9.55	7,220
8-----	23.55	32,100	10-----	19.62	23,300	6 p.m.-----	9.03	6,600
12 m.-----	21.88	28,300	12 m.-----	19.35	22,700	12 p.m.-----	8.56	6,030
4 p.m.-----	20.45	25,100	2 p.m.-----	19.05	22,100	Feb. 5		
8-----	19.30	22,600	4-----	18.70	21,400			
12 p.m.-----	18.85	21,700	6-----	18.25	20,500	6 a.m.-----	8.16	5,550
			8-----	17.76	19,500	12 m.-----	7.90	5,240
Feb. 1			10-----	17.25	18,600	6 p.m.-----	7.85	5,180
			12 p.m.-----	16.69	17,500	12 p.m.-----	7.92	5,260
4 a.m.-----	19.10	22,200						
8-----	19.45	22,900						

137. 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,814.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 789 cfs 6 p.m. Jan. 28 (gage height, 7.34 ft).

1952 to December 1956: Discharge, 800 cfs Apr. 15, 1956 (gage height, 7.40 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	22	590	12-----	107	140	23-----	208	49
2-----	19	425	13-----	72	93	24-----	111	45
3-----	16	216	14-----	55	73	25-----	78	43
4-----	18	136	15-----	46	60	26-----	60	42
5-----	28	116	16-----	40	54	27-----	80	40
6-----	32	123	17-----	32	47	28-----	574	46
7-----	34	252	18-----	28	42	29-----	723	-----
8-----	31	290	19-----	25	51	30-----	472	-----
9-----	197	372	20-----	23	63	31-----	504	-----
10-----	362	455	21-----	25	60			
11-----	193	245	22-----	28	55			
Monthly mean discharge, in cubic feet per second-----							137	151
Runoff, in inches-----							6.84	6.81

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29			Feb. 1-Con.		
12 p.m.-----	2.15	54	2 a.m.-----	6.91	720	12 m-----	5.70	530
			4-----	6.86	712	4 p.m.-----	5.74	536
Jan. 27			6-----	6.77	697	8-----	6.48	651
			8-----	6.67	681	12 p.m.-----	6.38	635
6 a.m.-----	2.14	53	10-----	6.52	657			
12 m-----	2.43	78	12 m-----	6.74	692	Feb. 2		
6 p.m.-----	2.64	98	2 p.m.-----	7.08	747			
12 p.m.-----	2.91	126	4-----	7.22	769	4 a.m.-----	5.91	562
			6-----	7.24	772	8-----	5.40	485
Jan. 28			8-----	7.17	761	12 m-----	4.82	398
			10-----	7.07	745	4 p.m.-----	4.45	342
1 a.m.-----	3.20	160	12 p.m.-----	6.91	720	8-----	4.20	305
2-----	3.70	230				12 p.m.-----	4.00	275
3-----	4.25	312	Jan. 30			Feb. 3		
4-----	4.63	370	4 a.m.-----	6.44	644			
5-----	4.89	408	8-----	5.85	552	6 a.m.-----	3.75	238
6-----	5.11	442	12 m-----	5.16	449	12 m-----	3.63	220
7-----	5.34	476	4 p.m.-----	4.57	360	6 p.m.-----	3.40	186
8-----	5.54	506	8-----	4.24	311	12 p.m.-----	3.25	166
9-----	5.68	527	12 p.m.-----	4.17	300			
10-----	5.79	544				Feb. 4		
11-----	5.91	562	Jan. 31					
12 m-----	6.08	587	4 a.m.-----	4.28	317	6 a.m.-----	3.10	148
1 p.m.-----	6.26	616	8-----	4.95	418	12 m-----	2.97	133
2-----	6.70	686	12 m-----	6.40	638	6 p.m.-----	2.90	125
3-----	7.22	769	4 p.m.-----	6.09	588	12 p.m.-----	2.79	113
4-----	7.28	779	8-----	6.15	598			
5-----	7.32	786	12 p.m.-----	6.35	630	Feb. 5		
6-----	7.34	789						
7-----	7.32	786				6 a.m.-----	2.76	110
8-----	7.25	774				12 m-----	2.82	116
9-----	7.18	763	Feb. 1			6 p.m.-----	2.84	118
10-----	7.08	747	4 a.m.-----	6.23	611	12 p.m.-----	2.90	125
11-----	7.01	736	8-----	6.05	582			
12 p.m.-----	6.94	724						

138. CLINCH RIVER ABOVE TAZEWEEL, 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. At site used 1919–27, 1,548 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,060.7 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurement below 43,000 cfs.

Maxima.—January–February 1957: Discharge, 51,100 cfs 4:30 a.m. Jan. 31 (gage height, 21.00 ft).

1918 to December 1956: Discharge, 39,700 cfs Feb. 4, 1923 (gage height, 20.3 ft, at site 23 miles downstream at datum 102.7 ft lower).

Flood of February 1862 reached a stage of about 24 ft, from information by local resident (discharge, 66,000 cfs), from report by Tennessee Valley Authority.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	1,350	34,000	12-----	8,850	14,000	23-----	2,260	4,120
2-----	1,190	31,400	13-----	5,220	8,280	24-----	5,600	3,330
3-----	1,060	21,900	14-----	3,560	5,800	25-----	4,910	2,860
4-----	994	12,300	15-----	2,680	4,450	26-----	3,600	2,600
5-----	1,510	8,170	16-----	2,180	3,640	27-----	3,460	2,490
6-----	1,660	7,080	17-----	1,840	3,100	28-----	9,470	2,550
7-----	1,650	7,510	18-----	1,550	2,680	29-----	29,400	-----
8-----	1,730	10,700	19-----	1,290	2,360	30-----	42,700	-----
9-----	2,620	12,100	20-----	1,090	3,660	31-----	47,300	-----
10-----	6,500	18,500	21-----	1,130	7,580			
11-----	11,000	21,000	22-----	1,240	5,770			
Monthly mean discharge, in cubic feet per second-----							6,793	9,426
Runoff, in inches-----							5.31	6.66

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 30—Con.		
12 p.m.---	3.84	3,050	4 p.m.---	7.90	10,000	6 p.m.---	19.75	45,900
			8-----	9.30	13,000	12 p.m.---	20.78	50,200
Jan. 27			12 p.m.---	11.30	17,900			
6 a.m.---	3.77	2,950	Jan. 29			Jan. 31		
11-----	3.70	2,850				4:30 a.m.---	21.00	51,100
6 p.m.---	4.42	3,890	6 a.m.---	13.50	24,100	8-----	20.88	50,600
12 p.m.---	5.17	5,070	6 p.m.---	17.00	35,500	12 m-----	20.52	49,100
			9-----	17.53	37,400	6 p.m.---	19.40	44,500
Jan. 28			12 p.m.---	17.68	37,900	12 p.m.---	17.95	38,900
2 a.m.---	5.40	5,440	Jan. 30			Feb. 1		
6-----	6.20	6,810						
12 m-----	7.30	8,850	6 a.m.---	17.90	38,700	6 a.m.---	16.98	35,400

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 1—Con.			Feb. 2—Con.			Feb. 4		
12 m -----	16.15	32,600	6 p.m.-----	15.44	30,200	6 a.m.-----	9.60	13,700
4 p.m.-----	15.92	31,800	12 p.m.-----	14.69	27,800	6 p.m.-----	8.16	10,600
12 p.m.-----	16.40	33,500				12 p.m.-----	7.68	9,600
Feb. 2			Feb. 3			Feb. 5		
			6 a.m.-----	13.80	25,000	6 a.m.-----	7.23	8,720
6 a.m.-----	16.20	32,800	6 p.m.-----	11.70	18,900	6 p.m.-----	6.58	7,490
12 m -----	15.90	31,800	12 p.m.-----	10.55	16,000	12 p.m.-----	6.38	7,130

139. 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 Pigeons Creek.

Drainage area.—112 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,459.07 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,800 cfs and by slope-area measurement at 11,000 cfs.

Maxima.—January-February 1957: Discharge, 11,000 cfs 3 p.m. Jan. 29 (gage height, 9.67 ft).

1944 to December 1956: Discharge, 16,500 cfs Jan. 7, 1946 (gage height, 9.8 ft, from floodmark).

Mean discharge, in cubic feet per second, 1957

[illegible]

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 1—Con.		
12 p.m.---	1.81	247	8 a.m.-----	5.94	4,320	6 p.m.-----	4.41	2,210
Jan. 27			10-----	6.93	5,890	12 p.m.-----	4.87	2,820
			12 m-----	8.58	8,900	Feb. 2		
4 a.m.-----	1.80	243	2 p.m.-----	9.50	10,700			
8-----	1.90	280	3-----	9.67	11,000	6 a.m.-----	4.47	2,280
12 m-----	1.99	316	4-----	9.54	10,800	12 m-----	4.03	1,780
4 p.m.-----	2.05	340	6-----	8.63	9,000	6 p.m.-----	3.71	1,450
8-----	2.08	352	8-----	7.52	6,940	12 p.m.-----	3.46	1,210
12 p.m.-----	2.15	380	10-----	6.79	5,660	Feb. 3		
Jan. 28			12 p.m.-----	6.18	4,690			
			Jan. 30			6 a.m.-----	3.25	1,040
2 a.m.-----	2.29	445	4 a.m.-----	5.29	3,410	12 m-----	3.13	944
4-----	2.38	490	8-----	4.65	2,510	6 p.m.-----	2.98	836
6-----	2.51	555	12 m-----	4.24	2,010	12 p.m.-----	2.86	756
8-----	2.20	400	4 p.m.-----	3.95	1,700	Feb. 4		
10-----	2.98	836	8-----	3.71	1,450			
12 m-----	3.56	1,300	12 p.m.-----	3.52	1,270	6 a.m.-----	2.75	690
2 p.m.-----	4.25	2,020	Jan. 31			12 m-----	2.66	636
4-----	4.85	2,790	6 a.m.-----	3.39	1,150	6 p.m.-----	2.57	585
6-----	5.28	3,390	12 m-----	3.46	1,210	12 p.m.-----	2.49	545
8-----	5.37	3,520	6 p.m.-----	3.53	1,280	Feb. 5		
10-----	5.23	3,320	12 p.m.-----	4.07	1,830			
12 p.m.-----	5.04	3,060	Feb. 1			6 a.m.-----	2.45	525
Jan. 29						12 m-----	2.45	525
2 a.m.-----	5.02	3,030	6 a.m.-----	4.40	2,200	6 p.m.-----	2.42	510
4-----	5.14	3,200	12 m-----	4.23	2,000	12 p.m.-----	2.38	490
6-----	5.36	3,500						

140. SOUTH FORK POWELL RIVER AT BIG STONE GAP, VA.

[Crest-stage gage; gaging station discontinued 1947]

Location.—Lat 36° 51' 54", long 82° 46' 16", at bridge on U.S. Highway 23 in town of Big Stone Gap, Wise County, 1.6 miles upstream from Powell River and 1.9 miles downstream from Butcher Creek.

Drainage area.—40 sq mi.

Gage-height record.—Crest stage only. Altitude of gage is 1,470 ft (from topographic map).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,500 cfs.

Maxima.—January 1957: Discharge, 3,550 cfs Jan. 29 (gage height, 8.62 ft).

1944–47, 1951 to December 1956: Discharge, 3,100 cfs Jan. 7, 1946 (gage height, 8.0 ft, from floodmark).

141. NORTH FORK POWELL RIVER AT PENNINGTON GAP, VA.

[Crest-stage station; gaging station discontinued 1951]

Location.—Lat 36°46'26", long 83°01'59", at 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.

Gage-height record.—Crest stage only. Altitude of gage is 1,365 ft (by barometer).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 2,300 cfs and by slope-area measurements at 4,500 and 9,700 cfs.

Maxima.—January 1957: Discharge, 4,430 cfs Jan. 29 (gage height, 8.70 ft).

1944 to December 1956: Discharge, 9,700 cfs Jan. 7, 1946 (gage height, 12.1 ft).

142. POWELL RIVER NEAR JONESVILLE, VA.

Location.—Lat 36°39'42", 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.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,259.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 19,800 cfs 2 a.m. Jan. 30 (gage height, 26.87 ft).

1931 to December 1956: Discharge, 30,000 cfs Jan. 8, 1946 (gage height, 30.8 ft).

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1----	280	6,540	12-----	1,350	1,800	23-----	2,070	715
2-----	242	6,310	13-----	898	1,230	24-----	1,860	602
3-----	198	2,970	14-----	670	1,010	25-----	1,090	560
4-----	204	1,780	15-----	540	765	26-----	765	520
5-----	308	1,320	16-----	460	648	27-----	775	520
6-----	354	1,230	17-----	382	560	28-----	5,030	520
7-----	371	1,560	18-----	285	488	29-----	13,200	-----
8-----	364	2,290	19-----	240	540	30-----	11,600	-----
9-----	1,240	3,260	20-----	240	1,320	31-----	4,360	-----
10-----	4,170	5,020	21-----	270	1,140			
11-----	2,800	3,520	22-----	304	870			
Monthly mean discharge, in cubic feet per second -----							1,836	1,772
Runoff, in inches -----							6.64	5.78

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 29—Con.			Feb. 1—Con.		
12 p.m.-----	3.29	666	4 a.m.-----	19.76	11,700	8 a.m.-----	12.83	6,660
			6-----	19.57	11,500	12 m-----	13.09	6,830
Jan. 27			8-----	19.25	11,200	4 p.m.-----	12.90	6,700
			10-----	19.00	11,000	8-----	12.84	6,670
6 a.m.-----	3.22	634	12 m-----	18.98	11,000	12 p.m.-----	13.32	6,990
12 m-----	3.25	648	2 p.m.-----	19.60	11,600			
6 p.m.-----	3.70	870	4-----	20.95	13,000	Feb. 2		
12 p.m.-----	4.35	1,230	6-----	22.75	15,000			
			8-----	24.45	16,900	4 a.m.-----	13.87	7,380
Jan. 28			10 p.m.-----	25.72	18,500	8-----	13.87	7,380
			12 p.m.-----	26.55	19,500	12 m-----	12.95	6,740
1 a.m.-----	4.66	1,420				4 p.m.-----	11.55	5,830
2-----	4.81	1,510	Jan. 30			8-----	10.20	4,950
3-----	5.04	1,640				12 p.m.-----	9.08	4,220
4-----	5.30	1,800	2 a.m.-----	26.87	19,800			
5-----	5.62	1,990	4-----	26.40	19,300	Feb. 3		
6-----	5.95	2,190	6-----	25.00	17,600			
7-----	6.30	2,420	8-----	23.00	15,300	4 a.m.-----	8.20	3,650
8-----	6.65	2,640	10-----	20.45	12,500	8-----	7.50	3,200
9-----	7.03	2,890	12 m-----	18.00	10,300	12 m-----	6.95	2,840
10-----	7.28	3,050	2 p.m.-----	15.30	8,380	4 p.m.-----	6.54	2,570
11-----	7.78	3,380	4-----	13.50	7,120	8-----	6.23	2,370
12 m-----	8.25	3,680	6-----	12.10	6,180	12 p.m.-----	5.95	2,190
1 p.m.-----	9.30	4,360	8-----	11.05	5,500			
2-----	10.00	4,820	10-----	10.20	4,950	Feb. 4		
3-----	11.05	5,500	12 p.m.-----	9.45	4,460			
4-----	12.30	6,320				6 a.m.-----	5.53	1,940
5-----	13.72	7,270	Jan. 31			12 m-----	5.21	1,750
6-----	15.10	8,240				6 p.m.-----	4.96	1,600
7-----	16.15	8,980	4 a.m.-----	8.53	3,860	12 p.m.-----	4.73	1,460
8-----	17.00	9,570	8-----	8.20	3,650			
9-----	17.90	10,200	12 m-----	8.77	4,020	Feb. 5		
10-----	18.50	10,600	4 p.m.-----	9.70	4,620			
11-----	18.95	11,000	8-----	10.42	5,090	6 a.m.-----	4.52	1,330
12 p.m.-----	19.35	11,300	12 p.m.-----	11.08	5,520	12 m-----	4.45	1,290
						6 p.m.-----	4.45	1,290
Jan. 29			Feb. 1			12 p.m.-----	4.45	1,290
2 a.m.-----	19.70	11,700	4 a.m.-----	12.00	6,120			

143. 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 25 E, 2.3 miles east of Arthur, Claiborne County, and 2.4 miles downstream from Indian Creek.

Drainage area.—685 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 1,045.84 ft above mean sea level (Tennessee River Survey datum).

Discharge record.—Stage-discharge relation defined by current-meter measurements below 23,000 cfs.

Maxima.—January-February 1957: Discharge, 23,500 cfs 5 a.m. Jan. 30 (gage height, 22.07 ft).

1919 to December 1956: Discharge, 33,000 cfs Jan. 9, 1946 (gage height, 27.15 ft, from floodmark) from rating curve extended above 23,000 cfs by indirect measurement at 32,000 cfs.

Maximum stage known, about 27.5 ft in March 1826 (discharge, 34,000 cfs).

The flood of Jan. 29, 1918, reached a stage of about 27.2 ft (discharge, 33,000 cfs) from reports of Tennessee Valley Authority.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	505	12,600	12-----	4,760	6,340	23-----	1,230	1,690
2-----	430	14,500	13-----	2,600	3,880	24-----	2,900	1,460
3-----	378	11,100	14-----	1,780	2,780	25-----	2,960	1,330
4-----	360	6,060	15-----	1,330	2,140	26-----	1,870	1,260
5-----	722	4,080	16-----	1,030	1,780	27-----	1,680	1,250
6-----	824	3,280	17-----	842	1,540	28-----	5,800	1,340
7-----	746	3,310	18-----	692	1,360	29-----	15,800	-----
8-----	680	4,990	19-----	554	1,350	30-----	23,100	-----
9-----	1,040	5,530	20-----	488	1,670	31-----	19,500	-----
10-----	3,790	7,100	21-----	456	2,260			
11-----	6,290	8,610	22-----	483	2,010			
Monthly mean discharge, in cubic feet per second-----							3,407	4,164
Runoff, in inches-----							5.73	6.33

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 26			Jan. 28—Con.			Jan. 30—Con.		
12 p.m.---	3.20	1,610	6 p.m.-----	10.45	8,050	5 a.m.-----	22.07	23,500
			12 p.m.-----	12.85	10,500	8-----	21.98	23,400
Jan. 27						12 m-----	21.78	23,000
			Jan. 29			4 p.m.-----	21.64	22,800
6 a.m.-----	3.07	1,520				8-----	21.68	22,900
12 m-----	3.05	1,500	6 a.m.-----	14.50	12,400	12 p.m.---	21.85	23,100
6 p.m.-----	3.52	1,830	12 m-----	16.35	14,800			
12 p.m.---	3.95	2,180	6 p.m.-----	19.60	19,500	Jan. 31		
			12 p.m.-----	21.67	22,800	2 a.m.-----	21.91	23,200
Jan. 28						6-----	21.72	22,900
			Jan. 30			12 m-----	20.27	20,500
6 a.m.-----	5.75	3,680				6 p.m.-----	17.53	16,400
12 m-----	7.40	5,160	2 a.m.-----	21.94	23,300	12 p.m.---	15.20	13,300

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Feb. 1			Feb. 2—Con.			Feb. 4		
6 a.m.---	14.21	12,100	12 m.---	16.38	14,800	6 a.m.---	9.10	6,700
10.-----	14.03	11,800	6 p.m.---	15.90	14,200	12 m.---	8.18	5,860
2 p.m.---	14.21	12,100	12 p.m.---	15.34	13,400	6 p.m.---	7.50	5,250
6.-----	14.84	12,800	Feb. 3			12 p.m.---	6.96	4,760
12 p.m.---	16.05	14,400				Feb. 5		
Feb. 2						6 a.m.---	14.66	12,600
			12 m.---	13.54	11,300	12 m.---	6.15	4,040
4 a.m.---	16.44	14,900	6 p.m.---	11.97	9,570	6 p.m.---	5.85	3,760
8.-----	16.50	15,000	12 p.m.---	10.48	8,080	12 p.m.---	5.60	3,540

144. NORRIS LAKE NEAR NORRIS, TENN.

Location.—Lat 36°13'29", long 84°05'29", at Norris Dam on Clinch River, 2½ miles northwest of Norris, Anderson County, Tenn., and at mile 79.8.

Drainage area.—2,912 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is at mean sea level, adjustment of 1921, and 0.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Elevations given herein are referred to adjustment of 1912.

Maxima.—January-February 1957: Contents at 12 p.m., 756,400 cfs-days Feb. 4 (elev., 1,031.10 ft).

Remarks.—Storage capacity, 1,294,200 cfs-days (elev., 1,034.0 ft) of which 1,150,000 cfs-days is controlled storage. Records furnished by Tennessee Valley Authority.

Elevation, in feet, and contents, in cfs-days at 12 p.m. of indicated day 1957

Day	January		February		Day	January		February	
	Elevation	Contents	Elevation	Contents		Elevation	Contents	Elevation	Contents
1.---	966.97	369,300	996.18	675,900	17.---	967.48	373,700	996.07	674,500
2.---	966.40	364,700	999.99	725,900	18.---	966.93	369,000	994.82	658,700
3.---	965.77	359,600	1,001.96	752,900	19.---	966.27	363,700	993.65	644,000
4.---	965.28	355,700	1,002.21	756,400	20.---	965.60	358,300	992.50	629,800
5.---	965.25	355,400	1,001.77	750,300	21.---	964.98	353,300	991.71	620,200
6.---	965.65	358,700	1,001.17	742,000	22.---	964.84	352,100	990.95	611,200
7.---	965.72	359,200	1,000.61	734,300	23.---	964.87	352,400	990.16	601,800
8.---	965.35	356,200	1,000.45	732,100	24.---	965.49	357,400	989.50	594,200
9.---	965.19	355,000	1,000.47	732,400	25.---	966.23	363,300	988.90	587,200
10.---	965.66	358,800	1,001.28	743,500	26.---	966.77	367,700	988.43	581,800
11.---	967.09	370,300	1,002.06	754,300	27.---	967.49	373,800	988.12	578,200
12.---	968.17	379,600	1,001.98	753,200	28.---	971.40	408,000	987.90	575,600
13.---	968.51	382,500	1,001.18	742,100	29.---	978.21	472,000	-----	-----
14.---	968.53	382,700	1,000.07	727,000	30.---	984.88	541,700	-----	-----
15.---	968.40	381,600	998.83	710,700	31.---	991.45	617,100	-----	-----
16.---	968.05	378,600	997.40	691,900					

145. 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. At site used 1904–27, 3,056 sq mi.

Gage-height record.—Water-stage recorder graph. Datum of gage is 819.11 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements. Maxima.—January-February 1957: Discharge, 26,600 cfs 1–11 a.m. Feb. 12 (gage height, 11.65 ft).

1903 to December 1956: Discharge, 87,000 cfs Mar. 5, 1917 (gage height, 38.5 ft, from graph based on gage readings, at site 19.6 miles downstream at railroad bridge at Clinton, at datum 42.49 ft lower), from rating curve extended above 62,000 cfs.

Flood of Mar. 11, 1826, reached a stage of 43.5 ft (discharge, 130,000 cfs) at railroad bridge at Clinton, from reports by Tennessee Valley Authority. Flood of March 31, 1886, reached a stage of 41.3 ft, revised, (discharge, 113,000 cfs) at railroad bridge at Clinton. Flood of Feb. 24, 1862, equalled that of Mar. 31, 1886, from reports by Tennessee Valley Authority.

Remarks.—Flow regulated by Norris Lake.

Mean discharge, in cubic feet per second, 1957

Day	January	February	Day	January	February	Day	January	February
1-----	6,760	8,680	12-----	5,990	26,600	23-----	4,780	16,900
2-----	6,810	8,850	13-----	6,330	26,500	24-----	3,720	14,700
3-----	6,890	11,700	14-----	6,300	26,400	25-----	3,280	12,700
4-----	6,920	20,100	15-----	6,360	26,300	26-----	2,040	10,800
5-----	3,840	21,800	16-----	6,790	26,200	27-----	2,640	8,590
6-----	219	21,800	17-----	7,890	24,100	28-----	97	8,590
7-----	2,650	21,800	18-----	7,860	21,400	29-----	110	-----
8-----	6,120	21,800	19-----	7,830	21,300	30-----	2,300	-----
9-----	5,630	21,900	20-----	7,830	21,200	31-----	6,890	-----
10-----	5,640	21,900	21-----	7,500	21,100			
11-----	5,670	23,900	22-----	4,410	19,300			
Monthly mean discharge, in cubic feet per second-----							5,100	19,180

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957

Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge	Hour	Gage height	Dis-charge
Jan. 29			Jan. 31			Feb. 2		
12 p.m.---	1.32	110	12 m -----	5.00	6,890	12 m -----	5.71	8,850
			12 p.m.---	4.94	6,730	12 p.m.---	5.72	8,880
Jan. 30*			Feb. 1*			Feb. 3*		
6 a.m.---	1.31	103						
1 p.m.---	1.30	97.	1 a.m.---	4.95	6,760	1 p.m.---	5.74	8,940
2-----	3.50	3,410	2-----	5.65	8,680	2-----	7.08	13,000
3-----	3.58	3,580	12 m -----	5.67	8,730	6-----	7.15	13,200
7-----	3.57	3,560	12 p.m.---	5.70	8,820	8-----	8.45	17,200
8-----	5.05	7,020						
12 p.m.---	5.06	7,050						

Gage height, in feet, and discharge, in cubic feet per second, at indicated time, 1957—Continued

Hour	Gage height	Dis- charge	Hour	Gage height	Dis- charge	Hour	Gage height	Dis- charge
Feb. 3*—Con.			Feb. 11*			Feb. 19		
10 p.m.---	8.53	17,500	1 p.m.---	10.02	21,900	12 p.m.---	9.82	21,300
12 p.m.---	8.54	17,500	2-----	11.35	25,700			
			3-----	11.50	26,200	Feb. 20		
Feb. 4*			4-----	11.57	26,400			
			6-----	11.62	26,500	12 p.m.---	9.76	21,100
6:30 a.m.---	8.55	17,500	12 p.m.---	11.63	26,500			
7:30-----	9.80	21,200				Feb. 21		
8-----	9.15	19,300	Feb. 12					
9-----	9.82	21,300				12 p.m.---	9.76	21,100
2 p.m.---	10.03	21,900	1 a.m.---	11.65	26,600			
3:30-----	8.58	17,500	11-----	11.65	26,600	Feb. 22*		
5-----	9.60	20,600	12 m-----	11.64	26,600			
6-----	9.90	21,500	12 p.m.---	11.63	26,500	1 p.m.---	9.75	21,100
8-----	10.00	21,800				2-----	8.55	17,500
12 p.m.---	10.02	21,900	Feb. 13			3-----	8.42	17,100
						6-----	8.37	17,000
Feb. 5			12 p.m.---	11.59	26,400	12 p.m.---	8.35	16,900
12 m-----	10.01	21,800	Feb. 14					
12 p.m.---	10.00	21,800				Feb. 23*		
			12 p.m.---	11.58	26,400	3 a.m.---	8.35	16,900
Feb. 6						4-----	8.25	16,600
			Feb. 15			6-----	8.35	16,900
12 m-----	10.00	21,800				12 p.m.---	8.35	16,900
12 p.m.---	9.98	21,700	12 p.m.---	11.52	26,200			
						Feb. 24*		
Feb. 7			Feb. 16					
12 m-----	10.00	21,800	12 m-----	11.50	26,200	11 a.m.---	8.32	16,800
12 p.m.---	10.00	21,800	12 p.m.---	11.48	26,100	12 m-----	7.10	13,000
						2 p.m.---	7.00	12,700
Feb. 8			Feb. 17*			12 p.m.---	7.00	12,700
12 m-----	10.02	21,900						
12 p.m.---	10.00	21,800	1 p.m.---	11.46	26,000	Feb. 25		
			2-----	10.15	22,200	12 p.m.---	7.00	12,700
			4-----	9.93	21,600			
Feb. 9			6-----	9.90	21,500			
10 a.m.---	10.04	21,900	12 p.m.---	9.87	21,400			
12 p.m.---	10.04	21,900						
			Feb. 18					
Feb. 10			12 m-----	9.85	21,400			
12 p.m.---	10.05	21,900	12 p.m.---	9.83	21,300			

*Affected by regulation; daily means cannot be computed exactly from data shown.

146. COAL CREEK AT LAKE CITY, TENN.

[Crest-stage station]

Location.—Lat 36°13'14", long 84°09'27", on right bank at U.S. Highway 25W bridge at Lake City, Anderson County, 0.1 mile upstream from Right Fork, and 0.1 mile downstream from Louisville and Nashville Railroad bridge.

Drainage area.—24.5 sq mi (measured by Tennessee Valley Authority on 7½-minute planimetric maps, scale, 1:24,000).

Gage-height record.—Crest stages only.

Discharge record.—Peak discharges from rating curve defined by current-meter measurements to 3,600 cfs.

Maxima.—January-February 1957: Discharge, 2,580 cfs Jan. 31 (gage height, 12.02 ft).
June 1932 to April 1934, May 1954 to December 1956: Discharge, 3,400 cfs Mar. 19, 1933 (gage height, 13.0 ft).

The Tennessee Valley Authority estimated a discharge of 8,400 cfs for the flood of Mar. 23, 1929.

147. BUFFALO CREEK AT NORRIS, TENN.

[Crest-stage station]

Location.—Lat 36°11'05", long 84°03'41", on right bank at culvert on State Highway 71 (Norris Freeway), 1.0 mile southeast of Norris, Anderson County.

Drainage area.—9.45 sq mi (measured by Tennessee Valley Authority on 7½-minute planimetric maps, scale, 1:24,000).

Gage-height record.—Crest stages only.

Discharge record.—Peak discharges from rating curve extended above 610 cfs.

Maxima.—January-February 1957: Discharge, 1,130 cfs Jan. 31, (gage height, 9.03 ft).

August 1947 to January 1951, May 1954 to December 1956: Discharge, 757 cfs Feb. 13, 1948 (gage height, 7.91 ft).

148. 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 mile upstream from Walnut Street Bridge in Chattanooga, Hamilton County, and at mile 467.6.

Drainage area.—21,400 sq mi, approximately.

Gage-height record.—Water-stage recorder graph. Datum of gage is 621.12 ft above mean sea level, datum of 1929, supplementary adjustment of 1936.

Discharge record.—Stage-discharge relation defined by current-meter measurements.

Maxima.—January-February 1957: Discharge, 208,000 cfs Feb. 2; gage height, 34.22 ft (32.24 at Walnut Street) Feb. 2.

1874 to December 1956: Discharge, 410,000 cfs (gage height, 53.8 ft, at Walnut Street).

Stage known, 57.9 ft, at Walnut Street, Mar. 11, 1867 (discharge about 459,000 cfs).

Day	January	February	Day	January	February	Day	January	February
1 ----	44,300	191,000	12 ----	31,100	155,000	23 ----	29,100	83,400
2 ----	44,700	202,000	13 ----	28,200	141,000	24 ----	44,000	68,400
3 ----	44,900	199,000	14 ----	27,800	128,000	25 ----	44,400	59,000
4 ----	43,300	192,000	15 ----	35,400	124,000	26 ----	30,000	63,100
5 ----	31,000	192,000	16 ----	41,700	118,000	27 ----	32,400	67,600
6 ----	29,500	183,000	17 ----	43,300	115,000	28 ----	56,000	68,900
7 ----	28,900	177,000	18 ----	38,700	107,000	29 ----	111,000	-----
8 ----	34,900	175,000	19 ----	33,900	103,000	30 ----	123,000	-----
9 ----	38,400	178,000	20 ----	29,700	100,000	31 ----	138,000	-----
10 ----	37,100	176,000	21 ----	21,800	93,500			
11 ----	31,800	171,000	22 ----	28,400	86,600			
Monthly mean discharge, in cubic feet per second -----							44,410	132,800

INDEX

	Page		Page
A		Cumberland River at Cumberland	
Acknowledgments	A5	Falls, Ky	113
Antecedent conditions	1	Cumberland River at Pineville,	
		Ky	109
B		Cumberland River at Williamsburg,	
Barren River	38	Ky	112
Barren River at Bowling Green, Ky ..	104	Cumberland River basin ... 1, 14, 17,	105
Barren River basin	13	Cumberland River near Harlan, Ky ..	106
Barren River near Pageville, Ky	102	Cumberland River near Pineville,	
Bear Branch near Noble, Ky	75	Ky	109
Beaver Creek near Wallace, Va	146	Cumberland River near Rowena,	
Beaverdam Creek at Damascus, Va	137	Ky	125
Big Creek near Rogersville, Tenn	165	D	
Big Moccasin Creek near Gate City,		Dale Hollow Reservoir near Celina,	
Va	159	Tenn	129
Big Sandy River	3, 5, 8, 9, 38	Damage figures for the upper	
Big Sandy River at Louisa, Ky	69	Tennessee River basin	23
Big Sandy River basin	1, 8, 9, 51	Death toll in Kentucky	7
Blaine Creek at Yatesville, Ky	71	Dewey Reservoir near Van Lear,	
Bluestone River near Pipestem,		Ky	61
W. Va	44	Discharge hydrograph	11, 14, 18
Bluestone River near Spanishburg,		Dix River near Danville, Ky	91
W. Va	42	Doe River at Elizabethton, Tenn	149
Boone Lake at Spurgeon, Tenn	153	Drakes Creek near Alvaton, Ky	103
Buck Creek near Shopville, Ky	119	Duck River	19
Buffalo Creek at Norris, Tenn	191	E	
C		East Fork Obey River near	
Camp Creek near Camp Creek,		Jamestown, Tenn	125
W. Va	43	Elk River	19
Cane Branch near Parkers Lake, Ky ..	117	Elk River at Sutton, W. Va	47
Cedar Creek near Lebanon, Va	173	Explanation of data	26
Cherokee Lake near Jefferson City,		F	
Tenn	165	Flood damage	19
Clear Fork near Robbins, Tenn	121	Flood discharges, determination ..	25
Clinch River	3, 18	Flood frequencies	38
Clinch River above Tazewell, Tenn ..	182	Flood losses in the Green River	
Clinch River at Cedar Bluff, Va	171	basin	20
Clinch River at Cleveland, Va	174	Flood losses in the Kentucky River	
Clinch River at Richlands, Va	171	basin	20
Clinch River at Speers Ferry, Va	179	Flood losses in the Licking River	
Clinch River basin	18	basin	20
Clinch River below Norris Dam,		Floods	5
Tenn	189	Floods, general description	5
Clover Fork	15	Fort Patrick Henry Lake near	
Coal Creek at Lake City, Tenn	191	Kingsport, Tenn	153
Copper Creek near Gate City, Va	177	G	
Cumberland River .. 5, 15, 16, 17, 18, 22, 38		Goose Creek at Manchester, Ky	83
Cumberland River at Barboursville,			
Ky	111		
Cumberland River at Celina, Tenn	132		

	Page		Page
Green River-----	38	Licking River basin-----	10, 22, 73
Green River at Greensburg, Ky-----	99	Licking River near Salyersville,	
Green River at Munfordville, Ky-----	101	Ky-----	73
Green River basin-----	3, 13, 22, 97	Little Pigeon River-----	19
Green River near McKinney, Ky-----	98	Little Pigeon River above West Fork	
Green River near Mount Salem, Ky-----	99	Little Pigeon River at Sevier-	
Guest River at Coeburn, Va-----	176	ville, Tenn-----	134
Guyandot River at Branchland, W. Va-----	50	Little Pigeon River at Sevierville,	
Guyandot River at Man, W. Va-----	49	Tenn-----	134
Guyandot River basin-----	49	Little River at Wardell, Va-----	172
		Little River near Maryville, Tenn-----	168
		Little Sandy River basin-----	10, 71
		Little Sandy River near Grayson, Ky-----	71
H-----		M-----	
Helton Branch at Greenwood, Ky-----	118	McGills Creek near McKinney, Ky-----	97
Herrington Lake near Burgin, Ky-----	91	Middle Fork Holston River at	
Holston River-----	3	Groseclose, Va-----	140
Holston River at Surgoinsville, Tenn-----	162	Middle Fork Holston River at	
Holston River basin-----	18	Sevenmile Ford, Va-----	141
Holston River near Jefferson City,		Middle Fork Kentucky River-----	3, 5, 10
Tenn-----	166	Middle Fork Kentucky River at	
		Buckhorn, Ky-----	80
I-----		Middle Fork Kentucky River at	
Introduction-----	1	Tallega, Ky-----	81
Isohyetal map-----	6	Middle Fork Kentucky River basin-----	13
		Middle Fork Kentucky River near	
		Hyden, Ky-----	79
J-----		N-----	
Johns Creek near Meta, Ky-----	60	New River at Glenlyn, Va-----	42
Johns Creek near Van Lear, Ky-----	62	New River at New River, Tenn-----	119
		Norris Lake near Norris, Tenn-----	188
		North Fork Clinch River at Duffield,	
K-----		Va-----	180
Kanawha River basin-----	40	North Fork Holston River at Holston,	
Kentucky River-----	3, 5, 12, 38, 39	Va-----	158
Kentucky River at lock 2, at Lockport,		North Fork Holston River, near Gate	
Ky-----	95	City, Va-----	161
Kentucky River at lock 4, at		North Fork Holston River near	
Frankfort, Ky-----	93	Saltville, Va-----	157
Kentucky River at lock 6, near		North Fork Kentucky River-----	3, 10, 11
Salvisa, Ky-----	92	North Fork Kentucky River at	
Kentucky River at lock 8, near Camp		Hazard, Ky-----	74
Nelson, Ky-----	89	North Fork Kentucky River at	
Kentucky River at lock 10, near		Jackson, Ky-----	78
Winchester, Ky-----	88	North Fork Kentucky River at	
Kentucky River at lock 14, at		Whitesburg, Ky-----	73
Heidleberg, Ky-----	85	North Fork Kentucky River near	
Kentucky River basin-----	1, 10, 22, 73	Airedale, Ky-----	79
		North Fork Powell River at	
		Pennington Gap, Va-----	185
L-----		O-----	
Lake Cumberland-----	17	Obey River below Dale Hollow Dam,	
Lake Cumberland near Jamestown,		Tenn-----	130
Ky-----	124	Ohio River-----	22
Laurel River-----	3, 14, 17		
Laurel River at Corbin, Ky-----	115		
Levisa Fork-----	3, 8, 9		
Levisa Fork at Fishtrap, Ky-----	53		
Levisa Fork at Paintsville, Ky-----	64		
Levisa Fork at Pikeville, Ky-----	58		
Levisa Fork at Prestonsburg, Ky-----	59		
Levisa Fork near Grundy, Va-----	52		

	Page		Page
P		South Holston Lake near Bristol, Va., -Tenn.....	143
Paint Creek at Staffordsville, Ky.....	62	Stages and discharges at stream- gaging stations.....	26
Panther Creek near Panther, W. Va.....	66	Stillwater Creek at Stillwater, Ky....	87
Piney Creek at Raleigh, W. Va.....	45	Stony Creek at Fort Blackmore, Va....	177
Pitman Creek at Somerset, Ky.....	123	Straight Creek at Jensen, Ky.....	109
Poor Fork.....	3, 14, 15	Summary of flood stages and discharges.....	27
Poor Fork at Cumberland, Ky.....	105	T	
Potcamp Creek near Pound, Va.....	56		
Pound River.....	10		
Pound River at Pound, Va.....	56		
Pound River near Haysi, Va.....	56		
Powell River at Big Stone Gap, Va.....	183	Tellico River.....	18
Powell River near Arthur, Tenn.....	187	Tellico River at Tellico Plains, Tenn.....	169
Powell River near Jonesville, Va.....	185	Temperatures.....	1
Prater Creek at Vansant, Va.....	51	Tennessee River.....	5, 18, 19
R		Tennessee River at Chattanooga, Tenn.....	191
Rainfall.....	5	Tennessee River basin.....	1, 18, 134
Recurrence interval.....	39	Troublesome Creek at Noble, Ky.....	76
Red Bird River near Big Creek, Ky....	83	Tug Fork at Litwar, W. Va.....	65
Red River.....	38	Tug Fork near Kermit, W. Va.....	68
Red River at Clay City, Ky.....	87	Tygarts Creek.....	38
Red River near Hazel Green, Ky.....	86	Tygarts Creek basin.....	10, 72
Rockcastle River.....	17	Tygarts Creek near Greenup, Ky....	72
Rockcastle River at Billows, Ky.....	117	U	
Rolling Fork near Lebanon, Ky.....	97		
Russell Creek near Columbia, Ky.....	100		
Russell Fork.....	8	Upper Cumberland River.....	3
Russell Fork at Elkhorn City, Ky.....	58	Upper Licking River.....	38
Russell Fork at Haysi, Va.....	55	W	
S			
		Wabash River basin.....	22
Saline River basin.....	22	Walker Creek at Bane, Va.....	40
Salt River basin.....	13, 95	Watauga Lake near Elizabethton, Tenn.....	148
Salt River near Harrodsburg, Ky.....	95	Watauga River at Elizabethton, Tenn.....	151
Salt River near Van Buren, Ky.....	96	Watauga River below Wilbur Dam, Tenn.....	148
South Fork Cumberland River.....	17	Watauga River near Sugar Grove, N.C.....	147
South Fork Cumberland River near Stearns, Ky.....	122	West Bays Fork at Scottsville, Ky....	103
South Fork Holston River at Kings- port, Tenn.....	154	West Fork Little Pigeon River near Pigeon Forge, Tenn.....	134
South Fork Holston River at River- side, near Chilhowie, Va.....	136	West Fork Obey River near Alpine, Tenn.....	127
South Fork Holston River at Vestal, Va.	138	Wolf Creek near Narrows, Va.....	41
South Fork Holston River below South Holston Dam, Tenn.....	144	Wolf River.....	18
South Fork Kentucky River.....	3, 10	Wolf River near Byrdstown, Tenn....	128
South Fork Kentucky River at Booneville, Ky.....	83	Wood Creek near London, Ky.....	116
South Fork Kentucky River near Oneida, Ky.....	83	Y	
South Fork Little Barren River at Edmonton, Ky.....	101		
South Fork Powell River at Big Stone Gap, Va.....	184	Yellow Creek near Middlesboro, Ky.....	107