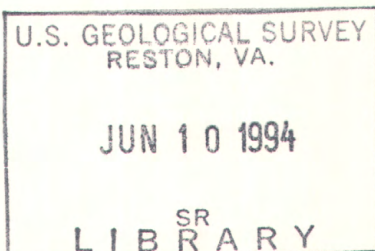
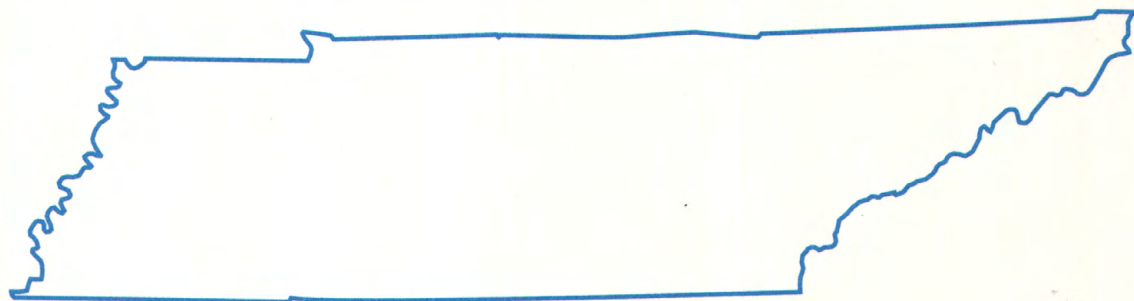


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Tennessee  
1993



# Water Resources Data Tennessee Water Year 1993



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TN-93-1  
Prepared in cooperation with the State of Tennessee  
and with other agencies



# CALENDAR FOR WATER YEAR 1993

1992

## OCTOBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
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## DECEMBER

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1993

## JANUARY

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31						

## FEBRUARY

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28						

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## JUNE

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## JULY

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## AUGUST

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## SEPTEMBER

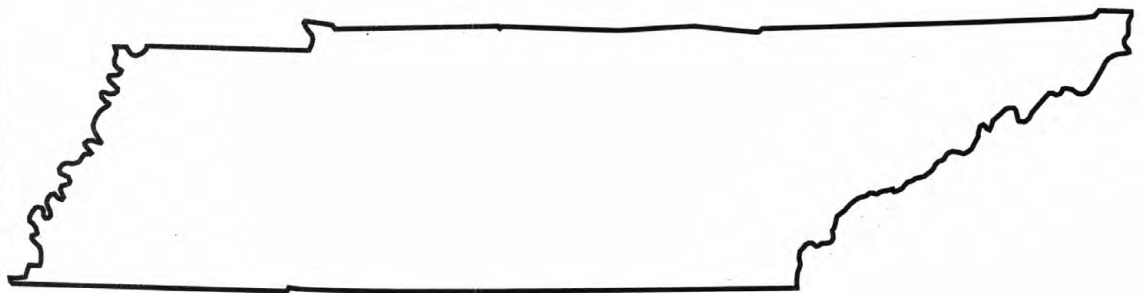
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26	27	28	29	30		





# Water Resources Data Tennessee Water Year 1993

by D.F. Flohr, F.D. Edwards, J.G. Lewis, and R.A. Orr



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT TN-93-1  
Prepared in cooperation with the State of Tennessee  
and with other agencies



**U.S. DEPARTMENT OF THE INTERIOR**

**BRUCE BABBITT, SECRETARY**

**U.S. GEOLOGICAL SURVEY**

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District Chief, Water Resources Division  
U.S. Geological Survey  
810 Broadway, Suite 500  
Nashville, Tennessee 37203**

**1994**



## PREFACE

This volume of the annual hydrologic data report of Tennessee is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and water quality provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines. Most of the data were collected, computed, and processed from the subdistrict offices under the supervision of the following subdistrict chiefs:

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W. Harry Doyle, Jr., Memphis  
Jerry F. Lowery, Nashville

The data were collected, computed, and processed by the following personnel:

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This report was prepared in cooperation with the State of Tennessee and with other agencies under the general supervision of Jess D. Weaver, Data Management Section Chief, and Harold C. Mattraw, Jr., District Chief, Tennessee.



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17. Document Analysis a. Descriptors  <p>*Tennessee, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment analyses, Water temperatures, Sampling sites, Water levels, Water analyses.</p>			
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# WATER RESOURCES DATA - TENNESSEE, 1993

## INTRODUCTION

The Water Resources Division of the U.S. Geological Survey (USGS), in cooperation with State, local, and Federal agencies, obtains a large amount of data pertaining to the water resources of Tennessee each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the USGS, the data are published annually in this report series entitled "Water Resources Data - Tennessee."

This report consists of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs; and water levels and water quality of ground-water wells. This volume contains discharge records for 77 gaging stations; stage only at 1 gaging station; stage and contents at 27 lakes and reservoirs; water quality for 20 stations, and 12 wells; and water levels at 30 observation wells. Also included are data for 96 crest-stage partial-record stations. Locations of these sites are shown on figures 4 through 7. Additional water data were collected at various sites not involved in the systematic data-collection program and are published as miscellaneous measurements and miscellaneous analyses or as seepage investigations.

This series of annual reports for Tennessee began with the 1961 water year with a report that contained only data relating to the quantities of surface water. Water-quality records for water years 1964 through 1974 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels.

Prior to introduction of this series and for several years concurrent with it, water-resources data for Tennessee were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States." For the 1961 through 1970 years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Water of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from the Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225.

Publications similar to this report are published annually by the USGS for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report TN-93-1." For archiving and general distribution, the reports for the 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161. Beginning with the 1990 water year, all water-data reports will also be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on the back of the title page or by telephone (615) 736-5424. A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

**WATER RESOURCES DATA - TENNESSEE, 1993****COOPERATION**

The USGS and agencies of the State of Tennessee have had cooperative agreements for the systematic collection of streamflow records since 1918, for ground-water levels since 1946, and for water-quality records since 1960. Organizations that assisted in collecting data contained in this report through cooperative agreement with the Survey are:

Tennessee Department of Environment and Conservation  
Tennessee Department of Transportation  
Tennessee Wildlife Resources Agency  
Upper Duck River Development Agency  
Harpeth Valley Utility District  
Cities, Towns, or Counties;  
Alcoa  
Camden  
Columbia  
Crossville  
Dickson  
Franklin  
Harriman  
Johnson City  
Knoxville  
Memphis  
Metropolitan Government of Nashville and Davidson County  
Murfreesboro  
Red Boiling Springs  
Rogersville  
Sevierville  
Tullahoma  
Union City  
Wartrace  
Shelby County

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army, Nashville District, in collecting records for 5 gaging stations and 4 water-quality stations, by the Tennessee Valley Authority for 17 gaging stations, and by the U.S. Department of Energy for 14 gaging stations on Oak Ridge Reservation, and by the Department of the Air Force, Arnold Engineering Development Center for 3 water-quality stations. All data are published in this report.

Organizations that supplied data are acknowledged in station descriptions.

## SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

The State of Tennessee benefits from an abundance of streams, rivers, and lakes. The Tennessee and Cumberland are the largest rivers in the State, excluding the Mississippi River which flows along Tennessee's western boundary. The main stems of the Tennessee and Cumberland Rivers are highly regulated with a complex system of dams and reservoirs used for navigation, flood control, recreation, and water supply. Natural flow conditions occur only in tributaries to these rivers, or in other streams draining smaller basins throughout the State. Runoff data from these natural-flow streams can be used to describe the hydrologic conditions of the State for the 1993 water year.

A comparison of the mean discharges for the 1993 water year with the period-of-record mean at unregulated streams can be used to measure hydrologic conditions. The data for 1993 show that mean discharges at unregulated streams east of the Tennessee River (Kentucky Lake) ranged from 68 to 125 percent of the period-of-record mean. However, in West Tennessee mean discharges for 1993 ranged from 61 to 87 percent of the period-of-record means. This comparison indicates that runoff during the water year was about average in East Tennessee and mostly below average on streams in West Tennessee.

No major floods occurred in Tennessee during the 1993 water year, however, minor flooding occurred over much of the State on March 23-25, 1993. The highest flows occurred in streams draining the eastern slopes of the Cumberland Plateau where peak flows on the Sequatchie River near Whitwell and the Emory River at Oakdale had recurrence intervals of slightly greater than 5- and 10-years, respectively. Peak flows at other locations in the State were generally less than the 2-year recurrence interval for this storm. Minor localized flooding, primarily in Middle Tennessee, occurred from a storm on May 4, 1993. In West Tennessee, minor flooding resulted from a storm occurring on April 9, 1993. Both of these storms produced peak discharges generally less than the 2-year recurrence interval.

Ground Water

Ground-water levels at key aquifers throughout Tennessee were near normal during the 1993 water year. Ground-water levels are recorded continuously at a series of observation wells across the State (fig. 1). Water levels at well Ld:F-4 (Lauderdale County); well Hm:O-15 (Hamilton County); and well Pm:C-1 (Putnam County) are representative of condition in West, Middle, and East Tennessee and were near normal during most of the water year.

Water levels recorded from wells throughout Middle and East Tennessee generally respond faster and exhibit larger fluctuations than wells drilled into the sand and gravel aquifers of West Tennessee. Observation wells in Shelby County show that ground water levels are strongly affected by ground water withdrawals by the City of Memphis and surrounding communities. At well Sh:Q-1 (fig. 2), near downtown Memphis, water levels declined steadily since 1972, although a more stable rate of decline began in 1988. The decline in ground water levels in the Memphis area are not indicative of a reduction in the available ground-water supplies, but the response of the aquifer to additional withdrawals. Hydrographs showing lowest daily water levels for each of the continuous recording observation wells are included in the body of this report.



## WATER RESOURCES DATA - TENNESSEE, 1993

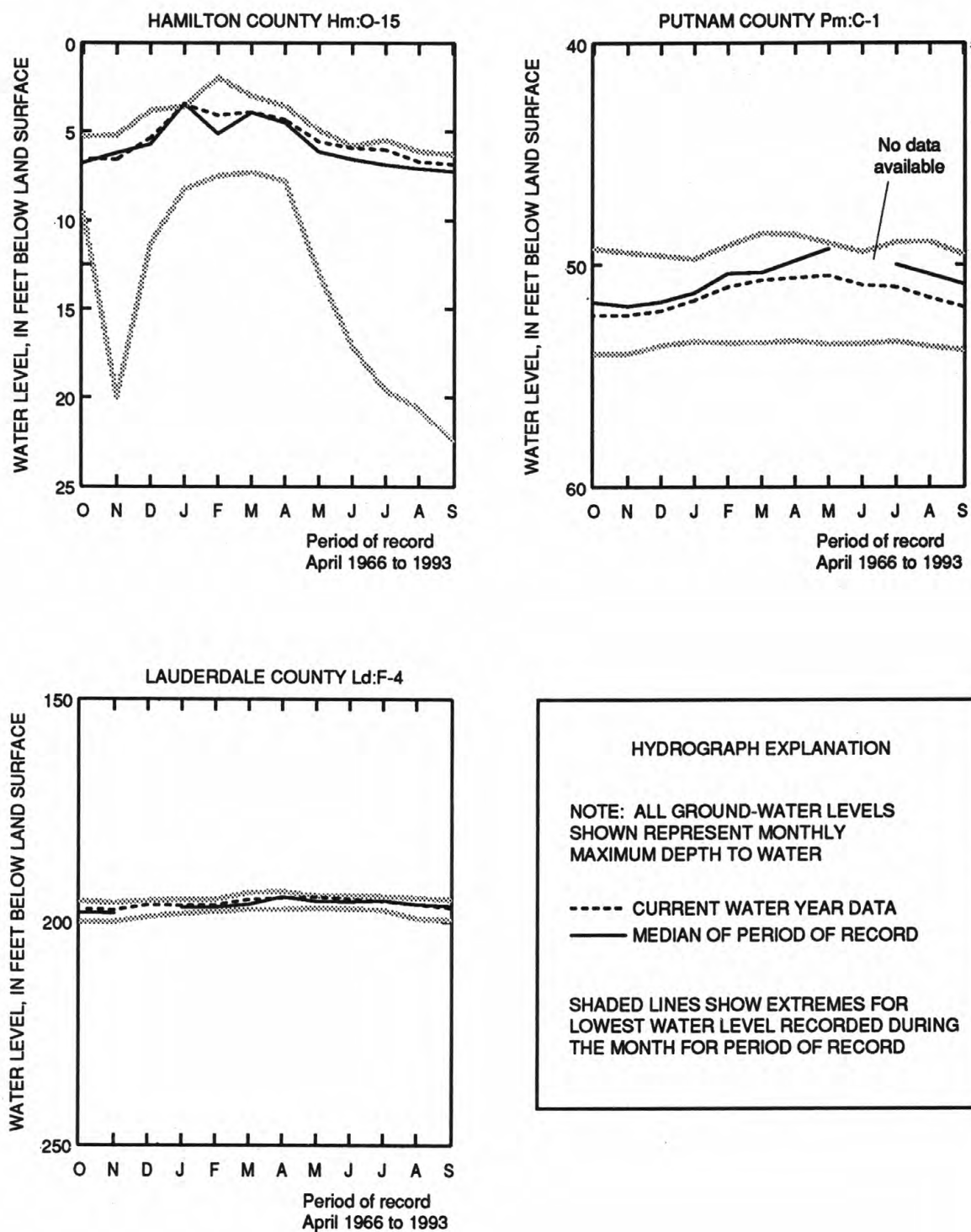
### Water Quality

Water-quality data were collected at 20 surface-water sites during the 1993 water year. Six of these sites are part of the U.S. Geological Survey's National Stream Quality Accounting Network (NASQAN), where chemical, physical, and bacteriological determinations are made quarterly or bimonthly. These six stations are located on the Cumberland, Holston, Clinch, Tennessee, Obion, and Hatchie Rivers. Data were also collected at two additional stations that are a part of the national Hydrologic Benchmark Network (HBN). Basins gaged as part of this network are relatively undisturbed by the activities of man. The HBN sites are located on the Buffalo and Little Rivers. Other surface-water quality activities in Tennessee included:

- o Operation of four continuous monitors to measure temperature, dissolved oxygen, pH, and specific conductance in the Cumberland River Basin in support of the U.S. Army Corps of Engineers, Nashville District operations.
- o Operation of three continuous monitors to measure temperature and pH in support of the Department of the Air Force, Arnold Engineering Development Center
- o Operation of a continuous monitor to measure temperature, dissolved oxygen, pH, and specific conductance in the West Fork Stones River in support of a water resources program for the City of Murfreesboro, Tennessee.
- o Operation of a continuous monitor to measure temperature and dissolved oxygen of the Duck River in support of a water resources program with the Upper Duck River Development Agency.
- o Determination of water quality of Carter's Creek in Maury County in support of a water resources study in that area.

The data from these networks did not identify any significant water-quality problems. Sanitary conditions (bacteria concentrations) at the stations were generally within the maximum allowable standards for human contact and recreation. There were no indications of toxic organics or inorganic compounds.

## WATER RESOURCES DATA FOR TENNESSEE, 1993



**Figure 1.** Ground-water levels for the 1993 water year compared to the maximum, minimum, and median water levels for the period of record.

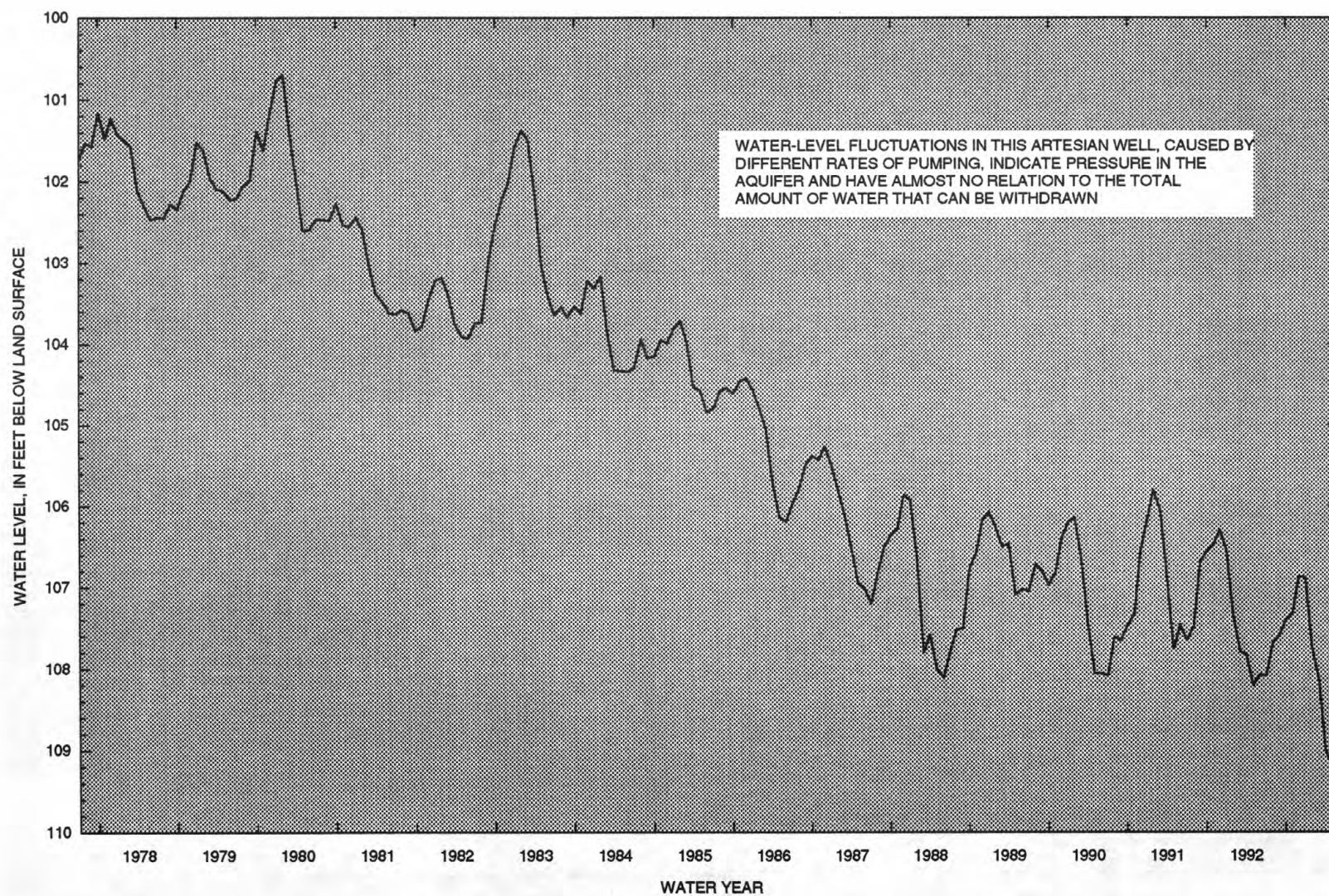


Figure 2. Hydrograph of well Sh:Q-1 in Shelby County showing long-term decline in water level.



### SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the USGS to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

### EXPLANATION OF RECORDS

The surface-water and ground-water records published in this report are for the 1993 water year that began October 1, 1992, and ended September 30, 1993. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figures 4 through 7. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

#### Station Identification Numbers

Each data station, whether streamsite or well, in this report is assigned a unique identification number. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the USGS to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for surface-water stations and the "latitude-longitude" system is used for wells.

#### Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

## WATER RESOURCES DATA - TENNESSEE, 1993

Each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete number for each station such as 03540500...., which appears just to the left of the station name, includes the 2-digit part number "03" plus the multi-digit downstream order number "540500...." This downstream numbering system is used in most cases; however, in some cases latitude and longitude numbers are assigned to hydrologic stations and partial-record stations as a means of identification (See Numbering System for Wells).

### Numbering system for wells

Downstream order station numbers are not assigned to wells. The well numbering system of the USGS is based on the grid system of latitude and longitude. The system provides the geographic location of the well and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells within a 1-second grid.

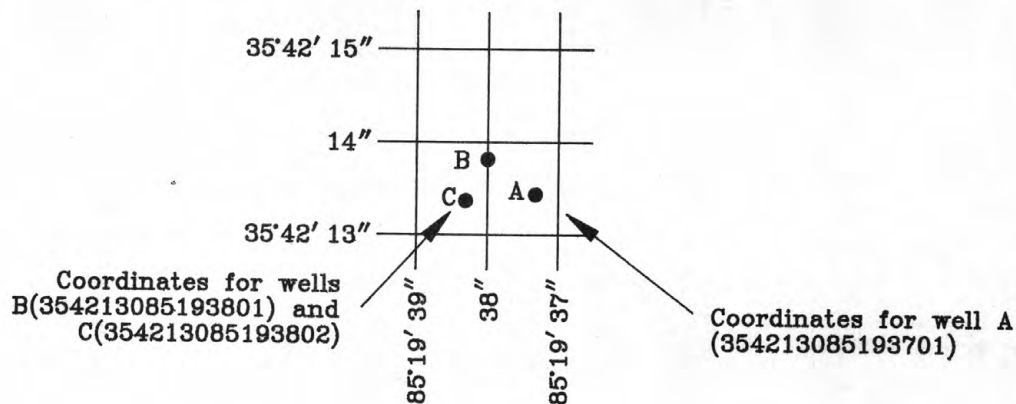


Figure 3.--System for numbering wells (latitude and longitude).

### Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report.

## Data Collection and Computation

The data obtained at a complete-record gaging station on a stream consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relation between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relation between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the USGS. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow-over-dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed from gage heights and rating tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes of the personnel making the measurements are used in applying the gage heights to the rating tables. The shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and comparable records of discharge for other stations in the same or nearby basins.

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

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed. If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."



## WATER RESOURCES DATA - TENNESSEE, 1993

## Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration.

Station manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

**LOCATION.**--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileage is that determined and used by the USGS, Tennessee Valley Authority, U.S. Army Corps of Engineers, or other agencies using methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council.

**DRAINAGE AREA.**--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

**PERIOD OF RECORD.**--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one whose location was such that records from it can reasonably be considered equivalent with records from the present station.

**REVISED RECORDS.**--Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

**GAGE.**--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see "Definition of terms"), and a condensed history of the types, locations, and datums of previous gages are given under this heading.



REMARKS.--All periods of estimated daily discharge will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a REMARKS paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent times. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the USGS.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District Office (address given on the back of the title page of this report) to determine if the published records were ever revised after the station was discontinued. Of course, if the data for a discontinued station were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, AND EXTREMES FOR CURRENT YEAR have been deleted and the information contained in these paragraphs, except for the listing of secondary instantaneous peak discharges in the EXTREMES FOR CURRENT YEAR paragraph, is now presented in the tabular summaries following the discharge table or in the REMARKS paragraph, as appropriate. No changes have been made to the data presentations of lake contents.

#### Data table of daily mean values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the average flow in cubic feet per second for the month; the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum line (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS \_\_\_\_ - \_\_\_\_, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar water year and for a designated period, as appropriate. The designated period selected, "WATER YEARS \_\_\_\_ - \_\_\_\_, " will consist of all the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (See line headings below), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. When the designated period is not the same as the station period of record published in the manuscript, values and dates of occurrence for daily and instantaneous extremes outside the designated period will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

**ANNUAL TOTAL.**--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnote.

**ANNUAL MEAN.**--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes. At least 5 complete years of record must be available before this statistic is published for the designated period.

**HIGHEST ANNUAL MEAN.**--The maximum annual mean discharge occurring for the designated period.

**LOWEST ANNUAL MEAN.**--The minimum annual mean discharge occurring for the designated period.

**HIGHEST DAILY MEAN.**--The maximum daily mean discharge for the year or for the designated period.

**LOWEST DAILY MEAN.**--The minimum daily mean discharge for the year or for the designated period.

**ANNUAL 7-DAY MINIMUM.**--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

**INSTANTANEOUS PEAK FLOW.**--The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of title page of this report.)

**INSTANTANEOUS PEAK STAGE.**--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

**INSTANTANEOUS LOW FLOW.**--The minimum instantaneous discharge occurring for the water year or for the designated period.

**ANNUAL RUNOFF (AC-FT).**--Indicates the depth, in acre-feet, to which the drainage area would be covered if all the runoff for the year were uniformly distributed on it.

**ANNUAL RUNOFF (CFSM).**--Indicates the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area for the year.

**ANNUAL RUNOFF (INCHES).**--Indicates the depth to which the drainage area would be covered if all the runoff for the year were uniformly distributed on it.

**10 PERCENT EXCEEDS.**--The discharge that is exceeded by 10 percent of the flow for the designated period.

**50 PERCENT EXCEEDS.**--The discharge that is exceeded by 50 percent of the flow for the designated period.

**90 PERCENT EXCEEDS.**--The discharge that is exceeded by 90 percent of the flow for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

#### Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

#### Accuracy of the Records

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

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft<sup>3</sup>/s; to the nearest tenth between 1.0 and 10 ft<sup>3</sup>/s; to whole numbers between 10 and 1,000 ft<sup>3</sup>/s; and to 3 significant figures to more than 1,000 ft<sup>3</sup>/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square and of runoff, in inches, are not published unless satisfactory adjustments



can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

#### Other Data Available

Records of discharge, not published by the USGS, are collected in Tennessee at several sites by the U.S. Army Corps of Engineers and Tennessee Valley Authority. The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 22092, maintains an index of these sites as well as an index of records of discharge collected by other agencies but not published by the USGS. Information on records at specific sites can be obtained from that office upon request.

Information used in the preparation of the records in this publication, such as discharge-measurements notes, gage-height records, temperature measurements, and rating tables are on file in the Tennessee District office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the District office.

#### Records of Surface-Water Quality

Records of surface-water quality ordinarily are collected at or near stream-gaging stations. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

#### Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

#### Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

#### On-Site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS District Office.



One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (NASQAN) (see definitions) are obtained from at least several verticals.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter ( $\mu\text{g/L}$ ) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Present data above the  $\mu\text{g/L}$  level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the USGS will begin using new trace-element protocols in the near future.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the USGS District Office whose address is given on the back of the title page of this report.

#### Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, maximum, minimum, and mean temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office and are also published in this report.

#### Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar water discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size

distribution of the suspended sediment and bed material are included for some stations.

#### Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the USGS laboratories in Arvada, Colo. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the USGS laboratories are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

#### Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor, temperature recorder, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the USGS's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Users of USGS water-quality data should be aware of this update procedure because corrections are not documented in the State data-report series.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

## Remark Codes

The following remark codes may appear with the water-quality data in this report:

PRINTED OUTPUTREMARK

E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organisms count less than 0.5 percent (organisms may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

Records of Ground-Water Levels

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

## Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

Tables of water-level data are presented by counties arranged in alphabetical order. Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs.

Water-level records are obtained from direct measurements with a steel tape or from the graph or punched tape of a water-stage recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.



## Data Presentation

Each well record consists of three parts, the station description, the data table of water levels observed during the current water year, and a graph of the water levels for the current water year or other selected period. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings of the well description.

**LOCATION.**--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); the hydrologic-unit number; the distance and direction from a geographic point of reference; and the owner's name.

**AQUIFER.**--This entry designates by name (if a name exists) and geologic age the aquifer(s) open to the well.

**WELL CHARACTERISTICS.**--This entry describes the well in terms of depth, diameter, casing depth and/or screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

**INSTRUMENTATION.**--This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on weekly, monthly, or some other frequency of measurement.

**DATUM.**--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) National Geodetic Vertical Datum of 1929 (NGVD of 1929); it is reported with a precision depending on the method of determination.

**REMARKS.**--This entry describes factors that may influence the water level in a well or the measurement of the water level. It should identify wells that are also water-quality observation wells, and may be used to acknowledge the assistance of local (non-Survey) observers.

**PERIOD OF RECORD.**--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the USGS and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the USGS, may be noted.

**EXTREMES FOR PERIOD OF RECORD.**--This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum and all taped measurements of water level are listed. For wells equipped with recorders, only abbreviated tables are published; generally, only water-level lows are listed for every fifth day and at the end of the month (eom). The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the abbreviated table. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level. A hydrograph for a selected period of record follows each water-level table.

Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that for most sampling sites they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes slowly; therefore, for most general purposes one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.



### Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

Most methods for collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals listed on a following page. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. The wells sampled were pumped long enough to assure that the water collected came directly from the aquifer and had not stood in the well casing where it would have been exposed to the atmosphere and to the material comprising the casings.

### Data Presentation

The records of ground-water quality are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

## EXPLANATION OF PRECIPITATION-QUALITY RECORDS

### Collection of the Data

The precipitation-quality records in this report are for one site operated by the USGS in the National Trends Network. Field measurements of pH and specific conductance of weekly composite precipitation samples and daily precipitation quantity are made. Other chemical analyses for all National Trends Network sites are performed by the Central Analytical Laboratory of the Illinois Water Survey. A numerical agency code (17003) has been assigned to the Illinois Water-Survey for data storage purposes.

## ACCESS TO WATSTORE DATA

The USGS is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. As part of the USGS's program of releasing water data to the public, a large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. The National WATer Data STORage and REtrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the USGS and to facilitate release of the data to the public. A variety of useful products, ranging from data tables to complex statistical analyses such as Log Pearson Type III, can be produced using WATSTORE. The system resides on the central computer facilities of the USGS at its National Center in Reston, Virginia, and consists of related files and data bases.

- \* Station Header File - Contains descriptive information on more than 440,000 sites throughout the United States and its territories where the USGS collects or has collected data.
- \* Daily Values File - Contains more than 220 million daily values of stream flows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.
- \* Peak Flow File - Contains approximately 500,000 maximum (peak) streamflow and gage-height values at surface-water sites.
- \* Water-Quality File - Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, and radio-chemical characteristics of both surface and ground water.
- \* Ground-Water Site Inventory Data Base - Contains inventory data for more than 900,000 wells, springs, and other sources

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of ground water. The data includes site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

In 1976, the USGS opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requestor will be expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey  
National Water Data Exchange  
421 USGS National Center  
Reston, Virginia 22092

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5¼ inch floppy disk; and, as noted in the introduction, on CD-ROM discs. Beginning with the 1990 water year, all water-data reports will also be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division's District offices. (See address on the back of the title page.) A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

## DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at  $44.5^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$  on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at  $35^{\circ}\text{C} \pm 1.0^{\circ}\text{C}$  on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Bottom material in tables of data, refers to the chemical analysis of unconsolidated matter described as bed material and specifically includes anthropogenic matter in addition to natural solid material.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

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

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

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream.

Cubic feet per second per square mile [ $(\text{ft}^3/\text{s})/\text{mi}^2$ ] (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second ( $\text{ft}^3/\text{s}$ ) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic foot per second-day [ $(\text{ft}^3/\text{s})/\text{d}$ ] is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,445 cubic meters.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1 - March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

Dissolved is that material in a representative water sample which passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ( $\text{CaCO}_3$ ).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each well.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram ( $\mu\text{g/g}$ ) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent sorbed per unit mass (gram) of sediment.

Micrograms per liter ( $\mu\text{g/L}$ ,  $\mu\text{g/L}$ ) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter ( $\text{MG/L}$ ,  $\text{mg/L}$ ) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in  $\text{mg/L}$  and is based on the mass of dry sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream Quality Accounting Network is a nationwide data-collection network designed by the USGS to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Parameter Code is a 5-digit number used in the USGS computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

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

Particle size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).



Particle-size classification used in this report agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

<u>Classification</u>	<u>Size (mm)</u>		<u>Method of analysis</u>
Clay .....	0.00024	- 0.004	Sedimentation
Silt .....	.004	- .062	Sedimentation
Sand .....	.062	- 2.0	Sedimentation or sieve
Gravel .....	2.0	- 64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population in terms of types, numbers, mass, or volume.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth ( $1 \times 10^{-12}$ ) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields  $3.7 \times 10^{10}$  radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

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

Sea level in this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge ( $\text{ft}^3/\text{s}$ ) x 0.0027.

Suspended-sediment load is the quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the total quantity of sediment (suspended-sediment and bed-load) as measured by dry weight or volume, that passes a section during a specified period.

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions with soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and the volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Thermograph is an instrument that continuously records variations of water temperature on a chart. The more general term "temperature recorder" is the term used in the table headings and refers to any instrument that records water temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY) is the quantity of substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended mixture and that the analytical method determined all of the constituent in the sample.)

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load is the quantity of any individual constituent, as measured by dry mass or volume that passes through a section during a specified period. It is computed by multiplying the total stream discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Water year in USGS reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1980, is called the "1980 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water Resources Data" in reports published prior to 1976).

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1976.

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

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

- 1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.
- 2-D1. *Application of surface geophysics to ground-water investigations*, by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.
- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.
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- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.
- 3-A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.
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- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A7, 1968. 28 pages.
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- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.
- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by moving-boat method*, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing*, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.



- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, N. Yotsukura, G.W. Parker, and L.L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.
- 3-A19. *Levels of streamflow gaging stations*, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 27 pages.
- 3-B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G.D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by Richard L. Cooley and Richard L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.
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- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.
- 3-B7. *Analytical solutions for one-, two, and three-dimensional solute transport in ground-water systems with uniform flow*, by E. J. Wexler: USGS--TWRI Box 3, Chapter B7. 1992. 90 pages.
- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by H.P. Guy and V.W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.
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- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.
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- 6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water flow problems, Part 1: Model Description and User's Manual*, by L. J. Torak: USGS--TWRI Book 6, Chapter A2. 1991. 68 pages.
- 6-A4. *A modular finite-element model (MODFE) for area and axisymmetric ground-water flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R. L. Cooley: USGS--TWRI Book 6, Chapter A4. 1992. 109 pages.
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- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.



- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.
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- 8-A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.
- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

## Cumberland River Basin

Map number	Station number	Station name	Page	Map number	Station number	Station name	Page
1	03409000	WHITE OAK CREEK NEAR SUNBRIGHT	295	35	03431062	MILL CREEK TRIB AT GLENROSE AVENUE AT WOODBINE	299
2	03414500	EAST FOR OBEY RIVER NEAR JAMESTOWN	295,321	36	03431120	WEST FORK BROWNS CREEK AT GENERAL BATES DRIVE AT NASHVILLE	299
3	03416000	WOLF RIVER NEAR BYRDSTOWN	295,321	37	03431240	EAST FORK BROWNS CREEK AT BAIRD-WARD PRINTING COMPANY AT NASHVILLE	299
4	03417500	CUMBERLAND RIVER AT CELINA	30-34	38	03431340	BROWNS CREEK AT FACTORY STREET AT NASHVILLE	299
5	03418070	ROARING RIVER ABOVE GAINESBORO	296,321	39	03431490	PAGES BRANCH AT AVONDALE	299
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8	03421000	COLLINS RIVER NEAR MCMINNVILLE	44-45,322	42	03431573	EWING CREEK AT RICHMOND HILL DRIVE AT PARKWOOD	300
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12	03423400	TAYLORS CREEK NEAR CASSVILLE	50-51,322	46	03431677	SUGARTREE CREEK AT YMCA ACCESS ROAD AT GREEN HILLS	300
13	03424730	SMITH FORK AT TEMPERANCE HALL	52-53,323	47	03431679	SUGARTREE CREEK AT ABBOTT MARTIN ROAD AT GREEN HILLS	301
14	03424900	MULHERRIN CREEK NEAR GORDONSVILLE	296	48	03431795	BEDNIGO BRANCH TRIB AT CHESTNUT GROVE	301
15	03425000	CUMBERLAND RIVER AT CARTHAGE (NASQAN)	54-55	49	03431800	SYCAMORE CREEK NEAR ASHLAND CITY	324
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17	03425357	DARWIN BRANCH TRIB AT HARTSVILLE	296	51	03432400	HARPETH RIVER BELOW FRANKLIN	90,324
18	03425365	SECOND CREEK NEAR WALNUT GROVE	296	52	03432470	MURFREES FORK ABOVE BURWOOD	301
19	03426310	CUMBERLAND RIVER AT OLD HICKORY DAM	56-64	53	03432925	LITTLE HARPETH RIVER AT GRANNY WHITE PIKE	301
20	03426800	EAST FORK STONES RIVER AT WOODBURY	297	54	03433500	HARPETH RIVER NEAR BELLEVUE	92-94,325
21	03426874	BRAWLEYS FORK BELOW BRADYVILLE	297	55	03434500	HARPETH RIVER NEAR KINGSTON SPRINGS	96-97,325
22	034269424	REED CREEK NEAR BRADYVILLE	297	56	03434590	JONES CREEK NEAR BURNS	301
23	03427500	EAST FORK STONES RIVER NEAR LASCASSAS	323	57	03434616	HALL BRANCH NEAR CHARLOTTE	302
24	03427690	BUSHMANN CREEK AT PITTS LANE FORD NEAR COMPTON	297	58	03435000	CUMBERLAND RIVER BELOW CHEATHAM DAM	325
25	03428043	LYTLE CREEK SANBYRN DRIVE AT MURFREESBORO	297	59	034350021	BARTONS CREEK NEAR CUMBERLAND FURNACE	302
26	03428200	WEST FORK STONES RIVER AT MURFREESBORO	66-73	60	0343500213	BARTONS CREEK TRIB NEAR STATON	302
27	03428500	WEST FORK STONES RIVER NEAR SMYRNA	298,323	61	034351113	HONEY RUN CREEK BELOW CROSS PLAINS	302
28	03430118	MCCRORY CREEK AT IRONWOOD DRIVE AT DONELSON	298	62	03435770	SULPHUR FORK RED RIVER ABOVE SPRINGFIELD	302
29	03430147	STONERS CREEK NEAR HERMITAGE	74-76,323	63	03435930	SPRING CREEK TRIB NEAR CEDAR HILL	302
30	03430400	MILL CREEK AT NOLENSVILLE	298	64	03436100	RED RIVER AT PORT ROYAL	302,325
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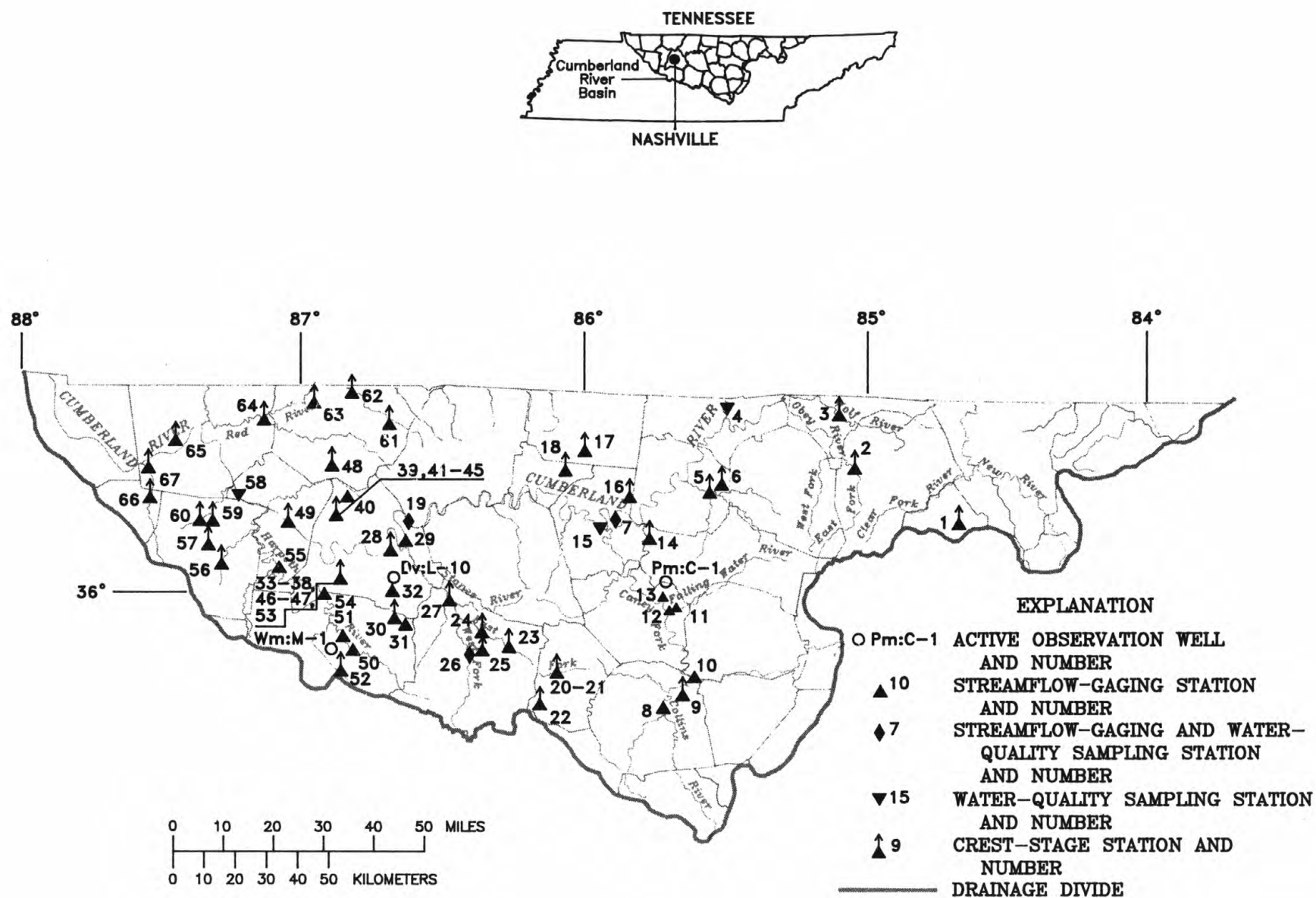


Figure 4.—Location of gaging sites in the Cumberland River Basin.

## CUMBERLAND RIVER BASIN

03417500 CUMBERLAND RIVER AT CELINA, TN

## WATER-QUALITY RECORDS

LOCATION.--Lat 36°33'15", long 85°30'52", Clay County, Hydrologic Unit 05130106, on right bank at State Highway 52 bridge, 0.5 mi northwest of courthouse in Celina, 600 ft downstream from Obey River, and at mile 380.8.

DRAINAGE AREA.--7,307 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1991 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1991 to current year.

pH: November 1991 to current year.

WATER TEMPERATURE: November 1991 to current year.

DISSOLVED OXYGEN: October 1992 to September 1993.

INSTRUMENTATION.--Water-quality monitor since November 1991.

REMARKS.--Flow regulated by Lake Cumberland (station 03413500) and Dale Hollow Lake (station 03416500). Interruptions in the record were due to instrument malfunctions.

## EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 280 microsiemens, Aug. 29, 1992; minimum, 159 microsiemens, July 11, 1993.

pH: Maximum, 8.5 units, Mar. 3, 4, 6, 1992; minimum, 6.2 units, Sept. 14, 1993.

WATER TEMPERATURE: Maximum, 17.7°C, May 18, 19, 1993; minimum, 4.7°C, Feb. 19, 1993.

DISSOLVED OXYGEN: Maximum, 12.8 mg/L, May 16, 1993; minimum, 7.2 mg/L, Oct. 9, 1992, Nov. 5, 1992..

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 233 microsiemens, Dec. 26; minimum, 159 microsiemens, July 11.

pH: Maximum, 8.2 units, June 14, 15; minimum, 6.2 units, Sept 14.

WATER TEMPERATURE: Maximum, 17.7°C, May 18, 19; minimum, 4.7°C, Feb. 19.

DISSOLVED OXYGEN: Maximum, 12.8 mg/L, May 16; minimum, 7.2 mg/L, Oct. 9.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM @ 25 DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	204	200	202	196	192	194	208	208	208	226	215	221
2	204	200	203	211	199	203	208	208	208	226	215	220
3	208	204	206	216	206	212	208	204	208	229	219	224
4	208	204	206	216	211	214	208	204	206	229	218	225
5	208	203	205	215	210	211	208	208	208	221	201	213
6	207	203	204	214	205	208	212	208	209	213	201	206
7	203	199	201	216	211	215	212	208	208	217	209	212
8	203	199	200	210	200	206	208	204	205	216	212	213
9	199	199	199	204	195	201	208	204	207	219	212	216
10	203	199	199	214	199	205	220	208	212	222	215	219
11	203	199	202	227	212	217	220	220	220	224	218	219
12	207	203	203	215	195	205	220	220	220	224	220	222
13	207	199	201	208	195	200	224	220	221	224	220	223
14	199	199	199	228	210	220	224	216	218	223	223	223
15	199	199	199	222	217	219	216	212	213	223	219	222
16	199	199	199	223	211	218	213	208	211	223	219	222
17	199	198	199	210	203	204	222	209	216	223	223	223
18	198	198	198	208	204	206	225	216	221	223	219	221
19	202	198	198	212	208	209	223	215	218	222	218	218
20	198	198	198	212	208	210	229	223	226	218	218	218
21	198	198	198	208	208	208	228	216	222	218	218	218
22	198	198	198	212	208	208	227	216	219	222	218	219
23	198	183	194	220	212	216	223	215	219	222	218	219
24	187	180	183	216	212	213	223	210	217	221	221	221
25	194	184	189	216	216	216	218	210	215	221	221	221
26	200	194	197	216	212	215	233	218	225	221	217	218
27	199	194	196	216	212	213	222	213	218	217	217	217
28	198	193	194	220	216	216	224	217	222	217	212	215
29	197	191	194	216	208	212	232	221	227	216	212	213
30	191	190	191	208	208	208	231	223	228	216	212	213
31	193	189	191	---	---	---	231	226	231	216	212	214
MONTH	208	180	198	228	192	210	233	204	216	229	201	218



## CUMBERLAND RIVER BASIN

03417500 CUMBERLAND RIVER AT CELINA, TN--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM @ 25 DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	219	215	216	216	215	215	194	186	190	187	183	184
2	219	211	213	215	203	211	185	176	180	183	183	183
3	211	211	211	203	199	201	176	173	174	183	183	183
4	211	211	211	206	195	201	174	174	174	187	183	186
5	211	210	210	214	206	211	177	174	175	191	187	190
6	210	210	210	218	214	216	178	177	178	191	187	191
7	214	210	212	224	218	220	182	178	179	191	187	188
8	214	209	213	228	224	224	178	178	178	187	187	187
9	209	209	209	224	220	223	179	178	179	187	187	187
10	209	209	209	220	212	215	179	179	179	191	187	187
11	209	209	209	216	212	214	183	179	183	191	187	190
12	213	209	211	212	212	212	183	179	182	195	191	192
13	212	208	211	212	203	205	180	180	180	195	191	193
14	212	208	210	207	203	204	180	180	180	195	191	195
15	212	208	211	207	203	204	181	180	181	195	191	195
16	212	207	210	206	202	204	181	178	181	199	195	196
17	207	203	206	214	210	211	181	178	180	204	195	199
18	211	207	207	214	206	209	179	178	178	204	200	202
19	211	207	208	214	210	210	179	175	178	204	200	201
20	207	203	206	214	210	210	179	179	179	200	196	199
21	214	198	204	210	210	210	183	179	181	196	196	196
22	202	194	199	210	210	210	179	179	179	196	196	196
23	210	194	200	214	206	210	179	179	179	196	196	196
24	217	209	215	214	210	212	183	179	180	200	196	197
25	217	217	217	214	208	211	183	179	182	196	196	196
26	221	217	218	220	212	215	195	183	188	204	196	197
27	220	220	220	220	215	217	195	191	192	196	192	196
28	220	216	217	219	210	214	191	183	186	200	192	193
29	---	---	---	214	205	209	183	183	183	204	192	193
30	---	---	---	208	200	204	187	183	185	204	188	192
31	---	---	---	201	193	197	---	---	---	200	196	197
MONTH	221	194	210	228	193	211	195	173	181	204	183	193
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	204	196	199	174	170	171	---	---	---	179	175	178
2	196	192	195	174	170	171	---	---	---	179	171	176
3	196	192	193	170	170	170	---	---	---	179	175	176
4	192	192	192	170	170	170	---	---	---	---	---	---
5	192	192	192	173	170	171	---	---	---	---	---	---
6	204	192	193	173	170	171	---	---	---	---	---	---
7	192	184	189	173	170	170	---	---	---	---	---	---
8	196	188	192	171	171	171	---	---	---	---	---	---
9	196	188	191	171	171	171	---	---	---	---	---	---
10	---	---	---	171	163	170	184	180	181	176	173	174
11	---	---	---	174	159	165	192	176	181	174	169	173
12	187	178	181	186	171	175	176	169	174	174	170	173
13	185	176	180	178	174	176	172	169	169	178	174	175
14	200	175	188	182	174	177	169	169	169	178	175	178
15	186	173	177	178	174	176	172	169	170	178	172	176
16	185	172	175	178	174	176	176	172	173	176	172	174
17	184	170	173	182	174	178	176	172	175	177	172	173
18	186	169	172	178	167	175	---	---	---	177	177	177
19	181	169	176	182	178	179	177	173	174	181	177	178
20	191	175	186	182	178	179	177	173	176	181	178	181
21	190	181	188	178	174	176	177	177	177	186	181	184
22	184	167	176	178	174	175	177	173	177	186	182	184
23	183	165	171	178	174	175	177	176	177	183	180	183
24	183	169	176	---	---	---	176	172	176	184	180	180
25	180	170	173	---	---	---	176	172	173	180	180	180
26	174	170	172	---	---	---	172	169	172	184	180	181
27	174	174	174	---	---	---	176	169	172	188	180	184
28	177	174	174	---	---	---	176	172	174	184	180	184
29	177	174	174	---	---	---	176	172	175	184	180	182
30	174	170	173	---	---	---	179	175	176	180	176	177
31	---	---	---	---	---	---	179	179	179	---	---	---
MONTH	204	165	182	186	159	173	192	169	175	188	169	178

## CUMBERLAND RIVER BASIN

03417500 CUMBERLAND RIVER AT CELINA, TN--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.3	7.2	7.4	7.4	7.5	7.3	7.8	7.6	7.8	7.7	7.7	7.6
2	7.2	7.1	7.6	7.4	7.4	7.3	7.9	7.5	7.7	7.7	7.6	7.6
3	7.3	7.0	7.5	7.4	7.4	7.3	8.0	7.7	7.7	7.6	7.6	7.5
4	7.4	7.2	7.8	7.4	7.5	7.3	8.1	8.0	7.7	7.6	7.8	7.5
5	7.5	7.1	7.7	7.6	7.4	7.3	8.0	7.8	7.7	7.6	7.9	7.7
6	7.5	7.4	7.6	7.2	7.5	7.3	7.8	7.7	7.7	7.6	7.9	7.7
7	7.5	7.4	7.4	7.3	7.6	7.3	7.8	7.7	7.8	7.6	8.0	7.7
8	7.5	7.4	7.4	7.3	7.4	7.4	7.8	7.7	8.0	7.6	8.1	7.9
9	7.4	7.4	7.4	7.3	7.4	7.3	7.9	7.8	8.0	7.6	8.0	7.8
10	7.4	7.3	7.4	7.3	7.4	7.3	7.9	7.8	7.9	7.6	7.9	7.8
11	7.4	7.2	7.4	7.3	7.4	7.4	7.9	7.7	7.8	7.6	7.8	7.7
12	7.5	7.4	7.4	7.3	7.4	7.4	7.7	7.6	7.7	7.5	7.9	7.8
13	7.5	7.4	7.4	7.3	7.4	7.3	7.8	7.6	7.7	7.6	7.9	7.9
14	7.5	7.4	7.4	7.3	7.4	7.3	7.7	7.6	7.6	7.6	7.9	7.8
15	7.5	7.4	7.5	7.4	7.4	7.3	7.7	7.5	7.9	7.6	8.0	7.8
16	7.5	7.4	7.7	7.5	7.5	7.3	7.7	7.6	7.8	7.6	8.0	7.9
17	7.6	7.4	7.7	7.7	7.6	7.3	7.7	7.6	7.6	7.5	8.0	7.7
18	7.5	7.4	7.8	7.7	7.7	7.4	7.7	7.5	7.6	7.5	7.8	7.7
19	7.5	7.3	7.7	7.7	7.5	7.4	7.8	7.7	7.7	7.6	8.0	7.7
20	7.5	7.4	7.7	7.6	7.7	7.5	8.1	7.7	8.0	7.6	7.9	7.8
21	7.5	7.4	7.7	7.7	7.5	7.2	8.1	7.8	7.8	7.6	7.9	7.8
22	7.5	7.4	7.7	7.5	7.7	7.4	7.9	7.7	7.8	7.6	8.1	7.9
23	7.5	7.1	7.7	7.6	7.8	7.5	7.8	7.6	7.6	7.6	8.0	7.9
24	7.5	7.3	7.7	7.5	7.9	7.5	7.8	7.6	7.8	7.6	7.9	7.8
25	7.5	7.4	7.6	7.5	7.5	7.4	7.8	7.6	7.8	7.8	7.9	7.8
26	7.5	7.4	7.5	7.5	7.9	7.5	7.9	7.7	7.8	7.7	7.9	7.8
27	7.5	7.4	7.5	7.4	7.6	7.3	7.9	7.8	7.7	7.6	7.9	7.7
28	7.4	7.3	7.5	7.4	7.7	7.5	7.9	7.8	7.7	7.6	7.8	7.7
29	7.3	7.2	7.5	7.5	7.9	7.6	7.9	7.8	---	---	7.8	7.7
30	7.4	7.3	7.7	7.4	7.9	7.7	7.9	7.9	---	---	7.7	7.7
31	7.5	7.4	---	---	8.0	7.8	7.9	7.8	---	---	7.7	7.6
MONTH	7.6	7.0	7.8	7.2	8.0	7.2	8.1	7.5	8.0	7.5	8.1	7.5
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.7	7.6	7.6	7.5	7.6	7.4	7.6	7.3	---	---	7.3	7.0
2	7.6	7.6	7.7	7.5	7.6	7.4	7.5	7.4	---	---	7.1	6.9
3	7.7	7.6	7.6	7.4	7.7	7.6	7.5	7.4	---	---	7.2	6.6
4	7.7	7.6	7.6	7.5	7.7	7.6	7.5	7.4	---	---	---	---
5	7.7	7.6	7.6	7.5	7.6	7.5	7.5	7.4	---	---	---	---
6	7.8	7.7	7.6	7.5	7.7	7.6	7.5	7.4	---	---	---	---
7	7.8	7.7	7.7	7.5	7.9	7.6	7.5	7.4	---	---	---	---
8	7.8	7.7	7.8	7.5	7.9	7.8	7.5	7.5	---	---	---	---
9	7.9	7.7	7.8	7.6	7.9	7.8	7.5	7.2	---	---	---	---
10	7.7	7.6	7.9	7.6	---	---	7.5	7.5	---	---	7.2	7.0
11	7.7	7.6	7.9	7.7	---	---	7.5	7.4	7.4	7.2	7.2	6.7
12	7.7	7.6	7.9	7.8	---	---	7.5	7.1	7.3	7.2	6.8	6.4
13	7.7	7.6	7.9	7.7	8.0	7.7	7.5	6.9	7.3	7.1	6.7	6.3
14	7.7	7.6	7.9	7.8	8.2	7.8	7.3	7.0	7.3	7.1	6.5	6.2
15	7.7	7.5	8.1	7.9	8.2	7.8	7.3	7.1	7.4	7.2	6.7	6.4
16	7.8	7.6	8.0	7.8	7.9	7.6	7.2	7.1	7.5	7.2	6.8	6.4
17	7.8	7.6	7.8	7.6	7.8	7.6	7.2	7.0	7.5	7.3	7.0	6.6
18	7.7	7.5	7.6	7.4	7.8	7.6	7.1	6.9	---	---	7.0	6.6
19	7.8	7.6	7.5	7.4	7.8	7.7	7.0	6.8	7.1	6.6	7.2	6.9
20	7.7	7.6	7.5	7.4	7.8	7.7	6.9	6.7	6.9	6.6	7.4	7.0
21	7.6	7.4	7.5	7.4	7.9	7.7	7.0	6.7	6.9	6.7	7.5	7.2
22	7.6	7.4	7.5	7.3	7.8	7.7	7.1	6.9	6.9	6.7	7.5	7.4
23	7.5	7.4	7.4	7.3	7.7	7.7	7.1	6.9	6.7	6.5	7.4	7.2
24	7.5	7.4	7.4	7.2	7.7	7.7	---	---	6.7	6.4	7.3	7.1
25	7.7	7.4	7.3	7.2	7.7	7.6	---	---	6.7	6.5	7.3	7.3
26	7.7	7.5	7.3	7.2	7.7	7.6	---	---	6.9	6.7	7.4	7.2
27	7.6	7.5	7.4	7.2	7.8	7.6	---	---	7.1	6.9	7.3	7.3
28	7.6	7.5	7.4	7.3	7.8	7.5	---	---	7.2	6.7	7.5	7.3
29	7.6	7.5	7.5	7.3	7.7	7.5	---	---	7.1	6.9	7.5	7.5
30	7.6	7.5	7.5	7.4	7.6	7.5	---	---	7.1	6.9	7.5	7.4
31	---	---	7.6	7.4	---	---	---	---	7.3	6.9	---	---
MONTH	7.9	7.4	8.1	7.2	8.2	7.4	7.6	6.7	7.5	6.4	7.5	6.2

03417500 CUMBERLAND RIVER AT CELINA, TN--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	16.1	15.3	15.8	16.0	15.2	15.6	11.2	10.6	10.9	10.6	9.4	10.0
2	16.7	15.3	15.9	16.4	16.0	16.1	11.0	10.4	10.8	9.4	8.8	9.2
3	16.7	16.3	16.4	16.0	15.3	15.6	10.6	10.2	10.3	10.2	9.4	9.8
4	16.6	16.0	16.5	15.3	14.3	15.0	10.6	10.2	10.5	11.0	10.0	10.4
5	16.8	16.0	16.5	14.3	13.7	14.1	10.7	9.9	10.4	11.0	9.8	10.3
6	16.8	16.4	16.5	13.7	12.7	13.1	9.9	9.1	9.5	9.8	9.3	9.5
7	16.6	16.0	16.3	12.9	12.5	12.7	9.1	8.9	9.0	9.3	8.9	9.1
8	16.4	16.0	16.2	13.1	12.3	12.7	11.1	9.1	10.3	9.5	9.1	9.3
9	16.4	16.0	16.2	13.0	12.4	12.7	10.9	10.7	10.8	9.5	9.1	9.3
10	16.2	15.6	15.8	13.8	12.8	13.2	10.7	10.1	10.4	9.3	9.1	9.2
11	15.7	15.2	15.5	14.8	13.6	14.4	10.1	9.5	9.8	9.5	9.1	9.4
12	15.5	15.1	15.3	15.4	14.6	15.0	9.6	9.3	9.4	9.9	9.3	9.6
13	15.5	14.7	15.1	14.8	13.4	14.1	9.8	9.4	9.5	9.9	9.3	9.7
14	16.1	14.9	15.5	13.4	12.0	12.8	9.4	9.0	9.3	9.3	8.5	8.9
15	16.5	15.3	15.9	12.2	11.8	11.9	10.0	9.0	9.5	8.8	8.3	8.6
16	16.3	15.9	16.2	11.8	11.2	11.4	11.0	10.0	10.6	9.0	8.2	8.6
17	15.9	14.7	15.3	12.5	11.6	12.0	11.4	11.0	11.1	8.6	6.9	7.7
18	14.9	14.3	14.5	13.3	12.3	12.9	11.0	10.3	10.7	7.1	6.5	6.8
19	15.2	14.1	14.7	13.1	12.5	12.9	10.3	10.1	10.1	8.6	6.7	7.8
20	14.8	14.2	14.5	13.3	12.5	13.0	10.5	9.7	10.2	9.0	8.0	8.6
21	15.6	14.2	14.8	14.0	13.1	13.8	9.7	9.1	9.2	9.4	8.8	9.1
22	16.0	15.6	15.8	14.6	13.8	14.3	10.1	9.1	9.5	9.2	8.9	9.1
23	15.6	15.0	15.4	14.4	13.2	13.9	10.9	10.1	10.6	8.9	8.5	8.8
24	16.0	14.0	14.7	13.2	12.2	12.8	10.5	8.9	9.7	8.9	7.9	8.7
25	16.3	14.7	15.7	12.8	12.1	12.5	8.7	7.7	8.2	7.9	7.6	7.8
26	16.1	15.5	15.6	12.6	12.4	12.5	8.1	7.3	7.7	7.7	7.6	7.7
27	15.7	15.1	15.3	12.4	11.5	12.1	7.6	7.3	7.5	7.9	7.3	7.6
28	15.9	15.3	15.5	11.5	10.2	10.9	8.2	7.4	7.8	8.1	7.3	7.8
29	15.6	15.2	15.4	10.6	9.8	10.2	10.2	8.0	9.2	8.3	7.7	8.0
30	15.6	15.4	15.5	10.8	10.4	10.7	10.6	10.0	10.3	7.7	7.3	7.6
31	15.6	15.4	15.4	---	---	---	10.8	10.4	10.6	7.7	7.2	7.5
MONTH	16.8	14.0	15.6	16.4	9.8	13.2	11.4	7.3	9.8	11.0	6.5	8.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.7	7.3	7.6	6.5	5.5	6.0	9.1	8.7	8.9	10.0	9.4	9.7
2	7.7	7.0	7.4	6.9	6.3	6.5	8.8	8.1	8.5	9.4	9.2	9.3
3	7.7	7.0	7.4	7.3	6.9	7.1	8.5	7.9	8.2	9.2	8.8	9.0
4	7.7	7.2	7.5	7.4	7.3	7.3	8.7	8.2	8.5	10.3	9.1	9.9
5	7.9	7.2	7.6	7.3	6.5	6.9	9.2	8.5	8.8	11.7	10.3	11.1
6	7.9	7.2	7.6	7.0	6.2	6.6	9.5	9.1	9.2	11.3	10.7	11.0
7	7.9	7.3	7.7	7.2	6.6	6.9	9.4	9.0	9.2	11.3	10.7	11.0
8	8.1	7.2	7.7	8.3	7.0	7.7	9.7	8.9	9.3	11.1	10.3	10.7
9	8.2	7.4	7.9	8.1	7.4	7.9	9.2	8.7	9.0	11.2	10.5	10.8
10	8.4	8.0	8.2	8.5	7.7	8.1	9.4	8.2	8.7	11.8	10.8	11.2
11	8.4	8.2	8.3	8.5	7.5	8.0	9.7	9.1	9.4	12.0	11.2	11.6
12	8.8	8.2	8.5	7.9	6.6	7.3	9.7	9.4	9.5	13.5	12.0	12.5
13	8.2	7.8	8.1	6.4	5.2	5.7	9.6	9.0	9.4	13.5	12.7	13.1
14	7.8	6.9	7.4	5.4	4.8	5.1	9.9	9.1	9.4	13.3	12.4	12.8
15	6.9	6.1	6.5	6.0	5.2	5.6	10.2	9.5	9.9	14.4	13.2	13.5
16	6.7	6.1	6.3	6.6	5.8	6.2	9.5	8.4	8.9	15.0	13.6	14.2
17	6.7	6.3	6.4	6.6	6.4	6.5	8.6	7.9	8.2	15.8	13.4	15.0
18	6.3	5.1	5.7	6.9	6.1	6.5	8.4	7.6	8.0	17.7	15.8	16.7
19	5.9	4.7	5.1	6.9	6.4	6.5	9.5	8.1	8.6	17.7	16.8	17.3
20	6.5	5.9	6.2	7.4	6.7	7.0	9.6	9.0	9.3	16.8	14.4	15.8
21	8.4	6.5	7.5	8.2	7.4	7.7	9.0	7.2	8.2	14.4	13.0	13.8
22	8.4	7.6	8.1	8.7	8.0	8.4	7.4	6.7	7.1	13.0	12.8	13.0
23	7.4	6.5	7.1	9.6	8.7	9.2	9.1	7.4	8.2	13.0	12.4	12.7
24	6.5	5.7	5.9	9.7	9.2	9.5	9.7	8.5	9.1	13.4	12.8	13.1
25	5.5	5.3	5.3	9.2	7.9	8.5	9.7	9.3	9.6	14.2	13.2	13.7
26	5.5	5.3	5.4	8.5	8.0	8.2	9.9	9.3	9.7	15.2	12.1	14.3
27	5.7	4.9	5.3	8.7	8.3	8.5	10.7	9.7	10.2	14.8	14.0	14.4
28	6.1	5.1	5.6	9.0	8.4	8.7	10.4	9.7	10.1	14.8	13.8	14.1
29	---	---	---	9.1	8.7	8.9	10.2	9.6	9.9	15.4	14.8	15.1
30	---	---	---	9.4	8.6	9.0	10.0	9.6	9.8	15.8	15.2	15.5
31	---	---	---	9.5	8.9	9.1	---	---	---	15.2	14.8	15.1
MONTH	8.8	4.7	7.0	9.7	4.8	7.5	10.7	6.7	9.0	17.7	8.8	12.9

## CUMBERLAND RIVER BASIN

03417500 CUMBERLAND RIVER AT CELINA, TN--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	15.2	14.0	14.7	13.0	12.6	12.8	13.2	12.8	13.1	14.9	13.9	14.4
2	14.0	11.9	12.7	13.0	12.7	12.9	14.5	13.2	13.8	14.3	13.5	13.9
3	12.8	11.9	12.3	13.1	12.7	12.9	14.6	13.5	13.9	---	13.5	---
4	12.4	11.9	12.1	13.6	12.9	13.4	13.8	12.8	13.4	---	---	---
5	12.2	11.5	11.9	15.6	13.0	14.1	13.0	12.4	12.8	---	---	---
6	12.1	11.3	11.7	16.2	15.2	15.8	12.4	12.2	12.3	---	---	---
7	13.8	12.1	12.5	16.0	13.6	14.2	12.7	12.0	12.4	---	---	---
8	15.2	13.8	14.6	13.9	12.9	13.4	13.4	12.2	12.9	---	---	---
9	15.2	13.4	14.0	13.3	12.9	13.2	14.6	13.0	13.8	---	---	---
10	---	---	---	13.9	12.7	13.0	14.4	13.5	14.0	14.7	---	---
11	---	12.4	---	14.7	13.5	14.0	13.5	13.2	13.3	14.5	13.5	13.9
12	13.4	12.6	13.0	14.8	11.9	13.8	13.7	12.9	13.3	14.5	13.3	14.0
13	13.7	12.8	13.3	15.5	14.8	15.2	12.9	12.5	12.8	14.9	13.5	14.1
14	14.3	12.9	13.5	15.7	13.7	15.2	12.9	12.5	12.6	15.1	14.1	14.6
15	15.3	14.3	14.9	14.1	13.1	13.6	13.7	12.9	13.4	14.5	13.7	14.2
16	15.3	13.0	14.0	14.9	13.5	14.1	14.8	13.7	14.2	13.9	12.9	13.6
17	13.6	13.0	13.3	13.9	13.1	13.4	14.9	14.0	14.4	13.4	12.7	13.1
18	13.6	13.0	13.2	14.9	13.1	14.1	---	---	---	14.0	13.4	13.7
19	13.6	12.9	13.3	15.5	13.3	14.0	---	12.8	---	14.4	13.8	14.0
20	13.7	12.9	13.3	15.9	14.5	15.5	14.0	13.2	13.7	14.6	13.8	14.2
21	13.7	12.7	13.1	14.5	13.3	13.7	14.6	13.7	14.2	15.4	14.0	14.7
22	14.5	13.7	14.3	13.9	13.1	13.5	13.9	13.3	13.7	15.0	14.0	14.5
23	14.2	13.0	13.3	13.3	12.9	13.2	13.9	13.7	13.8	14.8	14.0	14.5
24	13.4	12.9	13.1	---	---	---	14.3	13.7	13.9	14.1	13.6	13.9
25	13.2	12.4	12.9	---	---	---	14.1	13.5	13.7	14.1	13.5	13.8
26	13.2	12.4	12.8	---	---	---	13.7	12.6	13.1	14.2	13.3	13.7
27	13.6	12.6	13.1	---	---	---	13.4	12.3	12.7	14.2	13.6	13.9
28	14.6	12.1	13.5	---	---	---	13.8	13.0	13.4	14.6	13.0	14.2
29	16.0	14.4	15.3	---	---	---	13.8	13.4	13.6	14.0	13.0	13.6
30	15.0	12.6	13.3	---	---	---	14.6	13.6	14.2	13.0	12.3	12.7
31	---	---	---	13.3	12.8	13.0	15.4	14.2	14.7	---	---	---
MONTH	16.0	11.3	13.3	16.2	11.9	13.8	15.4	12.0	13.5	15.4	12.3	14.0





## CUMBERLAND RIVER BASIN

03418420 CUMBERLAND RIVER BELOW CORDELL HULL DAM, TN

LOCATION.--Lat 36°17'12", long 85°56'27", Smith County, Hydrologic Unit 05130108, on right bank in powerhouse at Cordell Hull Dam, 2.7 mi north of Carthage, and at mile 313.5.

DRAINAGE AREA.--8,095 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1980 to current year. Equivalent record prior to 1981 published in annual reports of Tennessee Valley Authority entitled "Operation of TVA Reservoirs".

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Flow regulated by Lake Cumberland (station 03413500) and Dale Hollow Lake (station 03416500) (see p. 103).

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 116,000 ft<sup>3</sup>/s, Mar. 13, 1975; no flow Nov. 2, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 36,600 ft<sup>3</sup>/s, Mar. 27; minimum daily, 2,490 ft<sup>3</sup>/s, May 16, 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13400	6180	11100	17200	13100	8610	30700	14500	5000	8980	8110	7180
2	8760	5920	10600	17200	12500	10700	30200	15300	8650	10500	8410	8400
3	6890	7820	8630	16700	13600	19800	31300	15200	7530	9190	8500	9100
4	6020	11500	7830	17000	16300	17500	28800	19700	7700	6430	7910	7830
5	6500	12000	7350	23000	18300	17200	28400	22300	7120	6480	9050	7140
6	10900	11000	6970	25600	15700	19400	31100	16100	4670	6800	8170	7830
7	9240	10300	7500	27500	10200	14900	34500	16900	4060	9120	9790	7380
8	12700	8230	11200	19700	7090	8540	35000	15700	4700	10500	7470	6710
9	14300	8610	20700	20800	8100	7160	30500	15000	8170	10100	7280	7030
10	11600	9000	17900	21300	10100	7220	29500	14300	9460	11600	8070	8080
11	6730	11200	9170	19200	10800	10300	25700	8770	8030	7470	8520	6780
12	9360	12100	7630	19000	9480	10100	16500	5980	7420	6560	8560	5450
13	10400	11100	7210	21100	8550	10800	13500	4900	5810	5900	7810	5130
14	12000	10500	6820	24800	7980	14100	15700	3850	4800	6550	9400	5770
15	11200	7050	8870	22900	6620	16200	20300	2820	5630	7300	11100	6470
16	12600	7640	8900	19500	7600	15200	17200	2490	9350	10600	6480	6850
17	9990	8800	11500	18400	13700	18600	14500	2490	8920	5670	6540	7540
18	9590	9380	14200	16900	12400	13400	16000	2500	7120	8320	7810	6480
19	10900	8670	11800	17800	10400	10500	16700	3440	7140	7360	9770	5820
20	10700	11300	12100	20700	12000	12700	14800	4710	6470	7610	9850	5070
21	13000	9480	14200	20700	10400	13600	14600	4440	5100	8710	7520	5050
22	11300	6850	11900	23000	17200	12700	16000	4410	5430	11100	7200	5720
23	9860	7250	18200	21900	12000	18100	17600	3430	8820	8560	8870	6030
24	9270	9310	21800	17800	8500	26500	16600	3470	8150	9340	7810	6450
25	4790	13900	12800	20700	5920	26700	15300	2510	8980	7840	10300	5460
26	5430	16400	11500	23400	9670	27800	13300	3430	7300	6810	11600	5680
27	8090	10600	8590	21900	10700	36600	16500	3750	6020	9200	11300	6370
28	9200	7190	11400	22200	7010	29500	13900	3840	4710	9110	9600	4770
29	8990	9250	16000	20500	---	31500	14500	4200	6800	9590	9330	5310
30	8990	10900	18400	17300	---	31900	16700	3080	12600	9980	7500	6420
31	8550	---	18700	15900	---	32300	---	3440	---	8800	6830	---
TOTAL	301250	289430	371470	631600	305920	550130	635900	246950	211660	262080	266460	195300
MEAN	9718	9648	11980	20370	10930	17750	21200	7966	7055	8454	8595	6510
MAX	14300	16400	21800	27500	18300	36600	35000	22300	12600	11600	11600	9100
MIN	4790	5920	6820	15900	5920	7160	13300	2490	4060	5670	6480	4770

CUMBERLAND RIVER BASIN

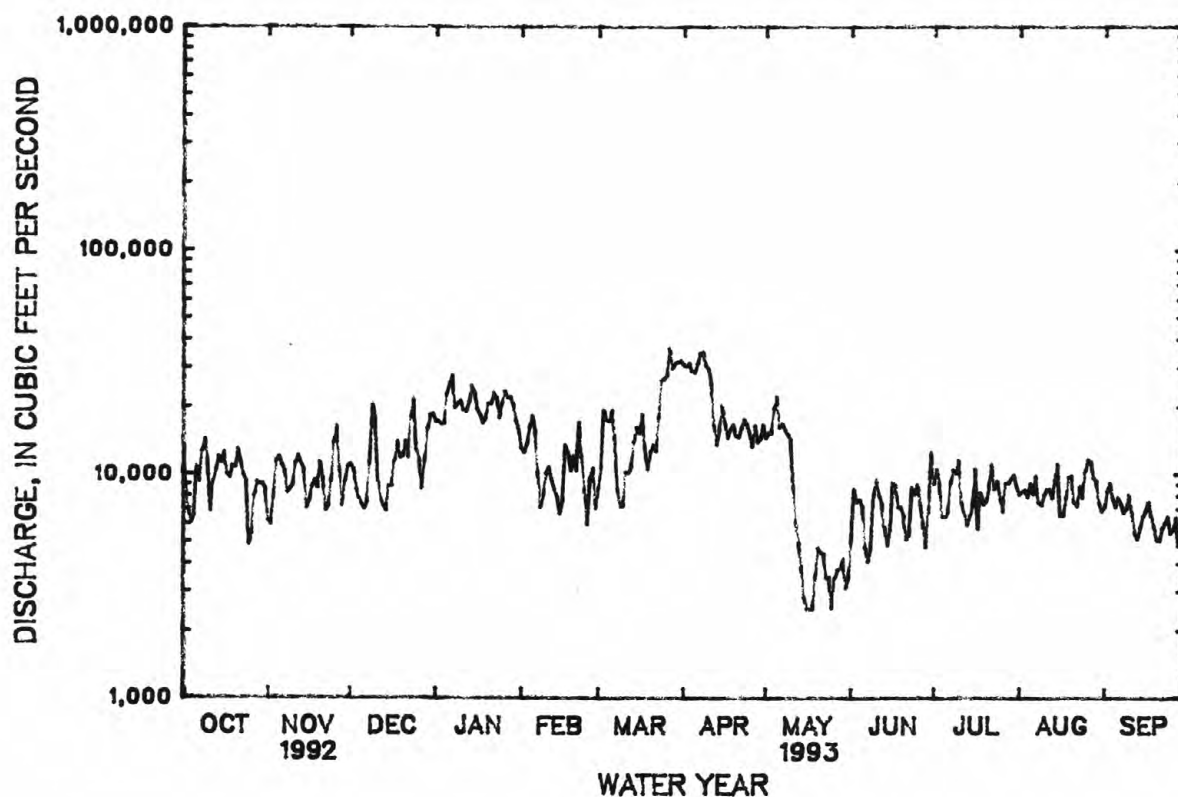
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03418420 CUMBERLAND RIVER BELOW CORDELL HULL DAM, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1993, BY WATER YEAR (WY)

MEAN	6924	8503	14080	16310	15510	15690	12450	11210	12540	10300	9874	8024
MAX	18890	20780	23430	32860	28810	37090	24210	37590	24760	19250	15800	16180
(WY)	1990	1990	1987	1991	1991	1991	1991	1984	1983	1989	1982	1982
MIN	3156	1795	2269	2493	4466	3686	4830	3925	5446	6090	5945	4409
(WY)	1989	1981	1981	1981	1981	1981	1981	1985	1985	1986	1988	1988

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1981 - 1993
ANNUAL TOTAL	4302460	4268150	
ANNUAL MEAN	11760	11690	
HIGHEST ANNUAL MEAN			11770
LOWEST ANNUAL MEAN			16830
HIGHEST DAILY MEAN	42200	36600	6159
LOWEST DAILY MEAN	3110	2490	85200
ANNUAL SEVEN-DAY MINIMUM	4280	3190	1290
10 PERCENT EXCEEDS	18000	20700	23500
50 PERCENT EXCEEDS	11100	9480	9000
90 PERCENT EXCEEDS	5720	5560	3710



## CUMBERLAND RIVER BASIN

03418420 CUMBERLAND RIVER BELOW CORDELL HULL DAM, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1980 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to current year.

pH: October 1990 to current year.

WATER TEMPERATURE: October 1980 to current year.

DISSOLVED OXYGEN: October 1980 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1980.

REMARKS.--Flow regulated by Cordell Hull Dam and other reservoirs above station. Interruptions in the record were due to instrument malfunctions.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 290 microsiemens, Mar. 27, 1990; minimum, 140 microsiemens, Sept. 3, 1984.

pH: Maximum, 8.5 units, Mar. 9, 10, May 14, 16, 1992, June 16, 17, 1993; minimum 6.7 units, Aug. 16, 17, May 12, 13, 1993.

WATER TEMPERATURE: Maximum, 23.6°C, July 8, 1988; minimum, 2.0°C, Jan. 12, 15-21, 1981.

DISSOLVED OXYGEN: Maximum, 15.5 mg/L, Mar. 4, 1983; minimum, 3.7 mg/L, Aug. 5, 1988.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 232 microsiemens, Jan. 1, 2; minimum, 175 microsiemens, Sept. 9.

pH: Maximum, 8.5 units, June 16, 17; minimum, 6.7 units, Aug. 16, 17, May 12, 13.

WATER TEMPERATURE: Maximum, 22.7°C, June 25; minimum, 5.9°C, Feb. 27, 28, Mar. 18, 19.

DISSOLVED OXYGEN: Maximum, 12.0 mg/L, Mar. 16, 19, 20, 21; minimum, 5.4 mg/L, Aug. 25.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM @ 25 DEG.C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	57	208	61	207	203	204	228	224	225	232	228	229
2	57	208	61	207	203	204	228	224	226	232	228	229
3	58	208	62	207	203	205	228	228	228	228	224	226
4	58	208	70	207	203	204	228	228	228	224	224	224
5	---	208	---	207	203	203	228	224	227	224	221	223
6	---	211	---	208	203	204	228	224	225	221	221	221
7	71	211	75	208	204	204	228	224	225	221	217	220
8	71	211	76	208	204	207	224	220	222	221	217	217
9	211	207	208	212	208	209	220	216	218	217	217	217
10	211	207	208	216	208	211	216	216	216	221	221	220
11	211	207	209	220	212	216	216	216	216	224	221	223
12	211	207	210	220	216	219	216	212	214	228	224	225
13	211	207	209	221	220	220	216	212	213	228	224	227
14	211	207	208	221	221	221	212	212	212	228	224	225
15	211	207	207	221	217	220	212	212	212	227	223	224
16	207	207	207	221	217	219	216	212	212	223	223	223
17	207	207	207	221	217	217	216	212	214	227	223	225
18	207	207	207	221	217	217	216	216	216	227	223	224
19	207	206	207	217	217	217	220	216	219	223	223	223
20	206	206	206	221	217	218	223	220	220	223	223	223
21	206	202	206	224	221	221	223	220	220	227	223	224
22	206	202	203	224	221	221	223	220	220	223	223	223
23	206	202	203	224	221	221	227	220	222	223	222	223
24	206	202	203	224	217	221	227	223	226	222	222	222
25	206	202	203	221	217	217	227	227	227	222	222	222
26	206	202	202	217	217	217	231	227	228	222	222	222
27	206	202	204	217	213	216	227	227	227	225	222	224
28	206	202	203	217	217	217	227	223	225	229	225	226
29	206	202	202	221	217	218	228	223	226	225	225	225
30	207	203	204	224	221	223	228	224	225	225	224	225
31	207	203	205	---	---	---	228	228	228	224	221	224
MONTH	211	202	177	224	203	214	231	212	221	232	217	223



## CUMBERLAND RIVER BASIN

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03418420 CUMBERLAND RIVER BELOW CORDELL HULL DAM, TN--Continue

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	224	221	223	220	220	220	194	189	192	194	190	192
2	224	221	221	220	216	218	193	177	183	199	194	197
3	221	221	221	223	212	217	182	177	181	199	195	198
4	224	221	221	227	220	225	182	182	182	196	192	194
5	223	220	220	227	227	227	182	182	182	192	192	192
6	223	223	223	227	223	227	183	179	181	197	192	193
7	223	220	220	223	219	220	183	179	180	197	193	194
8	223	220	220	219	215	218	184	179	183	198	194	194
9	223	220	220	219	215	216	184	184	184	199	194	195
10	223	219	220	219	215	215	184	184	184	199	199	199
11	219	219	219	219	215	218	185	184	185	204	199	200
12	222	219	219	219	219	219	185	185	185	208	200	202
13	222	219	219	219	218	218	190	185	187	208	201	203
14	222	219	219	218	218	218	190	186	189	205	195	201
15	222	219	219	221	218	220	190	190	190	201	200	200
16	222	218	218	222	218	219	191	190	191	206	201	202
17	218	218	218	222	209	213	191	187	188	203	202	203
18	218	214	217	213	204	208	187	187	187	204	200	202
19	222	214	219	212	203	204	188	188	188	204	204	204
20	222	222	222	207	203	203	188	184	186	204	204	204
21	225	222	222	206	202	205	185	184	185	204	204	204
22	225	221	223	209	206	208	189	185	186	---	---	---
23	224	221	221	213	208	210	186	185	186	---	---	---
24	224	221	221	212	207	208	187	186	186	207	203	203
25	224	221	222	211	207	209	187	183	187	207	195	198
26	221	221	221	211	206	207	188	183	187	199	199	199
27	224	221	221	206	201	202	188	188	188	199	199	199
28	224	220	222	201	196	200	189	188	189	199	198	199
29	---	---	---	200	196	198	189	185	187	198	198	198
30	---	---	---	196	195	195	190	189	190	202	198	199
31	---	---	---	195	194	194	---	---	---	202	198	200
MONTH	225	214	220	227	194	212	194	177	186	208	190	199
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	202	202	202	191	187	189	200	192	196	187	183	184
2	202	202	202	192	187	189	208	192	200	186	182	182
3	202	202	202	192	188	189	208	200	203	186	181	182
4	202	201	202	192	188	189	204	196	198	184	180	181
5	205	201	201	189	188	189	200	192	196	180	179	179
6	201	201	201	197	189	190	196	192	195	179	178	178
7	201	201	201	197	189	191	196	192	194	181	177	177
8	208	200	202	193	189	190	192	192	192	181	176	176
9	204	199	201	194	190	191	196	192	192	180	175	177
10	203	198	200	198	190	191	196	188	192	180	176	178
11	202	198	199	191	190	191	192	188	191	181	177	179
12	201	197	197	191	191	191	192	184	189	181	177	179
13	197	192	196	195	191	192	188	184	186	182	177	179
14	196	192	194	195	191	192	188	184	185	182	178	181
15	195	191	192	196	192	193	184	184	184	182	178	182
16	191	190	190	196	192	193	188	184	186	183	182	183
17	194	189	191	196	188	193	188	184	188	183	183	183
18	189	189	189	196	192	193	---	---	---	183	183	183
19	189	184	187	196	192	193	---	---	---	184	183	184
20	192	183	186	196	192	192	---	---	---	184	184	184
21	187	183	184	196	192	193	---	---	---	188	184	185
22	187	182	184	196	192	195	---	---	---	188	184	185
23	186	182	185	196	196	196	---	---	---	185	181	184
24	189	185	187	196	192	196	---	---	---	185	181	183
25	193	189	189	200	196	197	195	194	194	186	181	182
26	190	186	190	200	196	196	194	189	193	186	182	183
27	198	186	190	204	196	198	193	188	190	186	182	183
28	190	186	188	208	196	200	192	187	189	186	182	183
29	191	186	188	208	196	201	194	186	189	187	183	184
30	191	187	188	208	196	202	190	185	187	187	183	184
31	---	---	---	200	192	196	189	184	185	---	---	---
MONTH	208	182	194	208	187	193	208	184	191	188	175	182

## CUMBERLAND RIVER BASIN

03418420 CUMBERLAND RIVER BELOW CORDELL HULL DAM, TN--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	7.4	7.3	7.5	7.2	7.7	7.2	7.5	7.5	7.3	7.1	7.8	7.4
2	7.5	7.2	7.5	7.3	7.6	7.2	7.6	7.5	7.3	7.1	7.8	7.3
3	7.7	7.4	7.4	7.2	7.4	7.1	7.8	7.5	7.5	7.2	7.7	7.5
4	7.5	7.3	7.5	7.3	7.6	7.1	8.0	7.6	7.5	7.3	7.7	7.5
5	7.6	7.2	7.5	7.3	7.3	7.1	7.8	7.7	7.5	7.3	7.7	7.6
6	7.6	7.3	7.5	7.2	7.6	7.1	7.7	7.6	7.5	7.4	7.7	7.6
7	7.8	7.4	7.5	7.3	7.6	7.2	7.9	7.6	7.5	7.4	7.9	7.6
8	7.6	7.4	7.7	7.3	7.3	7.2	7.8	7.6	8.0	7.5	7.6	7.4
9	7.5	7.3	7.8	7.3	7.6	7.2	7.6	7.5	8.0	7.5	7.6	7.4
10	7.5	7.3	7.5	7.3	7.6	7.2	8.1	7.7	7.8	7.5	7.6	7.4
11	7.5	7.3	7.6	7.3	7.2	7.1	7.8	7.2	8.1	7.5	7.8	7.4
12	7.6	7.4	7.7	7.4	7.3	7.1	7.4	7.2	8.0	7.7	8.0	7.6
13	7.6	7.4	7.6	7.4	7.3	7.1	7.3	7.2	8.1	7.6	8.0	7.7
14	7.5	7.3	7.6	7.5	7.3	7.1	7.3	7.1	7.7	7.5	8.1	8.0
15	7.5	7.3	7.7	7.5	7.5	7.1	7.3	7.2	8.1	7.4	8.3	8.0
16	7.6	7.3	7.8	7.3	7.8	7.4	7.4	7.2	7.7	7.5	8.3	8.0
17	7.5	7.3	7.8	7.5	7.6	7.1	7.3	7.3	7.8	7.6	8.3	7.8
18	7.4	7.3	7.6	7.4	7.4	7.2	7.7	7.3	7.8	7.7	7.8	7.6
19	7.6	7.3	7.4	7.3	7.5	7.2	8.1	7.4	7.8	7.4	7.8	7.5
20	7.6	7.4	7.7	7.3	7.5	7.3	8.1	7.4	7.7	7.4	8.0	7.5
21	7.5	7.4	7.7	7.4	7.6	7.2	7.9	7.5	7.6	7.5	8.2	7.6
22	7.9	7.4	7.7	7.4	7.6	7.2	7.7	7.5	7.6	7.5	8.3	7.8
23	7.8	7.4	7.6	7.4	7.6	7.4	7.9	7.7	7.6	7.3	8.2	7.8
24	7.7	7.4	7.7	7.4	7.4	7.3	7.8	7.5	7.7	7.4	8.1	7.9
25	7.6	7.4	7.6	7.4	7.5	7.2	7.8	7.7	7.9	7.3	8.2	7.9
26	7.7	7.5	7.6	7.5	7.4	7.3	7.9	7.6	8.0	7.7	8.0	7.8
27	7.7	7.4	7.6	7.4	7.6	7.3	7.8	7.2	7.8	7.6	7.8	7.7
28	7.7	7.4	7.6	7.5	7.6	7.4	7.3	7.1	7.8	7.6	7.7	7.6
29	7.5	7.3	7.6	7.6	7.4	7.4	7.3	7.0	---	---	7.8	7.6
30	7.5	7.2	8.1	7.5	7.5	7.4	7.2	7.1	---	---	7.9	7.7
31	7.6	7.2	---	---	7.7	7.5	7.3	7.1	---	---	8.0	7.8
MONTH	7.9	7.2	8.1	7.2	7.8	7.1	8.1	7.0	8.1	7.1	8.3	7.3
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	7.9	7.8	7.7	7.5	7.9	7.8	7.7	7.2	7.4	7.0	7.4	6.9
2	8.0	7.7	7.6	7.4	8.1	7.8	8.0	7.1	7.6	7.1	7.7	6.9
3	7.8	7.6	7.6	7.3	8.2	7.8	7.8	7.2	7.6	7.1	7.9	7.0
4	8.1	7.7	7.5	7.3	8.3	7.7	7.8	7.2	7.4	7.1	7.3	7.0
5	8.1	7.6	7.4	7.4	8.0	7.7	7.9	7.1	7.7	7.1	7.2	6.9
6	7.6	7.5	7.4	7.1	8.0	7.8	7.7	7.2	7.5	7.1	7.3	6.9
7	7.7	7.5	7.4	7.3	8.1	7.8	7.8	7.2	7.7	7.1	7.5	7.0
8	7.7	7.5	7.3	6.9	8.1	7.7	7.7	7.2	7.3	7.0	7.7	7.0
9	7.8	7.6	7.4	6.9	8.1	7.5	8.0	7.2	7.4	6.9	7.6	7.3
10	7.8	7.6	7.4	6.9	8.1	7.5	8.0	7.1	7.5	6.9	7.5	7.2
11	7.8	7.7	7.3	7.1	8.3	7.5	7.7	7.2	7.6	6.9	7.8	7.3
12	7.9	7.6	7.3	6.7	8.2	7.5	7.8	7.0	7.5	6.9	7.8	7.4
13	8.1	7.7	7.5	6.7	7.8	7.3	7.6	7.1	7.5	7.0	7.9	7.3
14	8.1	7.8	7.7	6.8	7.8	6.9	7.8	7.0	7.2	7.0	7.8	7.2
15	8.0	7.8	7.5	7.2	8.4	7.3	7.7	7.1	7.1	6.9	7.5	7.0
16	7.8	7.7	7.4	7.1	8.5	7.1	7.8	7.1	7.4	6.7	7.5	7.0
17	7.7	7.6	7.4	7.0	8.5	7.3	7.6	7.4	7.1	6.7	7.5	6.9
18	7.9	7.6	7.8	6.8	7.8	7.3	7.8	7.4	---	---	7.6	7.2
19	7.9	7.7	7.3	7.0	8.0	7.2	7.9	7.4	---	---	7.6	7.1
20	7.8	7.6	7.6	7.3	7.9	7.3	7.7	7.4	---	---	7.6	7.1
21	7.6	7.5	---	---	7.7	7.3	7.9	7.3	---	---	7.6	7.2
22	7.7	7.4	---	---	7.8	7.4	8.0	7.3	---	---	7.6	7.2
23	7.6	7.3	---	---	8.1	7.4	7.5	7.2	---	---	7.6	7.1
24	7.6	7.4	---	---	8.1	7.4	7.7	7.2	---	---	7.8	7.2
25	7.6	7.4	7.9	7.7	8.3	7.4	7.8	7.1	7.9	7.0	7.6	7.1
26	7.6	7.4	7.8	7.6	8.1	7.2	7.4	7.1	7.9	7.2	7.5	7.1
27	7.8	7.6	7.9	7.6	8.0	7.0	7.6	7.0	8.1	7.2	7.4	7.0
28	7.9	7.6	7.8	7.7	7.7	7.2	7.6	7.1	8.0	7.5	7.5	7.0
29	7.8	7.5	8.3	7.7	7.7	7.2	7.5	7.0	8.2	7.4	7.4	7.0
30	7.8	7.6	8.3	7.7	8.2	7.3	7.4	7.0	8.2	7.4	7.8	6.9
31	---	---	8.1	7.8	---	---	7.4	7.1	7.5	7.2	---	---
MONTH	8.1	7.3	8.3	6.7	8.5	6.9	8.0	7.0	8.2	6.7	7.9	6.9

## CUMBERLAND RIVER BASIN

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03418420 CUMBERLAND RIVER BELOW CORDELL HULL DAM, TN--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	17.3	15.5	14.7	16.2	15.6	15.9	11.2	10.8	11.0	8.0	8.0	8.0
2	17.3	15.1	14.7	16.2	16.0	16.1	10.8	10.4	10.6	8.6	7.8	8.2
3	17.5	14.9	14.6	16.2	15.8	16.0	10.4	10.2	10.3	9.2	8.6	8.9
4	17.3	14.9	14.4	16.2	15.8	16.0	10.2	9.8	10.1	9.8	9.2	9.5
5	17.2	14.7	14.2	15.8	15.2	15.5	10.0	9.4	9.7	9.8	9.4	9.7
6	17.2	14.7	14.2	15.2	14.3	14.8	9.4	8.8	9.1	9.4	9.4	9.4
7	17.4	14.7	14.0	14.3	13.9	14.0	8.8	8.4	8.6	9.8	9.4	9.6
8	17.0	14.2	13.6	13.9	13.5	13.7	8.6	8.1	8.5	9.8	9.4	9.6
9	17.0	16.6	16.8	13.5	13.3	13.4	8.3	8.1	8.2	9.4	9.2	9.3
10	16.6	16.4	16.6	13.5	13.1	13.3	8.3	8.1	8.3	9.2	9.0	9.0
11	16.6	16.4	16.5	13.3	13.3	13.3	8.3	8.1	8.2	9.0	9.0	9.0
12	16.4	16.0	16.3	13.5	13.1	13.3	7.9	7.7	7.9	9.2	9.0	9.1
13	16.6	15.9	16.2	13.1	12.7	12.9	7.9	7.7	7.8	9.4	9.2	9.2
14	16.5	15.7	16.1	12.5	12.2	12.4	8.3	7.7	8.0	9.2	9.0	9.1
15	16.7	16.3	16.4	12.0	11.8	11.9	8.5	8.1	8.3	9.0	8.8	9.0
16	16.5	16.1	16.3	11.8	11.6	11.6	8.7	8.5	8.6	9.0	8.8	8.9
17	16.1	15.7	16.0	11.8	11.4	11.6	8.9	8.7	8.8	8.8	8.4	8.6
18	15.9	15.7	15.8	12.0	11.4	11.7	9.1	8.7	9.0	8.4	7.8	8.1
19	15.7	15.3	15.4	12.2	11.6	11.9	9.1	8.9	9.0	7.9	7.7	7.9
20	15.1	14.9	15.0	12.5	12.0	12.2	9.1	8.9	9.1	7.9	7.7	7.8
21	14.9	14.7	14.9	12.6	12.6	12.6	9.1	8.9	9.0	7.9	7.7	7.9
22	14.8	14.6	14.7	12.8	12.6	12.7	9.7	9.1	9.3	8.3	7.9	8.1
23	15.0	14.6	14.9	12.8	12.3	12.5	9.9	9.5	9.7	8.7	8.3	8.5
24	15.0	14.8	14.9	12.3	11.9	12.1	9.9	9.3	9.7	8.7	8.7	8.7
25	15.2	14.6	15.0	12.3	12.1	12.1	9.3	8.9	9.2	8.7	8.5	8.7
26	15.4	14.8	15.2	12.4	12.1	12.2	8.9	8.5	8.7	8.5	8.1	8.3
27	15.6	15.2	15.4	12.4	12.1	12.2	8.5	8.3	8.4	8.1	7.9	8.1
28	15.6	15.2	15.5	12.2	12.0	12.1	8.5	8.3	8.4	7.9	7.7	7.8
29	15.6	15.4	15.5	12.0	11.6	11.8	8.6	8.4	8.5	7.7	7.5	7.6
30	15.6	15.4	15.5	11.6	11.2	11.3	8.4	8.2	8.4	7.5	7.4	7.4
31	15.8	15.6	15.7	---	---	---	8.2	8.2	8.2	7.6	7.4	7.5
MONTH	17.5	14.2	15.3	16.2	11.2	13.1	11.2	7.7	8.9	9.8	7.4	8.6
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.6	7.5	7.6	6.9	6.1	6.6	9.2	8.6	9.0	13.0	12.8	12.9
2	7.6	7.5	7.6	7.3	6.9	7.0	8.6	7.8	8.2	13.2	13.0	13.1
3	7.6	7.5	7.6	7.1	6.8	7.0	7.8	7.6	7.7	13.0	13.0	13.0
4	7.6	7.5	7.5	6.8	6.6	6.6	7.6	7.4	7.6	13.2	13.0	13.1
5	7.6	7.3	7.5	6.6	6.4	6.5	7.6	7.3	7.4	13.3	12.8	13.1
6	7.6	7.5	7.5	7.0	6.6	6.8	7.3	7.2	7.3	13.5	13.1	13.3
7	7.8	7.5	7.6	7.5	7.0	7.2	8.1	7.2	7.6	14.1	13.3	13.6
8	7.9	7.6	7.8	7.9	7.3	7.6	8.7	8.1	8.4	14.7	13.5	14.2
9	8.1	7.6	7.9	8.3	7.3	7.9	9.1	8.7	8.9	15.3	13.9	14.2
10	8.3	7.9	8.1	8.5	8.1	8.3	9.3	8.7	9.1	15.5	14.3	14.8
11	8.5	8.3	8.4	8.7	7.9	8.4	9.4	9.0	9.2	16.0	14.9	15.3
12	8.5	8.3	8.5	8.5	8.1	8.4	9.8	9.0	9.4	15.6	14.8	15.1
13	8.5	8.3	8.4	8.1	7.3	7.8	10.4	9.6	9.9	15.8	14.6	15.0
14	8.3	7.9	8.2	7.3	6.8	7.0	11.2	10.2	10.5	15.3	14.2	14.9
15	8.1	7.7	7.9	7.2	7.0	7.0	11.6	10.8	11.0	15.4	14.8	15.1
16	7.8	7.5	7.7	7.4	7.2	7.2	11.4	11.0	11.2	16.1	14.8	15.4
17	7.5	6.9	7.4	7.4	6.4	7.0	11.0	10.7	10.7	16.1	15.2	15.5
18	7.1	6.7	6.8	6.4	5.9	6.1	11.1	10.5	10.7	16.8	14.8	15.6
19	6.7	6.3	6.5	6.3	5.9	6.0	11.5	10.7	11.0	15.6	14.5	15.2
20	6.5	6.3	6.4	6.5	6.1	6.3	11.3	10.9	11.1	15.5	14.5	15.0
21	7.1	6.3	6.5	7.0	6.5	6.7	10.9	10.3	10.7	14.7	14.7	14.7
22	6.7	6.3	6.6	7.5	7.0	7.3	10.5	9.9	10.3	---	---	---
23	6.7	6.3	6.5	7.9	7.5	7.8	10.6	9.9	10.3	---	---	---
24	6.5	6.1	6.3	8.4	7.9	8.2	11.0	10.4	10.6	16.5	15.3	15.6
25	6.3	6.1	6.2	9.0	8.4	8.6	11.0	10.8	10.8	16.3	15.7	16.1
26	6.1	6.1	6.1	9.4	9.0	9.3	11.2	11.0	10.9	16.5	16.1	16.2
27	6.3	5.9	6.1	9.4	8.4	9.1	11.6	11.0	11.2	17.1	15.9	16.5
28	6.5	5.9	6.2	8.5	8.1	8.4	12.0	11.0	11.4	17.3	16.6	16.9
29	---	---	---	8.9	8.5	8.7	12.4	11.6	11.9	18.3	16.8	17.2
30	---	---	---	9.5	8.9	9.2	12.8	12.2	12.5	17.5	17.0	17.2
31	---	---	---	9.5	9.1	9.3	---	---	---	18.5	16.8	17.3
MONTH	8.5	5.9	7.3	9.5	5.9	7.6	12.8	7.2	9.9	18.5	12.8	15.0

## CUMBERLAND RIVER BASIN

03418420 CUMBERLAND RIVER BELOW CORDELL HULL DAM, TN--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	17.9	17.0	17.3	20.4	18.8	19.6	20.7	18.7	19.6	18.9	17.4	18.2
2	18.9	17.5	18.0	21.4	18.2	19.6	21.7	19.3	20.2	20.6	17.6	18.3
3	19.9	17.7	18.6	20.4	18.4	19.6	22.1	19.5	20.5	21.5	17.1	18.8
4	21.3	17.8	18.7	20.6	18.2	19.2	20.7	19.5	20.1	19.1	17.6	18.4
5	19.2	17.8	18.4	21.0	18.0	19.2	21.9	18.7	20.2	19.0	17.7	18.2
6	18.8	18.2	18.5	20.8	18.4	19.4	21.1	18.7	19.8	19.1	17.7	18.4
7	19.6	18.6	19.0	20.8	18.2	19.4	21.5	18.5	19.7	20.6	18.0	18.8
8	20.2	18.8	19.5	20.4	18.0	19.4	19.9	18.3	19.1	20.8	18.1	19.0
9	21.2	19.0	20.1	21.0	18.0	19.5	20.3	18.3	19.2	19.9	18.2	18.9
10	21.7	19.0	20.0	22.0	18.0	19.7	20.9	18.3	19.4	19.7	18.1	18.6
11	22.3	19.1	20.0	20.4	18.2	19.4	21.5	18.3	19.4	19.5	17.7	18.5
12	22.1	18.7	19.8	20.4	18.6	19.3	20.5	18.7	19.2	19.7	17.9	18.5
13	20.2	18.4	19.2	20.4	19.0	19.5	20.5	17.5	18.9	20.5	17.9	18.9
14	20.2	18.2	19.0	20.8	18.8	19.4	19.1	17.4	18.4	20.3	18.5	19.3
15	21.6	18.2	19.0	20.6	18.4	19.6	19.5	17.7	18.6	19.3	18.3	19.0
16	22.2	18.2	19.6	20.9	18.0	19.3	21.1	18.1	18.9	20.0	18.2	18.9
17	22.4	18.9	20.3	19.3	17.9	18.4	19.7	18.1	18.9	19.2	18.0	18.8
18	20.9	18.7	19.8	20.1	17.9	18.7	---	---	---	19.4	18.0	18.6
19	21.0	18.7	19.8	21.1	18.3	19.1	---	---	---	19.4	18.0	18.5
20	20.4	18.6	19.4	20.1	18.7	19.3	---	---	---	19.2	17.8	18.2
21	20.0	18.2	18.8	21.5	18.5	19.7	---	---	---	18.8	17.8	18.3
22	20.2	18.2	18.8	22.6	18.9	20.2	---	---	---	18.8	17.8	18.3
23	21.1	18.3	19.2	20.7	18.9	19.9	---	---	---	19.0	17.8	18.3
24	21.2	18.5	19.5	21.9	18.9	20.1	---	---	---	19.2	17.6	18.5
25	22.7	18.6	20.0	22.6	18.7	20.4	19.8	17.3	18.3	19.2	17.8	18.3
26	22.0	18.6	19.7	20.7	18.9	19.8	19.9	17.1	18.5	18.6	17.6	18.1
27	21.2	18.0	19.5	22.1	19.1	20.2	19.9	17.5	18.6	17.6	16.9	17.4
28	19.8	18.0	18.9	22.4	19.1	20.7	19.6	17.6	18.7	18.0	16.9	17.4
29	20.4	18.0	19.1	21.3	18.7	20.2	20.7	17.9	19.1	18.1	17.2	17.5
30	21.6	18.4	19.8	21.1	18.5	20.0	20.8	17.9	19.1	18.7	16.8	17.7
31	---	---	---	20.5	18.9	19.8	19.2	17.7	18.6	---	---	---
MONTH	22.7	17.0	19.2	22.6	17.9	19.6	22.1	17.1	19.2	21.5	16.8	18.4

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.4	8.1	8.9	7.8	7.3	7.6	9.3	8.9	9.2	10.7	10.3	10.6
2	7.1	8.2	8.5	7.9	7.6	7.8	9.5	9.3	9.4	10.7	10.3	10.6
3	6.2	7.8	8.5	8.2	7.2	7.9	9.5	9.3	9.4	10.4	10.2	10.3
4	7.4	7.7	8.8	8.2	8.0	8.1	9.6	9.1	9.4	10.3	10.1	10.2
5	---	7.6	---	8.4	8.1	8.2	9.8	9.5	9.7	10.3	10.1	10.2
6	---	7.4	---	8.5	7.8	8.3	10.0	9.7	9.9	10.3	10.1	10.2
7	7.7	8.0	8.8	8.5	8.2	8.4	10.2	9.6	10.1	10.1	9.9	10.0
8	7.0	7.7	8.5	8.5	8.1	8.3	10.3	10.0	10.2	9.9	9.8	9.9
9	8.4	7.7	8.3	8.6	8.1	8.4	10.4	10.3	10.4	9.9	9.8	9.9
10	8.2	7.4	8.1	8.6	8.1	8.5	10.6	10.2	10.3	10.0	9.7	9.9
11	8.2	7.6	8.0	8.6	8.2	8.5	10.5	10.3	10.5	10.1	9.8	10.0
12	8.3	7.6	8.0	8.7	8.2	8.5	10.7	10.4	10.6	10.0	10.0	10.0
13	8.6	7.4	8.0	8.9	8.5	8.7	10.9	10.4	10.8	10.1	9.9	10.0
14	8.6	6.9	7.9	9.0	8.7	8.9	10.8	10.6	10.7	10.2	10.1	10.2
15	8.4	7.1	8.1	9.2	8.9	9.1	10.8	10.5	10.7	10.2	10.1	10.2
16	8.2	7.5	7.9	9.3	8.6	9.2	10.9	10.7	10.8	10.2	10.1	10.1
17	8.1	7.5	7.8	9.3	8.8	9.1	10.8	10.6	10.8	10.3	10.1	10.2
18	8.2	7.9	8.0	9.1	8.8	8.9	10.8	10.7	10.8	10.4	10.1	10.3
19	8.2	7.8	8.0	9.1	8.9	9.0	10.8	10.7	10.7	10.5	10.3	10.4
20	8.2	7.1	8.0	9.1	8.9	9.0	10.8	10.7	10.8	10.5	10.3	10.5
21	8.2	7.3	7.9	9.2	8.9	9.0	10.8	10.6	10.8	10.6	10.5	10.6
22	8.1	7.5	7.9	9.2	8.5	9.0	10.7	10.5	10.6	10.6	10.5	10.6
23	7.8	7.2	7.7	9.4	9.1	9.2	10.6	10.4	10.5	10.6	10.5	10.6
24	7.8	7.1	7.7	9.4	8.9	9.2	10.6	10.4	10.5	10.5	10.5	10.5
25	8.1	7.5	7.8	9.4	9.1	9.3	10.5	10.3	10.4	10.5	10.4	10.5
26	8.2	7.7	8.0	9.3	9.1	9.2	10.5	10.4	10.5	10.6	10.4	10.5
27	8.3	8.0	8.2	9.2	9.0	9.1	10.5	10.3	10.5	10.6	10.6	10.6
28	8.3	7.5	8.1	9.2	9.1	9.1	10.4	10.2	10.3	10.6	10.6	10.6
29	8.1	7.7	8.0	9.2	8.9	9.1	10.3	10.2	10.3	10.7	10.5	10.6
30	7.9	7.5	7.7	9.2	8.9	9.1	10.4	10.2	10.3	10.7	10.6	10.7
31	7.8	7.1	7.6	---	---	---	10.5	10.3	10.4	10.8	10.6	10.7
MONTH	8.6	6.9	8.1	9.4	7.2	8.7	10.9	8.9	10.3	10.8	9.7	10.3



## CUMBERLAND RIVER BASIN

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03418420 CUMBERLAND RIVER BELOW CORDELL HULL DAM, TN--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	10.8	10.5	10.6	11.2	10.5	10.8	10.0	9.8	10.0	11.5	11.3	11.4
2	10.7	10.4	10.6	10.7	10.2	10.4	10.0	9.5	9.8	11.5	11.0	11.4
3	10.8	10.6	10.7	10.7	10.3	10.5	9.7	9.4	9.5	11.3	10.8	11.1
4	10.8	10.4	10.7	11.0	10.7	10.9	10.1	9.7	9.8	11.1	10.7	11.0
5	10.7	10.4	10.6	11.2	10.7	11.1	10.0	9.8	9.9	11.1	10.9	11.0
6	10.7	10.5	10.7	11.2	10.9	11.1	10.0	9.9	10.0	11.4	10.7	11.1
7	10.7	10.5	10.6	11.1	10.8	10.9	10.1	10.0	10.0	11.4	11.1	11.3
8	10.6	10.2	10.6	10.9	10.6	10.8	10.2	9.9	10.0	11.1	10.3	11.0
9	10.7	10.3	10.6	11.0	10.6	10.8	10.2	9.9	10.0	11.4	10.2	10.7
10	10.7	10.4	10.6	10.9	10.6	10.8	10.1	10.0	10.0	11.2	10.1	10.8
11	10.6	10.4	10.6	11.2	10.6	11.0	10.3	10.1	10.2	11.3	10.6	10.8
12	10.6	10.3	10.5	11.3	11.0	11.2	10.5	10.2	10.3	11.0	9.1	10.6
13	10.6	10.3	10.5	11.5	11.1	11.3	10.8	10.4	10.6	11.3	7.9	10.1
14	10.5	10.2	10.4	11.7	11.4	11.5	11.0	10.6	10.8	10.8	8.9	10.1
15	10.4	10.1	10.3	11.9	11.6	11.7	10.7	10.4	10.6	10.4	9.5	9.9
16	10.4	10.2	10.4	12.0	11.7	11.8	10.5	10.2	10.4	10.0	9.1	9.5
17	10.4	10.2	10.4	11.8	11.6	11.8	10.4	10.2	10.3	9.4	8.3	9.0
18	10.6	10.3	10.4	11.9	11.5	11.7	10.8	10.3	10.5	9.9	8.1	9.0
19	10.5	10.2	10.4	12.0	11.3	11.7	10.9	10.6	10.7	8.9	7.6	8.5
20	10.5	10.2	10.4	12.0	11.5	11.8	10.7	10.5	10.6	9.1	7.5	8.5
21	10.6	10.4	10.5	12.0	11.5	11.8	10.6	10.5	10.6	8.5	8.2	8.5
22	10.7	10.4	10.6	11.8	11.3	11.6	10.8	10.5	10.7	---	---	---
23	10.7	10.3	10.6	11.6	11.1	11.4	11.1	10.7	10.9	---	---	---
24	11.0	10.3	10.7	11.4	11.2	11.3	11.1	10.9	11.0	9.1	8.4	8.9
25	11.1	10.4	10.9	11.3	10.9	11.1	10.9	10.8	10.8	8.8	7.5	8.2
26	11.2	10.6	11.0	10.9	10.3	10.6	11.8	10.7	11.0	8.6	6.5	8.3
27	11.2	10.9	11.1	10.5	10.2	10.3	11.5	11.1	11.3	8.6	6.5	8.1
28	11.2	10.9	11.1	10.5	10.3	10.4	11.8	11.3	11.5	8.6	7.5	8.1
29	---	---	---	10.4	10.2	10.3	11.8	11.3	11.5	9.4	7.9	8.4
30	---	---	---	10.3	10.1	10.2	11.6	11.4	11.5	8.5	6.7	7.9
31	---	---	---	10.2	10.0	10.1	---	---	---	8.6	6.9	7.8
MONTH	11.2	10.1	10.6	12.0	10.0	11.1	11.8	9.4	10.5	11.5	6.5	9.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	8.2	7.3	7.8	9.0	6.9	8.4	8.6	7.5	8.1	8.3	6.5	7.5
2	8.6	7.5	7.9	9.4	7.3	8.5	8.6	6.8	7.9	9.0	6.2	7.6
3	8.6	6.7	7.7	9.1	7.5	8.6	8.8	7.0	7.9	8.9	7.0	7.8
4	8.6	6.0	7.3	8.8	6.7	8.3	8.3	6.5	7.7	8.1	6.7	7.6
5	8.0	6.1	7.2	9.4	7.2	8.5	8.8	6.2	7.7	8.4	6.8	7.7
6	8.2	6.5	7.6	8.8	7.0	8.4	8.4	6.9	7.8	8.5	6.2	7.8
7	8.6	7.4	8.2	8.8	6.5	8.2	8.9	6.5	7.9	9.1	7.1	8.0
8	8.9	6.0	7.9	8.9	7.1	8.5	8.4	7.4	8.0	9.5	6.7	8.1
9	8.9	7.3	8.1	9.1	7.4	8.5	8.8	6.9	8.1	8.8	7.1	8.0
10	8.7	7.2	7.7	8.7	7.1	8.3	8.9	6.7	8.0	8.6	7.4	7.9
11	9.3	6.6	7.7	8.9	8.0	8.4	9.0	6.9	8.0	8.8	7.4	8.1
12	9.3	6.8	7.9	8.6	7.8	8.2	8.8	6.9	7.9	8.9	7.5	8.1
13	8.6	7.0	7.9	8.8	7.7	8.2	8.9	7.1	8.0	9.1	7.2	8.1
14	8.9	6.4	7.6	8.7	7.4	8.2	8.6	7.7	8.1	8.8	6.9	8.0
15	9.5	6.7	7.7	8.7	7.3	8.1	8.8	8.1	8.4	8.1	6.9	7.6
16	9.6	7.1	8.3	8.8	7.8	8.3	9.2	6.5	8.1	8.5	6.3	7.6
17	9.3	6.5	8.0	8.1	7.3	7.9	8.9	6.7	8.1	8.3	6.3	7.7
18	8.3	6.2	7.5	8.4	7.3	8.0	---	---	---	8.6	6.6	7.8
19	8.6	6.6	7.6	9.5	6.4	7.9	---	---	---	8.7	7.0	7.8
20	8.5	6.7	7.6	8.2	6.8	7.7	---	---	---	8.7	6.9	7.8
21	7.8	6.4	7.4	8.8	6.2	7.7	---	---	---	8.2	6.9	7.7
22	8.1	6.3	7.3	8.8	6.8	8.0	---	---	---	8.6	6.2	7.8
23	8.2	6.3	7.4	8.4	6.5	7.7	---	---	---	8.5	7.0	8.0
24	8.4	7.1	7.7	8.5	6.6	7.9	---	---	---	9.1	7.4	8.1
25	8.6	6.5	7.5	8.8	6.6	7.6	8.6	5.4	6.9	8.6	7.3	7.9
26	8.6	6.7	7.6	8.4	5.8	7.5	8.4	6.1	7.4	8.3	6.9	7.9
27	9.1	6.7	7.7	8.8	6.0	7.8	9.1	6.2	7.7	7.9	7.2	7.6
28	8.8	7.0	7.8	8.7	6.6	7.8	8.7	6.9	7.9	8.3	6.8	7.8
29	8.9	7.0	8.1	9.0	6.8	8.0	9.4	6.5	7.8	8.4	7.2	8.1
30	9.6	8.0	8.6	8.8	6.9	8.0	9.2	6.7	7.7	9.5	7.1	8.3
31	---	---	---	8.5	7.4	8.2	8.4	6.7	7.6	---	---	---
MONTH	9.6	6.0	7.7	9.5	5.8	8.1	9.4	5.4	7.9	9.5	6.2	7.9

## CUMBERLAND RIVER BASIN

03421000 COLLINS RIVER NEAR MCMINNVILLE, TN

LOCATION.--Lat 35°42'32", long 85°43'46", Warren County, Hydrologic Unit 05130107, on left bank at downstream side of bridge on U.S. Highway 70S, 1.8 mi downstream from Barren Fork River, 2.5 mi northeast of McMinnville, and at mile 19.5.

DRAINAGE AREA.--640 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1924 to current year. Prior to April 1925 monthly discharge only, published in WSP 1306.

REVISED RECORDS.--WSP 873: 1929, 1932(M), 1934-35, 1936(M), 1937. WSP 1276: 1925-26, 1928(M), 1933, 1936, 1940. WSP 2110: Drainage area.

GAGE.--Water-stage encoder and satellite telemeter at station. Datum of gage is 825.78 ft, Sandy Hook datum. Prior to Oct. 16, 1926, nonrecording gage on upstream side of bridge at same datum.

REMARKS.--No estimated daily discharges. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1854 is believed to have been about equal to that of Mar. 23, 1929, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 24	0330	11,900	14.56	May 4	1900	14,300	16.24
Mar. 24	0500	*23,100	*21.77				

Minimum discharge, 76 ft<sup>3</sup>/s, Sept. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	679	1330	933	1720	947	1220	1990	1110	4540	263	129	121
2	602	1230	834	1450	856	1170	1880	942	2830	259	130	119
3	545	2060	751	1270	781	1770	1690	855	1640	227	128	140
4	538	4020	698	1160	725	2020	1470	10100	1080	210	127	172
5	905	5860	715	2480	680	2350	1700	6260	818	198	127	141
6	987	4440	829	2250	645	2190	2680	3080	681	191	233	124
7	897	2940	788	1830	617	1800	2170	2110	599	183	290	116
8	743	2030	769	2330	589	1540	1840	1560	525	177	206	113
9	656	1520	724	2480	558	1320	1600	1280	459	183	172	113
10	587	1220	718	2000	529	1140	1760	1040	408	189	158	122
11	529	1010	861	2250	524	1000	1870	873	415	186	148	118
12	481	933	974	3580	574	877	1620	781	415	188	142	114
13	449	1600	892	2980	657	899	1360	737	398	260	193	111
14	414	1590	815	2440	654	881	1180	744	363	238	179	107
15	377	1300	749	1970	611	855	1040	686	427	202	155	113
16	365	1060	734	1670	905	1010	949	641	442	193	154	124
17	364	893	1420	1440	1470	3410	925	828	388	183	146	125
18	355	798	2110	1230	1330	4010	822	708	341	176	146	121
19	343	724	1800	1090	1070	3370	754	3290	305	174	139	116
20	326	667	4350	1030	906	2810	726	3540	283	171	143	110
21	311	630	6430	1190	1410	2410	848	1880	280	167	163	105
22	302	1330	4430	1660	2980	2150	948	1270	277	159	155	105
23	289	4940	6530	1450	2020	10100	851	950	261	154	136	102
24	280	3610	9630	2480	1540	19500	773	775	255	149	131	113
25	270	3720	5230	4030	1330	9140	748	685	243	145	124	106
26	268	2890	3700	3070	1820	4290	4610	708	236	146	146	119
27	333	2130	2850	2250	1570	4440	4140	645	229	143	173	147
28	360	1640	3620	1740	1360	4330	2640	555	230	141	163	131
29	400	1320	3140	1420	---	3320	1790	485	268	139	137	118
30	457	1090	2510	1200	---	2530	1350	461	314	134	129	110
31	766	---	2060	1040	---	2060	---	2070	---	130	124	---
TOTAL	15178	60525	72594	60180	29658	99912	48724	51649	19950	5658	4826	3596
MEAN	490	2017	2342	1941	1059	3223	1624	1666	665	183	156	120
MAX	987	5860	9630	4030	2980	19500	4610	10100	4540	263	290	172
MIN	268	630	698	1030	524	855	726	461	229	130	124	102
CFSM	.77	3.15	3.66	3.03	1.66	5.04	2.54	2.60	1.04	.29	.24	.19
IN.	.88	3.52	4.22	3.50	1.72	5.81	2.83	3.00	1.16	.33	.28	.21

## CUMBERLAND RIVER BASIN

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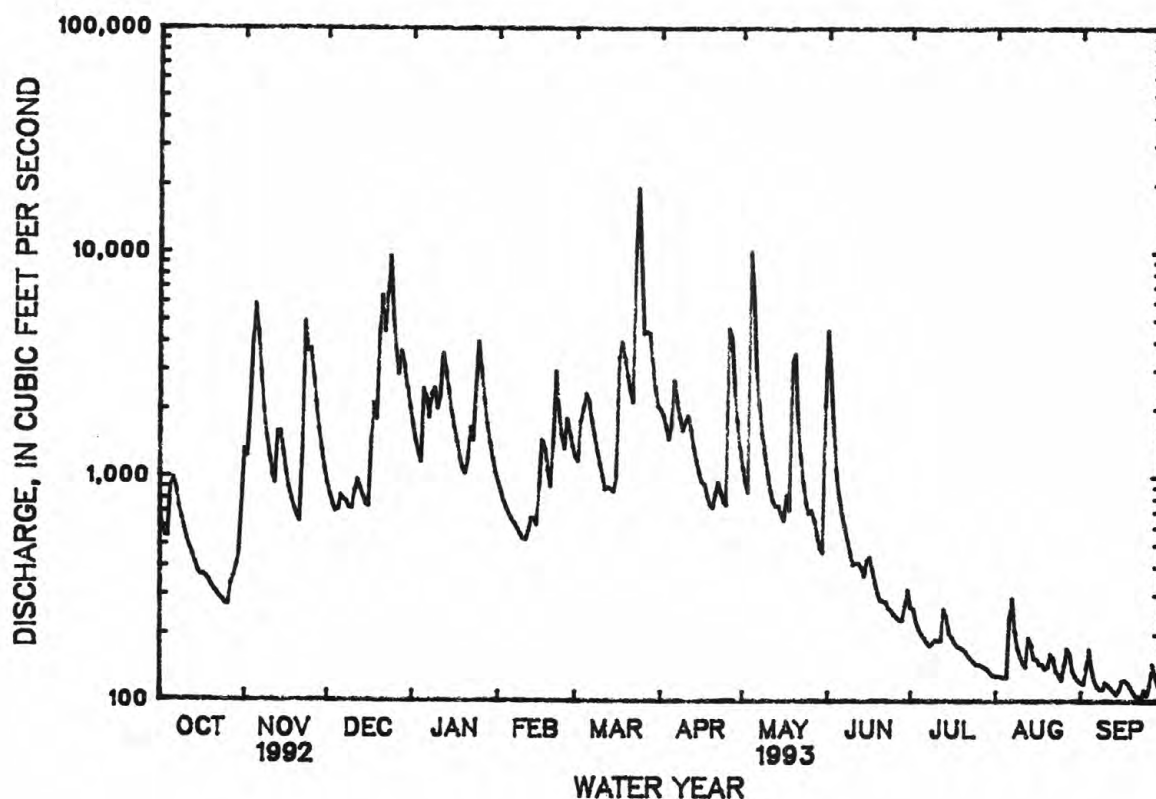
03421000 COLLINS RIVER NEAR MCMINNIVILLE, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1993, BY WATER YEAR (WY)

MEAN	315	777	1617	2095	2388	2473	1758	1077	610	423	301	288
MAX	2345	4286	6783	6262	6564	6279	4203	3825	4216	2091	1439	1204
(WY)	1976	1958	1991	1974	1939	1929	1970	1984	1928	1989	1942	1992
MIN	63.5	69.0	107	126	391	619	462	225	85.9	115	76.2	62.9
(WY)	1932	1932	1940	1940	1941	1988	1986	1941	1988	1944	1925	1925

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1925 - 1993	
ANNUAL TOTAL	447106		472450		1171	
ANNUAL MEAN	1222		1294		2193	
HIGHEST ANNUAL MEAN					409	
LOWEST ANNUAL MEAN					64100	
HIGHEST DAILY MEAN	10700	Jan 4	19500	Mar 24	64100	Dec 23 1990
LOWEST DAILY MEAN	191	Aug 7	102	Sep 23	a37	Oct 28 1961
ANNUAL SEVEN-DAY MINIMUM	205	Aug 2	108	Sep 19	50	Sep 24 1925
INSTANTANEOUS PEAK FLOW			23100	Mar 24	b75300	Mar 23 1929
INSTANTANEOUS PEAK STAGE			21.77	Mar 24	39.10	Mar 23 1929
INSTANTANEOUS LOW FLOW			76	Sep 26	35	Sep 21 1930
ANNUAL RUNOFF (CFSM)	1.91		2.02		1.83	
ANNUAL RUNOFF (INCHES)	25.99		27.46		24.86	
10 PERCENT EXCEEDS	2670		3020		2580	
50 PERCENT EXCEEDS	729		773		526	
90 PERCENT EXCEEDS	280		133		110	

a Caused by regulation from highway construction.

b From rating curve extended above 42,000 ft<sup>3</sup>/s on basis of slope-area measurements of peak flow.

## CUMBERLAND RIVER BASIN

03422500 CANEY FORK NEAR ROCK ISLAND, TN

LOCATION.--Lat 35°48'26", long 85°37'44", White County, Hydrologic Unit 05130108, on right bank 180 ft downstream from powerhouse of Tennessee Valley Authority, 0.8 mi downstream from Great Falls Dam, 0.9 mi downstream from Collins River, 1.5 mi northwest of Rock Island, and at mile 90.3.

DRAINAGE AREA.--1,678 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1911 to April 1913, July 1913 to May 1914, August 1914 to current year. Monthly discharge only for some periods, published in WSP 1306.

REVISED RECORDS.--WSP 1276: 1934, 1937. WSP 1910: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 647.09 ft above sea level. Prior to Mar. 30, 1924, at sites from 80 ft to 0.5 mi upstream at different datums. Apr. 12, 1925, to Sept. 9, 1930, at present site at datum 5.00 ft higher and Sept. 10, 1930, to Sept. 18, 1964, 3.00 ft higher.

REMARKS.--Records good except for estimated discharges, periods of low flow and rapidly changing stages, which are fair. Flow regulated since Dec. 8, 1916, by Great Falls Lake (station 03422000) (see p. 104). Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1902 reached a stage about 10 ft lower than the flood of Mar. 23, 1929, at a point 8 mi downstream, from profile by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 65,000 ft<sup>3</sup>/s, Mar. 23, gage height, 25.39 ft; minimum daily, 44 ft<sup>3</sup>/s, Oct. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3310	e880	3520	4630	3480	3560	4980	3540	2810	634	63	193
2	3240	e1420	3500	4050	3460	3530	4570	3510	3350	597	64	194
3	3180	e2350	2500	3700	3420	3660	4270	3480	3240	57	63	187
4	2630	e3450	3400	3540	3400	6090	4040	10800	3210	58	64	61
5	1790	e9720	3400	5370	3370	6210	4020	8730	3180	188	65	61
6	1530	e9100	3200	5030	3130	5650	5890	4230	2750	190	66	104
7	1460	e6180	3180	4990	2840	4620	5120	4180	1460	e190	65	114
8	1540	e4180	2970	5470	2640	4300	4810	3650	1540	215	65	61
9	1600	e3980	3070	5920	2660	4000	4460	3520	1440	190	148	59
10	1170	e3520	2360	5170	2490	3630	5440	3500	1250	58	149	59
11	1130	e3440	2660	5430	342	3210	5410	3520	903	59	151	59
12	1320	e3440	2510	8550	67	3540	4310	3500	733	187	150	59
13	1340	e3420	2580	7180	1120	3450	3850	3470	310	193	150	59
14	1350	e3450	2620	5740	1050	3480	3660	3050	509	191	65	58
15	1240	e3470	2970	4940	1700	3470	3570	3160	730	187	65	611
16	1020	e3460	3200	4350	2340	3430	3500	2870	824	190	65	334
17	216	3440	3200	4060	3270	4070	3510	2630	837	61	109	57
18	501	3430	3120	3690	3280	10600	3490	2560	e910	62	112	56
19	694	3430	2370	3550	3130	8450	3450	2230	55	192	109	56
20	757	3380	3430	3520	2860	7400	3420	3410	55	200	109	56
21	787	3040	12100	3490	1760	5610	3240	3450	621	151	66	56
22	672	3050	8240	3480	3260	5830	3160	3410	518	147	66	55
23	847	3550	18100	3490	3460	33400	3260	3370	539	148	66	55
24	51	7820	21800	4540	3500	40400	2480	3320	523	62	66	55
25	44	8380	11100	8400	3530	17500	2420	1820	633	62	65	55
26	658	7060	7290	6450	3540	9000	3140	1840	55	149	65	56
27	e530	4130	5930	4850	3540	10700	4050	2120	56	e58	64	264
28	e860	4330	8020	4370	3590	10100	5400	1700	349	e58	64	1010
29	e860	3820	7810	3970	---	7920	4380	760	443	e58	64	746
30	e880	3550	6030	3600	---	6110	3830	687	605	e58	106	145
31	e880	---	5330	3520	---	5380	---	720	---	148	106	---
TOTAL	38087	127870	171510	149040	76229	248300	121130	102737	34438	4998	2695	4995
MEAN	1229	4262	5533	4808	2722	8010	4038	3314	1148	161	86.9	166
MAX	3310	9720	21800	8550	3590	40400	5890	10800	3350	634	151	1010
MIN	44	880	2360	3480	67	3210	2420	687	55	57	63	55
(+)	-10000	+12000	+1500	-1900	+1100	+600	-600	-9300	-2000	+4900	+1800	-2600
MEAN±	906	4662	5581	4746	2762	8029	4018	3014	1081	319	145	79.8
CFSM±	.54	2.78	3.33	2.83	1.65	4.78	2.39	1.80	.64	.19	.09	.05
IN.±	.62	2.83	3.10	3.26	1.71	5.52	2.67	2.07	.72	.22	.10	.05
CAL YR 1992	MEAN±	2945	CFSM±	1.76	IN.±	23.89						
WTR YR 1993	MEAN±	2952	CFSM±	1.76	IN.±	23.88						

e Estimated

± Change in contents, in cfs-days, in Great Fall Lake.

± Adjusted for change in contents.

NOTE.--Contents (cfs-days) for adjustment furnished by Tennessee Valley Authority.



CUMBERLAND RIVER BASIN

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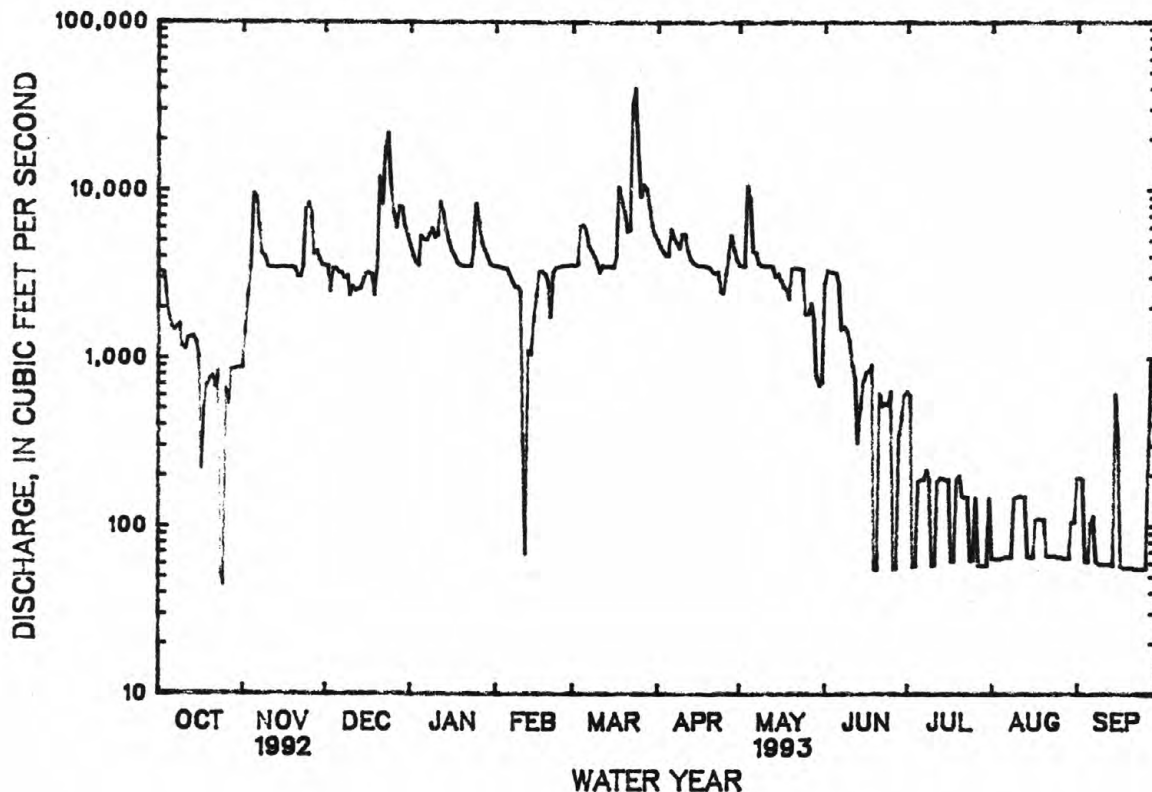
03422500 CANEY FORK NEAR ROCK ISLAND, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 1993, BY WATER YEAR (WY)

MEAN	871	1793	4170	5814	6250	6940	4974	2937	1606	1162	973	776
MAX	5017	9575	14860	16700	17030	18730	14920	12020	9810	6799	8810	2901
(WY)	1976	1958	1991	1937	1939	1929	1912	1984	1928	1916	1920	1950
MIN	37.2	40.6	325	359	1055	1229	991	638	83.6	115	79.8	125
(WY)	1954	1954	1964	1981	1934	1988	1986	1988	1988	1968	1976	1968

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1912 - 1993	
ANNUAL TOTAL	1077269		1082029			
ANNUAL MEAN	2943		2964		3121	
HIGHEST ANNUAL MEAN					5451	
LOWEST ANNUAL MEAN					1112	
HIGHEST DAILY MEAN	28200		40400		154000	
LOWEST DAILY MEAN	44		44		25	
ANNUAL SEVEN-DAY MINIMUM	255		55		32	
INSTANTANEOUS PEAK FLOW			65000		a210000	
INSTANTANEOUS PEAK STAGE			25.39		b43.60	
INSTANTANEOUS LOW FLOW					c25	
10 PERCENT EXCEEDS	5800		5900		6720	
50 PERCENT EXCEEDS	2380		2970		1780	
90 PERCENT EXCEEDS	476		62		128	

- a From rating curve extended above 110,000 ft<sup>3</sup>/s.  
b Also occurred several days August to October 1951.  
c From floodmarks.



## CUMBERLAND RIVER BASIN

03423152 FALLING WATER RIVER BELOW BURGESS FALLS DAM, TN

LOCATION.--Lat 36°02'42", long 85°35'43", Putnam County, Hydrologic Unit 05130108, on left bank 800 ft below Burgess Falls Dam, 0.3 mi above Burgess Falls, and at mile 10.7.

DRAINAGE AREA.--124 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1990 to September 1993 (discontinued).

GAGE.--Water-stage encoder, crest-stage gage and satellite telemeter at station. Datum of gage is 847.89 ft above sea level.

REMARKS.--Records good below 500 ft<sup>3</sup>/s fair above. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 24	0230	1,250	2.61	May 4	1330	1,230	2.59
Mar. 24	0330	*1,360	*2.72				

Minimum discharge, 17 ft<sup>3</sup>/s, Sept. 13, 14, 15, 19, 20, 21, 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	77	136	268	173	163	327	153	201	44	20	24
2	116	107	130	233	161	164	312	140	144	41	20	24
3	104	117	122	208	150	229	278	133	115	35	20	25
4	96	121	112	223	143	269	233	973	102	33	30	54
5	118	190	118	700	137	289	251	650	96	33	114	35
6	115	206	112	529	133	275	342	418	91	33	114	24
7	96	159	101	385	124	244	289	327	108	33	92	22
8	87	131	96	382	119	219	242	265	96	29	53	20
9	81	115	92	375	115	194	237	229	85	29	37	22
10	80	104	108	315	110	176	332	201	79	140	30	21
11	75	95	155	302	110	164	317	177	81	70	28	20
12	70	100	165	396	138	154	254	164	79	43	27	18
13	68	177	144	387	129	155	224	162	118	39	30	17
14	65	157	130	339	116	153	200	167	120	44	53	17
15	63	126	120	295	108	152	186	146	155	50	32	19
16	63	111	120	260	166	184	176	142	97	119	29	28
17	68	100	269	228	184	627	166	173	73	73	26	27
18	61	93	310	202	148	668	159	145	64	59	25	21
19	58	87	227	184	133	442	150	169	64	41	24	18
20	56	82	435	171	129	330	150	168	59	36	24	18
21	55	83	534	221	155	271	176	144	50	31	26	19
22	53	312	371	263	274	260	161	127	54	28	23	18
23	52	575	842	212	216	750	146	117	52	27	21	22
24	52	358	1000	580	169	1150	140	107	47	27	22	44
25	50	413	563	705	156	707	145	110	45	26	22	28
26	46	308	410	442	211	494	527	139	39	23	48	e102
27	46	227	327	341	206	495	405	115	39	22	82	e70
28	50	187	452	287	180	470	252	104	39	22	36	e52
29	50	161	431	247	---	395	190	109	47	23	28	e37
30	53	145	355	209	---	339	166	99	43	20	25	e32
31	96	---	305	185	---	320	---	147	---	20	25	---
TOTAL	2275	5224	8792	10074	4293	10902	7133	6420	2482	1293	1186	898
MEAN	73.4	174	284	325	153	352	238	207	82.7	41.7	38.3	29.9
MAX	132	575	1000	705	274	1150	527	973	201	140	114	102
MIN	46	77	92	171	108	152	140	99	39	20	20	17
CFSM	.59	1.40	2.29	2.62	1.24	2.84	1.92	1.67	.67	.34	.31	.24
IN.	.68	1.57	2.64	3.02	1.29	3.27	2.14	1.93	.74	.39	.36	.27

e Estimated

## CUMBERLAND RIVER BASIN

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03423152 FALLING WATER RIVER BELOW BURGESS FALLS DAM, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

MEAN	44.1	88.1	462	329	312	383	210	119	71.0	71.9	50.4	69.5
MAX	73.4	174	606	349	578	520	249	207	82.7	141	82.0	141
(WY)	1993	1993	1991	1992	1991	1991	1991	1993	1993	1992	1992	1992
MIN	25.6	36.9	284	314	153	278	142	64.2	64.5	32.7	30.9	29.9
(WY)	1992	1992	1993	1991	1993	1992	1992	1992	1991	1991	1991	1993

## SUMMARY STATISTICS

## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

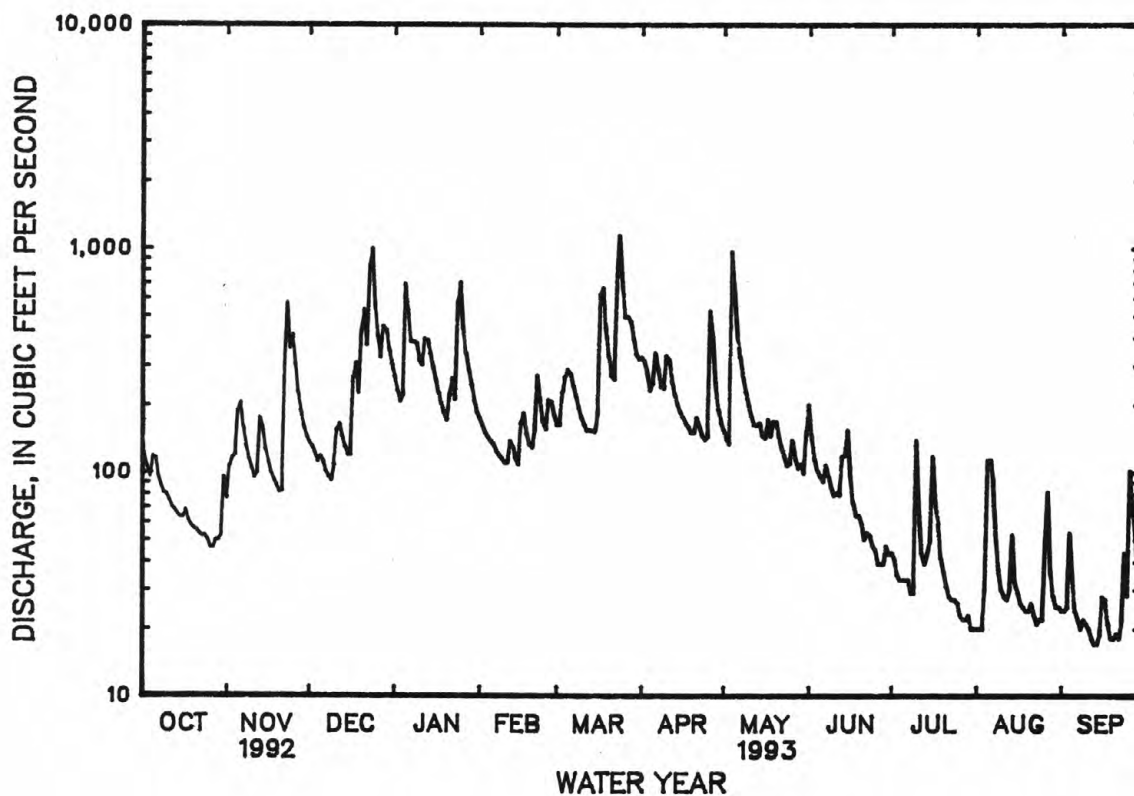
## WATER YEARS 1990 - 1993

ANNUAL TOTAL	61105			60972								
ANNUAL MEAN	167			167								
HIGHEST ANNUAL MEAN									184			
LOWEST ANNUAL MEAN									215			1991
HIGHEST DAILY MEAN	1500	Jan 4		1150	Mar 24				167			1993
LOWEST DAILY MEAN	31	aAug 20		17	Sep 13				3900	Dec 23		1990
ANNUAL SEVEN-DAY MINIMUM	33	Aug 10		19	Sep 9				16	Sep 4		1990
INSTANTANEOUS PEAK FLOW				1360	Mar 24				18	Sep 25		1990
INSTANTANEOUS PEAK STAGE				2.72	Mar 24				a4230	Dec 23		1990
INSTANTANEOUS LOW FLOW				b17	Sep 12				4.86	Dec 23		1990
ANNUAL RUNOFF (CFSM)	1.35			1.35					c16	Oct 1		1990
ANNUAL RUNOFF (INCHES)	18.33			18.29					1.48			
10 PERCENT EXCEEDS	354			363					20.16			
50 PERCENT EXCEEDS	108			120					394			
90 PERCENT EXCEEDS	46			25					96			
									23			

a Maximum discharge from rating curve extended above 500 ft<sup>3</sup>/s on basis of flow over dam computation.

b Also occurred Sept. 14, 15, 19, 20, 21, 22, 23.

c Also occurred Oct. 2, 1990.



## CUMBERLAND RIVER BASIN

03423400 TAYLOR CREEK NEAR CASSVILLE, TN

LOCATION.--Lat 35°59'50", long 85°36'56", White County, Hydrologic Unit 05130108, on right bank at downstream end of county road bridge at Franchers Mill, 3.0 mi north of Cassville, and at mile 2.2.

DRAINAGE AREA.--34.2 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1989 to September 1993 (discontinued).

GAGE.--Water-stage encoder, crest-stage gage and satellite telemeter at station.

REMARKS.--Records good, except for periods of estimated daily discharges, which are fair. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 23	1000	*1,020	*3.73	May 4	Unknown	Unknown	Unknown

Minimum discharge, 1.0 ft<sup>3</sup>/s, Sept. 13, 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	19	36	47	35	35	53	27	18	36	1.6	1.6
2	27	29	33	42	31	45	52	26	15	14	1.5	1.7
3	24	24	29	38	29	65	43	26	13	9.3	1.4	2.2
4	24	39	29	63	27	63	40	11	11	7.2	2.2	2.3
5	30	51	31	103	26	59	65	e110 e75	11	6.1	2.2	1.7
6	24	46	26	64	25	52	64	63	9.6	5.5	7.8	1.6
7	21	38	25	55	23	50	52	48	8.8	5.1	4.4	1.5
8	18	33	23	78	22	47	46	38	8.1	4.5	3.6	1.4
9	17	28	21	60	20	42	48	33	7.4	4.2	3.3	1.5
10	16	25	27	53	19	38	52	28	7.0	4.5	3.2	1.6
11	15	22	35	72	23	34	43	24	6.6	3.7	3.0	1.4
12	14	29	29	85	33	32	39	22	6.1	3.7	3.0	1.3
13	13	35	25	73	26	35	36	23	5.8	3.9	3.7	1.2
14	12	27	22	61	22	33	34	22	6.0	3.7	3.0	1.1
15	12	23	21	54	20	39	32	19	7.4	4.0	2.8	1.8
16	13	20	22	49	45	63	30	32	6.1	3.5	2.6	1.8
17	13	19	65	44	31	133	28	36	5.6	3.3	2.4	1.4
18	12	18	46	39	25	84	26	25	4.9	3.0	2.8	1.4
19	11	17	40	37	22	66	24	44	4.4	2.7	2.3	1.4
20	11	16	97	35	22	57	33	31	4.2	2.6	2.9	1.2
21	10	17	70	75	37	50	35	25	4.4	2.4	3.0	1.3
22	9.2	81	60	56	37	53	28	21	4.4	2.4	2.7	1.2
23	8.9	66	189	44	28	498	24	18	4.2	2.4	2.2	2.5
24	8.7	87	107	e60	25	191	23	16	39	2.3	2.8	2.5
25	8.7	90	77	e100	35	95	41	20	19	2.3	3.4	2.2
26	8.3	67	66	e65	54	86	83	24	9.5	2.1	2.6	6.5
27	8.9	56	63	57	42	133	46	18	7.5	1.9	2.3	3.9
28	9.7	49	116	50	37	85	37	15	6.4	1.7	2.0	2.9
29	9.4	44	72	44	---	67	33	13	5.9	1.6	1.7	2.5
30	15	40	61	40	---	56	30	12	28	1.5	1.8	2.3
31	24	---	53	37	---	56	---	22	---	1.5	1.7	---
TOTAL	478.8	1155	1616	1780	821	2442	1220	956	294.3	152.6	85.9	58.9
MEAN	15.4	38.5	52.1	57.4	29.3	78.8	40.7	30.8	9.81	4.92	2.77	1.96
MAX	31	90	189	103	54	498	83	110	39	36	7.8	6.5
MIN	8.3	16	21	35	19	32	23	12	4.2	1.5	1.4	1.1
CFSM	.45	1.12	1.52	1.67	.85	2.30	1.19	.90	.29	.14	.08	.06
IN.	.52	1.25	1.75	1.93	.89	2.65	1.32	1.04	.32	.17	.09	.06

e Estimated



## CUMBERLAND RIVER BASIN

03423400 TAYLOR CREEK NEAR CASSVILLE, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

MEAN	8.40	18.5	134	66.3	74.6	77.4	36.8	20.9	8.90	10.4	3.71	8.97
MAX	15.4	38.5	236	76.7	163	101	44.8	30.8	10.1	27.3	8.02	27.5
(WY)	1993	1993	1991	1992	1991	1991	1991	1993	1991	1992	1992	1992
MIN	3.75	3.74	52.1	57.4	29.3	52.6	24.9	8.95	6.81	4.05	2.02	1.96
(WY)	1992	1992	1993	1993	1993	1992	1992	1992	1990	1991	1990	1993

## SUMMARY STATISTICS

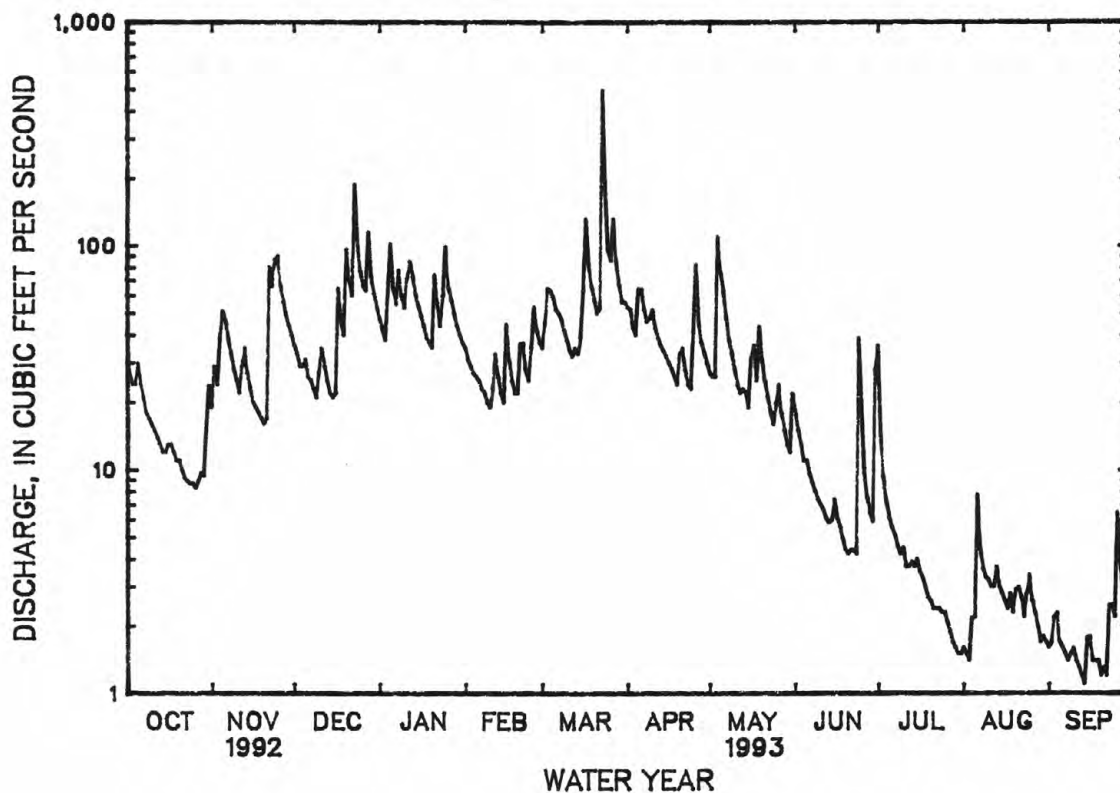
FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1990 - 1993

ANNUAL TOTAL	11415.0	11060.5	
ANNUAL MEAN	31.2	30.3	
HIGHEST ANNUAL MEAN			39.4
LOWEST ANNUAL MEAN			55.4
HIGHEST DAILY MEAN			30.3
LOWEST DAILY MEAN	492	498	2410
ANNUAL SEVEN-DAY MINIMUM	3.7	1.1	1.1
INSTANTANEOUS PEAK FLOW	4.3	1.4	1.4
INSTANTANEOUS PEAK STAGE		1020	5160
INSTANTANEOUS LOW FLOW		3.73	5.95
ANNUAL RUNOFF (CFSM)	.91	a1.0	a1.0
ANNUAL RUNOFF (INCHES)	12.38	.88	1.15
10 PERCENT EXCEEDS	64	12.00	15.63
50 PERCENT EXCEEDS	20	65	67
90 PERCENT EXCEEDS	5.8	24	14
		2.2	2.1

a Also occurred Sept. 14, 15.



## CUMBERLAND RIVER BASIN

03424730 SMITH FORK AT TEMPERANCE HALL, TN

LOCATION.--Lat 36°05'14", long 85°54'29", Dekalb County, Hydrologic Unit 05130108, on left bank 150 ft downstream from James Slager Memorial bridge on State Highway 264, 0.3 mi northwest of Temperance Hall, and at mile 8.8.

DRAINAGE AREA.--214 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1991 to current year.

GAGE.--Water-stage encoder, crest-stage gage and satellite telemeter at station. Datum of gage is 499.00 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum(\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 23	1500	*7,380	*15.32	Mar. 23	1730	3,870	10.65
Jan. 5	0200	5,900	13.51	May 4	0630	5,410	12.87

Minimum discharge, 13 ft<sup>3</sup>/s, Sept. 2, 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	147	146	163	331	184	317	364	205	151	892	18	14
2	122	1050	145	273	162	505	391	181	100	172	18	13
3	106	526	128	244	145	1160	352	187	78	87	18	21
4	111	864	118	603	134	678	314	2950	68	63	19	37
5	722	977	121	2600	126	492	471	926	63	50	19	25
6	395	762	117	875	119	381	683	512	58	43	34	27
7	251	454	113	568	115	321	496	363	54	39	51	21
8	185	313	106	737	109	282	407	281	52	36	44	18
9	158	237	100	642	104	240	356	233	49	43	32	19
10	130	188	185	488	98	213	359	184	45	76	27	17
11	117	159	399	650	97	188	323	153	46	62	24	17
12	104	478	312	899	122	166	289	136	45	47	21	16
13	93	751	250	655	127	182	255	132	44	41	21	15
14	84	388	209	488	112	172	231	134	42	52	22	15
15	77	278	181	386	104	165	212	113	46	71	24	20
16	77	214	168	323	230	354	317	105	55	83	22	42
17	98	179	728	274	238	1470	213	134	50	62	20	35
18	99	156	541	229	182	860	172	108	43	46	23	33
19	86	136	384	199	157	555	156	165	40	37	20	27
20	77	122	1510	183	151	407	148	150	37	32	21	23
21	73	115	942	1040	265	325	157	112	40	29	25	21
22	70	448	660	697	496	300	138	96	40	27	27	20
23	66	478	4410	443	259	2480	127	85	39	29	23	21
24	62	454	1810	1280	205	1590	120	77	41	46	20	23
25	60	848	854	916	219	822	193	76	54	33	18	25
26	57	533	570	582	736	709	1640	96	44	28	17	56
27	60	375	433	423	551	1090	627	95	38	25	17	103
28	69	283	1200	327	393	845	394	77	38	23	16	77
29	73	227	803	269	---	595	298	69	41	21	15	50
30	72	185	570	221	---	461	242	64	39	20	15	37
31	121	---	429	198	---	394	---	72	---	19	15	---
TOTAL	4022	12324	18659	18043	5940	18719	10445	8271	1580	2334	706	888
MEAN	130	411	602	582	212	604	348	267	52.7	75.3	22.8	29.6
MAX	722	1050	4410	2600	736	2480	1640	2950	151	892	51	103
MIN	57	115	100	183	97	165	120	64	37	19	15	13
CFSM	.61	1.92	2.81	2.72	.99	2.82	1.63	1.25	.25	.35	.11	.14
IN.	.70	2.14	3.24	3.14	1.03	3.25	1.82	1.44	.27	.41	.12	.15

CUMBERLAND RIVER BASIN

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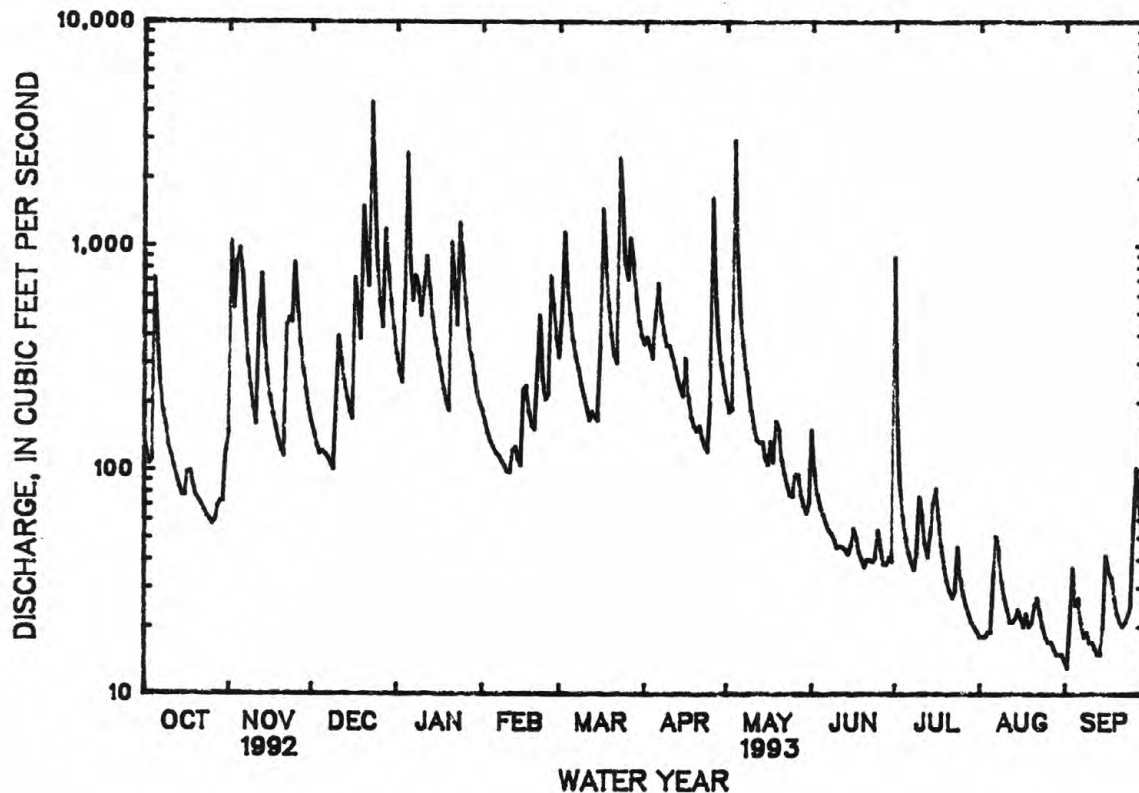
03424730 SMITH FORK AT TEMPERANCE HALL, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

MEAN	83.2	224	706	542	303	550	253	164	83.9	267	81.1	148
MAX	130	411	811	582	390	604	348	267	115	460	185	389
(WY)	1993	1993	1992	1993	1992	1993	1993	1993	1992	1992	1992	1992
MIN	36.6	37.2	602	503	212	496	158	61.4	52.7	75.3	22.8	26.8
(WY)	1992	1992	1993	1992	1993	1992	1992	1992	1993	1993	1993	1991

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1990 - 1993	
ANNUAL TOTAL	119034		101931			
ANNUAL MEAN	325		279		292	
HIGHEST ANNUAL MEAN					304	
LOWEST ANNUAL MEAN					279	
HIGHEST DAILY MEAN	5310	Sep 22	4410	Dec 23	5310	Sep 22 1992
LOWEST DAILY MEAN	33	Aug 20	13	Sep 2	13	Sep 2 1993
ANNUAL SEVEN-DAY MINIMUM	35	Aug 5	15	Aug 27	15	Nov 11 1991
INSTANTANEOUS PEAK FLOW			7380	Dec 23	9640	Sep 22 1992
INSTANTANEOUS PEAK STAGE			15.32	Dec 23	17.82	Sep 22 1992
INSTANTANEOUS LOW FLOW			a13	Sep 2	a13	Sep 2 1993
ANNUAL RUNOFF (CFSM)	1.52		1.30		1.36	
ANNUAL RUNOFF (INCHES)	20.69		17.72		18.53	
10 PERCENT EXCEEDS	664		702		630	
50 PERCENT EXCEEDS	139		134		104	
90 PERCENT EXCEEDS	52		22		21	

a Also occurred Sept. 3.



## CUMBERLAND RIVER BASIN

03425000 CUMBERLAND RIVER AT CARTHAGE, TN  
(National stream-quality accounting network station)

## WATER-QUALITY RECORDS

LOCATION.--Lat 36°14'53", long 85°57'19", Smith County, Hydrologic Unit 05130201, on left bank of Cordell Hull Bridge on State Highway 25, at Carthage, 1.0 mi downstream from Caney Fork River, and at mile 308.2.

DRAINAGE AREA.--10,690 mi<sup>2</sup>.

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1975 to September 1981.

WATER TEMPERATURE: October 1975 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 338 microsiemens, Sept. 5, 1981; minimum, 89 microsiemens, July 2, 1980.

WATER TEMPERATURES: Maximum, 29.5°C, Oct. 10, 1977; minimum, 2.0°C, Jan. 20, 22, 23, 1981.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)
OCT 22...	1000	21700	198	7.5	15.0	766	2.6	8.0	79	110	230
DEC 01...	0900	23800	220	7.8	11.0	752	3.9	9.2	85	100	--
FEB 16...	1000	8370	200	7.8	7.5	751	4.9	10.7	91	--	690
APR 12...	0900	25400	205	7.9	10.0	753	43	10.8	97	97	36
AUG 18...	1130	6460	164	7.3	15.5	754	2.6	7.3	73	44	58
DATE	HARDNESS TOTAL (MG/L AS CaCO3)	HARDNESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNESIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DIS-SOLVED (MG/L AS K)	ALKALINITY WAT DIS TOT IT FLD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLORIDE, DIS-SOLVED (MG/L AS Cl)
OCT 22...	88	27	26	5.5	3.8	8	0.2	1.5	61	25	3.5
DEC 01...	90	19	26	6.1	5.4	11	0.2	1.6	71	32	4.2
FEB 16...	87	24	25	6.0	5.7	12	0.3	1.9	63	30	4.6
APR 12...	80	23	23	5.5	4.4	10	0.2	1.4	57	28	4.0
AUG 18...	73	21	23	3.7	2.4	7	0.1	1.1	52	13	3.3
DATE	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)
OCT 22...	0.10	3.7	127	108	0.17	7440	<0.010	--	--	0.03	0.020
DEC 01...	0.10	3.9	120	124	0.16	7710	<0.010	0.260	0.280	0.04	0.030
FEB 16...	0.10	3.1	122	119	0.17	2760	0.020	0.280	0.300	0.03	0.020
APR 12...	<0.10	4.2	114	113	0.16	7820	<0.010	0.370	0.370	0.03	0.020
AUG 18...	<0.10	3.8	95	88	0.13	1660	<0.010	0.170	0.170	0.14	0.110



## CUMBERLAND RIVER BASIN

03425000 CUMBERLAND RIVER AT CARTHAGE, TN--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)
OCT 22...	<0.20	0.020	0.020	--	<0.010	20	19	<3	17	5
DEC 01...	<0.20	0.030	0.030	--	<0.010	--	--	--	--	--
FEB 16...	0.20	0.060	0.030	0.09	0.030	<10	19	<3	14	<4
APR 12...	<0.20	0.020	0.020	0.03	0.010	110	21	<3	130	<4
AUG 18...	0.30	0.010	0.030	0.03	0.010	<10	17	<3	11	<4
DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 22...	6	<10	<1	<1	<1.0	110	<6	7	410	93
DEC 01...	--	--	--	--	--	--	--	10	643	94
FEB 16...	16	<10	2	<1	<1.0	110	<6	10	226	71
APR 12...	37	<10	2	<1	<1.0	96	<6	10	686	95
AUG 18...	10	<10	2	<1	<1.0	83	<6	10	174	77

## CUMBERLAND RIVER BASIN

03426310 CUMBERLAND RIVER AT OLD HICKORY DAM (TAILWATER), TN

LOCATION.--Lat 36°17'47", long 86°39'28", Davidson County, Hydrologic Unit 05130202, at right bank in powerhouse, at Old Hickory Dam, 2.0 mi west of Hendersonville, and at mile 216.2.

DRAINAGE AREA.--11,673 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1931 to September 1942, October 1947 to current year. Prior to July 1953, published as "at dam 3, near Old Hickory". July 1953 to September 1986 published as "below Old Hickory".

GAGE.--Datum is sea level.

REMARKS.--Flow regulated by six lakes or reservoirs (see p. 103).

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 173,000 ft<sup>3</sup>/s, Jan. 29, 1937; maximum gage height, 438.80 ft, Mar. 14, 1975; minimum daily discharge, 86 ft<sup>3</sup>/s, Aug. 15, 1936; minimum gage height since filling of Cheatham Lake on Oct. 1, 1956, 383.49 ft, Sept. 10, 1962, at present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1793, 437.4 ft Dec. 31, 1926, at present datum, from profile by U.S. Army Corps of Engineers, discharge, 200,000 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 54,700 ft<sup>3</sup>/s, Mar. 28; minimum daily, 4,700 ft<sup>3</sup>/s, Nov. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18100	9310	14100	28600	19700	13000	47700	19200	6110	12600	9520	9210
2	16400	4700	15300	24000	19700	19100	45100	17900	10500	12200	8400	9140
3	10400	9800	14600	24400	20000	25600	47000	20500	13500	11200	8870	9150
4	7650	8830	13600	26700	21500	26800	44100	29600	13100	8960	10200	9150
5	10000	17000	10500	36400	22600	24500	43100	36600	11700	8030	9690	9160
6	17400	19000	7300	39000	21400	23600	43800	36800	8170	5380	11100	8800
7	22900	18300	12800	38000	17400	19700	48100	26800	6890	7970	9790	8870
8	20500	13000	14800	34800	12300	17100	52400	23300	6220	12100	9430	8390
9	20200	12100	24300	32800	11000	10200	44000	18300	8210	11900	7810	8620
10	17400	12500	25200	29200	14200	8820	38600	18200	12600	11200	8390	8400
11	15200	13400	18300	28400	15300	12600	40800	17200	15200	11500	9760	7990
12	11900	14500	9810	33100	15500	12100	33000	14400	9710	9130	11000	6440
13	25400	17800	8060	30200	11000	14300	23200	8840	8400	9450	9790	6780
14	18300	15200	12200	34700	11200	17600	20400	8530	7420	9980	8930	4770
15	19800	13000	12900	35700	10500	17400	22900	6370	7250	10800	10200	7860
16	20500	10200	13800	32900	11500	18800	26000	5030	8740	11300	9450	7650
17	12500	11600	15200	28100	19700	20200	25100	4780	11900	11700	8330	9400
18	14300	12200	18500	28100	17500	23000	22300	4780	11400	8320	8890	9070
19	16600	10400	20800	28900	17600	17200	21300	5050	7830	9370	10400	7190
20	19200	13600	18000	29100	15300	13700	21500	9470	6130	10300	10600	6400
21	22200	13900	19700	29000	13500	15200	18200	10600	7280	10500	10000	5910
22	20400	11000	26100	29900	22800	17300	17700	10000	7000	11100	9120	5700
23	20400	13100	25000	35900	22700	22900	19200	7660	7260	13400	9400	6620
24	15800	12900	41900	35700	15300	37100	23200	6920	8910	10600	8250	5750
25	9120	21200	26700	30000	10400	39000	19800	6110	11200	8890	10300	8120
26	8070	27300	21500	34400	10600	48500	21700	6620	11400	9220	10800	5800
27	8130	17200	20400	34000	19200	49700	20800	7040	7110	7740	11900	6960
28	11800	14400	26500	26400	13600	54700	20100	7430	6720	10100	11700	6900
29	14100	12500	28300	34800	---	44900	22300	6120	8070	9500	10600	5880
30	13200	12900	29200	28600	---	47500	17800	5820	8520	9200	9430	6590
31	11600	---	29500	24000	---	47900	---	5870	---	10100	8800	---
TOTAL	489470	412840	594870	965800	453000	780020	911200	411840	274450	313740	300850	226670
MEAN	15790	13760	19190	31150	16180	25160	30370	13290	9148	10120	9705	7556
MAX	25400	27300	41900	39000	22800	54700	52400	36800	15200	13400	11900	9400
MIN	7650	4700	7300	24000	10400	8820	17700	4780	6110	5380	7810	4770

## CUMBERLAND RIVER BASIN

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03426310 CUMBERLAND RIVER AT OLD HICKORY DAM (TAILWATER), TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 1993, BY WATER YEAR (WY)

MEAN	9488	12800	23010	29290	27600	31110	28640	20320	15170	12790	11860	10060
MAX	29430	29530	43590	79580	61700	73880	68070	65100	37840	28410	21400	27600
(WY)	1990	1980	1979	1974	1957	1975	1962	1984	1973	1967	1982	1979
MIN	2660	3449	3974	4656	8524	6778	6963	5465	6048	4211	4991	2723
(WY)	1969	1981	1981	1981	1981	1981	1986	1988	1988	1974	1975	1968

## SUMMARY STATISTICS

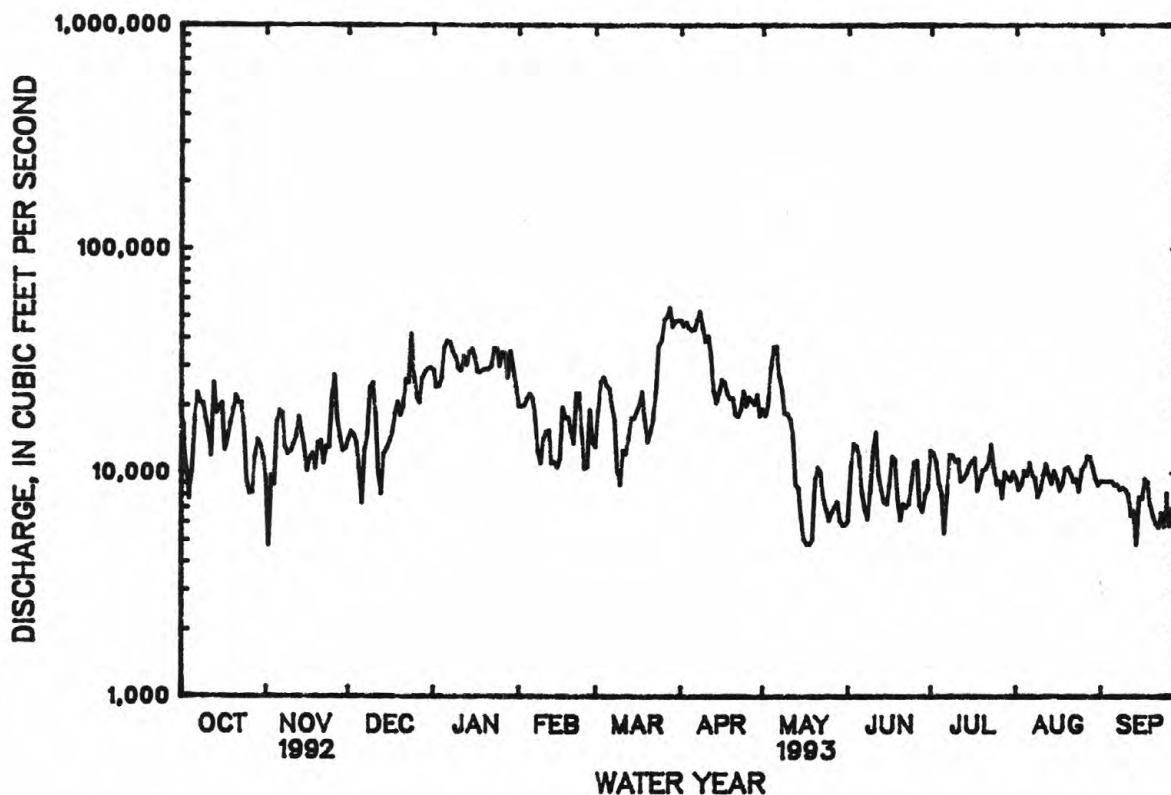
## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

## \*WATER YEARS 1957 - 1993

ANNUAL TOTAL	6183640	6134750	19310	
ANNUAL MEAN	16900	16810	28560	1974
HIGHEST ANNUAL MEAN			8780	1988
LOWEST ANNUAL MEAN			146000	Mar 14 1975
HIGHEST DAILY MEAN	67200	Jan 4	54700	Mar 28
LOWEST DAILY MEAN	4290	May 25	4700	Nov 2
ANNUAL SEVEN-DAY MINIMUM	5480	May 23	6200	May 13
10 PERCENT EXCEEDS	27400		32800	
50 PERCENT EXCEEDS	15600		13000	
90 PERCENT EXCEEDS	7560		5180	

\* Regulated period only.



## CUMBERLAND RIVER BASIN

03426310 CUMBERLAND RIVER AT OLD HICKORY DAM (TAILWATER), TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1979 to current year.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1979 to current year.

pH: April 1979 to current year.

WATER TEMPERATURE: April 1979 to current year.

DISSOLVED OXYGEN: April 1979 to current year.

TURBIDITY: October 1992 to September 1993.

INSTRUMENTATION.--Water-quality monitor since April 1979.

REMARKS.--Flow regulated by Old Hickory Dam and other reservoirs above station. Periods of missing record were due to instrument malfunctions. Supersaturation of dissolved oxygen may occur due to local hydraulic conditions.

## EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 262 microsiemens, Apr. 15, Dec. 2, 1988; minimum, 146 microsiemens, May 6, 1979.

pH: Maximum, 9.8 units, Mar. 26, 1988; minimum, 6.4 units, July 28, 1991, July 24, 25, 26, 1993.

WATER TEMPERATURE: Maximum, 27.6°C, Aug. 8, 1988; minimum, 2.1°C, Dec. 24, 1989.

DISSOLVED OXYGEN: Maximum, 15.9 mg/L, Dec. 24, 1990; minimum, 2.9 mg/L, Sept. 5, 1988, July 8, 1993.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 257 microsiemens, Dec. 30, 31; minimum, 176 microsiemens, Sept. 2, 3, 12, 13.

pH: Maximum, 8.7 units, Mar. 17, 22; minimum, 6.4 units, July 24, 25, 26.

WATER TEMPERATURE: Maximum, 26.3°C, July 11, 14; minimum, 5.5°C, Feb. 28.

DISSOLVED OXYGEN: Maximum, 13.0 mg/L, Mar. 26; minimum, 2.9 mg/L, July 8.

TURBIDITY: Maximum, 29 NTU, July 10; minimum, 5 NTU, May 15.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM @ 25 DEG.C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	215	189	181	206	194	200	241	229	236	253	229	238
2	215	189	181	206	194	201	245	229	239	241	229	236
3	211	189	181	206	194	201	245	237	241	237	225	234
4	210	189	181	210	198	202	249	237	242	237	225	231
5	214	---	---	206	198	202	249	233	243	237	225	230
6	214	---	---	206	198	203	249	237	242	229	222	225
7	214	193	185	206	202	204	249	229	240	233	218	225
8	213	205	207	210	202	205	245	225	235	233	222	228
9	213	205	207	210	202	206	237	225	231	233	225	231
10	209	201	205	214	202	209	233	222	227	233	225	229
11	209	200	204	222	210	214	229	218	224	233	225	230
12	208	200	206	226	214	221	225	214	220	233	225	229
13	212	200	206	230	218	226	225	214	221	233	222	228
14	212	200	206	238	227	232	233	218	224	233	222	227
15	212	200	204	238	230	234	233	218	225	233	225	230
16	208	200	202	238	227	231	225	218	222	237	225	231
17	208	200	203	234	227	231	225	214	221	237	229	232
18	208	200	204	234	223	228	225	214	222	237	229	233
19	212	200	204	231	219	226	229	222	225	241	225	234
20	209	201	204	227	219	223	233	222	225	233	221	229
21	209	201	204	230	219	223	229	222	226	232	217	225
22	209	197	204	230	222	228	229	214	222	225	213	221
23	209	201	203	233	221	231	229	214	219	227	212	220
24	209	197	202	237	229	234	233	222	228	224	212	216
25	205	197	202	237	229	232	249	233	238	227	216	221
26	209	197	201	233	225	230	253	237	243	227	212	220
27	209	197	203	229	218	224	249	237	243	227	216	222
28	209	197	202	233	222	225	241	233	239	227	216	223
29	205	197	202	233	222	227	253	237	242	227	216	224
30	205	197	201	237	225	232	257	245	249	227	216	222
31	205	197	201	---	---	---	257	241	249	227	216	220
MONTH	215	189	200	238	194	219	257	214	232	253	212	227



## 03426310 CUMBERLAND RIVER AT OLD HICKORY DAM (TAILWATER), TN--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM @ 25 DEG.C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	228	216	222	240	225	232	208	195	201	199	191	197
2	228	217	223	244	228	236	204	192	199	206	194	200
3	225	213	221	248	236	242	201	189	196	209	201	204
4	228	213	222	252	239	245	201	189	194	209	196	202
5	225	213	219	255	239	248	198	186	192	200	188	195
6	225	209	218	251	239	245	198	186	191	207	192	199
7	228	217	222	250	234	243	195	183	189	207	195	201
8	225	213	220	246	222	232	196	183	190	207	194	200
9	225	213	219	235	223	229	200	188	192	206	197	201
10	225	209	217	236	227	233	197	185	191	209	193	199
11	225	213	218	244	229	236	205	189	195	205	188	197
12	225	213	218	245	229	236	206	193	198	204	192	199
13	225	213	221	243	231	238	206	190	196	203	194	198
14	225	213	218	243	231	236	198	186	193	206	190	198
15	225	213	218	240	224	234	199	187	193	201	192	196
16	226	214	220	237	225	231	200	188	195	203	191	196
17	229	214	220	233	221	229	201	193	196	203	190	197
18	226	210	217	234	215	224	203	194	197	198	189	193
19	222	210	215	226	208	217	203	191	198	215	188	200
20	222	210	214	223	204	213	204	192	198	207	194	203
21	222	210	216	213	205	208	208	192	198	210	198	202
22	229	214	220	218	205	210	204	192	199	209	197	202
23	235	218	226	225	206	213	204	187	195	209	197	201
24	235	223	228	226	214	221	199	191	195	209	197	202
25	234	223	229	230	215	221	198	186	191	208	192	200
26	234	223	228	224	212	219	197	181	190	208	192	199
27	233	222	227	227	213	219	197	185	191	208	196	199
28	233	222	227	217	201	209	201	184	191	204	195	200
29	---	---	---	210	202	206	200	184	192	207	191	197
30	---	---	---	211	198	205	199	187	194	203	191	198
31	---	---	---	211	199	206	---	---	---	203	186	195
MONTH	235	209	221	255	198	226	208	181	194	215	186	199
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	202	190	196	200	184	193	199	191	196	203	185	195
2	202	194	197	196	184	193	201	189	196	196	176	186
3	198	186	193	192	184	190	200	189	195	188	176	182
4	197	185	193	196	188	191	199	190	194	189	177	183
5	201	185	192	196	184	190	201	188	194	189	177	183
6	197	185	191	196	188	193	200	187	193	189	177	184
7	196	184	192	196	188	192	199	186	191	190	178	185
8	196	188	190	196	184	192	197	185	191	190	178	185
9	196	183	190	196	184	190	195	183	190	190	179	184
10	195	187	190	196	184	191	195	182	189	191	179	183
11	199	183	191	196	184	189	201	181	190	183	179	182
12	199	183	190	196	184	191	197	185	193	188	176	182
13	194	178	187	196	188	192	197	181	189	188	176	183
14	204	186	192	196	184	191	194	185	191	192	180	186
15	200	191	196	196	184	191	198	186	192	189	180	184
16	203	190	196	200	188	193	198	186	192	189	177	183
17	202	190	197	201	189	195	198	186	191	189	177	185
18	201	189	195	202	193	196	198	186	191	189	185	188
19	201	184	192	206	194	198	198	182	192	189	185	187
20	196	187	191	203	195	201	198	186	191	189	185	187
21	199	187	191	203	195	198	194	186	191	189	181	187
22	198	187	192	200	188	195	195	183	191	189	181	187
23	198	186	193	200	189	195	195	183	190	189	181	186
24	197	185	191	202	189	195	195	187	190	189	181	187
25	196	188	192	202	186	195	198	187	193	189	181	187
26	196	188	193	203	190	196	203	191	197	189	181	188
27	199	190	193	204	191	197	204	191	198	189	181	185
28	200	190	193	208	192	200	202	193	198	189	181	187
29	200	192	195	207	194	201	204	195	200	189	181	186
30	200	188	193	202	189	198	205	196	201	189	181	186
31	---	---	---	201	191	198	210	196	201	---	---	---
MONTH	204	178	193	208	184	194	210	181	193	203	176	185

## CUMBERLAND RIVER BASIN

03426310 CUMBERLAND RIVER AT OLD HICKORY DAM (TAILWATER), TN--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		
1	8.1	7.9	7.5	7.3	7.8	7.6	8.1	8.1	8.0	7.9	8.3	8.2
2	8.2	7.7	7.5	7.3	7.9	7.6	8.1	8.0	8.0	7.9	8.2	8.0
3	8.1	7.7	7.7	7.4	7.8	7.5	8.1	8.0	8.0	7.9	8.1	8.1
4	8.1	7.7	7.8	7.4	7.8	7.7	8.1	7.9	8.1	7.9	8.3	8.1
5	8.0	---	7.8	7.5	7.9	7.6	8.1	7.9	8.1	8.0	8.3	8.2
6	8.3	---	7.8	7.6	7.9	7.6	8.1	8.0	8.1	8.0	8.4	8.3
7	8.3	8.1	7.7	7.6	8.0	7.8	8.1	8.0	8.1	7.9	8.4	8.3
8	8.3	7.9	7.7	7.6	8.0	7.7	8.0	7.9	8.1	7.9	8.5	8.3
9	8.1	7.6	7.7	7.5	7.9	7.7	8.0	7.8	8.1	7.8	8.5	8.3
10	7.8	7.6	7.7	7.6	7.9	7.4	7.9	7.8	8.0	7.8	8.4	8.2
11	7.7	7.6	7.7	7.6	7.9	7.3	7.9	7.8	7.9	7.8	8.4	8.2
12	7.6	7.4	7.8	7.6	8.0	7.3	7.9	7.7	7.8	7.7	8.5	8.2
13	8.2	7.4	7.8	7.6	7.9	7.7	7.8	7.7	8.0	7.6	8.5	8.3
14	8.2	8.1	7.8	7.6	8.3	7.9	7.8	7.7	7.9	7.7	8.6	8.4
15	8.3	8.1	7.7	7.6	8.3	8.1	7.8	7.7	7.8	7.6	8.6	8.1
16	8.3	8.1	7.8	7.6	8.3	8.2	7.8	7.6	7.8	7.6	8.5	8.0
17	8.3	8.0	8.0	7.7	8.3	8.1	7.7	7.6	7.8	7.6	8.7	7.8
18	8.0	7.8	8.0	7.9	8.3	8.1	7.6	7.5	7.9	7.6	8.2	7.8
19	7.8	7.7	8.4	7.7	8.4	8.2	7.6	7.5	7.8	7.5	8.1	7.8
20	7.7	7.6	8.4	8.2	8.4	8.3	7.9	7.4	7.8	7.6	8.0	7.6
21	7.6	7.5	8.3	8.1	8.4	8.3	7.9	7.8	8.0	7.5	8.0	7.8
22	7.5	7.4	8.2	8.0	8.4	8.3	7.9	7.8	7.9	7.8	8.7	7.9
23	7.6	7.4	8.1	7.8	8.3	8.2	8.0	7.9	7.9	7.7	8.6	8.0
24	7.6	7.4	8.0	7.8	8.4	8.2	8.0	7.9	8.1	7.8	8.0	7.9
25	7.6	7.5	8.0	7.8	8.3	8.2	8.1	7.9	8.1	7.9	8.4	7.8
26	7.7	7.6	7.9	7.7	8.3	8.2	8.1	8.0	8.2	8.0	8.3	7.7
27	7.6	7.5	7.9	7.8	8.3	8.1	8.1	7.9	8.4	8.1	7.8	7.6
28	7.6	7.5	7.9	7.8	8.3	8.1	8.0	7.9	8.4	8.2	7.7	7.6
29	7.6	7.4	7.9	7.7	8.2	8.1	7.9	7.9	---	---	7.7	7.6
30	7.5	7.3	7.8	7.7	8.2	8.1	8.0	7.9	---	---	7.8	7.6
31	7.5	7.3	---	---	8.1	8.1	8.0	7.9	---	---	7.8	7.7
MONTH	8.3	7.3	8.4	7.3	8.4	7.3	8.1	7.4	8.4	7.5	8.7	7.6
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		
1	7.8	7.6	8.3	7.7	8.3	7.5	7.5	6.7	7.8	6.9	7.5	7.0
2	7.7	7.6	8.2	8.0	8.4	7.5	7.4	7.1	7.3	7.1	7.4	6.9
3	7.8	7.7	8.1	7.6	8.4	7.8	7.5	7.2	7.4	6.9	7.4	6.5
4	7.7	7.6	8.1	7.8	8.5	7.7	7.6	7.2	7.7	6.9	6.9	6.6
5	8.0	7.7	8.1	7.7	8.5	7.6	7.6	7.3	7.9	7.0	7.1	6.6
6	7.9	7.7	7.9	7.4	8.6	7.5	7.7	7.3	8.1	7.3	7.1	6.6
7	8.1	7.8	7.6	7.4	8.5	7.7	7.6	7.1	7.5	7.3	7.1	6.7
8	8.1	8.0	7.5	7.4	8.4	7.5	7.8	7.3	7.5	7.1	7.2	6.8
9	8.4	7.9	7.4	6.7	8.3	7.4	7.9	7.5	7.5	7.0	7.2	6.8
10	8.4	7.9	7.5	6.9	8.3	7.3	8.1	7.5	7.7	6.8	7.1	6.8
11	8.2	8.0	7.8	7.3	8.4	7.4	8.2	7.5	7.4	6.9	7.4	6.9
12	8.2	8.0	8.2	7.4	8.5	7.4	7.9	7.4	7.2	6.6	7.6	6.7
13	---	---	8.1	7.1	8.6	7.6	8.0	7.5	7.5	6.7	7.5	6.9
14	---	---	7.7	7.0	8.4	7.1	8.0	7.4	7.2	6.7	7.8	7.0
15	8.5	7.4	7.7	7.3	7.6	7.1	8.2	7.3	7.2	6.6	7.7	7.1
16	7.5	7.4	8.2	7.2	7.9	7.2	7.8	7.2	7.2	6.7	7.6	6.9
17	7.6	7.4	8.0	7.5	7.8	7.2	7.5	7.0	7.1	6.7	7.7	7.1
18	7.7	7.5	8.3	7.5	7.8	7.3	7.8	7.0	7.4	6.8	7.9	7.4
19	8.0	7.7	---	---	7.7	7.1	7.7	6.8	7.3	6.7	7.9	7.5
20	---	---	---	---	7.8	7.2	6.9	6.7	7.2	6.8	8.0	7.6
21	---	---	7.8	7.2	7.7	7.2	6.9	6.6	7.3	6.8	7.9	7.5
22	---	---	7.7	7.2	7.8	7.2	7.3	6.5	7.4	6.8	7.7	7.5
23	8.3	8.0	8.2	7.4	7.8	7.1	7.1	6.6	7.4	6.8	7.7	7.6
24	8.3	7.8	8.2	7.4	7.8	7.1	7.1	6.4	7.4	7.0	7.8	7.4
25	8.2	7.8	8.1	7.8	8.3	7.4	7.2	6.4	7.4	7.0	8.0	7.4
26	8.2	7.9	8.2	7.5	7.9	7.3	7.2	6.4	7.5	7.0	7.7	7.5
27	8.2	7.6	8.3	7.5	8.2	7.2	7.5	6.6	7.6	7.1	7.6	7.4
28	8.3	7.6	8.2	7.6	8.1	6.9	7.4	6.9	7.5	7.2	7.8	7.4
29	8.4	7.6	8.1	7.4	7.3	6.8	7.0	6.8	7.8	7.1	7.7	7.4
30	8.5	8.2	8.1	7.4	7.0	6.8	7.0	6.8	7.6	7.2	7.9	7.4
31	---	---	8.1	7.4	---	---	7.3	6.9	7.4	7.1	---	---
MONTH	8.5	7.4	8.3	6.7	8.6	6.8	8.2	6.4	8.1	6.6	8.0	6.5

## CUMBERLAND RIVER BASIN

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03426310 CUMBERLAND RIVER AT OLD HICKORY DAM (TAILWATER), TN--Continued

TEMPERATURE WATER (DEG.C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	18.6	18.2	18.4	17.0	16.0	16.5	11.2	10.6	10.9	9.2	8.6	8.9
2	18.5	18.1	18.3	17.2	16.4	16.7	11.0	10.2	10.5	9.1	8.5	8.8
3	18.5	17.7	18.2	17.0	16.2	16.5	10.6	9.8	10.2	9.3	8.7	9.0
4	18.3	17.7	18.1	16.6	16.0	16.2	10.2	9.7	10.0	9.7	9.1	9.4
5	18.3	17.7	18.1	16.4	15.6	16.1	10.1	9.1	9.6	9.7	9.3	9.5
6	18.3	17.2	17.8	15.6	14.6	15.2	9.3	8.7	9.0	9.3	8.9	9.2
7	18.3	17.7	18.0	14.8	14.2	14.5	8.9	8.3	8.6	9.5	8.9	9.2
8	18.1	17.7	17.9	14.2	13.8	14.0	8.7	8.0	8.5	9.9	9.3	9.7
9	17.9	17.1	17.5	14.0	13.6	13.9	8.2	7.8	8.1	9.7	9.3	9.5
10	17.6	16.9	17.3	14.0	13.2	13.6	8.4	8.0	8.2	9.5	9.1	9.3
11	17.4	16.9	17.2	14.2	13.6	13.9	8.4	8.0	8.1	9.7	9.1	9.3
12	17.3	16.9	17.1	14.4	13.8	14.2	8.2	7.5	7.9	9.7	9.3	9.6
13	17.3	16.7	17.0	14.0	13.4	13.8	7.9	7.5	7.7	9.7	9.3	9.6
14	17.8	17.1	17.4	13.8	13.2	13.5	8.1	7.5	7.8	9.6	9.0	9.4
15	18.0	17.3	17.7	13.4	12.6	13.0	8.3	7.7	8.0	9.4	9.0	9.2
16	18.0	17.1	17.6	12.8	12.4	12.7	8.3	7.9	8.2	9.4	9.0	9.2
17	17.6	17.1	17.4	12.6	12.1	12.5	8.5	8.1	8.3	9.4	8.8	9.2
18	17.3	16.7	16.9	12.6	12.1	12.4	8.5	8.1	8.4	9.0	8.2	8.6
19	16.7	16.3	16.5	12.7	12.2	12.5	8.7	8.3	8.5	8.6	8.0	8.2
20	16.1	15.7	15.9	13.0	12.4	12.6	8.8	8.5	8.7	8.6	7.9	8.2
21	16.3	15.7	15.9	13.2	12.8	13.1	8.6	8.2	8.5	8.9	8.3	8.6
22	16.3	15.7	16.0	13.8	13.0	13.4	9.0	8.4	8.7	9.0	8.4	8.6
23	16.7	15.7	16.1	13.7	12.9	13.2	9.2	8.8	9.1	8.7	7.7	8.3
24	16.7	15.7	16.2	13.1	12.7	12.9	9.2	8.6	8.9	8.6	7.4	8.3
25	17.1	15.9	16.5	13.1	12.5	12.9	8.8	8.2	8.6	8.7	7.7	8.2
26	17.1	16.5	16.7	12.9	12.4	12.7	8.4	8.0	8.2	8.5	7.4	8.2
27	17.1	16.3	16.7	12.6	12.1	12.3	8.2	7.8	8.0	8.5	7.8	8.2
28	17.1	16.3	16.7	12.1	11.5	11.8	8.6	8.0	8.3	8.9	7.9	8.6
29	16.9	16.3	16.5	11.9	11.3	11.6	9.0	8.4	8.7	8.9	8.1	8.6
30	16.7	15.7	16.0	11.5	10.8	11.1	9.2	8.6	8.9	8.5	7.8	8.1
31	17.1	15.7	16.2	---	---	---	9.4	8.8	9.2	8.5	7.8	8.1
MONTH	18.6	15.7	17.1	17.2	10.8	13.6	11.2	7.5	8.7	9.9	7.4	8.9
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	8.5	7.6	8.0	6.8	5.8	6.3	10.5	9.8	10.3	15.5	15.1	15.2
2	8.5	7.9	8.2	7.0	6.4	6.7	10.0	9.4	9.7	15.3	14.9	15.2
3	8.3	7.9	8.1	7.3	6.8	7.0	9.6	9.0	9.3	15.5	15.1	15.3
4	8.3	7.8	8.0	7.3	6.9	7.1	9.4	8.6	9.0	15.3	14.7	15.1
5	8.3	7.8	8.0	7.1	6.7	6.9	9.4	8.4	9.1	15.5	14.7	15.1
6	8.3	7.8	8.1	7.2	6.5	6.8	9.4	8.8	9.1	15.9	15.1	15.4
7	8.5	7.6	8.2	7.6	7.0	7.2	9.6	8.8	9.2	17.0	15.7	16.3
8	8.9	8.1	8.6	7.9	7.2	7.5	9.8	8.6	9.2	18.0	16.6	17.2
9	8.9	8.3	8.6	8.5	7.6	8.0	9.8	8.8	9.5	17.8	16.6	17.2
10	9.3	8.1	8.8	8.7	8.1	8.5	10.2	9.2	9.7	18.1	16.4	17.3
11	9.3	8.9	9.1	8.5	7.9	8.3	10.8	9.8	10.2	18.3	16.8	17.4
12	9.3	8.5	9.1	8.5	7.9	8.3	11.6	10.6	11.0	17.7	16.6	17.0
13	9.3	8.7	9.0	8.3	7.0	7.7	11.8	11.2	11.4	17.5	16.5	17.0
14	9.1	8.5	8.9	7.2	6.6	6.8	12.2	11.6	11.9	18.0	16.3	17.1
15	8.7	8.1	8.3	6.8	6.2	6.4	12.5	11.9	12.2	17.8	17.1	17.5
16	8.1	7.6	7.9	6.8	6.0	6.3	12.3	11.7	12.0	17.9	17.4	17.6
17	7.9	7.0	7.6	6.8	6.4	6.5	12.2	11.7	12.0	18.1	17.0	17.6
18	7.2	6.6	6.9	7.0	6.4	6.6	12.7	11.8	12.2	18.5	17.2	18.0
19	6.8	6.4	6.6	7.1	6.7	6.8	13.0	12.0	12.6	17.6	17.0	17.3
20	7.2	6.4	6.7	7.1	6.7	6.9	13.2	12.7	13.0	18.8	17.4	18.2
21	7.6	6.6	7.1	7.3	6.7	6.9	13.3	12.7	13.0	18.8	17.5	18.0
22	7.6	6.6	7.1	7.6	7.1	7.4	13.0	12.5	12.8	19.2	17.5	18.4
23	7.2	6.4	6.9	8.2	7.6	7.9	13.8	12.7	13.1	19.8	18.2	19.0
24	7.0	6.6	6.7	8.6	7.8	8.3	13.6	12.8	13.3	19.3	18.0	18.8
25	6.7	6.3	6.4	8.6	8.2	8.4	13.6	13.0	13.4	18.7	17.9	18.4
26	6.5	5.9	6.2	9.5	8.3	8.9	14.0	13.4	13.7	19.3	18.1	18.6
27	6.1	5.7	5.9	9.9	9.3	9.6	14.5	13.6	14.1	19.7	18.9	19.3
28	6.2	5.5	5.9	10.1	9.3	9.6	14.9	13.7	14.3	19.7	18.7	19.2
29	---	---	---	10.5	9.5	10.0	14.9	13.9	14.5	19.3	18.7	19.0
30	---	---	---	10.9	10.1	10.5	15.3	14.3	14.8	20.3	18.3	19.1
31	---	---	---	10.9	10.3	10.6	---	---	---	19.1	17.6	18.3
MONTH	9.3	5.5	7.7	10.9	5.8	7.8	15.3	8.4	11.7	20.3	14.7	17.4

## CUMBERLAND RIVER BASIN

03426310 CUMBERLAND RIVER AT OLD HICKORY DAM (TAILWATER), TN--Continued

TEMPERATURE WATER (DEG.C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	19.8	17.7	18.7	24.3	23.3	23.9	25.2	23.9	24.5	25.0	23.6	24.1
2	20.0	18.8	19.4	24.9	23.1	24.1	24.8	24.2	24.5	24.6	23.8	24.2
3	20.2	18.6	19.4	24.5	23.3	24.2	25.2	23.8	24.6	24.4	23.1	23.9
4	20.2	18.8	19.6	25.1	23.5	24.3	25.3	24.4	24.8	24.1	22.9	23.6
5	20.6	18.2	19.4	25.5	24.5	25.0	25.3	24.5	25.0	24.1	23.5	23.8
6	20.6	19.8	20.3	25.3	24.1	24.5	25.3	24.5	25.0	24.0	23.4	23.8
7	21.2	20.2	20.6	25.1	23.9	24.5	25.3	24.6	24.9	24.2	23.2	23.8
8	21.2	19.8	20.5	25.7	23.9	24.8	25.2	24.4	24.9	24.3	23.2	23.9
9	21.2	20.0	20.5	26.1	24.5	25.2	25.0	23.8	24.5	24.1	23.3	23.7
10	21.1	19.9	20.4	25.9	24.5	25.2	25.1	23.7	24.3	23.3	22.7	23.0
11	21.9	20.3	21.0	26.3	24.5	25.3	24.4	22.8	23.8	23.4	22.6	23.1
12	21.9	20.3	21.0	25.9	24.7	25.3	24.2	22.2	23.6	23.6	22.6	23.2
13	22.1	20.9	21.3	26.1	24.7	25.3	23.8	21.3	22.4	24.1	22.6	23.4
14	21.9	20.8	21.4	26.3	25.1	25.5	23.8	21.9	23.2	24.5	23.3	23.9
15	22.1	20.8	21.4	25.7	24.5	25.1	24.6	21.9	23.3	23.5	22.3	22.8
16	23.0	21.5	22.2	25.5	24.5	24.9	24.6	23.0	23.6	23.2	22.5	22.9
17	23.0	21.9	22.5	24.7	23.9	24.4	24.0	23.0	23.5	23.0	22.0	22.6
18	23.3	22.0	22.7	24.9	23.7	24.3	24.0	22.2	22.9	22.7	21.6	22.1
19	23.3	22.0	22.5	24.7	23.3	24.0	24.0	22.4	23.2	22.4	21.4	22.0
20	22.9	22.2	22.5	25.0	23.4	24.2	23.4	22.2	23.0	22.5	21.6	22.0
21	23.0	22.3	22.6	25.4	23.8	24.6	23.2	22.6	23.0	22.3	21.3	21.7
22	23.5	22.7	22.9	24.6	23.2	24.0	24.6	23.0	23.7	22.1	20.9	21.5
23	24.3	23.1	23.6	25.2	23.2	24.1	24.8	23.2	24.1	22.1	21.3	21.6
24	24.5	23.3	23.8	24.8	23.2	24.1	24.2	23.4	23.8	22.1	21.1	21.5
25	25.4	23.4	24.4	24.5	23.2	23.8	24.4	23.2	23.8	22.3	20.7	21.6
26	24.8	23.0	24.0	24.3	23.1	23.6	24.5	22.9	23.9	21.7	20.7	21.1
27	25.1	23.6	24.3	23.9	23.1	23.6	25.0	23.6	24.3	21.4	20.4	20.9
28	24.9	23.5	23.9	24.2	23.3	23.7	24.8	22.3	24.0	21.6	20.8	21.2
29	24.5	22.9	23.9	23.6	22.6	23.2	25.2	23.2	24.3	21.2	20.0	20.6
30	24.5	23.5	24.0	24.3	23.1	23.5	24.9	23.7	24.3	21.0	20.2	20.6
31	---	---	---	24.7	23.5	24.2	24.6	23.1	24.1	---	---	---
MONTH	25.4	17.7	21.8	26.3	22.6	24.4	25.3	21.3	24.0	25.0	20.0	22.6

OXYGEN DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	9.1	-8.4	-9.6	7.9	6.4	7.2	10.8	10.2	10.5	9.6	9.3	9.5
2	8.7	-9.5	-10.9	8.5	6.7	7.8	10.8	10.0	10.5	9.7	9.4	9.6
3	9.7	-8.8	-10.1	9.2	7.5	8.6	10.8	9.8	10.3	9.8	9.4	9.7
4	8.5	-8.5	-10.2	8.4	6.8	7.7	11.2	10.2	10.5	9.7	9.5	9.6
5	8.5	-8.1	-10.6	8.5	7.1	7.8	10.9	9.9	10.5	9.8	9.6	9.8
6	9.0	---	---	8.2	7.3	7.8	11.1	10.0	10.8	9.9	9.7	9.8
7	9.0	-8.1	-10.1	7.8	6.9	7.5	11.2	10.0	10.6	9.8	9.6	9.7
8	8.3	-8.5	-10.1	7.8	7.0	7.4	10.6	9.7	10.3	9.7	9.4	9.5
9	8.5	6.9	7.8	8.4	7.2	7.8	10.9	10.4	10.6	9.7	9.4	9.6
10	8.2	7.0	7.7	8.0	7.6	7.8	10.6	9.8	10.3	9.8	9.6	9.7
11	8.4	6.8	7.7	8.3	7.2	7.7	10.5	9.8	10.2	9.7	9.5	9.6
12	8.1	6.6	7.5	8.9	7.1	8.1	10.9	10.0	10.4	9.7	9.4	9.5
13	8.5	7.3	7.7	8.2	6.9	7.6	11.0	10.3	10.7	9.6	9.4	9.5
14	8.2	7.3	7.7	8.8	7.3	8.2	10.7	10.5	10.6	9.7	9.5	9.6
15	8.3	7.3	7.9	9.4	8.4	8.8	10.7	10.4	10.6	9.8	9.7	9.7
16	7.8	7.3	7.5	9.4	8.4	8.9	10.6	10.1	10.4	9.7	9.5	9.7
17	8.2	7.3	7.7	9.7	8.9	9.4	10.4	10.1	10.3	9.8	9.6	9.7
18	8.1	7.4	7.8	9.6	8.9	9.2	10.4	10.1	10.3	10.0	9.7	9.8
19	9.0	7.5	8.3	10.8	9.0	9.8	10.4	10.1	10.2	10.1	9.8	10.0
20	8.7	8.0	8.3	11.0	10.0	10.5	10.3	10.0	10.1	10.2	9.9	10.1
21	8.4	7.8	8.1	10.2	9.6	9.9	10.4	10.0	10.2	10.4	10.0	10.1
22	8.3	7.9	8.1	10.6	9.4	10.1	10.2	10.0	10.0	10.5	10.1	10.3
23	8.3	7.7	8.0	10.5	8.9	9.6	10.0	9.9	9.9	10.6	10.3	10.4
24	8.3	7.5	7.9	10.7	8.9	9.7	10.1	9.8	10.0	10.7	10.4	10.6
25	8.7	7.3	8.0	11.4	9.9	10.8	10.0	9.6	9.8	11.0	10.6	10.8
26	9.2	8.0	8.5	11.2	10.8	11.0	10.0	9.6	9.7	11.1	10.8	10.9
27	8.5	7.5	8.1	11.5	10.5	11.0	9.9	9.6	9.7	11.0	10.7	10.9
28	8.8	7.0	7.9	11.2	10.5	11.0	9.6	9.5	9.6	11.0	10.6	10.8
29	8.5	6.9	7.7	11.0	10.6	10.8	9.5	9.3	9.4	10.9	10.5	10.7
30	7.9	6.4	7.4	11.0	10.1	10.6	9.6	9.3	9.5	10.9	10.6	10.8
31	7.2	6.3	6.7	---	---	---	9.5	9.3	9.4	11.1	10.7	10.9
MONTH	9.7	-9.5	3.6	11.5	6.4	9.0	11.2	9.3	10.2	11.1	9.3	10.0



## CUMBERLAND RIVER BASIN

03426310 CUMBERLAND RIVER AT OLD HICKORY DAM (TAILWATER), TN--Continued

OXYGEN DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	11.2	10.8	11.0	11.7	11.1	11.5	11.9	11.6	11.8	12.2	10.5	11.4
2	11.2	10.9	11.1	11.5	10.9	11.2	12.0	10.3	11.1	11.7	10.0	11.3
3	11.1	10.9	11.0	11.2	10.7	11.0	12.2	10.2	11.7	10.9	10.2	10.7
4	11.2	10.9	11.1	11.5	11.1	11.3	12.1	10.5	11.5	11.3	9.8	10.4
5	11.3	11.0	11.1	11.5	11.1	11.3	10.5	10.2	10.4	11.2	10.4	10.9
6	11.3	11.0	11.1	12.0	10.0	11.2	12.3	10.4	10.6	11.1	10.3	10.7
7	11.2	10.9	11.1	11.8	11.4	11.6	12.2	12.0	12.1	11.0	10.1	10.5
8	11.2	10.9	11.1	11.6	11.0	11.3	12.0	11.7	11.9	11.5	9.9	10.7
9	11.6	11.2	11.3	11.4	10.7	11.1	11.9	10.0	11.1	11.5	9.5	10.4
10	11.5	11.1	11.3	11.6	10.9	11.3	10.6	9.8	10.1	12.3	9.1	10.6
11	11.4	11.0	11.2	11.5	10.2	11.1	10.6	9.9	10.3	12.5	9.6	10.9
12	11.1	10.9	11.0	11.7	10.8	11.4	10.2	9.8	10.0	11.7	9.6	10.6
13	10.9	10.6	10.8	11.8	11.2	11.6	10.2	9.7	9.9	10.5	8.9	9.8
14	10.9	10.6	10.7	12.4	11.4	11.7	10.9	9.1	10.2	11.0	8.8	9.8
15	10.7	10.4	10.5	12.6	11.7	12.1	10.6	10.1	10.4	10.2	9.2	9.8
16	10.6	10.2	10.5	12.3	11.7	12.0	10.4	9.8	10.2	9.7	8.9	9.3
17	10.6	10.2	10.4	11.9	11.2	11.6	10.4	9.6	10.0	9.3	7.7	8.7
18	10.8	10.2	10.5	11.7	11.1	11.4	10.7	9.5	10.2	9.3	7.5	8.6
19	10.8	10.4	10.6	11.4	10.8	11.2	10.7	10.0	10.4	8.3	7.0	7.7
20	10.8	10.4	10.6	11.9	10.9	11.5	10.4	9.9	10.1	8.7	6.7	8.0
21	10.9	10.4	10.6	12.4	11.4	11.8	10.1	9.4	9.8	8.7	7.1	7.8
22	10.8	10.4	10.6	12.6	11.7	12.2	10.4	9.6	10.0	8.5	7.1	8.0
23	10.7	10.4	10.6	12.4	11.9	12.2	11.4	10.0	10.7	9.1	7.6	8.3
24	11.1	10.1	10.6	12.3	11.8	12.1	11.0	10.3	10.7	8.6	7.2	8.0
25	11.0	10.4	10.8	11.9	11.6	11.7	10.9	10.2	10.5	7.6	6.4	7.2
26	11.3	10.5	10.9	13.0	11.6	12.4	10.8	9.9	10.4	8.1	6.5	7.3
27	11.6	10.8	11.3	12.2	11.8	12.0	11.1	9.8	10.6	8.2	7.8	7.9
28	11.9	11.2	11.5	12.2	12.0	12.1	11.9	10.0	11.1	8.1	6.9	7.6
29	---	---	---	12.2	10.0	11.2	12.2	10.8	11.5	7.9	6.5	7.4
30	---	---	---	12.0	10.5	11.7	12.2	11.1	11.6	7.7	6.0	7.2
31	---	---	---	11.9	11.5	11.8	---	---	---	7.1	6.4	6.8
MONTH	11.9	10.1	10.9	13.0	10.0	11.6	12.3	9.1	10.7	12.5	6.0	9.2
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	7.3	6.4	6.8	5.2	3.3	4.7	6.4	5.1	5.9	5.3	3.8	4.8
2	7.6	6.6	7.1	6.0	3.9	5.0	6.0	4.4	5.5	6.4	4.7	5.8
3	7.7	6.9	7.3	5.9	3.9	5.4	6.0	4.4	5.4	6.1	4.9	5.7
4	7.9	6.0	7.3	6.6	5.0	5.8	5.9	4.8	5.6	5.4	4.7	5.2
5	7.6	6.4	6.9	6.6	5.0	5.8	5.9	4.6	5.3	6.5	4.8	5.8
6	8.1	5.9	7.3	5.5	4.2	5.0	6.1	4.8	5.6	6.3	5.7	5.9
7	8.5	7.0	7.8	5.5	3.7	4.5	6.5	5.5	6.0	6.1	5.2	5.6
8	8.1	7.1	7.7	5.3	2.9	4.3	6.6	5.0	6.0	6.3	4.8	5.6
9	7.3	6.6	7.1	6.5	3.8	5.1	7.0	5.5	6.2	6.0	5.0	5.6
10	7.0	5.7	6.5	6.2	4.7	5.3	7.5	5.4	6.3	6.0	5.1	5.6
11	7.8	6.4	7.0	7.0	4.3	5.4	6.4	5.0	6.0	6.8	5.5	6.2
12	7.3	6.0	6.9	5.4	4.2	4.9	6.3	5.0	5.7	7.5	6.2	6.8
13	7.3	6.4	7.0	6.2	3.5	4.8	6.5	4.9	5.8	7.6	6.4	6.9
14	6.9	5.8	6.3	6.3	3.3	5.2	6.5	5.4	6.2	8.7	6.1	7.5
15	5.9	5.1	5.6	5.8	4.1	5.2	6.7	4.8	6.0	7.1	5.9	6.3
16	6.7	5.3	6.1	6.3	4.2	5.4	6.9	5.5	6.2	6.4	6.0	6.3
17	6.7	5.1	6.0	6.6	5.0	6.0	6.4	4.8	5.8	6.4	5.8	6.1
18	6.2	5.0	5.7	6.6	5.2	6.0	6.0	4.2	5.4	7.3	5.2	6.1
19	6.5	4.6	5.7	6.1	5.1	5.6	6.6	4.5	5.7	7.1	5.9	6.5
20	6.7	5.1	6.0	5.5	4.7	5.2	6.4	4.6	5.5	7.5	6.0	6.7
21	6.0	4.6	5.6	6.5	4.4	5.7	5.9	4.5	5.3	6.8	5.6	6.2
22	6.5	4.9	5.8	6.3	5.1	5.7	6.2	4.8	5.6	6.6	5.4	6.0
23	6.5	4.8	5.8	6.3	4.9	5.8	6.5	5.0	5.6	6.5	5.9	6.2
24	6.0	4.7	5.4	6.2	5.2	5.8	5.7	4.9	5.3	6.8	5.4	6.1
25	7.3	5.1	6.2	6.3	4.4	5.8	6.0	4.4	5.3	7.5	4.7	6.5
26	5.8	3.8	4.7	5.9	3.9	5.4	5.3	3.8	4.8	6.7	5.6	6.0
27	6.8	3.4	5.4	6.1	5.0	5.5	5.4	3.9	4.9	6.4	5.2	6.0
28	6.3	4.6	5.7	6.0	4.2	5.3	5.6	3.3	4.8	7.5	6.1	6.9
29	5.7	4.0	5.1	5.4	4.2	4.9	5.6	3.3	4.8	7.6	4.7	6.5
30	5.9	3.9	4.8	5.5	4.2	5.1	5.0	3.6	4.6	8.5	6.4	7.4
31	---	---	---	6.2	5.0	5.7	4.8	3.7	4.4	---	---	---
MONTH	8.5	3.4	6.3	7.0	2.9	5.3	7.5	3.3	5.5	8.7	3.8	6.2

## CUMBERLAND RIVER BASIN

03426310 CUMBERLAND RIVER AT OLD HICKORY DAM (TAILWATER), TN--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	14	12	18	13	11	8	15	13	11	9	16	8
2	14	12	22	14	11	9	15	13	10	8	17	11
3	14	12	18	14	11	8	16	12	10	8	17	9
4	15	11	17	8	11	8	15	13	9	8	10	7
5	16	11	12	9	11	7	16	13	9	7	10	7
6	17	13	12	9	10	7	16	13	9	7	11	8
7	16	12	12	9	8	7	16	13	11	7	15	10
8	17	12	11	9	8	7	27	15	13	6	20	15
9	16	12	12	9	9	7	25	18	9	6	26	18
10	16	13	11	9	10	7	19	15	10	7	24	20
11	18	13	11	8	11	8	17	14	10	7	23	17
12	17	14	12	9	11	8	17	14	9	8	21	17
13	---	---	12	9	11	8	18	16	12	8	21	18
14	---	---	12	9	11	9	18	15	9	7	22	15
15	---	---	12	10	11	9	18	13	11	7	17	11
16	---	---	12	9	11	9	16	13	11	8	16	13
17	---	---	12	9	13	9	15	12	11	7	16	12
18	---	---	12	9	11	9	14	12	11	7	16	13
19	---	---	11	8	12	9	14	12	13	7	15	13
20	13	9.4	12	8	13	10	13	11	13	7	14	11
21	11	9	12	9	12	10	13	11	11	7	13	11
22	10	8	12	8	15	10	13	11	11	6	14	10
23	10	8	11	9	13	10	13	9	9	6	12	9
24	10	8	11	9	13	9	12	9	11	7	12	9
25	10	8	11	9	16	12	15	11	15	8	13	11
26	10	8	11	9	15	13	14	11	9	7	27	12
27	12	9	12	10	16	13	12	10	11	6	26	19
28	14	9	11	9	17	14	19	12	12	6	20	16
29	13	11	11	9	17	13	16	12	---	---	22	16
30	16	11	11	8	14	12	14	11	---	---	22	19
31	18	13	---	---	14	12	12	9	---	---	20	17
MONTH	18	8	22	8	17	7	27	9	15	6	27	7
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	18	16	9	6	---	---	16	9	17	8	---	---
2	19	15	10	6	---	---	13	9	14	10	16	13
3	16	13	14	8	---	---	14	9	16	8.8	18	11
4	15	13	12	9	---	---	14	9	16	9	17	12
5	15	12	13	9	---	---	14	9	---	---	15	12
6	14	12	14	11	---	---	15	9	16	10	15	11
7	13	12	13	11	---	---	22	9	16	8.4	16	12
8	15	12	12	9	---	---	15	9	---	---	18	11
9	14	11	12	10	---	---	17	11	15	10	21	13
10	13	11	12	10	---	---	29	9	---	---	20	14
11	13	11	14	9	---	---	25	10	17	11	18	14
12	13	9	13	10	---	---	24	17	17	13	17	11
13	13	9	18	9	---	---	21	12	18	14	16	11
14	13	10	18	7	---	---	19	10	16	12	15	10
15	14	11	9	5	12	9	13	9	18	13	17	12
16	15	11	10	6	12	8	14	9	23	16	16	11
17	16	13	18	6	13	9	16	9	21	16	18	13
18	17	12	22	7	14	10	15	10	20	15	19	15
19	17	12	---	---	14	11	16	9	24	15	18	15
20	16	13	---	---	12	9	17	12	22	17	19	14
21	17	12	---	---	14	10	17	11	22	16	20	15
22	17	13	---	---	13	9	18	12	21	14	19	14
23	21	13	---	---	15	9	20	10	20	13	17	14
24	16	13	---	---	15	10	18	10	21	14	17	12
25	17	13	---	---	15	8	19	10	21	14	17	11
26	16	13	---	---	16	11	17	12	---	---	17	12
27	15	11	---	---	16	14	16	12	21	14	18	11
28	15	10	---	---	17	13	17	11	18	12	18	13
29	13	8.1	---	---	17	13	16	11	15	11	18	14
30	10	8.0	---	---	18	13	16	9.1	15	11	18	13
31	---	---	---	---	---	---	15	10	15	10	---	---
MONTH	21	8	22	5	18	8	29	9	24	8	21	10



## CUMBERLAND RIVER BASIN

03428200 WEST FORK STONES RIVER AT MURFREESBORO, TN

LOCATION.--Lat 35°54'10", long 86°25'48", Rutherford County, Hydrologic Unit 05130203, on left bank at Murfreesboro waste treatment plant outfall, 3,000 ft downstream from Sinking Creek, 4.5 mi northwest of the courthouse in Murfreesboro, and at mile 10.7.

DRAINAGE AREA.--177 mi<sup>2</sup>, includes 17 mi<sup>2</sup> without surface drainage.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1972 to January 1982, January 1986 to current year.

GAGE.--Water-stage encoder, crest-stage gage and satellite telemeter at station. Datum of gage is 514.95 ft above sea level.

REMARKS.--Records good. Flow is affected by Murfreesboro sewage treatment plant outflow. An annual average of 11.6 ft<sup>3</sup>/s, with a maximum of 15.5 ft<sup>3</sup>/s is discharged to the West Fork Stones River 25 ft above the station. Prior to July 1987 an annual average of 7.7 ft<sup>3</sup>/s was discharged. Natural flow of stream affected by transbasin diversion of water from East Fork Stones River basin into the West Fork Stones River basin.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 2	1000	*3,890	*10.26	No other peak greater than base discharge.			

Minimum discharge, 11 ft<sup>3</sup>/s, Aug. 25, Sept. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230	171	195	318	193	244	367	130	360	40	18	12
2	200	2100	173	278	169	274	356	118	187	34	19	13
3	172	756	150	250	152	606	313	138	135	31	17	32
4	188	763	140	302	138	415	275	719	109	27	17	59
5	383	976	136	1990	129	341	429	511	90	24	16	28
6	324	776	124	756	118	293	551	367	79	23	60	22
7	244	497	118	516	109	253	378	273	70	21	38	19
8	197	388	112	739	102	231	311	214	64	20	28	18
9	164	317	104	581	95	202	274	192	58	35	24	26
10	137	270	152	443	90	181	290	146	51	39	21	18
11	127	235	223	546	102	158	262	122	61	31	20	15
12	111	515	195	751	135	143	222	114	59	28	19	13
13	103	741	167	551	130	154	198	116	52	75	22	13
14	84	402	148	437	109	146	177	109	48	109	25	13
15	76	313	134	367	99	145	161	94	159	215	20	20
16	90	261	134	318	234	236	210	81	89	142	18	36
17	102	230	527	274	262	936	182	80	74	77	15	27
18	100	197	404	240	195	538	149	74	62	101	16	21
19	84	171	297	225	159	375	130	237	53	142	17	19
20	76	149	927	242	145	300	120	226	47	69	17	18
21	69	181	668	665	167	255	169	135	45	57	19	17
22	66	1400	553	586	331	246	150	108	43	51	18	16
23	61	708	1820	401	229	2130	120	91	43	45	16	16
24	58	527	1270	1140	183	1150	107	78	41	41	14	19
25	54	817	691	703	199	722	127	73	50	36	20	25
26	52	474	606	465	513	1140	1210	80	51	32	21	42
27	73	364	494	373	351	1340	420	68	41	28	16	e42
28	106	301	666	316	277	838	269	62	39	26	18	e34
29	117	255	541	271	---	561	198	57	55	24	20	e29
30	106	218	440	235	---	438	152	53	45	21	17	e25
31	123	---	375	210	---	385	---	453	---	19	14	---
TOTAL	4077	15473	12684	15489	5115	15376	8277	5319	2360	1663	640	707
MEAN	132	516	409	500	183	496	276	172	78.7	53.6	20.6	23.6
MAX	383	2100	1820	1990	513	2130	1210	719	360	215	60	59
MIN	52	149	104	210	90	143	107	53	39	19	14	12

e Estimated



## CUMBERLAND RIVER BASIN

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03428200 WEST FORK STONES RIVER AT MURFREESBORO, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1993, BY WATER YEAR (WY)

MEAN	119	241	620	561	633	521	257	148	191	180	49.1	134
MAX	493	516	1259	881	1156	926	395	388	765	658	125	438
(WY)	1990	1993	1991	1989	1991	1989	1989	1991	1989	1989	1992	1992
MIN	10.6	43.6	168	444	183	303	101	32.1	11.0	13.9	14.6	20.1
(WY)	1988	1992	1990	1992	1993	1988	1990	1988	1988	1988	1990	1991

## SUMMARY STATISTICS

## FOR 1992 CALENDAR YEAR

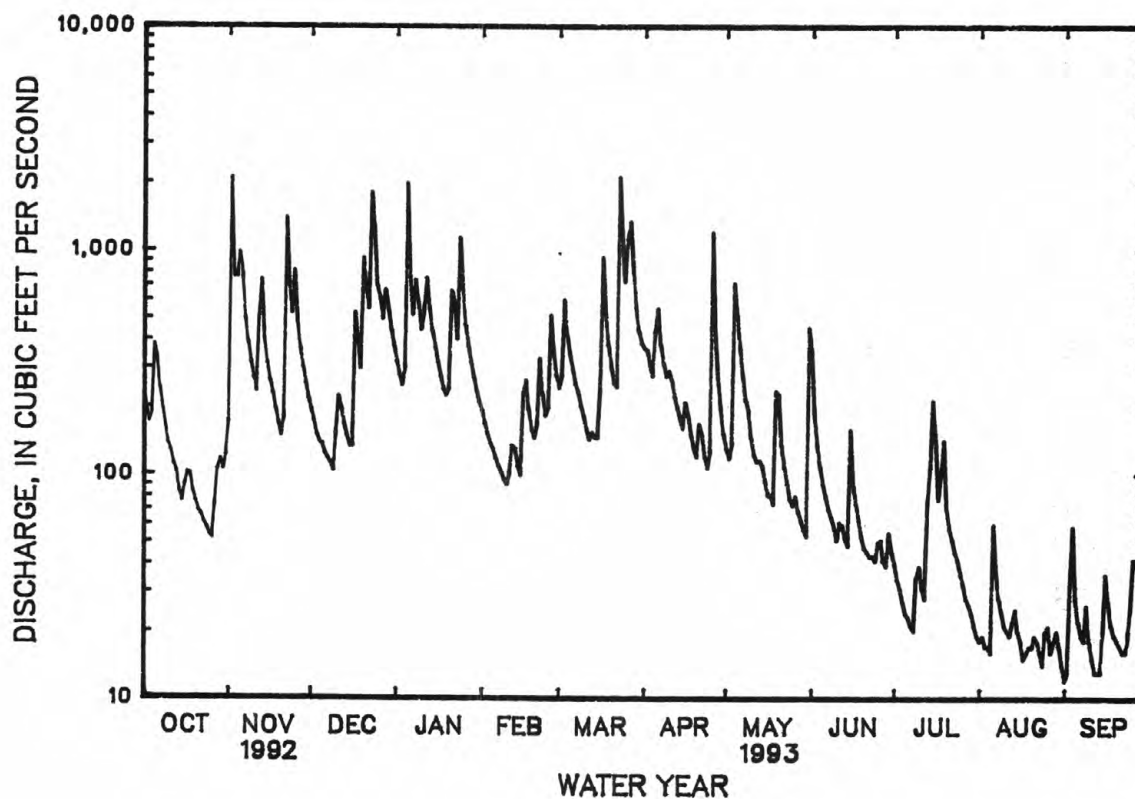
## FOR 1993 WATER YEAR

## aWATER YEARS 1988 - 1993

ANNUAL TOTAL	98705	87180	303	
ANNUAL MEAN	270	239	479	1989
HIGHEST ANNUAL MEAN			164	1988
LOWEST ANNUAL MEAN			9520	Feb 19 1991
HIGHEST DAILY MEAN	5170	2130	7.7	Jul 3 1988
LOWEST DAILY MEAN	23	12	8.9	Jul 3 1988
ANNUAL SEVEN-DAY MINIMUM	26	16	31000	Mar 13 1975
INSTANTANEOUS PEAK FLOW		3890	23.80	Mar 13 1975
INSTANTANEOUS PEAK STAGE		10.26	2.9	Jul 7 1988
INSTANTANEOUS LOW FLOW		b11		
10 PERCENT EXCEEDS	557	556	666	
50 PERCENT EXCEEDS	130	138	113	
90 PERCENT EXCEEDS	41	20	15	

a See REMARKS.

b Also occurred on Sept. 2.



## CUMBERLAND RIVER BASIN

03428200 WEST FORK STONES RIVER AT MURFREESBORO, TN--Continued

## WATER-QUALITY RECORDS

LOCATION.--At bridge on Blanton Drive, 900 ft upstream from Sinking Creek, 0.7 mi upstream from discharge station.

PERIOD OF RECORD.--February 1986 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1986 to current year.

pH: February 1986 to current year.

WATER TEMPERATURE: February 1986 to current year.

DISSOLVED OXYGEN: February 1986 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Records good. Interruptions in the record were due to equipment malfunctions.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 502 microsiemens, Dec. 20, 1990; minimum 63 microsiemens, Dec. 25, 1987.

pH: Maximum, 9.0 units, Mar. 24, 1986; minimum, 5.8 units, June 18, 1992.

WATER TEMPERATURES: Maximum, 33.2°C, June 24, 1988; minimum, 0.9°C, Dec. 26, 27, 1989.

DISSOLVED OXYGEN: Maximum, 18.2 mg/L, March 20, 1988; minimum, 1.6 mg/L, Sept. 12, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 466 microsiemens, Nov. 12, 30; minimum 207 microsiemens, July 9.

pH: Maximum, 8.5 units, Mar. 1; minimum, 6.6 units, Mar. 18.

WATER TEMPERATURES: Maximum, 32.4°C, July 8, 27; minimum, 2.7°C, Feb. 19.

DISSOLVED OXYGEN: Maximum, 17.7 mg/L, Feb. 9; minimum, 3.6 mg/L, July 10.

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM @ 25 DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	435	420	429	461	403	449	468	445	455	---	---	---
2	437	421	431	408	242	308	469	446	453	---	---	---
3	440	421	429	388	283	339	467	446	451	---	---	---
4	439	415	424	406	383	392	459	446	452	---	---	---
5	426	418	422	406	384	392	457	447	450	384	212	266
6	417	399	414	407	404	406	459	447	453	380	296	342
7	415	399	409	437	405	412	459	448	453	409	382	397
8	420	412	415	448	425	442	459	428	446	415	403	410
9	424	412	419	459	446	452	461	429	450	401	372	381
10	427	418	422	461	446	452	457	430	449	409	377	392
11	439	418	428	464	449	460	459	449	451	417	405	411
12	443	418	428	466	395	438	458	419	444	416	383	400
13	442	398	428	389	347	363	459	410	437	411	383	394
14	440	417	430	399	348	376	460	411	436	429	412	421
15	439	417	430	430	390	411	---	---	---	436	430	433
16	437	406	424	448	427	434	---	---	---	439	433	437
17	426	417	420	451	439	444	---	---	---	444	435	439
18	440	417	427	455	440	448	---	---	---	441	434	439
19	438	417	423	456	440	443	---	---	---	445	441	442
20	429	416	420	456	421	440	---	---	---	443	435	439
21	436	416	422	458	401	428	---	---	---	438	334	407
22	433	417	424	436	223	330	---	---	---	362	331	352
23	433	416	421	363	251	313	---	---	---	392	363	376
24	436	416	424	405	361	388	---	---	---	395	256	354
25	436	415	423	420	383	404	---	---	---	334	255	288
26	435	416	422	412	383	391	---	---	---	395	338	369
27	424	404	418	445	403	419	---	---	---	414	396	406
28	429	408	420	455	444	449	---	---	---	423	415	418
29	430	420	424	464	445	455	---	---	---	425	414	421
30	442	424	431	466	445	450	---	---	---	425	414	421
31	451	428	442	---	---	---	---	---	---	425	412	420
MONTH	451	398	424	466	223	411	469	410	449	445	212	395

## CUMBERLAND RIVER BASIN

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03428200 WEST FORK STONES RIVER AT MURFREESBORO, TN--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM @ 25 DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	425	409	418	408	385	391	381	373	378	403	394	399
2	421	402	413	420	401	409	373	369	371	402	394	399
3	419	395	409	411	380	395	371	366	368	404	297	390
4	417	387	404	386	380	384	383	368	374	324	210	257
5	414	380	399	405	386	395	378	370	372	330	242	291
6	413	375	395	419	405	410	371	345	358	374	330	356
7	408	372	390	425	415	420	359	343	349	399	372	386
8	400	370	384	427	410	419	380	362	372	406	385	396
9	390	367	378	419	409	413	384	377	380	402	386	396
10	381	360	372	426	401	414	380	369	375	409	392	400
11	378	369	374	412	384	400	383	365	373	404	385	393
12	384	371	377	406	379	394	377	355	364	398	384	392
13	396	385	391	404	378	390	380	363	370	396	382	390
14	400	380	391	427	396	412	382	365	374	391	382	387
15	400	385	394	444	413	424	386	361	374	395	383	389
16	408	387	396	419	399	408	371	361	365	393	383	388
17	397	386	391	422	330	380	370	355	364	388	383	385
18	393	382	389	372	331	349	373	363	368	---	---	---
19	398	384	392	412	374	393	386	372	378	---	---	---
20	395	378	388	429	412	421	386	365	376	374	356	369
21	396	378	387	437	427	431	369	363	366	362	352	356
22	400	389	395	437	424	432	373	359	367	372	362	368
23	406	389	398	435	293	361	382	362	373	376	366	371
24	406	384	396	383	309	345	388	374	381	377	367	372
25	450	377	395	413	384	401	390	341	369	378	373	375
26	458	389	403	409	372	396	361	240	276	388	377	380
27	387	371	380	380	361	370	327	252	293	389	383	385
28	385	369	374	407	378	389	375	327	355	390	377	383
29	---	---	---	433	407	421	394	367	382	383	378	380
30	---	---	---	443	385	428	404	394	398	381	377	379
31	---	---	---	390	383	386	---	---	---	381	268	345
MONTH	458	360	392	444	293	399	404	240	365	409	210	374
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	310	268	300	372	340	353	367	356	361	389	364	372
2	330	309	318	354	341	346	364	357	361	389	373	383
3	343	325	334	351	337	344	362	355	360	379	269	356
4	356	343	350	365	331	342	362	353	358	356	322	345
5	362	353	360	370	343	354	366	323	360	375	347	363
6	370	361	366	368	339	357	347	323	335	378	375	376
7	375	368	371	371	329	354	346	330	342	378	368	372
8	378	370	375	377	332	354	350	343	347	372	357	365
9	378	372	375	365	274	320	355	348	351	363	356	359
10	378	368	374	351	275	319	358	352	355	362	357	359
11	372	363	368	376	287	331	365	353	357	367	362	364
12	369	363	366	356	319	340	367	362	365	369	363	367
13	367	361	364	369	310	335	366	348	356	376	369	373
14	372	362	368	348	313	338	364	350	358	380	375	377
15	393	344	369	339	251	275	370	364	366	380	322	369
16	394	362	387	287	251	264	380	366	371	388	353	371
17	408	362	389	294	287	291	387	380	383	398	388	394
18	402	367	398	307	271	297	390	371	385	395	386	389
19	399	356	385	299	247	281	388	376	381	401	395	398
20	387	354	378	320	299	313	378	363	373	405	400	402
21	380	336	368	315	304	308	377	370	374	407	399	403
22	371	304	360	338	311	329	377	370	373	402	391	397
23	361	317	352	364	338	358	378	372	375	393	385	389
24	379	302	349	370	361	366	377	369	373	390	383	387
25	343	314	331	369	366	368	373	343	368	390	376	386
26	348	314	332	375	368	372	381	368	376	387	351	376
27	361	324	338	377	372	374	383	377	380	377	366	370
28	348	322	337	377	372	374	381	374	378	387	367	377
29	365	302	335	375	371	373	382	368	376	402	386	394
30	368	331	349	371	364	367	368	359	363	412	401	405
31	---	---	---	369	360	364	367	361	365	---	---	---
MONTH	408	268	358	377	247	337	390	323	365	412	269	378

## CUMBERLAND RIVER BASIN

03428200 WEST FORK STONES RIVER AT MURFREESBORO, TN--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	7.8	7.2	8.0	7.6	8.1	7.5	---	---	7.7	7.0	8.5	7.4
2	7.7	7.1	7.9	7.4	8.0	7.6	---	---	7.7	7.0	7.8	7.5
3	7.7	7.1	7.7	7.4	8.1	7.6	---	---	7.8	7.0	7.8	7.6
4	7.6	7.2	7.8	7.5	7.9	7.7	8.0	---	7.9	7.0	7.8	7.6
5	7.8	7.1	7.6	7.3	8.1	7.6	7.2	6.6	7.9	7.1	7.8	7.6
6	7.8	7.3	7.5	7.3	8.0	7.7	7.0	6.7	8.0	7.2	8.4	7.6
7	7.9	7.3	7.7	7.4	8.1	7.7	7.3	6.9	8.1	7.2	8.3	7.8
8	7.8	7.3	7.9	7.4	8.2	7.7	7.3	7.0	8.1	7.3	8.3	7.5
9	7.8	7.3	8.1	7.4	8.1	7.7	7.4	7.2	8.2	7.4	8.2	7.2
10	7.7	7.2	8.2	7.7	8.1	7.8	7.5	7.3	8.3	7.4	8.2	7.2
11	7.5	7.1	8.2	7.7	8.4	8.0	7.6	7.4	7.9	7.6	8.1	7.1
12	7.5	7.0	8.2	7.9	8.4	8.0	7.7	7.6	8.2	7.6	7.6	7.0
13	7.5	7.1	8.0	7.6	8.6	8.0	8.0	7.6	8.0	7.6	7.6	6.8
14	7.7	7.2	7.9	7.6	8.6	8.1	7.9	7.3	8.2	7.7	7.7	6.8
15	7.8	7.4	8.2	7.6	---	---	7.6	7.2	8.0	7.8	7.7	6.7
16	7.7	7.4	7.8	7.0	---	---	7.8	7.2	8.1	7.7	7.4	6.7
17	7.9	7.1	7.4	7.0	---	---	7.8	7.2	8.3	7.9	7.1	6.7
18	7.9	7.4	7.6	6.9	---	---	7.8	7.4	8.2	7.4	7.6	6.6
19	7.8	7.5	7.7	6.9	---	---	7.6	7.3	8.0	7.2	7.6	6.9
20	7.7	7.4	7.8	7.0	---	---	7.7	7.4	7.9	7.1	7.6	7.0
21	7.7	7.5	7.7	7.2	---	---	7.8	7.5	8.0	7.1	7.9	7.1
22	7.8	7.4	7.4	6.9	---	---	7.7	7.4	8.1	7.2	7.7	7.1
23	7.8	7.5	7.2	6.9	---	---	7.9	7.4	8.1	7.3	7.4	7.1
24	7.9	7.6	7.4	7.0	---	---	7.8	7.4	8.2	7.2	7.3	6.9
25	7.9	7.7	7.6	7.2	---	---	7.6	7.3	7.7	7.2	7.2	7.1
26	7.9	7.6	7.5	7.1	---	---	7.9	7.5	7.5	7.2	7.4	7.1
27	8.1	7.8	7.6	7.3	---	---	8.1	7.5	7.9	7.2	7.2	7.0
28	8.2	7.6	7.5	7.3	---	---	7.5	7.0	8.2	7.3	7.7	7.1
29	8.0	7.6	7.9	7.4	---	---	7.4	6.9	---	---	7.9	7.3
30	7.8	7.5	7.8	7.4	---	---	7.4	6.9	---	---	7.9	7.3
31	7.8	7.5	---	---	---	---	7.5	6.9	---	---	7.7	7.2
MONTH	8.2	7.0	8.2	6.9	8.6	7.5	8.1	6.6	8.3	7.0	8.5	6.6
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.3	6.9	7.6	7.2	7.4	7.1	8.1	7.7	7.7	7.6	7.3	7.1
2	7.5	6.8	7.4	7.2	7.3	7.0	8.0	7.7	7.7	7.5	7.3	7.2
3	7.7	6.8	7.4	7.2	7.4	6.9	8.0	7.8	7.7	7.5	7.4	7.2
4	7.7	6.9	7.5	6.9	7.4	7.0	8.1	7.9	7.6	7.4	7.3	7.2
5	7.3	6.8	7.3	6.9	7.4	7.1	8.1	7.9	7.6	7.4	7.2	7.2
6	7.4	6.9	7.6	7.1	7.5	7.1	8.1	7.9	7.7	7.4	7.3	7.2
7	8.0	6.9	7.8	7.3	7.6	7.2	8.1	7.9	7.5	7.3	7.3	7.2
8	8.1	7.0	8.0	7.4	7.8	7.3	8.1	7.9	7.5	7.3	7.2	7.1
9	7.8	7.1	8.1	7.5	7.8	7.4	8.0	7.6	7.8	7.3	7.2	7.0
10	8.2	7.1	8.2	7.5	7.8	7.5	7.7	7.5	8.0	7.6	7.1	7.0
11	8.0	7.2	8.0	7.5	8.0	7.6	7.7	7.1	8.0	7.5	7.2	7.0
12	8.1	7.3	7.6	7.3	8.1	7.6	7.7	7.6	7.9	7.6	7.2	7.1
13	8.1	7.3	7.8	7.1	8.1	7.8	8.0	7.6	7.8	7.6	7.3	7.1
14	8.2	7.5	8.0	7.5	7.9	7.7	---	7.8	7.7	7.5	7.3	7.1
15	8.1	7.5	8.2	7.8	7.9	7.3	---	---	7.8	7.6	7.2	7.1
16	7.8	7.5	8.2	8.0	7.8	7.5	---	---	7.8	7.6	7.2	7.1
17	8.1	7.4	8.2	8.0	8.1	7.8	---	---	7.8	7.6	7.3	7.2
18	8.3	7.5	8.2	7.9	8.0	7.8	---	---	7.8	7.5	7.4	7.2
19	8.1	7.6	8.2	8.0	8.2	7.8	---	---	7.7	7.5	7.4	7.3
20	7.6	7.1	8.3	8.1	8.2	7.9	---	---	7.7	7.5	7.4	7.2
21	7.5	6.9	8.3	8.0	8.1	7.9	---	---	7.6	7.4	7.4	7.1
22	7.6	6.9	8.4	8.1	8.1	7.8	---	---	7.5	7.4	7.3	7.2
23	7.6	6.9	8.3	8.0	8.1	7.8	8.0	---	7.6	7.4	7.2	7.0
24	7.5	6.9	8.2	8.0	8.1	7.8	8.0	7.6	7.6	7.4	7.0	6.9
25	7.4	7.0	8.1	8.0	8.1	7.7	7.9	7.6	7.5	7.3	7.0	6.8
26	7.4	6.8	8.2	7.9	8.0	7.7	7.7	7.6	7.5	7.3	6.9	6.7
27	7.4	6.7	8.1	7.9	8.0	7.6	7.7	7.5	7.5	7.3	7.0	6.7
28	7.6	6.9	8.1	7.9	7.9	7.6	7.7	7.5	7.4	7.2	7.2	7.0
29	7.8	7.0	8.0	7.8	8.0	7.7	7.8	7.5	7.4	7.2	7.2	7.1
30	7.7	7.1	7.9	7.7	8.0	7.6	7.8	7.6	7.4	7.2	7.4	7.2
31	---	---	7.8	7.4	---	---	7.8	7.6	7.5	7.2	---	---
MONTH	8.3	6.7	8.4	6.9	8.2	6.9	8.1	7.1	8.0	7.2	7.4	6.7



## CUMBERLAND RIVER BASIN

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03428200 WEST FORK STONES RIVER AT MURFREESBORO, TN--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	18.5	15.7	16.9	17.9	15.9	16.9	8.4	7.5	8.0	---	---	---
2	18.8	16.0	17.2	17.5	16.0	17.0	8.7	7.6	7.9	---	---	---
3	18.3	16.1	17.3	16.2	15.2	15.9	7.7	7.2	7.3	---	---	---
4	17.7	17.1	17.5	16.2	14.7	15.6	7.7	7.6	7.7	---	---	---
5	18.2	17.1	17.5	14.3	11.8	13.3	7.7	7.1	7.3	12.5	10.5	11.6
6	18.0	16.0	17.1	12.2	10.8	11.5	7.3	7.2	7.3	10.4	9.7	10.0
7	18.0	16.3	17.0	11.4	10.8	11.0	7.3	7.1	7.2	9.8	9.3	9.6
8	18.4	16.3	17.4	12.0	10.2	11.1	7.2	7.0	7.2	9.9	9.7	9.8
9	18.5	16.0	17.3	12.5	10.3	11.3	7.3	7.1	7.2	10.0	9.4	9.7
10	17.3	15.4	16.4	13.3	11.3	12.4	7.2	7.1	7.2	10.7	10.0	10.4
11	17.3	14.9	16.2	14.2	12.8	13.5	7.1	7.1	7.1	10.8	10.5	10.7
12	16.7	14.3	15.6	15.4	14.1	14.7	7.2	7.1	7.1	11.7	10.8	11.2
13	17.2	14.8	16.0	14.2	12.1	13.4	7.6	7.1	7.3	12.0	10.7	11.6
14	18.6	15.9	17.1	12.2	11.2	11.7	7.7	7.2	7.5	10.6	9.3	9.9
15	19.3	17.2	18.2	11.2	9.7	10.7	---	---	---	9.3	8.6	8.9
16	18.4	15.9	17.6	11.2	9.1	10.2	---	---	---	9.4	8.2	8.7
17	16.7	14.8	15.7	11.8	9.6	10.5	---	---	---	9.6	8.3	8.9
18	16.1	14.3	15.2	12.4	10.2	11.1	---	---	---	8.3	7.6	8.1
19	14.4	12.9	13.8	12.9	10.2	11.4	---	---	---	7.6	7.3	7.5
20	14.3	12.8	13.5	13.8	10.7	12.3	---	---	---	8.6	7.6	8.1
21	15.4	13.9	14.6	14.6	12.2	13.6	---	---	---	10.1	8.7	9.5
22	16.6	14.2	15.3	15.3	14.2	14.7	---	---	---	10.5	9.8	10.1
23	16.8	14.4	15.6	14.6	12.6	13.7	---	---	---	10.7	9.0	9.9
24	17.7	15.3	16.5	12.8	12.1	12.3	---	---	---	10.8	9.7	10.6
25	17.2	15.2	16.4	13.2	11.7	12.5	---	---	---	9.6	8.2	8.8
26	16.8	14.2	15.7	12.8	11.6	12.3	---	---	---	8.6	7.2	7.9
27	17.0	15.8	16.5	11.7	10.2	11.0	---	---	---	8.4	7.0	7.7
28	17.9	15.9	16.8	10.3	8.1	9.4	---	---	---	9.0	7.2	8.0
29	17.1	15.4	16.3	9.6	7.7	8.6	---	---	---	9.4	7.6	8.7
30	16.7	15.9	16.2	8.6	7.7	8.2	---	---	---	8.6	6.8	7.5
31	17.2	15.9	16.5	---	---	---	---	---	---	8.7	6.3	7.4
MONTH	19.3	12.8	16.4	17.9	7.7	12.4	8.7	7.0	7.4	12.5	6.3	9.3
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	9.2	7.0	7.9	8.5	5.4	6.7	16.3	13.2	14.9	19.0	17.4	18.2
2	8.9	6.6	7.6	8.8	7.1	8.2	13.2	11.3	12.2	18.4	17.3	17.9
3	8.8	6.1	7.4	10.0	8.8	9.5	13.3	10.3	11.7	17.9	16.6	17.3
4	8.8	6.2	7.5	10.1	9.5	10.0	13.1	11.5	12.1	17.1	16.0	16.5
5	9.4	6.7	8.0	9.5	8.4	9.0	12.1	11.5	11.9	18.3	16.2	17.3
6	9.5	6.6	8.1	10.4	7.8	9.0	12.1	11.0	11.5	20.1	17.6	18.7
7	9.6	7.0	8.4	10.3	9.0	9.5	14.1	11.3	12.7	21.7	18.9	20.0
8	9.9	7.1	8.6	11.6	9.2	10.2	15.8	13.5	14.6	23.2	19.6	21.0
9	10.4	7.7	9.1	12.4	9.3	10.7	15.8	14.2	15.1	23.9	20.2	21.8
10	11.2	8.7	10.0	13.6	10.2	11.7	16.9	13.5	15.0	25.0	20.4	22.4
11	10.7	10.4	10.6	13.0	9.9	11.3	17.8	14.8	16.1	24.4	21.1	22.7
12	11.8	10.7	11.2	10.6	8.2	9.5	19.5	15.6	17.2	23.4	21.3	22.4
13	10.7	9.3	10.0	8.2	4.9	6.2	19.3	16.3	17.8	22.2	20.3	20.9
14	9.2	8.1	8.9	7.2	3.5	5.2	21.1	17.3	19.0	22.2	18.4	20.2
15	7.9	7.0	7.3	8.2	3.9	6.0	19.7	17.3	18.8	22.8	18.6	20.7
16	7.7	7.0	7.5	7.5	5.8	6.8	17.3	14.4	15.9	23.2	20.2	21.8
17	7.0	5.8	6.6	7.6	6.9	7.4	17.2	13.2	15.1	23.4	21.2	22.3
18	5.8	3.6	5.0	8.5	6.5	7.4	18.6	13.9	16.2	24.5	21.9	23.1
19	4.8	2.7	3.8	9.3	7.8	8.6	19.8	15.3	17.3	23.2	21.3	22.1
20	6.0	4.0	5.0	10.1	9.0	9.6	18.3	16.5	17.1	21.3	18.9	20.2
21	10.1	6.0	8.0	12.4	10.0	11.1	16.8	14.4	15.6	19.5	17.6	18.5
22	10.5	8.3	9.2	12.9	11.2	12.2	17.3	12.9	14.8	20.7	16.2	18.4
23	9.8	7.4	8.7	13.7	12.8	13.1	18.1	13.1	15.6	21.4	17.4	19.4
24	8.3	6.5	7.4	14.1	12.9	13.5	17.9	15.1	16.6	20.9	19.2	20.2
25	7.1	5.8	6.3	13.4	12.4	12.9	17.4	16.4	16.8	20.6	20.0	20.4
26	6.3	5.7	6.2	13.3	12.0	12.5	16.6	14.5	15.4	21.8	19.0	20.3
27	6.2	5.3	5.7	13.4	13.0	13.2	17.3	13.8	15.6	22.5	18.4	20.5
28	7.0	4.8	5.8	14.6	12.4	13.7	18.4	15.3	16.6	24.0	20.3	22.2
29	---	---	---	15.8	13.4	14.7	19.5	15.7	17.3	25.3	22.1	23.7
30	---	---	---	16.8	14.4	15.7	19.8	16.6	18.0	24.5	23.0	23.9
31	---	---	---	17.4	15.5	16.4	---	---	---	23.7	19.5	21.8
MONTH	11.8	2.7	7.7	17.4	3.5	10.4	21.1	10.3	15.5	25.3	16.0	20.5

## CUMBERLAND RIVER BASIN

03428200 WEST FORK STONES RIVER AT MURFREESBORO, TN--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.4	17.9	19.1	30.1	27.3	28.7	28.4	25.6	26.8	30.0	26.8	28.2
2	20.9	18.0	19.3	30.6	27.8	29.1	28.5	25.9	27.2	28.3	26.6	27.3
3	22.4	18.5	20.4	30.7	27.8	29.2	29.2	25.8	27.3	28.4	26.0	26.6
4	23.0	20.4	21.7	31.5	28.0	29.6	27.1	26.0	26.5	26.8	24.7	25.7
5	22.9	21.1	22.0	31.0	28.7	29.7	27.7	25.0	26.2	26.3	23.8	25.0
6	23.0	19.6	21.3	31.6	27.8	29.4	25.3	24.1	24.8	26.4	23.1	24.5
7	25.0	21.4	23.2	31.7	27.7	29.5	25.9	23.0	24.4	26.5	23.3	24.8
8	27.1	23.2	25.1	32.4	28.2	30.1	26.9	23.7	25.3	26.0	23.4	24.6
9	27.9	24.6	26.3	30.1	26.5	28.3	27.9	24.2	25.9	25.5	23.4	24.3
10	27.0	25.1	26.1	29.1	25.5	27.1	27.4	24.8	26.1	25.8	22.6	23.9
11	27.9	24.0	25.9	29.7	26.4	28.0	28.6	25.2	26.8	24.4	20.2	22.2
12	27.9	25.2	26.5	29.9	27.2	28.2	27.3	26.1	26.8	24.4	19.8	22.1
13	27.7	24.7	26.2	29.7	26.2	27.9	27.9	25.8	26.8	24.9	21.2	23.1
14	27.3	23.2	26.3	28.6	27.3	27.9	28.3	26.0	27.0	26.2	23.1	24.5
15	25.9	23.2	24.7	27.6	25.3	26.1	29.5	26.0	27.6	25.0	21.3	22.9
16	26.9	23.1	24.9	28.0	24.6	26.2	30.2	26.3	28.1	21.5	20.4	21.1
17	27.8	24.4	26.1	28.5	25.5	27.0	30.7	26.7	28.6	23.8	21.3	22.2
18	28.7	25.3	27.1	28.9	26.5	27.6	31.3	27.1	29.1	22.6	20.8	21.5
19	28.4	25.9	27.3	29.0	25.8	27.3	31.3	27.7	29.3	23.1	19.2	21.0
20	27.5	25.8	26.5	29.5	26.4	27.9	30.7	28.2	29.2	22.1	19.8	20.8
21	26.2	24.9	25.6	29.7	26.3	28.0	30.5	27.2	28.7	24.2	20.8	22.2
22	26.9	24.5	25.7	29.4	26.8	28.2	30.1	26.6	28.2	24.1	20.2	22.2
23	28.2	25.3	26.8	30.3	26.4	28.5	29.9	26.5	28.1	22.9	21.2	21.9
24	27.6	26.1	27.0	30.7	28.1	29.5	30.5	26.9	28.5	23.3	21.1	22.1
25	26.8	25.4	26.0	31.6	28.8	30.3	29.8	27.0	28.2	24.1	21.9	23.0
26	26.7	24.3	25.5	32.1	29.2	30.7	29.7	26.9	28.3	23.5	21.5	22.6
27	27.0	24.7	26.0	32.4	29.3	30.8	30.4	26.7	28.4	21.5	20.1	20.9
28	28.1	25.0	26.6	32.1	29.2	30.5	30.0	26.6	28.3	20.1	17.7	19.1
29	27.8	25.9	26.9	31.7	28.6	29.8	30.3	27.1	28.6	19.8	17.8	18.8
30	28.8	25.6	27.3	30.2	27.0	28.4	30.9	26.9	28.7	18.5	16.6	17.5
31	---	---	---	29.9	25.7	27.5	30.6	26.9	28.6	---	---	---
MONTH	28.8	17.9	25.0	32.4	24.6	28.6	31.3	23.0	27.5	30.0	16.6	22.9

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.1	8.2	8.8	8.7	7.0	7.7	12.1	9.7	10.5	---	---	---
2	10.6	8.0	8.9	8.2	7.1	7.7	12.1	9.7	10.6	---	---	---
3	10.8	7.8	8.9	8.6	8.0	8.3	12.9	9.7	11.0	---	---	---
4	9.7	7.8	8.4	8.7	8.0	8.3	10.5	9.7	10.0	10.3	---	---
5	9.8	7.6	8.5	9.4	8.5	8.8	13.3	9.7	11.1	8.2	7.5	7.9
6	10.6	8.1	8.9	9.7	9.3	9.5	11.9	10.1	10.7	8.5	8.2	8.3
7	10.8	7.9	8.9	10.3	9.4	9.8	12.9	10.1	11.2	9.1	8.3	8.5
8	10.4	7.7	8.7	10.8	9.5	9.9	14.4	10.1	11.8	8.6	8.2	8.4
9	11.2	7.4	8.7	11.0	9.5	10.0	13.2	10.2	11.5	8.9	8.4	8.6
10	10.7	7.6	8.7	11.0	9.3	9.9	11.2	10.0	10.4	8.8	8.4	8.5
11	11.2	7.5	8.9	10.8	9.0	9.7	12.8	10.0	10.9	8.8	8.3	8.6
12	11.6	7.8	9.1	9.4	8.7	9.0	13.8	10.2	11.4	8.8	8.3	8.5
13	11.5	7.7	9.1	9.7	9.0	9.3	14.5	10.2	11.7	9.2	8.2	8.6
14	11.4	7.6	8.9	10.7	9.3	9.9	15.0	9.8	11.7	10.3	8.6	9.1
15	11.1	7.2	8.7	11.7	9.7	10.5	---	9.8	---	10.5	8.6	9.3
16	7.9	6.9	7.3	11.7	9.3	10.4	---	---	---	11.4	8.7	9.6
17	10.3	6.7	8.1	12.1	8.8	10.1	---	---	---	11.5	8.2	9.4
18	11.0	7.5	8.8	12.6	8.8	10.1	---	---	---	11.3	8.7	9.6
19	11.5	7.9	9.3	13.2	8.8	10.4	---	---	---	10.3	8.6	9.2
20	11.7	8.3	9.7	13.7	8.6	10.3	---	---	---	10.9	8.8	9.5
21	11.2	8.0	9.5	10.8	8.0	9.0	---	---	---	9.5	8.6	8.8
22	11.7	7.9	9.5	8.6	7.9	8.0	---	---	---	9.1	8.5	8.7
23	11.3	7.6	9.2	8.7	8.0	8.4	---	---	---	10.1	8.5	9.0
24	10.7	7.3	8.9	9.2	8.3	8.9	---	---	---	8.9	8.2	8.5
25	10.2	6.8	8.5	9.2	8.7	9.0	---	---	---	9.3	8.9	9.1
26	10.2	7.0	8.5	9.1	8.7	8.9	---	---	---	10.5	9.3	9.7
27	8.6	6.8	7.5	9.9	8.9	9.2	---	---	---	10.8	8.6	9.4
28	8.9	6.3	7.3	10.1	8.9	9.4	---	---	---	11.3	8.6	9.4
29	9.5	6.6	7.8	11.1	9.1	10.1	---	---	---	11.7	8.3	9.5
30	8.2	6.7	7.3	11.1	9.7	10.2	---	---	---	12.5	8.7	10.1
31	8.3	6.6	7.4	---	---	---	---	---	---	13.0	9.1	10.4
MONTH	11.7	6.3	8.6	13.7	7.0	9.4	15.0	9.7	11.0	13.0	7.5	9.0

## CUMBERLAND RIVER BASIN

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03428200 WEST FORK STONES RIVER AT MURFREESBORO, TN--Continued

OXYGEN, DISSOLVED (DO), MG/L WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	13.5	8.9	10.5	16.3	10.5	12.5	8.7	6.5	7.4	10.1	6.2	7.7
2	14.1	8.9	10.8	11.3	9.2	10.1	11.7	7.3	9.0	8.5	6.0	7.1
3	14.9	9.2	11.3	10.0	9.3	9.7	14.2	8.3	10.5	8.2	6.2	7.0
4	15.6	9.3	11.7	9.8	9.1	9.3	13.9	8.1	10.1	8.3	7.2	7.9
5	15.9	9.2	11.8	10.4	9.3	9.8	9.8	7.8	8.5	8.9	7.8	8.3
6	16.5	9.2	12.0	14.2	9.9	11.4	10.5	8.4	9.2	9.8	7.3	8.3
7	17.1	9.2	12.2	13.4	9.7	11.0	12.9	8.2	9.9	10.7	6.7	8.2
8	17.5	9.3	12.4	14.4	8.3	11.0	14.2	7.6	9.9	11.3	6.5	8.2
9	17.7	9.4	12.6	14.9	7.9	10.3	11.5	7.2	8.5	11.6	6.4	8.3
10	17.5	9.3	12.6	15.3	7.4	10.3	15.2	7.5	10.3	12.3	6.4	8.5
11	11.3	8.9	9.9	16.1	7.1	10.5	15.2	7.6	10.3	10.3	6.2	7.9
12	12.3	8.2	9.7	13.5	7.3	9.7	15.5	7.3	10.3	8.8	5.7	6.9
13	11.5	8.6	9.7	15.1	8.0	10.9	13.3	6.9	9.5	7.7	5.5	6.4
14	14.9	9.3	11.5	16.7	9.4	12.4	13.2	6.5	9.0	9.8	6.0	7.4
15	13.0	10.1	11.4	17.2	9.5	12.5	10.1	5.9	7.5	10.0	6.2	7.7
16	12.3	10.2	11.1	13.4	8.9	10.6	9.0	6.4	7.6	9.6	6.0	7.4
17	13.8	11.2	12.1	9.5	9.0	9.2	12.5	7.7	9.6	9.5	5.7	7.3
18	15.0	11.2	12.6	10.9	9.0	9.7	12.3	7.9	9.6	9.7	5.6	7.3
19	15.5	10.8	12.6	11.5	8.6	9.6	12.1	6.7	9.0	8.5	5.9	6.8
20	14.8	10.5	12.1	12.1	8.1	9.5	8.1	5.7	6.7	8.8	6.8	7.7
21	13.8	9.1	10.9	13.8	7.8	9.9	9.8	5.8	7.4	9.5	7.0	8.1
22	12.7	8.8	10.2	10.8	7.0	8.6	12.2	7.1	9.1	11.1	7.4	8.8
23	14.6	9.1	11.0	7.8	7.0	7.5	12.4	7.2	9.2	11.2	7.3	8.7
24	15.8	9.5	11.8	8.1	7.6	7.8	11.0	6.6	8.3	10.3	7.0	8.4
25	12.7	9.6	10.6	8.3	7.6	7.9	8.3	6.2	7.1	8.7	6.8	7.6
26	11.1	9.8	10.5	8.5	7.9	8.1	8.5	6.2	8.0	10.0	6.9	8.2
27	12.9	10.5	11.3	8.1	7.9	8.0	9.7	7.7	8.5	9.5	5.8	7.3
28	15.1	10.6	12.1	8.8	7.6	8.2	11.0	7.5	8.7	9.6	5.3	7.1
29	---	---	---	9.9	7.5	8.3	11.7	7.1	8.8	9.2	5.0	6.8
30	---	---	---	10.4	6.8	8.2	11.3	6.7	8.4	7.7	4.6	6.1
31	---	---	---	10.3	6.6	7.7	---	---	---	6.5	4.5	5.6
MONTH	17.7	8.2	11.4	17.2	6.6	9.7	15.5	5.7	8.9	12.3	4.5	7.6
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	7.4	6.3	6.8	9.0	4.4	6.4	7.3	5.4	6.0	7.2	6.2	6.6
2	7.7	6.1	6.7	7.7	4.0	5.5	7.4	5.0	6.0	6.9	6.2	6.5
3	8.1	6.0	6.7	7.2	3.8	5.2	8.0	5.2	6.4	7.0	6.2	6.6
4	7.8	5.6	6.4	7.6	4.0	5.5	7.1	5.3	6.1	7.1	6.4	6.7
5	8.4	5.3	6.6	7.7	4.1	5.6	7.8	5.1	6.2	7.3	6.5	6.8
6	9.0	5.7	7.0	7.9	4.2	5.6	6.3	5.4	5.9	7.0	6.6	6.8
7	9.1	5.5	7.0	7.7	4.3	5.6	7.4	5.1	6.2	7.2	6.6	6.9
8	9.0	5.2	6.7	7.8	4.1	5.6	7.9	5.4	6.6	7.1	6.7	6.9
9	8.8	4.7	6.5	6.0	3.9	4.7	8.7	6.2	7.3	7.2	6.8	7.0
10	7.4	4.4	5.9	6.7	3.6	4.9	9.0	6.4	7.5	7.6	7.0	7.2
11	9.2	4.6	6.4	6.8	4.0	5.2	9.6	6.2	7.6	7.5	7.0	7.3
12	9.3	4.4	6.3	6.9	4.6	5.4	8.5	6.0	7.0	7.4	7.2	7.3
13	8.4	4.1	6.0	8.9	4.7	6.5	7.5	5.4	6.2	7.6	7.2	7.3
14	7.2	4.0	5.6	7.4	5.1	6.0	7.0	4.9	5.8	7.6	7.3	7.4
15	6.7	5.2	5.8	6.0	5.4	5.7	7.6	5.3	6.2	7.6	7.3	7.5
16	7.6	4.7	5.9	6.9	5.3	5.9	7.9	5.2	6.2	7.7	7.5	7.6
17	8.4	4.8	6.3	7.0	4.8	5.7	8.5	5.0	6.3	7.9	7.6	7.7
18	8.7	4.7	6.3	7.0	4.6	5.6	9.0	5.0	6.5	8.2	7.7	7.9
19	8.6	4.4	6.2	7.0	5.0	5.7	8.8	5.1	6.4	8.1	7.8	7.9
20	7.2	4.4	5.8	7.4	4.8	5.9	7.5	4.9	6.2	11.1	6.0	7.9
21	6.8	4.3	5.5	7.8	4.9	6.1	8.3	6.0	6.9	9.2	4.8	6.6
22	7.5	4.6	5.8	8.0	5.0	6.3	8.3	6.5	7.2	9.1	4.9	6.5
23	8.2	4.4	6.2	8.8	5.0	6.7	8.4	6.3	7.2	7.8	4.7	5.7
24	7.8	4.6	6.1	8.3	5.2	6.7	8.5	6.1	7.0	7.4	4.2	5.5
25	8.5	4.8	6.4	7.7	4.9	6.3	8.2	6.2	6.9	7.4	4.9	5.9
26	8.6	4.7	6.5	7.1	4.7	5.8	7.9	6.3	7.1	6.1	5.1	5.6
27	7.7	4.7	6.2	6.8	4.6	5.6	8.0	6.3	7.1	7.4	5.2	6.1
28	9.4	4.5	6.7	6.8	4.8	5.6	7.9	6.4	7.1	8.1	5.5	6.8
29	9.0	5.0	6.7	7.1	4.8	5.6	7.5	6.7	7.0	8.5	6.3	7.3
30	9.6	4.5	6.7	7.3	5.1	5.9	7.3	6.5	6.8	9.3	7.2	8.0
31	---	---	---	7.8	5.3	6.1	7.4	6.3	6.7	---	---	---
MONTH	9.6	4.0	6.3	9.0	3.6	5.8	9.6	4.9	6.6	11.1	4.2	6.9

## CUMBERLAND RIVER BASIN

03430147 STONERS CREEK NEAR HERMITAGE, TN

LOCATION.--Lat 36°11'40", long 86°36'28", Davidson County, Hydrologic Unit 05130203, on downstream end of pier at center of culvert under Andrew Jackson Parkway, 0.8 mi southwest of Hermitage.

DRAINAGE AREA.--20.6 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1992 to September 1993.

GAGE.--Water-stage encoder. Datum of gage is 411.70 ft above sea level.

REMARKS.--Records good, except for estimated discharges which are fair.

EXTREMES FOR CURRENT PERIOD.--January 1992 to September 1993: Peak discharges greater than base discharge of 800 ft<sup>3</sup>/s and maximum(\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 10, 1992	0315	2,190	9.40	Mar. 23, 1993	Unknown	Unknown	Unknown
June 4, 1992	0645	1,240	7.53	May 4, 1993	0300	1,020	7.00
July 3, 1992	0730	*4,220	*12.60				

Minimum daily discharge, .27 ft<sup>3</sup>/s, Sept. 12, 13, 14, 1993.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR JANUARY 1992 TO SEPTEMBER 1992  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	e19	14	31	26	3.6	5.4	3.7	2.1	2.9
2	---	---	---	e90	13	25	22	3.4	4.2	55	1.9	3.5
3	---	---	---	e70	12	21	20	3.1	53	1260	1.9	3.6
4	---	---	---	e45	12	19	18	2.9	237	114	1.8	3.9
5	---	---	---	e35	10	17	16	2.8	46	173	1.7	8.0
6	---	---	---	e28	9.6	16	14	2.8	23	87	1.5	5.1
7	---	---	---	e22	8.9	15	14	2.6	16	48	1.4	3.8
8	---	---	---	e24	8.1	13	13	2.6	13	31	1.4	3.0
9	---	---	---	e26	7.4	35	12	2.6	10	21	1.3	2.6
10	---	---	---	e20	7.2	676	11	2.5	7.5	15	1.4	2.2
11	---	---	---	e18	7.0	100	10	2.3	6.2	12	1.4	2.1
12	---	---	---	e40	7.1	65	9.6	4.8	5.4	9.0	1.2	1.9
13	---	---	---	e100	12	48	8.4	8.8	4.8	6.9	1.1	1.8
14	---	---	---	e350	12	38	8.0	3.7	4.4	5.7	1.1	1.7
15	---	---	---	e105	32	30	7.6	2.9	7.1	7.7	1.6	1.6
16	---	---	---	e45	22	24	7.2	2.5	4.7	7.1	1.5	1.5
17	---	---	---	e35	18	21	6.7	2.1	3.4	6.8	1.4	1.6
18	---	---	---	30	17	53	6.3	10	83	7.6	1.2	11
19	---	---	---	24	15	75	6.2	15	55	4.6	1.1	13
20	---	---	---	21	13	48	11	7.2	18	3.8	1.1	5.1
21	---	---	---	19	12	37	20	4.1	13	3.4	1.0	3.6
22	---	---	---	17	11	33	11	3.2	8.1	8.8	1.0	5.9
23	---	---	---	102	68	29	7.5	2.6	6.2	8.4	2.8	4.3
24	---	---	---	52	55	23	6.3	2.4	4.9	4.4	2.6	3.7
25	---	---	---	39	77	30	5.5	2.2	8.4	3.5	1.8	3.1
26	---	---	---	30	168	30	5.0	2.1	9.8	2.9	1.5	8.6
27	---	---	---	25	75	25	4.8	2.0	7.6	3.2	26	9.7
28	---	---	---	22	53	21	4.4	2.5	5.2	2.9	42	5.1
29	---	---	---	19	39	20	4.1	26	4.1	2.6	7.1	3.8
30	---	---	---	17	---	37	3.9	19	3.9	2.3	4.6	3.2
31	---	---	---	16	---	31	---	8.2	---	2.2	3.5	---
TOTAL	---	---	---	1505	815.3	1686	319.5	162.5	678.3	1923.5	123.0	130.9
MEAN	---	---	---	48.5	28.1	54.4	10.6	5.24	22.6	62.0	3.97	4.36
MAX	---	---	---	350	168	676	26	26	237	1260	42	13
MIN	---	---	---	16	7.0	13	3.9	2.0	3.4	2.2	1.0	1.5
CFSM	---	---	---	2.36	1.36	2.64	.52	.25	1.10	3.01	.19	.21
IN.	---	---	---	2.72	1.47	3.04	.58	.29	1.22	3.47	.22	.24

e Estimated



## CUMBERLAND RIVER BASIN

03430147 STONERS CREEK NEAR HERMITAGE, TN--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	14	12	25	16	38	e58	15	5.4	3.2	.34	.31
2	2.5	54	9.9	21	14	138	e50	15	3.8	2.6	.34	.32
3	2.3	17	8.4	18	13	156	e43	46	3.2	2.3	.31	1.8
4	11	13	8.0	77	13	105	e36	305	2.8	2.1	.31	1.8
5	8.1	32	7.3	90	12	68	e40	63	2.4	2.0	.38	1.0
6	5.0	21	6.6	52	11	53	e33	41	2.3	1.8	2.1	.68
7	3.9	14	6.3	42	10	44	e27	30	2.1	1.6	.44	.52
8	3.8	10	5.7	53	9.8	36	e23	22	1.9	1.3	.40	.43
9	3.5	7.8	6.5	42	9.1	29	e20	18	1.7	1.3	.38	.59
10	2.9	6.4	18	39	8.7	25	e25	15	6.6	1.2	.33	.50
11	2.7	5.9	17	61	17	21	e21	12	2.3	1.2	.30	.35
12	2.4	35	14	64	23	19	e18	14	1.9	29	.29	.30
13	2.3	29	12	55	16	19	e14	14	1.9	11	5.2	.29
14	2.3	17	10	44	13	17	e13	12	10	3.1	1.4	.29
15	2.2	13	9.1	37	21	17	30	9.0	55	1.8	.96	1.0
16	4.8	9.7	9.8	30	97	21	29	13	5.9	1.5	.67	.79
17	3.5	8.1	11	25	44	50	22	12	3.8	.95	.53	.47
18	3.2	6.8	10	21	33	33	18	10	3.0	.87	3.8	.41
19	2.6	6.0	9.9	19	27	e27	15	11	2.5	.76	.85	.35
20	2.4	5.5	79	18	24	e25	15	7.8	2.2	.58	.69	.34
21	2.3	10	41	42	143	e22	13	6.5	2.1	.50	.65	.32
22	2.3	33	32	31	70	38	11	5.5	2.0	12	.51	.32
23	2.3	20	141	25	49	e450	9.9	4.7	1.9	7.6	.44	3.9
24	2.4	41	62	83	38	e140	9.0	4.5	17	1.8	.42	.92
25	2.4	118	45	50	47	e100	77	4.3	28	1.1	.39	13
26	2.5	45	35	40	76	e290	106	3.9	19	.81	.39	7.1
27	3.5	29	52	32	56	e200	42	3.5	6.8	.65	.38	2.4
28	3.4	21	120	27	45	e130	28	3.2	4.7	.54	.37	1.4
29	3.4	17	56	22	---	e90	21	2.9	10	.47	.35	1.1
30	5.4	14	41	19	---	e75	17	2.7	4.3	.40	.35	.86
31	2.8	---	32	18	---	e65	---	13	---	.36	.33	---
TOTAL	106.8	673.2	927.5	1222	955.6	2541	883.9	739.5	216.5	96.39	24.60	43.86
MEAN	3.45	22.4	29.9	39.4	34.1	82.0	29.5	23.9	7.22	3.11	.79	1.46
MAX	11	118	141	90	143	450	106	305	55	29	5.2	13
MIN	2.2	5.5	5.7	18	8.7	17	9.0	2.7	1.7	.36	.29	.29
CFSM	.17	1.09	1.45	1.91	1.66	3.98	1.43	1.16	.35	.15	.04	.07
IN.	.19	1.22	1.67	2.21	1.73	4.59	1.60	1.34	.39	.17	.04	.08

e Estimated

## CUMBERLAND RIVER BASIN

03430147 STONERS CREEK NEAR HERMITAGE, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

MEAN	3.45	22.4	29.9	44.0	31.1	68.2	20.1	14.5	14.9	32.6	2.38	2.91
MAX	3.45	22.4	29.9	48.5	34.1	82.0	29.5	23.9	22.6	62.0	3.97	4.36
(WY)	1993	1993	1993	1992	1993	1993	1993	1993	1992	1992	1992	1992
MIN	3.45	22.4	29.9	39.4	28.1	54.4	10.6	5.24	7.22	3.11	.79	1.46
(WY)	1993	1993	1993	1993	1992	1992	1992	1992	1993	1993	1993	1993

## SUMMARY STATISTICS

## FOR 1992 CALENDAR YEAR

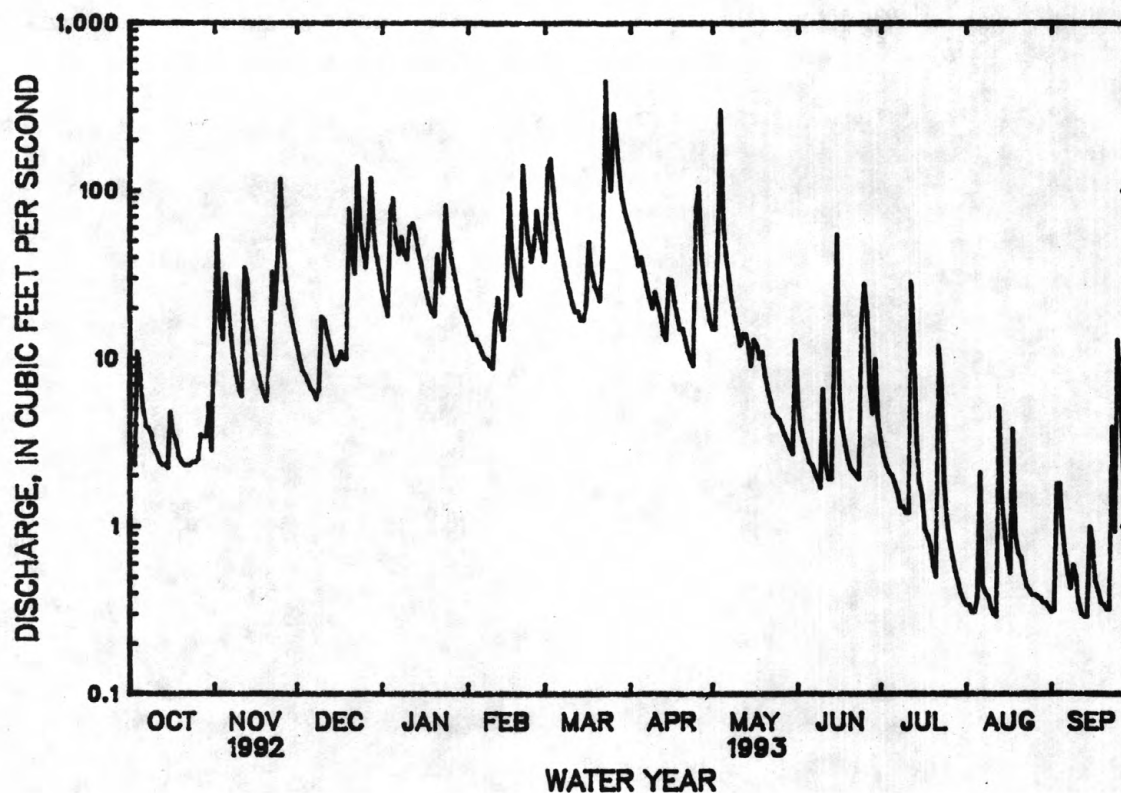
## FOR 1993 WATER YEAR

## WATER YEARS 1992 - 1993

ANNUAL TOTAL	9051.5	8430.85	
ANNUAL MEAN	24.7	23.1	23.1
HIGHEST ANNUAL MEAN			23.1
LOWEST ANNUAL MEAN			23.1
HIGHEST DAILY MEAN	1260	450	1260
LOWEST DAILY MEAN	1.0	.29	.29
ANNUAL SEVEN-DAY MINIMUM	1.2	.34	.34
INSTANTANEOUS PEAK FLOW		Unknown	a4220
INSTANTANEOUS PEAK STAGE		Unknown	12.60
INSTANTANEOUS LOW FLOW		b.27	b.27
ANNUAL RUNOFF (CFSM)	1.20	1.12	1.12
ANNUAL RUNOFF (INCHES)	16.35	15.22	15.23
10 PERCENT EXCEEDS	48	54	53
50 PERCENT EXCEEDS	8.7	10	9.8
90 PERCENT EXCEEDS	2.2	.49	1.1

a From rating curve extended above 500 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.

b Also occurred Sept. 13, 14, 1993.





## CUMBERLAND RIVER BASIN

03430550 MILL CREEK NEAR NOLENSVILLE, TN

LOCATION.--Lat 36°00'33", long 86°42'06", Davidson County, Hydrologic Unit 05130202, near left bank on downstream side of bridge on US Highway 31A, 800 ft upstream from Hoit Creek, 0.6 mi upstream from Owl Creek, 4.6 mi northwest of Nolensville, and at mile 19.6.

DRAINAGE AREA.--40.5 mi<sup>2</sup>.

PERIOD OF RECORD.--March 1992 to September 1993.

GAGE.--Water-stage encoder. Datum of gage is 527.74 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair.

EXTREMES FOR CURENT PERIOD.--March 1992 to September 1993: Peak discharges greater than base discharge of 2,400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 10, 1992	0315	*9,660	*13.67	July 6, 1992	0130	2,670	9.29
July 3, 1992	1730	2,870	9.50	Mar. 23, 1993	0030	3,480	10.07

Minimum daily discharge, .08 ft<sup>3</sup>/s, Sept. 13, 14, 1993.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR MARCH 1992 TO SEPTEMBER 1992  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	70	47	7.3	6.1	35	1.7	1.5
2	---	---	---	---	---	57	42	6.2	4.4	37	1.6	23
3	---	---	---	---	---	50	38	5.5	48	468	1.5	15
4	---	---	---	---	---	43	34	4.7	195	214	1.6	6.1
5	---	---	---	---	---	38	29	4.3	65	116	1.3	4.2
6	---	---	---	---	---	34	26	4.5	37	e500	1.1	4.0
7	---	---	---	---	---	29	27	4.1	26	e160	1.0	2.9
8	---	---	---	---	---	25	24	4.0	18	e85	.92	2.2
9	---	---	---	---	---	52	22	4.7	15	37	1.1	1.9
10	---	---	---	---	---	2260	20	4.1	12	26	2.4	1.5
11	---	---	---	---	---	246	18	3.4	10	19	1.8	1.3
12	---	---	---	---	---	150	19	25	58	15	1.5	1.1
13	---	---	---	---	---	105	16	61	38	12	1.4	1.1
14	---	---	---	---	---	81	15	15	21	9.3	1.3	.92
15	---	---	---	---	---	65	15	9.8	14	14	1.3	.92
16	---	---	---	---	---	55	15	6.8	10	9.7	1.4	.61
17	---	---	---	---	---	49	13	5.2	7.7	8.9	1.3	.51
18	---	---	---	---	---	170	12	4.2	209	7.8	1.3	4.9
19	---	---	---	---	---	180	12	4.3	98	6.0	1.3	3.4
20	---	---	---	---	---	129	16	7.6	46	4.7	1.3	2.2
21	---	---	---	---	---	95	38	4.9	36	4.1	1.2	2.3
22	---	---	---	---	---	86	22	3.7	20	4.0	1.3	3.5
23	---	---	---	---	---	84	16	3.1	15	5.4	2.6	4.5
24	---	---	---	---	---	68	14	2.7	11	4.1	5.9	3.7
25	---	---	---	---	---	70	12	2.7	8.7	3.6	2.8	3.2
26	---	---	---	---	---	73	11	2.8	18	2.8	1.9	16
27	---	---	---	---	---	61	10	2.7	15	2.8	2.3	16
28	---	---	---	---	---	54	9.9	2.4	9.2	3.5	14	7.0
29	---	---	---	---	---	49	9.2	13	6.9	2.7	5.0	4.1
30	---	---	---	---	---	58	8.3	21	6.3	2.1	2.9	3.3
31	---	---	---	---	---	53	---	9.6	---	1.9	2.0	---
TOTAL	---	---	---	---	---	4639	610.4	260.3	1084.3	1821.4	70.02	142.86
MEAN	---	---	---	---	---	150	20.3	8.40	36.1	58.8	2.26	4.76
MAX	---	---	---	---	---	2260	47	61	209	500	14	23
MIN	---	---	---	---	---	25	8.3	2.4	4.4	1.9	.92	.51
CFSM	---	---	---	---	---	3.69	.50	.21	.89	1.45	.06	.12
IN.	---	---	---	---	---	4.26	.56	.24	1.00	1.67	.06	.13

e Estimated



## CUMBERLAND RIVER BASIN

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03430550 MILL CREEK NEAR NOLENSVILLE, TN--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	20	23	39	24	67	71	35	6.0	15	.40	.63
2	2.5	48	20	34	21	153	62	33	4.4	8.3	.30	.44
3	2.2	20	17	31	20	266	52	85	3.4	5.3	.30	8.3
4	2.7	21	16	109	18	213	46	326	3.0	3.8	.30	8.1
5	4.0	36	14	167	17	136	56	94	2.5	2.8	1.0	5.4
6	3.5	28	12	86	16	98	52	103	2.0	2.1	4.0	4.1
7	3.0	20	11	63	15	78	45	71	1.8	1.7	5.3	3.3
8	3.1	14	9.7	118	13	63	41	49	1.5	1.5	1.8	1.9
9	3.0	10	9.4	85	12	52	50	39	1.2	1.0	1.6	.18
10	3.0	8.1	22	69	12	46	58	32	1.0	1.5	1.3	.10
11	3.3	6.8	22	143	27	39	48	27	1.7	1.4	1.0	.09
12	3.0	31	20	136	46	36	41	35	2.1	1.9	.92	.09
13	3.1	37	18	101	33	37	37	32	3.3	1.9	13	.08
14	3.6	25	16	74	27	33	34	26	5.8	1.6	6.9	.08
15	5.2	19	15	59	37	34	44	21	14	2.3	3.1	.10
16	7.5	15	17	49	138	52	43	18	3.7	2.6	2.1	.30
17	6.1	12	19	41	70	133	35	16	2.1	2.1	1.5	.65
18	4.9	9.6	17	35	54	77	31	15	1.3	26	1.2	.90
19	4.3	8.3	17	32	45	60	28	20	.77	16	1.0	1.1
20	4.3	8.1	179	31	41	50	29	14	.58	2.7	1.0	2.4
21	5.1	20	89	62	421	44	27	12	.72	1.1	.90	2.1
22	5.9	86	69	51	183	157	24	10	.72	2.5	.80	3.1
23	6.4	45	370	43	106	904	22	8.8	.68	5.9	.60	2.3
24	6.5	87	143	71	75	241	20	7.7	32	1.4	.58	3.4
25	6.1	265	86	57	131	198	183	7.8	43	.87	.60	6.6
26	6.0	92	61	49	164	655	218	7.0	22	1.1	.50	23
27	7.6	56	55	42	108	358	96	5.8	9.2	.85	.45	8.2
28	9.2	41	99	37	82	194	64	5.1	6.2	.95	.46	4.6
29	9.3	32	70	32	---	133	49	4.4	74	.78	.33	3.1
30	9.8	27	55	28	---	97	40	3.9	37	.50	.25	1.6
31	11	---	47	26	---	84	---	8.7	---	.33	.18	---
TOTAL	158.0	1147.9	1638.1	2000	1956	4788	1646	1172.2	287.67	117.78	53.67	96.24
MEAN	5.10	38.3	52.8	64.5	69.9	154	54.9	37.8	9.59	3.80	1.73	3.21
MAX	11	265	370	167	421	904	218	326	74	26	13	23
MIN	2.2	6.8	9.4	26	12	33	20	3.9	.58	.33	.18	.08
CFSM	.13	.94	1.30	1.59	1.72	3.81	1.35	.93	.24	.09	.04	.08
IN.	.15	1.05	1.50	1.84	1.80	4.39	1.51	1.08	.26	.11	.05	.09

CUMBERLAND RIVER BASIN  
03430550 MILL CREEK NEAR NOLENSVILLE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

MEAN	5.10	38.3	52.8	64.5	69.9	152	37.6	23.1	22.9	31.3	1.99	3.98
MAX	5.10	38.3	52.8	64.5	69.9	154	54.9	37.8	36.1	58.8	2.26	4.76
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1992	1992	1992	1992
MIN	5.10	38.3	52.8	64.5	69.9	150	20.3	8.40	9.59	3.80	1.73	3.21
(WY)	1993	1993	1993	1993	1993	1992	1992	1992	1993	1993	1993	1993

SUMMARY STATISTICS

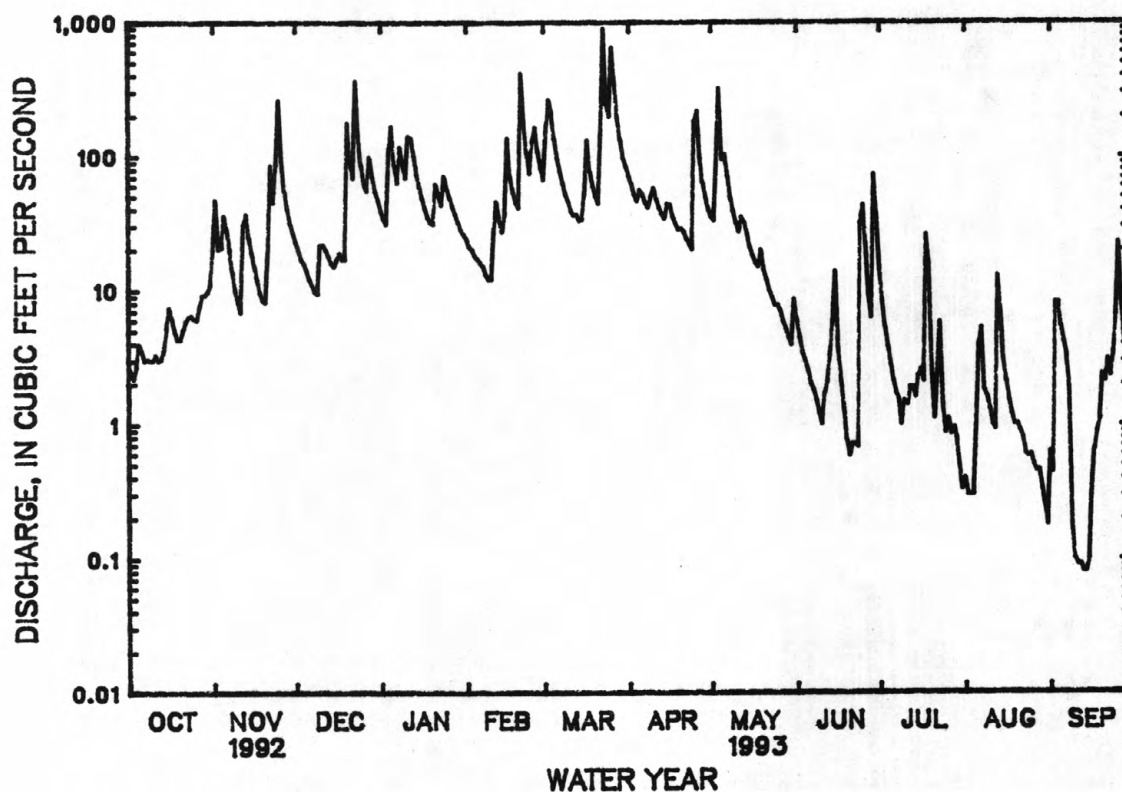
FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1992 - 1993

ANNUAL TOTAL						15061.56						
ANNUAL MEAN						41.3				41.3		
HIGHEST ANNUAL MEAN										41.3		1993
LOWEST ANNUAL MEAN										41.3		1993
HIGHEST DAILY MEAN												
LOWEST DAILY MEAN												
ANNUAL SEVEN-DAY MINIMUM												
INSTANTANEOUS PEAK FLOW												
ANNUAL RUNOFF (CFSM)												
ANNUAL RUNOFF (INCHES)												
10 PERCENT EXCEEDS												
50 PERCENT EXCEEDS												
90 PERCENT EXCEEDS												

a Also occurred on Sept. 14, 1993.





## CUMBERLAND RIVER BASIN

03431000 MILL CREEK NEAR ANTIOCH, TN

LOCATION.--Lat 36°04'54", long 86°40'50", Davidson County, Hydrologic Unit 05130202, at downstream end of left bridge pier on Franklin Limestone Road, 900 ft upstream from Louisville and Nashville spur track bridge, 1.6 mi north of Antioch, 2.1 mi downstream from Whittemore Branch, 8.2 mi southeast of the State Capitol in Nashville, and at mile 11.0.

DRAINAGE AREA.--64.0 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1953 to September 1961. Annual maximum, water years 1962-63. October 1963 to September 1975. Annual maximum, water years 1976-92. October 1992 to September 1993.

GAGE.--Water-stage encoder, crest-stage gage and satellite telemeter at station. Datum of gage is 472.57 ft above sea level. Dec. 5, 1961, to Nov. 29, 1963, Oct. 1976 to Sept. 1992, crest-stage gage at same site and datum.

REMARKS.--Records good. Minor diversion from gage pool for industrial use.

EXTREMES FOR PERIOD OF RECORD.--Maximum stage since at least 1920, that of May 4, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum(\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 23	0200	*2,610	*9.35				

Minimum daily discharge, .43 ft<sup>3</sup>/s, Sept. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	41	25	59	48	98	113	56	16	22	1.5	e2.0
2	4.7	70	22	50	43	228	98	53	12	15	1.7	e1.0
3	4.2	29	19	44	38	409	82	123	10	10	1.6	34
4	11	26	19	111	36	330	72	433	8.9	8.1	1.5	10
5	7.8	48	18	272	35	198	87	150	7.9	6.0	3.2	4.1
6	6.0	41	16	142	33	147	83	245	7.0	5.0	11	2.2
7	5.3	24	15	108	31	117	70	193	5.6	3.8	3.6	1.9
8	4.5	18	14	165	32	97	61	113	5.3	3.5	2.2	2.1
9	5.5	15	13	135	30	80	75	87	4.4	3.5	2.1	2.3
10	5.0	13	27	114	28	69	84	59	3.9	15	1.7	2.9
11	5.5	11	25	200	56	60	73	52	5.8	12	1.8	2.7
12	4.5	42	21	209	94	54	63	69	6.1	14	1.4	1.2
13	3.7	51	19	167	64	54	56	108	9.4	10	29	.73
14	3.7	28	18	130	54	53	52	63	36	11	7.5	.73
15	4.2	21	17	106	73	48	70	48	47	27	4.6	5.2
16	13	18	20	87	236	67	71	44	16	22	2.8	4.6
17	5.2	16	21	73	124	177	56	36	11	11	2.2	2.3
18	4.1	14	19	63	92	115	49	38	8.2	108	1.8	.91
19	2.9	13	19	58	75	90	43	44	6.6	84	1.4	.43
20	2.5	12	223	55	69	76	48	32	5.2	19	1.8	.90
21	3.1	23	119	107	583	67	44	27	3.9	12	1.6	1.9
22	2.7	120	90	93	277	143	36	24	4.1	29	e1.0	1.5
23	1.8	65	455	76	155	1230	34	21	4.2	27	e.80	3.0
24	2.1	105	205	163	113	361	32	19	23	14	1.1	5.3
25	3.3	383	128	116	166	300	286	18	91	8.8	1.6	8.6
26	5.1	127	93	96	242	1020	368	16	38	6.4	1.2	40
27	13	76	85	82	157	553	155	14	20	5.2	1.3	7.6
28	8.0	53	145	69	121	296	103	13	14	4.9	1.1	5.1
29	5.5	40	112	60	---	199	78	12	42	3.1	e.70	3.5
30	11	29	87	53	---	151	64	11	59	2.5	5.9	2.1
31	11	---	72	50	---	130	---	33	---	2.2	e3.0	---
TOTAL	174.6	1572	2181	3313	3105	7017	2606	2254	531.5	525.0	103.70	160.80
MEAN	5.63	52.4	70.4	107	111	226	86.9	72.7	17.7	16.9	3.35	5.36
MAX	13	383	455	272	583	1230	368	433	91	108	29	40
MIN	1.8	11	13	44	28	48	32	11	3.9	2.2	.70	.43
CFSM	.09	.82	1.10	1.67	1.73	3.54	1.36	1.14	.28	.26	.05	.08
IN.	.10	.91	1.27	1.93	1.80	4.08	1.51	1.31	.31	.31	.06	.09

e Estimated



CUMBERLAND RIVER BASIN

83

03431000 MILL CREEK NEAR ANTIOCH, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1993, BY WATER YEAR (WY)

MEAN	16.0	51.8	131	169	212	225	147	80.3	52.6	16.7	15.6	16.3
MAX	69.6	225	439	544	512	694	348	245	318	63.9	86.0	103
(WY)	1958	1958	1973	1974	1956	1975	1973	1973	1960	1972	1972	1974
MIN	.000	.000	2.85	50.2	44.9	77.5	20.9	13.8	1.89	.017	1.14	.085
(WY)	1954	1954	1954	1955	1968	1966	1967	1960	1990	1954	1969	1956

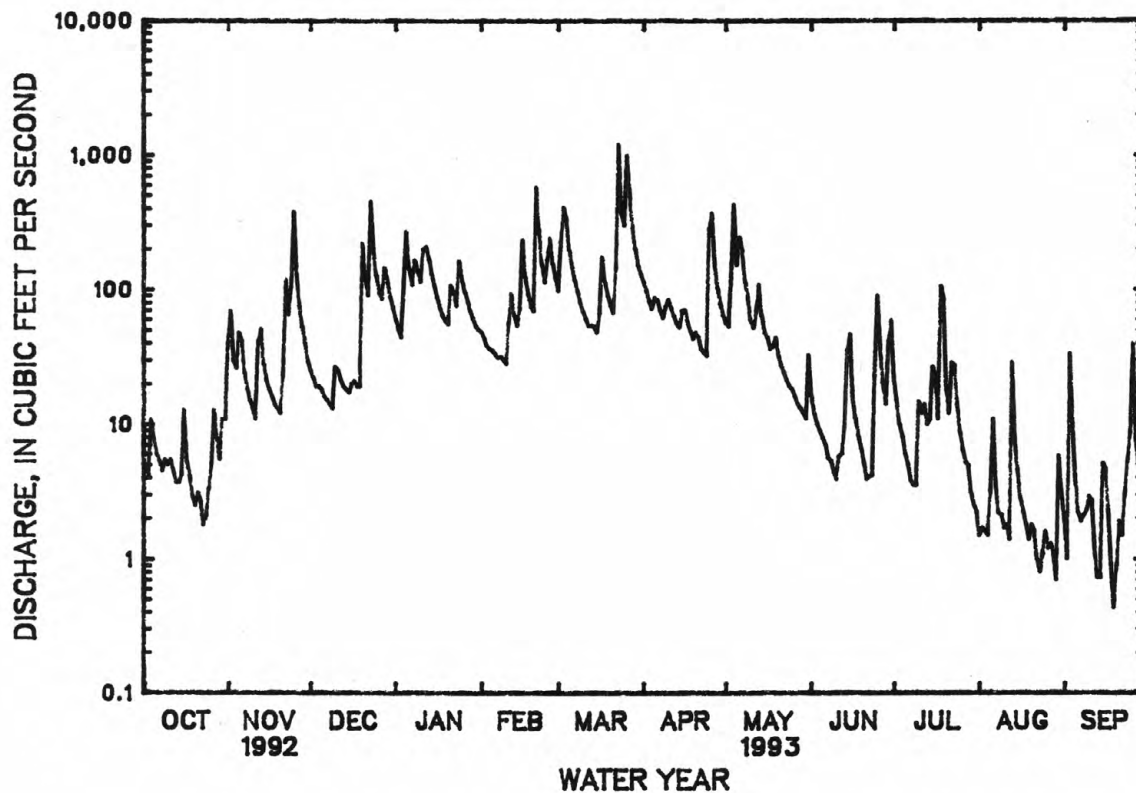
SUMMARY STATISTICS

FOR 1993 WATER YEAR

WATER YEARS 1954 - 1993

ANNUAL TOTAL	23543.60	
ANNUAL MEAN	64.5	96.5
HIGHEST ANNUAL MEAN		182
LOWEST ANNUAL MEAN		49.8
HIGHEST DAILY MEAN	1230	7440
LOWEST DAILY MEAN	.43	a.00
ANNUAL SEVEN-DAY MINIMUM	1.1	.00
INSTANTANEOUS PEAK FLOW	2610	30100
INSTANTANEOUS PEAK STAGE	9.35	23.78
ANNUAL RUNOFF (CFSM)	1.01	1.51
ANNUAL RUNOFF (INCHES)	13.68	20.48
10 PERCENT EXCEEDS	150	205
50 PERCENT EXCEEDS	27	21
90 PERCENT EXCEEDS	2.2	.95

a Also occurred one or more days 1953-56, 1964-65.



## CUMBERLAND RIVER BASIN

034315005 CUMBERLAND RIVER AT WOODLAND STREET AT NASHVILLE, TN

LOCATION.--Lat 36°10'02", long 86°46'35", Davidson County, Hydrologic Unit 05130202, on left bank at northwest corner of Woodland Street Bridge, at Nashville, 3.5 mi downstream from Mill Creek, and at mile 190.9.

DRAINAGE AREA.--12,860 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--May 1992 to September 1993. October 1892 to September 1954, monthly and yearly discharges published in WSP 1306 and 1726, October 1986 to September 1991, gage height, published as "at Nashville." Gage height record collected in this vicinity since 1873 are contained in reports of U.S. Weather Bureau.

GAGE.--Water-stage encoder, satellite telemeter and acoustic velocity meter. Datum of gage is 368.17 ft above sea level. Prior to fall of 1922 inclined and vertical staff gage at site 350 ft downstream and from fall of 1922 to April 9, 1940, staff gage at site 400 ft downstream, both gages at same datum. November 1, 1930, to September 30, 1954, upper staff gage at former lock 1, 2.7 miles downstream was used as auxiliary gage. Prior to May 1992 at site .2 mi upstream at same datum.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 203,000 ft<sup>3</sup>/s, Jan. 1, 1927, gage height 56.2 ft; minimum gage height observed after first filling of pool at dam 1, 6.1 ft Oct. 19, 1935.

EXTREMES FOR CURRENT PERIOD.--May 1992 to September 1993: Maximum discharge 69,800 ft<sup>3</sup>/s, gage height, 28.44 ft, Mar. 28, 1993; minimum daily discharge, 4,390 ft<sup>3</sup>/s, May 25, 1992; minimum gage height, 15.77 ft, July 12, 1992.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR MAY 1992 TO SEPTEMBER 1992  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	e10400	7980	14800	17600	14300
2	---	---	---	---	---	---	---	e7500	7630	18100	14100	16000
3	---	---	---	---	---	---	---	e7520	8300	46600	10400	17900
4	---	---	---	---	---	---	---	e5940	19900	55000	9120	15100
5	---	---	---	---	---	---	---	e6310	21300	31200	16000	12600
6	---	---	---	---	---	---	---	e5240	16800	16200	22000	9490
7	---	---	---	---	---	---	---	e7540	13300	24800	16800	6980
8	---	---	---	---	---	---	---	e6670	12900	26900	14400	e11000
9	---	---	---	---	---	---	---	e7170	13100	31000	12100	e13300
10	---	---	---	---	---	---	---	e5450	14700	31400	7850	16000
11	---	---	---	---	---	---	---	e4920	21000	20300	7350	19300
12	---	---	---	---	---	---	---	e4420	24000	18200	9330	18500
13	---	---	---	---	---	---	---	e5370	21400	18200	14500	13400
14	---	---	---	---	---	---	---	e8990	14700	e18900	20700	10300
15	---	---	---	---	---	---	---	e7800	15000	20400	17400	11100
16	---	---	---	---	---	---	---	7830	14800	21400	13900	14800
17	---	---	---	---	---	---	---	7980	13200	19400	13100	20600
18	---	---	---	---	---	---	---	8220	15000	18600	12400	20500
19	---	---	---	---	---	---	---	10100	31500	12500	13600	18300
20	---	---	---	---	---	---	---	10600	34500	8340	14900	17900
21	---	---	---	---	---	---	---	e9740	25200	10700	14700	20800
22	---	---	---	---	---	---	---	e7740	16700	13300	13800	18400
23	---	---	---	---	---	---	---	e7740	19600	20300	8970	31200
24	---	---	---	---	---	---	---	e4410	20800	13400	9230	35000
25	---	---	---	---	---	---	---	e4390	19700	16500	12900	32600
26	---	---	---	---	---	---	---	e4470	27600	12500	20600	26900
27	---	---	---	---	---	---	---	5070	24200	9400	22200	24200
28	---	---	---	---	---	---	---	5990	16600	11400	27700	26100
29	---	---	---	---	---	---	---	7220	17400	14800	30300	25300
30	---	---	---	---	---	---	---	10200	15800	19100	23000	26700
31	---	---	---	---	---	---	---	10100	---	16400	13900	---
TOTAL	---	---	---	---	---	---	---	223040	544610	630040	474850	564570
MEAN	---	---	---	---	---	---	---	7195	18150	20320	15320	18820
MAX	---	---	---	---	---	---	---	10600	34500	55000	30300	35000
MIN	---	---	---	---	---	---	---	4390	7630	8340	7350	6980

e Estimated

## CUMBERLAND RIVER BASIN

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034315005 CUMBERLAND RIVER AT WOODLAND STREET AT NASHVILLE, TN--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22700	e10500	18100	37200	22800	16800	57100	22300	7130	12800	11100	10200
2	20100	e8500	19200	34000	22700	19600	55500	19100	10700	13600	9280	9460
3	12600	e16000	18500	27500	22900	32600	54400	23700	14200	12600	9080	9730
4	9230	9720	17900	32700	24400	34600	52900	43300	14300	9550	10300	9970
5	11300	16900	13100	43500	25000	33000	49500	46100	13200	10500	11100	10000
6	19000	25100	9460	49300	24700	32000	49500	48500	10600	6330	12100	9670
7	23300	23500	13300	48400	19800	25000	53700	39800	6680	e7660	10700	9880
8	25000	17300	15600	46200	e17000	21100	58500	29000	6680	10500	10800	9740
9	23900	16500	23000	40800	e13000	14600	54900	22300	8510	13700	9050	9450
10	19000	17400	30500	36300	17500	12100	45600	20900	12600	13600	8520	9420
11	16100	16800	23100	35300	16100	14700	48800	20300	17000	12400	10200	8840
12	e15200	18600	12900	41400	17200	16000	42000	e17500	12500	e10000	11800	7220
13	24500	21800	8620	39100	12900	15900	28700	e11000	9880	e10500	11200	7860
14	23700	19600	13400	41700	12300	20300	21900	9500	8260	e11500	9870	5500
15	20100	18000	14600	45500	12600	20500	23900	8070	9830	e12500	10800	7940
16	22900	12700	16700	42500	13300	20500	29400	5950	10400	e13500	11200	8110
17	21800	13500	17900	33700	21200	23000	28800	6040	11800	e13300	8890	9990
18	e16500	15000	21700	33300	23000	27700	25200	6070	13300	e9500	9560	9340
19	e19600	12400	23200	34300	21500	22400	23100	6390	9470	e11000	10400	7900
20	22500	15400	20800	35000	17300	17400	24200	10400	6700	e13000	11200	6270
21	26600	16900	20300	35100	16100	16700	21600	12600	7190	e13100	10800	5960
22	22700	14400	34300	36000	25100	20000	19700	10700	7980	e14500	9850	5550
23	22800	18500	29100	42600	29000	25100	20100	9620	8400	14500	10000	6670
24	17800	16800	50500	43100	21200	45500	22500	8460	9590	13400	9280	7550
25	10400	24600	39100	40900	16000	48300	23500	6880	11700	10100	10600	8550
26	e9500	31800	28900	41700	13100	57500	27100	7450	12400	10900	10900	6890
27	e11500	26000	26300	43000	20900	59400	26800	7840	9240	9000	12400	7810
28	e15000	19100	30600	33500	18900	65300	24400	8630	7630	e11000	12400	6330
29	17200	17500	35700	42200	---	57100	26200	7330	8610	e10500	12000	6950
30	e14100	17900	35800	36600	---	56000	25800	6700	9780	10500	10300	6520
31	e13000	---	37300	29300	---	56600	---	6990	---	10700	9530	---
TOTAL	569630	528720	719480	1201700	537500	947300	1065300	509420	306260	356240	325210	245270
MEAN	18380	17620	23210	38760	19200	30560	35510	16430	10210	11490	10490	8176
MAX	26600	31800	50500	49300	29000	65300	58500	48500	17000	14500	12400	10200
MIN	9230	8500	8620	27500	12300	12100	19700	5950	6680	6330	8520	5500

e Estimated

## CUMBERLAND RIVER BASIN

034315005 CUMBERLAND RIVER AT WOODLAND STREET AT NASHVILLE, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

MEAN	18380	17620	23210	38760	19200	30560	35510	11810	14180	15910	12900	13500
MAX	18380	17620	23210	38760	19200	30560	35510	16430	18150	20320	15320	18820
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1992	1992	1992	1992
MIN	18380	17620	23210	38760	19200	30560	35510	7195	10210	11490	10490	8176
(WY)	1993	1993	1993	1993	1993	1993	1993	1992	1993	1993	1993	1993

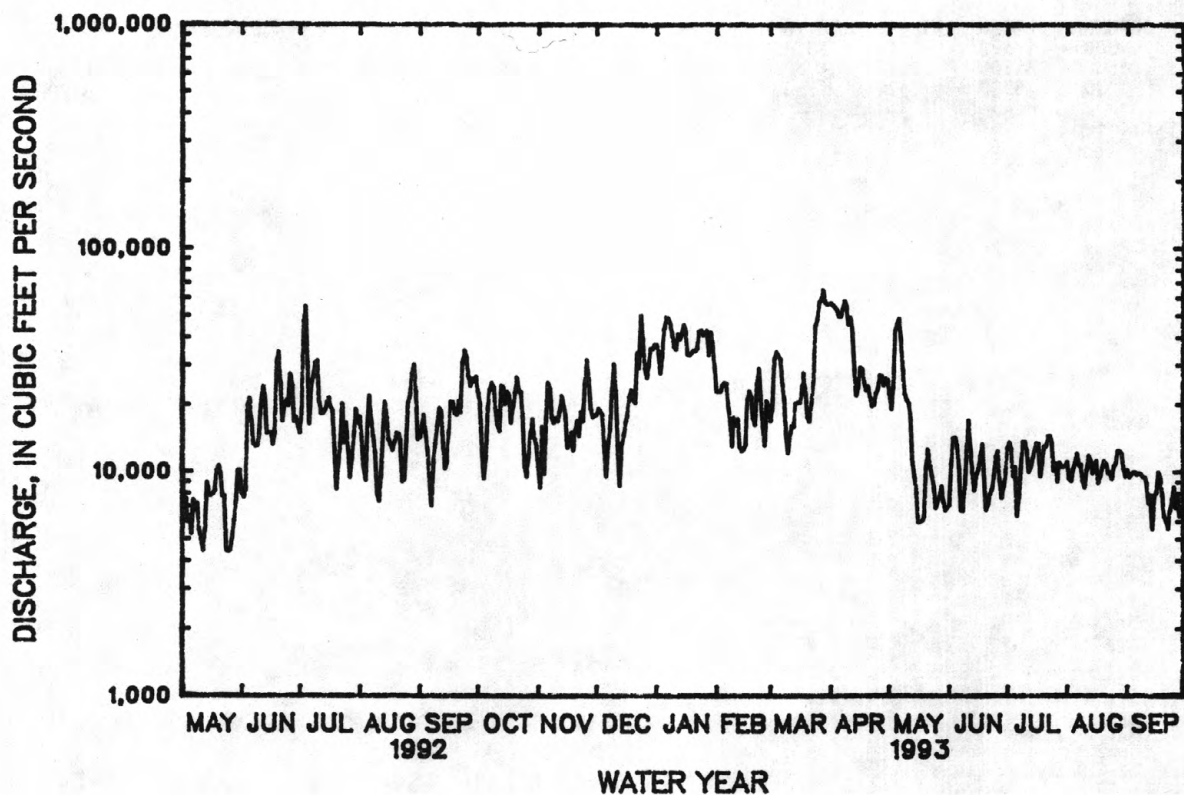
## SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1992 - 1993

ANNUAL TOTAL												
ANNUAL MEAN							7312030					
HIGHEST ANNUAL MEAN							20030					
LOWEST ANNUAL MEAN										20030		1993
HIGHEST DAILY MEAN												
LOWEST DAILY MEAN												
ANNUAL SEVEN-DAY MINIMUM												
INSTANTANEOUS PEAK FLOW												
INSTANTANEOUS PEAK STAGE												
10 PERCENT EXCEEDS												
50 PERCENT EXCEEDS												
90 PERCENT EXCEEDS												







## CUMBERLAND RIVER BASIN

03432350 HARPETH RIVER AT FRANKLIN, TN

LOCATION.--Lat 35°55'14", long 86°51'56", Williamson County, Hydrologic Unit 05130204, on left bank 15 ft downstream from State Highway 96 bridge, 0.4 mi southeast of the courthouse in Franklin, and at mile 88.1.

DRAINAGE AREA.--191 mi<sup>2</sup>, includes 15 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage encoder, crest-stage gage and satellite telemeter at station. Datum of gage is 604.42 ft above sea level.

REMARKS.--No estimated daily discharges. Records good except those below 5.0 ft<sup>3</sup>/s, which are poor. The Franklin Utility District diverts part of its municipal water supply from the river above the gage. This water along with other water is returned to the river through the sewage treatment plant 2.7 mi below gage. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,900 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 23	1630	2,960	14.28	Mar. 23	1800	*3,100	*14.67

Minimum daily discharge, 1.2 ft<sup>3</sup>/s, July 29, many days in September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	82	151	253	142	264	415	133	235	72	1.5	1.6
2	53	1200	132	214	132	318	355	128	107	53	1.5	1.5
3	38	475	115	185	124	752	288	457	73	34	1.7	1.5
4	28	339	109	233	115	886	245	1340	55	25	1.6	1.5
5	32	535	107	966	102	602	270	691	40	23	1.4	10
6	42	506	100	563	93	432	343	437	37	18	2.5	6.1
7	34	301	89	399	90	337	258	387	38	23	16	3.4
8	28	205	80	516	92	280	219	274	33	18	6.6	1.2
9	30	157	75	468	88	234	213	227	24	13	6.8	1.2
10	30	128	107	363	78	211	233	183	21	35	2.0	1.2
11	28	99	164	474	94	182	208	158	39	21	3.2	1.3
12	26	249	140	687	199	159	189	149	35	23	2.5	1.4
13	20	585	123	569	163	153	169	149	40	20	8.5	1.4
14	12	289	105	420	128	147	148	136	36	16	9.1	1.2
15	9.3	205	93	333	111	141	181	120	73	7.3	5.8	1.2
16	13	148	91	279	279	176	180	105	36	16	5.0	1.3
17	25	121	105	238	256	567	155	99	26	23	2.3	1.2
18	42	102	148	208	203	423	137	76	18	19	1.8	1.2
19	32	89	134	187	171	290	124	159	24	90	1.6	1.2
20	30	79	757	189	153	229	121	157	21	19	1.9	1.2
21	26	92	650	534	334	198	120	111	13	20	3.1	1.2
22	23	552	490	581	388	213	111	86	67	12	2.9	1.2
23	21	427	1860	381	255	2540	99	70	45	2.2	2.0	1.2
24	17	344	1280	525	204	1440	93	65	28	6.3	2.6	1.2
25	8.5	1030	707	489	235	873	215	63	140	11	2.3	1.7
26	9.1	605	538	341	636	1890	646	61	126	7.8	2.2	4.9
27	18	395	412	273	445	1610	345	54	82	1.4	2.1	3.7
28	27	280	597	231	325	1020	226	41	111	1.3	1.9	15
29	32	214	464	200	---	718	177	45	79	1.2	1.7	10
30	33	174	364	175	---	547	150	78	129	1.3	1.6	6.0
31	37	---	304	154	---	467	---	214	---	1.3	1.5	---
TOTAL	872.9	10007	10591	11628	5635	18299	6633	6453	1831	634.1	107.2	87.9
MEAN	28.2	334	342	375	201	590	221	208	61.0	20.5	3.46	2.93
MAX	69	1200	1860	966	636	2540	646	1340	235	90	16	15
MIN	8.5	79	75	154	78	141	93	41	13	1.2	1.4	1.2
CFSM	.15	1.75	1.79	1.96	1.05	3.09	1.16	1.09	.32	.11	.02	.02
IN.	.17	1.95	2.06	2.26	1.10	3.56	1.29	1.26	.36	.12	.02	.02

## CUMBERLAND RIVER BASIN

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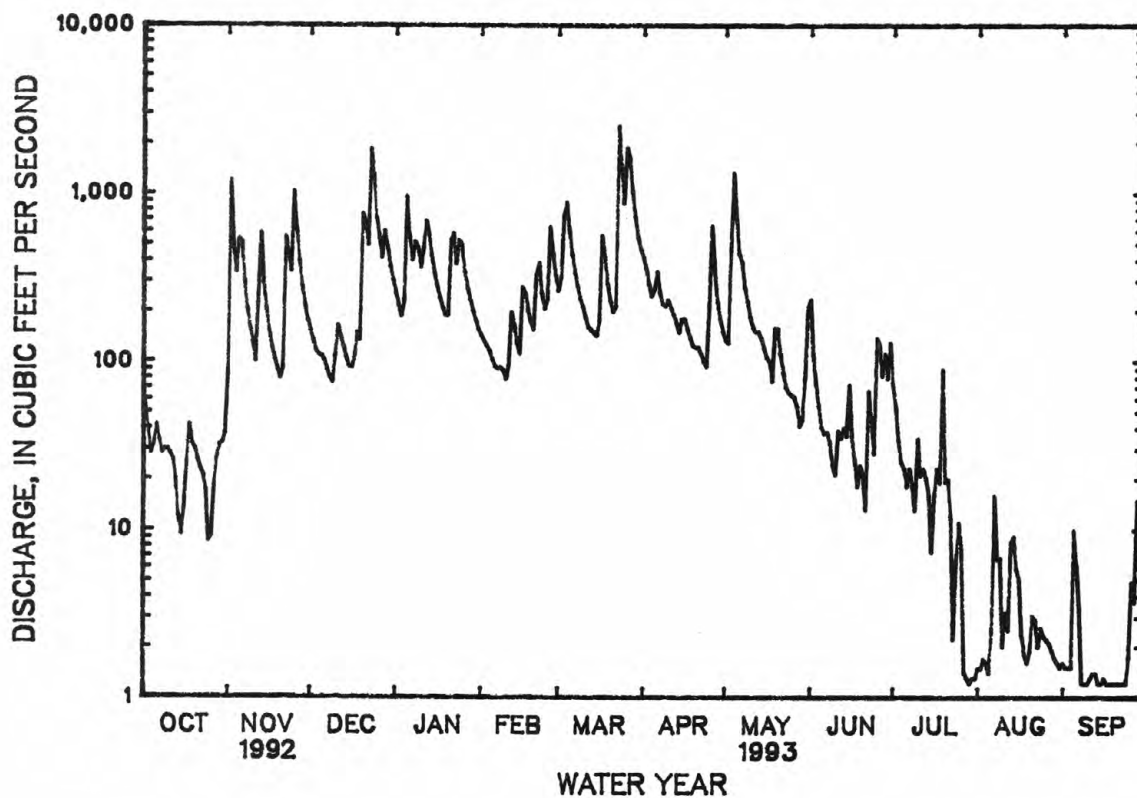
03432350 HARPETH RIVER AT FRANKLIN, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 1993, BY WATER YEAR (WY)

MEAN	99.3	299	497	500	532	621	360	335	95.6	64.0	25.5	86.1
MAX	610	778	1172	1472	1358	1945	1066	1489	530	431	104	971
(WY)	1976	1980	1991	1979	1990	1975	1979	1984	1989	1989	1984	1979
MIN	.52	4.08	16.2	14.4	139	159	62.2	21.8	1.25	1.44	1.58	1.17
(WY)	1981	1981	1981	1986	1978	1985	1986	1988	1988	1988	1988	1980

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1975 - 1993
ANNUAL TOTAL	83099.6	72779.1	
ANNUAL MEAN	227	199	292
HIGHEST ANNUAL MEAN			522
LOWEST ANNUAL MEAN			68.7
HIGHEST DAILY MEAN	4240 Mar 10	2540 Mar 23	18500 Mar 13 1975
LOWEST DAILY MEAN	3.7 Sep 12	a1.2 Jul 29	.30 Oct 14 1980
ANNUAL SEVEN-DAY MINIMUM	7.5 Sep 10	1.2 Sep 17	.32 Oct 20 1980
INSTANTANEOUS PEAK FLOW		3100 Mar 23	20200 Mar 13 1975
INSTANTANEOUS PEAK STAGE		14.67 Mar 23	33.65 Mar 13 1975
INSTANTANEOUS LOW FLOW			.30 Oct 14 1980
ANNUAL RUNOFF (CFSM)	1.19	1.04	1.53
ANNUAL RUNOFF (INCHES)	16.18	14.17	20.78
10 PERCENT EXCEEDS	526	520	638
50 PERCENT EXCEEDS	106	107	91
90 PERCENT EXCEEDS	20	1.8	2.6

a Also occurred many days in September.



## CUMBERLAND RIVER BASIN

03432400 HARPETH RIVER BELOW FRANKLIN, TN

LOCATION.--Lat 35°56'53", long 86°52'54", Williamson County, Hydrologic Unit 05130204, on right bank 0.1 mi below bridge on U.S. Highway 431, 1.2 mi downstream from Spence Creek, 1.8 mi northwest of the courthouse in Franklin, and at mile 84.3.

DRAINAGE AREA.--210 mi<sup>2</sup>, includes 15 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--August 1988 to current year, discharge for stage of 5.00 ft and below only.

GAGE.--Water-stage encoder and satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Flow is affected by Franklin sewage treatment plant outflow 1.1 mi upstream. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined; maximum stage, 28.97 ft, Feb. 4, 1990; minimum discharge, 3.0 ft<sup>3</sup>/s, Aug. 19, 1988; minimum daily, 4.1 ft<sup>3</sup>/s, Aug. 18, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, not determined; maximum stage, 15.71 ft, May 3; minimum discharge, 4.5 ft<sup>3</sup>/s, Sept. 12; minimum daily, 5.1 ft<sup>3</sup>/s, Sept. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	107	201	325	184	353	463	183	298	81	7.3	7.8
2	49	---	180	282	170	---	413	178	136	59	6.0	7.1
3	41	---	160	248	158	---	356	---	91	43	5.4	11
4	34	---	151	---	147	---	312	---	72	29	6.6	9.9
5	35	---	142	---	129	---	332	---	58	30	7.8	13
6	42	---	127	---	118	---	398	---	51	21	17	12
7	36	---	114	459	112	415	322	445	55	27	21	8.8
8	31	239	96	---	112	365	280	349	49	23	12	7.0
9	33	193	86	---	105	315	276	295	39	19	12	6.2
10	31	159	137	434	94	287	298	227	33	45	7.0	7.3
11	31	119	198	---	128	251	265	190	55	29	8.5	6.0
12	27	---	173	---	244	220	243	209	51	28	7.5	5.1
13	25	---	153	---	212	215	220	216	56	25	37	5.7
14	20	---	127	479	165	203	197	184	50	23	19	5.6
15	17	239	108	411	155	196	262	163	91	16	16	10
16	26	185	116	361	343	237	239	137	50	21	13	10
17	25	151	131	315	332	---	206	145	42	28	10	7.9
18	43	120	183	279	265	---	179	110	26	22	8.9	6.6
19	33	101	162	254	227	360	162	192	34	99	8.6	6.3
20	31	88	---	259	207	298	164	209	32	25	12	9.0
21	27	118	---	---	---	262	157	146	28	22	15	8.3
22	24	---	---	---	---	---	145	115	68	19	11	7.3
23	23	---	---	430	354	---	129	90	77	15	12	8.0
24	20	---	---	---	291	---	117	83	45	11	13	8.5
25	13	---	---	---	319	---	---	85	166	15	11	8.6
26	14	---	---	400	---	---	---	79	165	14	12	36
27	23	---	466	340	---	---	423	73	120	8.6	9.8	13
28	28	---	---	295	410	---	307	62	143	6.7	27	19
29	31	262	---	259	---	---	246	65	92	6.4	13	18
30	33	223	426	232	---	---	210	93	164	6.6	9.7	12
31	36	---	377	206	---	508	---	223	---	6.1	8.3	---
TOTAL	943	---	---	---	---	---	---	---	2437	823.4	384.4	301.0
MEAN	30.4	---	---	---	---	---	---	---	81.2	26.6	12.4	10.0
MAX	61	---	---	---	---	---	---	---	298	99	37	36
MIN	13	---	---	---	---	---	---	---	26	6.1	5.4	5.1





## CUMBERLAND RIVER BASIN

03433500 HARPETH RIVER AT BELLEVUE, TN

LOCATION.--Lat 36°03'16", long 86°55'42", Davidson County, Hydrologic Unit 05130204, on right bank 45 ft upstream from bridge on State Highway 100, 0.1 mi downstream from Little Harpeth River, 0.9 mi southeast of Bellevue, and at mile 62.1.

DRAINAGE AREA.--408 mi<sup>2</sup>, includes 15 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--April 1920 to current year. Monthly discharge only November 1929 to December 1931, published in WSP 1306.

REVISED RECORDS.--WSP 953: 1920-30, 1932-35. WSP 1386: 1948. WSP 1556: Drainage area. WSP 1910: 1960.

GAGE.--Water-stage recorder. Datum of gage is 541.04 ft above sea level (levels by U.S. Army Corps of Engineers). Apr. 11, 1920, to Oct. 31, 1929, Jan. 1, 1932, to Sept. 30, 1933, nonrecording gage at site 2.8 mi downstream at datum 7.85 ft lower.

REMARKS.--Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1897, that of Feb. 13, 1948.

EXTREMES FOR CURRENT PERIOD.--October 1991 to September 1993: Peak discharges greater than base discharge of 7,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 3, 1991	1830	*15,600	*18.08	May 4, 1993	0300	12,600	16.63
Mar. 10, 1992	2130	11,700	15.72				

Minimum discharge, 9.2 ft<sup>3</sup>/s, Oct. 4, 5, 1991.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	73	5480	585	316	1100	556	166	175	192	65	96
2	15	72	8890	524	293	919	497	155	131	406	61	321
3	13	68	14500	1310	273	786	448	143	200	3650	57	455
4	11	58	8730	1490	262	672	416	117	4460	2890	56	215
5	16	52	2010	1050	249	562	372	102	1430	1460	53	764
6	15	46	1360	826	237	487	341	99	792	1760	45	428
7	23	46	1040	677	225	440	333	98	595	989	45	231
8	19	37	831	588	206	388	323	87	446	678	42	169
9	16	32	1480	612	196	392	304	87	352	488	58	132
10	17	33	3370	605	187	9490	320	86	297	382	68	109
11	16	34	1720	511	177	5580	295	81	254	308	67	94
12	15	33	1210	471	175	2200	417	128	1410	260	70	81
13	14	33	2430	546	187	1560	317	526	759	324	52	72
14	15	32	3750	3400	217	1220	281	251	428	191	51	67
15	16	32	1960	2040	317	1020	268	155	317	193	61	63
16	16	30	1340	1340	579	850	352	115	244	318	55	61
17	19	27	1050	1040	456	724	280	94	201	247	47	55
18	17	26	846	851	487	990	245	88	390	201	43	113
19	13	30	686	703	478	2010	233	89	645	164	37	188
20	12	40	586	591	424	1470	270	300	382	139	34	130
21	12	69	519	514	376	1150	484	179	283	119	33	113
22	13	171	486	447	341	991	590	125	222	112	31	114
23	41	233	573	681	1920	1020	399	98	177	118	78	373
24	244	214	706	881	4900	944	318	82	151	133	169	326
25	402	149	568	699	2480	825	267	75	133	134	126	209
26	218	118	488	582	4110	828	237	76	167	108	87	405
27	181	99	444	507	3040	752	220	71	322	94	232	895
28	241	86	492	457	1910	646	206	64	272	90	501	531
29	132	76	1110	413	1400	584	191	192	171	85	260	331
30	104	328	868	377	---	600	176	519	159	75	172	248
31	84	---	704	350	---	626	---	258	---	63	124	---
TOTAL	1990	2377	70227	25668	26418	41826	9956	4706	15965	16371	2880	7389
MEAN	64.2	79.2	2265	828	911	1349	332	152	532	528	92.9	246
MAX	402	328	14500	3400	4900	9490	590	526	4460	3650	501	895
MIN	11	26	444	350	175	388	176	64	131	63	31	55
CFSM	.16	.19	5.55	2.03	2.23	3.31	.81	.37	1.30	1.29	.23	.60
IN.	.18	.22	6.40	2.34	2.41	3.81	.91	.43	1.46	1.49	.26	.67

## CUMBERLAND RIVER BASIN

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03433500 HARPETH RIVER AT BELLEVUE, TN--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	203	131	428	636	377	781	981	418	415	163	16	20
2	168	1020	371	544	343	977	846	387	251	112	17	18
3	147	929	320	483	318	1720	724	1870	174	89	e18	17
4	131	545	295	533	294	1780	620	11000	142	69	e16	18
5	127	659	282	1670	274	1370	678	2510	121	54	16	48
6	122	851	258	1290	251	1100	873	1350	105	50	23	31
7	121	588	242	975	239	913	710	1040	99	41	33	26
8	108	454	221	1020	231	791	597	801	98	42	34	22
9	99	370	207	1060	221	671	591	634	86	39	30	27
10	97	313	260	890	210	593	658	511	76	34	23	20
11	91	269	342	986	231	519	579	425	73	42	21	17
12	87	415	327	1460	513	459	518	417	98	40	18	16
13	79	1040	292	1290	469	436	465	524	103	39	42	15
14	74	687	267	1060	372	413	421	587	106	36	75	13
15	65	514	241	889	355	389	654	392	112	38	48	13
16	71	409	245	766	931	401	697	319	110	32	35	14
17	94	340	263	655	824	e650	550	290	82	33	25	19
18	89	298	300	566	639	e750	466	269	71	37	22	19
19	100	262	296	508	535	e700	407	256	53	38	18	17
20	85	238	1010	495	484	574	381	373	56	99	18	16
21	80	241	1370	754	1220	502	397	276	56	43	17	16
22	74	1040	993	1190	1470	547	341	233	55	33	21	17
23	68	1090	2600	862	929	3720	311	196	105	41	20	18
24	65	804	3160	926	738	3400	282	173	85	33	22	17
25	61	2100	1580	1080	717	2100	443	171	70	23	53	22
26	54	1520	1170	829	1320	e3000	1650	164	218	23	31	39
27	54	1000	948	702	1140	e4300	1080	152	185	25	31	61
28	76	765	1100	601	922	2450	760	139	186	22	25	44
29	92	601	1010	523	---	1670	587	121	166	18	30	38
30	92	496	853	460	---	1290	487	141	193	16	36	33
31	97	---	742	416	---	1090	---	239	---	16	23	---
TOTAL	2971	19989	21993	26119	16567	40056	18754	26378	3750	1420	857	711
MEAN	95.8	666	709	843	592	1292	625	851	125	45.8	27.6	23.7
MAX	203	2100	3160	1670	1470	4300	1650	11000	415	163	75	61
MIN	54	131	207	416	210	389	282	121	53	16	16	13
CFSM	.23	1.63	1.74	2.07	1.45	3.17	1.53	2.09	.31	.11	.07	.06
IN.	.27	1.82	2.01	2.38	1.51	3.65	1.71	2.41	.34	.13	.08	.06

e Estimated

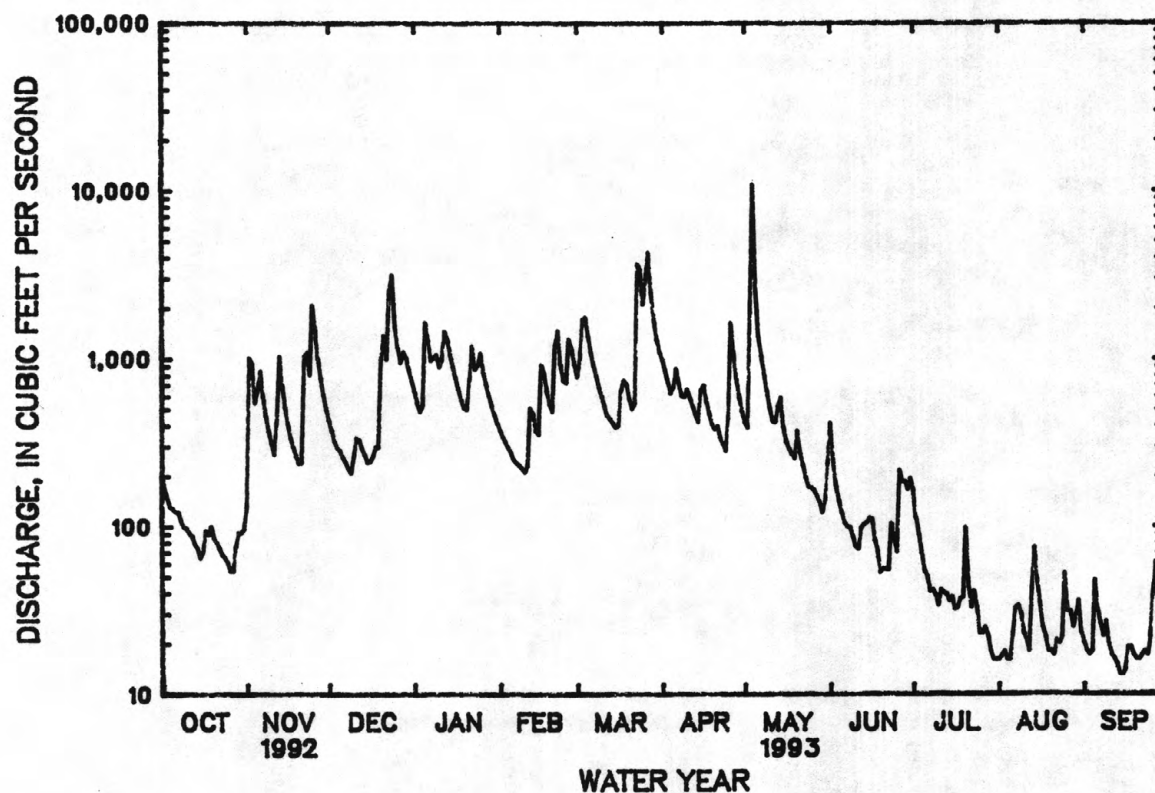
CUMBERLAND RIVER BASIN  
03433500 HARPETH RIVER AT BELLEVUE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1993, BY WATER YEAR (WY)

MEAN	108	365	831	1154	1293	1310	875	567	258	143	107	121
MAX	953	1678	3952	4305	3606	4263	2579	3232	1834	827	663	1685
(WY)	1976	1987	1927	1937	1950	1975	1927	1984	1928	1989	1926	1979
MIN	1.90	10.4	32.3	40.5	90.2	167	138	38.7	13.1	15.6	5.76	1.28
(WY)	1932	1940	1940	1940	1941	1941	1967	1941	1988	1954	1954	1948

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1920 - 1993	
ANNUAL TOTAL	196132		179565		591	
ANNUAL MEAN	536		492		1157	
HIGHEST ANNUAL MEAN					137	
LOWEST ANNUAL MEAN					32400	
HIGHEST DAILY MEAN	9490	Mar 10	11000	May 4		Mar 13 1975
LOWEST DAILY MEAN	31	Aug 22	13	Sep 14	a.00	Oct 5 1922
ANNUAL SEVEN-DAY MINIMUM	40	Aug 16	15	Sep 11	.07	Oct 4 1922
INSTANTANEOUS PEAK FLOW			12600	May 4	40000	Feb 13 1948
INSTANTANEOUS PEAK STAGE			16.63	May 4	b24.34	Feb 13 1948
INSTANTANEOUS LOW FLOW			11	Sep 14	a.00	Oct 5 1922
ANNUAL RUNOFF (CFSM)	1.31		1.21		1.45	
ANNUAL RUNOFF (INCHES)	17.88		16.37		19.67	
10 PERCENT EXCEEDS	1090		1080		1380	
50 PERCENT EXCEEDS	292		269		181	
90 PERCENT EXCEEDS	72		22		16	

a From floodmarks.  
b Also occurred Oct. 6-10, 1922.





THESE CHANGEMENTS SONT

LA SUITE DE LA MISE EN ŒUVRE

DES MESURES D'AMÉLIORATION

DES PROCÉDÉS DE TRAVAIL

ET DE LA RÉORGANISATION

DES SERVICES ADMINISTRATIFS

ET DES SERVICES TECHNIQUES

DE LA DIRECTION GÉNÉRALE

DE LA SOCIÉTÉ

ET DE LA RÉGION

ET DE LA PAYSAN

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## CUMBERLAND RIVER BASIN

## 03434500 HARPETH RIVER NEAR KINGSTON SPRINGS, TN

LOCATION.--Lat 36°07'19", long 87°05'56", Cheatham County, Hydrologic Unit 05130204, on right bank 400 ft upstream from bridge on U.S. Highway 70, 1.7 mi northeast of Kingston Springs, 3.0 mi downstream from Turnbull Creek, and at mile 32.4.

DRAINAGE AREA.--681 mi<sup>2</sup>, includes 15 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1924 to current year. Prior to July 1925 monthly discharge only, published in WSP 1306.

REVISED RECORDS.--WSP 953: 1927, 1933, 1935-36. WSP 1033: 1927(M), 1932-33(M), 1935(M), 1937(M). WSP 1706: 1945(P). WSP 2110: Drainage area.

GAGE.--Water-stage encoder and satellite telemeter at station. Datum of gage is 447.04 ft above sea level. July 8, 1925, to Jan. 22, 1939, nonrecording gage at site 150 ft downstream, and Jan. 22, 1939, to July 26, 1988, water-stage recorder at present site at datum 1.0 ft higher.

REMARKS.--No estimated daily discharges. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1897, that of Jan. 7, 1946. Flood of March 1902 reached a stage about 3 ft lower than that of Jan. 7, 1946.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 4	0930	*13,600	*17.01	No other peak greater than base discharge.			

Minimum discharge, 66 ft<sup>3</sup>/s, Aug. 1, Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	332	217	608	962	618	1300	1500	725	539	348	68	89
2	279	496	537	831	559	1480	1310	677	529	274	75	81
3	243	1550	471	741	512	3050	1140	1320	349	216	77	83
4	224	786	425	755	476	2740	1000	12200	284	183	75	102
5	226	723	405	2050	447	2250	957	6320	253	159	78	92
6	209	997	379	2110	416	1750	1210	2380	222	139	116	94
7	193	832	356	1500	391	1440	1100	1750	202	130	114	95
8	187	618	335	1420	373	1240	954	1430	186	119	98	85
9	172	499	314	1550	362	1080	959	1160	177	113	101	97
10	160	424	392	1340	348	953	1130	977	169	112	98	125
11	160	374	460	1360	382	845	1050	829	198	107	86	95
12	151	423	494	2080	741	742	920	812	192	114	78	79
13	147	1200	446	2020	782	690	823	915	677	186	363	72
14	141	1080	406	1650	637	663	752	1130	311	125	261	68
15	133	741	381	1360	573	618	1310	823	270	157	178	73
16	148	583	366	1170	1950	601	1660	664	249	206	146	97
17	187	480	379	1020	1650	862	1230	597	228	135	124	98
18	168	416	384	881	1210	1290	1000	544	191	116	108	84
19	152	371	422	781	982	1040	869	507	171	119	101	86
20	158	334	930	733	872	887	772	543	152	119	91	89
21	148	332	1940	885	2190	785	742	536	157	161	86	103
22	144	683	1410	1500	3010	775	658	436	161	120	84	94
23	137	1700	2630	1260	1800	4200	593	382	163	193	76	90
24	132	1120	4470	1440	1330	4950	545	341	203	145	78	118
25	127	1950	2400	1670	1190	3470	571	322	261	117	78	124
26	125	2430	1700	1340	1960	6100	2110	314	338	99	123	150
27	122	1450	1370	1130	1970	6610	1800	294	360	87	119	147
28	126	1100	1500	977	1550	3850	1250	276	457	85	95	135
29	136	864	1520	850	---	2670	987	261	356	89	101	119
30	168	709	1270	734	---	2050	826	237	382	83	94	100
31	209	---	1100	663	---	1700	---	351	---	72	100	---
TOTAL	5344	25482	30200	38763	29281	62681	31728	40053	8387	4428	3470	2964
MEAN	172	849	974	1250	1046	2022	1058	1292	280	143	112	98.8
MAX	332	2430	4470	2110	3010	6610	2110	12200	677	348	363	150
MIN	122	217	314	663	348	601	545	237	152	72	68	68
CFSM	.25	1.25	1.43	1.84	1.54	2.97	1.55	1.90	.41	.21	.16	.15
IN.	.29	1.39	1.65	2.12	1.60	3.42	1.73	2.19	.46	.24	.19	.16

CUMBERLAND RIVER BASIN

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03434500 HARPETH RIVER NEAR KINGSTON SPRINGS, TN--Continued

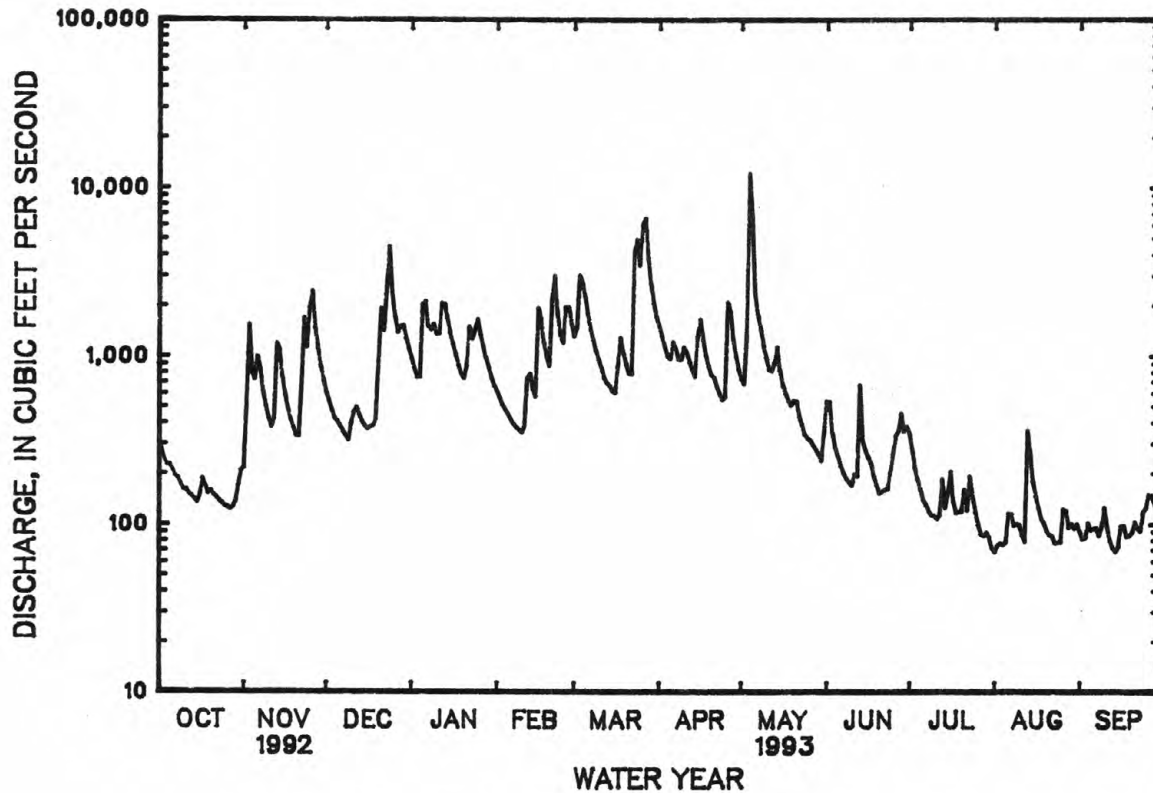
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1993, BY WATER YEAR (WY)

MEAN	221	616	1303	1866	2083	2122	1486	1015	478	266	202	215
MAX	1516	2761	6274	6975	6077	6806	3941	5107	2849	1071	1099	2530
(WY)	1976	1980	1927	1937	1950	1975	1927	1984	1928	1989	1926	1979
MIN	28.9	63.2	94.9	116	187	279	269	99.3	59.0	62.7	38.5	25.0
(WY)	1932	1955	1936	1940	1941	1941	1967	1941	1988	1954	1954	1939

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1925 - 1993	
ANNUAL TOTAL	294674		282781		985	
ANNUAL MEAN	805		775		2000	
HIGHEST ANNUAL MEAN					249	
LOWEST ANNUAL MEAN					43100	
HIGHEST DAILY MEAN	12800	Mar 10	12200	May 4	16	Feb 14 1948
LOWEST DAILY MEAN	96	Aug 22	68	Aug 1	18	Sep 28 1939
ANNUAL SEVEN-DAY MINIMUM	107	Aug 17	75	Jul 30	60000	Sep 22 1939
INSTANTANEOUS PEAK FLOW			13600	May 4	a32.20	Jan 7 1946
INSTANTANEOUS PEAK STAGE			17.01	May 4	12	Jan 7 1946
INSTANTANEOUS LOW FLOW			b66	Aug 1	1.45	Sep 18 1939
ANNUAL RUNOFF (CFSM)	1.18		1.14		19.65	
ANNUAL RUNOFF (INCHES)	16.10		15.45		2230	
10 PERCENT EXCEEDS	1660		1700		338	
50 PERCENT EXCEEDS	459		423		69	
90 PERCENT EXCEEDS	150		95			

a From high-water mark in gage house.

b Also occurred Sept. 14.



## CUMBERLAND RIVER BASIN

03435000 CUMBERLAND RIVER BELOW CHEATHAM DAM, TN

## WATER-QUALITY RECORDS

LOCATION.--Lat 36°19'22", long 87°13'42", Cheatham County, Hydrologic Unit 05130205, on left bank 0.4 mi downstream from Cheatham Dam, 2.0 mi southwest of Neptune, 2.6 mi upstream from Half Pone Creek, 9.7 mi west of Ashland City, and at mile 148.4.

DRAINAGE AREA.--14,163 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1993 to September 1993.

## PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1993 to September 1993.

pH: February 1993 to September 1993.

WATER TEMPERATURE: February 1993 to September 1993.

DISSOLVED OXYGEN: February 1993 to September 1993.

INSTRUMENTATION.--Water-quality monitor since February 1993.

REMARKS.--Flow regulated by Cheatham Dam and other reservoirs above station. Interruptions in the record were due to instrument malfunctions.

## EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 272 microsiemens, Mar. 16; minimum, 179 microsiemens, Aug. 6, 7.

pH: Maximum, 8.9 units, May 16, 17, 18; minimum, 6.0 units, June 13.

WATER TEMPERATURE: Maximum, 28.3°C, July 15, 20, 21; minimum, 5.6°C, Feb. 27.

DISSOLVED OXYGEN: Maximum, 13.6 mg/L, Feb. 21; minimum, 4.1 mg/L, July 24.

## SPECIFIC CONDUCTANCE (MICROSIEMENS/CM @ 25 DEG.C), WATER YEAR FEBRUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	252	245	247	258	247	254	228	223	226	224	220	220
2	256	251	254	251	240	245	227	218	222	224	220	222
3	255	253	254	256	244	249	222	214	218	232	212	227
4	256	251	253	256	252	256	220	208	212	216	184	194
5	255	246	251	261	253	261	208	203	206	228	196	208
6	249	242	247	265	258	260	207	202	205	228	224	225
7	248	243	247	262	258	262	205	196	201	228	224	225
8	250	233	239	267	262	264	200	195	197	244	228	234
9	233	223	227	267	263	264	198	194	195	246	239	243
10	227	222	225	264	256	261	201	197	200	243	228	235
11	232	221	227	265	261	263	200	195	197	232	220	228
12	232	226	229	262	257	261	211	193	199	225	222	224
13	230	225	228	270	262	268	217	209	212	228	224	225
14	232	227	229	271	267	269	216	206	212	228	223	224
15	222	218	220	271	267	269	212	204	209	227	223	224
16	228	217	223	272	268	269	212	204	208	227	222	225
17	228	223	225	268	260	264	208	204	206	230	226	228
18	237	228	233	265	261	264	208	204	205	232	229	229
19	240	237	238	266	261	263	208	204	205	231	228	230
20	238	230	236	266	262	266	208	204	204	231	230	231
21	235	227	231	267	263	264	208	204	208	233	230	231
22	235	231	233	267	259	263	208	208	208	234	231	233
23	240	224	229	264	235	254	208	208	208	235	234	235
24	233	228	231	243	235	238	208	208	208	235	228	233
25	241	229	233	249	233	241	208	204	208	233	228	231
26	245	233	238	249	227	239	208	204	206	233	229	232
27	254	242	247	235	227	231	212	204	208	234	226	228
28	262	250	256	245	233	240	220	208	216	227	226	226
29	---	---	---	236	227	233	220	216	219	228	227	227
30	---	---	---	235	226	230	224	212	219	232	228	230
31	---	---	---	230	221	226	---	---	---	233	232	232
MONTH	262	217	237	272	221	255	228	193	208	246	184	227



## 03435000 CUMBERLAND RIVER BELOW CHEATHAM DAM, TN--Continue

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR FEBRUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	233	233	233	212	207	209	210	209	210	205	193	203
2	234	233	234	212	208	212	217	205	210	205	193	202
3	234	230	232	213	209	212	213	208	209	206	202	206
4	231	227	228	218	213	215	224	204	209	206	206	206
5	232	220	226	214	214	214	224	203	205	211	206	207
6	224	216	219	215	211	213	203	179	191	211	207	208
7	233	221	228	212	211	211	211	179	200	211	207	210
8	236	227	230	212	208	210	202	198	198	212	200	210
9	235	230	231	209	208	209	202	197	198	212	208	209
10	230	229	230	214	209	212	201	197	198	209	205	208
11	229	224	227	214	210	213	201	196	200	209	200	208
12	228	223	225	215	211	213	200	200	200	210	210	210
13	227	222	223	212	208	211	201	196	200	216	210	213
14	222	217	220	212	208	208	201	201	201	216	210	216
15	221	216	218	213	205	209	205	201	201	216	216	214
16	216	215	215	214	205	210	206	202	203	216	212	213
17	219	215	218	218	210	214	206	202	203	216	212	215
18	222	217	217	223	214	220	207	202	204	---	---	---
19	220	216	216	224	223	223	207	203	204	---	---	---
20	220	216	219	224	220	220	207	203	204	---	---	---
21	223	218	220	224	219	219	204	204	204	---	---	---
22	218	213	216	223	219	219	208	204	205	---	---	---
23	217	212	212	219	214	216	209	205	205	---	---	---
24	215	211	213	218	218	218	205	205	205	212	208	210
25	218	210	212	221	217	217	206	202	206	---	---	---
26	210	205	208	217	213	217	206	202	205	216	212	213
27	209	204	207	217	212	215	207	203	205	216	212	212
28	211	206	207	220	216	216	203	203	203	---	---	---
29	210	206	209	216	207	210	208	203	206	---	---	---
30	211	207	209	211	206	207	208	208	208	---	---	---
31	---	---	---	214	206	208	208	204	205	---	---	---
MONTH	236	204	220	224	205	214	224	179	203	216	193	210

PH (STANDARD UNITS), WATER YEAR FEBRUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	---	---	---	---	---	---	8.0	7.8	8.2	8.0
2	---	---	---	---	---	---	---	---	8.0	7.9	8.3	8.0
3	---	---	---	---	---	---	---	---	7.9	7.8	8.3	8.2
4	---	---	---	---	---	---	---	---	7.9	7.8	8.2	8.0
5	---	---	---	---	---	---	---	---	8.0	7.8	8.0	7.9
6	---	---	---	---	---	---	---	---	8.0	7.8	8.0	7.9
7	---	---	---	---	---	---	---	---	7.9	7.8	8.0	7.8
8	---	---	---	---	---	---	---	---	8.0	7.8	7.8	7.8
9	---	---	---	---	---	---	---	---	8.2	8.0	7.9	7.8
10	---	---	---	---	---	---	---	---	8.2	8.0	8.1	7.6
11	---	---	---	---	---	---	---	---	8.2	8.0	8.1	7.8
12	---	---	---	---	---	---	---	---	8.2	8.0	8.0	7.8
13	---	---	---	---	---	---	---	---	8.1	8.0	8.0	7.8
14	---	---	---	---	---	---	---	---	8.2	8.0	8.0	7.9
15	---	---	---	---	---	---	---	---	8.2	8.0	7.9	7.8
16	---	---	---	---	---	---	---	---	8.2	8.0	8.0	7.8
17	---	---	---	---	---	---	---	---	8.0	8.0	8.1	7.9
18	---	---	---	---	---	---	---	---	8.0	7.9	8.3	8.0
19	---	---	---	---	---	---	---	---	8.0	7.8	8.3	8.0
20	---	---	---	---	---	---	---	---	8.1	7.6	8.3	8.1
21	---	---	---	---	---	---	---	---	8.1	8.0	8.3	8.2
22	---	---	---	---	---	---	---	---	8.1	7.9	8.4	8.3
23	---	---	---	---	---	---	---	---	8.1	7.9	8.5	8.3
24	---	---	---	---	---	---	---	---	7.9	7.9	8.7	8.4
25	---	---	---	---	---	---	---	---	8.1	7.9	8.7	8.6
26	---	---	---	---	---	---	---	---	8.2	8.0	8.6	8.4
27	---	---	---	---	---	---	---	---	8.2	7.9	8.3	8.1
28	---	---	---	---	---	---	---	---	8.2	8.0	8.1	8.1
29	---	---	---	---	---	---	---	---	---	---	8.1	8.1
30	---	---	---	---	---	---	---	---	---	---	8.1	7.9
31	---	---	---	---	---	---	---	---	---	---	7.9	7.9
MONTH	---	---	---	---	---	---	---	---	8.2	7.6	8.7	7.6

## CUMBERLAND RIVER BASIN

03435000 CUMBERLAND RIVER BELOW CHEATHAM DAM, TN--Continue

PH (STANDARD UNITS), WATER YEAR FEBRUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.9	7.8	8.1	7.9	7.2	7.0	7.6	6.8	7.6	7.4	7.4	7.3
2	8.0	7.9	8.0	7.9	7.5	7.1	7.6	6.8	7.7	7.4	7.4	7.3
3	8.0	7.8	8.3	7.9	7.8	7.2	7.4	6.9	7.7	7.4	7.4	7.3
4	8.1	7.9	8.2	8.0	7.8	7.2	7.4	7.2	7.7	7.4	7.4	7.3
5	8.0	7.9	8.1	7.9	8.0	7.3	7.5	7.3	7.7	7.5	7.4	7.3
6	8.0	7.9	8.1	8.0	7.8	7.3	7.6	7.4	7.7	7.5	7.4	7.3
7	8.0	7.9	8.1	7.9	7.7	7.4	7.6	7.4	7.7	7.5	7.4	7.3
8	8.3	7.9	7.9	7.7	7.7	7.5	7.7	7.3	7.7	7.5	7.6	7.1
9	8.4	8.2	7.9	7.7	7.5	7.0	7.6	7.1	7.7	7.4	7.5	7.2
10	8.3	7.8	8.3	7.8	7.0	6.7	7.7	7.2	7.7	7.6	7.3	7.2
11	7.9	7.8	8.0	7.7	6.8	6.4	7.7	6.9	7.8	7.6	7.8	7.3
12	8.0	7.8	8.0	7.6	6.7	6.2	7.7	6.8	7.8	7.6	7.8	7.3
13	7.8	7.7	8.3	7.9	6.6	6.0	7.7	6.9	7.8	7.7	7.8	7.3
14	7.9	7.8	8.4	8.1	6.7	6.4	7.7	6.7	7.8	7.6	7.8	7.3
15	8.3	7.8	8.8	8.4	6.9	6.5	7.7	6.7	7.6	7.6	7.7	7.3
16	8.6	8.2	8.9	8.6	7.1	6.7	8.2	7.3	7.7	7.6	7.7	7.3
17	8.7	8.5	8.9	8.6	7.2	6.8	8.1	7.4	7.7	7.5	7.7	7.3
18	8.7	8.6	8.9	8.6	7.5	6.9	8.1	7.7	7.5	7.5	---	---
19	8.7	8.6	8.8	8.6	7.3	7.1	8.0	7.8	7.6	7.5	---	---
20	8.7	8.5	8.7	8.4	7.2	6.9	8.0	7.0	7.6	7.5	---	---
21	8.5	8.4	8.5	8.3	7.4	6.6	7.6	7.1	7.6	7.5	---	---
22	8.6	8.4	8.5	8.3	7.5	7.3	7.4	7.1	7.6	7.5	---	---
23	8.5	8.4	8.6	8.4	7.8	7.3	7.5	7.2	7.6	7.5	---	---
24	8.5	8.4	8.4	8.1	8.0	7.6	7.4	7.0	7.6	7.5	7.8	7.4
25	8.4	8.3	8.0	7.7	8.0	7.7	7.6	7.2	7.5	7.5	---	---
26	8.4	8.2	7.8	7.6	8.0	7.5	7.7	7.3	7.6	7.5	7.8	7.1
27	8.4	8.2	7.6	7.1	8.0	7.8	7.7	7.2	7.6	7.5	7.8	6.8
28	8.2	8.0	7.3	6.9	7.9	7.7	7.8	7.4	7.6	7.4	---	---
29	8.2	8.0	6.9	6.8	7.8	7.0	7.8	7.2	7.4	7.4	---	---
30	8.2	8.0	7.0	6.6	7.7	7.3	7.7	7.4	7.4	7.3	---	---
31	---	---	7.2	6.8	---	---	7.6	7.4	7.4	7.3	---	---
MONTH	8.7	7.7	8.9	6.6	8.0	6.0	8.2	6.7	7.8	7.3	7.8	6.8

TEMPERATURE, WATER (DEG. C), WATER YEAR FEBRUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	8.4	8.0	8.1	6.2	5.8	5.9	12.2	11.5	11.8	15.8	15.6	15.7
2	---	---	---	6.4	6.2	6.2	11.3	10.6	10.9	15.8	15.6	15.7
3	8.9	8.7	8.8	7.2	6.4	6.7	10.6	10.2	10.3	16.3	15.5	15.6
4	---	---	---	7.5	7.2	7.4	10.2	10.0	10.1	16.3	15.9	16.1
5	---	---	---	7.3	7.2	7.3	10.2	10.0	10.1	16.5	16.0	16.2
6	9.6	8.6	9.0	7.3	7.0	7.2	10.2	9.8	10.0	16.5	16.2	16.4
7	9.2	8.6	8.8	7.3	7.2	7.3	10.2	9.8	9.9	17.0	16.3	16.7
8	8.8	8.3	8.5	7.7	7.3	7.5	10.2	10.0	10.1	17.2	16.8	17.1
9	8.9	8.3	8.6	8.3	7.7	8.0	10.3	10.1	10.1	17.9	16.9	17.3
10	9.1	8.3	8.8	8.9	8.1	8.4	10.7	10.1	10.4	18.5	17.7	18.1
11	9.0	8.8	9.0	9.1	8.5	8.7	11.1	10.5	10.7	18.8	18.4	18.6
12	9.2	9.0	9.1	8.7	8.3	8.6	11.9	10.9	11.3	18.8	18.3	18.6
13	9.0	8.7	8.8	8.5	7.5	8.1	12.2	11.8	11.8	18.4	17.7	18.1
14	8.7	7.9	8.2	7.3	7.0	7.1	12.6	12.0	12.3	18.4	17.6	17.9
15	8.1	7.3	7.8	7.2	6.9	7.0	13.2	12.6	13.0	18.9	18.1	18.5
16	7.7	6.9	7.4	7.2	7.1	7.1	13.9	13.4	13.6	19.0	18.6	18.8
17	6.9	6.7	6.8	7.1	6.9	7.0	13.5	12.9	13.2	19.7	18.6	19.1
18	6.9	6.5	6.6	7.2	6.9	6.9	13.6	13.1	13.3	19.9	19.5	19.6
19	6.5	6.1	6.2	7.4	7.1	7.2	14.2	13.6	13.9	20.4	19.9	20.1
20	6.1	5.7	6.0	7.6	7.4	7.5	14.5	14.2	14.4	20.2	19.8	20.0
21	6.7	6.1	6.3	8.2	7.6	7.9	14.5	14.3	14.3	20.3	19.9	20.0
22	7.6	6.7	7.1	8.6	8.0	8.3	14.4	13.9	14.1	20.1	19.7	19.9
23	7.8	7.4	7.7	9.0	8.6	8.8	14.6	14.2	14.3	20.0	19.4	19.8
24	7.4	7.1	7.2	10.0	9.0	9.5	14.9	14.4	14.7	19.4	19.2	19.3
25	7.1	6.4	6.7	9.8	9.4	9.6	14.9	14.7	14.8	19.6	19.2	19.4
26	6.4	5.8	6.2	10.1	9.6	9.8	15.1	14.9	15.0	19.9	19.2	19.5
27	6.2	5.6	5.9	10.9	10.1	10.5	15.4	15.0	15.2	20.3	19.5	19.8
28	6.2	6.0	6.0	11.1	10.9	11.0	15.4	15.2	15.3	20.7	20.3	20.5
29	---	---	---	11.3	10.7	11.0	15.9	15.3	15.4	21.5	20.7	21.1
30	---	---	---	11.7	11.3	11.4	15.9	15.7	15.8	21.7	21.4	21.6
31	---	---	---	12.1	11.7	11.8	---	---	---	21.7	21.4	21.7
MONTH	9.6	5.6	7.6	12.1	5.8	8.3	15.9	9.8	12.7	21.7	15.5	18.6

## 03435000 CUMBERLAND RIVER BELOW CHEATHAM DAM, TN--Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR FEBRUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	21.5	21.0	21.3	27.1	26.8	26.8	26.5	26.3	26.4	27.7	27.0	27.4
2	21.6	21.3	21.4	27.3	27.0	27.1	26.4	26.2	26.3	27.2	26.8	26.9
3	21.6	21.4	21.6	27.3	27.0	27.1	26.2	25.6	25.9	27.2	26.6	26.9
4	21.6	20.7	21.2	27.4	27.0	27.2	25.9	25.7	25.8	26.8	26.0	26.4
5	20.8	20.3	20.6	27.4	27.1	27.2	26.3	25.9	26.0	26.2	25.6	25.8
6	21.0	20.8	20.9	27.4	27.2	27.4	26.2	25.8	26.0	25.8	24.8	25.4
7	21.2	20.6	20.9	28.0	27.4	27.7	26.0	25.6	25.7	25.8	24.8	25.3
8	21.7	21.2	21.5	28.0	27.6	27.8	26.0	25.6	25.8	25.8	25.2	25.5
9	22.5	21.7	22.1	28.0	27.8	28.0	26.1	25.5	25.7	25.4	24.8	25.2
10	22.5	22.1	22.3	28.2	27.8	28.1	26.1	25.7	25.9	25.2	24.6	25.0
11	23.5	22.1	22.7	28.0	27.4	27.6	26.4	25.8	26.0	25.0	24.2	24.6
12	23.5	22.3	23.5	27.4	27.1	27.3	27.1	26.2	26.6	24.8	23.8	24.3
13	23.5	22.9	23.2	27.8	27.1	27.4	27.1	26.7	26.9	25.7	24.0	24.9
14	23.9	23.1	23.4	28.2	27.6	27.9	26.9	26.7	26.7	26.1	25.1	25.6
15	24.1	23.7	23.8	28.3	27.8	28.0	26.7	26.5	26.5	24.9	23.5	24.3
16	24.5	23.9	24.2	28.1	27.5	27.9	26.7	26.3	26.5	23.9	23.5	23.7
17	24.5	24.1	24.3	27.9	27.5	27.7	27.1	26.5	26.7	23.7	23.3	23.4
18	24.8	24.3	24.5	27.9	27.7	27.9	26.7	26.5	26.6	---	---	---
19	24.8	24.4	24.5	27.9	27.5	27.8	27.3	26.7	26.9	---	---	---
20	24.8	24.4	24.5	28.3	27.7	28.0	27.3	27.1	27.2	---	---	---
21	24.6	24.2	24.4	28.3	28.0	28.2	27.4	27.1	27.3	---	---	---
22	25.2	24.6	24.8	28.2	28.0	28.1	27.3	26.7	26.9	---	---	---
23	25.6	25.0	25.3	28.0	27.1	27.4	27.1	26.7	26.8	---	---	---
24	25.6	25.4	25.4	27.4	26.6	26.9	27.3	26.7	26.9	24.3	23.9	24.2
25	25.4	24.8	25.2	27.5	27.0	27.2	26.9	26.5	26.6	---	---	---
26	25.0	24.6	24.7	27.4	26.9	27.1	26.9	26.3	26.6	23.9	23.3	23.7
27	25.4	24.8	25.1	27.6	27.1	27.3	27.1	26.5	26.8	23.3	22.9	23.0
28	25.6	25.2	25.4	28.1	27.6	27.8	27.3	26.7	26.9	---	---	---
29	26.6	25.4	25.9	27.9	27.5	27.8	27.2	26.6	26.8	---	---	---
30	27.0	26.4	26.6	27.7	26.9	27.4	27.2	26.8	27.0	---	---	---
31	---	---	---	26.9	26.3	26.6	27.3	26.8	27.1	---	---	---
MONTH	27.0	20.3	23.5	28.3	26.3	27.5	27.4	25.5	26.5	27.7	22.9	25.1

## OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR FEBRUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	10.6	9.5	10.4	12.9	11.3	12.2	9.6	9.3	9.5	9.0	8.6	8.8
2	9.6	7.7	8.6	13.1	11.4	12.5	9.9	9.4	9.7	8.6	7.7	8.1
3	8.7	7.6	7.9	13.4	12.3	12.8	9.9	9.7	9.8	9.7	7.8	8.0
4	8.3	7.5	7.9	12.4	10.9	11.7	9.8	9.6	9.7	9.4	8.0	8.7
5	10.4	7.0	8.2	12.1	10.3	11.1	10.0	9.6	9.8	9.3	7.6	8.3
6	10.1	7.3	8.7	11.1	9.8	10.6	10.1	9.8	10.0	9.9	9.0	9.5
7	8.6	7.4	8.0	11.3	9.5	10.6	10.3	10.0	10.1	9.7	9.3	9.5
8	11.2	7.8	10.0	10.1	8.7	9.3	10.3	9.8	10.1	---	---	---
9	12.2	11.1	11.8	12.0	10.2	11.1	10.3	10.0	10.2	---	---	---
10	12.5	11.7	12.1	---	---	---	10.3	9.0	9.9	---	---	---
11	11.9	10.9	11.5	---	---	---	10.2	9.0	9.7	---	---	---
12	11.8	10.8	11.4	13.0	11.8	12.6	11.4	9.8	10.3	10.1	9.5	10.0
13	11.6	10.6	11.1	---	---	---	---	---	---	9.8	9.2	9.5
14	12.3	11.9	12.1	13.1	12.2	12.8	---	---	---	9.0	8.6	8.9
15	12.5	12.2	12.3	12.7	11.7	12.2	---	---	---	9.9	9.1	9.5
16	12.3	10.9	11.8	12.4	11.2	11.7	10.6	9.9	10.4	9.8	9.0	9.5
17	12.0	10.6	11.5	12.9	11.3	12.3	10.0	9.8	9.9	10.2	8.9	9.5
18	11.9	9.7	10.7	12.9	12.2	11.6	10.1	9.8	10.0	9.9	9.0	9.5
19	11.9	9.0	10.3	---	---	---	10.1	9.7	9.9	9.7	9.2	9.4
20	13.0	9.1	10.9	12.9	12.0	12.4	10.2	9.8	10.0	9.6	9.0	9.3
21	13.6	11.9	13.0	12.9	11.5	12.2	9.8	9.2	9.5	9.9	9.0	9.5
22	12.3	10.7	11.5	12.9	11.2	12.0	9.4	9.1	9.3	9.4	8.6	9.0
23	12.6	10.9	11.7	12.6	10.2	11.2	9.5	9.2	9.4	9.4	8.5	8.9
24	11.4	9.7	10.5	12.8	9.9	11.6	9.9	9.2	9.5	8.6	8.0	8.2
25	12.9	11.2	11.9	13.2	12.2	12.6	9.9	9.4	9.6	8.7	8.0	8.2
26	12.9	11.9	12.6	12.3	10.7	11.4	9.6	9.4	9.5	9.6	7.9	8.5
27	13.3	11.5	12.6	10.9	9.9	10.4	9.5	9.0	9.3	9.1	8.3	8.6
28	12.7	10.5	11.6	10.0	9.5	9.7	9.4	8.5	9.0	9.0	8.1	8.5
29	---	---	---	10.3	9.7	10.0	10.0	8.3	8.7	9.1	8.0	8.5
30	---	---	---	9.9	9.4	9.7	10.0	9.1	9.7	8.8	8.1	8.4
31	---	---	---	9.7	9.3	9.5	---	---	---	8.4	7.7	8.2
MONTH	13.6	7.0	10.8	13.4	8.7	11.4	11.4	8.3	9.7	10.2	7.6	8.9

## CUMBERLAND RIVER BASIN

03435000 CUMBERLAND RIVER BELOW CHEATHAM DAM, TN--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR FEBRUARY 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.4	7.4	7.8	6.9	5.8	6.2	6.9	6.1	6.7	7.2	5.5	6.2
2	8.7	7.5	7.9	7.5	6.2	6.7	7.1	6.4	6.6	6.6	5.3	6.1
3	8.0	6.8	7.5	7.0	6.2	6.5	7.1	6.4	6.8	6.6	5.5	6.0
4	7.0	5.8	6.6	6.7	6.0	6.3	7.2	6.6	6.9	6.1	5.5	5.8
5	7.2	5.9	6.6	6.6	5.7	6.0	7.3	6.8	7.0	6.1	5.5	5.8
6	7.4	6.9	7.1	7.1	6.2	6.5	7.1	6.8	7.0	6.2	5.7	6.0
7	7.2	6.7	6.9	7.6	6.4	7.2	6.9	5.8	6.5	6.3	5.9	6.1
8	7.7	6.7	7.0	7.5	6.2	6.9	6.5	5.9	6.2	6.5	5.9	6.2
9	7.5	6.7	7.1	7.6	6.9	7.2	6.6	5.9	6.1	6.3	5.7	6.0
10	8.0	6.7	7.3	7.9	6.9	7.3	7.0	6.4	6.7	6.5	5.6	5.9
11	7.8	6.5	7.0	7.4	6.6	7.0	7.3	6.6	7.0	6.7	6.2	6.5
12	7.8	6.8	7.2	6.9	6.1	6.5	7.9	6.7	7.1	6.6	6.2	6.4
13	6.8	5.7	6.2	7.3	6.1	6.8	7.9	6.5	7.1	6.9	6.1	6.5
14	7.2	6.0	6.4	7.3	6.3	7.0	7.6	5.3	6.4	---	---	---
15	8.0	7.1	7.4	8.0	7.0	7.4	5.9	4.7	5.3	---	---	---
16	8.6	7.2	7.9	7.2	5.5	6.3	6.0	4.8	5.4	6.4	5.8	6.1
17	7.2	5.8	6.4	6.9	5.6	6.4	6.3	5.6	5.9	6.1	5.6	5.9
18	6.9	6.3	6.7	6.7	5.6	6.1	5.6	4.8	5.3	---	---	---
19	6.6	5.7	6.2	7.2	6.1	6.5	6.1	5.3	5.6	---	---	---
20	6.8	5.7	6.1	7.2	6.2	6.8	6.2	5.3	5.8	---	---	---
21	6.7	5.8	6.3	7.1	6.2	6.6	6.2	5.4	5.7	---	---	---
22	7.3	6.5	6.9	6.4	5.4	5.9	6.2	5.3	5.7	---	---	---
23	7.8	6.8	7.2	5.8	4.8	5.4	6.2	5.5	5.8	---	---	---
24	7.4	6.6	7.0	6.1	4.1	5.0	6.5	5.6	5.9	6.9	6.5	6.8
25	7.0	6.1	6.5	5.8	5.0	5.4	6.3	5.5	6.0	---	---	---
26	6.9	5.8	6.3	5.7	4.2	4.9	7.0	6.1	6.5	7.4	6.6	7.1
27	7.1	6.3	6.6	6.6	5.0	5.5	6.9	5.9	6.4	7.3	6.6	6.9
28	6.4	5.7	6.1	6.9	6.1	6.6	6.9	5.4	6.4	---	---	---
29	6.5	5.8	6.2	7.0	5.9	6.4	6.7	5.8	6.1	---	---	---
30	6.8	6.1	6.4	6.5	5.7	6.2	6.9	5.3	6.0	---	---	---
31	---	---	---	6.2	5.3	5.9	6.8	5.4	6.2	---	---	---
MONTH	8.7	5.7	6.8	8.0	4.1	6.4	7.9	4.7	6.3	7.4	5.3	6.2



## RESERVOIRS IN CUMBERLAND RIVER BASIN

03413500 LAKE CUMBERLAND.--Lat 36°52'09", long 85°08'45", Russell County, KY, Hydrologic Unit 05130103, in pylon of Wolf Creek Dam on Cumberland River and 10 mi southwest of Jamestown, Ky. DRAINAGE AREA, 5,789 mi<sup>2</sup>. PERIOD OF RECORD, April 1950 to current year. Prior to October 1954, published as Wolf Creek Reservoir. April to June 1950, published in WSP 1726. GAGE, water-stage recorder. Datum of gage is Sandy Hook datum. Prior to Dec. 6, 1950, nonrecording gage at same site at datum 545.0 ft higher.

REVISIONS.--WSP 1556: Drainage area.

REMARKS.--Reservoir is formed by earth embankment and concrete gravity dam surmounted by 10 taintor gates, each 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 elevation 673.00 ft, minimum power pool, and 723.00 ft are used for power production. Figures given herein represent total contents, of which 934,000 cfs-days below elevation 673.00 ft is dead storage. Reservoir is used for flood control, power, navigation, and recreation.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,811,000 cfs-days, May 13, 1984, elevation, 751.70 ft; minimum, after first filling, 934,400 cfs-days, Jan. 1, 1956, elevation, 673.01 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,163,200 cfs-days, Mar. 29, elevation, 728.79 ft; minimum, 1,401,400 cfs-days, Nov. 20, elevation, 696.74 ft.

03416500 DALE HOLLOW LAKE.--Lat 36°32'19", long 85°27'05", Clay County, Hydrologic Unit 05130105, at Dale Hollow Dam on Obey River, 3.0 mi east of Celina, and 7.3 mi upstream from mouth. DRAINAGE AREA, 936 mi<sup>2</sup>. PERIOD OF RECORD, August 1943 to current year. Prior to October 1965, published as Dale Hollow Reservoir. GAGE, water-stage recorder. Datum of gage is Sandy Hook datum. Prior to June 25, 1946, nonrecording gage at same site and datum.

REVISIONS.--WSP 1306: 1944. WSP 2110: Drainage area.

REMARKS.--Reservoir is formed by concrete gravity dam. Spillway is equipped with six taintor gates, each 12 ft high by 60 ft wide. Closure of dam was made Aug. 30, 1943; water in reservoir first reached minimum pool elevation May 7, 1944. Revised capacity table used after Sept. 30, 1970. Total capacity at elevation 663.0 ft, top of gates, is 859,800 cfs-days of which 177,500 cfs-days between elevations 663.00 ft and 651.00 ft, crest of spillway, are reserved for flood control, and 250,200 cfs-days between elevations 651.00 ft and 631.00 ft, ordinary minimum pool, are used for power production. Contents of 432,100 cfs-days below elevation 631.00 ft is dead storage. Reservoir is used for flood control, navigation, and power.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 828,600 cfs-days, Mar. 15, 1975, elevation, 660.98 ft; minimum, after first filling, 428,000 cfs-days, Sept. 11, 1944, elevation, 630.63 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 677,200 cfs-days, Mar. 29, elevation, 650.63 ft; minimum, 483,000 cfs-days, Nov. 21, elevation, 635.47 ft.

03418400 CORDELL HULL RESERVOIR.--Lat 36°17'23", long 85°56'39", Smith County, Hydrologic Unit 05130108, at Cordell Hull Dam on Cumberland River, 2.7 mi north of Carthage, and at mile 313.5. DRAINAGE AREA, 8,095 mi<sup>2</sup>. PERIOD OF RECORD, October 1972 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete gravity dam with earth embankment. Spillway is equipped with five taintor gates, each 41 ft high and 45 ft wide. Closure of dam was made Oct. 4, 1967; water in reservoir first reached ordinary minimum pool Mar. 13, 1973. Total capacity at elevation 508.0 ft, maximum surcharge pool, is 156,700 cfs-days, of which 53,400 cfs-days is controlled storage between elevations 508.0 ft and 499.0 ft, ordinary minimum pool. Contents of 5,000 cfs-days between elevation of 499.0 ft and 500.0 ft full winter pool, is available for power production. Contents of 48,400 cfs-days above 500.0 ft is available for flood control during the winter, and 26,100 cfs-days above 504.0 ft, full pool during spring to fall season, is available for flood control the rest of the year. Contents of 103,300 cfs-days below elevation 499.0 ft is dead storage. Reservoir is used for navigation, power, and flood control.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 156,700 cfs-days, Mar. 13, 1975, May 8, 1984, elevation, 508.00 ft; minimum, after first filling to ordinary minimum pool, 96,700 cfs-days, Apr. 18, 1974, elevation, 497.65 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 135,200 cfs-days, May 4, elevation, 504.75 ft; minimum, 101,700 cfs-days, Feb. 8, elevation, 498.68 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	03413500 LAKE CUMBERLAND			03416500 DALE HOLLOW LAKE			03418400 CORDELL HULL RESERVOIR		
	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
Sept. 30...	706.59	1,619,100	-	642.75	572,000	-	503.84	129,700	-
Oct. 31...	699.71	1,465,500	-153,600	636.15	491,000	-81,000	502.24	120,400	-9,300
Nov. 30...	699.65	1,464,200	-1,300	636.97	500,700	+9,700	500.22	109,500	-10,900
Dec. 31...	708.80	1,669,800	+205,600	641.27	553,300	+52,600	500.42	110,500	+1,000
CAL YR 1992	-	-	-146,400	-	-	-44,200	-	-	-2,800
Jan. 31...	704.74	1,577,100	-92,700	641.97	562,100	+8,800	500.54	111,100	+600
Feb. 28...	710.01	1,697,900	+120,800	644.22	591,000	+28,900	500.63	111,600	+500
Mar. 31...	728.36	2,151,900	+454,000	650.45	674,700	+83,700	499.30	104,800	-6,800
Apr. 30...	724.94	2,063,300	-88,600	649.56	662,300	-12,400	503.93	130,200	+25,400
May 31...	722.69	2,006,100	-57,200	650.08	669,500	+7,200	504.27	132,300	+2,100
June 30...	717.88	1,886,200	-119,900	648.88	653,000	-16,500	504.18	131,700	-600
July 31...	710.77	1,715,700	-170,500	644.23	591,100	-61,900	504.25	132,200	+500
Aug. 31...	703.35	1,545,900	-169,800	640.73	546,500	-44,600	504.17	131,700	-500
Sept. 30...	696.97	1,406,300	-139,600	638.51	519,200	-27,300	504.24	132,100	+400
WTR YR 1993	-	-	-212,800	-	-	-52,800	-	-	+2,400



## RESERVOIRS IN CUMBERLAND RIVER BASIN--Continued

03422000 GREAT FALLS LAKE.--Lat 35°48'21", long 85°38'09", Warren County, Hydrologic Unit 05130108, at pen- stock inlet on Collins River, 700 ft southwest of powerhouse of Tennessee Valley Authority, 1.5 mi northwest of Rock Island, 1.8 mi upstream from mouth of Collins River, and 2.0 mi upstream from Great Falls Dam on Caney Fork. DRAINAGE AREA, 1,677 mi<sup>2</sup>. PERIOD OF RECORD, January 1917 to current year. GAGE, remote indicator gage. Datum of gage is sea level.

REVISIONS.--WSP 2110: Drainage area.

REMARKS.--Reservoir is formed by concrete gravity dam. Spillway is equipped with 18 taintor gates, each 14 ft high by 25 ft wide. Closure of dam was made in 1916; dam redesigned and crest raised 35 ft in 1925. Revised capacity table used after Sept. 30, 1970. Total capacity at elevation 805.3 ft top of gates, is 25,900 cfs-days, of which 18,700 cfs-days are controlled storage above elevation 780.0 ft, normal minimum pool. Contents of 1,500 cfs-days below elevation 762.0 ft is dead storage. Reservoir is used primarily for power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum midnight elevation, 817.48 ft, Mar. 23, 1929, contents not determined; minimum midnight contents, 1,700 cfs-days, Aug. 19, 1918, elevation, 756.3 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 27,100 cfs-days, Jan. 12, elevation, 806.42 ft; minimum, 11,400 cfs-days, Feb. 10, elevation, 787.56 ft.

03424000 CENTER HILL LAKE.--Lat 36°05'48", long 85°49'38", DeKalb County, Hydrologic Unit 05130108, at Center Hill Dam on Caney Fork, 10 mi north of Smithville, 14 mi southeast of Carthage, and at mile 26.6. DRAINAGE AREA, 2,174 mi<sup>2</sup>. PERIOD OF RECORD, October 1948 to current year. Prior to October 1965, published as Center Hill Reservoir. GAGE, water-stage recorder. Datum of gage is Sandy Hook datum. Prior to Mar. 14, 1949, nonrecording gage at site 1,320 ft upstream at same datum.

REVISIONS.--WSP 1910: Drainage area.

REMARKS.--Reservoir is formed by earth embankment and concrete gravity dam. Spillway is equipped with eight taintor gates, each 37 ft high by 50 ft wide. Closure of dam was made Nov. 27, 1948; water in reservoir first reached minimum pool elevation Jan. 11, 1949. Revised capacity table used after Sept. 30, 1970. Total capacity at elevation 685.0 ft, top of gates, is 1,054,800 cfs-days, of which 384,500 cfs-days between 685.0 ft and 648.0 ft, crest of spillway, are reserved for flood control, and 248,000 cfs-days between elevations 648.0 ft and 618.0 ft, ordinary minimum pool, are used for power production. Contents of 422,300 cfs-days below 618.0 ft is dead storage. Reservoir is used for flood control, navigation, and power.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,014,600 cfs-days, May 10, 1984, elevation, 681.52 ft; minimum, after first filling, 171,000 cfs-days, Dec. 1, 2, 1949, elevation, 576.1 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 751,600 cfs-days, Mar. 25, elevation, 656.59 ft; minimum, 512,600 cfs-days, Nov. 3, elevation, 629.71 ft.

03426300 OLD HICKORY LAKE.--Lat 36°17'50", long 86°39'20", Sumner County, Hydrologic Unit 05130201, at Old Hickory Dam on Cumberland River, 2.0 mi west of Hendersonville, 10 mi northeast of the State Capitol in Nashville, and at mile 216.2. DRAINAGE AREA, 11,673 mi<sup>2</sup>. PERIOD OF RECORD, June 1954 to current year. GAGE, water-stage recorder. Datum of gage is 408.5 ft sea level; gage readings have been reduced to elevations NGVD. Prior to Apr. 4, 1957, nonrecording gage at same site and datum.

REVISIONS.--WSP 2110: Drainage area.

REMARKS.--Reservoir is formed by concrete gravity dam with earth embankment. Spillway is equipped with six taintor gates, each 41 ft high and 45 ft wide. Closure of dam was made in June 1954 and water in reservoir was raised sufficiently to maintain navigation through the lock. Water in reservoir first reached ordinary minimum pool elevation Dec. 30, 1956. Revised capacity table used after Sept. 30, 1970. Total capacity at elevation 450.0 ft, maximum surcharge pool, 274,600 cfs-days of which 63,000 cfs-days between elevations 450.0 ft and 445.0 ft, normal pool, are induced surcharge storage provided to compensate for loss of natural valley storage incurred by construction of the project, and 31,800 cfs-days between elevations 445.0 ft and 442.0 ft, ordinary minimum pool, are used for power production. Contents of 179,800 cfs-days below elevation 442.0 ft, is dead storage. Reservoir is used for navigation and power.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 277,200 cfs-days, May 9, 1984, elevation, 450.18 ft; minimum, after first filling to ordinary minimum pool, 179,400 cfs-days, Oct. 22, 1957, Oct. 28, 1969, elevation, 441.96 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 217,800 cfs-days, Dec. 21, Mar. 26, elevation, 445.54 ft; minimum, 186,800 cfs-days, Oct. 25, elevation, 442.70 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
	03422000	GREAT FALLS LAKE		03424000	CENTER HILL LAKE		03426300	OLD HICKORY LAKE	
Sept. 30...	802.56	22,700	-	644.93	642,400	-	444.26	203,400	-
Oct. 31...	789.57	12,700	-10,000	630.00	514,900	-127,500	443.25	192,500	-10,900
Nov. 30...	804.69	24,700	+12,000	638.56	586,300	+71,400	444.59	207,000	+14,500
Dec. 31...	806.17	26,200	+1,500	645.83	650,500	+64,200	444.54	206,400	-600
CAL YR 1992	-	-	+500	-	-	-21,200	-	-	-800
Jan. 31...	804.28	24,300	-1,900	636.70	570,400	-80,100	444.55	206,600	+200
Feb. 28...	805.41	25,400	+1,100	635.61	561,200	-9,200	444.86	210,000	+3,400
Mar. 31...	805.90	26,000	+600	654.64	732,700	+171,500	445.10	212,800	+2,800
Apr. 30...	805.39	25,400	-600	646.06	652,600	-80,100	444.46	205,600	-7,200
May 31...	794.53	16,100	-9,300	647.48	665,500	+12,900	444.54	206,400	+800
June 30...	791.74	14,100	-2,000	645.16	644,400	-21,100	444.86	210,000	+3,600
July 31...	798.18	19,000	+4,900	639.95	598,400	-46,000	444.62	207,300	-2,700
Aug. 31...	800.39	20,800	+1,800	634.94	555,600	-42,800	444.48	205,800	-1,500
Sept. 30...	797.26	18,200	-2,600	631.39	526,200	-29,400	444.80	209,400	+3,600
WTR YR 1993	-	-	-4,500	-	-	-116,200	-	-	+6,000

## RESERVOIRS IN CUMBERLAND RIVER BASIN--Continued

03430050 J. PERCY PRIEST RESERVOIR.--Lat 36°09'23", long 86°37'07", Davidson County, Hydrologic Unit 05130203, on upstream face of J. Percy Priest Dam on Stones River, 2.6 mi east of Donelson, and 6.8 mi above mouth. DRAINAGE AREA, 892 mi<sup>2</sup>. PERIOD OF RECORD, September 1967 to current year. GAGE, water-stage recorder. Datum of gage is sea level. Prior to Dec. 15, 1967, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by concrete gravity dam with earth embankments. Spillway is equipped with four taintor gates, each 41 ft high by 45 ft wide. Closure of dam was made Sept. 18, 1967; water in reservoir first reached ordinary minimum pool May 15, 1968. Revised capacity table used after Sept. 30, 1970. Total capacity at elevation 504.5 ft, maximum controlled pool, is 328,700 cfs-days of which 193,600 cfs-days is controlled storage between elevations 504.5 ft and 480.0 ft, ordinary minimum pool. Contents of 17,200 cfs-days between elevations 480.0 ft and 483.0 ft, full winter pool, is available for power production. Contents of 176,400 cfs-days above 483.0 ft is available for flood control during the winter, and 131,100 cfs-days above 490.0 ft, full pool during spring-to-fall season, is available for flood control the rest of the year. Contents of 135,100 cfs-days below elevation 480.0 ft is dead storage. Reservoir is used for flood control, power, recreation, and wildlife.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 336,600 cfs-days, May 9, 1984, elevation, 505.18 ft; minimum, after first filling to ordinary minimum pool, 109,500 cfs-days, Dec. 5, 1968, elevation, 474.75 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 206,800 cfs-days, May 5, elevation, 491.25 ft; minimum, 147,600 cfs-days, Feb. 11, elevation, 482.21 ft.

03434900 CHEATHAM LAKE.--Lat 36°18'56", long 87°13'10", Cheatham County, Hydrologic Unit 05130202, at Cheatham Dam on Cumberland River, 9.4 mi west of Ashland City, 16 mi southeast of the courthouse in Clarksville, and at mile 148.7. DRAINAGE AREA, 14,159 mi<sup>2</sup>.

REMARKS.--Reservoir is formed by concrete gravity dam. Spillway is equipped with seven semi-submersible taintor gates, each 27 ft high by 60 ft wide. Total capacity at elevation 385.0 ft, normal pool, is 52,200 cfs-days, of which 9,800 cfs-days are controlled storage. Records of contents not published herein.

03438210 LAKE BARKLEY.--Lat 37°01'17", long 88°13'16", Lyon County, KY, Hydrologic Unit 05130205, in powerhouse of Barkley Dam on Cumberland River, 1.4 mi northeast of Grand Rivers, KY, and at mile 30.6. DRAINAGE AREA, 17,598 mi<sup>2</sup>. PERIOD OF RECORD, July 1964 to current year. GAGE, water-stage recorder. Datum of gage is sea level, (levels by U.S. Army Corps of Engineers). Prior to Jan. 1, 1966, nonrecording gage, 1,200 ft upstream from Barkley Dam at same datum.

REMARKS.--Reservoir is formed by concrete gravity dam with earth embankments. Spillway is equipped with 12 taintor gates, each 50 ft high by 55 ft wide. Construction cofferdam was closed and limited storage began July 1, 1964; reservoir reached ordinary minimum pool elevation of 354.0 ft Feb. 16, 1966. Total level pool capacity at elevation 375.0 ft, top of gates, is 1,049,600 cfs-days, of which 742,000 cfs-days is controlled storage above 354.0 ft, ordinary minimum pool. Contents of 130,500 cfs-days between ordinary minimum pool elevation, 354.0 ft, and full pool elevation, 359.0 ft, is available for power during the spring-to-fall season. Minimum pool elevation in advance of floods is 346.0 ft, contents 171,000 cfs-days. Reservoir is used for navigation, flood control, power, and recreation. Barkley-Kentucky Canal opened June 13, 1966, for navigation and power use. Canal is 1.75 mi long and interconnects Lake Barkley and Kentucky Lake at a point 2.2 mi upstream from Barkley Dam. For daily discharges through the canal, see station 03438190, Kentucky reports.

COOPERATION.--Records furnished by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 370.04 ft, May 13, 1984; minimum after reaching permanent pool elevation, 353.20 ft, Dec. 20, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 514,600 cfs-days, Aug. 13, elevation, 361.50 ft; minimum contents, 300,300 cfs-days, Mar. 13, minimum elevation, 352.75 ft. Contents based on backwater profile.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
	03430050 J. PERCY PRIEST LAKE			*03438210 LAKE BARKLEY		
Sept. 30.....	490.56	201,700	-	355.45	351,400	-
Oct. 31.....	487.62	181,100	-20,600	355.80	350,400	-1,000
Nov. 30.....	484.93	163,700	-17,400	355.55	349,800	-600
Dec. 31.....	484.83	163,000	-700	355.47	360,700	+10,900
CAL YR 1992	-	-	+9,200	-	-	+32,300
Jan. 31.....	482.84	151,100	-11,900	354.30	324,200	-36,500
Feb. 28.....	483.34	154,000	+2,900	354.80	333,600	+9,400
Mar. 31.....	487.71	181,700	+27,700	357.36	420,600	+87,000
Apr. 30.....	490.32	199,900	+18,200	359.16	448,300	+27,700
May 31.....	490.29	199,700	-200	359.20	443,200	-5,100
June 30.....	490.35	200,100	+400	359.32	447,400	+4,200
July 31.....	489.94	197,200	-2,900	359.08	443,700	-3,700
Aug. 31.....	489.81	196,300	-900	357.17	385,700	-58,000
Sept. 30.....	489.86	196,600	+300	356.42	-	-
WTR YR 1993	-	-	-5,100	-	-	-

\* Contents based on backwater profile.

## Upper Tennessee

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69	03461230	CANEY CREEK NEAR COSBY	303	108	03519640	BAKER CREEK NEAR GREENBACK	306
70	03465500	NOLICHUCKY RIVER AT EMBREEVILLE	110-111,325	109	03527800	BIG WAR CREEK AT LUTHER	306
71	03465607	CHEROKEE CREEK NEAR EMBREEVILLE	303	110	03528000	CLINCH RIVER ABOVE TAZEWEEL	132-133,327
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82	03478615	EVANS CREEK NEAR BLOUNTVILLE	305	121	03537100	MELTON BRANCH NEAR MELTON HILL NR OAK RIDGE	150-151,327
83	03486305	SINKING CREEK AT SINKING CREEK ROAD AT JOHNSON CITY	282-326	122	03537200	MELTON BRANCH TRIB (CENTER SEVEN) NR OAK RIDGE	152-153
84	03486311	SINKING CREEK AT HWY 67 AT JOHNSON CITY	283,326	123	03537300	MELTON BRANCH TRIB (WEST SEVEN) NR OAK RIDGE	154-155
85	03486312	CATBIRD CREEK AT MIAMI DRIVE AT JOHNSON CITY	284-285,326	124	03538231	EAST FORK POPLAR CREEK AT Y-12 AT OAK RIDGE	156-157
86	03486485	BRUSH CREEK AT STATE OF FRANKLIN RD AT JOHNSON CITY	286,326	125	03538235	EAST FORK POPLAR CREEK AT BEAR CR RD AT OAK RIDGE	158-159
87	03486494	BRUSH CREEK AT JOHNSON CITY	287,326	126	03538256	BEAR CREEK AT BEAR CREEK ROAD NEAR OAK RIDGE	327
88	03486508	BRUSH CREEK AT PINEY GROVE AT JOHNSON CITY	288,326	127	03538260	BEAR CREEK AT COUNTY LINE NEAR OAK RIDGE	160-161
89	03486657	KNOB CREEK AT CLAUDE SIMMONS ROAD AT JOHNSON CITY	289,326	128	03538267	BEAR CREEK TRIB NEAR WHEAT	162-163
90	03486659	KNOB CREEK TRIB AT KNOB CREEK ROAD	290,326	129	03538270	BEAR CREEK AT STATE HIGHWAY 95 NEAR OAK RIDGE	164-165
91	03486665	KNOB CREEK AT WAYFIELD DRIVE AT JOHNSON CITY	291,326	130	03538600	OBED RIVER AT CROSSVILLE	166-167,327
92	03486670	COBB CREEK AT EAST OAKLAND AVE AT JOHNSON CITY	292,326	131	03540500	EMORY RIVER AT OAKDALE	168-169,327
93	03487550	REEDY CREEK AT OREBANK	305	132	03543500	SEWEE CREEK NEAR DECATUR	170-171,328
94	03490522	FORGERY CREEK AT ZION HILL	305	133	03555900	COKER CREEK NEAR IRONSBURG	306
95	03491000	BIG CREEK NEAR ROGERSVILLE	116-117,327	134	03560500	DAVIS MILL CREEK AT COPPERHILL	172-173,328
96	03491490	DODSON CREEK TRIB NEAR ROGERSVILLE	305	135	03563000	OCOEE RIVER AT EMF	174-175,328
97	03491540	ROBERTSON CREEK NEAR PERSIA	305	136	03564500	OCOEE RIVER AT PRAKSVILLE	176-177,328
98	03491544	CROCKETT CREEK BELOW ROGERSVILLE	118-119,327	137	03566000	HIWASSEE RIVER AT CHARLESTON	178-179,328
99	03494714	DRY LAND CREEK TRIB NEAR NEW MARKET	305	138	03566420	WOLFFEVER CREEK NEAR OOLTEWAH	306
100	03494990	FLAT CREEK AT LUTTRELL	305	139	03566599	NORTH CHICKAMAUGA CREEK AT GREENS MILL NEAR HIXSON	307
101	03495500	HOLSTON RIVER NEAR KNOXVILLE	120-123	140	03567500	SOUTH CHICKAMAUGA NEAR CHICKAMAUGA	180-181
102	03495547	LOVE CREEK AT I-40 AT KNOXVILLE	293	141	03568000	TENNESSEE RIVER AT CHATTANOOGA	182-183
103	03495957	WHITE CREEK AT NORA ROAD AT KNOXVILLE	294,327	142	03569168	STRINGERS BRANCH AT LEAWOOD DRIVE AT RED BANK	307
104	03497300	LITTLE RIVER AT TOWNSEND	124-127	143	03571000	SEQUATCHIE RIVER NEAR WHITWELL	184-185,328
105	03498500	LITTLE RIVER NEAR MARYVILLE	128-129,327	144	03571500	LITTLE SEQUATCHIE RIVER AT SEQUATCHIE	307
106	03498850	LITTLE RIVER NEAR ALCOA	130-131,327	145	03571730	STANDIFER BRANCH AT JASPER	307



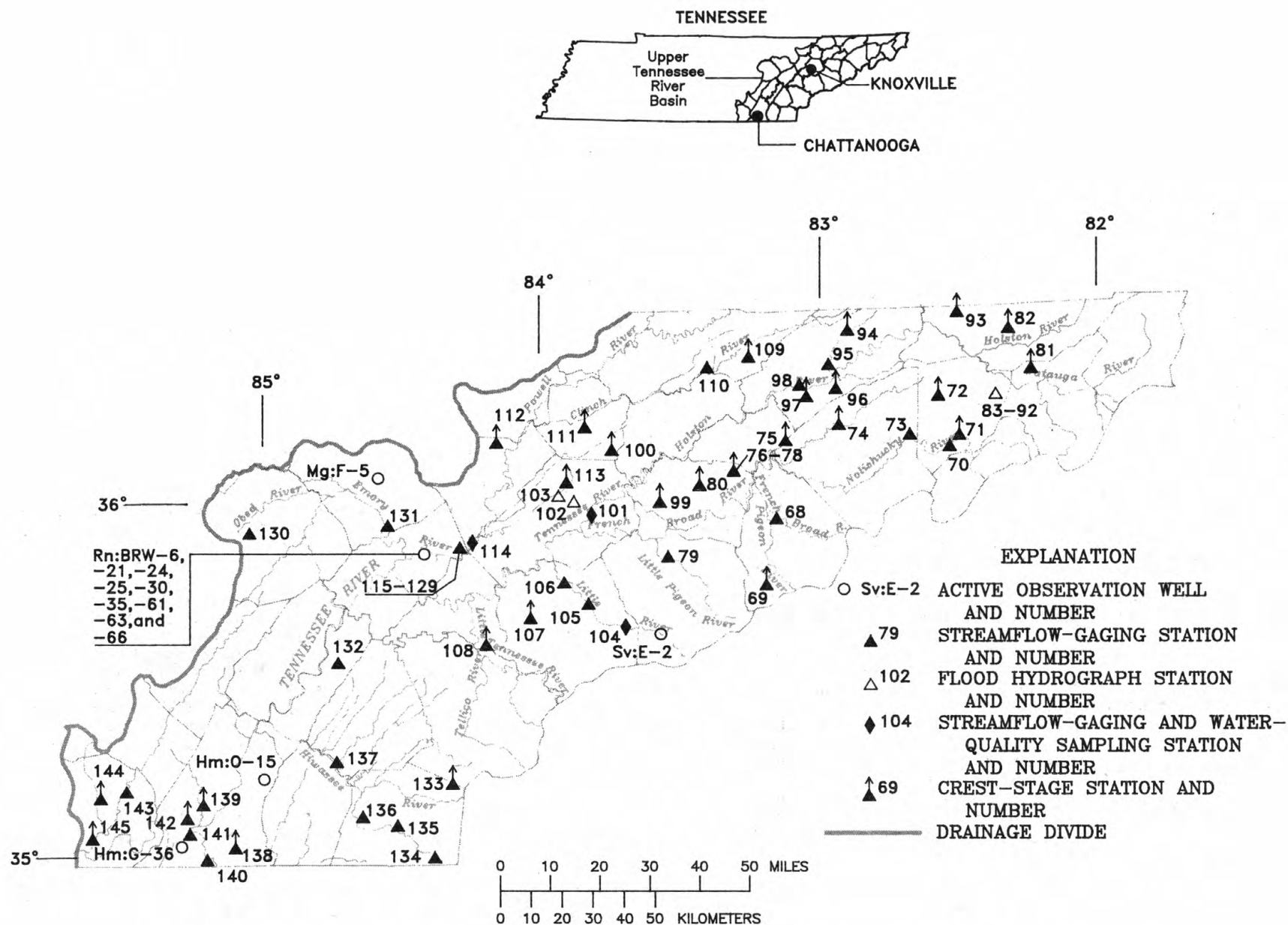


Figure 5.—Location of gaging sites in the upper Tennessee River Basin.



## TENNESSEE RIVER BASIN

03455000 FRENCH BROAD RIVER NEAR NEWPORT, TN

LOCATION.--Lat 35°58'54", long 83°09'40", Cocke County, Hydrologic Unit 06010105, on left bank, 200 ft upstream from bridge on U.S. Highway 321, 1.0 mi northeast of Newport city limits, 3.7 mi upstream from Pigeon River, and at mile 77.5.

DRAINAGE AREA.--1,858 mi<sup>2</sup>.

PERIOD OF RECORD.--September to December 1900, February to August 1901, October to November 1901, November 1902 to December 1905, September to December 1907, October 1920 to current year. Monthly discharge only October to November 1920, published in WSP 1306.

REVISED RECORDS.--WSP 783: 1933-34. WSP 823: Drainage area. WSP 893: 1928(M). WSP 1306: 1900-1908. WSP 1336: 1903(M), 1921-22(M), 1923, 1925(M), 1927(M), 1928, 1932. WSP 1706: 1901(M).

GAGE.--Water-stage recorder. Datum of gage is 1,011.61 ft above sea level. See WSP 1910 for history of changes prior to Mar. 31, 1934.

REMARKS.--Records good. Diurnal fluctuation during low flow caused by powerplants above station. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--From reports of Tennessee Valley Authority, the flood of Mar. 7, 1867, gage height, 24 ft, present datum, discharge, estimated, 110,000 ft<sup>3</sup>/s, has not been exceeded since that date. From the same reports, other outstanding floods occurred Feb. 28, 1902, gage height, 23.0 ft present datum, discharge, estimated, 101,000 ft<sup>3</sup>/s; and July 17, 1916, gage height, 22.5 ft, present datum, discharge, estimated, 97,000 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 24	0600	*23,000	*10.14	Mar. 27	1530	21,700	9.77

Minimum discharge, 606 ft<sup>3</sup>/s, Sept. 14, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2090	2780	4400	4170	3620	3190	6800	3760	2840	1600	876	789
2	1900	2330	3980	3910	3490	3040	7480	3800	2570	1480	896	1060
3	1790	4730	3730	3660	3280	3050	6540	3390	2220	1370	936	1040
4	3020	5490	3510	3490	3150	5660	e6200	e3400	2230	1270	1420	990
5	9050	7590	3450	4810	3010	8720	e6700	6490	2100	1180	1450	1340
6	7260	6520	3350	6360	2890	6010	e8700	6040	1920	1150	1540	1300
7	5110	5250	3210	5380	2910	4860	7850	4910	1880	1170	1580	1120
8	3620	3900	3090	5260	2800	4350	6690	4290	1830	986	1240	978
9	3400	3370	3000	6890	2760	4000	5910	4500	1800	1030	1180	1120
10	4290	3090	2900	6310	2610	3700	e12200	4530	1730	1080	1070	1160
11	3610	2890	3480	5510	2570	3480	e11000	4170	1810	1110	976	979
12	3010	2760	3550	8950	2970	3280	e9200	3760	1700	1060	920	864
13	2730	3850	3170	8030	4780	3370	e8300	3930	2320	1030	1060	751
14	2520	4610	3000	6450	4280	3480	5770	3440	2670	1170	1380	704
15	2290	3740	2860	5410	3620	3610	5240	3210	2170	1530	1230	671
16	2200	3240	3050	4930	3570	3510	5220	2890	1940	1430	1310	821
17	2080	3000	7300	4640	5250	3630	5240	2670	1810	1330	1290	986
18	1960	2820	11100	4250	4590	5980	4850	3060	1930	1200	1020	962
19	2000	2680	8290	3980	3850	7530	4530	3540	2050	1060	881	903
20	1910	2520	10100	3740	3620	6200	4330	3640	1830	1170	925	801
21	1880	2460	10300	3670	3470	6440	4190	3260	1610	1110	895	724
22	1850	3040	7310	5730	3770	9040	4200	3170	1590	1020	1110	775
23	1810	7740	7020	5560	4100	10800	3680	2930	1570	919	927	775
24	1740	8120	8170	4850	3620	20000	3520	2720	1490	889	854	788
25	1750	9380	5900	6670	3290	15200	3460	2640	1400	1030	933	787
26	1700	12300	4990	6020	3240	12900	3970	2860	1420	1330	1130	767
27	1650	10400	4360	5070	3370	16200	4260	2690	1430	1680	998	851
28	1740	8500	4650	4580	3420	16000	3830	2500	1390	1320	1110	1090
29	1920	6830	5500	4220	---	13000	3340	2390	1360	1200	1020	902
30	1770	5250	4970	3910	---	10300	3360	2360	1410	1010	973	823
31	2230	---	4460	3670	---	7710	---	2440	---	949	936	---
TOTAL	85880	151180	158150	160080	97900	228240	176560	109380	56020	36863	34066	27621
MEAN	2770	5039	5102	5164	3496	7363	5885	3528	1867	1189	1099	921
MAX	9050	12300	11100	8950	5250	20000	12200	6490	2840	1680	1580	1340
MIN	1650	2330	2860	3490	2570	3040	3340	2360	1360	889	854	671
CFSM	1.49	2.71	2.75	2.78	1.88	3.96	3.17	1.90	1.01	.64	.59	.50
IN.	1.72	3.03	3.17	3.21	1.96	4.57	3.54	2.19	1.12	.74	.68	.55

e Estimated

TENNESSEE RIVER BASIN

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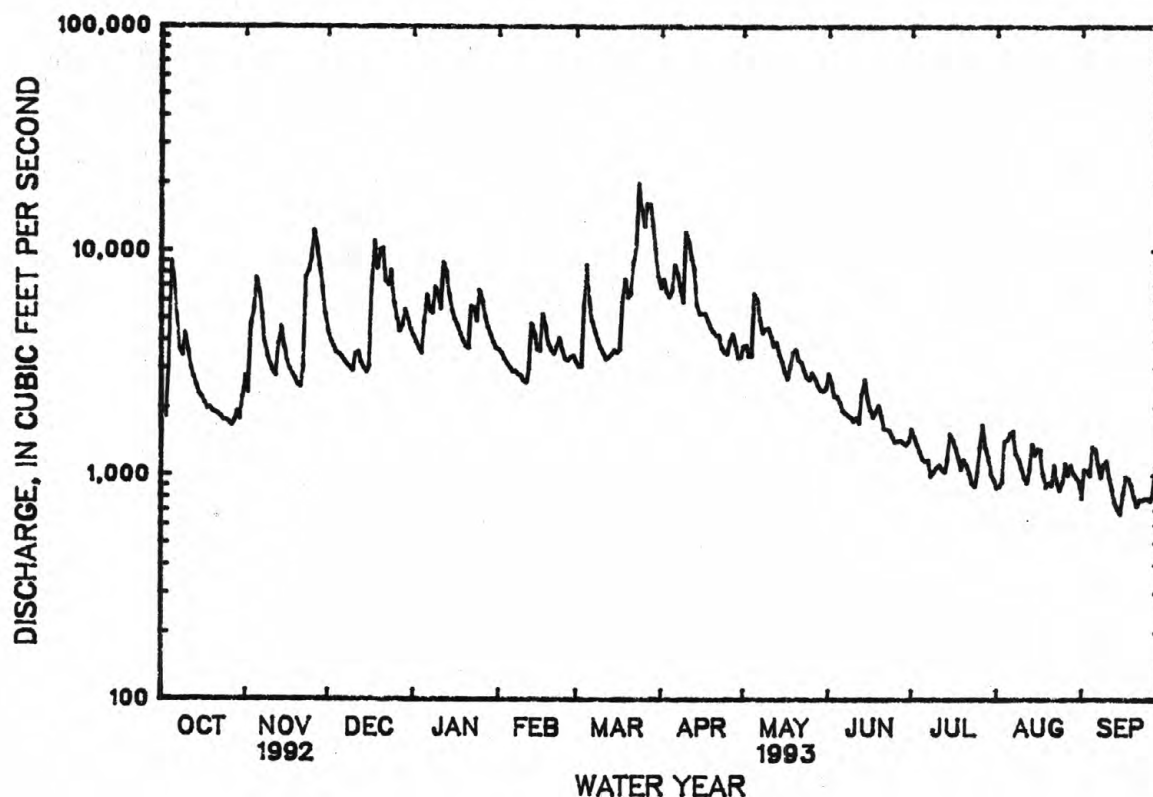
03455000 FRENCH BROAD RIVER NEAR NEWPORT, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1901 - 1993, BY WATER YEAR (WY)

MEAN	1924	2172	2893	3544	4217	4843	4341	3389	2622	2241	2312	1769
MAX	9875	7249	7478	9533	8814	12710	11650	9448	6148	7620	14640	6358
(WY)	1965	1980	1962	1937	1990	1903	1903	1901	1901	1905	1901	1928
MIN	508	713	819	968	1450	1399	1362	1252	722	711	380	421
(WY)	1955	1932	1940	1956	1941	1988	1986	1941	1988	1986	1925	1925

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1901 - 1993	
ANNUAL TOTAL	1302980		1321940			
ANNUAL MEAN	3560		3622		2961	
HIGHEST ANNUAL MEAN					4641	
LOWEST ANNUAL MEAN					1348	
HIGHEST DAILY MEAN	22000	May 8	20000	Mar 24	62200	Apr 8 1903
LOWEST DAILY MEAN	1110	Aug 4	671	Sep 15	240	Sep 9 1925
ANNUAL SEVEN-DAY MINIMUM	1200	Aug 1	774	Sep 20	276	Aug 25 1925
INSTANTANEOUS PEAK FLOW			23000	Mar 24	76300	Aug 30 1940
INSTANTANEOUS PEAK STAGE			10.14	Mar 24	19.25	Aug 30 1940
INSTANTANEOUS LOW FLOW			a606	Sep 14	208	Oct 23 1952
ANNUAL RUNOFF (CFSM)	1.92		1.95		1.59	
ANNUAL RUNOFF (INCHES)	26.09		26.47		21.65	
10 PERCENT EXCEEDS	6300		7280		5490	
50 PERCENT EXCEEDS	2860		3060		2290	
90 PERCENT EXCEEDS	1720		983		978	

a Also occurred on Sept. 16.



## TENNESSEE RIVER BASIN

03465500 NOLICHUCKY RIVER AT EMBREEVILLE, TN

LOCATION.--Lat 36°10'35", long 82°27'27", Washington County, Hydrologic Unit 06010108, on left bank, at Embreeville, 1,000 ft upstream from bridge on State Highway 81, 3 mi northwest of Erwin, 5.2 mi downstream from North Indian Creek, and at mile 89.0.

DRAINAGE AREA.--805 mi<sup>2</sup>.

PERIOD OF RECORD.--September 1900 to May 1901 (published as "near Chucky Valley"), October 1919 to current year. Monthly discharge only October 1919 to June 1920, published in WSP 1306.

REVISED RECORDS.--WSP 803: 1935(M). WSP 823: Drainage area. WSP 1336: 1921-24, 1931(M).

GAGE.--Water-stage recorder. Datum of gage is 1,519.30 ft above sea level. Sept. 1, 1900 to May 21, 1901, nonrecording gage at site 3 mi downstream at different datum, destroyed by flood of May 21, 1901. July 1, 1920 to Sept. 30, 1931, nonrecording gage at bridge 2,000 ft downstream at datum 6.33 ft lower.

REMARKS.--Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 21, 1901, reached a stage of 24 ft, discharge, 120,000 ft<sup>3</sup>/s, present site and datum, from reports of Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 24	0600	*18,700	*7.15	May 5	0030	10,900	5.37
Mar. 27	1600	11,700	5.57				

Minimum discharge, 317 ft<sup>3</sup>/s, Sept. 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	613	1090	1630	1720	1380	1420	3830	1500	1110	641	383	400
2	553	839	1500	1580	1300	1410	3300	1430	1010	636	376	400
3	536	3330	1380	1470	1230	1450	2810	1380	968	617	391	406
4	1410	1810	1280	1420	1190	4720	2510	1920	944	587	509	460
5	4420	3190	1410	2440	1150	5050	3590	5360	942	e520	486	676
6	2400	2050	1310	2420	1130	3290	4980	2540	885	e470	511	527
7	1470	1610	1230	2010	1100	2670	3980	2080	845	445	783	410
8	1170	1380	1180	2440	1070	2460	3380	2080	833	417	633	408
9	1700	1210	1100	3010	1040	2260	3170	2020	813	403	489	529
10	1740	1100	1110	2600	1010	2040	7090	1900	778	567	444	598
11	1230	1030	1350	2530	1000	1910	5510	1940	755	515	405	455
12	1040	1020	1200	4280	1850	1770	4120	1990	776	489	400	374
13	932	1720	1110	3500	2940	1970	3390	2030	1130	431	496	346
14	857	1380	1090	2790	2330	1700	2950	2300	1260	439	620	327
15	795	1180	1110	2380	1880	1700	2650	2000	981	1120	520	320
16	752	1090	1480	2190	2340	1700	2780	1710	849	745	444	687
17	724	1010	5830	1980	3080	1900	2440	1560	780	731	400	751
18	706	968	5650	1780	2390	2750	2170	1570	823	677	378	685
19	700	921	3280	1640	1910	2950	2020	1980	881	548	362	548
20	659	879	4090	1530	1800	2640	1910	2080	787	590	354	443
21	636	889	4890	1580	1750	3140	1860	1730	715	498	399	401
22	625	1870	3470	2300	2330	4940	1840	1570	742	429	383	395
23	609	5000	3920	1790	2100	7430	1710	1430	725	399	355	371
24	600	2720	4660	1860	1790	14000	1620	1320	662	395	335	357
25	590	3490	3190	2560	1630	7370	1570	1270	649	1350	339	356
26	571	5490	2570	2120	1620	5130	1930	1360	641	952	544	363
27	559	3260	2150	1930	1650	7330	2080	1230	641	896	606	443
28	617	2490	2240	1770	1480	7220	1760	1140	641	724	615	554
29	660	2080	2220	1640	---	6500	1640	1100	641	541	537	412
30	635	1790	1980	1510	---	5200	1560	1080	650	449	452	361
31	1040	---	1840	1420	---	4260	---	1060	---	404	384	---
TOTAL	31549	57886	72450	66190	47470	120280	86150	55660	24857	18625	14333	13763
MEAN	1018	1930	2337	2135	1695	3880	2872	1795	829	601	462	459
MAX	4420	5490	5830	4280	3080	14000	7090	5360	1260	1350	783	751
MIN	536	839	1090	1420	1000	1410	1560	1060	641	395	335	320
CFSM	1.26	2.40	2.90	2.65	2.11	4.82	3.57	2.23	1.03	.75	.57	.57
IN.	1.46	2.67	3.35	3.06	2.19	5.56	3.98	2.57	1.15	.86	.66	.64

e Estimated

TENNESSEE RIVER BASIN

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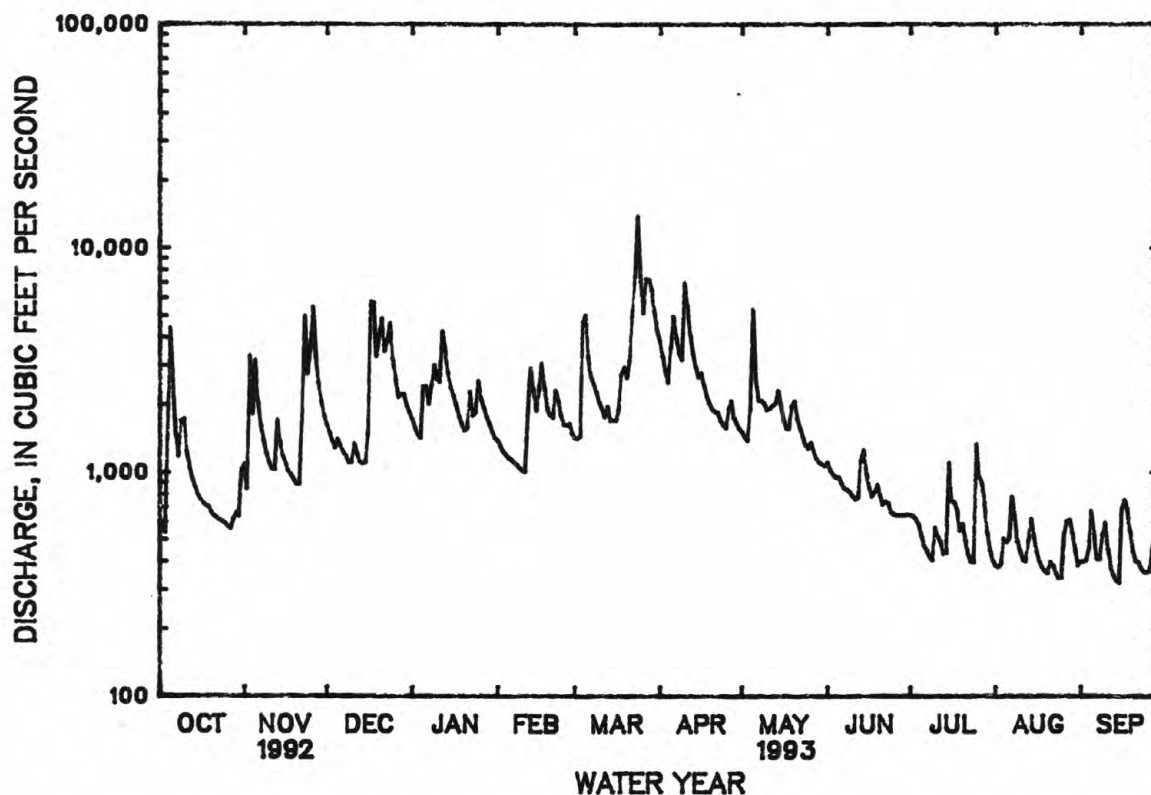
03465500 NOLICHUCKY RIVER AT EMBREEVILLE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1993, BY WATER YEAR (WY)

MEAN	823	1032	1305	1644	2015	2327	2008	1578	1115	939	905	776
MAX	2630	4720	3073	3765	4494	5102	4169	3171	3196	2525	4876	2648
(WY)	1930	1978	1962	1937	1957	1963	1983	1984	1992	1949	1940	1928
MIN	246	294	353	382	635	649	699	597	376	351	182	187
(WY)	1954	1940	1940	1940	1941	1988	1986	1941	1988	1988	1925	1925

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1920 - 1993	
ANNUAL TOTAL	651070		609213			
ANNUAL MEAN	1779		1669		1368	
HIGHEST ANNUAL MEAN					1948	
LOWEST ANNUAL MEAN					694	
HIGHEST DAILY MEAN	16000	Apr 21	14000	Mar 24	50800	Nov 6 1977
LOWEST DAILY MEAN	536	Oct 3	320	Sep 15	88	Sep 8 1925
ANNUAL SEVEN-DAY MINIMUM	596	Oct 22	361	Aug 19	121	Sep 3 1925
INSTANTANEOUS PEAK FLOW			18700	Mar 24	a110000	Nov 6 1977
INSTANTANEOUS PEAK STAGE			7.15	Mar 24	21.52	Nov 6 1977
INSTANTANEOUS LOW FLOW			b317	Sep 14	c85	Sep 8 1925
ANNUAL RUNOFF (CFSM)	2.21		2.07		1.70	
ANNUAL RUNOFF (INCHES)	30.09		28.15		23.09	
10 PERCENT EXCEEDS	3560		3310		2560	
50 PERCENT EXCEEDS	1230		1280		1000	
90 PERCENT EXCEEDS	660		415		404	

- a From rating curve extended above 48,000 ft<sup>3</sup>/s on basis of contracted opening and slope-area measurements of peak flow.  
b Also occurred on Sept. 15.  
c Also occurred on Sept. 9, 1925.





## TENNESSEE RIVER BASIN

03466228 SINKING CREEK AT AFTON, TN

LOCATION.--Lat 36°11'55", long 82°44'31", Greene County, Hydrologic Unit 06010108, on left bank 300 ft upstream from bridge on county road, 0.4 mi northwest of Afton, and at mile 3.1.

DRAINAGE AREA.--13.7 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,459.36 ft above sea level.

REMARKS.--No estimated daily discharge. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 180 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 23	2130	*166	*3.13				

Minimum discharge, 3.2 ft<sup>3</sup>/s, July 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	6.5	5.1	19	19	14	33	15	9.6	6.0	3.7	4.4
2	4.3	6.0	5.1	18	17	14	31	14	9.1	6.0	4.0	4.6
3	4.3	7.8	5.1	17	17	14	29	14	8.9	5.9	4.6	4.5
4	8.5	7.2	5.1	16	16	63	26	15	8.9	5.9	4.2	5.0
5	8.3	8.8	7.8	25	16	35	35	15	8.8	6.3	4.1	4.4
6	6.1	8.5	7.8	21	15	27	44	14	8.4	5.8	5.6	4.1
7	5.3	7.3	7.0	19	15	23	31	13	8.3	5.4	5.0	4.1
8	5.1	6.5	6.6	47	15	22	29	13	8.1	5.5	4.2	4.1
9	5.1	6.1	6.3	30	15	20	27	13	8.0	5.3	4.2	4.0
10	4.8	5.6	6.3	24	14	19	31	13	8.0	5.1	4.0	3.9
11	4.8	5.4	9.9	39	14	18	26	13	7.8	5.1	3.9	3.9
12	4.6	5.4	10	49	15	17	24	12	7.7	4.9	4.3	3.8
13	4.5	5.6	9.1	29	17	17	23	12	7.7	4.9	7.1	3.7
14	4.4	5.5	8.1	25	16	18	22	12	7.9	5.0	5.8	3.6
15	4.6	5.2	7.5	23	15	18	21	11	7.6	4.9	4.8	3.6
16	4.5	4.9	12	22	23	20	21	11	7.4	4.9	4.3	4.5
17	4.3	4.8	44	20	19	47	20	11	7.4	4.9	4.1	4.5
18	4.3	4.7	22	19	16	58	19	11	9.3	4.6	4.0	3.8
19	4.3	4.6	16	18	15	42	19	19	7.6	4.5	3.9	3.7
20	4.3	4.6	78	18	15	36	18	14	7.4	4.5	4.5	3.6
21	4.3	4.6	31	36	24	41	19	12	7.1	4.2	5.1	3.5
22	4.1	4.7	23	28	24	34	18	11	7.3	4.1	4.2	3.4
23	4.1	5.1	93	22	18	46	17	11	7.0	3.9	4.0	3.4
24	4.1	5.1	52	63	16	75	17	11	6.6	3.8	3.9	3.4
25	4.1	5.9	31	44	15	37	16	11	6.5	4.4	4.0	3.5
26	4.1	6.7	26	28	15	32	19	11	6.9	4.9	4.0	3.6
27	3.9	6.2	24	25	15	37	17	10	6.7	4.9	18	4.2
28	4.1	5.6	26	23	15	48	16	9.9	6.1	4.4	8.0	3.7
29	4.1	5.3	25	21	---	38	15	10	6.0	4.2	5.6	3.4
30	4.7	5.1	23	19	---	33	15	9.8	6.1	3.9	4.9	3.4
31	11	---	21	19	---	31	---	9.4	---	3.8	4.5	---
TOTAL	153.3	175.3	653.8	826	466	994	698	381.1	230.2	151.9	156.5	117.3
MEAN	4.95	5.84	21.1	26.6	16.6	32.1	23.3	12.3	7.67	4.90	5.05	3.91
MAX	11	8.8	93	63	24	75	44	19	9.6	6.3	18	5.0
MIN	3.9	4.6	5.1	16	14	14	15	9.4	6.0	3.8	3.7	3.4
CFSM	.36	.43	1.54	1.94	1.21	2.34	1.70	.90	.56	.36	.37	.29
IN.	.42	.48	1.78	2.24	1.27	2.70	1.90	1.03	.63	.41	.42	.32

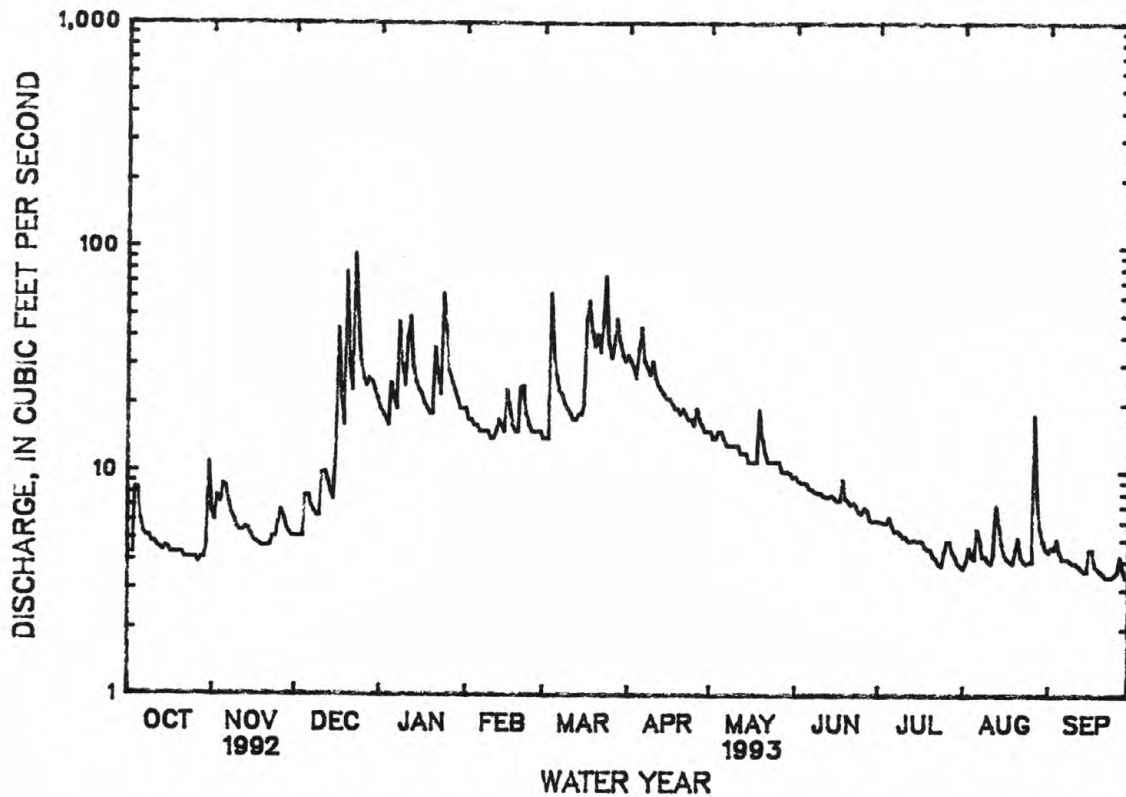
TENNESSEE RIVER BASIN  
03466228 SINKING CREEK AT AFTON, TN--Continued

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STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1993, BY WATER YEAR (WY)

MEAN	4.88	6.94	11.7	17.3	22.9	22.3	16.1	14.4	10.9	10.7	6.72	5.70
MAX	10.5	26.0	32.6	34.3	45.9	39.2	29.6	50.6	20.9	32.5	14.6	18.5
(WY)	1990	1978	1992	1978	1990	1980	1987	1984	1989	1979	1984	1982
MIN	1.28	2.16	3.04	3.23	10.7	5.96	4.13	3.49	2.11	1.86	1.68	1.49
(WY)	1989	1987	1988	1981	1981	1988	1988	1988	1988	1988	1988	1988

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1977 - 1993	
ANNUAL TOTAL	5284.0		5003.4		12.5	
ANNUAL MEAN	14.4		13.7		18.5	
HIGHEST ANNUAL MEAN					3.62	
LOWEST ANNUAL MEAN					561	
HIGHEST DAILY MEAN	198	FEB 26	93	DEC 23	1.1	MAY 7 1984
LOWEST DAILY MEAN	3.9	OCT 27	3.4	SEP 22	1.1	SEP 22 1988
ANNUAL SEVEN-DAY MINIMUM	4.1	OCT 22	3.5	SEP 20	1.1	OCT 20 1988
INSTANTANEOUS PEAK FLOW			166	DEC 23	1510	JUL 21 1979
INSTANTANEOUS PEAK STAGE			3.13	DEC 23	7.79	JUL 21 1979
INSTANTANEOUS LOW FLOW			3.2	JUL 24	.90	JUL 9 1988
ANNUAL RUNOFF (CFSM)	1.05		1.00		.91	
ANNUAL RUNOFF (INCHES)	14.35		13.59		12.37	
10 PERCENT EXCEEDS	25		29		24	
50 PERCENT EXCEEDS	11		8.3		8.2	
90 PERCENT EXCEEDS	4.8		4.1		2.9	



## TENNESSEE RIVER BASIN

03469175 LITTLE PIGEON RIVER ABOVE SEVIERVILLE, TN

LOCATION.--Lat 35°51'55", long 83°32'01", Sevier County, Hydrologic Unit 06010107, on left bank of county road, 1.2 mi downstream from East Fork, 1.2 mi upstream from West Prong, 0.8 mi east of Sevierville, and at mi 7.5.

DRAINAGE AREA.-- 184 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1988 to current year.

GAGE.--Water-stage recorder and encoder. Datum of gage is 898.08 ft above sea level.

REMARKS.--Records good. The town of Sevierville diverts an average of about 1.5 ft<sup>3</sup>/s (1.0 MGD) for municipal supply. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 17	1100	2,720	7.18	Dec. 23	2100	2,830	7.51
Dec. 20	1500	*3,240	*8.59	Mar. 23	2200	2,930	7.79

Minimum discharge, 38 ft<sup>3</sup>/s, Aug. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	180	167	189	396	258	245	688	273	446	143	39	73
2	153	557	174	349	231	232	543	245	300	120	38	68
3	135	475	160	310	212	234	436	224	230	93	117	115
4	e1050	294	149	284	201	1550	389	235	193	80	80	174
5	1200	349	240	541	190	1270	495	273	170	70	73	214
6	782	e383	203	443	183	718	505	209	149	72	349	126
7	453	e292	188	373	178	534	432	189	134	64	688	97
8	324	e231	181	879	170	446	390	192	125	56	226	83
9	277	e202	163	1220	161	379	364	402	120	54	141	93
10	230	e175	187	785	154	332	630	245	110	55	107	78
11	198	e161	256	877	150	317	463	209	107	59	90	69
12	175	251	250	1250	194	285	385	187	106	53	81	58
13	158	e534	231	815	222	308	339	186	109	49	104	53
14	143	256	223	570	212	336	306	231	192	47	190	48
15	132	202	220	459	180	e320	279	183	253	466	110	45
16	121	175	641	405	261	e300	465	158	144	289	86	93
17	115	156	1960	350	331	675	359	144	112	136	74	395
18	110	147	1300	303	280	1350	305	139	107	98	68	173
19	110	134	712	275	239	1260	280	442	129	80	75	116
20	101	126	2130	254	232	1150	257	477	98	73	61	91
21	96	119	1850	401	279	1360	247	285	89	71	88	80
22	95	474	1170	424	522	1580	263	233	92	61	65	84
23	94	697	1830	311	334	2160	234	199	88	54	55	74
24	90	336	2020	989	267	2150	220	177	79	51	48	158
25	89	565	1170	1170	242	1540	219	175	80	66	45	114
26	86	556	767	657	278	1170	775	241	92	59	58	107
27	82	367	557	495	291	1460	689	201	78	77	131	228
28	118	292	744	400	264	1470	452	172	70	71	72	248
29	124	244	657	344	---	1220	363	173	304	55	109	150
30	105	209	528	296	---	896	311	160	125	47	79	114
31	226	---	440	270	---	733	---	184	---	42	63	---
TOTAL	7352	9126	21490	16895	6716	27980	12083	7043	4431	2811	3610	3619
MEAN	237	304	693	545	240	903	403	227	148	90.7	116	121
MAX	1200	697	2130	1250	522	2160	775	477	446	466	688	395
MIN	82	119	149	254	150	232	219	139	70	42	38	45
CFSM	1.29	1.65	3.77	2.96	1.30	4.91	2.19	1.23	.80	.49	.63	.66
IN.	1.49	1.85	4.34	3.42	1.36	5.66	2.44	1.42	.90	.57	.73	.73

e Estimated

TENNESSEE RIVER BASIN

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03469175 LITTLE PIGEON RIVER ABOVE SEVIERVILLE, TN--Continued

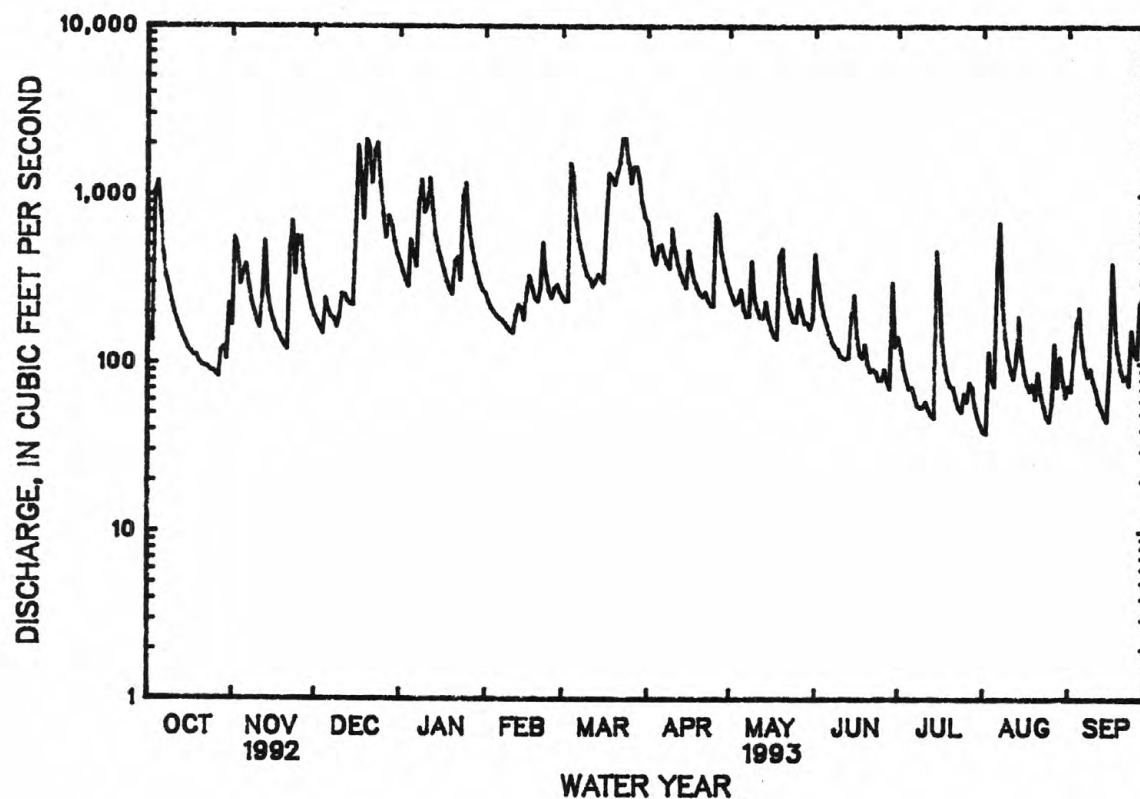
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1993, BY WATER YEAR (WY)

MEAN	182	237	472	496	577	712	338	383	315	220	179	202
MAX	335	374	743	688	918	903	413	576	552	412	286	530
(WY)	1990	1990	1992	1990	1990	1993	1989	1989	1989	1989	1992	1989
MIN	54.8	101	135	317	240	578	232	227	121	90.7	89.4	86.0
(WY)	1992	1991	1989	1991	1993	1992	1990	1993	1990	1993	1990	1990

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1988 - 1993	
ANNUAL TOTAL	135899		123156			
ANNUAL MEAN	371		337			
HIGHEST ANNUAL MEAN					361	
LOWEST ANNUAL MEAN					406	1989
HIGHEST DAILY MEAN	2730	Feb 26	2160	Mar 23	337	1993
LOWEST DAILY MEAN	64	Aug 5	38	Aug 2	4030	Mar 17 1990
ANNUAL SEVEN-DAY MINIMUM	69	Jul 30	53	Jul 27	35	Sep 7 1990
INSTANTANEOUS PEAK FLOW			3240	Dec 20	39	Nov 1 1991
INSTANTANEOUS PEAK STAGE			8.59	Dec 20	a7040	Sep 22 1989
INSTANTANEOUS LOW FLOW			b38	Aug 1	15.22	Sep 22 1989
ANNUAL RUNOFF (CFSM)	2.02		1.83		33	Sep 7 1990
ANNUAL RUNOFF (INCHES)	27.48		24.90		1.96	
10 PERCENT EXCEEDS	783		753		26.65	
50 PERCENT EXCEEDS	249		214		782	
90 PERCENT EXCEEDS	111		72		227	
					68	

a From rating curve extended above 3,800 ft<sup>3</sup>/s.

b Also occurred on Aug. 2.





## TENNESSEE RIVER BASIN

03491000 BIG CREEK NEAR ROGERSVILLE, TN

LOCATION.--Lat 36°25'34", long 82°57'07", Hawkins County, Hydrologic Unit 06010104, on left bank 300 ft upstream from county road bridge, 3 mi northeast of Rogersville, and at mile 2.0.

DRAINAGE AREA.--47.3 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1941 to June 1949. Occasional low-flow measurements, water years 1950-55, 1957. Annual maximum, water years 1955-57. October 1957 to current year.

REVISED RECORDS.--WSP 1436: 1945.

GAGE.--Water-stage recorder, encoder, and crest-stage gage. Datum of gage is 1,128.9 ft above sea level (levels based on City of Rogersville construction plans for pumping station). Dec. 7, 1954, to Sept. 30, 1957, crest-stage gage at same site and datum.

REMARKS.--Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 21	Unknown	*2,590	*6.23	No other peak greater than base discharge.			

Minimum discharge, 3.4 ft<sup>3</sup>/s, Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	17	18	74	49	66	189	43	26	9.5	4.8	6.4
2	3.6	13	17	60	43	63	162	39	20	8.7	4.9	6.3
3	3.6	50	15	52	38	64	127	36	17	7.6	6.6	6.9
4	6.3	25	14	47	37	341	108	37	16	6.9	10	7.1
5	28	21	15	48	33	275	121	44	18	6.4	8.3	7.4
6	17	21	15	46	32	171	186	33	16	5.9	12	6.8
7	9.3	17	13	41	30	129	145	30	14	5.4	19	5.9
8	6.9	13	13	82	28	109	117	28	13	5.2	10	5.4
9	6.3	11	12	129	27	94	106	26	13	5.1	7.4	6.9
10	6.0	9.1	16	97	25	82	152	25	12	5.4	6.2	7.2
11	5.5	8.2	66	80	25	73	126	25	11	5.2	5.9	5.6
12	4.9	9.0	51	143	39	64	105	23	12	6.9	6.6	5.1
13	4.6	28	38	120	44	76	90	22	12	7.5	37	4.8
14	4.6	24	30	92	39	73	79	34	12	9.5	68	4.6
15	4.5	16	26	74	34	62	71	24	17	8.0	24	4.5
16	4.3	12	29	64	200	70	115	21	15	30	14	8.9
17	4.0	10	190	56	157	174	92	20	12	12	11	11
18	4.1	9.3	167	49	94	327	75	20	10	8.4	9.0	8.2
19	4.6	8.6	88	43	69	258	66	153	9.7	7.6	8.0	6.3
20	4.9	8.0	172	39	59	193	60	83	10	10	7.8	5.4
21	4.8	8.0	197	59	e635	254	67	47	9.4	7.9	26	5.3
22	5.1	14	117	93	e1370	201	62	37	9.7	6.4	16	5.0
23	5.4	78	256	70	202	252	55	31	9.3	5.6	10	5.0
24	5.1	41	326	284	135	699	51	27	8.5	5.1	8.1	5.1
25	4.9	67	162	270	105	264	47	25	7.9	5.3	7.4	5.7
26	4.8	68	113	141	94	180	69	26	8.0	6.2	28	7.3
27	4.8	44	85	105	86	204	70	23	8.6	13	19	9.8
28	4.9	32	146	83	74	189	59	20	8.0	11	12	12
29	5.1	25	171	69	---	158	52	20	7.3	7.7	10	9.8
30	5.8	21	121	58	---	131	47	21	7.3	6.0	8.2	7.3
31	14	---	92	52	---	121	---	20	---	5.2	7.1	---
TOTAL	201.4	728.2	2791	2720	3803	5417	2871	1063	369.7	250.6	432.3	203.0
MEAN	6.50	24.3	90.0	87.7	136	175	95.7	34.3	12.3	8.08	13.9	6.77
MAX	28	78	326	284	1370	699	189	153	26	30	68	12
MIN	3.6	8.0	12	39	25	62	47	20	7.3	5.1	4.8	4.5
CFSM	.14	.51	1.90	1.86	2.87	3.69	2.02	.72	.26	.17	.29	.14
IN.	.16	.57	2.20	2.14	2.99	4.26	2.26	.84	.29	.20	.34	.16

e Estimated

## 03491000 BIG CREEK NEAR ROGERSVILLE, TN--Continued

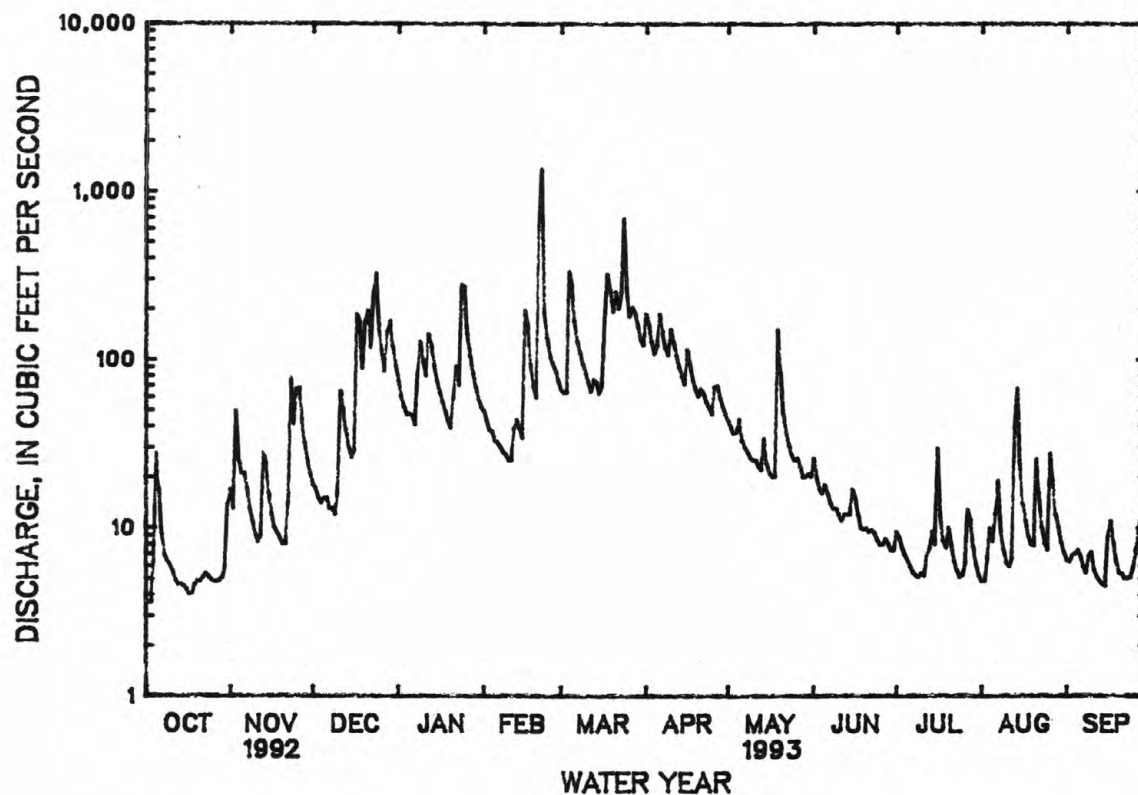
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 1993, BY WATER YEAR (WY)

MEAN	15.6	31.1	73.4	102	128	127	86.0	56.9	30.1	22.7	16.1	12.3
MAX	109	124	258	331	248	366	220	206	150	96.5	67.1	58.7
(WY)	1972	1974	1992	1974	1962	1963	1977	1958	1989	1960	1942	1989
MIN	3.53	4.43	5.06	9.33	34.4	27.4	15.4	10.7	7.61	4.35	2.45	3.38
(WY)	1989	1988	1966	1981	1968	1983	1986	1985	1941	1988	1988	1984

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1941 - 1993
ANNUAL TOTAL	15301.2	20850.2	
ANNUAL MEAN	41.8	57.1	58.0
HIGHEST ANNUAL MEAN			105
LOWEST ANNUAL MEAN			20.9
HIGHEST DAILY MEAN	616 Feb 26	1370 Feb 22	3280 Mar 12 1963
LOWEST DAILY MEAN	3.6 Oct 2	3.6 Oct 2	1.4 Aug 18 1988
ANNUAL SEVEN-DAY MINIMUM	4.2 Sep 27	4.4 Oct 13	1.8 Aug 14 1988
INSTANTANEOUS PEAK FLOW		2590 Feb 21	a5760 Mar 12 1963
INSTANTANEOUS PEAK STAGE		6.23 Feb 21	b10.68 Dec 30 1969
INSTANTANEOUS LOW FLOW		3.4 Oct 3	1.3 Sep 23 1955
ANNUAL RUNOFF (CFSM)	.88	1.21	1.23
ANNUAL RUNOFF (INCHES)	12.03	16.40	16.67
10 PERCENT EXCEEDS	90	148	125
50 PERCENT EXCEEDS	23	23	23
90 PERCENT EXCEEDS	5.1	5.4	5.4

a From rating curve extended above 3,000 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.

b Due to backwater from log jam.



## TENNESSEE RIVER BASIN

03491544 CROCKETT CREEK BELOW ROGERSVILLE, TN

LOCATION.--Lat 36°22'47", Long 83°02'48", Hawkins County, Hydrologic Unit 06010104, on right bank at Rogersville sewage treatment plant, 3.0 mi southwest of Rogersville, and at mile 1.2.

DRAINAGE AREA.--4.67 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1092.53 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Periodic observations of water temperature are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 250 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 21	1430	276	3.17	Aug. 13	1445	*365	*3.54

Minimum discharge, 0.31 ft<sup>3</sup>/s, July 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.53	1.3	1.7	5.9	4.1	5.1	34	3.2	1.7	.72	.45	.74
2	.48	6.9	1.5	5.1	3.6	4.8	17	3.0	1.7	.60	1.5	1.3
3	.46	2.7	1.4	4.6	3.3	6.2	12	2.8	1.4	.56	3.0	.93
4	9.9	3.1	1.5	4.2	3.0	27	10	4.1	1.4	.52	.76	1.6
5	3.3	2.8	1.9	5.8	2.8	15	17	2.9	1.3	.51	.69	.89
6	1.6	2.2	1.5	4.1	2.7	10	14	2.7	1.2	.47	8.3	.81
7	1.1	1.8	1.5	4.0	2.5	8.7	11	2.4	1.2	.52	1.4	.75
8	1.3	1.4	1.5	17	2.4	8.0	9.2	2.3	1.0	.47	1.1	.74
9	1.2	1.3	1.3	10	2.3	6.6	11	2.2	1.0	.43	.84	.64
10	.97	1.1	4.5	7.7	2.2	5.9	10	2.2	.96	.62	.61	.59
11	.86	1.1	3.7	15	3.0	5.4	8.3	2.0	.90	.51	.54	.58
12	.81	5.6	2.9	13	6.0	5.1	7.5	1.9	.98	.46	5.5	.55
13	.67	2.8	2.5	9.9	3.9	6.4	6.7	1.8	1.3	.41	54	.52
14	.62	2.0	2.4	7.9	3.3	6.1	6.0	1.7	.94	.68	8.8	.49
15	.56	1.7	2.1	6.7	2.9	6.5	5.5	1.6	2.0	.63	4.0	3.6
16	.54	1.5	5.5	5.9	16	9.5	7.8	1.5	.98	.55	2.7	11
17	.52	1.3	22	4.8	8.3	21	4.9	1.4	.92	.51	2.1	1.6
18	.59	1.2	7.1	4.1	6.1	22	4.4	3.0	.78	.44	1.7	1.1
19	.53	1.2	5.1	3.9	5.1	17	4.1	36	.78	.87	1.5	.90
20	.52	1.0	26	3.5	4.9	16	4.0	6.9	.73	.52	6.5	.83
21	.51	1.5	10	12	54	16	6.2	4.8	.73	.39	2.2	.76
22	.48	4.5	8.0	27	23	12	3.8	3.7	1.1	.40	1.6	.67
23	.47	2.4	31	5.8	12	33	3.5	3.4	.70	.39	1.3	.65
24	.48	4.7	14	34	9.4	31	3.3	2.6	.65	.35	1.2	.62
25	.49	5.6	9.8	15	8.1	17	3.1	2.7	.69	1.9	1.1	3.0
26	.48	3.5	8.6	10	7.9	13	10	2.6	.73	.89	1.0	2.5
27	.41	2.9	8.0	7.9	6.6	19	4.7	2.2	.62	.90	.96	5.3
28	.42	2.4	18	6.5	5.6	13	4.1	1.9	.65	.58	.89	1.8
29	.41	1.9	11	5.6	---	11	3.7	5.8	.63	.55	.86	1.3
30	3.0	1.8	8.3	4.8	---	9.2	3.5	2.2	.55	.49	.82	1.1
31	3.3	---	6.9	4.4	---	18	---	1.8	---	.45	.76	---
TOTAL	37.51	75.2	231.2	276.1	215.0	404.5	250.3	119.3	30.22	18.29	118.68	47.86
MEAN	1.21	2.51	7.46	8.91	7.68	13.0	8.34	3.85	1.01	.59	3.83	1.60
MAX	9.9	6.9	31	34	54	33	34	36	2.0	1.9	54	11
MIN	.41	1.0	1.3	3.5	2.2	4.8	3.1	1.4	.55	.35	.45	.49
CFSM	.26	.54	1.60	1.91	1.64	2.79	1.79	.82	.22	.13	.82	.34
IN.	.30	.60	1.84	2.20	1.71	3.22	1.99	.95	.24	.15	.95	.38

TENNESSEE RIVER BASIN

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03491544 CROCKETT CREEK BELOW ROGERSVILLE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1993, BY WATER YEAR (WY)

MEAN	1.91	2.91	8.68	9.01	12.3	9.98	5.43	5.11	5.22	2.35	2.72	3.03
MAX	3.75	4.69	18.7	11.6	21.1	14.1	8.34	6.89	9.95	3.39	3.98	7.63
(WY)	1990	1990	1992	1990	1991	1991	1993	1989	1989	1991	1990	1989
MIN	.53	1.37	2.70	7.30	6.73	6.38	2.99	3.85	1.01	.59	1.70	.80
(WY)	1989	1991	1989	1991	1992	1992	1992	1993	1993	1993	1992	1992

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

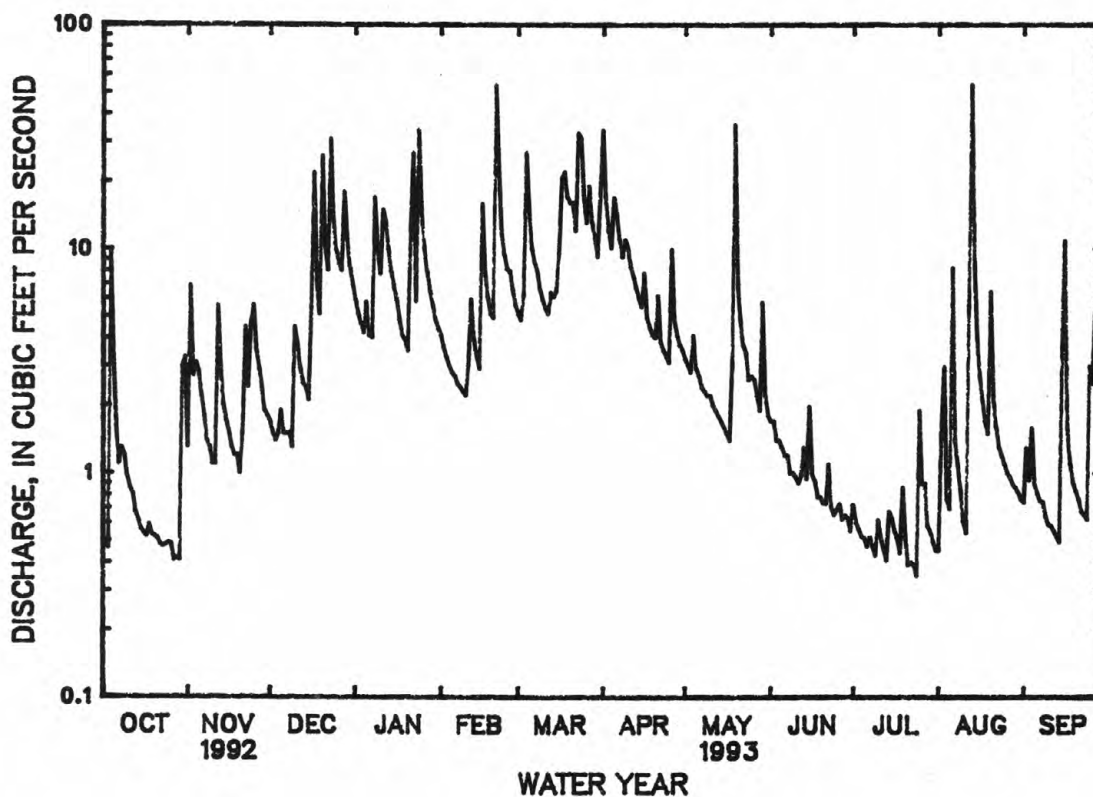
FOR 1993 WATER YEAR

WATER YEARS 1989 - 1993

ANNUAL TOTAL	1441.88	1824.16	
ANNUAL MEAN	3.94	5.00	
HIGHEST ANNUAL MEAN			5.69
LOWEST ANNUAL MEAN			7.02
HIGHEST DAILY MEAN	52	Feb 26	4.94
LOWEST DAILY MEAN	.41	Oct 27	118
ANNUAL SEVEN-DAY MINIMUM	.45	Oct 23	.31
INSTANTANEOUS PEAK FLOW			.34
INSTANTANEOUS PEAK STAGE			UNKNOWN
INSTANTANEOUS LOW FLOW			5.10
ANNUAL RUNOFF (CFSM)	.84		b.31
ANNUAL RUNOFF (INCHES)	11.49		1.22
10 PERCENT EXCEEDS	8.2		16.56
50 PERCENT EXCEEDS	2.5		12
90 PERCENT EXCEEDS	.62		3.0
			.82

a Also occurred July 25.

b Also occurred July 24, 25, 1993.





## TENNESSEE RIVER BASIN

03495500 HOLSTON RIVER NEAR KNOXVILLE, TN  
(National stream-quality accounting network station)

LOCATION.--Lat 36°00'56", long 83°49'54", Knox County, Hydrologic Unit 06010104, on right bank at bridge on U.S. Highway 70, at Knoxville city limits, and 5.5 mi upstream from confluence with French Broad River.

DRAINAGE AREA.--3,747 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1930 to June 1976, January 1978 to September 1993 (discontinued). Published as "at Strawberry Plains" 1930-48. Records published for both sites June 1945 to September 1948. Gage-height records collected at Strawberry Plains from December to March 1885-97 are contained in reports of the U.S. Weather Bureau.

REVISED RECORDS.--WSP 893: 1935(M). WSP 1336: 1939.

GAGE.--Water-stage recorder. Datum of gage is 815.64 ft above sea level. Oct. 1, 1930, to June 8, 1931, nonrecording gage, and June 9, 1931, to Sept. 30, 1948, water-stage recorder, at site 12 mi upstream at datum 22.55 ft higher. June 19, 1945, to Oct. 4, 1960, 300 ft upstream at datum 0.20 ft higher and Oct. 5, 1960, to Sept. 30, 1991, at present site at datum 0.20 ft higher.

REMARKS.--No estimated discharges. Records good. Flow regulated by five reservoirs (see p. 246). Minimum discharge since closure of Cherokee Dam on December 5, 1941, 44 ft<sup>3</sup>/s, December 12, 21, and 27, 1941.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1791, about 41 ft in March 1867, from profile by Tennessee Valley Authority. Flood in 1901 reached a stage of about 32 ft, from reports of Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,900 ft<sup>3</sup>/s, Dec. 23, gage height, 7.67; minimum, 590 ft<sup>3</sup>/s, Oct. 19; minimum daily 705 ft<sup>3</sup>/s, May 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4000	4590	7160	12300	3220	3160	5000	3180	1990	4880	3490	6620
2	3780	2130	6990	12200	3110	7850	7600	1900	2310	4560	3650	6820
3	3480	5070	7230	11300	3280	6560	9660	926	2760	4790	7010	7110
4	758	4390	6950	11900	2920	6330	9490	956	2350	3330	6880	6840
5	726	4350	6370	11700	3050	6490	8510	873	2220	2170	6830	4680
6	994	4610	6900	11700	2470	4800	9360	817	1680	4850	6840	2240
7	1430	3950	7220	11600	2090	2700	9320	803	1510	4890	4980	6230
8	1580	4450	7030	12600	3030	4080	9150	803	6220	5100	3410	8820
9	1610	4260	6840	8300	3130	5410	8450	777	6670	5340	4350	8570
10	1550	4260	6740	3340	3340	6580	3840	884	6020	5160	8680	7650
11	737	4260	6040	5940	2110	5250	3020	5450	6040	3050	8750	6870
12	2020	4290	5550	9800	994	5910	2920	2840	6700	3030	9030	1220
13	4740	3740	4330	11400	954	4180	3970	823	3380	5800	8950	1750
14	4300	3500	5320	13900	839	6270	4000	821	2400	5860	6930	6350
15	4480	1420	5790	12600	990	6450	4360	798	4920	5770	5280	6300
16	5810	3290	5720	7410	2470	5830	3590	760	4670	5760	4870	6070
17	5580	4850	7120	1850	3210	5660	7370	712	4200	5490	5860	5090
18	721	4830	5220	7630	3670	9620	3130	740	4240	3990	5930	4090
19	2490	4910	1930	8910	6660	5050	2940	2190	5000	4000	6910	739
20	6700	5030	1650	8890	2220	3110	4830	5310	4210	8550	7120	894
21	10400	3190	5430	8900	1800	1560	4690	4960	4240	8350	6670	6370
22	8610	3450	12100	9060	2960	1980	4120	875	5120	8380	3740	6490
23	11500	5710	14600	7310	3090	2550	3270	773	5390	8580	3960	6470
24	8430	7580	13700	2670	6200	3310	2440	719	5140	7030	5150	6400
25	3610	3560	12400	4410	5190	2970	1120	1820	5020	5980	6350	6300
26	5030	4890	12200	4420	4870	4470	1940	2440	4930	5950	9420	3280
27	7090	6710	12200	4430	5280	6640	3300	2860	2210	7100	9960	1850
28	7680	7140	12600	4400	1150	7930	3370	1180	3410	7040	7610	5140
29	9110	6940	12800	2020	---	7590	3980	3890	4520	6260	5840	3390
30	9110	7550	12400	3800	---	2940	4380	831	4530	6280	5770	3780
31	7700	---	12600	3050	---	3070	---	705	---	6080	6870	---
TOTAL	145756	138900	251130	249740	84297	156300	153120	53416	124000	173400	197090	154423
MEAN	4702	4630	8101	8056	3011	5042	5104	1723	4133	5594	6358	5147
MAX	11500	7580	14600	13900	6660	9620	9660	5450	6700	8580	9960	8820
MIN	721	1420	1650	1850	839	1560	1120	705	1510	2170	3410	739

CAL YR 1992 MEAN‡ 4440 CFSM‡ 1.18 IN‡ 16.13  
WTR YR 1993 MEAN‡ 4755 CFSM‡ 1.27 IN‡ 17.23

‡ Adjusted for change in contents in South Holston, Watauga, Boone, Fort Partick Henry and Cherokee Lakes.

NOTE.--Contents (cfs-days) for adjustments furnished by Tennessee Valley Authority.

TENNESSEE RIVER BASIN

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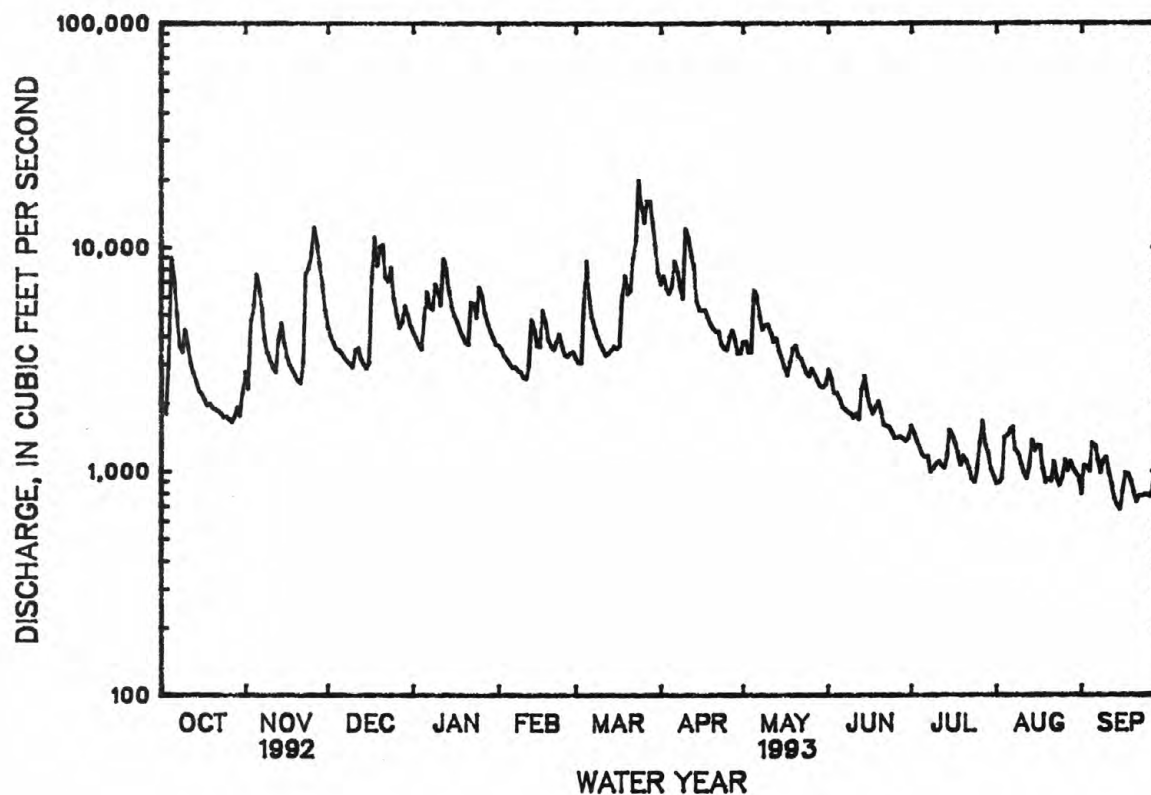
03495500 HOLSTON RIVER NEAR KNOXVILLE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1993, BY WATER YEAR (WY)

MEAN	4558	4812	6241	6071	4971	3764	2604	3090	4398	5272	6434	5965
MAX	8816	9099	15320	19100	18940	9763	8408	8612	7987	8792	10270	9986
(WY)	1990	1980	1973	1974	1957	1963	1975	1984	1973	1975	1983	1960
MIN	1672	1915	1724	1895	1626	793	644	516	1659	1374	2292	1735
(WY)	1965	1989	1989	1971	1992	1966	1988	1981	1959	1963	1959	1988

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		*WATER YEARS 1954 - 1993	
ANNUAL TOTAL	1602235		1881572			
ANNUAL MEAN	4378		5155		4872	
HIGHEST ANNUAL MEAN					7751	
LOWEST ANNUAL MEAN					2272	
HIGHEST DAILY MEAN	14600	Dec 23	14600	Dec 23	28400	Feb 12 1957
LOWEST DAILY MEAN	637	May 26	705	May 31	138	Oct 23 1975
ANNUAL SEVEN-DAY MINIMUM	662	May 22	845	May 4	191	May 12 1981
INSTANTANEOUS PEAK FLOW			16900	Dec 23	31400	Mar 12 1963
INSTANTANEOUS PEAK STAGE			7.67	Dec 23	11.20	Mar 12 1963
INSTANTANEOUS LOW FLOW			590	Oct 19	NOT DETERMINED	
10 PERCENT EXCEEDS	9170		8980		9420	
50 PERCENT EXCEEDS	3750		4880		4330	
90 PERCENT EXCEEDS	856		1480		665	

\* Regulated period only.



## TENNESSEE RIVER BASIN

03495500 HOLSTON RIVER NEAR KNOXVILLE, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1965, 1977 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: February 1980 to September 1986.

WATER TEMPERATURE: February 1980 to September 1986.

INSTRUMENTATION.--Water-quality monitor from March 1981 to Sept. 1986.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 365 microsiemens, Mar. 1, 1981; minimum, 121 microsiemens, July 31, 1982.

WATER TEMPERATURE: Maximum, 27.0°C, Aug. 21, 1982, Sept. 2, 1985; minimum, 1.0°C, Jan. 27, 1986.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 26...	1045	5080	270	8.1	17.5	742	2.9	8.9	96	27	29
FEB 22...	1155	2610	195	8.0	9.0	--	99	--	--	5400	8000
APR 21...	1205	5760	278	8.2	10.0	739	3.7	10.6	97	42	180
JUN 18...	1330	3510	275	8.1	14.5	747	1.7	8.2	82	K31	K15
AUG 09...	1405	2420	280	8.2	20.0	747	0.50	7.6	85	52	26

DATE	HARD- NESS TOTAL (MG/L AS CaCO3)	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CaCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)
OCT 26...	110	10	29	8.2	11	18	0.5	1.8	96	15
FEB 22...	91	6	28	5.0	3.3	7	0.2	2.6	84	4.4
APR 21...	110	5	33	7.3	8.1	13	0.3	1.8	108	10
JUN 18...	120	21	37	7.8	8.3	12	0.3	1.8	103	9.4
AUG 09...	120	8	35	8.1	8.2	13	0.3	1.8	112	9.9

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITU- ENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT 26...	0.10	1.5	165	147	0.22	2260	0.010	0.270	0.250	0.03	0.020
FEB 22...	0.10	3.2	106	111	0.14	747	0.020	0.520	0.540	0.10	0.080
APR 21...	0.10	1.3	144	148	0.20	2240	<0.010	0.760	0.760	--	<0.010
JUN 18...	0.10	2.1	151	150	0.21	1430	<0.010	0.790	0.790	0.01	0.010
AUG 09...	0.20	3.0	157	151	0.21	1030	0.020	0.340	0.360	0.08	0.060

K--Results based on non-ideal colony count.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	MANGANESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM % FINER THAN .062 MM
OCT 26...	4	<10	1	<1	<1.0	120	<6	--	--	--
FEB 22...	4	<10	<1	<1	<1.0	67	<6	120	846	99
APR 21...	2	<10	<1	<1	<1.0	110	<6	12	187	93
JUN 18...	4	<10	<1	<1	<1.0	110	<6	6	57	85
AUG 09...	--	--	--	--	--	--	--	5	33	88



## TENNESSEE RIVER BASIN

03497300 LITTLE RIVER ABOVE TOWNSEND, TN  
(Hydrologic bench-mark station)

LOCATION.--Lat 35°39'52", long 83°42'41", Blount County, Hydrologic Unit 06010201, in Great Smoky Mountains National Park, on left bank along U.S. Highway 321, 0.3 mi upstream from Rush Branch, 0.4 mi southeast of Park entrance, 2.2 mi southeast of Townsend, and at mile 35.3.

DRAINAGE AREA.--106 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,106.92 ft above sea level.

REMARKS.--Records good.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 17	0915	3,120	5.66	Mar. 23	2000	3,660	6.11
Dec. 20	Unknown	*3,890	*6.29				

Minimum discharge, 32 ft<sup>3</sup>/s, Aug. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	95	214	e380	240	264	571	292	387	126	33	69
2	81	254	194	e350	213	252	485	267	311	85	35	73
3	76	303	173	e320	196	265	402	245	261	73	116	102
4	282	242	166	e300	182	1070	363	284	223	67	86	130
5	379	255	218	e420	172	842	447	264	196	63	89	121
6	279	266	172	310	164	607	431	231	175	60	323	92
7	215	224	175	292	156	488	401	217	159	56	339	75
8	175	196	162	463	149	426	375	214	149	54	133	83
9	165	173	153	552	142	374	430	214	138	60	94	116
10	138	156	211	467	136	343	567	193	128	59	81	74
11	126	145	240	529	136	325	508	180	120	58	74	63
12	114	276	217	677	199	299	451	171	122	52	71	55
13	107	418	207	562	184	318	398	175	148	60	116	51
14	99	267	207	449	173	302	359	273	121	52	157	48
15	93	232	218	381	154	285	336	189	157	138	96	47
16	89	206	661	344	330	250	436	173	115	178	82	70
17	88	183	2000	301	325	326	347	163	103	77	74	113
18	84	164	1070	267	282	390	321	155	103	64	90	67
19	81	150	657	244	241	371	300	341	138	58	76	55
20	77	139	e2600	226	236	408	278	327	100	60	72	49
21	77	170	e1800	343	511	638	290	272	97	52	121	56
22	75	361	e900	333	677	1130	279	260	101	48	80	58
23	73	418	e1200	292	463	2250	259	228	91	45	72	49
24	72	366	e1800	666	368	2350	247	206	85	44	67	57
25	71	562	e1200	776	324	1310	235	231	82	46	68	50
26	68	553	e800	575	353	968	482	277	78	48	86	59
27	68	402	e480	451	311	1150	460	232	76	43	92	116
28	80	318	e600	374	282	1130	398	213	71	41	82	97
29	80	263	e500	325	---	961	354	196	88	39	86	68
30	72	232	e450	283	---	769	320	189	84	36	76	58
31	138	---	e410	259	---	661	---	303	---	35	67	---
TOTAL	3711	7989	20055	12511	7299	21522	11530	7175	4207	1977	3134	2221
MEAN	120	266	647	404	261	694	384	231	140	63.8	101	74.0
MAX	379	562	2600	776	677	2350	571	341	387	178	339	130
MIN	68	95	153	226	136	250	235	155	71	35	33	47
CF5M	1.13	2.51	6.10	3.81	2.46	6.55	3.63	2.18	1.32	.60	.95	.70
IN.	1.30	2.80	7.04	4.39	2.56	7.55	4.05	2.52	1.48	.69	1.10	.78

e Estimated

TENNESSEE RIVER BASIN

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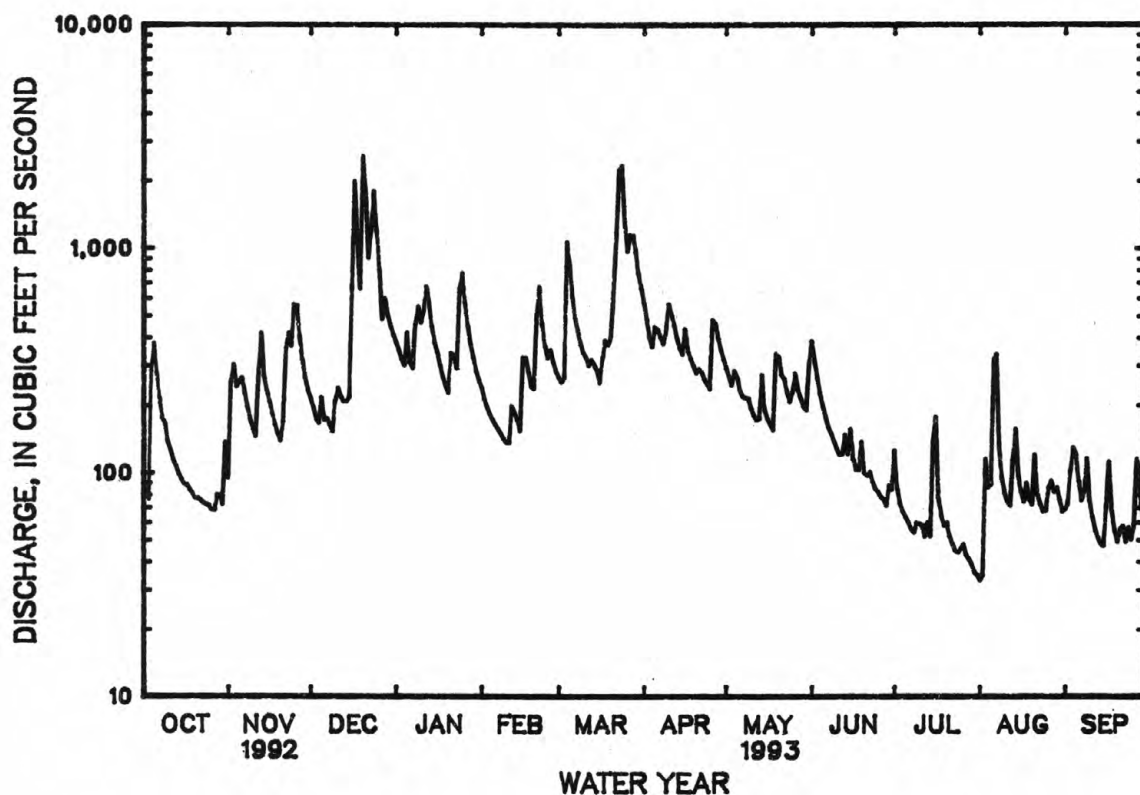
03497300 LITTLE RIVER ABOVE TOWNSEND, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

MEAN	133	211	352	392	439	503	375	281	211	195	174	122
MAX	373	436	725	785	857	937	706	774	648	815	530	492
(WY)	1973	1967	1992	1974	1990	1975	1983	1984	1989	1971	1966	1989
MIN	28.9	36.0	58.8	72.7	191	185	141	124	50.4	63.8	40.5	43.2
(WY)	1988	1988	1966	1981	1978	1988	1986	1986	1988	1993	1987	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1964 - 1993	
ANNUAL TOTAL	104960		103331			
ANNUAL MEAN	287		283		282	
HIGHEST ANNUAL MEAN					400	
LOWEST ANNUAL MEAN					141	
HIGHEST DAILY MEAN	2600	Dec 20	2600	Dec 20	8790	Mar 16 1973
LOWEST DAILY MEAN	58	Aug 5	33	Aug 1	23	Oct 18 1987
ANNUAL SEVEN-DAY MINIMUM	67	Aug 3	37	Jul 27	25	Oct 14 1987
INSTANTANEOUS PEAK FLOW			3890	Dec 20	16000	Mar 16 1973
INSTANTANEOUS PEAK STAGE			6.29	Dec 20	12.30	Mar 16 1973
INSTANTANEOUS LOW FLOW			32	Aug 2	a21	Jan 18 1981
ANNUAL RUNOFF (CFSM)	2.71		2.67		2.66	
ANNUAL RUNOFF (INCHES)	36.84		36.26		36.11	
10 PERCENT EXCEEDS	552		552		550	
50 PERCENT EXCEEDS	211		199		195	
90 PERCENT EXCEEDS	81		60		62	

a Result of freeze-up.



## TENNESSEE RIVER BASIN

03497300 LITTLE RIVER ABOVE TOWNSEND, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to 1982, 1986 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: October 1963 to September 1981.

INSTRUMENTATION.--Temperature recorder from October 1963 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 26.0°C June 23, 1964, July 3, 1970; minimum, 0.0°C on several days during winter periods.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 27...	1030	68	17	7.1	10.0	732	0.60	10.2	94	K5	38
DEC 07...	1335	178	12	6.9	4.0	735	0.70	--	--	K2	K20
FEB 24...	1040	364	12	6.4	2.0	--	1.2	--	--	K1	K2
APR 22...	1200	271	15	6.7	8.0	736	0.70	11.2	98	72	K4
JUN 16...	1255	114	19	6.9	19.0	737	0.90	8.8	98	K8	71
AUG 10...	0930	82	20	6.8	20.0	740	0.40	8.8	100	28	230

DATE	HARD- NESS TOTAL (MG/L AS CaCO3)	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CaCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)
OCT 27...	6	0	1.6	0.46	1.0	25	0.2	0.60	6	1.9	0.60
DEC 07...	4	0	1.2	0.35	0.90	28	0.2	0.50	6	1.7	0.60
FEB 24...	4	2	1.1	0.32	0.80	28	0.2	0.40	3	2.4	0.40
APR 22...	4	0	1.1	0.31	1.0	32	0.2	0.50	4	2.1	0.50
JUN 16...	5	0	1.5	0.42	1.1	28	0.2	0.50	6	1.7	0.30
AUG 10...	6	0	1.7	0.46	1.0	24	0.2	0.60	6	2.1	0.50

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
OCT 27...	<0.10	6.5	9	16	0.01	1.66	0.010	--	<0.050	--	<0.010
DEC 07...	<0.10	5.9	8	15	0.01	3.84	<0.010	0.150	0.160	0.01	0.010
FEB 24...	0.10	5.3	4	14	0.01	3.93	0.010	0.250	0.260	0.01	0.010
APR 22...	<0.10	5.5	13	14	0.02	9.51	<0.010	0.170	0.170	0.03	0.020
JUN 16...	<0.10	6.8	10	17	0.01	3.08	<0.010	0.150	0.150	0.01	0.010
AUG 10...	<0.10	6.2	15	17	0.02	3.31	<0.010	0.190	0.190	0.04	0.030

K--Results based on non-ideal colony count.

## TENNESSEE RIVER BASIN

03497300 LITTLE RIVER ABOVE TOWNSEND, TN--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)
OCT 27...	<0.20	0.010	<0.010	--	<0.010	<10	7	<3	14	<4
DEC 07...	<0.20	<0.010	<0.010	0.03	0.010	--	--	--	--	--
FEB 24...	<0.20	<0.010	0.010	--	<0.010	<10	7	<3	79	<4
APR 22...	<0.20	0.020	0.030	--	<0.010	20	6	<3	4	<4
JUN 16...	<0.20	0.010	<0.010	--	<0.010	40	8	<3	14	<4
AUG 10...	<0.20	0.010	<0.010	0.03	0.010	--	--	--	--	--

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 27...	1	<10	1	<1	<1.0	10	<6	--	--	--
DEC 07...	--	--	--	--	--	--	--	3	1.4	47
FEB 24...	1	<10	<1	<1	<1.0	8	<6	1	0.98	91
APR 22...	<1	<10	<1	<1	<1.0	8	<6	2	1.5	80
JUN 16...	2	<10	<1	<1	<1.0	11	<6	4	1.2	87
AUG 10...	--	--	--	--	--	--	--	8	1.8	70

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	ALPHA, COUNT, 2 SIGMA WAT DIS AS NAT U (UG/L)	ALPHA COUNT, 2 SIGMA WAT DIS AS TH-230 (PCI/L)	ALPHA, 2 SIGMA SED SUS TOT DRY AS TH-230 (PCI/L)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	BETA, 2 SIGMA WATER, DISS, AS SR90 /Y90 (PCI/L)
FEB 24...	<0.6	<0.6	0.25	0.16	0.20	<0.6	<0.6	0.38
AUG 10...	<0.6	<0.6	0.29	0.19	0.16	1.0	<0.6	0.48

DATE	BETA, 2 SIGMA SED, SUSP. TOT DRY SR90Y90 (PCI/L)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L)	RA-226 2 SIGMA WATER, DISS, (PCI/L)
FEB 24...	0.47	<0.6	<0.6	0.02	<0.01	<1.0	0.010
AUG 10...	0.46	1.0	<0.6	0.06	<0.01	<1.0	0.020



## TENNESSEE RIVER BASIN

03498500 LITTLE RIVER NEAR MARYVILLE, TN

LOCATION.--Lat 35°47'10", long 83°53'04", Blount County, Hydrologic Unit 06010201, on left bank 200 ft above bridge on U.S. Highway 411, 0.8 mi downstream from Crooked Creek, 5.0 mi east of Maryville, and at mile 17.3.

DRAINAGE AREA.--269 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1951 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 850.00 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuations at low flow caused by small mills above station. The town of Maryville diverted an average of about 4.0 ft<sup>3</sup>/s (2.6 MGD) for municipal supply 100 ft upstream from gage. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 25, 1875, reached a stage of 31 ft, discharge, 50,000 ft<sup>3</sup>/s, and flood of April 1, 1896, reached a stage of 26 ft, discharge, 36,000 ft<sup>3</sup>/s, from reports by Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 20	1600	*7,270	*13.75	No other peak greater than base discharge.			

Minimum discharge, 50 ft<sup>3</sup>/s, Aug. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	187	295	631	490	499	1130	460	641	211	55	88
2	117	305	272	566	452	473	1010	414	496	167	55	93
3	106	546	252	516	417	474	864	376	396	132	108	117
4	275	320	242	482	393	1700	787	391	342	120	145	143
5	610	375	388	612	373	1390	870	427	313	112	136	184
6	469	412	292	561	357	989	880	347	290	105	393	134
7	330	326	279	523	341	821	814	330	267	99	655	114
8	263	280	269	1010	328	727	764	368	251	92	236	102
9	237	248	248	1110	313	645	754	498	237	90	164	156
10	209	225	307	901	296	586	1010	356	221	127	132	118
11	184	205	441	1080	290	555	882	321	209	102	119	100
12	167	231	361	1450	348	513	811	303	197	92	110	88
13	153	647	325	1060	345	560	733	316	231	87	131	79
14	141	386	309	860	340	582	669	629	206	94	254	75
15	129	322	299	740	310	511	620	411	298	148	162	73
16	120	280	770	673	508	568	744	336	225	276	130	87
17	115	252	2910	598	556	1040	625	306	190	145	114	153
18	114	231	1690	534	482	1370	571	292	183	114	137	122
19	109	212	987	491	427	1180	527	682	207	100	130	92
20	103	197	3860	463	417	1100	491	738	179	93	112	83
21	96	191	2480	560	578	1410	529	530	163	89	169	84
22	93	403	1320	629	999	2010	505	483	174	82	135	95
23	91	624	2600	539	725	3130	451	393	160	77	109	88
24	89	468	2730	1750	604	4040	426	349	149	73	97	106
25	86	734	1340	1840	539	2290	403	360	142	77	92	96
26	83	752	1020	1080	645	1670	717	448	137	81	114	107
27	83	559	829	866	602	2170	755	368	133	73	187	155
28	135	449	1010	731	537	2070	646	338	125	67	117	195
29	140	373	870	639	---	1700	566	316	136	66	114	125
30	114	326	769	563	---	1400	513	306	141	60	112	101
31	288	---	686	521	---	1240	---	434	---	58	96	---
TOTAL	5384	11066	30450	24579	13012	39413	21067	12626	7039	3309	4820	3353
MEAN	174	369	982	793	465	1271	702	407	235	107	155	112
MAX	610	752	3860	1840	999	4040	1130	738	641	276	655	195
MIN	83	187	242	463	290	473	403	292	125	58	55	73
CFSM	.65	1.37	3.65	2.95	1.73	4.73	2.61	1.51	.87	.40	.58	.42
IN.	.74	1.53	4.21	3.40	1.80	5.45	2.91	1.75	.97	.46	.67	.46

TENNESSEE RIVER BASIN

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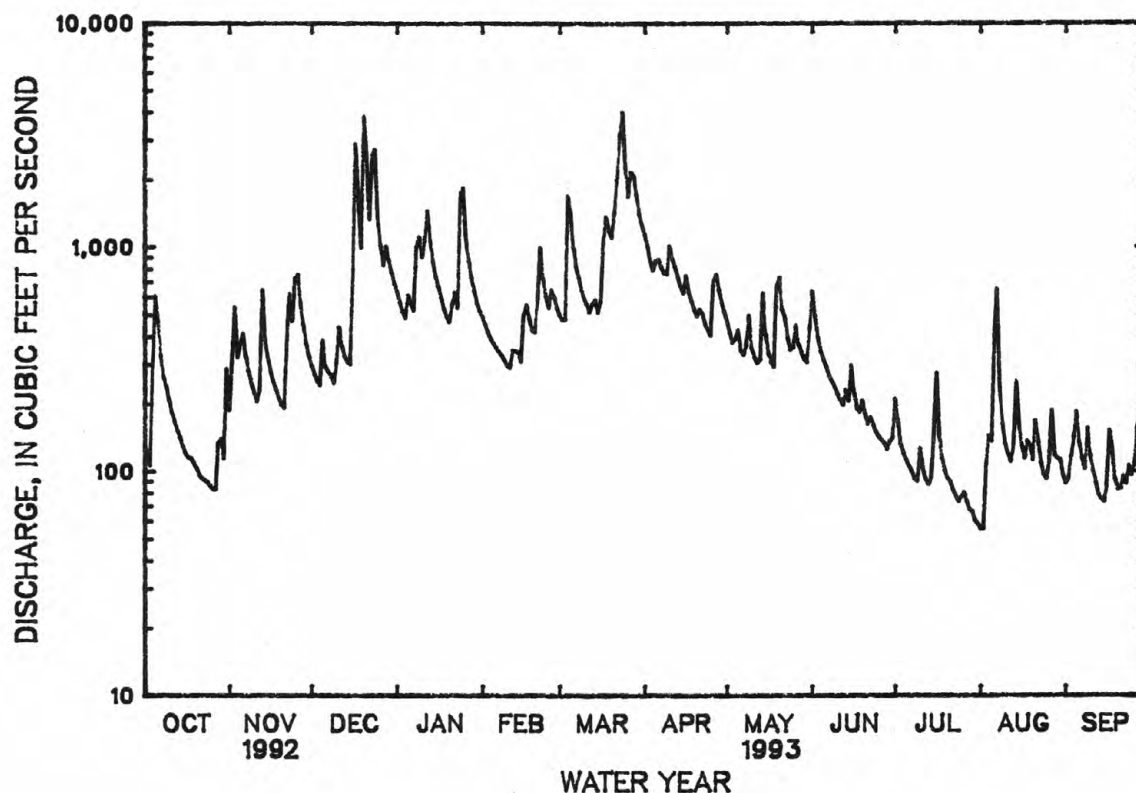
03498500 LITTLE RIVER NEAR MARYVILLE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 1993, BY WATER YEAR (WY)

MEAN	206	349	644	786	936	992	732	490	358	317	256	182
MAX	830	1160	1679	1792	2254	2416	1314	1782	1261	1391	867	1019
(WY)	1973	1958	1962	1974	1957	1963	1964	1984	1989	1971	1971	1989
MIN	50.7	65.4	103	121	308	385	224	208	86.1	100	78.1	55.6
(WY)	1988	1988	1966	1981	1954	1988	1986	1986	1988	1952	1987	1954

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1951 - 1993	
ANNUAL TOTAL	170514		176118			
ANNUAL MEAN	466		483		519	
HIGHEST ANNUAL MEAN					784	
LOWEST ANNUAL MEAN					220	
HIGHEST DAILY MEAN	4080	Feb 26	4040	Mar 24	19100	Mar 12 1963
LOWEST DAILY MEAN	83	Oct 26	55	Aug 1	43	Oct 19 1987
ANNUAL SEVEN-DAY MINIMUM	89	Oct 21	62	Jul 27	45	Oct 14 1987
INSTANTANEOUS PEAK FLOW			7270	Dec 20	a32200	Mar 12 1963
INSTANTANEOUS PEAK STAGE			13.75	Dec 20	24.20	Mar 12 1963
INSTANTANEOUS LOW FLOW			50	Aug 2	32	Aug 27 1956
ANNUAL RUNOFF (CFSM)	1.73		1.79		1.93	
ANNUAL RUNOFF (INCHES)	23.58		24.36		26.21	
10 PERCENT EXCEEDS	892		1010		1040	
50 PERCENT EXCEEDS	336		326		313	
90 PERCENT EXCEEDS	124		94		101	

a From rating curve extended above 20,000 ft<sup>3</sup>/s on basis of area velocity study and road overflow computations.



## TENNESSEE RIVER BASIN

03498850 LITTLE RIVER NEAR ALCOA, TN

LOCATION.--Lat 35°48'32", long 83°55'36", Blount County, Hydrologic Unit 06010201, at Singleton Bend on left bank, 3.0 mi northeast of Alcoa, and at mile 9.7.

DRAINAGE AREA.--300 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year, discharge for stage 14.7 and below only.

GAGE.--Water-stage recorder. Datum of gage is 814.22 ft above sea level.

REMARKS.--Records good. Diurnal fluctuations at low flow caused by small mills above station. The town of Maryville diverts an average of about 4.0 ft<sup>3</sup>/s (2.6 MGD) for municipal supply 7.6 mi upstream from gage and the town of Alcoa at the gage diverts about 17.2 ft<sup>3</sup>/s (11.1 MGD). Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6940 ft<sup>3</sup>/s, Dec. 20; gage height 11.55 ft; minimum 43 ft<sup>3</sup>/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	132	196	297	662	499	502	1050	510	625	205	59	76
2	117	203	268	587	462	460	930	472	495	167	56	78
3	107	586	259	522	426	477	801	442	387	128	67	89
4	182	313	227	495	397	1880	744	444	353	115	144	123
5	592	362	381	591	378	1690	786	502	314	117	140	146
6	478	406	310	578	353	1070	828	408	284	97	274	115
7	313	338	278	533	338	868	759	380	261	87	702	96
8	246	282	263	1090	332	758	721	370	236	95	271	96
9	215	245	248	1250	316	670	706	563	225	94	150	116
10	194	221	279	973	303	597	922	424	191	118	114	108
11	173	200	465	1150	282	569	818	369	191	100	99	91
12	158	206	393	1790	340	524	770	331	191	93	101	82
13	145	638	341	1190	357	581	696	324	215	85	125	63
14	139	406	305	902	349	586	664	622	189	96	255	71
15	131	317	301	776	320	512	608	458	305	130	166	69
16	121	255	768	694	476	564	708	365	222	301	106	81
17	120	236	3300	626	573	1140	627	340	171	158	109	116
18	118	215	2110	557	475	1710	581	308	155	113	131	111
19	116	202	1090	499	424	1460	547	602	203	101	109	81
20	112	183	3890	480	409	1230	519	708	179	86	108	70
21	105	176	3190	522	501	1550	549	542	153	81	158	69
22	104	400	1540	668	1090	2140	542	481	157	92	136	79
23	103	680	2930	552	735	2980	494	415	151	82	100	90
24	98	469	3490	1810	606	4280	466	378	145	73	89	105
25	98	760	1600	2410	530	2390	441	374	145	77	84	83
26	97	838	1100	1210	629	1570	663	467	130	80	91	97
27	95	597	858	903	596	2150	744	386	126	77	161	140
28	125	484	1090	746	541	2120	659	347	125	71	115	185
29	155	408	931	668	---	1660	599	323	122	63	110	104
30	126	335	812	583	---	1310	549	309	132	58	88	84
31	251	---	728	531	---	1130	---	371	---	62	72	---
TOTAL	5266	11157	34042	26548	13037	41128	20491	13335	6778	3302	4490	2914
MEAN	170	372	1098	856	466	1327	683	430	226	107	145	97.1
MAX	592	838	3890	2410	1090	4280	1050	708	625	301	702	185
MIN	95	176	227	480	282	460	441	308	122	58	56	63

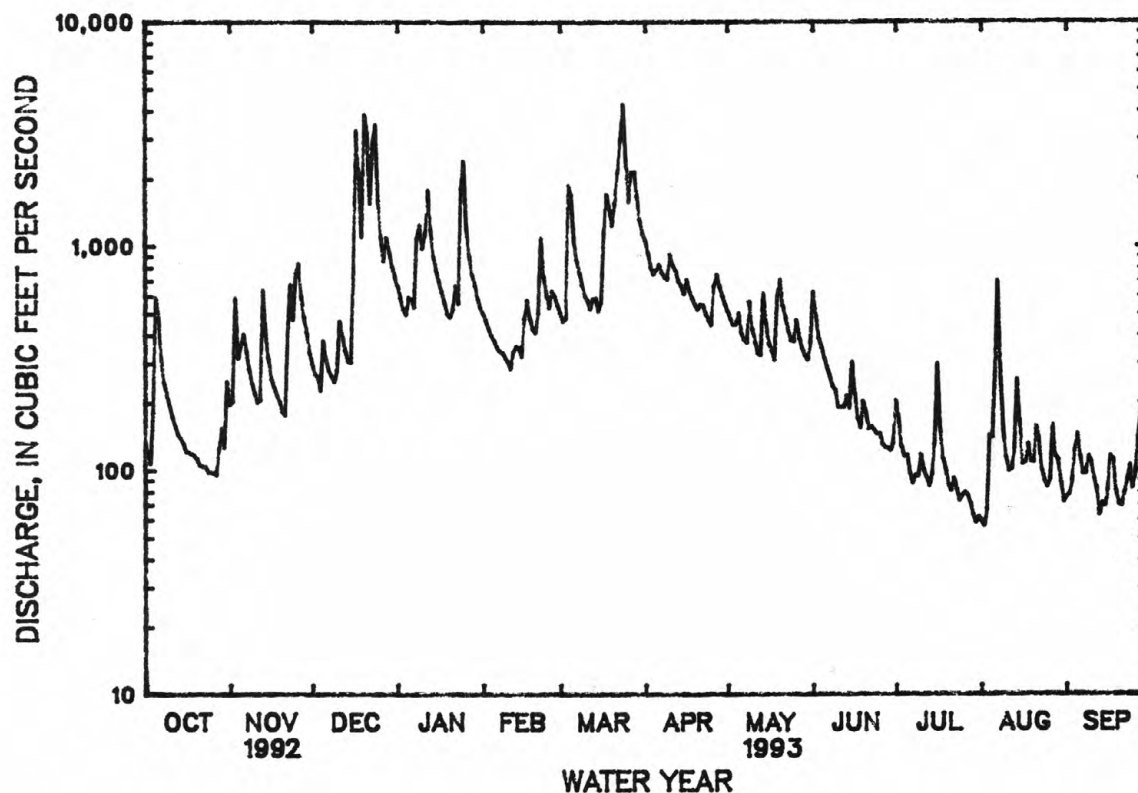
TENNESSEE RIVER BASIN  
03498850 LITTLE RIVER NEAR ALCOA, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

MEAN	233	328	750	847	980	1012	613	494	429	283	205	278
MAX	779	783	1624	1391	1876	1539	883	989	1335	775	404	1123
(WY)	1990	1990	1992	1990	1990	1990	1987	1989	1989	1989	1991	1989
MIN	43.4	60.6	176	432	435	403	352	199	73.6	106	69.0	64.1
(WY)	1988	1988	1988	1988	1988	1988	1988	1988	1988	1988	1987	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1987 - 1993	
ANNUAL TOTAL	184091		182488			
ANNUAL MEAN	503		500			
HIGHEST ANNUAL MEAN					536	
LOWEST ANNUAL MEAN					786	1989
HIGHEST DAILY MEAN					220	1988
LOWEST DAILY MEAN	5170	Feb 26	4280	Mar 24	e10800	Mar 17 1990
ANNUAL SEVEN-DAY MINIMUM	95	Oct 27	56	Aug 2	28	Jul 10 1988
INSTANTANEOUS PEAK FLOW	100	Oct 21	62	Jul 28	35	Oct 14 1987
INSTANTANEOUS PEAK STAGE			6940	Dec 20	NOT DETERMINED	Mar 17 1990
INSTANTANEOUS LOW FLOW			11.55	Dec 20	18.00	Mar 17 1990
10 PERCENT EXCEEDS	937		43	Sep 13	23	Jul 10 1988
50 PERCENT EXCEEDS	342		1090		1130	
90 PERCENT EXCEEDS	133		335		332	
			91		82	

e Estimated



## TENNESSEE RIVER BASIN

## 03528000 CLINCH RIVER ABOVE TAZEWell, TN

LOCATION.--Lat 36°25'30", long 83°23'54", Claiborne County, Hydrologic Unit 06010205, on right bank 0.4 mi upstream from Grissom Island, 4.6 mi downstream from Big War Creek, 10 mi east of Tazewell, and at mile 159.8.

DRAINAGE AREA.--1,474 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1918 to current year. Published as "near Lone Mountain" October 1918 to September 1927; as "near Tazewell" August 1927 to December 1936; and as "above Tazewell" July 1935 to current year. Prior to April 1919, monthly discharge only, published in WSP 1306. Gage-height record "near Tazewell" January 1937 to July 1941.

REVISED RECORDS.--WSP 803: Drainage area at site "near Tazewell". WSP 1306: Drainage area at site "near Lone Mountain". WSP 1336: 1928.

GAGE.--Water-stage recorder. Datum of gage is 1,060.7 ft above sea level. April 1, 1919, to Sept. 30, 1927, nonrecording gage on railroad bridge 23.3 mi downstream at datum 102.7 ft lower. Aug. 8, 1927, to July 16, 1941, water-stage recorder at site 8.0 mi downstream at datum 47.2 ft lower. Water-stage recorder at present site and datum since July 29, 1935.

REMARKS.--No estimated daily discharges. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1862 reached a stage of about 24 ft, present site and datum, from information by local resident; discharge, about 66,000 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 14,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Feb. 22	2100	19,600	11.64	Mar. 25	1000	*20,800	*12.07
Mar. 6	0330	14,800	9.84				

Minimum discharge, 171 ft<sup>3</sup>/s, Sept. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	250	329	654	2360	1370	2480	5010	1850	841	404	273	261
2	250	356	582	1990	1250	2280	5230	1670	842	365	261	235
3	242	564	534	1700	1130	2270	4900	1520	794	350	255	221
4	272	686	496	1480	1030	4490	4230	1460	743	343	259	243
5	444	721	475	1400	940	12000	3850	1530	700	395	252	236
6	585	656	456	1380	880	13700	4810	1460	669	413	294	226
7	689	607	440	1450	841	7900	5450	1340	682	383	317	241
8	608	604	447	1790	809	5210	4490	1230	727	355	303	245
9	539	546	509	2570	771	4340	3780	1130	663	334	279	246
10	446	491	539	3470	735	3940	3720	1050	588	370	258	252
11	384	441	831	3210	712	3520	4060	1120	552	349	241	226
12	341	434	1330	3240	797	3050	4320	1230	528	310	255	206
13	317	652	1330	3050	1790	2810	3790	1250	547	294	498	192
14	295	799	1170	2720	2160	2740	3270	1190	620	318	1140	181
15	281	807	1000	2330	1760	2470	2870	1160	804	329	620	177
16	265	650	1210	2000	2190	2230	2770	1040	833	484	520	192
17	256	587	3480	1750	3930	3160	2600	947	678	399	454	202
18	241	517	7530	1550	4270	6110	2320	902	567	447	390	196
19	235	458	6650	1370	3350	7660	2100	1390	599	384	332	236
20	227	418	4490	1220	2570	6880	1900	5060	533	413	315	255
21	225	391	5340	1150	3590	6700	1900	4420	493	399	342	221
22	223	473	4750	1340	16000	8890	2000	2940	469	350	305	204
23	225	928	5520	1690	15500	11100	2090	2160	453	316	298	201
24	225	1340	9070	2540	8530	16800	2030	1710	420	279	296	213
25	225	1580	8030	5190	5060	20300	1870	1440	407	259	347	216
26	216	1660	4870	4630	3760	14000	1930	1270	396	259	335	231
27	214	1400	3360	3330	3150	8220	2170	1170	392	279	309	322
28	218	1120	3310	2610	2760	7450	2330	1050	372	332	491	356
29	217	906	3380	2130	---	6630	2250	938	372	319	471	460
30	222	756	3140	1780	---	6470	2040	893	372	346	330	467
31	280	---	2780	1520	---	5580	---	881	---	310	278	---
TOTAL	9657	21877	87703	69940	91635	211380	96080	48401	17656	10887	11318	7360
MEAN	312	729	2829	2256	3273	6819	3203	1561	589	351	365	245
MAX	689	1660	9070	5190	16000	20300	5450	5060	842	484	1140	467
MIN	214	329	440	1150	712	2230	1870	881	372	259	241	177
CFSM	.21	.49	1.92	1.53	2.22	4.63	2.17	1.06	.40	.24	.25	.17
IN.	.24	.55	2.21	1.77	2.31	5.33	2.42	1.22	.45	.27	.29	.19



## 03528000 CLINCH RIVER ABOVE TAZEWEEL, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1919 - 1993, BY WATER YEAR (WY)

MEAN	680	1120	2369	3435	4096	4236	3062	2276	1284	973	858	546
MAX	2871	4794	9107	9500	9426	11950	8860	6382	3865	3251	4411	2939
(WY)	1990	1978	1927	1937	1957	1963	1977	1929	1989	1938	1942	1989
MIN	145	159	217	285	571	990	711	547	301	239	169	136
(WY)	1964	1940	1940	1940	1941	1988	1986	1941	1988	1988	1925	1955

## SUMMARY STATISTICS

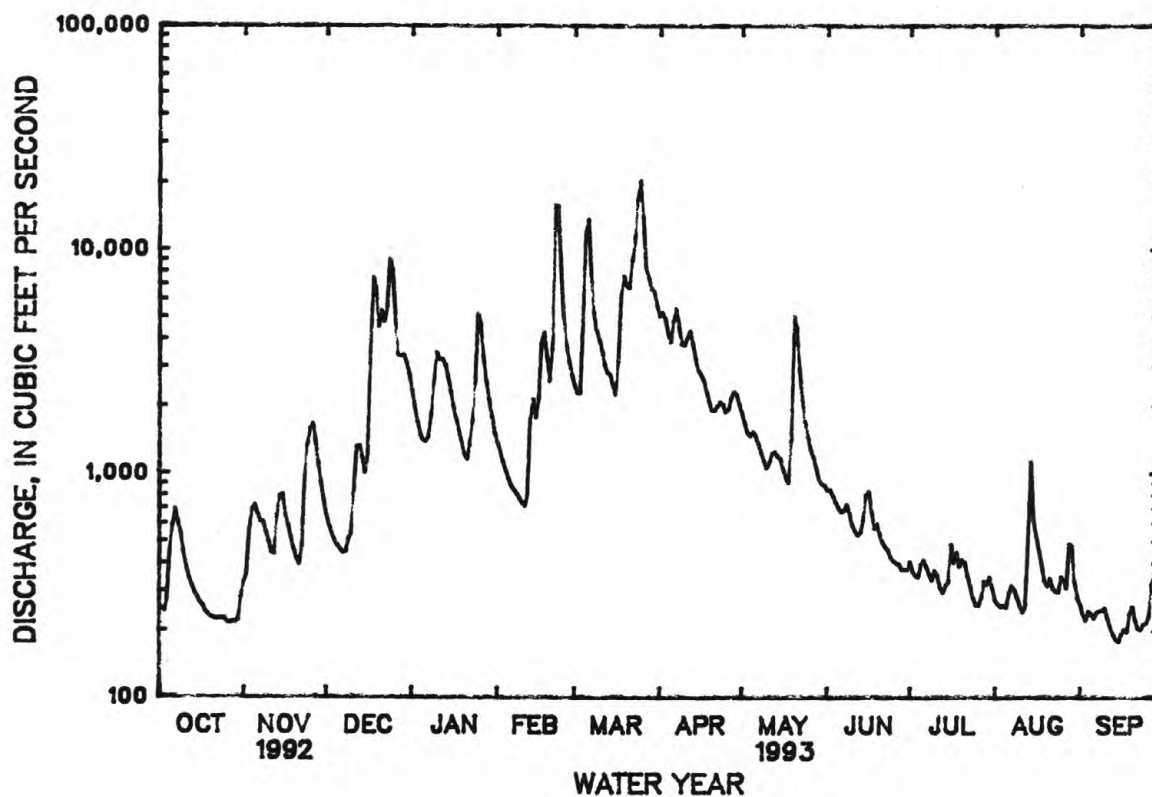
## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

## WATER YEARS 1919 - 1993

ANNUAL TOTAL	566772		683894		2069	
ANNUAL MEAN	1549		1874		3269	1927
HIGHEST ANNUAL MEAN					850	1941
LOWEST ANNUAL MEAN					83300	Apr 5 1977
HIGHEST DAILY MEAN	10000	Mar 12	20300	Mar 25	108	Sep 11 1925
LOWEST DAILY MEAN	214	Oct 27	177	Sep 15	116	Sep 17 1955
ANNUAL SEVEN-DAY MINIMUM	220	Oct 24	192	Sep 12	98100	Apr 5 1977
INSTANTANEOUS PEAK FLOW			20800	Mar 25	a29.32	Apr 5 1977
INSTANTANEOUS PEAK STAGE			12.07	Mar 25	108	Sep 11 1925
INSTANTANEOUS LOW FLOW			171	Sep 15	1.40	
ANNUAL RUNOFF (CFSM)	1.05		1.27		19.07	
ANNUAL RUNOFF (INCHES)	14.30		17.26			
10 PERCENT EXCEEDS	3320		4770		4640	
50 PERCENT EXCEEDS	1070		797		1110	
90 PERCENT EXCEEDS	318		244		271	

a From floodmarks.



## TENNESSEE RIVER BASIN

03535912 CLINCH RIVER AT MELTON HILL DAM (TAILWATER), TN  
(National stream-quality accounting network station)

LOCATION.--Lat 35°53'07", long 84°18'03", Loudon County, Hydrologic Unit 06010207, at downstream side of Melton Hill Dam, 1.9 mi downstream from Hope Creek, and at mile 23.1.

DRAINAGE AREA.--3,343 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1936 to January 1941 published as "near Wheat", February 1941 to September 1960 published as "near Scarboro", October 1960 to September 1964 published as "at Melton Hill Dam", October 1967 to September 1968 published as "near Oak Ridge", October 1978 to current year. Equivalent record for the period October 1964 to December 1978 published in annual reports of Tennessee Valley Authority entitled "Operation of TVA Reservoirs".

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to February 1941, at site 8.7 mi downstream at datum 717.36 ft higher. February 1941 to September 1962 at site 15.9 mi upstream at datum 753.35 ft higher. October 1962 to September 1964, headwater gage at upstream side of dam at present datum. October 1967 to September 1968, at site 8.6 mi downstream at datum 731.62 ft higher.

REMARKS.--Flow regulated by Melton Hill Lake (station 03535900) since August 1962, and Norris Lake (station 03532500) since March 1936 (see p. 247-248).

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 14,100 ft<sup>3</sup>/s, Mar. 24; minimum daily, 333 ft<sup>3</sup>/s, Mar. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	454	2850	8960	9210	6250	9230	9770	1710	3180	3170	5330	4470
2	425	6270	8600	9030	5590	10500	11100	1590	1340	3020	6140	5000
3	471	6870	5410	9440	6420	9750	10300	1500	2220	1570	6100	4930
4	396	7360	4330	8360	3180	2220	9680	1760	2200	1560	6090	4820
5	4790	5350	2220	8020	2440	4860	9400	1680	1230	1850	6120	4450
6	5000	3550	1880	9320	396	8040	10400	2080	1130	3110	4680	4100
7	4540	975	6780	8480	404	8670	9630	1630	3740	2930	3590	6050
8	2770	400	6040	8420	5000	8330	9870	1100	6090	3450	4050	6840
9	892	5550	3130	9680	4420	7650	9850	1420	6170	2380	4310	5560
10	396	5250	3070	8830	4760	8300	9890	2890	6230	1610	4620	3140
11	483	5200	3720	5780	3580	7980	8930	2010	4710	1520	4690	3070
12	3180	5080	3020	3430	796	8450	9780	1930	2300	3060	4050	3460
13	1690	5390	3350	5740	2980	7630	10200	1590	1880	3450	6910	3440
14	2020	4100	6080	4270	3000	8510	9260	800	3450	3100	4250	6740
15	3620	3620	7480	6740	6370	10000	10500	750	5320	4140	5370	5160
16	3550	8800	8570	5450	7490	10100	9040	754	4250	4330	5900	7250
17	2360	8950	3070	5460	7280	10900	4030	1560	4320	2360	5790	5510
18	3620	8940	3900	9050	4480	11100	4410	1500	4280	1920	4220	3860
19	6180	6430	1880	10200	2220	6350	6080	1980	3830	2490	5710	2040
20	7100	5590	3810	12400	438	371	5580	2060	3870	3470	5760	3750
21	6300	500	7250	6960	1200	333	5990	1110	3620	3790	2980	5350
22	3450	383	6840	6920	9110	3560	6390	1150	4050	3560	3050	5390
23	2100	2430	7380	617	5590	7930	9370	1120	3950	3440	5520	5750
24	400	1100	10700	559	3660	14100	1830	1160	3450	3730	5200	5300
25	408	817	8510	5420	4410	13000	379	1530	3460	3460	6070	3500
26	2610	738	9890	4350	4190	8120	1770	1110	1980	4020	6100	2100
27	3410	1080	9000	3830	2450	10400	2550	1210	1940	5350	5260	5240
28	3610	383	11300	3450	2760	10700	1130	1550	2500	6150	4190	5420
29	3980	404	9690	3680	---	12400	4970	1150	3120	6480	3110	5090
30	3990	5780	9380	2220	---	12100	450	792	3140	5610	6880	5040
31	2840	---	8820	2100	---	10200	---	713	---	3860	5750	---
TOTAL	87035	120140	194060	197416	110864	261784	212529	44889	102950	103940	157790	141820
MEAN	2808	4005	6260	6368	3959	8445	7084	1448	3432	3353	5090	4727
MAX	7100	8950	11300	12400	9110	14100	11100	2890	6230	6480	6910	7250
MIN	396	383	1880	559	396	333	379	713	1130	1520	2980	2040

CAL YR 1992 MEAN‡ 3682 CFSM‡ 1.10 IN.‡ 14.99  
WTR YR 1993 MEAN‡ 4539 CFSM‡ 1.36 IN.‡ 18.43

‡ Adjusted for change in contents in Norris and Melton Hill Lakes.

NOTE.--Contents (cfs-days) for adjustments furnished by Tennessee Valley Authority.

TENNESSEE RIVER BASIN

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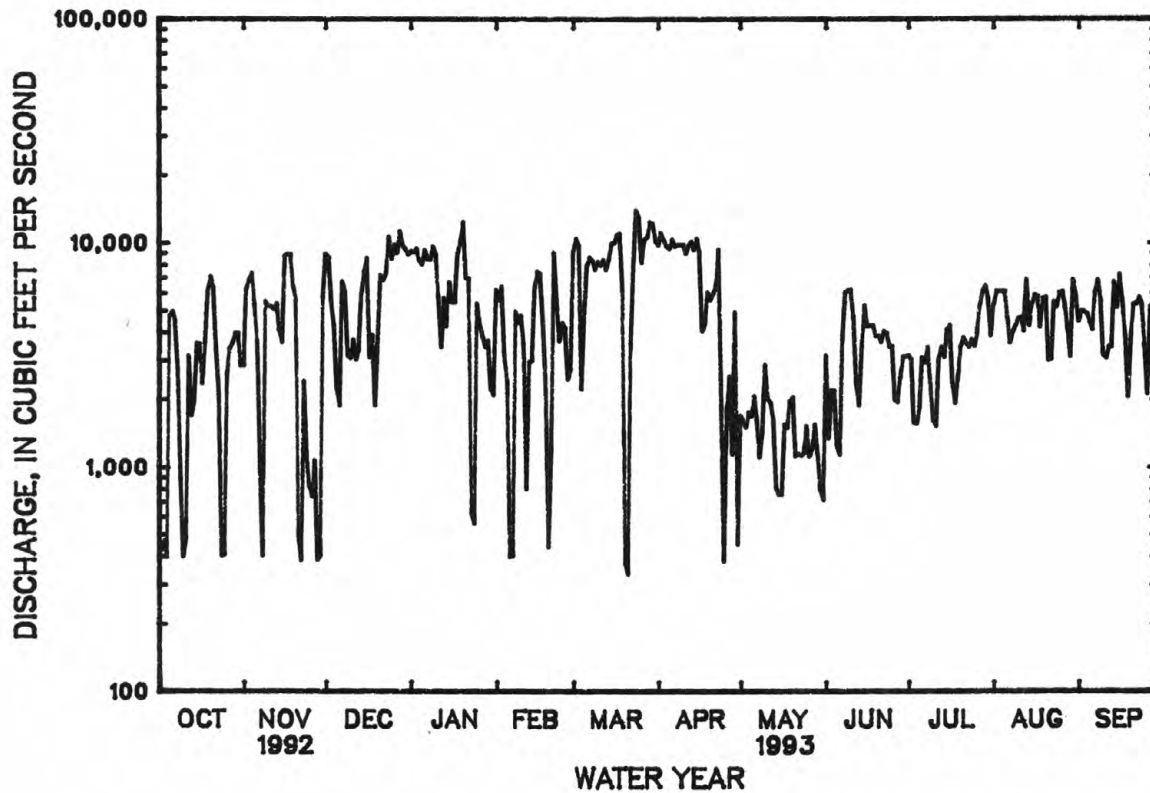
03535912 CLINCH RIVER AT MELTON HILL DAM (TAILWATER), TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1979 - 1993, BY WATER YEAR (WY)

MEAN	3721	3477	5208	6659	6486	5318	3150	3520	4456	4904	5342	4646
MAX	8130	9043	15500	11830	14920	13360	7084	14840	9728	7332	8208	6736
(WY)	1990	1990	1992	1979	1990	1979	1993	1984	1989	1979	1979	1989
MIN	1754	1363	1413	2203	1537	438	720	833	1868	2069	2259	1834
(WY)	1984	1989	1988	1981	1981	1981	1988	1988	1992	1988	1988	1988

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1979 - 1993
ANNUAL TOTAL	1350639	1735217	
ANNUAL MEAN	3690	4754	
HIGHEST ANNUAL MEAN			4846
LOWEST ANNUAL MEAN			7056
HIGHEST DAILY MEAN	17400	14100	2235
LOWEST DAILY MEAN	325	333	29900
ANNUAL SEVEN-DAY MINIMUM	419	990	a.00
10 PERCENT EXCEEDS	7310	9340	3.1
50 PERCENT EXCEEDS	3100	4250	9100
90 PERCENT EXCEEDS	495	1110	4100
			773

a Also occurred many other days since closure of Melton Hill Dam in August 1962.



## TENNESSEE RIVER BASIN

03535912 CLINCH RIVER AT MELTON HILL DAM (TAILWATER), TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1981 to September 1986.

WATER TEMPERATURES: March 1981 to September 1986.

INSTRUMENTATION.--Water-quality monitor from March 1981 to Sept. 1986.

REMARKS.--Flow regulated by Melton Hill and Norris Lakes.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 449 microsiemens, Oct. 28, 1981; minimum, 186 microsiemens, May 29, 1982.

WATER TEMPERATURES: Maximum, 23.5°C, May 17, 1982; minimum, 4.0°C, Jan. 27, 1983, Jan. 21, 22, 1984.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI KF AGAR (COLS. PER 100 ML)
OCT 29...	1030	3000	285	8.1	14.5	741	2.0	--	--	36	36
FEB 23...	1125	100	279	8.1	8.5	--	2.7	--	--	25	27
APR 20...	1035	1800	266	8.1	11.5	741	4.4	10.8	102	K1	K2
JUN 17...	1455	1800	271	8.2	17.5	751	2.3	9.0	96	K1	K2
AUG 11...	1525	18000	260	7.9	17.0	748	2.1	8.7	92	K4	K3

DATE	HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)
OCT 29...	130	9	37	10	4.9	7	0.2	1.3	124	22	3.4
FEB 23...	130	9	36	10	6.1	9	0.2	1.7	122	24	3.8
APR 20...	120	8	34	8.8	4.9	8	0.2	1.6	113	21	3.6
JUN 17...	130	16	35	10	5.3	8	0.2	1.5	113	22	3.3
AUG 11...	120	17	32	9.1	4.4	7	0.2	1.4	100	21	3.4

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
OCT 29...	0.10	4.5	170	160	0.23	1380	0.010	0.420	0.390	0.01	0.010
FEB 23...	<0.10	2.9	152	160	0.21	41.0	0.010	0.350	0.360	0.01	0.010
APR 20...	<0.10	3.9	154	148	0.21	748	<0.010	0.550	0.550	0.01	0.010
JUN 17...	0.10	3.7	149	151	0.20	724	<0.010	0.480	0.480	0.03	0.020
AUG 11...	<0.10	5.0	146	139	0.20	7100	<0.010	0.580	0.580	0.03	0.020

K--Results based on non-ideal colony count.

03535912 CLINCH RIVER AT MELTON HILL DAM (TAILWATER), TN--Continued

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)
OCT 29...	0.20	0.020	<0.010	--	<0.010	<10	39	<3	4	6
FEB 23...	<0.20	0.010	<0.010	--	<0.010	<10	30	<3	5	<4
APR 20...	<0.20	0.020	0.030	--	<0.010	10	27	<3	<3	<4
JUN 17...	<0.20	0.020	<0.010	--	<0.010	20	31	<3	<3	<4
AUG 11...	<0.20	<0.010	<0.010	0.03	0.010	--	--	--	--	--

DATE	MANGANESE, DIS- SOLVED (UG/L AS MN)	MOLYBDENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELENIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRONTIUM, DIS- SOLVED (UG/L AS SR)	VANADIUM, DIS- SOLVED (UG/L AS V)	SEDIMENT, SUS- PENDED (MG/L)	SEDIMENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 29...	<1	<10	1	<1	<1.0	97	<6	15	122	100
FEB 23...	2	<10	<1	<1	<1.0	110	<6	5	1.4	96
APR 20...	1	<10	<1	<1	<1.0	88	<6	7	34	86
JUN 17...	2	<10	<1	<1	<1.0	97	<6	--	--	--
AUG 11...	--	--	--	--	--	--	--	8	389	90



## TENNESSEE RIVER BASIN

03536320 WHITEOAK CREEK NEAR MELTON HILL, TN

LOCATION.--Lat 35°55'56", long 84°18'20", Roane County, Hydrologic unit 06010207, on right bank 1.8 mi upstream from Melton Branch, 5.5 mi southwest of Oak Ridge, and at mile 3.4.

DRAINAGE AREA.--1.31 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1987 to current year.

REVISED RECORD.--WDR TN-90-1: 1988, 1989 (M).

GAGE.--Water-stage recorder. Datum of gage is 807.57 ft above sea level.

REMARKS.--No estimated daily discharge. Records fair. Periodic observations of water temperature are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 23	1415	*176	*2.69	No other peak greater than base discharge.			

Minimum discharge, 0.01 ft<sup>3</sup>/s, July 29, 30, 31, gage height, 0.32 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.12	.11	1.1	.48	1.1	3.5	1.0	.13	.15	.02	.02
2	.04	3.1	.10	.81	.30	1.2	2.6	.81	.10	.07	.03	.03
3	.04	.27	.10	.54	.17	2.2	2.0	.62	.08	.07	.02	.46
4	1.6	1.9	.30	1.2	.12	7.3	1.8	1.1	.08	.05	.40	.97
5	.25	.60	.16	2.4	.12	3.9	2.5	.50	.08	.05	.05	.06
6	.13	.28	.11	1.5	.11	2.5	1.7	.37	.06	.06	1.8	.04
7	.09	.19	.11	1.6	.11	2.0	1.5	.30	.07	.06	.13	.04
8	.10	.14	.09	3.9	.10	1.6	1.4	.23	.06	.06	.06	.03
9	.07	.12	.09	2.5	.10	1.3	4.4	.17	.05	.06	.05	.03
10	.06	.10	.51	2.0	.10	1.2	3.1	.12	.04	.06	.04	.03
11	.05	.08	.28	5.0	.63	.93	2.5	.12	.03	.06	.14	.02
12	.05	2.2	.16	3.9	.49	.82	2.0	.13	.04	.06	.14	.02
13	.05	.32	.12	2.8	.20	1.1	1.7	.37	.30	.07	.35	.02
14	.06	.18	.11	2.0	.15	1.0	1.4	.24	.06	.05	.11	.02
15	.06	.13	.10	1.6	.13	.95	2.6	.15	1.2	.50	.05	.26
16	.06	.10	1.7	1.3	2.5	1.5	1.8	.10	.09	.07	.04	.10
17	.05	.09	11	.98	1.2	5.0	1.5	.09	.08	.42	.03	.04
18	.06	.08	3.3	.68	1.1	4.4	1.4	.19	.06	.09	.53	.03
19	.05	.08	1.9	.42	.99	3.0	1.2	.87	.33	.07	.07	.02
20	.05	.08	7.4	.24	.79	2.3	2.7	.20	.08	.04	.09	.02
21	.06	1.0	3.5	1.0	12	1.8	2.1	.36	.10	.04	.05	.02
22	.06	5.8	2.6	.50	6.9	1.5	1.8	.16	.07	.03	.03	.02
23	.04	1.8	15	.39	3.5	29	1.6	.11	.06	.02	.03	.88
24	.04	3.4	6.4	6.6	2.2	13	1.4	.09	.06	.02	.03	.10
25	.04	2.1	3.4	3.5	1.8	5.6	1.6	.14	.06	.02	.02	.43
26	.04	1.4	2.1	2.5	2.1	4.7	3.7	.11	.05	.02	.02	.38
27	.10	.87	1.9	1.8	1.5	11	1.8	.09	.04	.08	.02	.74
28	.40	.45	4.3	1.4	1.2	5.8	1.6	.08	.04	.02	.03	.10
29	.08	.17	2.5	1.0	---	3.6	1.4	.12	.05	.02	.03	.06
30	.95	.13	1.9	.77	---	2.5	1.2	.08	.61	.01	.02	.04
31	.26	---	1.5	.60	---	5.2	---	.56	---	.02	.02	---
TOTAL	5.03	27.28	72.85	56.53	41.09	129.00	61.5	9.58	4.16	2.42	4.45	5.03
MEAN	.16	.91	2.35	1.82	1.47	4.16	2.05	.31	.14	.078	.14	.17
MAX	1.6	5.8	15	6.6	12	29	4.4	1.1	1.2	.50	1.8	.97
MIN	.04	.08	.09	.24	.10	.82	1.2	.08	.03	.01	.02	.02
CFSM	.12	.69	1.79	1.39	1.12	3.18	1.56	.24	.11	.06	.11	.13
IN.	.14	.77	2.07	1.61	1.17	3.66	1.75	.27	.12	.07	.13	.14

TENNESSEE RIVER BASIN

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03536320 WHITEOAK CREEK NEAR MELTON HILL, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

MEAN	.42	.82	2.93	2.50	3.27	2.79	1.05	.74	1.14	.50	.38	.49
MAX	1.87	2.63	7.72	4.67	7.24	4.16	2.05	2.27	3.93	1.13	1.77	2.36
(WY)	1990	1990	1991	1989	1991	1993	1993	1990	1989	1989	1990	1989
MIN	.058	.13	.22	1.44	.56	1.26	.24	.12	.034	.078	.047	.10
(WY)	1988	1988	1988	1988	1988	1988	1992	1988	1988	1993	1987	1990

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1987 - 1993

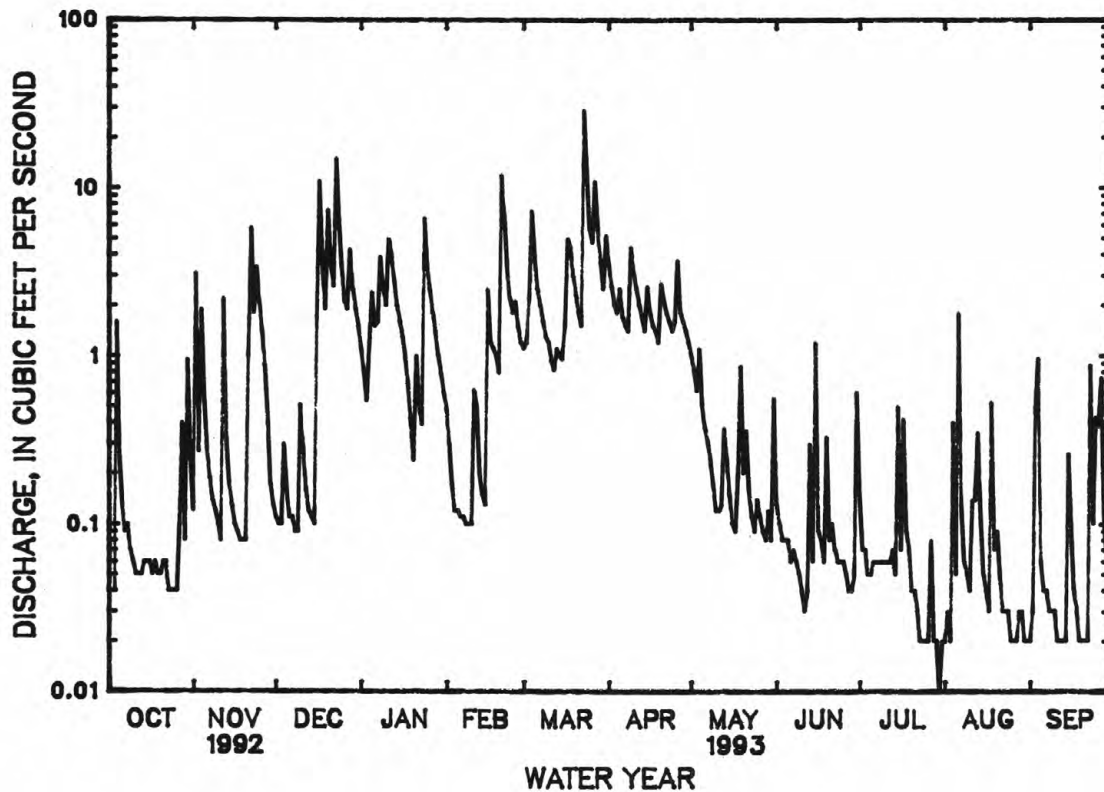
ANNUAL TOTAL	279.96	418.92	
ANNUAL MEAN	.76	1.15	1.45
HIGHEST ANNUAL MEAN			2.19
LOWEST ANNUAL MEAN			.42
HIGHEST DAILY MEAN	15 Dec 23	29 Mar 23	80 Dec 23 1990
LOWEST DAILY MEAN	.03 Sep 15	.01 Jul 30	a.01 Sep 5 1987
ANNUAL SEVEN-DAY MINIMUM	.04 Sep 11	.02 Jul 28	.02 Jun 16 1988
INSTANTANEOUS PEAK FLOW		b176 Mar 23	b327 Aug 9 1990
INSTANTANEOUS PEAK STAGE		2.69 Mar 23	4.12 Aug 9 1990
INSTANTANEOUS LOW FLOW		c.01 Jul 29	d.00 Jun 25 1988
ANNUAL RUNOFF (CFSM)	.58	.88	1.10
ANNUAL RUNOFF (INCHES)	7.95	11.90	15.00
10 PERCENT EXCEEDS	2.0	2.9	3.1
50 PERCENT EXCEEDS	.14	.18	.19
90 PERCENT EXCEEDS	.05	.03	.05

a Also occurred on June 18, 19, 28, July 9, 10, 1988; July 30, 1993.

b From rating curve extended above 80 ft<sup>3</sup>/s.

c Also occurred on July 30, 31.

d Also occurred on July 9, 10, 11, 1988.



## TENNESSEE RIVER BASIN

03536380 WHITEOAK CREEK NEAR WHEAT, TN

LOCATION.--Lat 35°55'30", long 84°18'52", Roane County, Hydrologic Unit 06010207, on left bank, 1.1 mi upstream from Melton Branch, 6.2 mi southwest of Oak Ridge, and at mile 2.7.

DRAINAGE AREA.--2.10 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1986 to current year.

REVISED RECORD.--WDR TN-90-1: 1988-89 (M).

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 775.44 ft above sea level.

REMARKS.--No estimated daily discharge. Records fair. Flow regulated by Oak Ridge National Laboratory.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 160 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 23	1400	*219	*4.80	No other peaks greater than base discharge.			

Minimum discharge, 1.5 ft<sup>3</sup>/s, Sept. 7, gage height, 0.27 ft; minimum daily, 1.6 ft<sup>3</sup>/s, Sept. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.5	3.2	5.3	4.2	5.2	12	4.6	2.6	2.9	1.9	2.1
2	2.0	11	3.0	4.5	3.8	5.7	9.5	4.2	2.4	2.4	2.0	2.3
3	2.0	3.7	2.9	4.1	3.5	8.3	7.7	3.9	2.4	2.1	2.0	3.8
4	8.1	9.4	3.5	6.4	3.3	20	6.9	6.0	2.4	2.0	3.9	5.3
5	3.4	5.4	3.0	10	3.2	12	9.5	3.9	2.2	2.0	2.1	1.8
6	2.7	4.2	2.7	6.5	3.1	9.0	7.0	3.6	2.1	2.0	9.3	1.6
7	2.5	3.6	2.6	6.8	3.0	7.3	6.3	3.3	2.3	2.1	2.4	1.8
8	2.4	3.2	2.5	13	3.0	6.3	6.0	3.1	2.3	2.1	2.2	2.1
9	2.3	2.9	2.5	9.3	2.9	5.4	14	3.0	2.3	2.0	2.1	2.0
10	2.2	2.8	3.9	7.7	2.9	4.9	10	3.1	2.3	2.1	2.1	2.0
11	2.2	2.5	3.3	15	4.9	4.4	8.9	3.1	2.1	2.0	2.5	1.9
12	2.1	9.7	3.0	12	4.4	4.4	7.4	3.1	1.8	2.1	2.5	1.9
13	2.2	4.2	2.9	9.5	3.5	5.2	6.4	4.1	2.7	2.2	3.2	1.8
14	2.2	3.6	2.7	7.6	3.2	4.9	5.8	3.2	1.9	2.1	2.2	1.8
15	2.2	3.3	2.6	6.4	3.1	4.9	10	3.0	5.7	4.2	2.1	3.0
16	2.3	3.1	8.7	5.8	11	6.9	7.5	3.0	2.1	2.2	2.1	2.3
17	2.2	2.8	27	5.0	5.9	16	6.2	2.9	2.0	3.9	2.0	2.0
18	2.2	2.6	10	4.4	5.5	13	5.6	3.4	2.0	2.2	3.2	2.0
19	2.2	2.4	7.1	4.0	4.9	9.8	5.3	5.6	3.5	2.2	2.1	1.9
20	2.2	2.3	20	3.8	4.6	8.0	9.5	3.1	2.2	2.1	2.1	1.9
21	2.2	6.0	11	6.5	30	6.8	8.2	3.5	2.5	2.1	1.9	1.8
22	2.2	18	9.4	4.3	17	6.2	7.1	2.9	2.4	2.1	1.8	1.8
23	2.2	7.8	32	3.9	11	57	6.4	2.8	2.4	2.1	1.8	5.7
24	2.1	12	16	19	8.1	27	5.5	2.9	2.3	2.0	1.9	2.4
25	2.1	8.9	10	12	7.2	15	6.2	2.9	2.2	2.0	1.9	3.5
26	2.2	6.4	7.9	8.7	7.9	14	12	2.9	2.1	2.1	1.9	3.4
27	2.4	4.9	7.4	7.3	6.4	24	7.0	2.6	2.0	2.1	1.9	5.2
28	3.7	4.1	14	6.3	5.5	15	6.3	2.4	2.2	2.0	1.9	2.4
29	2.4	3.5	9.2	5.3	---	11	5.6	2.5	2.2	2.0	2.0	2.1
30	5.2	3.3	7.3	4.7	---	8.9	5.0	2.3	5.3	2.0	2.0	2.0
31	3.2	---	6.2	4.3	---	16	---	4.2	---	1.9	2.0	---
TOTAL	81.5	160.1	247.5	229.4	177.0	362.5	230.8	105.1	74.9	69.3	75.0	75.6
MEAN	2.63	5.34	7.98	7.40	6.32	11.7	7.69	3.39	2.50	2.24	2.42	2.52
MAX	8.1	18	32	19	30	57	14	6.0	5.7	4.2	9.3	5.7
MIN	2.0	2.3	2.5	3.8	2.9	4.4	5.0	2.3	1.8	1.9	1.8	1.6

TENNESSEE RIVER BASIN

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03536380 WHITEOAK CREEK NEAR WHEAT, TN--Continued

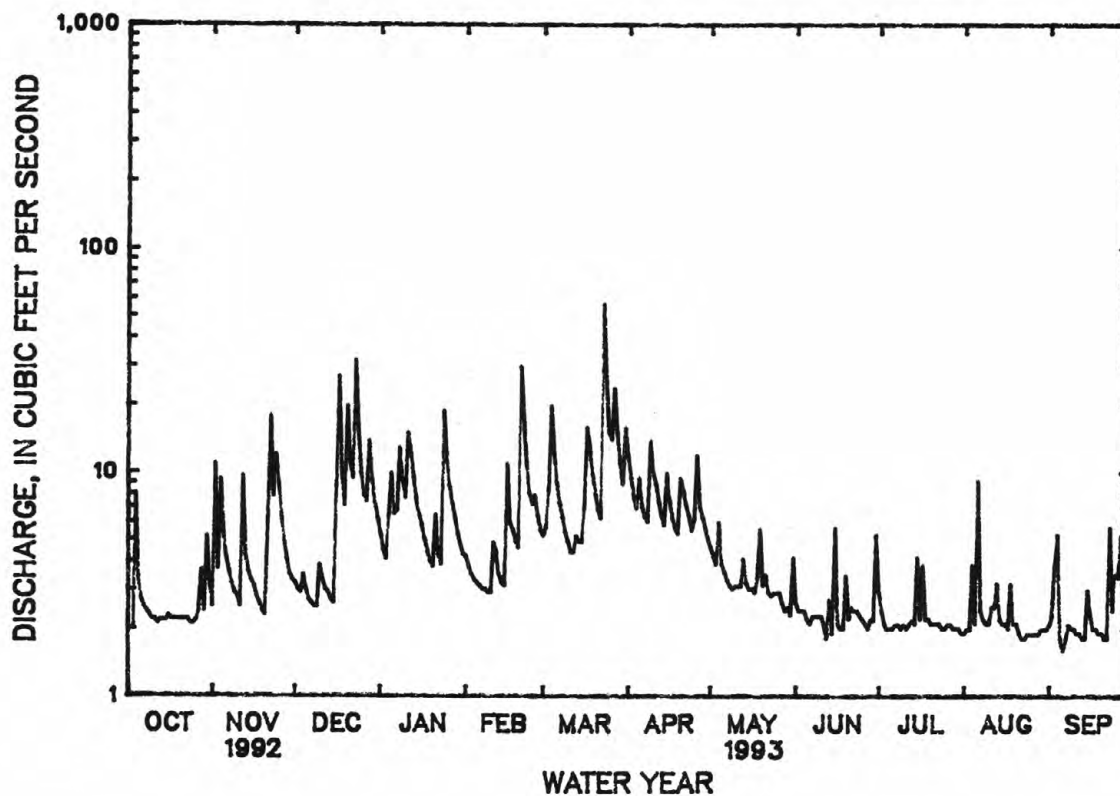
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

MEAN	3.34	4.70	8.15	8.17	9.31	8.56	5.46	4.55	4.92	4.04	3.39	3.54
MAX	6.46	8.65	15.7	12.0	16.7	11.7	7.69	8.24	12.0	6.18	6.15	7.90
(WY)	1990	1990	1991	1989	1990	1993	1993	1990	1989	1989	1990	1989
MIN	2.44	2.93	3.33	5.94	4.71	5.59	3.73	2.52	2.50	2.24	2.42	2.48
(WY)	1992	1991	1988	1988	1988	1988	1992	1992	1993	1993	1993	1992

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1987 - 1993
ANNUAL TOTAL	1638.5	1888.7	
ANNUAL MEAN	4.48	5.17	5.84
HIGHEST ANNUAL MEAN			7.29
LOWEST ANNUAL MEAN			3.77
HIGHEST DAILY MEAN	35 Jan 3	57 Mar 23	106 Dec 23 1990
LOWEST DAILY MEAN	2.0 May 25	1.6 Sep 6	1.6 Sep 6 1993
ANNUAL SEVEN-DAY MINIMUM	2.0 Sep 11	1.9 Aug 21	1.9 Aug 21 1993
INSTANTANEOUS PEAK FLOW		a219 Mar 23	a384 Dec 23 1990
INSTANTANEOUS PEAK STAGE		4.80 Mar 23	b6.09 Dec 23 1990
INSTANTANEOUS LOW FLOW		1.5 Sep 7	1.5 Sep 7 1993
10 PERCENT EXCEEDS	8.2	10	10
50 PERCENT EXCEEDS	3.2	3.2	3.6
90 PERCENT EXCEEDS	2.2	2.0	2.3

a From rating curve extended 75 ft<sup>3</sup>/s based on theoretical parshall flume rating.

b From floodmarks.



## TENNESSEE RIVER BASIN

03536440 NORTHWEST TRIBUTARY NEAR OAK RIDGE, TN

LOCATION.--Lat 35°55'18", Long 84°19'13", Roane County, Hydrologic Unit 06010207, on left bank 750 ft upstream of Lagoon Road, 6 mi southwest of Oak Ridge, and at mile 0.2.

DRAINAGE AREA.--0.67 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1987 to current year.

REVISED RECORD.--WDR TN-89-1: 1987-88 (M).

GAGE.--Water-stage recorder and concrete V-notch weir. Datum of gage is 774.36 ft above sea level.

REMARKS.--Records fair. Flow regulated at times by Oak Ridge National Laboratory.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 23	1415	*94	*3.06	No other peak greater than base discharge.			

Minimum discharge, 0.18 ft<sup>3</sup>/s, several days, gage height, 0.25 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.34	.38	.71	.44	.73	2.4	.43	.24	.31	.19	.35
2	.28	2.3	.31	.59	.40	.73	1.5	.36	.24	.28	.20	.34
3	.26	.72	.26	.51	.38	1.4	1.0	.32	.20	.24	.23	.50
4	1.1	2.1	.39	.80	.33	5.7	.80	.61	.24	.22	.41	.67
5	.59	1.1	.35	2.5	.33	2.4	1.3	.34	.24	.21	.22	.34
6	.41	.70	.30	1.4	.29	1.5	1.0	.31	.18	.21	.92	.33
7	.37	.48	.30	1.1	.28	1.1	.81	.30	.25	.23	.33	.33
8	.34	.38	.30	3.0	.26	.90	.72	.24	.30	.22	.28	.27
9	.32	.37	.35	1.8	.27	.73	3.2	.22	.25	.24	.28	.29
10	.26	.35	.56	1.3	.28	.63	2.4	.23	.26	.22	.30	.38
11	.25	.33	.56	3.3	.48	.51	1.5	.28	.27	.21	.35	.32
12	.24	2.1	.47	2.6	.87	.49	1.1	.24	.24	.21	.38	.31
13	.24	1.0	.42	1.8	.49	.58	.80	.34	.26	.24	.41	.28
14	e.23	.56	.36	1.2	.40	.57	.65	.26	.24	.24	.31	.20
15	e.23	.43	.38	.94	.35	.55	1.8	.23	.43	.35	.29	.32
16	e.24	.38	1.7	.75	2.3	1.0	1.5	.20	.24	.25	.28	.25
17	.24	.37	7.9	.62	1.1	4.5	.88	.25	.36	.35	.31	.24
18	.23	.33	2.0	.54	.79	3.3	.69	.30	.24	.24	.51	.22
19	.23	.33	1.2	.59	.64	2.1	.57	.57	.30	.25	.31	.21
20	.26	.29	4.8	.50	.55	1.6	1.5	.31	.22	.26	.32	.21
21	.25	.93	2.1	.94	8.2	1.2	1.5	.38	.22	.24	.30	.23
22	.24	4.8	1.5	.69	4.1	1.0	.93	.27	.23	.23	.29	.22
23	.24	1.5	9.5	.53	2.0	19	.75	.24	.21	.25	.27	.53
24	.23	2.5	3.7	5.8	1.3	6.7	.61	.23	.23	.23	.32	.25
25	.23	1.7	1.9	2.7	1.0	2.9	.64	.27	.24	.21	.33	.32
26	.23	1.1	1.3	1.6	1.1	2.2	2.7	.26	.23	.21	.29	.33
27	.28	.71	1.0	1.1	1.0	6.3	1.1	.22	.20	.21	.35	.53
28	.41	.54	3.2	.82	.79	3.0	.81	.23	.23	.27	.33	.25
29	.26	.44	1.7	.66	---	1.8	.64	.21	.26	.25	.33	.20
30	.63	.44	1.2	.52	---	1.3	.55	.19	.55	.24	.33	.20
31	.58	---	.93	.46	---	2.4	---	.34	---	.20	.34	---
TOTAL	10.18	29.62	51.32	42.37	30.72	78.82	36.35	9.18	7.80	7.52	10.31	9.42
MEAN	.33	.99	1.66	1.37	1.10	2.54	1.21	.30	.26	.24	.33	.31
MAX	1.1	4.8	9.5	5.8	8.2	19	3.2	.61	.55	.35	.92	.67
MIN	.23	.29	.26	.46	.26	.49	.55	.19	.18	.20	.19	.20

e Estimated



TENNESSEE RIVER BASIN

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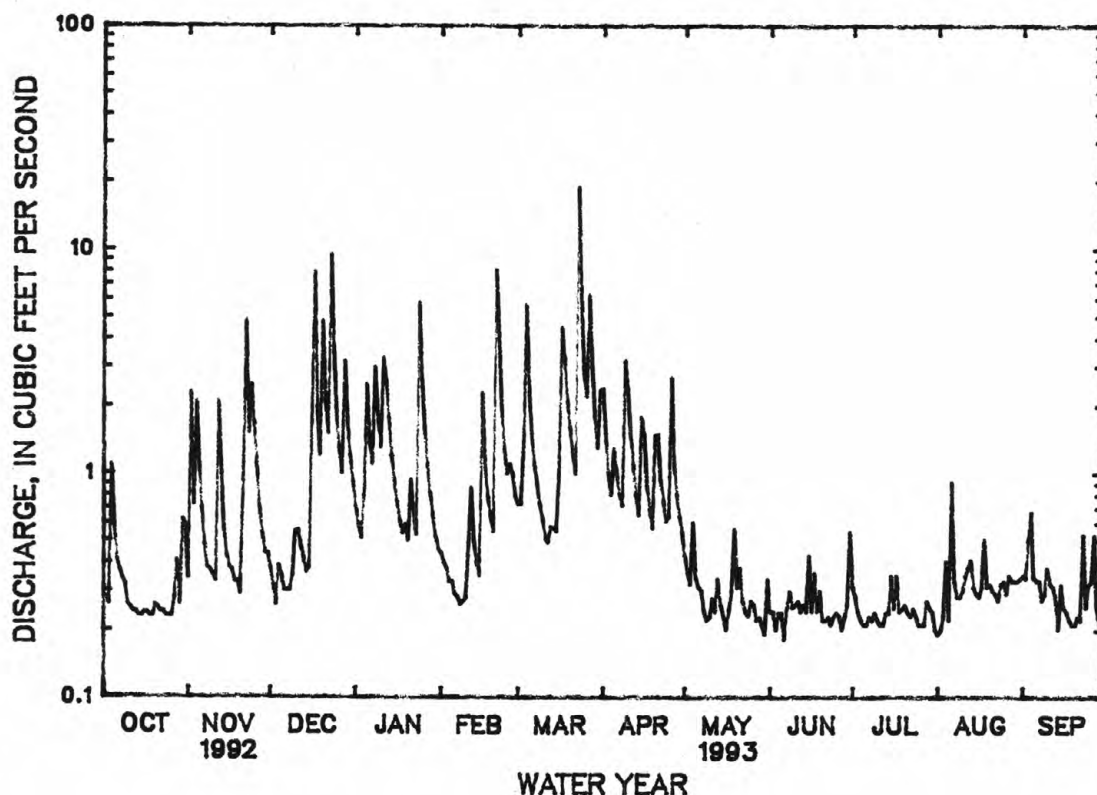
03536440 NORTHWEST TRIBUTARY NEAR OAK RIDGE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

MEAN	.60	.90	1.92	1.79	2.19	1.92	.94	.83	.89	.72	.53	.64
MAX	1.33	1.78	3.82	3.07	3.96	2.54	1.34	1.95	3.09	1.24	.77	1.51
(WY)	1990	1990	1991	1989	1990	1993	1989	1990	1989	1989	1990	1989
MIN	.33	.44	.70	1.09	.98	1.08	.64	.30	.26	.24	.33	.31
(WY)	1992	1992	1988	1991	1988	1992	1992	1993	1993	1993	1992	1993

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1987 - 1993
ANNUAL TOTAL	278.52	323.61	
ANNUAL MEAN	.76	.89	1.15
HIGHEST ANNUAL MEAN			1.62 1989
LOWEST ANNUAL MEAN			.82 1988
HIGHEST DAILY MEAN	11 Jan 3	19 Mar 23	32 Dec 23 1990
LOWEST DAILY MEAN	.23 Sep 1	.18 Jun 6	.18 Jun 6 1993
ANNUAL SEVEN-DAY MINIMUM	.23 Oct 13	.22 Jul 5	.22 Jul 5 1993
INSTANTANEOUS PEAK FLOW		a94 Mar 23	a182 Dec 23 1990
INSTANTANEOUS PEAK STAGE		3.06 Mar 23	3.73 Dec 23 1990
INSTANTANEOUS LOW FLOW		b.18 May 30	b.18 Jun 1 1988
10 PERCENT EXCEEDS	1.4	2.0	2.0
50 PERCENT EXCEEDS	.44	.36	.62
90 PERCENT EXCEEDS	.27	.23	.31

a From rating curve extended above 22 ft<sup>3</sup>/s based on theoretical weir formula.  
b Also occurred several times in the 1993 water year.



## TENNESSEE RIVER BASIN

03536450 FIRST CREEK NEAR OAK RIDGE, TN

LOCATION.--Lat 35°55'21", long 84°19'10", Roane County, Hydrologic Unit 06010207, on left bank, 5.9 mi southwest of Oak Ridge, and at mile 0.1.

DRAINAGE AREA.--0.33 mi<sup>2</sup>.

PERIOD OF RECORD.--February 1987 to current year.

REVISED RECORDS.--WDR TN-89-1: 1987-88 (M).

GAGE.--Water-stage recorder and concrete weir. Datum of gage is 772.78 ft above sea level.

REMARKS.--Records fair. Flow regulated at times by Oak Ridge National Laboratory.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 22	1230	43	2.68	Mar. 23	1355	*49	*2.75
Feb. 21	1245	31	2.49	June 30	1900	31	2.48

Minimum discharge, 0.14 ft<sup>3</sup>/s, Sept. 12, 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	.24	.37	1.1	.77	1.1	2.1	.95	.33	.41	.18	.17
2	.18	1.8	.34	.88	.67	1.2	1.8	.84	.31	.33	.20	.18
3	.17	.59	.30	.73	.56	1.7	1.6	.75	.31	.28	.19	.54
4	1.3	1.7	.40	.85	.53	3.4	1.4	1.0	.30	.26	.57	1.4
5	.38	.85	.32	1.9	.52	2.2	1.9	.69	.28	.25	.24	.54
6	.27	.54	.28	1.4	.52	1.8	1.5	.63	.26	.24	1.7	.49
7	.22	.38	.28	1.5	.49	1.6	1.3	.60	.27	.24	.38	.41
8	.22	.32	.27	2.5	.47	1.3	1.3	.56	.27	.58	.30	.25
9	.20	.27	.27	1.8	.43	1.2	2.8	.52	.25	.22	.25	.23
10	.20	.25	.48	1.6	.41	1.1	2.1	.47	.24	.22	.20	.17
11	.19	.24	.38	2.5	.77	.91	1.8	.43	.33	.23	.25	.15
12	.19	1.7	.33	2.2	.73	.85	1.6	.41	.52	.23	.27	.15
13	.19	.75	.31	1.9	e.56	.99	1.4	.56	.58	.23	.36	.16
14	.19	.52	.30	1.6	e.52	.97	1.3	.42	.54	.22	.21	.20
15	.19	.39	.30	1.4	e.50	.92	2.0	.39	.94	.48	.20	.40
16	.19	.34	1.5	1.2	e1.7	1.4	1.5	.37	.58	.25	.19	.30
17	.18	.30	4.5	1.0	1.2	2.9	1.3	.35	.57	.51	.19	.28
18	.18	.27	2.1	.78	1.2	2.4	1.2	.41	.47	.27	.40	.25
19	.18	.26	1.5	.63	1.1	2.1	1.2	.77	.39	.26	.20	.24
20	.17	.25	3.4	.60	.99	1.8	1.9	.38	.25	.24	.20	.24
21	.18	.84	2.1	1.1	5.0	1.5	1.5	.43	.26	.24	.18	.25
22	.17	3.0	1.9	.79	3.0	1.3	1.4	.34	.25	.23	.18	.23
23	.17	1.4	5.1	.73	2.2	10	1.3	.33	.24	.22	.18	1.0
24	.18	2.2	3.0	2.2	1.7	5.5	1.2	.33	.25	.21	.18	.39
25	.17	1.7	2.2	2.1	1.6	3.1	1.4	.34	.25	.21	.18	.52
26	.18	1.2	1.7	1.8	1.7	2.9	2.3	.34	.24	.21	.17	.53
27	.20	.92	1.6	1.6	1.3	4.4	1.4	.32	.23	.20	.17	.99
28	.41	.67	2.5	1.4	1.2	2.9	1.3	.32	.24	.19	.17	.48
29	.20	.49	1.7	1.2	---	2.3	1.2	.31	.23	.20	.17	.40
30	.78	.40	1.6	.95	---	1.9	1.1	.30	.97	.19	.17	.34
31	.35	---	1.3	.81	---	2.7	---	.57	---	.18	.17	---
TOTAL	8.16	24.78	42.63	42.75	32.34	70.34	47.1	15.43	11.15	8.23	8.60	11.88
MEAN	.26	.83	1.38	1.38	1.15	2.27	1.57	.50	.37	.27	.28	.40
MAX	1.3	3.0	5.1	2.5	5.0	10	2.8	1.0	.97	.58	1.7	1.4
MIN	.17	.24	.27	.60	.41	.85	1.1	.30	.23	.18	.17	.15

e Estimated

## TENNESSEE RIVER BASIN

03536450 FIRST CREEK NEAR OAK RIDGE, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

MEAN	.38	.66	1.43	1.53	1.63	1.57	.99	.69	.65	.52	.36	.41
MAX	1.01	1.44	2.90	2.33	2.86	2.27	1.57	1.65	2.14	.94	.56	.96
(WY)	1990	1990	1991	1989	1990	1993	1993	1990	1989	1989	1990	1989
MIN	.20	.23	.28	.83	.75	.97	.72	.32	.32	.27	.27	.22
(WY)	1988	1988	1988	1988	1988	1988	1988	1992	1988	1993	1992	1990

## SUMMARY STATISTICS

## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

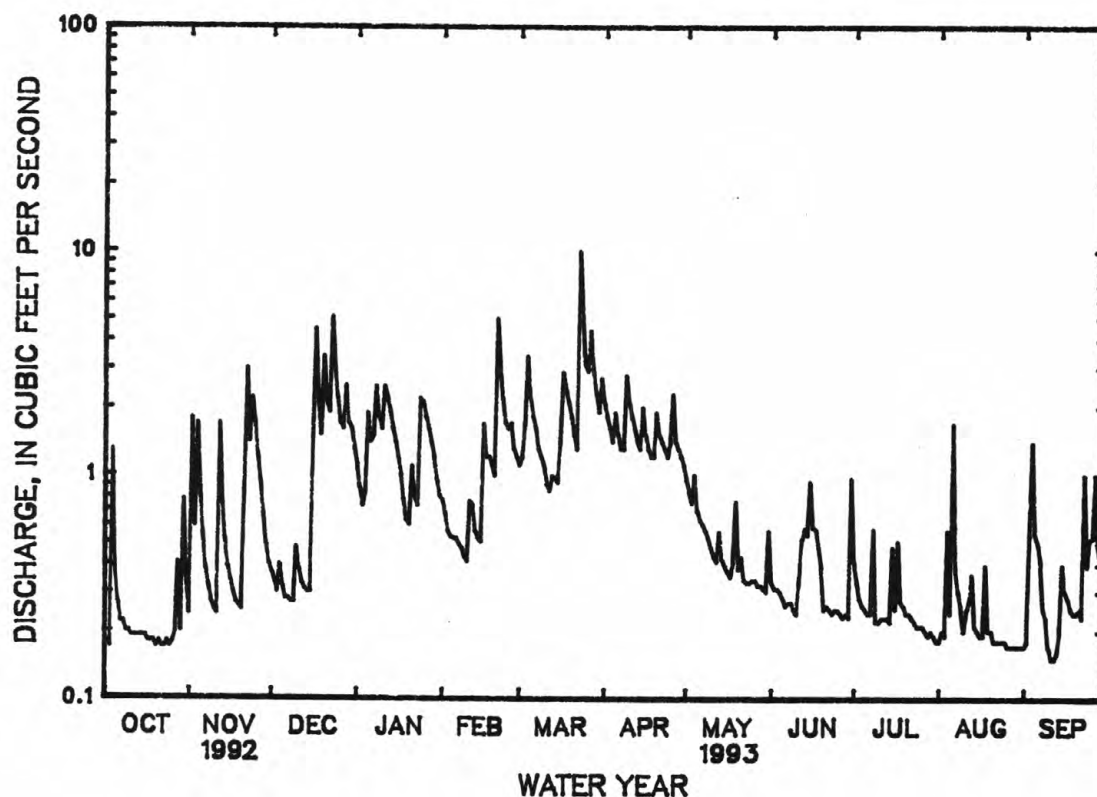
## WATER YEARS 1987 - 1993

ANNUAL TOTAL	257.84	323.39	
ANNUAL MEAN	.70	.89	
HIGHEST ANNUAL MEAN			.92 1990
LOWEST ANNUAL MEAN			1.15 1988
HIGHEST DAILY MEAN	6.4 Jan 3	10 Mar 23	.49 Dec 23 1990
LOWEST DAILY MEAN	.17 Oct 3	a.15 Sep 11	.14 Dec 2 1987
ANNUAL SEVEN-DAY MINIMUM	.17 Oct 19	.17 Aug 26	.15 Dec 1 1987
INSTANTANEOUS PEAK FLOW		b49 Mar 23	b295 Dec 23 1990
INSTANTANEOUS PEAK STAGE		2.75 Mar 23	4.10 Dec 23 1990
INSTANTANEOUS LOW FLOW		c.14 Sep 12	.09 Sep 13 1991
10 PERCENT EXCEEDS	1.6	1.9	1.9
50 PERCENT EXCEEDS	.39	.49	.48
90 PERCENT EXCEEDS	.20	.19	.21

a Also occurred on Sept. 12.

b From rating curve extending above 10 ft<sup>3</sup>/s on the basis of theoretical weir formula.

c Also occurred on Sept. 13, 14.



## TENNESSEE RIVER BASIN

03536550 WHITEOAK CREEK BELOW MELTON VALLEY DRIVE NEAR OAK RIDGE, TN

LOCATION.--Lat 35°55'10", long 84°19'02", Roane County, Hydrologic Unit 06010207, on right bank 200 ft downstream of bridge on Melton Valley Drive at Oak Ridge National Laboratory, 6.7 mi southwest of Oak Ridge, and at mile 2.2.

DRAINAGE AREA.--3.28 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1985 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and sharp-crested weir. Datum of gage is 766.35 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Oak Ridge National Laboratory. The control structure's weir plate and dam were modified June 14, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft<sup>3</sup>/s, and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 22	1300	203	4.85	Mar. 23	1415	*389	*5.62

Minimum discharge, 3.4 ft<sup>3</sup>/s, Oct. 25, gage height 2.55 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	5.0	5.8	9.5	7.3	9.6	21	8.7	5.4	7.1	4.5	5.1
2	4.1	18	5.6	7.9	6.8	10	17	7.7	5.2	5.9	5.0	5.6
3	4.2	7.4	5.4	7.4	6.5	14	14	7.2	5.3	5.5	5.2	7.4
4	14	17	6.6	11	6.2	34	13	11	5.6	5.3	8.2	10
5	6.5	10	5.8	18	6.2	20	17	7.4	5.2	5.2	5.4	4.9
6	5.3	7.7	5.1	12	5.8	15	13	6.9	4.7	5.0	16	4.6
7	4.9	6.5	5.0	12	5.8	13	12	6.7	5.3	5.2	6.2	4.8
8	4.7	5.8	5.0	22	5.8	11	11	6.4	5.3	7.0	5.6	5.0
9	4.8	5.4	5.0	16	5.7	10	24	5.9	5.5	5.5	5.2	5.0
10	4.4	5.5	7.4	13	5.7	9.3	20	6.3	5.6	5.3	5.1	4.6
11	4.2	5.3	6.4	24	8.9	8.2	16	6.6	5.5	5.2	5.7	4.3
12	4.1	16	5.8	20	8.6	7.9	14	5.9	5.2	5.5	6.0	4.0
13	4.4	8.4	5.5	16	6.6	9.3	12	7.3	6.6	5.7	7.0	4.2
14	4.7	6.8	5.4	13	5.8	9.0	11	6.0	5.4	5.6	5.6	4.2
15	4.5	5.9	5.5	11	5.6	8.9	17	5.5	11	8.4	5.3	6.3
16	4.5	5.7	15	10	19	12	14	5.5	6.0	5.4	5.0	5.3
17	4.1	5.4	43	8.7	11	28	11	6.0	5.5	7.8	5.0	4.8
18	4.0	5.4	18	7.9	9.4	22	9.9	6.3	5.5	4.9	7.0	4.6
19	4.1	5.3	13	7.2	8.5	17	9.8	10	7.5	5.2	5.2	4.4
20	4.3	4.9	32	6.9	8.1	14	16	5.9	5.2	5.3	5.3	4.4
21	4.3	11	19	11	45	12	15	6.4	5.7	5.5	4.8	4.4
22	4.3	29	16	8.0	29	11	13	5.4	5.8	5.3	4.6	4.2
23	4.2	14	48	6.9	18	87	12	5.0	5.9	5.4	4.9	9.9
24	4.0	20	26	29	14	44	10	5.5	5.8	4.9	4.9	5.3
25	3.8	15	18	19	13	26	11	5.6	5.6	4.8	4.9	7.3
26	4.2	11	14	15	14	23	22	5.4	5.6	5.0	4.9	6.9
27	4.9	8.6	12	12	11	40	13	5.3	5.3	5.1	4.9	9.7
28	6.5	7.2	23	11	10	26	12	5.4	5.6	5.4	4.8	5.2
29	4.4	6.0	16	9.2	---	19	11	5.1	5.7	5.3	4.7	4.9
30	9.2	5.8	13	8.3	---	15	10	4.9	10	5.1	4.8	4.6
31	6.4	---	11	7.6	---	26	---	7.8	---	4.9	4.9	---
TOTAL	156.3	285.0	422.3	390.5	307.3	611.2	421.7	201.0	177.5	172.7	176.6	165.9
MEAN	5.04	9.50	13.6	12.6	11.0	19.7	14.1	6.48	5.92	5.57	5.70	5.53
MAX	14	29	48	29	45	87	24	11	11	8.4	16	10
MIN	3.8	4.9	5.0	6.9	5.6	7.9	9.8	4.9	4.7	4.8	4.5	4.0

TENNESSEE RIVER BASIN

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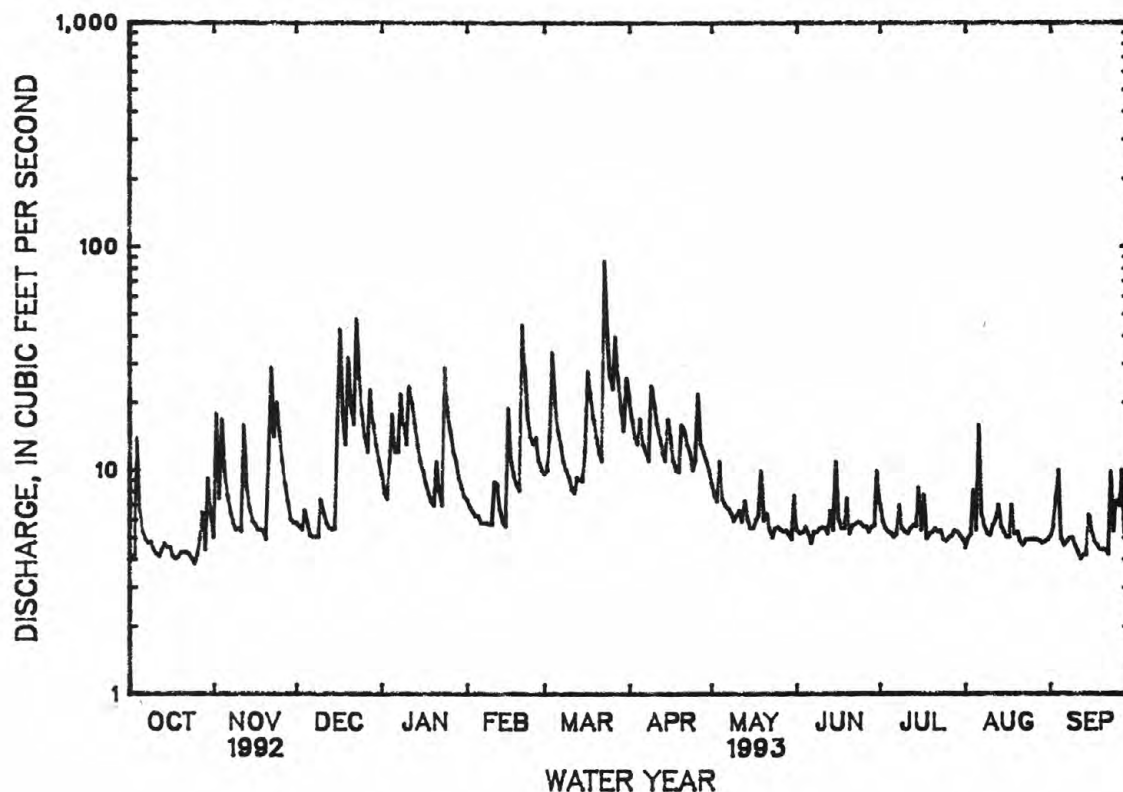
03536550 WHITEOAK CREEK BELOW MELTON VALLEY DRIVE NEAR OAK RIDGE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1993, BY WATER YEAR (WY)

MEAN	6.69	8.67	13.2	13.5	15.6	14.4	9.62	8.56	8.96	7.97	7.73	7.09
MAX	11.2	14.8	25.4	19.8	26.0	19.7	14.1	15.5	21.9	11.9	13.6	13.9
(WY)	1990	1990	1991	1989	1990	1993	1993	1990	1989	1989	1985	1989
MIN	5.04	5.94	6.39	7.10	8.84	10.4	6.96	6.09	5.76	5.57	5.62	5.29
(WY)	1993	1988	1988	1986	1988	1988	1986	1992	1992	1993	1992	1992

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1985 - 1993
ANNUAL TOTAL	3086.3	3488.0	
ANNUAL MEAN	8.43	9.56	10.1
HIGHEST ANNUAL MEAN			12.9
LOWEST ANNUAL MEAN			7.47
HIGHEST DAILY MEAN	56 Jan 3	87 Mar 23	150 Dec 23 1990
LOWEST DAILY MEAN	3.8 Oct 25	3.8 Oct 25	3.8 Oct 25 1992
ANNUAL SEVEN-DAY MINIMUM	4.1 Oct 19	4.1 Oct 19	4.1 Oct 19 1992
INSTANTANEOUS PEAK FLOW		a383 Mar 23	a711 Dec 23 1990
INSTANTANEOUS PEAK STAGE		5.60 Mar 23	6.51 Dec 23 1990
INSTANTANEOUS LOW FLOW		3.4 Oct 25	3.4 Oct 25 1992
10 PERCENT EXCEEDS	15	18	17
50 PERCENT EXCEEDS	6.3	6.4	7.1
90 PERCENT EXCEEDS	4.7	4.7	5.3

a From rating curve extended above 100 ft<sup>3</sup>/s on basis of theoretical weir formula.





## TENNESSEE RIVER BASIN

## 03537050 MELTON BRANCH TRIBUTARY (EAST SEVEN) NEAR OAK RIDGE, TN

LOCATION.--Lat 35°55'07", long 84°17'43", Roane County, Hydrologic Unit 06010207, on left bank 125 ft upstream from mouth, 1.2 mi southeast of the Oak Ridge National Laboratory, and 5.8 mi southwest of Oak Ridge.

DRAINAGE AREA.--0.24 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1987 to September 1991, October 1992 to September 1993 (discontinued).

REVISED RECORD.--WDR TN-90-1: 1988, 1989 (M).

GAGE.--Water-stage recorder and fiberglass flume. Datum of gage is 800.70 ft above sea level.

REMARKS.--Records fair except above 20 ft<sup>3</sup>/s, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41 ft<sup>3</sup>/s, March 23, gage height, 3.61 ft, from rating curve extended above 12 ft<sup>3</sup>/s on basis of theoretical flume rating, may have been higher during period of missing gage height record on March 23; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.06	.09	e.20	.13	.27	1.4	.11	.06	.01	.00	.00
2	.00	.91	.08	e.14	.11	.31	.60	.09	.02	.00	.00	.00
3	.00	.19	.06	e.12	.10	.59	.37	.08	.01	.00	.00	.00
4	.34	1.1	.11	e.20	.09	2.9	.29	.28	.01	.00	.00	.00
5	.10	.40	.14	e1.0	.09	.71	.67	.10	.01	.00	.00	.00
6	.02	.20	.09	e.60	.08	.40	.44	.06	.01	.00	.08	.00
7	.01	.11	.09	.35	.08	.30	.32	.04	.01	.00	.01	.00
8	.01	.07	.08	1.7	.08	.25	.26	.03	.01	.00	.00	.00
9	.02	.06	.07	.70	.08	.20	1.5	.03	.01	.00	.00	.00
10	.01	.05	.22	.41	.07	.18	.94	.02	.01	.00	.00	.00
11	.01	.04	.23	1.8	.23	.15	.44	.01	.01	.00	.00	.00
12	.01	1.1	.17	1.1	.40	.16	.29	.01	.01	.00	.01	.00
13	.01	.45	.13	.57	.21	.27	.22	.02	.01	.00	.01	.00
14	.01	.18	.11	.35	.16	.23	.21	.03	.01	.00	.00	.00
15	e.01	.11	.10	.26	.14	.27	.45	.01	.28	.00	.00	.00
16	e.00	.08	.84	.22	1.1	.59	.38	.01	.02	.00	.00	.00
17	e.00	.06	4.4	.18	.48	2.7	.21	.01	.01	.03	.00	.00
18	e.00	.06	.78	.15	.29	1.1	.17	.01	.01	.01	.01	.00
19	e.00	.05	.48	.14	.22	.53	.16	.38	.01	.01	.00	.00
20	e.00	.05	2.8	.14	.19	.40	.77	.06	.01	.00	.00	.00
21	e.00	.53	.79	.46	3.8	.32	1.0	.06	.01	.00	.00	.00
22	e.00	2.8	.57	.30	1.2	.28	.42	.05	.01	.00	.00	.00
23	e.00	.73	5.0	.23	.47	e7.4	.27	.02	.01	.00	.00	.01
24	e.00	1.2	1.1	3.2	.29	e1.0	.20	.01	.00	.00	.00	.00
25	e.00	.85	.49	.93	.26	e.50	.19	.02	.00	.00	.00	.01
26	e.00	.42	.35	.49	.54	e.50	1.7	.03	.00	.00	.00	.01
27	e.00	.24	.31	.29	.48	e3.0	.42	.01	.00	.00	.00	.02
28	e.08	.16	1.7	.22	.34	e.70	.25	.01	.00	.00	.00	.00
29	.02	.12	.62	.18	---	e.40	.18	.01	.00	.00	.00	.00
30	.20	.10	.38	.15	---	e.35	.14	.01	.01	.00	.00	.00
31	.15	---	.27	.15	---	1.2	---	.15	---	.00	.00	---
TOTAL	1.01	12.48	22.65	16.93	11.71	28.16	14.86	1.77	0.58	0.06	0.12	0.05
MEAN	.033	.42	.73	.55	.42	.91	.50	.057	.019	.002	.004	.002
MAX	.34	2.8	5.0	3.2	3.8	7.4	1.7	.38	.28	.03	.08	.02
MIN	.00	.04	.06	.12	.07	.15	.14	.01	.00	.00	.00	.00
CFSM	.14	1.73	3.04	2.28	1.74	3.78	2.06	.24	.08	.01	.02	.01
IN.	.16	1.93	3.51	2.62	1.82	4.36	2.30	.27	.09	.01	.02	.01

e Estimated

TENNESSEE RIVER BASIN

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03537050 MELTON BRANCH TRIBUTARY (EAST SEVEN) NEAR OAK RIDGE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

MEAN	.079	.26	.67	.68	.88	.76	.31	.28	.28	.091	.025	.098
MAX	.31	.61	1.89	1.09	1.57	.98	.50	.69	.81	.24	.10	.54
(WY)	1990	1990	1991	1989	1991	1991	1993	1990	1989	1989	1990	1989
MIN	.000	.002	.022	.35	.25	.42	.18	.019	.000	.002	.000	.001
(WY)	1988	1988	1988	1991	1988	1988	1988	1988	1988	1993	1987	1987

SUMMARY STATISTICS

FOR 1993 WATER YEAR

WATER YEARS 1987 - 1993

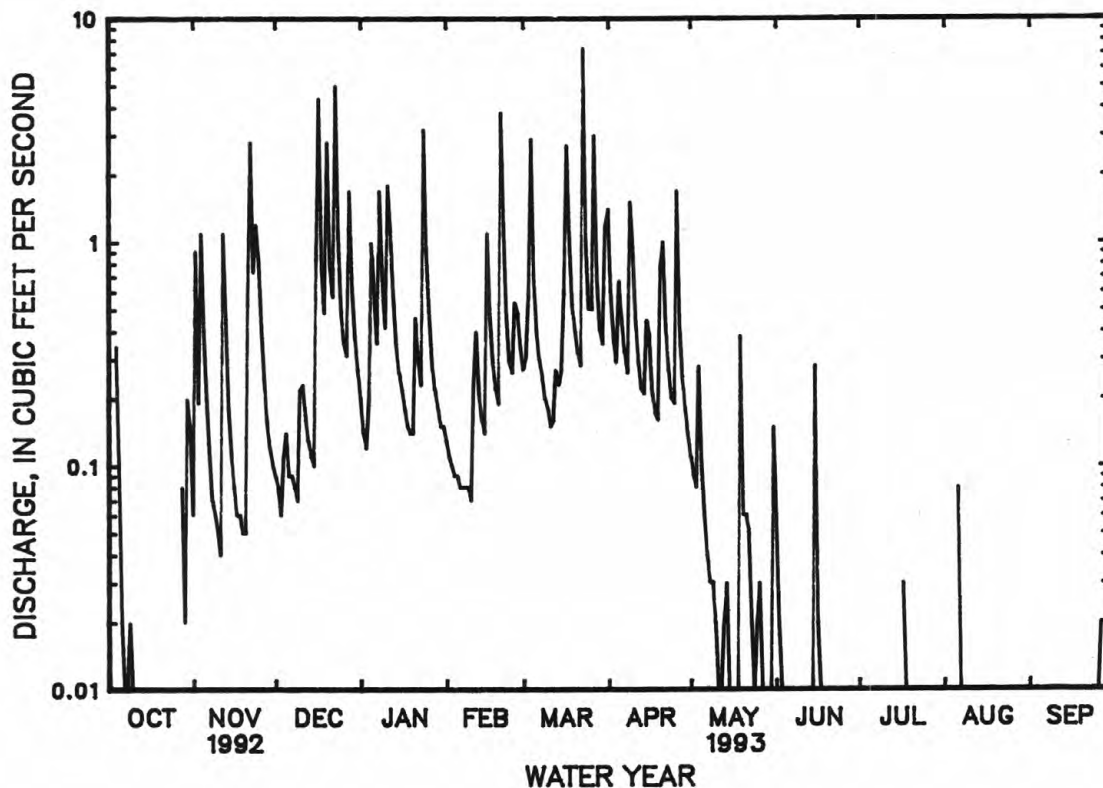
ANNUAL TOTAL	110.38											
ANNUAL MEAN	.30											
HIGHEST ANNUAL MEAN									.37			
LOWEST ANNUAL MEAN									.49			1991
HIGHEST DAILY MEAN	7.4	Mar 23							.12			1988
LOWEST DAILY MEAN	a.00	Oct 1							20	Dec 23	1990	
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 16							a.00	Aug 1	1987	
INSTANTANEOUS PEAK FLOW	b41	Mar 23							.00	Aug 1	1987	
INSTANTANEOUS PEAK STAGE	c3.61	Mar 23							b51	Jan 19	1988	
INSTANTANEOUS LOW FLOW									d3.69	Jan 19	1988	
ANNUAL RUNOFF (CFSM)	1.26								a.00	Aug 3	1987	
ANNUAL RUNOFF (INCHES)	17.11								1.53			
10 PERCENT EXCEEDS	.75								20.76			
50 PERCENT EXCEEDS	.08								.78			
90 PERCENT EXCEEDS	.00								.07			
									.00			

a Occurs many days each year.

b From rating extended above 12 ft<sup>3</sup>/s on basis of theoretical flume rating.

c May have been higher during period of missing gage height record on March 23.

d May have been higher during period of missing gage height record on Dec. 23, 1990.



## TENNESSEE RIVER BASIN

03537100 MELTON BRANCH NEAR MELTON HILL, NEAR OAK RIDGE, TN

LOCATION.--Lat 35°54'59", long 84°17'53", Roane County, Hydrologic Unit 06010207, on left bank 1.0 mi southeast of the Oak Ridge National Laboratory, 6.0 mi south of Oak Ridge, and at mile 1.2.

DRAINAGE AREA.--0.52 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1985 to current year.

REVISED RECORDS.--WDR TN-91-1: 1986-90.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 784.06 ft above sea level.

REMARKS.--Records fair between 0.2 and 30 ft<sup>3</sup>/s, and poor above and below. Periodic observations of water temperature are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 30 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 23	1430	*55	*9.45	No other peak greater than base discharge.			

Minimum discharge, no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.10	.19	.56	.33	.67	2.5	.30	.22	.02	.00	.00
2	.00	1.5	.17	.42	.27	.73	1.5	.27	.09	.00	.00	.00
3	.00	.41	.13	.37	.24	1.1	1.1	.24	.04	.00	.00	.00
4	.54	1.8	.21	.51	.22	4.8	.89	.66	.03	.00	.00	.00
5	.15	.89	.24	2.0	.22	1.7	1.5	.42	.02	.00	.00	.00
6	e.05	.39	.17	1.1	.22	1.2	1.1	.30	.01	.00	.08	.00
7	e.04	.21	.15	.83	.17	.92	.92	.26	.01	.00	.01	.00
8	.04	.14	.11	2.7	.17	.73	.74	.24	.01	.00	.00	.00
9	.04	.11	.10	1.5	.16	.55	2.7	.20	.00	.00	.00	.00
10	.02	.10	.33	1.1	.13	.49	1.9	.17	.00	.00	.00	.00
11	.02	.07	.37	3.1	.40	.38	1.3	.14	.00	.00	.00	.00
12	.01	1.8	.27	2.2	.79	.36	.99	.12	.00	.00	.00	.00
13	.01	.97	.22	1.4	.38	.61	.75	.16	.01	.00	.01	.00
14	.01	e.40	.18	1.0	.29	.47	.61	.16	.01	.00	.00	.00
15	.01	e.30	.17	.78	.24	.52	1.0	.10	.49	.00	.00	.00
16	.01	e.25	1.3	.63	1.8	.99	1.1	.08	.05	.00	.00	.00
17	.01	e.20	6.6	.48	1.1	4.1	.69	.07	.01	.05	.00	.00
18	.01	e.20	1.5	.38	.69	2.2	.54	.10	.00	.01	.00	.00
19	.01	e.15	.88	.32	.55	1.4	.46	.93	.02	.00	.00	.00
20	.01	e.10	4.5	.32	.43	1.1	1.3	.27	.00	.00	.00	.00
21	.01	e1.0	1.7	.91	5.7	.97	1.8	.24	.01	.00	.00	.00
22	.01	4.4	1.3	.64	2.4	.81	1.0	.21	.01	.00	.00	.00
23	.01	1.6	8.1	.47	1.3	11	.69	.13	.01	.00	.00	.00
24	.01	2.1	2.4	4.9	.94	3.7	.53	.08	.00	.00	.00	.00
25	.01	1.7	1.4	1.9	.72	1.7	.47	.10	.00	.00	.00	.00
26	.01	1.0	1.0	1.2	1.2	1.7	2.8	.13	.00	.00	e.00	.00
27	.02	.60	.80	.96	1.1	5.5	1.1	.06	.00	.00	e.00	.02
28	.10	.37	3.0	.71	.87	2.2	.71	.05	.00	.00	.00	.00
29	.04	.27	1.5	.52	---	1.4	.54	.05	.00	.00	.00	.00
30	.31	.22	1.1	.41	---	1.1	.40	.07	.00	.00	.00	.00
31	.30	---	.80	.38	---	2.3	---	.36	---	.00	.00	---
TOTAL	1.82	23.35	40.89	34.70	23.03	57.40	33.63	6.67	1.05	0.08	0.10	0.02
MEAN	.059	.78	1.32	1.12	.82	1.85	1.12	.22	.035	.003	.003	.001
MAX	.54	4.4	8.1	4.9	5.7	11	2.8	.93	.49	.05	.08	.02
MIN	.00	.07	.10	.32	.13	.36	.40	.05	.00	.00	.00	.00
CFSM	.11	1.50	2.54	2.15	1.58	3.56	2.16	.41	.07	.00	.01	.00
IN.	.13	1.67	2.93	2.48	1.65	4.11	2.41	.48	.08	.01	.01	.00

e Estimated

TENNESSEE RIVER BASIN

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03537100 MELTON BRANCH NEAR MELTON HILL, NEAR OAK RIDGE, TN--Continued

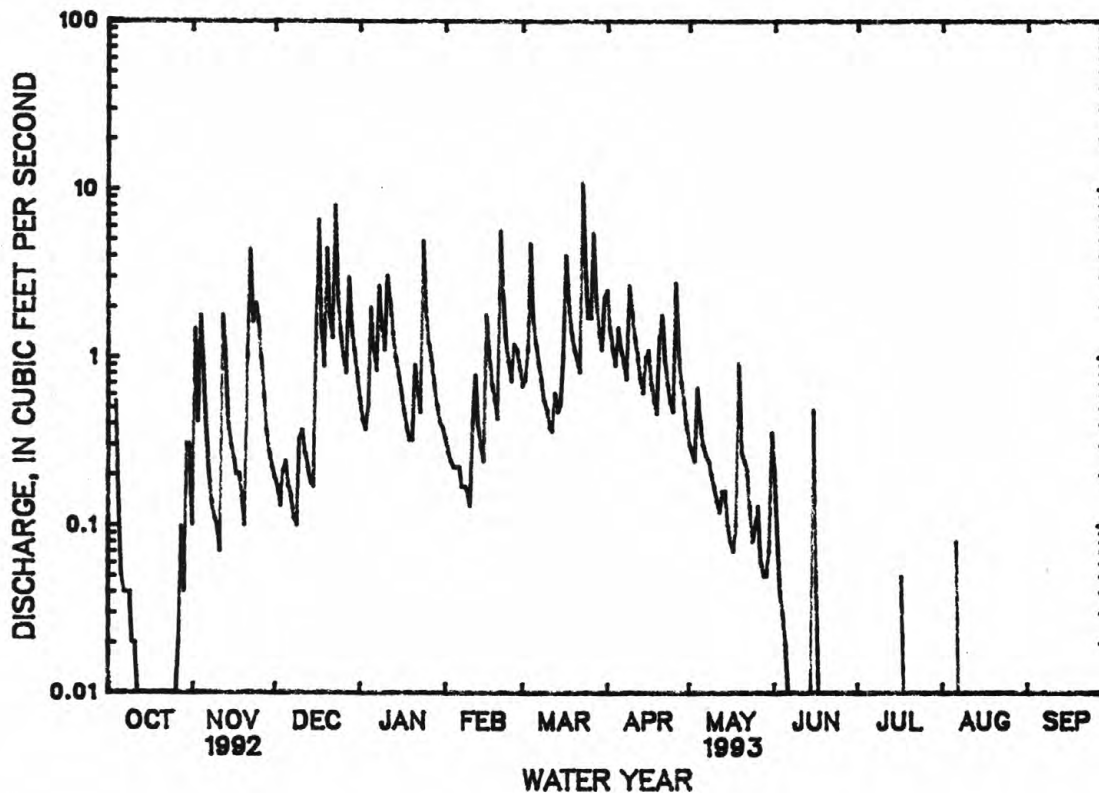
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1993, BY WATER YEAR (WY)

MEAN	.13	.43	1.19	1.20	1.55	1.32	.58	.35	.29	.12	.13	.10
MAX	.71	1.17	2.94	2.22	3.15	2.00	1.12	1.52	1.44	.41	.87	.86
(WY)	1990	1990	1991	1989	1990	1991	1993	1990	1989	1989	1985	1989
MIN	.000	.000	.039	.31	.44	.73	.15	.045	.000	.003	.000	.000
(WY)	1988	1988	1988	1986	1988	1988	1986	1988	1988	1993	1986	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1985 - 1993
ANNUAL TOTAL	170.21	222.74	
ANNUAL MEAN	.47	.61	.61
HIGHEST ANNUAL MEAN			.99
LOWEST ANNUAL MEAN			.21
HIGHEST DAILY MEAN	8.9 Jan 3	11 Mar 23	28 Dec 23 1990
LOWEST DAILY MEAN	a.00 Jun 26	a.00 Oct 1	a.00 Jun 5 1985
ANNUAL SEVEN-DAY MINIMUM	.00 Aug 29	.00 Jun 24	.00 Jun 21 1986
INSTANTANEOUS PEAK FLOW		b55 Mar 23	b238 Dec 23 1990
INSTANTANEOUS PEAK STAGE		9.45 Mar 23	10.64 Dec 23 1990
INSTANTANEOUS LOW FLOW		.00 Oct 1	.00 Jun 3 1985
ANNUAL RUNOFF (CFSM)	.89	1.17	1.18
ANNUAL RUNOFF (INCHES)	12.18	15.93	16.00
10 PERCENT EXCEEDS	1.2	1.6	1.4
50 PERCENT EXCEEDS	.13	.17	.11
90 PERCENT EXCEEDS	.00	.00	.00

a Occurred many days each year.

b From rating curve extended above 30 ft<sup>3</sup>/s.



## TENNESSEE RIVER BASIN

## 03537200 MELTON BRANCH TRIBUTARY (CENTER SEVEN) NEAR OAK RIDGE, TN

LOCATION.--Lat 35°55'03", long 84°17'55", Roane County, Hydrologic Unit 06010207, on left bank 300 ft upstream of mouth, 1.1 mi southeast of the Oak Ridge National Laboratory, and 5.9 mi southwest of Oak Ridge.

DRAINAGE AREA.--0.07 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1987 to September 1991, October 1992 to September 1993 (discontinued).

GAGE.--Water-stage recorder and fiberglass flume. Datum of gage is 794.74 ft above sea level.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12 ft<sup>3</sup>/s, March 23, gage height, 3.01 ft, from rating curve extended above 9 ft<sup>3</sup>/s, on basis of theoretical flume formula; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	e.02	.04	e.08	.06	.11	.48	.08	.04	.02	.00	.00
2	.01	e.25	.03	e.06	.05	.11	.23	.07	.02	.01	.00	.00
3	.00	e.07	.03	e.05	.05	.17	.16	.07	.02	.01	.00	.00
4	.12	e.25	.05	e.10	.05	.86	.13	.12	.02	.01	.01	.02
5	.04	e.15	.04	e.40	.04	.25	.22	.06	.01	.01	.01	.00
6	.01	e.07	.03	e.12	.04	.15	.18	.05	.01	.01	.07	.00
7	.01	e.05	.03	.13	.04	.11	.15	.05	.01	.01	.01	.00
8	.01	e.04	.03	.44	.04	.10	.12	.04	.01	.00	.01	.00
9	.01	e.03	.03	.23	.04	.09	.44	.04	.01	.00	.00	.00
10	.01	e.02	.07	.14	.04	.08	.36	.04	.01	.00	.00	.00
11	.01	e.02	.07	.47	.08	.07	.19	.04	.01	.00	.01	.00
12	.01	e.23	.06	.37	.10	.07	.13	.03	.01	.00	.01	.00
13	.01	e.15	.05	.18	.08	.09	.11	.04	.01	.01	.02	.00
14	.01	e.06	.05	.12	.07	.08	.10	.04	.01	.01	.01	.00
15	.01	e.05	.04	.10	.06	.09	.17	.03	.12	.01	.01	.01
16	.01	e.04	.21	.08	.30	.17	.18	.03	.02	.01	.00	.01
17	.01	.03	1.3	.07	.18	.84	.13	.03	.01	.05	.00	.01
18	.01	.02	.21	.06	.11	.39	.11	.04	.01	.01	.01	.00
19	.01	.02	.10	.06	.09	.19	.10	.14	.02	.01	.00	.00
20	.01	.02	.76	.05	.08	.14	.22	.04	.01	.01	.00	.00
21	.01	.13	.25	.12	1.0	.12	.34	.05	.01	.01	.00	.00
22	.01	.76	.16	.09	.42	.10	.18	.04	.01	.00	.00	.00
23	.01	.22	1.5	e.07	.17	2.2	.13	.03	.01	.00	.00	.03
24	.01	.31	.36	e.45	.11	.57	.10	.03	.01	.00	.00	.01
25	.01	.25	e.12	e.30	.10	.22	.11	.03	.01	.00	.00	.01
26	.01	.13	e.10	e.16	.15	.22	.49	.04	.01	.00	.00	.01
27	.01	.08	e.07	.11	.15	.93	.19	.03	.01	.00	.00	.03
28	.03	.06	e.80	.09	.13	.34	.13	.02	.01	.00	.00	.01
29	.01	.05	e.25	.08	---	.19	.11	.02	.01	.00	.00	.01
30	.06	.04	e.13	.07	---	.14	.09	.02	.02	.00	.00	.00
31	.05	---	e.12	.06	---	.37	---	.07	---	.00	.00	---
TOTAL	0.54	3.62	7.09	4.91	3.83	9.56	5.78	1.46	0.50	0.21	0.18	0.16
MEAN	.017	.12	.23	.16	.14	.31	.19	.047	.017	.007	.006	.005
MAX	.12	.76	1.5	.47	1.0	2.2	.49	.14	.12	.05	.07	.03
MIN	.00	.02	.03	.05	.04	.07	.09	.02	.01	.00	.00	.00
CFSM	.25	1.72	3.27	2.26	1.95	4.41	2.75	.67	.24	.10	.08	.08
IN.	.29	1.92	3.77	2.61	2.04	5.08	3.07	.78	.27	.11	.10	.09

e Estimated



TENNESSEE RIVER BASIN

153

03537200 MELTON BRANCH TRIBUTARY (CENTER SEVEN) NEAR OAK RIDGE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

MEAN	.032	.087	.19	.22	.28	.25	.12	.10	.087	.040	.016	.037
MAX	.11	.18	.50	.35	.50	.32	.19	.24	.25	.090	.045	.17
(WY)	1990	1990	1991	1989	1991	1991	1993	1990	1989	1989	1990	1989
MIN	.000	.007	.025	.13	.083	.13	.057	.012	.000	.007	.000	.002
(WY)	1988	1988	1988	1991	1988	1988	1988	1988	1988	1993	1987	1987

SUMMARY STATISTICS

FOR 1993 WATER YEAR

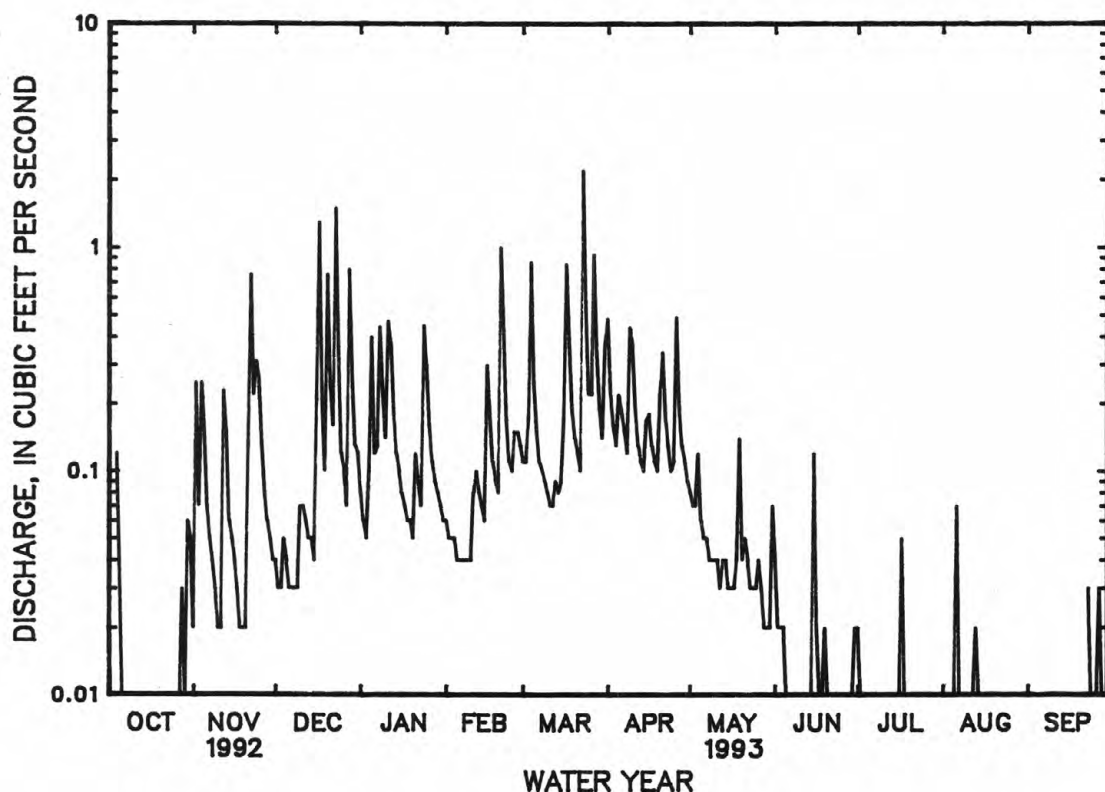
WATER YEARS 1987 - 1993

ANNUAL TOTAL	37.84		
ANNUAL MEAN	.10		
HIGHEST ANNUAL MEAN			.12
LOWEST ANNUAL MEAN			.16
HIGHEST DAILY MEAN	2.2	Mar 23	.044
LOWEST DAILY MEAN	a.00	Oct 1	4.6
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 22	b.00
INSTANTANEOUS PEAK FLOW	c12	Mar 23	.00
INSTANTANEOUS PEAK STAGE	3.01	Mar 23	c35
INSTANTANEOUS LOW FLOW	a.00	Jul 30	3.71
ANNUAL RUNOFF (CFSM)	1.48		b.00
ANNUAL RUNOFF (INCHES)	20.11		1.74
10 PERCENT EXCEEDS	.23		23.69
50 PERCENT EXCEEDS	.04		.24
90 PERCENT EXCEEDS	.00		.04
			.00

a Also occurred many days.

b Also occurred many days in 1987, 1988, 1989, and 1993 water years.

c From rating curve extended above 9 ft/s on basis of theoretical flume formula.



## TENNESSEE RIVER BASIN

03537300 MELTON BRANCH TRIBUTARY (WEST SEVEN) NEAR OAK RIDGE, TN

LOCATION.--Lat 35°55'11", long 84°18'08", Roane County, Hydrologic Unit 06010207, on left bank 1500 ft upstream of mouth, 0.8 mi southeast of the Oak Ridge National Laboratory, and 5.9 miles southwest of Oak Ridge.

DRAINAGE AREA.--0.15 mi<sup>2</sup>.

PERIOD OF RECORD.--August 1987 to September 1989, October 1992 to September 1993 (discontinued).

GAGE.--Water-stage recorder and sharp crested weir. Datum of gage is 798.20 ft above sea level.

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 32 ft<sup>3</sup>/s, March 23, gage height, 2.53 ft; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.03	.05	.16	.08	.25	1.2	.09	.03	e.00	.00	.00
2	.00	.58	.04	.12	.06	.24	.68	.07	.01	e.00	.00	.00
3	.00	.13	.03	.10	.05	.35	.44	.07	.01	e.00	.00	.00
4	.25	.56	.06	.19	.05	1.7	.42	.20	.00	e.00	.00	.00
5	.07	.27	.07	.82	.05	.62	.60	.10	.00	e.00	.00	.00
6	.02	.12	.06	.22	.05	.40	.49	.05	.00	e.00	.08	.00
7	.01	.06	.06	.33	.04	.29	.36	.03	.00	e.00	.00	.00
8	.01	.04	.05	1.8	.04	.22	.28	.02	.00	e.00	.00	.00
9	.01	.03	.04	.58	.04	.15	.86	.02	.00	e.00	.00	.00
10	.01	.02	.12	.17	.04	.13	.77	.02	.00	e.00	.00	.00
11	.01	.02	.12	1.5	.12	.10	.49	.01	.00	e.00	.00	.00
12	.00	.51	.12	1.2	.24	.10	.34	.01	.00	e.00	.00	.00
13	.00	.33	.09	.41	.13	.17	.23	.03	.00	e.00	.00	.00
14	.00	.11	.07	.34	.10	.13	.17	.06	.00	.00	e.00	.00
15	.00	.06	.06	.17	.08	.18	.35	.03	.13	.00	e.00	.00
16	.00	.04	.56	.17	.63	.40	.49	.01	.01	.00	e.00	.00
17	.00	e.03	3.0	.13	.47	1.7	.33	.01	.00	.02	e.00	.00
18	.00	e.03	.50	.10	.29	1.4	.23	.02	.00	.00	e.00	.00
19	.00	e.02	.33	.08	.18	.49	.17	.28	.01	.00	e.00	.00
20	.00	e.02	2.0	.08	.15	.29	.41	.06	.00	.00	e.00	.00
21	.00	.29	.69	.28	2.3	.28	.72	.05	.00	.00	e.00	.00
22	.00	1.5	.49	.23	.94	.13	.46	.04	.00	.00	e.00	.00
23	.00	.56	3.6	.18	.47	5.7	.30	.02	.00	.00	e.00	.01
24	.00	.75	1.1	1.8	.30	1.8	.20	.01	.00	.00	e.00	.00
25	.00	.63	.26	.72	.22	.86	.18	.01	e.00	.00	e.00	.00
26	.00	.35	.20	.43	.31	.85	1.0	.02	e.00	.00	e.00	.00
27	.01	.13	.14	.28	.36	2.8	.48	.01	e.00	.00	e.00	.04
28	.04	.07	2.0	.18	.34	1.4	.29	.01	e.00	.00	.00	.00
29	.01	.08	.53	.13	---	e.80	.18	.00	e.00	.00	.00	.00
30	.12	.06	.26	.10	---	e.30	.12	.01	e.00	.00	.00	.00
31	.09	---	.25	.09	---	.74	---	.07	---	.00	.00	---
TOTAL	0.66	7.43	16.95	13.09	8.13	24.97	13.24	1.44	0.20	0.02	0.08	0.05
MEAN	.021	.25	.55	.42	.29	.81	.44	.046	.007	.001	.003	.002
MAX	.25	1.5	3.6	1.8	2.3	5.7	1.2	.28	.13	.02	.08	.04
MIN	.00	.02	.03	.08	.04	.10	.12	.00	.00	.00	.00	.00
CFSM	.14	1.65	3.65	2.82	1.94	5.37	2.94	.31	.04	.00	.02	.01
IN.	.16	1.84	4.20	3.25	2.02	6.19	3.28	.36	.05	.00	.02	.01

e Estimated

TENNESSEE RIVER BASIN

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03537300 MELTON BRANCH TRIBUTARY (WEST SEVEN) NEAR OAK RIDGE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

MEAN	.007	.13	.26	.52	.32	.51	.23	.097	.18	.057	.005	.098
MAX	.021	.25	.55	.81	.52	.81	.44	.24	.53	.16	.017	.37
(WY)	1993	1993	1993	1989	1989	1993	1993	1989	1989	1989	1989	1989
MIN	.000	.000	.020	.32	.16	.26	.12	.005	.000	.001	.000	.000
(WY)	1988	1988	1988	1988	1988	1988	1988	1988	1988	1993	1987	1987

SUMMARY STATISTICS

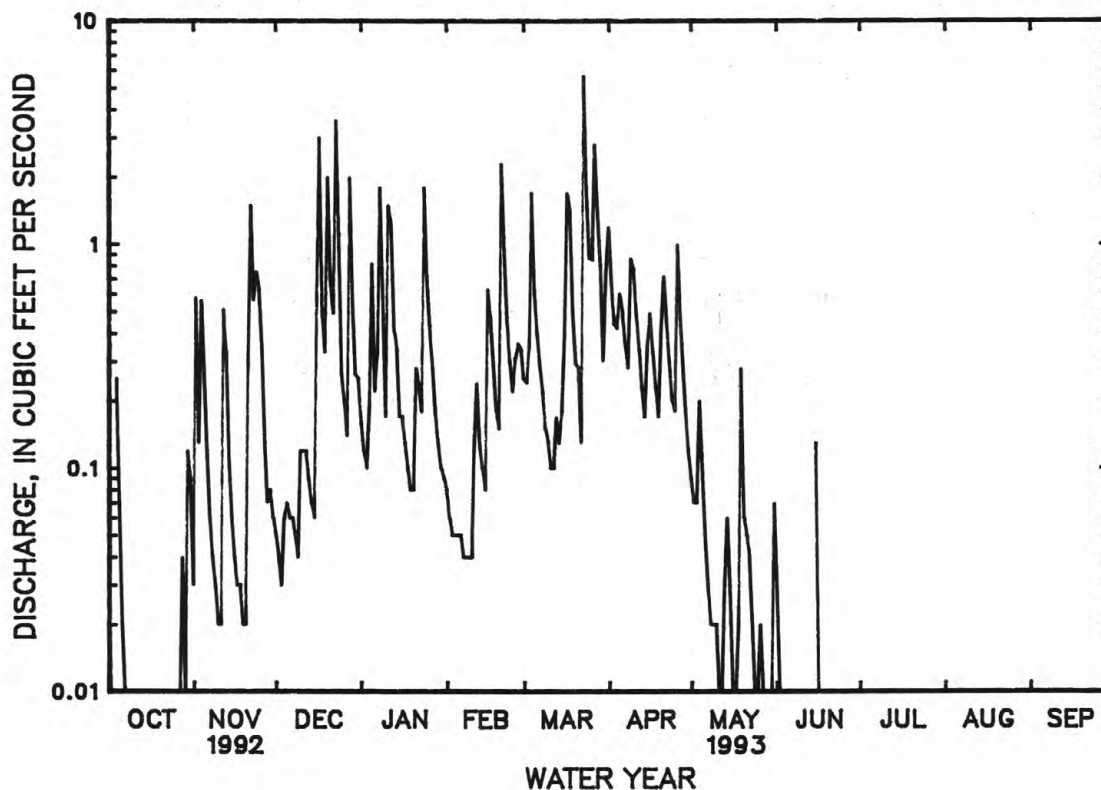
FOR 1993 WATER YEAR

WATER YEARS 1987 - 1993

ANNUAL TOTAL	86.26											
ANNUAL MEAN	.24											
HIGHEST ANNUAL MEAN									.20			
LOWEST ANNUAL MEAN									.30			1989
HIGHEST DAILY MEAN	5.7	Mar 23							.076			1988
LOWEST DAILY MEAN	a.00	Oct 1							6.5	Jan 12		1989
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 12							a.00	Aug 1		1987
INSTANTANEOUS PEAK FLOW	b32	Mar 23							.00	Aug 1		1987
INSTANTANEOUS PEAK STAGE	2.53	Mar 23							b35	Jan 19		1988
INSTANTANEOUS LOW FLOW	a.00	Oct 1							2.59	Jan 19		1988
ANNUAL RUNOFF (CFSM)	1.58								a.00	Aug 1		1987
ANNUAL RUNOFF (INCHES)	21.39								1.36			
10 PERCENT EXCEEDS	.61								18.48			
50 PERCENT EXCEEDS	.04								.50			
90 PERCENT EXCEEDS	.00								.02			
									.00			

a Many days each year.

b From rating curve extended above 7 ft<sup>3</sup>/s on basis of theoretical weir formula.



## TENNESSEE RIVER BASIN

03538231 EAST FORK POPLAR CREEK AT Y-12 AT OAK RIDGE, TN

LOCATION.--Lat 35°59'11", long 84°15'02", Anderson County, Hydrologic Unit 06010207, on the downstream end of culvert, 1.5 miles south of Oak Ridge, and at mile 15.5.

DRAINAGE AREA.--0.81 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1992 to September 1993.

GAGE.--Water-stage recorder, crest-stage gage, and flume. Datum of gage is 930 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow affected by operations of the Department of Energy, Y-12 Plant.

EXTREMES FOR CURRENT PERIOD.--December 1992 to September 1993: Maximum discharge 293 ft<sup>3</sup>/s, gage height, 5.43 ft, Feb. 21; minimum 3.6 ft<sup>3</sup>/s, gage height, 1.55 ft, Sept. 11 and 12; minimum daily 3.8 ft<sup>3</sup>/s, Sept. 11, 12, and 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR DECEMBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	4.7	4.3	4.5	5.0	5.6	4.3	5.1	4.7	4.1	4.4
2	---	---	4.8	4.3	4.4	5.8	5.5	4.3	5.0	4.5	4.8	4.5
3	---	---	4.7	4.2	4.5	8.8	5.1	4.4	4.8	4.4	4.5	7.6
4	---	---	5.7	7.8	4.4	12	5.2	7.6	4.9	4.3	5.3	14
5	---	---	4.5	6.9	4.2	5.7	7.7	4.6	4.5	4.3	4.6	4.1
6	---	---	4.3	4.6	4.1	5.1	5.1	4.4	4.6	4.3	16	4.2
7	---	---	4.6	5.8	4.3	5.0	4.9	4.3	4.7	4.4	4.4	4.5
8	---	---	4.5	8.8	4.3	5.0	4.7	6.5	5.0	4.7	4.2	4.5
9	---	---	4.6	4.8	4.3	5.0	11	4.3	4.9	4.5	4.3	4.5
10	---	---	6.4	4.6	4.3	4.8	5.5	4.2	4.7	4.4	4.6	4.2
11	---	---	4.6	12	7.3	4.8	4.9	4.6	4.6	4.4	5.1	3.8
12	---	---	4.4	6.4	5.0	5.3	4.8	4.4	4.5	4.8	6.9	3.8
13	---	---	4.3	5.2	4.3	6.0	5.0	4.9	5.0	5.7	8.2	4.2
14	---	---	4.5	4.7	4.1	6.6	4.8	4.4	4.5	5.4	4.5	4.4
15	---	---	4.6	4.6	4.2	6.7	9.3	4.3	7.7	5.9	4.2	9.7
16	---	---	12	4.4	11	7.5	5.3	4.2	4.5	4.7	4.5	11
17	---	---	17	4.4	4.7	9.2	4.6	4.3	4.5	7.1	4.7	4.7
18	---	---	5.1	4.4	4.4	5.7	4.6	8.4	4.5	4.6	4.6	4.0
19	---	---	4.6	4.6	4.4	5.3	4.8	10	7.6	7.0	4.2	3.8
20	---	---	15	4.4	4.2	5.5	11	5.1	4.4	5.3	4.3	4.2
21	---	---	6.0	6.8	32	5.1	5.6	6.0	4.6	4.9	4.1	4.3
22	---	---	7.0	4.5	7.5	5.4	5.0	4.6	4.7	4.7	4.1	4.3
23	---	---	20	4.2	5.7	37	4.8	4.2	5.0	4.6	4.2	6.8
24	---	---	5.8	16	5.4	8.1	4.4	4.6	4.7	4.4	4.5	4.5
25	---	---	5.2	5.1	6.0	5.6	7.1	5.0	4.6	4.4	4.6	6.1
26	---	---	5.0	4.8	7.0	8.1	9.3	4.7	4.2	4.4	4.5	9.2
27	---	---	6.5	4.6	5.3	13	4.8	4.6	4.2	7.7	4.3	8.1
28	---	---	9.8	4.4	5.1	5.9	4.7	4.6	4.4	4.8	4.2	4.6
29	---	---	5.1	4.4	---	5.3	4.5	5.6	4.6	4.5	4.2	4.3
30	---	---	4.8	4.6	---	5.2	4.5	5.7	5.6	4.4	4.5	4.1
31	---	---	4.7	4.5	---	8.0	---	12	---	4.2	4.6	---
TOTAL	---	---	204.8	175.1	170.9	231.5	174.1	165.1	146.6	152.4	155.8	166.4
MEAN	---	---	6.61	5.65	6.10	7.47	5.80	5.33	4.89	4.92	5.03	5.55
MAX	---	---	20	16	32	37	11	12	7.7	7.7	16	14
MIN	---	---	4.3	4.2	4.1	4.8	4.4	4.2	4.2	4.2	4.1	3.8

03538231 EAST FORK POPLAR CREEK AT Y-12 AT OAK RIDGE, TN--Continued

## SUMMARY STATISTICS

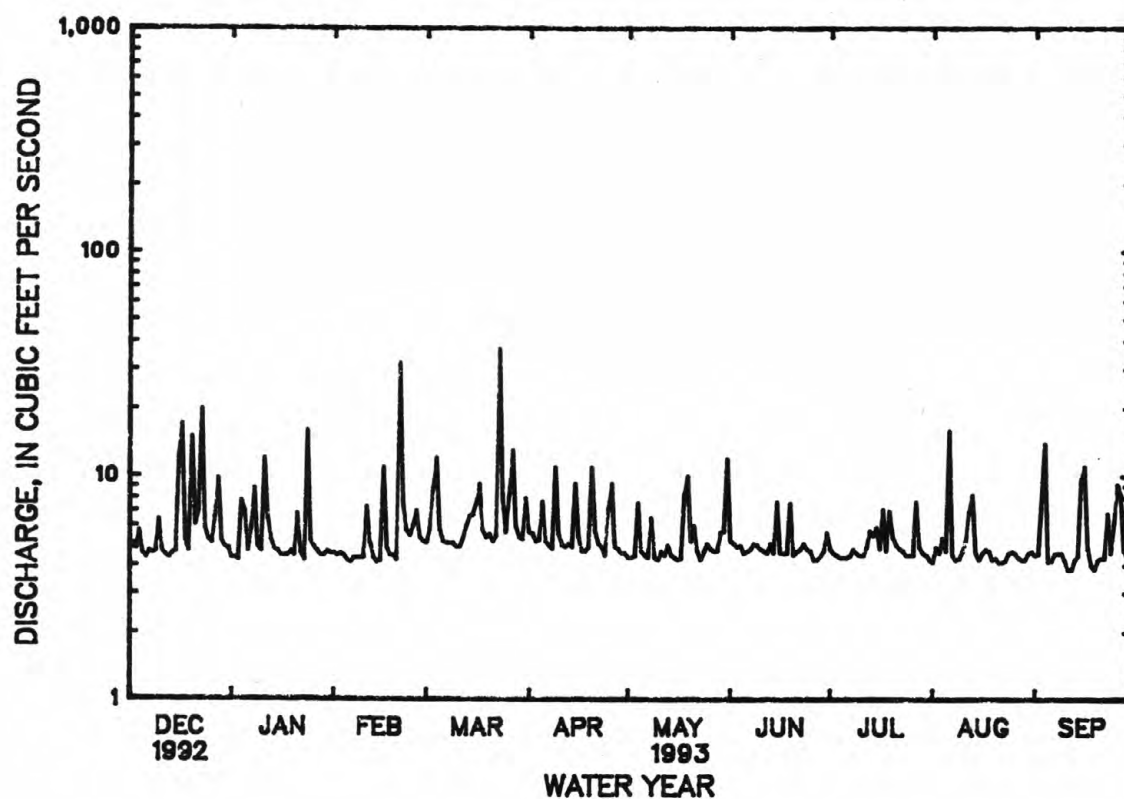
FOR DECEMBER 1992 TO SEPTEMBER 1993

HIGHEST DAILY MEAN	37	Mar 23
LOWEST DAILY MEAN	a3.8	Sep 11
ANNUAL SEVEN-DAY MINIMUM	4.2	Sep 8
INSTANTANEOUS PEAK FLOW	b293	Feb 21
INSTANTANEOUS PEAK STAGE	5.43	Feb 21
INSTANTANEOUS LOW FLOW	c3.6	Sep 11
10 PERCENT EXCEEDS	8.1	
50 PERCENT EXCEEDS	4.7	
90 PERCENT EXCEEDS	4.2	

a Also occurred Sept. 12 and 19.

b From rating curve extended above 57 ft<sup>3</sup>/s bases on theoretical culvert computation.

c Also occurred Sept. 12.





## TENNESSEE RIVER BASIN

03538235 EAST FORK POPLAR CREEK AT BEAR CREEK ROAD AT OAK RIDGE, TN

LOCATION.--Lat 35°59'48", long 84°14'25", Anderson County, Hydrologic Unit 06010207, on left bank upstream from bridge on Bear Creek Road, 0.5 mi south of Oak Ridge, and at mile 14.4.

DRAINAGE AREA.--1.69 mi<sup>2</sup>.

PERIOD OF RECORD.--December 1992 to September 1993.

GAGE.--Water-stage recorder and concrete weir. Datum of gage is 890 ft above sea level, from topographic map.

REMARKS.--Records good. Flow affected by operations of the Department of Energy, Y-12 Plant.

EXTREMES FOR CURRENT PERIOD.--December 1992 to September 1993: Maximum discharge 811 ft<sup>3</sup>/s, gage height, 5.32 ft, Mar.23; minimum 4.0 ft<sup>3</sup>/s, gage height, 1.21 ft, Sept. 4; minimum daily 4.8 ft<sup>3</sup>/s, Sept. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR DECEMBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	e6.0	5.5	5.5	5.7	7.7	6.0	6.4	6.4	5.0	5.6
2	---	---	e6.0	5.4	5.3	6.4	7.0	5.9	6.0	5.6	5.8	5.6
3	---	---	e6.0	5.3	5.4	8.9	6.4	5.9	5.8	5.4	5.7	12
4	---	---	e8.0	8.1	5.3	19	6.5	10	5.9	5.3	6.3	24
5	---	---	e5.5	11	5.1	7.0	9.7	6.2	5.5	5.3	5.8	5.4
6	---	---	e5.0	6.0	5.1	6.1	6.4	5.9	5.5	5.3	22	5.4
7	---	---	e6.0	6.4	5.1	6.0	6.1	5.9	5.7	5.4	5.6	5.7
8	---	---	e5.5	13	5.2	5.9	5.9	8.5	6.1	5.7	5.2	5.7
9	---	---	e6.0	6.4	5.2	5.8	16	6.1	5.9	5.7	5.3	5.5
10	---	---	7.6	6.0	5.3	5.6	7.4	5.7	5.8	5.3	5.6	5.4
11	---	---	5.7	18	8.4	5.4	6.3	6.1	5.6	5.3	6.2	4.8
12	---	---	5.2	8.8	7.1	5.6	6.1	5.9	5.5	5.7	11	4.8
13	---	---	5.1	7.1	5.3	6.8	6.2	6.3	5.9	6.4	12	5.2
14	---	---	5.3	6.2	5.2	7.5	6.0	5.8	5.6	6.6	5.8	5.6
15	---	---	5.3	5.9	5.1	7.6	11	5.5	10	7.1	5.4	12
16	---	---	13	5.6	16	9.1	7.0	5.6	5.6	5.9	5.6	16
17	---	---	31	5.6	5.9	12	5.9	5.6	5.6	8.7	5.9	6.1
18	---	---	6.7	5.4	5.6	7.0	5.9	10	5.7	5.8	5.8	5.2
19	---	---	5.9	5.5	5.5	6.4	5.9	14	11	8.9	5.4	5.0
20	---	---	24	5.4	5.3	6.4	14	6.6	5.5	7.0	5.5	5.2
21	---	---	7.8	8.7	70	6.2	8.5	7.0	5.7	6.1	5.2	5.4
22	---	---	8.6	5.7	10	6.1	6.4	5.8	5.7	5.8	5.1	5.4
23	---	---	32	5.3	6.9	84	6.2	5.5	5.9	5.8	5.2	7.7
24	---	---	8.3	27	6.3	13	5.7	5.7	5.7	5.5	5.6	5.8
25	---	---	6.9	6.8	6.7	7.9	6.6	6.2	5.7	5.5	5.7	7.5
26	---	---	6.6	6.2	8.4	8.9	17	6.0	5.2	5.5	5.5	14
27	---	---	7.2	5.9	6.2	21	6.5	5.7	5.1	12	5.5	11
28	---	---	15	5.6	5.8	8.4	6.4	5.9	5.3	6.1	5.4	5.8
29	---	---	6.7	5.5	---	7.2	6.1	9.0	5.7	5.7	5.3	5.5
30	---	---	6.3	5.5	---	6.9	6.2	7.7	6.0	5.5	5.6	5.2
31	---	---	5.9	5.5	---	10	---	16	---	5.1	5.8	---
TOTAL	---	---	280.1	234.3	242.2	329.8	229.0	218.0	180.6	191.4	200.8	223.5
MEAN	---	---	9.04	7.56	8.65	10.6	7.63	7.03	6.02	6.17	6.48	7.45
MAX	---	---	32	27	70	84	17	16	11	12	22	24
MIN	---	---	5.0	5.3	5.1	5.4	5.7	5.5	5.1	5.1	5.0	4.8

e Estimated

TENNESSEE RIVER BASIN

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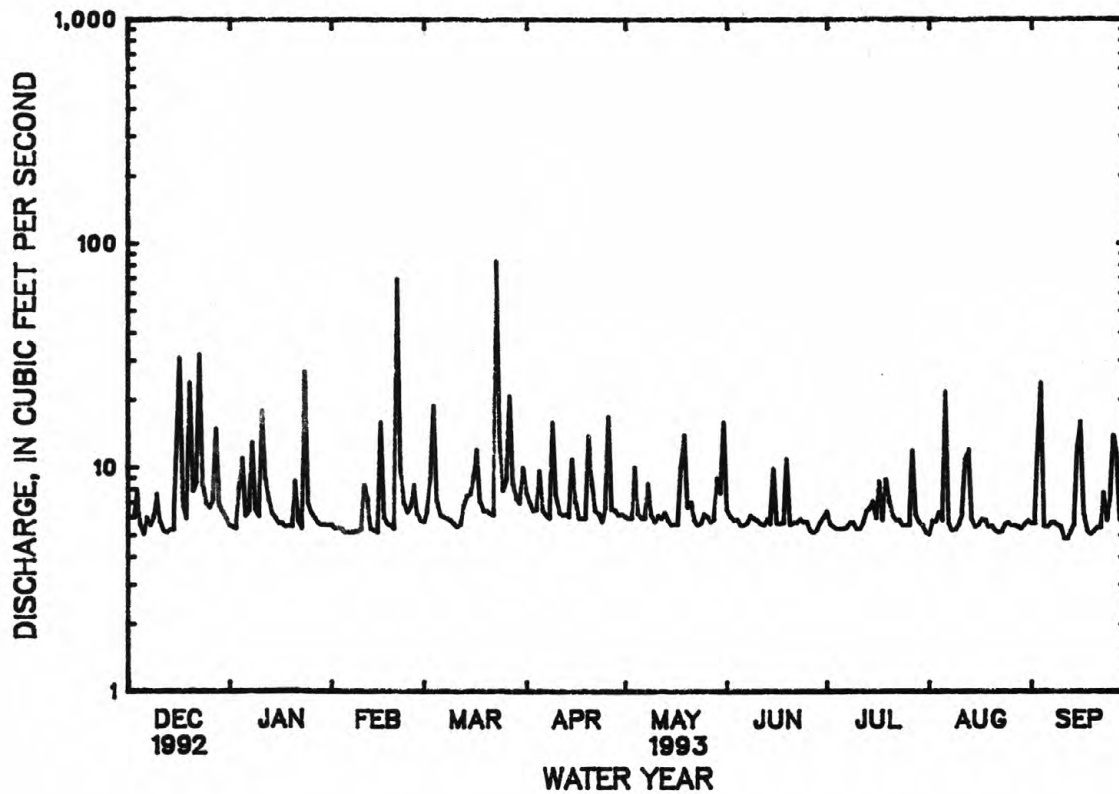
03538235 EAST FORK POPLAR CREEK AT BEAR CREEK ROAD AT OAK RIDGE, TN--Continued

SUMMARY STATISTICS

FOR DECEMBER 1992 TO SEPTEMBER 1993

HIGHEST DAILY MEAN	84	Mar 23
LOWEST DAILY MEAN	4.8	Sep 11
ANNUAL SEVEN-DAY MINIMUM	5.2	Feb 4
INSTANTANEOUS PEAK FLOW	811	Mar 23
INSTANTANEOUS PEAK STAGE	5.32	Mar 23
INSTANTANEOUS LOW FLOW	4.0	Sep 4
10 PERCENT EXCEEDS	11	
50 PERCENT EXCEEDS	5.9	
90 PERCENT EXCEEDS	5.3	

a Also occurred Sept. 12.



## TENNESSEE RIVER BASIN

03538260 BEAR CREEK AT COUNTY LINE NEAR OAK RIDGE, TN

LOCATION.--Lat 35°57'26", long 84°18'03", Anderson County, Hydrologic Unit 06010207, on right bank upstream of Bear Creek Road, at Anderson/Roane County line, and at mile 5.6.

DRAINAGE AREA.--1.57 mi<sup>2</sup>.

PERIOD OF RECORD.--May to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 882.17 ft above sea level.

REMARKS.--Records good.

EXTREMES FOR CURRENT PERIOD.--May to September 1993: Maximum discharge 32 ft<sup>3</sup>/s, gage height, 1.87 ft, Sept. 4; minimum, 0.00 ft<sup>3</sup>/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR MAY 1993 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	e.50	.66	.33	.00	.00
2	---	---	---	---	---	---	---	e.48	.37	.09	.00	.00
3	---	---	---	---	---	---	---	e.45	.27	.03	.01	.09
4	---	---	---	---	---	---	---	e1.5	.24	.02	.02	3.6
5	---	---	---	---	---	---	---	e.50	.23	.02	.03	.16
6	---	---	---	---	---	---	---	e.38	.21	.01	3.3	.13
7	---	---	---	---	---	---	---	e.38	.21	.01	.22	.06
8	---	---	---	---	---	---	---	e.36	.19	.01	.12	.04
9	---	---	---	---	---	---	---	e.40	.15	.01	.07	.05
10	---	---	---	---	---	---	---	e.35	.13	.01	.03	.03
11	---	---	---	---	---	---	---	e.33	.12	.01	.04	.01
12	---	---	---	---	---	---	---	e.30	.10	.00	.09	.00
13	---	---	---	---	---	---	---	e.38	.41	.05	.71	.00
14	---	---	---	---	---	---	---	e.47	.20	.19	.21	.00
15	---	---	---	---	---	---	---	.47	1.1	.14	.12	.46
16	---	---	---	---	---	---	---	.39	.19	.03	.06	2.4
17	---	---	---	---	---	---	---	.45	.16	.38	.04	.28
18	---	---	---	---	---	---	---	.43	.13	.09	.44	.27
19	---	---	---	---	---	---	---	2.7	.26	.47	.14	.20
20	---	---	---	---	---	---	---	.74	.15	.45	.06	.13
21	---	---	---	---	---	---	---	.87	.13	.09	.09	.08
22	---	---	---	---	---	---	---	.56	.13	.03	.04	.04
23	---	---	---	---	---	---	---	.33	.09	.02	.02	.86
24	---	---	---	---	---	---	---	.30	.07	.01	.02	.39
25	---	---	---	---	---	---	---	.30	.08	.01	.01	.52
26	---	---	---	---	---	---	---	.31	.08	.01	.01	2.3
27	---	---	---	---	---	---	---	.27	.06	1.4	.01	3.0
28	---	---	---	---	---	---	---	.26	.05	.14	.00	.42
29	---	---	---	---	---	---	---	.72	.05	.07	.00	.26
30	---	---	---	---	---	---	---	.33	.15	.03	.00	.20
31	---	---	---	---	---	---	---	2.4	---	.01	.00	---
TOTAL	---	---	---	---	---	---	---	18.61	6.37	4.17	5.91	15.98
MEAN	---	---	---	---	---	---	---	.60	.21	.13	.19	.53
MAX	---	---	---	---	---	---	---	2.7	1.1	1.4	3.3	3.6
MIN	---	---	---	---	---	---	---	.26	.05	.00	.00	.00
CFSM	---	---	---	---	---	---	---	.38	.14	.09	.12	.34
IN.	---	---	---	---	---	---	---	.44	.15	.10	.14	.38

e Estimated

TENNESSEE RIVER BASIN

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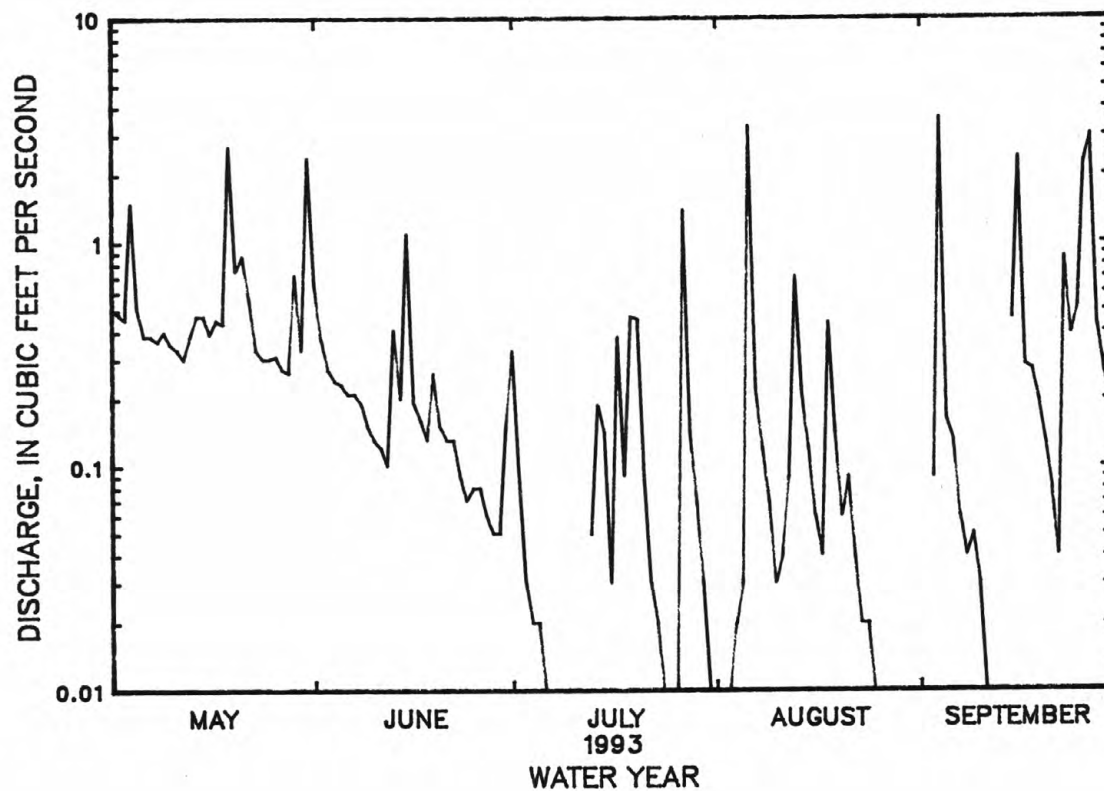
03538260 BEAR CREEK AT COUNTY LINE NEAR OAK RIDGE, TN--Continued

SUMMARY STATISTICS

FOR MAY TO SEPTEMBER 1993

HIGHEST DAILY MEAN	3.6	Sept 4
LOWEST DAILY MEAN	a.00	Jul 12
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 27
INSTANTANEOUS PEAK FLOW	32	Sept 4
INSTANTANEOUS PEAK STAGE	1.87	Sept 4
INSTANTANEOUS LOW FLOW	a.00	Jul 12

a Occurred many days.



## TENNESSEE RIVER BASIN

035382677 BEAR CREEK TRIBUTARY NEAR WHEAT, TN

LOCATION.--Lat 35°56'28", long 84°19'55", Roane County, Hydrologic Unit 06010207, on right bank, 0.7 mi northeast of intersection of State Highway 95 and Bear Creek Valley Road, 4.7 mi southeast of Oak Ridge, and at mile 0.1.

DRAINAGE AREA.--0.14 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to September 1989, October 1992 to September 1993 (discontinued).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 817.99 ft above sea level.

REVISED RECORD.--WDR TN-89: 1987, 1988 (M).

REMARKS.--Records fair.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30 ft<sup>3</sup>/s, Mar. 23, gage height, 2.65 ft, from rating curve extended above 4 ft<sup>3</sup>/s; no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	.02	.05	e.25	.12	.27	.64	.18	.04	.03	.00	.00
2	e.00	.23	.05	e.20	.10	.29	.50	.15	.03	.01	.00	.00
3	e.00	.06	.04	e.15	.09	.40	.39	.12	.03	.01	.00	.00
4	e.10	.18	.05	e.18	.08	1.8	.32	.28	.03	.00	.00	.01
5	e.02	.11	.05	e.70	.08	.94	.50	.13	.03	.00	.00	.00
6	.01	.07	.04	e.45	.08	.56	.47	.10	.03	.00	e.01	.00
7	.01	.04	.04	e.35	.07	.41	.38	.08	.03	.00	e.00	.00
8	.01	.03	.04	1.0	.07	.32	.32	.07	.03	.00	e.00	.00
9	.01	.03	.04	.77	.06	.25	.86	.06	.02	.00	e.00	.00
10	.01	.03	.07	.47	.06	.21	1.0	.05	.02	.00	e.00	.00
11	.01	.02	.08	.85	.12	.17	.61	.05	.02	.01	e.00	.00
12	.01	.32	.07	1.1	.25	.14	.42	.04	.02	.00	e.00	.00
13	.01	.17	.06	.68	.16	.20	.32	.05	.03	.00	e.00	.00
14	.01	.07	.06	.45	.12	.15	.26	.05	.02	.01	e.00	.00
15	.02	.05	.05	.34	.11	.15	.39	.04	.04	.02	e.00	.00
16	.02	.04	.37	.27	.69	.29	.49	.03	.01	.01	e.00	.01
17	.02	.03	2.1	.21	.52	1.5	.34	.03	.01	.01	e.00	.00
18	.02	.03	.67	.15	.35	1.2	.28	.03	.01	.01	e.00	.00
19	.02	.03	.34	.12	.27	.70	.24	.09	.01	.01	e.00	.00
20	.01	.03	1.3	.11	.23	.49	.42	.04	.01	.01	e.00	.00
21	.00	.10	.74	.25	1.9	.37	.69	.04	.01	.01	e.00	.00
22	.00	.86	.48	.22	1.5	.32	.48	.04	.01	.00	e.00	.00
23	.00	.45	2.3	.19	.72	5.4	.35	.03	.01	.00	e.00	.02
24	.00	.53	1.1	1.3	.43	1.9	.28	.03	.01	.00	e.00	.01
25	.01	.46	.55	1.0	.34	.92	.27	.03	.01	.00	e.00	.01
26	.01	.26	.39	.56	.36	.73	.96	.04	.01	.00	e.00	.02
27	.01	.16	.38	.38	.35	1.8	.54	.03	.00	.00	e.00	.04
28	.02	.10	e1.0	.29	.30	1.1	.36	.02	.00	.00	.00	.00
29	.01	.07	e.60	.22	---	.67	.28	.02	.00	.00	.00	.00
30	.05	.06	e.40	.17	---	.47	.23	.02	.05	.00	.00	.00
31	.04	---	e.30	.14	---	.53	---	.06	---	.00	.00	---
TOTAL	0.47	4.64	13.81	13.52	9.53	24.65	13.59	2.03	0.58	0.15	0.01	0.12
MEAN	.015	.15	.45	.44	.34	.80	.45	.065	.019	.005	.000	.004
MAX	.10	.86	2.3	1.3	1.9	5.4	1.0	.28	.05	.03	.01	.04
MIN	.00	.02	.04	.11	.06	.14	.23	.02	.00	.00	.00	.00
CFSM	.11	1.10	3.18	3.12	2.43	5.68	3.24	.47	.14	.03	.00	.03
IN.	.12	1.23	3.67	3.59	2.53	6.55	3.61	.54	.15	.04	.00	.03

e Estimated



TENNESSEE RIVER BASIN

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035382677 BEAR CREEK TRIBUTARY NEAR WHEAT, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1993, BY WATER YEAR (WY)

MEAN	.007	.092	.23	.43	.30	.39	.25	.11	.20	.034	.008	.058
MAX	.015	.15	.45	.67	.42	.80	.45	.30	.76	.10	.032	.22
(WY)	1993	1993	1993	1989	1989	1993	1993	1989	1989	1989	1989	1989
MIN	.001	.005	.010	.28	.10	.17	.087	.017	.000	.005	.000	.002
(WY)	1988	1988	1988	1988	1988	1988	1988	1988	1988	1993	1987	1987

SUMMARY STATISTICS

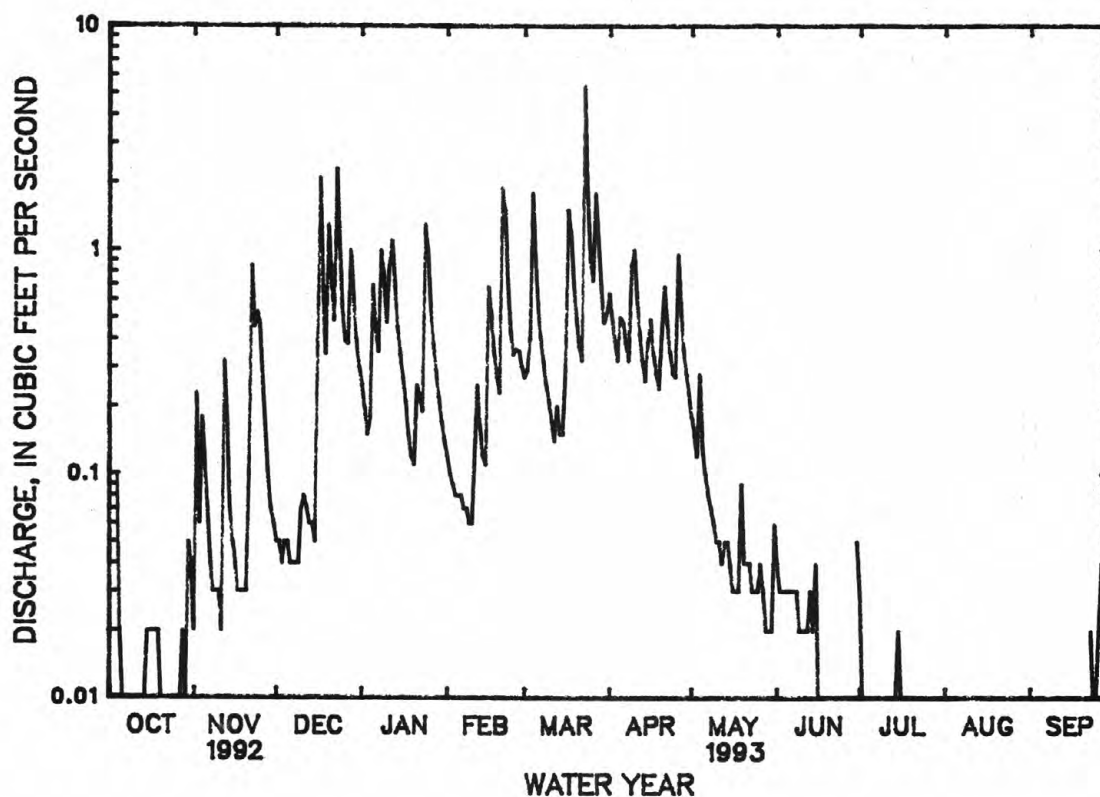
FOR 1993 WATER YEAR

WATER YEARS 1986 - 1993

ANNUAL TOTAL	83.10	
ANNUAL MEAN	.23	.18
HIGHEST ANNUAL MEAN		.29
LOWEST ANNUAL MEAN		.057
HIGHEST DAILY MEAN	5.4	5.5
LOWEST DAILY MEAN	a.00	.00
ANNUAL SEVEN-DAY MINIMUM	.00	.00
INSTANTANEOUS PEAK FLOW	b30	b30
INSTANTANEOUS PEAK STAGE	2.65	2.65
INSTANTANEOUS LOW FLOW	a.00	a.00
ANNUAL RUNOFF (CFSM)	1.63	1.25
ANNUAL RUNOFF (INCHES)	22.08	17.01
10 PERCENT EXCEEDS	.65	.45
50 PERCENT EXCEEDS	.05	.03
90 PERCENT EXCEEDS	.00	.00

a Many days each year.

b From rating curve extended above 4 ft<sup>3</sup>/s.



## TENNESSEE RIVER BASIN

03538270 BEAR CREEK AT STATE HIGHWAY 95 NEAR OAK RIDGE, TN

LOCATION.--Lat 35°56'14", long 84°20'22", Roane County, Hydrologic Unit 06010207, on right bank upstream from bridge on State Hwy 95, in triangle formed by intersection of Highway 95 and Bear Creek Road, 6.8 mi southwest of Oak Ridge, and at mile 2.8.

DRAINAGE AREA.--4.34 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1959 to June 1964 (discharge measurements only), March 1985 to current year.

REVISED RECORDS.--WDR TN-87-1: Drainage area. WDR TN-89-1: 1985-88 (M).

GAGE.--Water-stage recorder and Cippolletti-weir. Datum of gage is 801.15 ft above sea level.

REMARKS.--Records fair, except for discharges less than 2.0 ft<sup>3</sup>/s which are poor.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 160 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 23	1700	*420	*3.27	No other peak greater than base discharge.			

Minimum discharge, 0.34 ft<sup>3</sup>/s, Sept. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.76	1.3	2.5	7.9	5.7	8.3	17	6.5	5.8	1.9	.43	.38
2	.67	11	2.3	6.5	5.2	8.1	14	5.8	3.4	1.1	.45	.38
3	.63	4.9	2.0	5.8	4.4	9.7	11	5.6	1.7	.93	.45	.37
4	5.1	12	2.3	5.6	3.9	40	10	6.9	1.6	.83	.47	5.2
5	3.5	6.9	2.3	19	3.8	21	13	5.3	1.7	.78	.57	.86
6	1.7	5.0	1.9	12	3.5	15	11	4.3	1.6	.72	5.0	.65
7	1.3	3.1	1.9	9.9	3.4	12	10	3.6	1.5	.68	1.5	.59
8	1.1	2.3	1.7	e23	3.3	10	9.2	3.3	1.4	.59	.88	.59
9	1.0	1.8	1.7	e14	3.6	8.6	20	3.1	1.3	.59	.75	.56
10	.92	1.6	3.5	e11	3.9	7.6	21	2.8	1.1	.68	.64	.71
11	.83	1.4	3.1	e25	3.9	6.6	16	2.5	1.4	.69	.59	.50
12	.74	10	2.7	e20	7.1	5.9	13	2.4	.94	.58	.67	.43
13	.74	7.3	2.5	e14	5.4	7.0	11	2.9	1.3	.53	1.2	.43
14	.72	4.3	2.3	e9.6	4.5	6.9	9.4	2.9	1.6	.72	1.0	.41
15	.68	3.0	2.2	e8.7	3.9	6.5	12	2.6	3.2	1.3	.76	.45
16	.68	2.3	8.2	e7.2	15	9.5	15	4.5	1.6	.95	.65	3.2
17	.71	1.9	52	e6.2	11	27	11	3.5	1.3	1.1	.61	1.2
18	.68	1.7	16	e5.2	8.9	23	9.6	3.4	1.1	1.3	.85	.79
19	.68	1.5	11	e4.0	7.5	16	8.8	5.3	1.3	.85	.66	.64
20	.68	1.4	31	e3.0	6.9	13	11	2.9	1.2	1.6	.57	.56
21	.65	4.1	18	e10	60	11	15	2.6	1.1	.86	.54	.53
22	.55	25	13	6.6	39	9.9	11	2.7	1.2	.71	.49	.48
23	.55	13	56	5.8	19	139	9.7	2.3	1.0	.64	.46	1.3
24	.55	14	29	32	14	63	8.7	2.1	.95	.59	.43	2.3
25	.55	12	17	21	11	27	7.7	2.1	.89	.57	.44	1.2
26	.55	7.7	12	14	12	20	19	2.0	.89	.56	.47	3.4
27	.55	5.9	9.6	11	11	45	11	1.8	.84	1.3	.41	6.2
28	.76	4.7	24	9.4	9.0	28	9.6	2.0	.84	1.4	.42	2.0
29	.80	3.5	15	7.8	---	19	8.4	2.7	.81	.68	.43	1.2
30	1.0	2.9	12	6.4	---	14	7.3	3.8	1.2	.55	.42	1.0
31	3.4	---	9.7	5.9	---	15	---	7.4	---	.49	.38	---
TOTAL	33.73	177.5	368.4	347.5	289.8	652.6	360.4	111.6	45.76	26.77	23.59	38.51
MEAN	1.09	5.92	11.9	11.2	10.3	21.1	12.0	3.60	1.53	.86	.76	1.28
MAX	5.1	25	56	32	60	139	21	7.4	5.8	1.9	5.0	6.2
MIN	.55	1.3	1.7	3.0	3.3	5.9	7.3	1.8	.81	.49	.38	.37
CFSM	.25	1.36	2.74	2.58	2.38	4.85	2.77	.83	.35	.20	.18	.30
IN.	.29	1.52	3.16	2.98	2.48	5.59	3.09	.96	.39	.23	.20	.33

e Estimated

## 03538270 BEAR CREEK AT STATE HIGHWAY 95 NEAR OAK RIDGE, TN--Continued

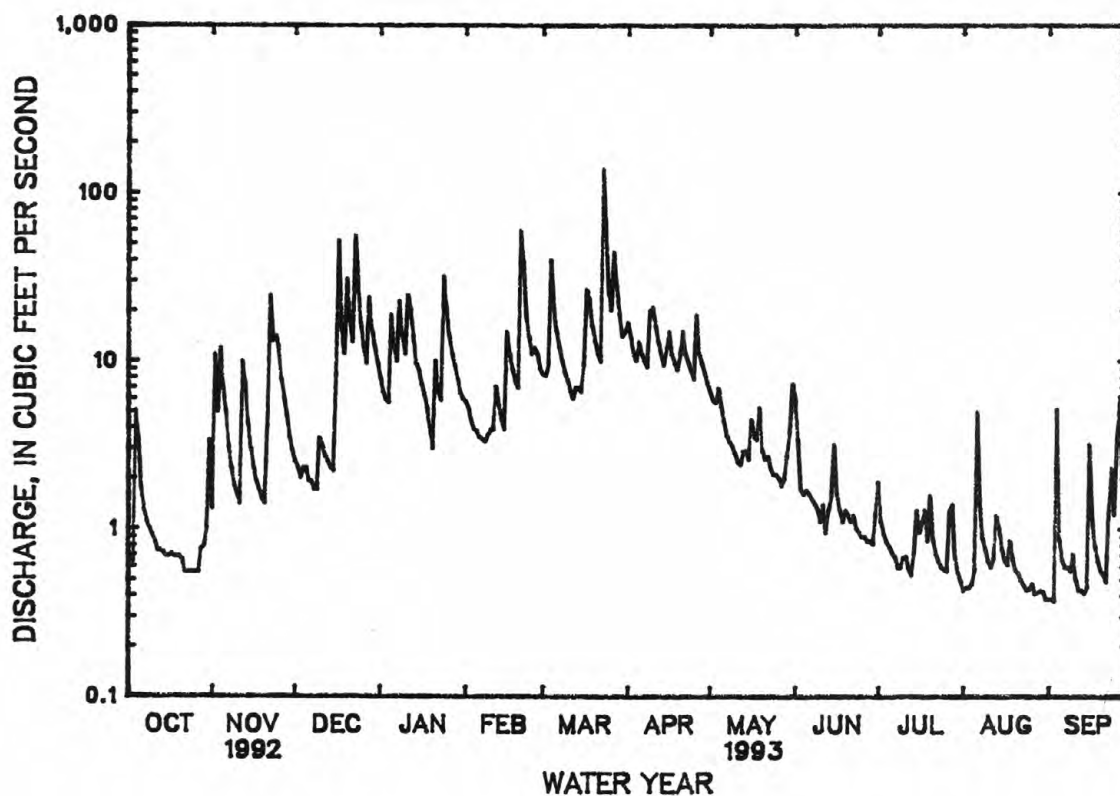
## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 1993, BY WATER YEAR (WY)

MEAN	2.29	4.54	12.4	12.3	15.3	12.3	6.84	4.46	4.44	2.63	2.70	1.99
MAX	10.3	12.9	34.8	24.2	30.9	21.1	12.0	13.1	19.3	5.79	8.92	9.26
(WY)	1990	1990	1991	1989	1991	1993	1993	1990	1989	1989	1990	1989
MIN	.43	.62	1.54	2.85	4.67	5.52	2.41	1.26	.32	.86	.31	.55
(WY)	1988	1988	1988	1986	1988	1985	1986	1988	1988	1993	1987	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1985 - 1993
ANNUAL TOTAL	1952.42	2476.16	
ANNUAL MEAN	5.33	6.78	6.89
HIGHEST ANNUAL MEAN			11.0 1990
LOWEST ANNUAL MEAN			2.57 1988
HIGHEST DAILY MEAN	59 Jan 3	139 Mar 23	295 Dec 23 1990
LOWEST DAILY MEAN	.46 Sep 17	.37 Sep 3	.19 Sep 4 1987
ANNUAL SEVEN-DAY MINIMUM	.56 Oct 21	.40 Aug 28	.21 Sep 1 1987
INSTANTANEOUS PEAK FLOW		a420 Mar 23	a783 Dec 23 1990
INSTANTANEOUS PEAK STAGE		3.27 Mar 23	3.88 Dec 23 1990
INSTANTANEOUS LOW FLOW		.34 Sep 3	b.18 Sep 3 1987
ANNUAL RUNOFF (CFSM)	1.23	1.56	1.59
ANNUAL RUNOFF (INCHES)	16.74	21.22	21.58
10 PERCENT EXCEEDS	12	15	14
50 PERCENT EXCEEDS	2.5	3.0	2.7
90 PERCENT EXCEEDS	.72	.56	.49

a From rating curve extended above 120 ft<sup>3</sup>/s based on indirect measurement of peak flow.

b Also occurred Sept. 4, 1987.



## TENNESSEE RIVER BASIN

03538600 OBED RIVER AT CROSSVILLE, TN

LOCATION.--Lat 35°57'27", long 85°03'00", Cumberland County, Hydrologic Unit 06010208, on right bank downstream wingwall of bridge on Sparta Drive, 0.4 mi downstream from Town Branch, and at mile 38.8.

DRAINAGE AREA.--12.0 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1950-51; crest-stage partial record, water years 1955-85; December 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1717.40 ft above sea level.

REMARKS.--Records good. Periodic observations of water temperature are published in this report as miscellaneous water-quality data. Flow affected at times by a small lake upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 4	0630	597	6.63	Mar. 23	1415	*808	*8.02

Minimum discharge, 0.09 ft<sup>3</sup>/s, Aug. 28, 29, Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	2.0	4.0	26	12	19	48	10	3.4	1.8	.47	.36
2	5.2	22	3.4	22	10	40	28	9.4	2.0	.99	.40	.30
3	4.0	19	2.8	19	9.3	68	12	18	1.4	1.2	.40	.31
4	13	312	3.3	34	8.7	91	11	65	1.3	.91	.41	.54
5	29	251	3.6	93	7.9	69	27	23	1.3	1.2	.41	.24
6	25	92	2.8	58	7.4	55	42	5.7	2.7	1.2	3.5	.46
7	18	9.7	2.9	46	6.8	27	75	4.9	1.8	1.3	.51	.51
8	14	12	2.7	55	6.7	9.6	80	4.3	1.8	1.1	.48	1.1
9	11	13	2.5	34	6.4	10	88	4.1	1.4	3.6	.57	1.3
10	7.7	13	5.1	10	5.3	12	59	3.7	1.3	1.7	.63	.81
11	5.9	12	8.7	49	7.2	12	14	3.1	1.2	2.2	.67	.63
12	4.7	81	10	84	11	12	17	2.9	2.9	1.5	.50	.65
13	3.8	84	10	63	11	17	18	2.8	1.4	.93	.63	.74
14	2.6	19	9.9	49	10	18	46	2.5	.87	1.3	.44	.51
15	1.9	4.8	9.3	31	10	36	50	2.3	2.7	1.1	.44	.72
16	2.5	4.1	18	7.3	44	53	23	3.0	1.0	.89	.57	.78
17	1.9	3.6	55	6.4	37	110	6.1	3.2	.79	3.6	.62	.66
18	1.8	2.9	40	6.0	29	92	5.4	2.0	.96	1.1	.55	.68
19	1.9	2.9	30	5.6	24	74	5.2	7.1	.77	.80	.32	.38
20	1.8	2.7	162	6.6	20	60	24	3.1	1.0	.80	.44	.38
21	1.8	5.4	122	35	86	52	23	2.8	.80	1.1	.46	.35
22	1.6	41	83	56	106	45	5.7	2.6	1.1	.60	.37	.32
23	2.2	86	172	26	64	450	5.1	1.7	.80	.67	.57	3.3
24	.97	119	151	29	26	379	5.0	2.4	.62	.46	.83	1.6
25	.81	96	96	26	8.5	162	15	2.4	.96	.56	.78	1.7
26	1.4	61	51	27	15	84	58	3.5	.67	.41	1.2	5.0
27	1.4	45	14	25	18	129	9.4	2.2	1.9	.26	.64	1.7
28	2.0	34	58	22	19	105	11	2.0	1.4	.26	.13	1.2
29	1.2	21	51	19	---	78	12	1.4	1.0	.64	.17	1.0
30	4.7	4.4	41	16	---	62	11	1.3	1.6	.96	.35	.89
31	3.8	---	32	14	---	55	---	4.6	---	.61	.33	---
TOTAL	184.48	1475.5	1257.0	999.9	626.2	2485.6	833.9	207.0	42.84	35.75	18.79	29.12
MEAN	5.95	49.2	40.5	32.3	22.4	80.2	27.8	6.68	1.43	1.15	.61	.97
MAX	29	312	172	93	106	450	88	65	3.4	3.6	3.5	5.0
MIN	.81	2.0	2.5	5.6	5.3	9.6	5.0	1.3	.62	.26	.13	.24
CFSM	.50	4.10	3.38	2.69	1.86	6.68	2.32	.56	.12	.10	.05	.08
IN.	.57	4.57	3.90	3.10	1.94	7.71	2.59	.64	.13	.11	.06	.09

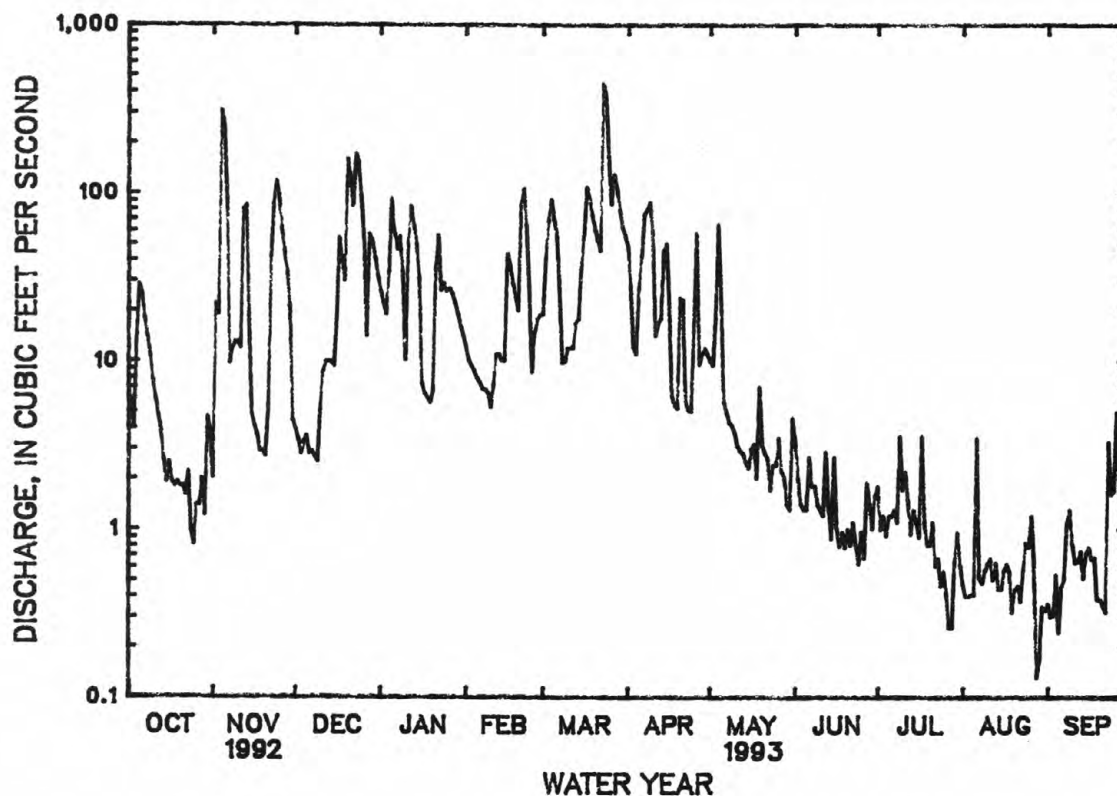
TENNESSEE RIVER BASIN  
03538600 OBED RIVER AT CROSSVILLE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

MEAN	5.95	49.2	59.0	33.1	18.6	50.1	17.5	8.82	16.0	8.07	4.33	9.70
MAX	5.95	49.2	77.5	33.9	22.4	80.2	27.8	11.0	30.6	15.0	8.06	18.4
(WY)	1993	1993	1992	1992	1993	1993	1993	1992	1992	1992	1992	1992
MIN	5.95	49.2	40.5	32.3	15.0	20.1	7.19	6.68	1.43	1.15	.61	.97
(WY)	1993	1993	1993	1993	1992	1992	1992	1993	1993	1993	1993	1993

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1992 - 1993
ANNUAL TOTAL	7764.87	8196.08	
ANNUAL MEAN	21.2	22.5	22.5
HIGHEST ANNUAL MEAN			22.5 1993
LOWEST ANNUAL MEAN			22.5 1993
HIGHEST DAILY MEAN	312 Nov 4	450 Mar 23	450 Mar 23 1993
LOWEST DAILY MEAN	.16 Aug 4	.13 Aug 28	.13 Aug 28 1993
ANNUAL SEVEN-DAY MINIMUM	.32 Jul 29	.28 Aug 28	.28 Aug 28 1993
INSTANTANEOUS PEAK FLOW		808 Mar 23	808 Mar 23 1993
INSTANTANEOUS PEAK STAGE		8.02 Mar 23	8.02 Mar 23 1993
INSTANTANEOUS LOW FLOW		a.09 Aug 28	a.09 Aug 4 1992
ANNUAL RUNOFF (CFSM)	1.77	1.87	1.87
ANNUAL RUNOFF (INCHES)	24.07	25.41	25.42
10 PERCENT EXCEEDS	60	63	62
50 PERCENT EXCEEDS	5.3	4.9	5.4
90 PERCENT EXCEEDS	.81	.57	.63

a Also occurred on Aug. 29 and Sept. 22, 1993.





## TENNESSEE RIVER BASIN

03540500 EMORY RIVER AT OAKDALE, TN

LOCATION.--Lat 35°58'59", long 84°33'29", Morgan County, Hydrologic Unit 06010208, on left bank, at Oakdale, 1,000 ft downstream from highway bridge, 1,100 ft downstream from Mud Lick Creek, and at mile 18.3.

DRAINAGE AREA.--764 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1927 to current year. Prior to October 1929, published as Emory River at Harriman and October 1929 to September 1934 as Emory River at Oakdale.

REVISED RECORDS.--WSP 823: Drainage area. WSP 923: 1940. WSP 1386: 1928-30(M), 1932, 1943, 1945(P).

GAGE.--Water-stage recorder. Datum of gage is 761.38 ft above sea level. Prior to Oct. 1, 1929, nonrecording gage at site 5.8 mi downstream at datum 43.60 ft lower, and Oct. 1, 1929, to Dec. 29, 1969, water-stage recorder at present site at datum 2.00 ft higher.

REMARKS.--Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1857, that of Mar. 23, 1929, from report of Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 19,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 23	1730	*77,500	*29.21	No other peak greater than base discharge.			

Minimum discharge, 8.3 ft<sup>3</sup>/s, Aug. 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	620	628	1220	2040	1110	e1700	2500	1340	181	45	10	26
2	512	738	1090	1670	987	1620	2400	1120	270	46	9.4	21
3	429	1680	957	1450	863	2000	2140	966	279	62	11	21
4	424	4350	845	1300	777	5690	1820	1240	207	51	11	33
5	1420	6770	802	3320	714	e5300	1870	1450	160	38	11	35
6	1760	4490	783	3560	662	e3750	3170	1140	132	31	22	31
7	1270	2860	726	2730	623	e2900	2960	914	108	28	25	21
8	1020	2010	687	3160	584	2420	2480	770	96	24	24	14
9	893	1560	631	3590	546	2010	2650	657	86	19	35	13
10	757	1290	623	2890	507	1710	4570	563	78	17	42	14
11	613	1100	786	2750	492	1480	3440	478	72	39	36	11
12	515	1110	981	5120	781	1280	2550	411	65	33	29	12
13	443	2500	912	4300	987	1130	1990	372	127	27	32	13
14	386	2260	850	3130	883	1250	1640	361	167	42	32	19
15	335	1750	801	2430	833	1200	1440	330	120	45	37	18
16	291	1400	1190	1980	1730	1220	2020	289	123	50	27	18
17	263	1180	7770	1640	3720	3830	1800	250	124	45	21	17
18	255	1040	5750	1380	2630	e6600	1500	223	107	115	19	16
19	251	904	3420	1240	2080	5300	1300	291	94	75	17	13
20	226	797	5100	1130	1770	4280	1180	403	74	57	15	11
21	204	827	6210	1170	2140	4110	1710	385	63	64	18	10
22	186	2050	4170	1770	5170	3670	1760	298	56	69	20	9.4
23	173	6780	7400	1610	4720	37200	1510	243	49	57	19	13
24	163	4160	10000	2770	3270	24800	1310	205	44	45	20	14
25	154	5770	5080	5390	2820	7540	1170	176	39	44	15	14
26	143	4080	3430	3440	e2100	4400	5710	193	33	31	14	24
27	140	2870	2590	2540	e1950	5890	4700	254	29	26	14	61
28	142	2190	3920	1990	e1800	6320	2920	250	25	23	13	93
29	146	1740	4300	1640	---	4340	2100	213	31	23	11	114
30	180	1430	3220	1380	---	3140	1640	200	40	17	9.5	89
31	313	---	2520	1210	---	2580	---	166	---	13	14	---
TOTAL	14627	72314	88764	75720	47249	160660	69950	16151	3079	1301	632.9	818.4
MEAN	472	2410	2863	2443	1687	5183	2332	521	103	42.0	20.4	27.3
MAX	1760	6780	10000	5390	5170	37200	5710	1450	279	115	42	114
MIN	140	628	623	1130	492	1130	1170	166	25	13	9.4	9.4
CFSM	.62	3.16	3.75	3.20	2.21	6.78	3.05	.68	.13	.05	.03	.04
IN.	.71	3.52	4.32	3.69	2.30	7.82	3.41	.79	.15	.06	.03	.04

e Estimated

TENNESSEE RIVER BASIN

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03540500 EMORY RIVER AT OAKDALE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 1993, BY WATER YEAR (WY)

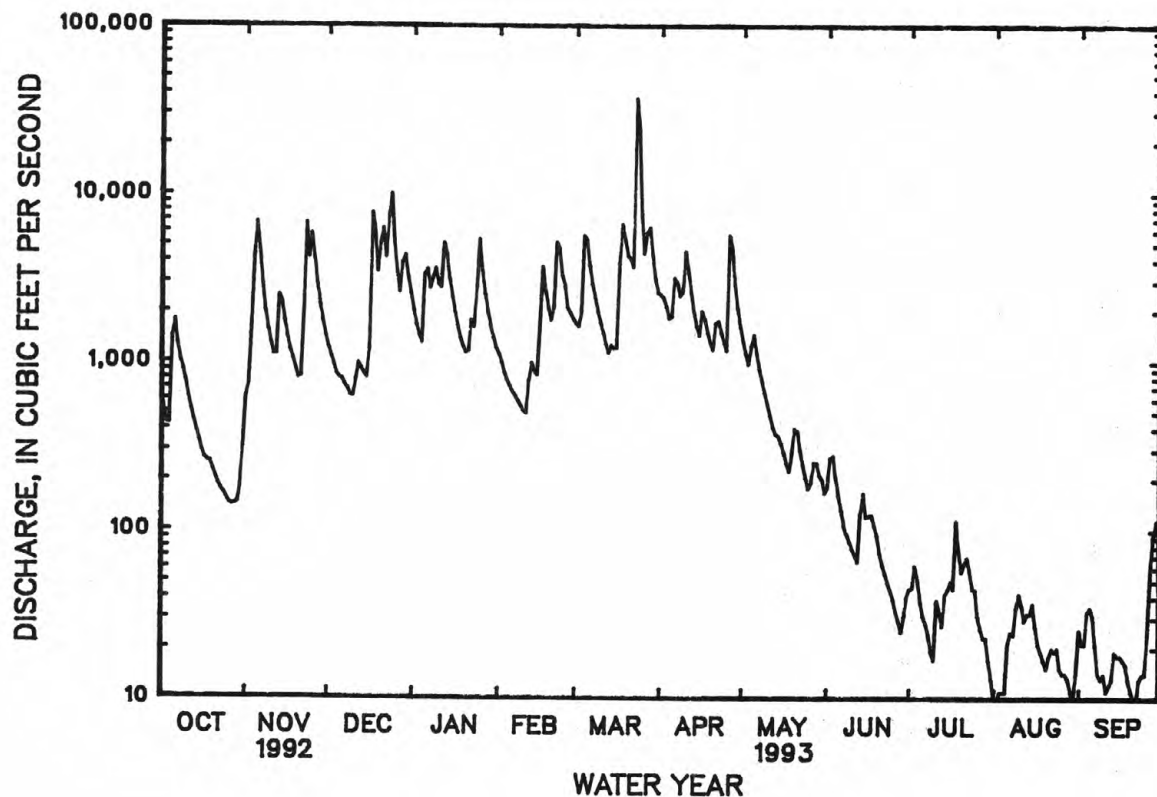
MEAN	295	1101	2271	2772	2998	3154	2133	1314	645	476	288	246
MAX	1971	6214	7938	7941	8136	8962	5808	5804	6731	3694	2107	1562
(WY)	1976	1958	1991	1937	1939	1975	1977	1973	1989	1967	1942	1944
MIN	.57	.37	42.1	97.8	422	946	374	140	16.3	5.55	7.70	.91
(WY)	1954	1954	1940	1981	1941	1985	1986	1962	1936	1944	1930	1954

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR			FOR 1993 WATER YEAR			WATER YEARS 1927 - 1993		
ANNUAL TOTAL	529220			551266.3					
ANNUAL MEAN	1446			1510					
HIGHEST ANNUAL MEAN							1467		
LOWEST ANNUAL MEAN							2653		
HIGHEST DAILY MEAN	20300			37200			103000		
LOWEST DAILY MEAN	121			9.4			a.00		
ANNUAL SEVEN-DAY MINIMUM	152			12			.00		
INSTANTANEOUS PEAK FLOW				77500			b195000		
INSTANTANEOUS PEAK STAGE				29.21			c41.20		
INSTANTANEOUS LOW FLOW				8.3			a.00		
ANNUAL RUNOFF (CFSM)	1.89			1.98			1.92		
ANNUAL RUNOFF (INCHES)	25.77			26.84			26.10		
10 PERCENT EXCEEDS	3280			4090			3400		
50 PERCENT EXCEEDS	849			738			548		
90 PERCENT EXCEEDS	261			19			20		

a Also occurred Aug. 14, 15, 1944; Nov. 7, 8, 9, 1952.

b From rating curve extended above 85,000 ft.

c Maximum stage from floodmarks and flood profile, present site and datum, 61.1 ft at site and datum then in use.



## TENNESSEE RIVER BASIN

03543500 SEWEE CREEK NEAR DECATUR, TN

LOCATION.--Lat 35°34'53", long 84°44'53", Meigs County, Hydrologic Unit 06020001, on right bank, 0.3 mi downstream from bridge on State Highway 58, 0.5 mi downstream from Dry Fork, 5.0 mi north of Decatur, and at mile 5.7.

DRAINAGE AREA.--117 mi<sup>2</sup>.

PERIOD OF RECORD.--May 1934 to current year. Prior to October 1935, published as Suee Creek near Decatur.

REVISED RECORDS.--WSP 1910: 1936(M), 1939(M), 1943(M), 1946, 1948(M), 1949, 1951, 1957, 1958(P). WSP 2110: 1951 (monthly runoff).

GAGE.--Water-stage recorder. Datum of gage is 694.32 ft above sea level.

REMARKS.--Records good except for estimated daily discharges Aug. 2 to Sept. 16, which are poor. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 22	1730	2,370	6.46	Mar. 24	0030	*2,840	*7.43

Minimum discharge, 23 ft<sup>3</sup>/s, Sept. 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	133	128	257	165	207	544	139	217	197	31	e28
2	42	249	113	218	146	206	391	128	109	64	e32	e26
3	39	240	97	197	130	290	314	118	88	49	e33	e25
4	194	199	96	186	121	1220	277	133	77	43	e36	e24
5	274	215	124	431	114	585	382	113	71	39	e39	e26
6	148	181	94	282	108	399	381	106	64	36	e62	e25
7	107	141	91	251	103	317	314	101	61	35	e70	e25
8	87	115	83	594	98	274	278	96	58	38	e58	e26
9	77	99	77	418	93	233	447	95	55	43	e52	e28
10	68	89	103	325	90	208	441	88	52	41	e34	e27
11	59	80	108	611	107	184	318	83	50	41	e27	e27
12	52	199	96	697	280	167	273	80	49	38	e27	e25
13	48	285	88	464	186	195	242	85	47	38	e30	e24
14	43	160	82	344	149	187	216	103	46	38	e32	e24
15	40	126	77	291	127	169	209	82	63	41	e30	e25
16	40	106	420	258	334	200	211	75	50	39	e29	e32
17	40	95	1410	224	258	689	175	76	46	38	e28	25
18	39	87	587	197	208	786	159	73	43	40	e27	25
19	38	80	369	176	179	555	144	209	41	37	e26	23
20	37	74	1300	169	170	431	157	140	40	35	e26	26
21	37	119	748	305	222	366	284	98	41	34	e26	32
22	37	1020	553	272	285	311	189	90	42	34	e26	30
23	37	777	1150	220	189	1460	166	80	39	33	e26	29
24	35	622	998	829	165	1760	152	74	40	30	e25	32
25	34	620	548	605	159	684	137	72	70	32	e25	40
26	34	384	415	383	242	766	424	73	57	31	e25	51
27	38	277	352	307	272	1810	242	67	43	30	e25	73
28	104	222	749	258	221	1110	199	63	41	30	e26	45
29	86	182	459	225	---	672	172	61	42	30	e26	31
30	114	151	362	193	---	487	157	59	47	29	e28	27
31	313	---	300	175	---	638	---	240	---	30	e30	---
TOTAL	2384	7327	12177	10362	4921	17566	7995	3100	1789	1313	1017	906
MEAN	76.9	244	393	334	176	567	266	100	59.6	42.4	32.8	30.2
MAX	313	1020	1410	829	334	1810	544	240	217	197	70	73
MIN	34	74	77	169	90	167	137	59	39	29	25	23
CFSM	.66	2.09	3.36	2.86	1.50	4.84	2.28	.85	.51	.36	.28	.26
IN.	.76	2.33	3.87	3.29	1.56	5.59	2.54	.99	.57	.42	.32	.29

e Estimated

TENNESSEE RIVER BASIN

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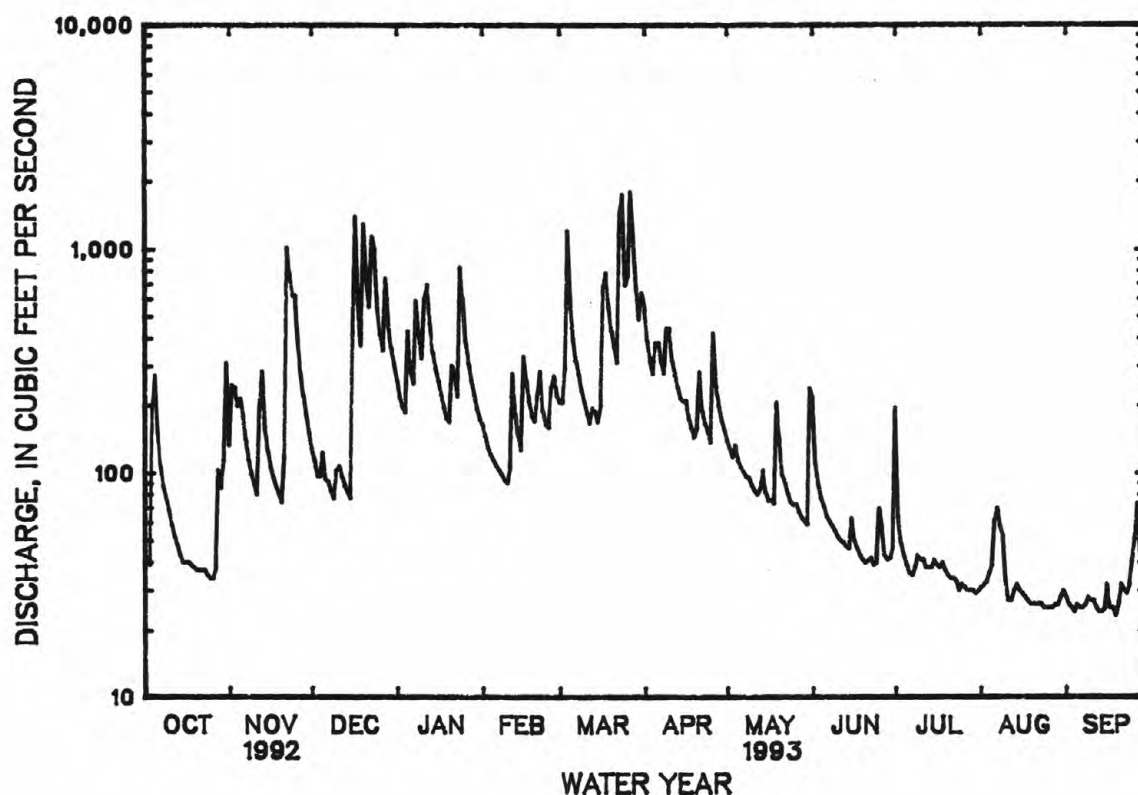
03543500 SEWEE CREEK NEAR DECATUR, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 1993, BY WATER YEAR (WY)

MEAN	57.2	121	248	344	392	395	267	160	95.2	93.2	54.7	53.9
MAX	334	684	795	969	1058	1074	595	962	846	648	272	439
(WY)	1990	1949	1943	1946	1939	1963	1977	1984	1989	1967	1942	1957
MIN	16.3	17.9	25.6	27.2	49.9	90.4	55.8	32.0	12.9	15.8	17.0	15.8
(WY)	1988	1988	1988	1981	1941	1988	1986	1988	1988	1986	1956	1935

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1934 - 1993	
ANNUAL TOTAL	58836		70857			
ANNUAL MEAN	161		194		189	
HIGHEST ANNUAL MEAN					323	
LOWEST ANNUAL MEAN					61.5	
HIGHEST DAILY MEAN	2160	Jan 3	1810	Mar 27	12900	Mar 12 1963
LOWEST DAILY MEAN	30	Aug 21	23	Sep 19	8.1	Jun 29 1988
ANNUAL SEVEN-DAY MINIMUM	35	Aug 15	25	Sep 2	9.2	Jun 26 1988
INSTANTANEOUS PEAK FLOW			2840	Mar 24	a23900	Jan 7 1946
INSTANTANEOUS PEAK STAGE			7.43	Mar 24	b23.97	Jan 7 1946
INSTANTANEOUS LOW FLOW			c23	Sep 18	6.3	Jun 28 1988
ANNUAL RUNOFF (CFSM)	1.37		1.66		1.62	
ANNUAL RUNOFF (INCHES)	18.71		22.53		21.97	
10 PERCENT EXCEEDS	335		443		403	
50 PERCENT EXCEEDS	95		99		76	
90 PERCENT EXCEEDS	39		29		23	

- a From rating curve extended above 11,300 ft<sup>3</sup>/s on basis of slope-area measurements of peak flow at gage-height 22.81 ft.  
b From flood marks.  
c Also occurred Sept. 19, may have been lower during period of estimated record.



## TENNESSEE RIVER BASIN

## 03560500 DAVIS MILL CREEK AT COPPERHILL, TN

LOCATION.--Lat 34°59'43", long 84°22'56", Polk County, Hydrologic Unit 06020203, on right bank 100 ft upstream from bridge on State Highway 68, 0.1 mi upstream from mouth, 0.4 mi northwest of CSX Railroad station, and 0.8 mi northwest of Post Office at Copperhill.

DRAINAGE AREA.--5.16 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1940 to September 1941 (published as Mill Creek at Copperhill), December 1948 to December 1977, July 1986 to current year.

REVISED RECORDS.--WSP 1206: Drainage area. WSP 2110: 1949-65 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,451.06 ft above sea level. July 16, 1940, to Sept. 30, 1941, water-stage recorder and sharp-crested weir at site 145 ft upstream at datum of 1.58 ft higher. Oct. 1, 1941, to Aug. 12, 1971, water-stage recorder and concrete San Dimas flume and dam at present site and datum.

REMARKS.--No estimated daily discharges. Records fair. Flow is predominately process water for BIT Manufacturing Company, Inc. plant that is withdrawn from Ocoee River upstream from Davis Mill Creek and discharged to Davis Mill Creek upstream from the gage. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 163 ft<sup>3</sup>/s, Aug. 2, gage height, 1.37 ft; minimum daily, 19 ft<sup>3</sup>/s, May 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	38	44	48	35	38	43	48	39	60	53	57
2	48	52	53	49	35	38	41	47	39	54	50	54
3	47	43	59	49	35	41	40	51	39	44	72	58
4	58	51	53	47	36	53	39	62	37	44	51	56
5	55	43	44	48	35	50	45	52	38	44	51	56
6	51	41	42	47	35	50	39	50	37	50	56	56
7	48	41	51	47	35	47	39	50	37	54	55	56
8	48	40	51	52	34	47	39	46	37	50	49	54
9	50	41	50	48	36	41	56	50	40	44	49	48
10	49	41	42	47	34	37	43	30	42	47	49	47
11	50	39	44	57	37	38	41	19	44	47	49	54
12	50	47	40	57	38	38	39	20	47	48	54	53
13	44	43	41	51	37	29	39	21	40	58	47	53
14	39	39	41	48	35	34	37	28	43	60	47	48
15	39	39	44	47	34	36	44	43	49	57	42	55
16	39	40	49	47	46	32	41	44	57	58	47	58
17	39	40	62	47	37	40	39	45	63	49	48	56
18	39	39	47	44	37	45	39	46	62	50	52	55
19	39	39	45	38	35	43	41	47	61	57	51	54
20	39	40	60	43	36	44	47	47	61	54	55	53
21	39	50	50	45	39	42	46	46	61	48	64	53
22	39	54	49	40	39	43	45	45	53	53	50	56
23	38	52	53	41	35	59	46	45	58	53	51	57
24	37	66	50	54	32	58	46	45	59	49	54	57
25	37	68	49	41	37	51	48	53	58	50	62	57
26	37	60	47	38	45	56	58	47	55	58	55	59
27	38	54	52	38	42	48	50	43	54	51	58	60
28	39	43	60	37	38	46	47	40	54	46	56	56
29	39	42	50	36	---	44	47	38	56	49	68	55
30	40	42	49	36	---	44	47	38	56	50	69	56
31	39	---	47	36	---	46	---	42	---	55	54	---
TOTAL	1343	1367	1518	1403	1029	1358	1311	1328	1476	1591	1668	1647
MEAN	43.3	45.6	49.0	45.3	36.7	43.8	43.7	42.8	49.2	51.3	53.8	54.9
MAX	58	68	62	57	46	59	58	62	63	60	72	60
MIN	37	38	40	36	32	29	37	19	37	44	42	47



TENNESSEE RIVER BASIN

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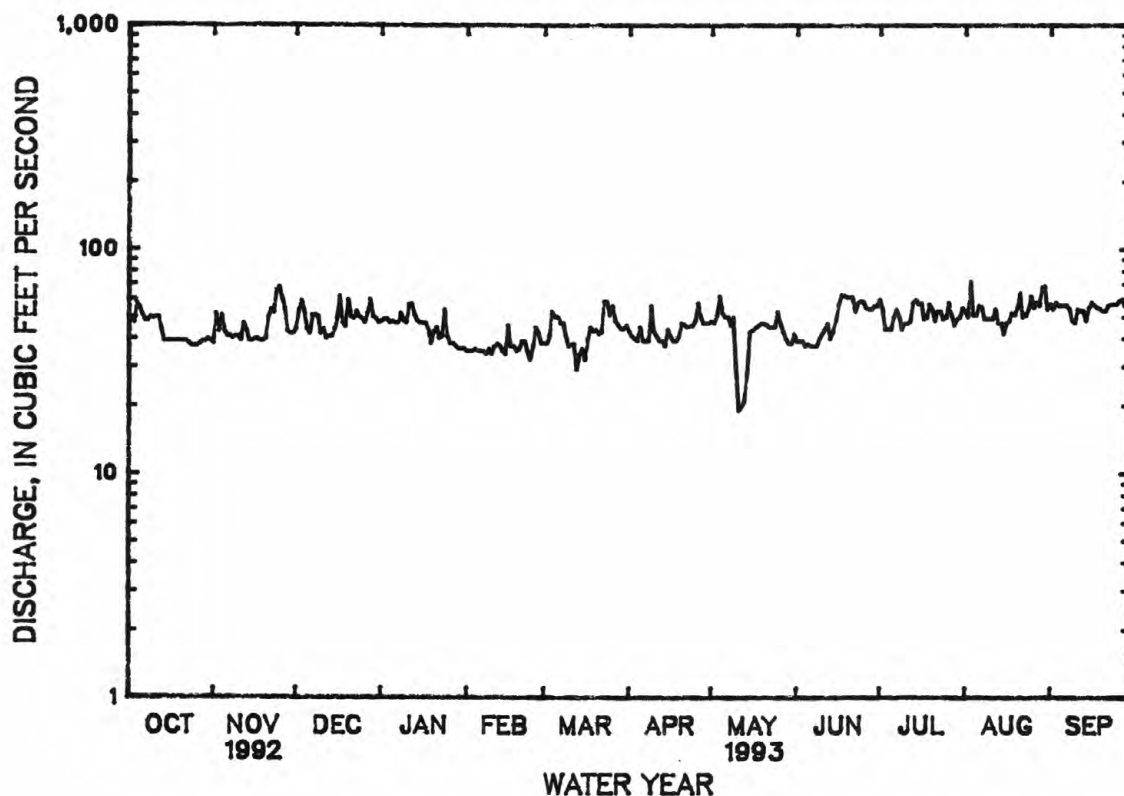
03560500 DAVIS MILL CREEK AT COPPERHILL, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 1993, BY WATER YEAR (WY)

MEAN	58.4	53.7	51.0	48.7	50.5	54.5	55.4	55.3	57.1	59.3	58.2	58.8
MAX	156	158	149	131	121	147	124	129	143	164	154	146
(WY)	1976	1976	1976	1976	1975	1977	1977	1976	1974	1974	1974	1974
MIN	6.35	7.03	7.65	6.85	5.53	6.44	6.37	5.72	6.40	9.97	8.56	6.39
(WY)	1941	1941	1941	1941	1941	1941	1941	1941	1941	1941	1941	1940

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1940 - 1993	
ANNUAL TOTAL	16661		17039			
ANNUAL MEAN	45.5		46.7		55.2	
HIGHEST ANNUAL MEAN					134	
LOWEST ANNUAL MEAN					6.99	
HIGHEST DAILY MEAN	91	Apr 21	72	Aug 3	950	Feb 16 1990
LOWEST DAILY MEAN	18	Mar 1	19	May 11	4.0	May 2 1941
ANNUAL SEVEN-DAY MINIMUM	19	Feb 28	29	May 10	4.6	Aug 1 1940
INSTANTANEOUS PEAK FLOW			163	Aug 2	a3520	Oct 6 1949
INSTANTANEOUS PEAK STAGE			1.37	Aug 2	b10.82	Feb 16 1990
10 PERCENT EXCEEDS	57		57		110	
50 PERCENT EXCEEDS	47		47		45	
90 PERCENT EXCEEDS	33		37		27	

- a From rating curve extended above 150 ft<sup>3</sup>/s on basis of critical-depth measurement of peak flow at gage height 6.02 ft in gage well, 8.5 ft from floodmarks.
- b Caused by backwater from flooding on Ocoee River.



## TENNESSEE RIVER BASIN

03563000 OCOEE RIVER AT EMF, TN

LOCATION.--Lat 35°05'48", long 84°32'07", Polk County, Hydrologic Unit 06020203, on left bank 700 ft downstream from Tennessee Valley Authority powerplant, 0.8 mi upstream from former village of Emf, 2.0 mi downstream from Goforth Creek, and at mile 19.6.

DRAINAGE AREA.--524 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1912 to current year. Prior to January 1913, monthly discharge only, published in WSP 1306.

REVISED RECORDS.--WSP 783: 1913-34. WSP 853: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 837.88 ft above sea level.

REMARKS.--Records fair. Flow regulated by Blue Ridge Lake (station 03558500), in Water Resources Data for Georgia, Ocoee No. 3 Lake (station 03562500) (see p. 251), and by powerplant above station. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 19, 1906, discharge, 62,000 ft<sup>3</sup>/s, was the greatest known since at least 1840, from reports of Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,740 ft<sup>3</sup>/s, Dec. 20, gage height 8.28 ft; minimum, 52 ft<sup>3</sup>/s, Sept. 28, gage height 2.62 ft; minimum daily 360 ft<sup>3</sup>/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1170	1050	2070	2780	e2600	1150	1480	1410	e1500	e800	807	1380
2	1070	1150	2090	2730	e2100	937	1230	1410	e1550	e800	792	1370
3	907	1480	2090	2700	e2500	937	2860	985	e1300	e750	1030	1370
4	990	1190	2100	2360	e2600	1210	2560	1040	e1250	e800	1150	1370
5	1220	1570	2120	2290	e2800	1590	2880	1370	e1250	e800	988	1380
6	1130	1270	2130	2220	e2400	1500	2790	1370	e1200	e650	1180	1380
7	1100	1240	2190	e1900	e2100	1470	2830	e1570	e1200	e750	1220	1380
8	1090	1220	2160	e1200	e2400	1460	2780	e1550	e1100	e750	1130	1390
9	1080	1320	2160	e1500	e2300	1090	2160	e1600	e1100	e750	1030	1380
10	1070	1330	2380	e1500	2180	926	2060	e1300	e1250	e750	1110	1160
11	924	1320	2620	e1600	2190	914	1500	e1250	e1200	e700	1120	1110
12	1070	1380	2170	e2200	2050	944	1450	e1250	e1250	e750	1350	1110
13	1090	1460	2150	e3000	1800	1450	1440	e1250	e1250	e700	1360	1050
14	1060	1370	2180	e3000	1780	1450	1440	e1300	e1200	e800	1360	888
15	1090	1350	2370	e2900	1480	1430	1440	e1550	e1100	e1150	1350	901
16	1040	1360	2360	e2900	1470	1430	1440	e1550	e1100	e1150	1350	1050
17	1140	1360	3560	e2400	1460	1530	1420	e1300	e1100	e1200	1350	1310
18	1060	1340	2750	e2300	1450	1590	1410	e1300	e1000	e750	1270	1120
19	1070	1350	2840	e2700	1670	1510	1410	e1300	e950	e800	1350	1110
20	1070	1340	4110	e2700	1420	1560	1720	e1350	e900	e1050	1320	971
21	1070	1010	3690	e2700	890	1550	1930	e1300	e1050	e1000	1390	980
22	1060	1530	3250	e2800	1500	1590	1570	e1300	e850	e900	1370	983
23	1070	1600	3210	e2800	1460	1870	1830	e1250	e850	e900	1370	907
24	1070	1580	3000	e3100	1440	2410	1400	e1200	e850	e700	917	904
25	1060	2470	2890	e3200	1430	1800	1390	e1250	e800	e750	1370	1070
26	850	2210	2840	e3300	1460	1330	1470	e1200	e750	e1000	1370	1070
27	843	1420	2810	e2800	1480	1540	1400	e1200	e800	e950	1370	717
28	847	1420	3170	e700	1470	1760	1430	e1600	e850	e1200	1370	360
29	901	1410	3050	e1100	---	1740	1430	e1200	e750	e1300	1270	827
30	870	1590	2840	e1100	---	2630	1420	e1200	e800	1000	1540	904
31	1160	---	2820	e2100	---	2790	---	e1250	---	808	1460	---
TOTAL	32242	42690	82170	72580	51880	47088	53570	40955	32100	27158	38414	32902
MEAN	1040	1423	2651	2341	1853	1519	1786	1321	1070	876	1239	1097
MAX	1220	2470	4110	3300	2800	2790	2880	1600	1550	1300	1540	1390
MIN	843	1010	2070	700	890	914	1230	985	750	650	792	360
(†)	-7200	+14300	-11600	+1300	-4900	+21300	+3100	+1600	-3400	-7700	-22000	-22200
MEAN±	808	1900	2276	2336	1678	2206	1889	1373	957	628	529	357
CFSM±	1.54	3.63	4.34	4.46	3.20	4.21	3.60	2.62	1.83	1.20	1.01	0.68
IN±	1.78	4.04	5.01	5.14	3.33	4.85	4.02	3.02	2.04	1.38	1.16	0.76
CAL YR	1992	MEAN±	1344	CFSM±	2.56	IN±	34.90					
WTR YR	1993	MEAN±	1411	CFSM±	2.69	IN±	36.54					

e Estimated

† Change in contents, in cfs-days, in Blue Ridge Lake (Georgia).

± Adjusted for change in contents in lakes or reservoirs listed above.

NOTE.--Contents (cfs-days) for adjustment furnished by Tennessee Valley Authority.

TENNESSEE RIVER BASIN

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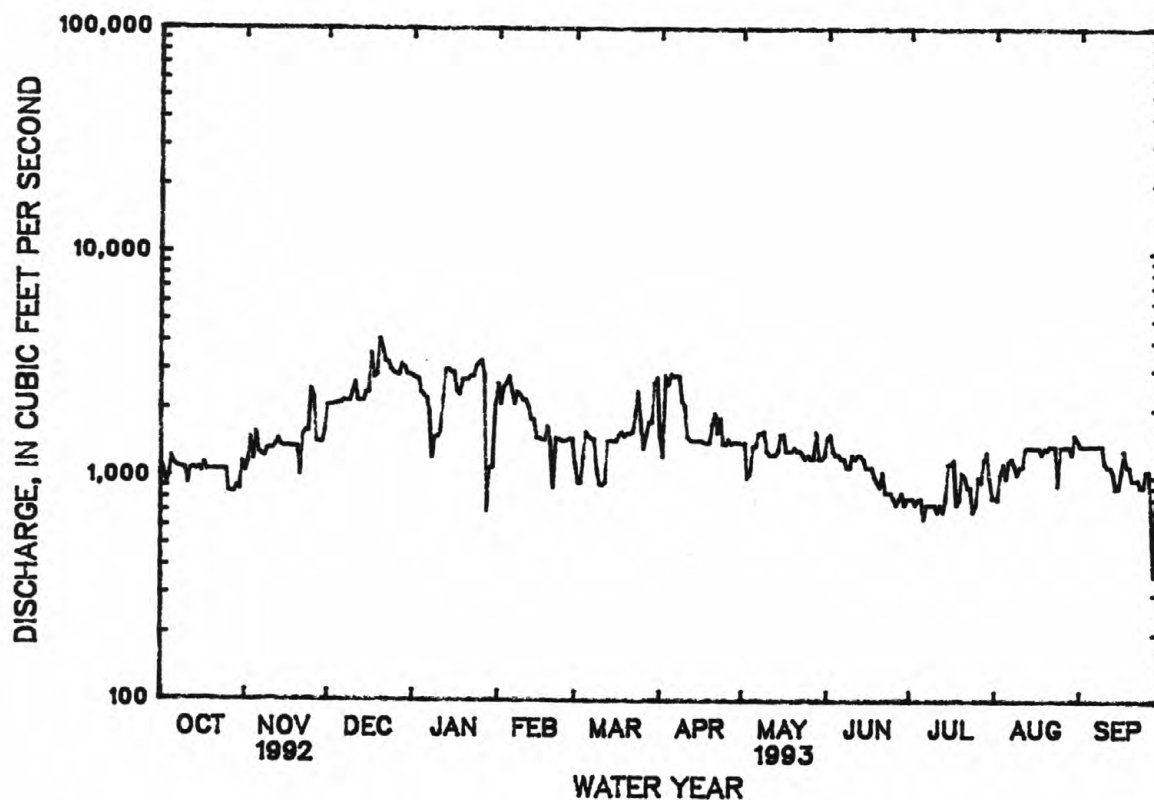
03563000 OCOEE RIVER AT EMF, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 1993, BY WATER YEAR (WY)

MEAN	1043	999	1124	1276	1406	1462	1511	1316	1159	1113	1104	1070
MAX	2312	1677	3415	2780	4687	4111	4040	2786	2272	2439	2014	1604
(WY)	1965	1990	1933	1933	1990	1990	1936	1946	1973	1938	1967	1949
MIN	410	260	278	448	356	381	351	328	436	432	459	472
(WY)	1931	1988	1988	1931	1934	1988	1941	1988	1940	1940	1986	1986

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1931 - 1993	
ANNUAL TOTAL	478401		553749		1214	
ANNUAL MEAN	1307		1517		1868	
HIGHEST ANNUAL MEAN					570	
LOWEST ANNUAL MEAN					1990	
HIGHEST DAILY MEAN	4110	Dec 20	4110	Dec 20	a24000	Feb 16 1990
LOWEST DAILY MEAN	559	Jun 30	360	Sep 28	4.6	Sep 14 1962
ANNUAL SEVEN-DAY MINIMUM	717	Apr 14	729	Jul 6	6.0	Jul 27 1944
INSTANTANEOUS PEAK FLOW			7740	Dec 20	a51400	Feb 16 1990
INSTANTANEOUS PEAK STAGE			8.28	Dec 20	b17.06	Feb 16 1990
INSTANTANEOUS LOW FLOW			52	Sep 28	3.4	Sep 20 1962
10 PERCENT EXCEEDS	2060		2700		1720	
50 PERCENT EXCEEDS	1180		1360		1070	
90 PERCENT EXCEEDS	850		850		582	

a From rating curve extended above 17,000 ft<sup>3</sup>/s.  
b From high water mark in gage house.



## TENNESSEE RIVER BASIN

03564500 OCOEE RIVER AT PARKSVILLE, TN

LOCATION.--Lat 35°05'48", long 84°39'15", Polk County, Hydrologic Unit 06020203, on right bank 0.4 mi downstream from Lake Ocoee Dam and Ocoee No. 1 powerplant of Tennessee Valley Authority at Parksville, and at mile 11.5.

DRAINAGE AREA.--595 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1911 to September 1916, March 1921 to current year.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1306: 1916, 1921-36 (adjusted runoff). WSP 1386: 1926.

GAGE.--Water-stage recorder. Datum of gage is 716.96 ft above sea level.

REMARKS.--No estimated daily discharge. Records good. Flow regulated by Blue Ridge Lake (station 03558500) in Water Resources Data for Georgia, Ocoee No. 3 Lake (station 03562500), and Lake Ocoee (station 03564000) (see p. 251). Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 19, 1906, discharge, 65,000 ft<sup>3</sup>/s, was the greatest known flood since at least 1840, from reports of Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,310 ft<sup>3</sup>/s, Dec. 23, gage height 8.60 ft; minimum, 25 ft<sup>3</sup>/s, Nov. 23, 24; minimum daily, 362 ft<sup>3</sup>/s, July 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1030	1090	2210	3210	2690	1510	2680	1470	1640	907	837	1630
2	994	1280	2270	3280	2040	1150	2740	1800	1330	1050	1030	1620
3	837	1290	2150	3280	2340	1170	2650	1200	1490	609	924	1710
4	965	1580	2060	3280	2590	1180	2480	1070	1210	665	1010	1340
5	1280	1900	2010	3320	2560	2520	2480	1130	1060	852	1280	1260
6	1480	2300	2360	2740	2030	1810	2630	1860	792	830	1250	1240
7	1530	1840	2150	2170	2030	1740	2560	1630	1190	903	1230	1600
8	1490	1830	2290	975	2270	1650	2270	1580	1230	827	922	1560
9	1430	1520	2370	933	2290	1440	2920	1500	1270	653	1250	1440
10	837	1570	2340	2090	2230	1280	2040	1490	1230	501	1360	1280
11	588	1420	2350	1740	2090	1340	2020	1820	1270	525	1390	1250
12	1310	1450	2340	1460	2040	1050	2110	1170	1010	831	1490	1110
13	1260	1390	2310	2580	1500	1360	1710	1400	844	655	1680	1310
14	1250	1640	2340	3260	1620	1410	1250	1500	1180	709	1200	1230
15	1220	1620	2610	3280	2040	1830	1740	1540	1180	1180	1240	1120
16	1180	1690	3130	3290	1720	1810	1760	1020	1170	1070	1570	1180
17	935	1790	3210	3330	1780	2200	1210	1410	1070	1060	1470	1390
18	950	1720	3100	2750	1840	1590	1260	1570	1080	560	1550	1050
19	1210	1710	3140	2180	1800	1570	1260	1450	889	821	1490	1070
20	1210	1210	3190	2500	1530	1480	1510	1380	1010	1140	1690	1160
21	1280	961	3130	2580	806	1470	1830	995	945	1140	1080	1110
22	1210	1410	3200	2650	1600	1980	1720	1060	834	1040	1240	1080
23	1200	1790	4020	2510	1760	2740	1820	982	908	1040	1480	1090
24	921	1790	4580	2680	1920	3470	1340	1460	673	367	1520	897
25	734	1980	4120	2930	1720	3420	1410	1360	591	362	1410	917
26	1090	2510	3570	3310	1560	2230	1370	1410	674	875	1410	907
27	1020	2630	3330	3300	1620	1920	1500	1410	583	811	1400	1050
28	1230	2050	3290	2370	1670	2270	1370	1470	875	1180	1400	935
29	1350	2310	3050	1820	---	1740	1470	1110	873	975	1180	904
30	1400	2620	3240	1450	---	1930	1520	1130	895	1250	1480	807
31	746	---	3230	1630	---	2480	---	1150	---	821	1390	---
TOTAL	35167	51891	88690	78878	53686	56740	56630	42527	30996	26209	40853	36247
MEAN	1134	1730	2861	2544	1917	1830	1888	1372	1033	845	1318	1208
MAX	1530	2630	4580	3330	2690	3470	2920	1860	1640	1250	1690	1710
MIN	588	961	2010	933	806	1050	1210	982	583	362	837	807

CAL YR 1992 MEAN‡ 1503 CFSM‡ 2.53 IN.‡ 34.38  
WTR YR 1993 MEAN‡ 1538 CFSM‡ 2.58 IN.‡ 35.10

‡ Adjusted for change in contents in Blue Ridge Lake (Georgia) and Lake Ocoee.

NOTE.--Contents (cfs-days) for adjustments furnished by Tennessee Valley Authority.

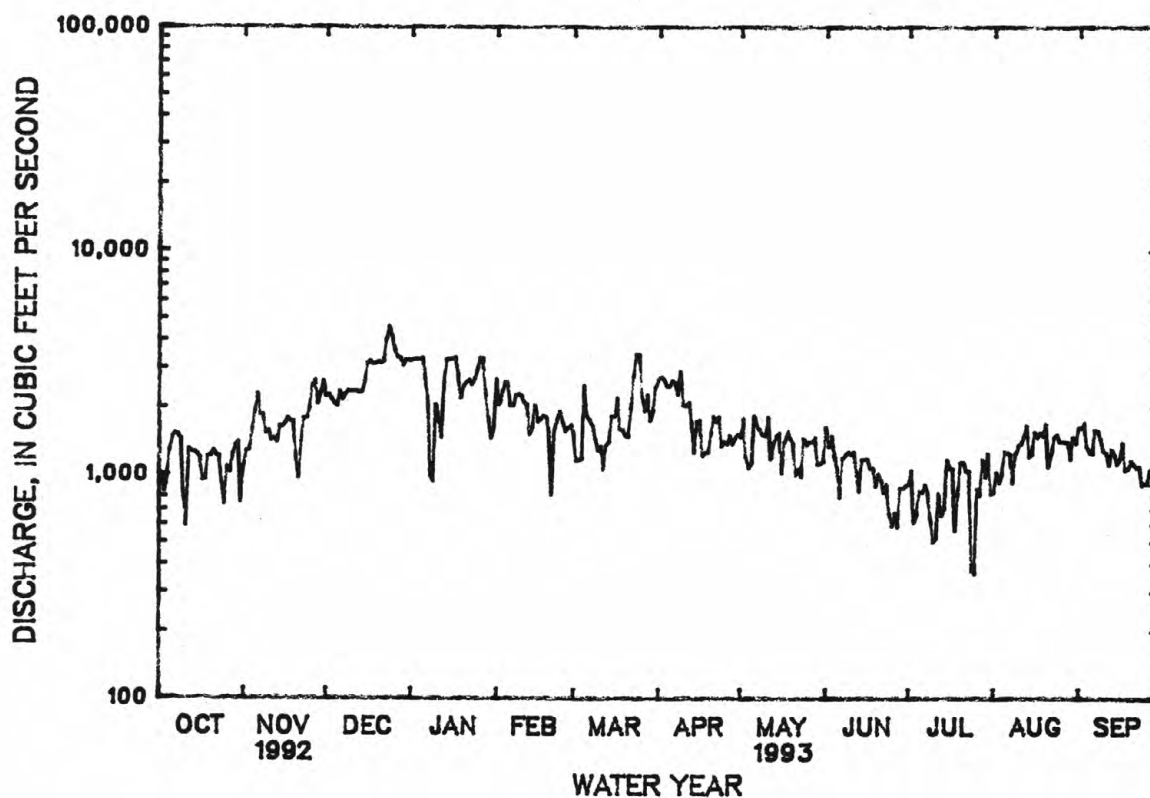
TENNESSEE RIVER BASIN  
03564500 OCOEE RIVER AT PARKSVILLE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1993, BY WATER YEAR (WY)

MEAN	1032	1115	1293	1527	1608	1737	1668	1453	1228	1156	1073	1035
MAX	2579	2507	3762	3136	5382	4591	4214	4243	2530	2790	2294	2238
(WY)	1990	1930	1933	1933	1990	1990	1936	1929	1989	1916	1967	1928
MIN	228	348	329	544	212	370	295	283	354	409	242	225
(WY)	1927	1988	1931	1931	1934	1988	1941	1988	1931	1914	1925	1925

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1911 - 1993	
ANNUAL TOTAL	532420		598514		1328	
ANNUAL MEAN	1455		1640		2214	
HIGHEST ANNUAL MEAN					586	
LOWEST ANNUAL MEAN					a28000	
HIGHEST DAILY MEAN	4580	Dec 24	4580	Dec 24	10	Feb 16 1990
LOWEST DAILY MEAN	271	Aug 16	362	Jul 25	54	Oct 28 1925
ANNUAL SEVEN-DAY MINIMUM	669	Apr 15	672	Jul 8	a61800	Oct 17 1925
INSTANTANEOUS PEAK FLOW			5310	Dec 23	b24.76	Feb 16 1990
INSTANTANEOUS PEAK STAGE			8.60	Dec 23	NOT DETERMINED	Feb 16 1990
INSTANTANEOUS LOW FLOW			c25	Nov 23		
10 PERCENT EXCEEDS	2290		2680			
50 PERCENT EXCEEDS	1300		1460			
90 PERCENT EXCEEDS	834		893			

- a From rating curve extended above 15,000 ft<sup>3</sup>/s on basis of contracted-opening measurement of peak flow.  
b From high water mark in house.  
c Also occurred Nov. 24.





## TENNESSEE RIVER BASIN

## 03566000 HIWASSEE RIVER AT CHARLESTON, TN

LOCATION.--Lat 35°17'16", long 84°45'07", Bradley County, Hydrologic Unit 06020002, on left bank 250 ft upstream from Norfolk Southern Railway bridge, 0.3 mi upstream from bridge on U.S. Highway 11 at Charleston, and at mile 18.9.

DRAINAGE AREA.--2,298 mi<sup>2</sup>.

PERIOD OF RECORD.--November 1898 to April 1899, November 1899 to April 1903, October 1919 to January 1940, January 1963 to January 1977, September 1979 to December 1981 (vane lost), August 1987 to current year. Gage-height records collected at this station during the period December 1884 to December 1889 are contained in the United States War Department Stages of Ohio River and Principal Tributaries, 1858-89, Part 1, and during period January 1890 to December 1943 in reports of the U.S. Weather Bureau.

REVISED RECORDS.--WSP 853: Drainage area. WSP 1436: 1902, 1922(M), 1928, 1936(M).

GAGE.--Water-stage recorder and velocity recorder. Datum of gage is 665.56 ft above sea level. Prior to July 18, 1925, nonrecording gages, and July 18, 1925, to Sept. 6, 1926, water-stage recorder, at Southern Railway bridge, 250 ft downstream at datum 1.50 ft higher. Auxiliary nonrecording gages at several sites and datums used periodically.

REMARKS.--Records poor. Some diversions above gage for industrial and municipal water supplies. Flow regulated by seven reservoirs (see p. 245) and Water Resources Data for Georgia and North Carolina). Daily discharge figures computed using areas as determined from a stage-area curve and velocities as determined from a velocity curve. Reverse flow has occurred for short periods each year since closure of Chickamauga Dam on Tennessee River in 1939. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 31, 1886, reached a stage of 34.0 ft, present datum, discharge about 70,000 ft<sup>3</sup>/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3920	3840	e7800	e11900	6380	4150	7330	e2650	4340	2880	e2750	3710
2	4030	4640	e7800	e11800	6300	4240	6870	e2900	4390	2900	e3250	3700
3	3610	5540	e7600	e11700	5950	3740	6500	e2300	4340	2540	e3150	3850
4	4100	4750	e7500	e11600	6110	5170	5830	e2200	4150	2330	e3250	2980
5	5110	5230	e7600	11200	6310	6420	4740	e2200	3270	2420	e3600	2920
6	5020	5320	7970	10100	5780	6770	4740	2760	3060	2540	e3700	3040
7	4760	4870	7700	10500	5630	5790	4610	2820	3190	2560	e3600	3990
8	4710	4650	7440	9770	5900	5690	4180	2970	3740	2490	e3200	3960
9	4650	4540	7760	8200	5740	5550	4730	2660	3860	2560	e3500	4060
10	4200	4330	e7900	7990	5830	5330	4370	2940	3740	2200	e3550	3580
11	4220	4190	7810	8570	5290	5090	3800	3040	3660	2170	e3650	3190
12	4530	4250	7810	9380	5650	4870	3820	2480	3220	2540	e3750	3190
13	4680	5080	8650	8920	4870	4700	3330	2190	2810	2620	e3950	3640
14	4360	4940	7230	10100	4690	5220	2910	2710	2910	2760	e3200	3940
15	3850	4740	e8000	9460	4880	5160	3110	3380	3330	2820	e3250	3900
16	3790	4600	e10200	9690	4870	5130	3130	3070	3270	3120	e4500	3950
17	3790	4630	e15100	9350	5400	6550	2950	3270	3310	2980	e4400	3790
18	3400	4530	e11800	9010	5260	8260	2700	3220	3290	2580	e4450	3040
19	3580	4520	e12100	8240	5600	7230	2370	3120	3220	2490	e4400	2970
20	3800	4260	e16600	8020	4500	5910	2740	3160	2830	3010	e4600	3660
21	3830	3890	e13800	9090	3440	4910	2860	3040	3230	3330	e3650	3830
22	3680	e9300	e12900	9160	4060	5270	3170	3010	3180	3150	e3500	3510
23	3750	e8500	e16800	7600	4610	6010	3010	2770	3130	3170	e4100	3550
24	3100	e7700	e16900	9120	5150	8530	2690	3420	3050	2850	e4400	3520
25	3430	e7900	e14200	8610	5270	7600	2650	3610	2700	2330	3530	2820
26	3560	e7300	e13000	8390	5860	6690	2980	3790	2690	3090	3500	2760
27	3620	e6900	e12500	9600	5570	6760	3100	3500	2190	3540	3590	3330
28	3620	e6000	e14400	8900	4600	6670	e2950	3610	2290	3020	3570	3600
29	3910	e6100	e12800	7730	---	7090	e3100	3190	2580	e3900	3430	3380
30	3930	e7300	e12500	6190	---	6940	e2950	3080	2640	e4200	3600	3090
31	4150	---	e12000	5200	---	6990	---	3170	---	e2700	3590	---
TOTAL	124690	164340	334170	285090	149500	184430	114220	92230	97610	87790	114160	104450
MEAN	4022	5478	10780	9196	5339	5949	3807	2975	3254	2832	3683	3482
MAX	5110	9300	16900	11900	6380	8530	7330	3790	4390	4200	4600	4060
MIN	3100	3840	7230	5200	3440	3740	2370	2190	2190	2170	2750	2760

e Estimated

TENNESSEE RIVER BASIN

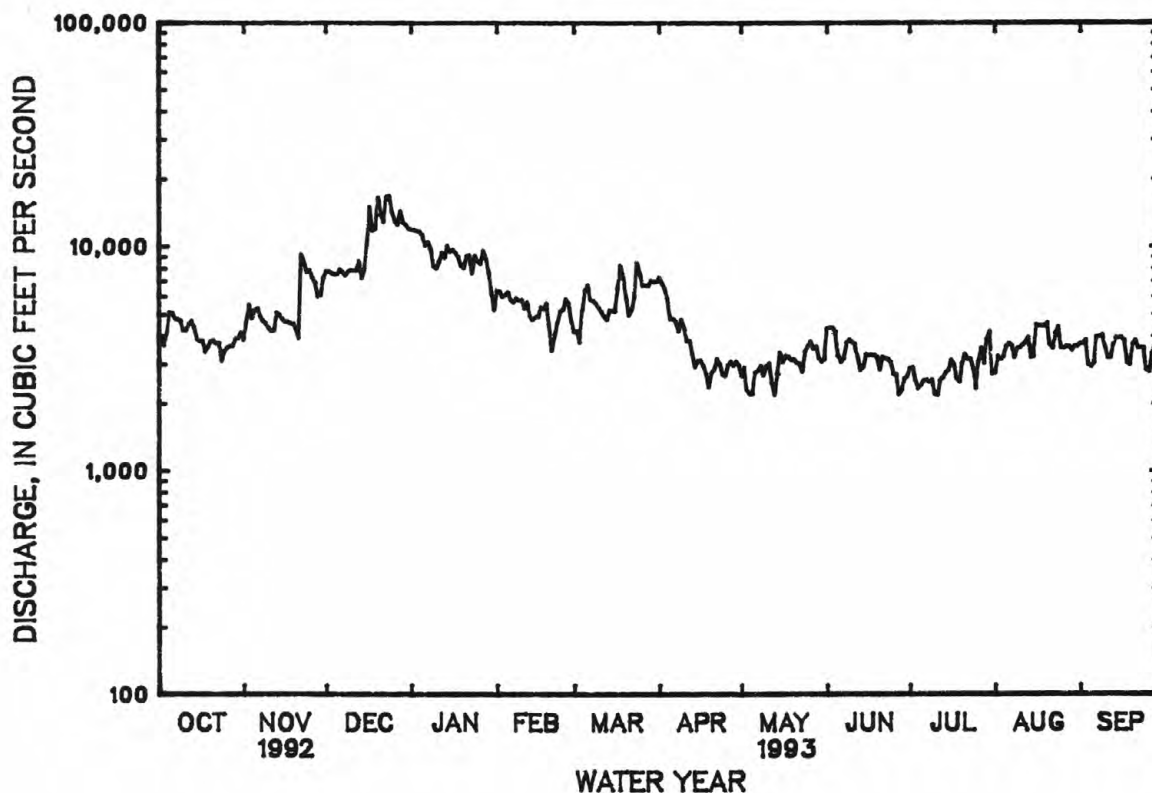
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03566000 HIWASSEE RIVER AT CHARLESTON, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

MEAN	3936	4383	5506	6142	6448	6033	4240	3658	3781	3809	3842	3548
MAX	9332	8638	12980	13060	16270	13860	11280	6457	8897	6975	6201	5118
(WY)	1990	1968	1968	1974	1990	1990	1964	1964	1989	1967	1967	1967
MIN	1442	1681	2070	2601	2680	1866	1110	971	1395	1750	1810	1747
(WY)	1989	1982	1988	1981	1988	1988	1988	1988	1988	1988	1988	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1964 - 1993	
ANNUAL TOTAL	1668650		1852680			
ANNUAL MEAN	4559		5076		4638	
HIGHEST ANNUAL MEAN					6891	
LOWEST ANNUAL MEAN					1940	
HIGHEST DAILY MEAN	16900		16900		54000	
LOWEST DAILY MEAN	1440		2170		524	
ANNUAL SEVEN-DAY MINIMUM	1630		2420		817	
INSTANTANEOUS PEAK FLOW			NOT DETERMINED		57000	
INSTANTANEOUS PEAK STAGE			17.92		29.39	
10 PERCENT EXCEEDS	7800		8910		7600	
50 PERCENT EXCEEDS	3930		4030		4010	
90 PERCENT EXCEEDS	2020		2760		2110	



## TENNESSEE RIVER BASIN

## 03567500 SOUTH CHICKAMAUGA CREEK NEAR CHICKAMAUGA, TN

LOCATION.--Lat 35°00'51", long 85°12'35", Hamilton County Hydrologic Unit 06020001, on left bank 0.1 mi upstream from bridge on U.S. Highway 11, 1.5 mi south of Chickamauga, 6.0 mi east of the city hall in Chattanooga, and at mile 12.2.

DRAINAGE AREA.--428 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1928 to September 1978, October 1980 to current year. Monthly discharge only for December 1930, published in WSP 1306. Gage-height records collected October 1978 to September 1980 (fragmentary). Prior to October 1937, published as Chickamauga Creek near Chickamauga.

REVISED RECORDS.--WSP 823: Drainage area. WSP 853: 1937. WSP 1386: 1932.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 644.12 ft above sea level. Prior to Oct. 7, 1930, nonrecording gage. Oct. 7, 1930, to Oct. 29, 1980, water-stage recorder at site 1,000 ft upstream at datum 7.00 ft higher.

REMARKS.--No estimated daily discharges. Records good.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,300 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 20	2230	5,970	15.40	Mar. 27	2030	6,810	16.25
Mar. 24	1530	*8,500	*17.70				

Minimum discharge, 103 ft<sup>3</sup>/s, Sept. 14, 15, 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	447	606	1010	668	702	1590	562	993	190	121	137
2	147	1240	543	858	614	730	1170	523	534	191	121	117
3	146	2100	489	757	546	1260	972	526	377	178	122	120
4	533	1070	465	706	509	3210	859	1500	331	170	127	123
5	1110	1420	565	1210	483	2380	1120	2130	301	153	137	123
6	652	1050	496	1260	461	1340	1920	1990	276	163	186	120
7	400	737	457	924	446	1060	1400	856	254	184	210	120
8	306	574	454	1380	429	936	1100	681	252	160	170	122
9	269	480	419	1620	408	817	1180	641	237	161	157	133
10	244	422	562	1120	387	722	1940	565	220	182	134	126
11	271	387	703	1680	494	655	1290	490	211	149	130	119
12	325	806	579	3640	1160	599	1010	461	218	160	131	115
13	274	1880	508	4100	865	704	869	510	242	265	142	110
14	248	1030	466	2530	621	807	775	1120	230	194	143	104
15	214	700	435	1450	533	815	726	712	366	175	141	133
16	198	566	563	1240	1050	972	729	517	313	308	137	162
17	191	484	2980	1060	1220	2830	658	445	241	213	136	130
18	183	436	2970	894	801	4110	582	406	215	183	131	120
19	180	398	1320	797	665	2980	538	380	208	156	128	117
20	175	365	4300	787	612	1790	572	362	195	147	122	112
21	166	401	4900	1380	829	1370	1270	336	194	137	123	113
22	163	1770	2510	1600	1420	1160	963	314	202	133	123	110
23	161	3430	1940	1110	907	3480	699	293	195	135	120	107
24	158	2900	2370	3100	728	7870	615	283	190	137	118	106
25	155	3880	1460	4480	675	5750	563	317	211	133	117	105
26	153	2950	1160	2000	1080	3750	1530	342	243	159	117	125
27	154	1370	1040	1300	1030	6250	1260	319	208	143	116	136
28	166	999	3430	1060	793	5810	812	298	226	138	128	121
29	161	811	3440	906	---	3120	679	288	236	133	131	113
30	264	687	1640	779	---	1610	602	290	197	128	142	105
31	801	---	1210	702	---	1430	---	467	---	122	155	---
TOTAL	8716	35790	44980	47440	20434	71019	29993	18924	8316	5180	4216	3604
MEAN	281	1193	1451	1530	730	2291	1000	610	277	167	136	120
MAX	1110	3880	4900	4480	1420	7870	1940	2130	993	308	210	162
MIN	146	365	419	702	387	599	538	283	190	122	116	104
CFSM	.66	2.79	3.39	3.58	1.71	5.35	2.34	1.43	.65	.39	.32	.28
IN.	.76	3.11	3.91	4.12	1.78	6.17	2.61	1.64	.72	.45	.37	.31

TENNESSEE RIVER BASIN

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03567500 SOUTH CHICKAMAUGA CREEK NEAR CHICKAMAUGA, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1993, BY WATER YEAR (WY)

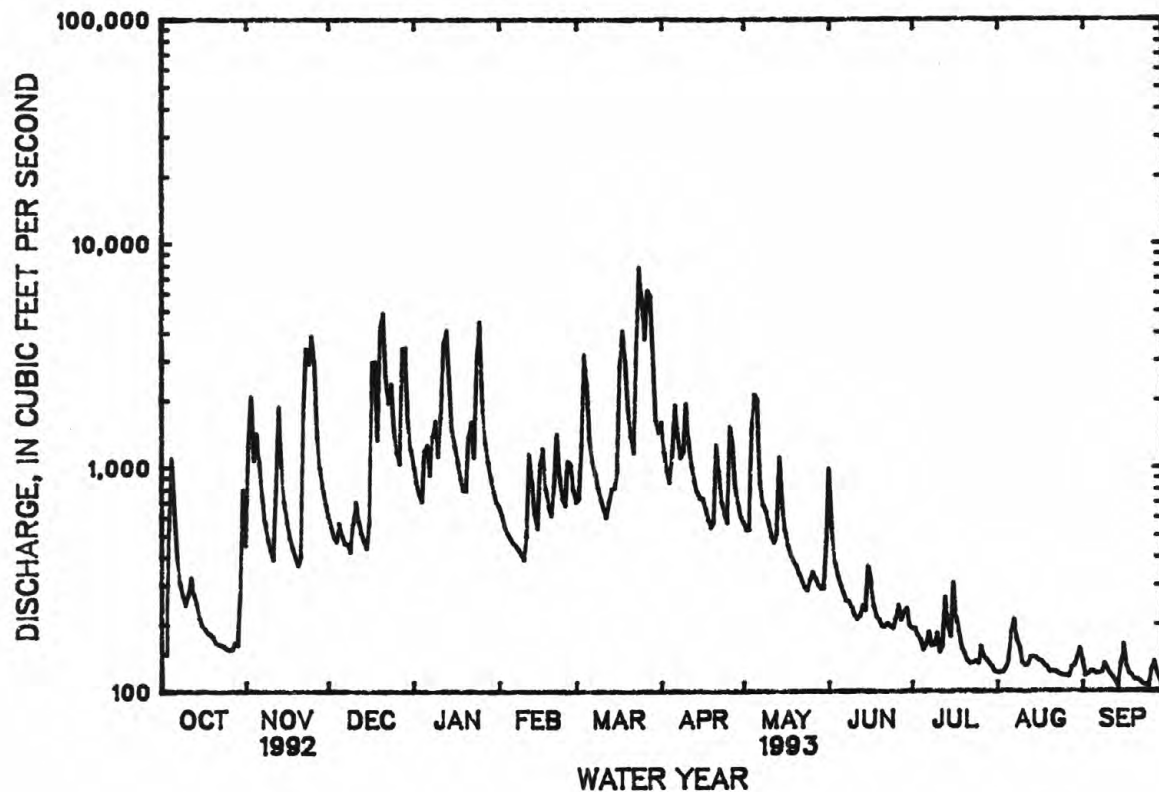
MEAN	273	504	840	1248	1442	1401	937	595	343	347	230	275
MAX	1525	2709	3269	3752	3952	3785	2834	2093	1453	1575	654	2960
(WY)	1990	1930	1933	1947	1990	1929	1936	1929	1989	1967	1984	1950
MIN	84.0	98.9	119	160	246	311	172	132	75.4	83.9	85.6	82.7
(WY)	1988	1940	1940	1940	1941	1988	1986	1988	1988	1986	1986	1954

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1929 - 1993
ANNUAL TOTAL	266380	298612	
ANNUAL MEAN	728	818	
HIGHEST ANNUAL MEAN			1197 1990
LOWEST ANNUAL MEAN			258 1986
HIGHEST DAILY MEAN	7220 Feb 26	7870 Mar 24	26500 Mar 17 1973
LOWEST DAILY MEAN	146 Oct 3	104 Sep 14	64 Oct 18 1954
ANNUAL SEVEN-DAY MINIMUM	158 Oct 23	110 Sep 19	67 Jun 26 1988
INSTANTANEOUS PEAK FLOW		8500 Mar 24	a30000 Mar 17 1973
INSTANTANEOUS PEAK STAGE		17.70 Mar 24	b30.75 Mar 17 1973
INSTANTANEOUS LOW FLOW		c103 Sep 14	61 Oct 8 1941
ANNUAL RUNOFF (CFSM)	1.70	1.91	1.63
ANNUAL RUNOFF (INCHES)	23.15	25.95	22.20
10 PERCENT EXCEEDS	1460	1900	1480
50 PERCENT EXCEEDS	422	483	299
90 PERCENT EXCEEDS	178	127	124

a Maximum discharge 30,000 ft<sup>3</sup>/s, gage height 28.70 ft.

b From floodmarks (backwater from Tennessee River).

c Also occurred Sept. 15, 30.





## TENNESSEE RIVER BASIN

## 03568000 TENNESSEE RIVER AT CHATTANOOGA, TN

LOCATION.--Lat 35°05'12", long 85°16'43", Hamilton County, Hydrologic Unit 06020001, on right bank at Rivermont Golf and Country Club, 0.5 mi downstream from South Chickamauga Creek, 3.0 mi downstream from Chickamauga Dam, 3.5 mi upstream from Walnut Street Bridge in Chattanooga, and at mile 467.6.

DRAINAGE AREA.--21,400 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--April 1874 to current year. Monthly discharges only for some periods, published in WSP 1306. July 1930 to December 1935, published as "at Hales Bar, near Chattanooga." Gage-height records collected in this vicinity since 1874 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 353: 1874-1912. WSP 783: 1917. WSP 823: 1875(M). WSP 973: 1942. WSP 1306: 1916(M). WSP 1386: 1932-34 (station at Hales Bar near Chattanooga).

GAGE.--Water-stage recorder. Datum of gage is 621.12 ft above sea level. Prior to Feb. 1, 1939, nonrecording or recording gages at several sites from 7.0 mi upstream from Chattanooga to Hales Bar Dam 33 mi downstream at or within 0.2 ft of present datum, except nonrecording gage at Bridgeport, AL, 49.9 mi downstream at different datum Oct. 22, 1913, to Feb. 28, 1915, and Oct. 1, 1918, to Jan. 5, 1921. Auxiliary gages at several sites parts of periods since Feb. 28, 1915. Present auxiliary gage at site 2.2 mi downstream from base gage at same datum.

REMARKS.--Records good. Flow regulated since 1936 by many upstream reservoirs (see p. 245 and Water Resources Data for adjoining states).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 410,000 ft<sup>3</sup>/s, Mar. 1, 1875, gage height, 53.8 ft, present datum, at Walnut Street, from rating curve extended above 250,000 ft<sup>3</sup>/s; minimum daily, 1,200 ft<sup>3</sup>/s, Nov. 1, 1953; minimum gage height, 0.0 ft, Sept. 11-14, 1881, Sept. 19, 1883.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 57.9 ft, Mar. 11, 1867, present datum at Walnut Street, discharge about 459,000 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 113,000 ft<sup>3</sup>/s, Mar. 24, gage height, 23.67 ft; minimum daily discharge, 7,870 ft<sup>3</sup>/s, May 30; minimum gage height, 11.35 ft, July 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33200	34400	60300	97900	46300	40500	71800	21400	e27500	20200	e22700	34100
2	29900	32400	59400	95100	45800	43900	47100	17300	e30200	26400	e28600	30700
3	12900	35200	59900	93200	45500	46000	46000	18200	e32400	12500	e27300	31900
4	13500	37400	57700	89900	45700	48100	45500	27100	e33000	10200	e29100	11800
5	31800	39200	50900	87300	46800	51600	45200	21800	e17100	17200	e28200	15100
6	32400	40300	50700	81300	26700	58000	38800	24500	e12000	20400	e27100	16200
7	34200	45500	50000	65000	22800	57800	45300	23600	e27300	19900	e12600	35200
8	33200	45600	50800	68500	40500	59000	45700	21300	e33100	22400	e13300	36600
9	32700	43800	50100	76400	43300	61600	40300	17900	e33500	26400	e35800	38400
10	33100	44200	49200	75500	40600	61100	21000	25400	e27000	11900	e36100	23900
11	33700	44600	48500	75800	35000	56400	26700	31500	e20400	10800	e34800	11900
12	32800	44100	46000	77700	36400	46000	40100	20500	e20100	22600	36100	10600
13	33500	46100	46400	77900	25200	46200	43600	e14700	e16500	20300	36600	25600
14	32400	45900	44900	77100	26600	46900	42200	e21000	e25400	24600	25200	30900
15	32600	44700	44900	72600	33000	48000	43900	e21000	e24700	22400	19000	33200
16	33000	42900	45800	67100	30000	47500	43300	e12700	23200	25200	33900	18600
17	33000	43400	52900	67300	32800	48800	37300	e20300	26000	e17600	35600	12700
18	33100	45600	64600	67500	38600	50700	26200	e23000	27800	e16200	30900	15100
19	32400	45000	64300	66800	44300	50900	33800	e25900	18400	e17400	33300	21000
20	33000	45200	71000	66300	24900	42200	33200	e37600	14600	e27600	30600	26200
21	32000	46600	87300	62600	24100	31500	36600	e27900	26500	e29100	23200	e32700
22	32000	47500	93800	54400	31100	37800	39100	e13600	28800	e29800	21000	e37500
23	31500	50500	94100	46700	43000	59800	37800	e9710	30000	e29700	34200	e37700
24	32000	50400	99700	47800	41800	109000	19000	e26000	22200	e14200	28400	e34700
25	32100	55400	105000	57200	43100	110000	12000	e21800	21700	e14400	26700	e16400
26	32800	65300	106000	64000	52100	95200	26600	e22400	20800	e33200	30900	e18000
27	36000	63700	105000	62500	36400	e85700	29000	e24700	14500	e32600	35900	e29300
28	38800	62300	105000	59800	30100	e89500	32400	e25000	20300	e25400	26800	e33200
29	39500	61800	107000	50400	---	e98800	32300	e8080	18700	e28100	12800	e26500
30	36900	60800	104000	45800	---	e112000	31800	e7870	20600	e27900	28200	e24900
31	34400	---	101000	47000	---	102000	---	e9060	---	e23100	34300	---
TOTAL	994400	1409800	2176200	2144400	1032500	1942500	1113600	642820	714300	679700	879200	770600
MEAN	32080	46990	70200	69170	36870	62660	37120	20740	23810	21930	28360	25690
MAX	39500	65300	107000	97900	52100	112000	71800	37600	33500	33200	36600	38400
MIN	12900	32400	44900	45800	22800	31500	12000	7870	12000	10200	12600	10600

e Estimated



TENNESSEE RIVER BASIN

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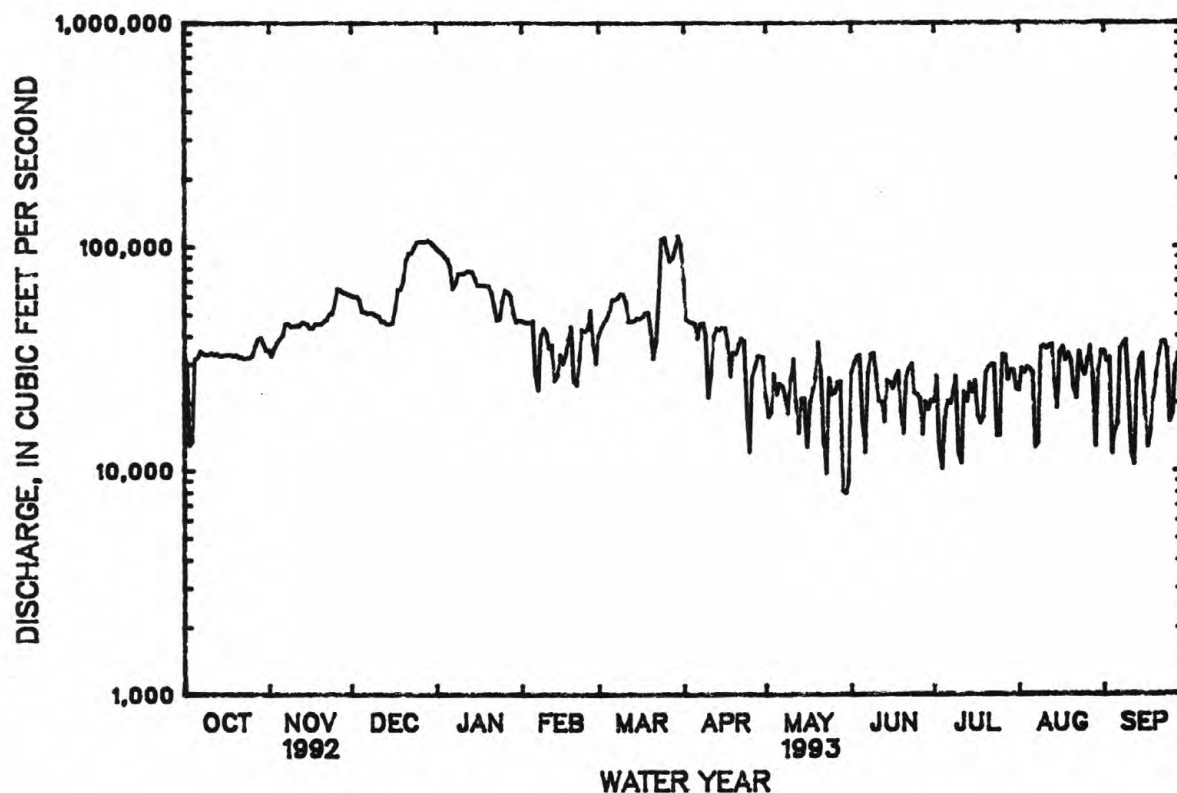
03568000 TENNESSEE RIVER AT CHATTANOOGA, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 1993, BY WATER YEAR (WY)

MEAN	28840	34280	44990	48440	48860	46290	27210	28730	29310	29670	31010	28230
MAX	63270	68330	94270	127900	132800	98850	60380	87890	65280	49670	41460	42140
(WY)	1990	1958	1973	1974	1957	1963	1975	1984	1989	1989	1967	1967
MIN	16690	16340	13660	17370	22570	14380	7503	7805	11310	11230	12740	14090
(WY)	1984	1988	1988	1986	1986	1988	1986	1988	1988	1988	1988	1968

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	*WATER YEARS 1954 - 1993
ANNUAL TOTAL	13023090	14500020	
ANNUAL MEAN	35580	39730	35450
HIGHEST ANNUAL MEAN			53260
LOWEST ANNUAL MEAN			15070
HIGHEST DAILY MEAN	107000	Dec 29	251000
LOWEST DAILY MEAN	5500	Apr 29	1200
ANNUAL SEVEN-DAY MINIMUM	7350	Apr 23	6790
INSTANTANEOUS PEAK FLOW			267000
INSTANTANEOUS PEAK STAGE			23.67
10 PERCENT EXCEEDS	57400	67400	38.98
50 PERCENT EXCEEDS	33100	33500	56800
90 PERCENT EXCEEDS	12800	17500	31100
			16200

\* Regulated period only.



## TENNESSEE RIVER BASIN

03571000 SEQUATCHIE RIVER NEAR WHITWELL, TN

LOCATION.--Lat 35°12'22", long 85°29'48", Marion County, Hydrologic Unit 06020004, on right bank 250 ft upstream from county road bridge, 1.5 mi east of Whitwell, 3.0 mi upstream from bridge on State Highway 283, 4.5 mi downstream from Griffith Creek, and at mile 25.1.

DRAINAGE AREA.--402 mi<sup>2</sup>, includes 18 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1920 to current year. Prior to December 1920, monthly discharges only, published in WSP 1306.

REVISED RECORDS.--WSP 603: 1922(M). WSP 758: 1929(M). WSP 1033: 1943(M). WSP 1386: 1921-22, 1923-25(M), 1927-28(M), 1930(M), 1933(M). WSP 1910: Drainage area. WDR TN-76-1: 1973-75(P).

GAGE.--Water-stage recorder. Datum of gage is 632.73 ft above sea level (levels by Tennessee Valley Authority). Prior to Sept. 18, 1927, nonrecording gage at same site at datum 0.03 ft higher. Sept. 18, 1927, to Sept. 30, 1930, nonrecording gage at bridge 15 ft upstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Prior to 1950, some diurnal fluctuation caused by small mills above station. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1867 reached a stage of about 19 ft from reports of Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,500 ft<sup>3</sup>/s and maximum(\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 24	0200	*21,900	*16.30	No other peak greater than base discharge.			

Minimum discharge, 50 ft<sup>3</sup>/s, Sept. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	353	751	888	1390	872	974	2100	1030	1380	208	77	57
2	316	1350	782	1200	775	971	1840	918	800	178	77	56
3	285	1630	684	1050	683	1270	1590	1050	555	172	75	61
4	282	2140	620	952	613	1980	1410	1890	425	156	74	67
5	462	3180	673	1110	565	2370	1440	1580	357	147	74	63
6	810	2410	678	1270	525	2060	1620	1170	311	143	99	59
7	751	1780	644	1230	491	1700	1640	938	278	135	105	58
8	584	1360	615	1250	460	1450	1520	839	255	130	114	58
9	494	1080	573	1330	427	1250	1550	852	235	128	104	61
10	435	892	585	1310	403	1090	2010	683	220	130	91	61
11	395	748	652	1310	409	957	1810	572	220	136	86	58
12	355	752	681	1690	670	846	1570	501	222	132	82	58
13	324	1190	679	1840	652	867	1330	460	298	172	104	58
14	295	1130	641	1660	585	831	1170	435	261	132	118	55
15	269	1030	590	1440	540	740	1050	402	358	125	92	55
16	250	854	630	1280	777	751	988	368	285	123	84	58
17	237	729	1600	1120	1200	1610	965	357	236	161	80	53
18	226	639	2150	973	1240	2710	885	349	213	145	77	52
19	213	567	1930	869	1030	2530	791	435	201	131	74	51
20	201	513	3190	805	890	2150	780	677	192	122	71	51
21	195	559	4250	1250	898	1900	1080	503	183	115	69	53
22	188	1260	2970	1610	1370	1720	1120	407	178	109	68	53
23	181	2540	2910	1460	1770	8300	1030	352	172	105	68	51
24	177	2350	4760	2090	1530	18400	913	318	166	102	65	50
25	170	2520	3810	3300	1210	12400	836	289	168	101	63	52
26	166	2230	2870	2480	1140	7540	2300	278	163	97	64	65
27	166	1800	2000	1890	1130	4930	2450	265	159	92	63	93
28	206	1460	2000	1530	1050	3990	1890	248	199	90	62	64
29	224	1210	2050	1290	---	3110	1450	241	183	87	60	57
30	221	1020	1860	1090	---	2410	1200	254	166	82	59	54
31	593	---	1610	957	---	2490	---	823	---	79	58	---
TOTAL	10024	41674	50575	44026	23905	96297	42328	19484	9039	3965	2457	1742
MEAN	323	1389	1631	1420	854	3106	1411	629	301	128	79.3	58.1
MAX	810	3180	4760	3300	1770	18400	2450	1890	1380	208	118	93
MIN	166	513	573	805	403	740	780	241	159	79	58	50
CFSM	.80	3.46	4.06	3.53	2.12	7.73	3.51	1.56	.75	.32	.20	.14
IN.	.93	3.86	4.68	4.07	2.21	8.91	3.92	1.80	.84	.37	.23	.16

TENNESSEE RIVER BASIN

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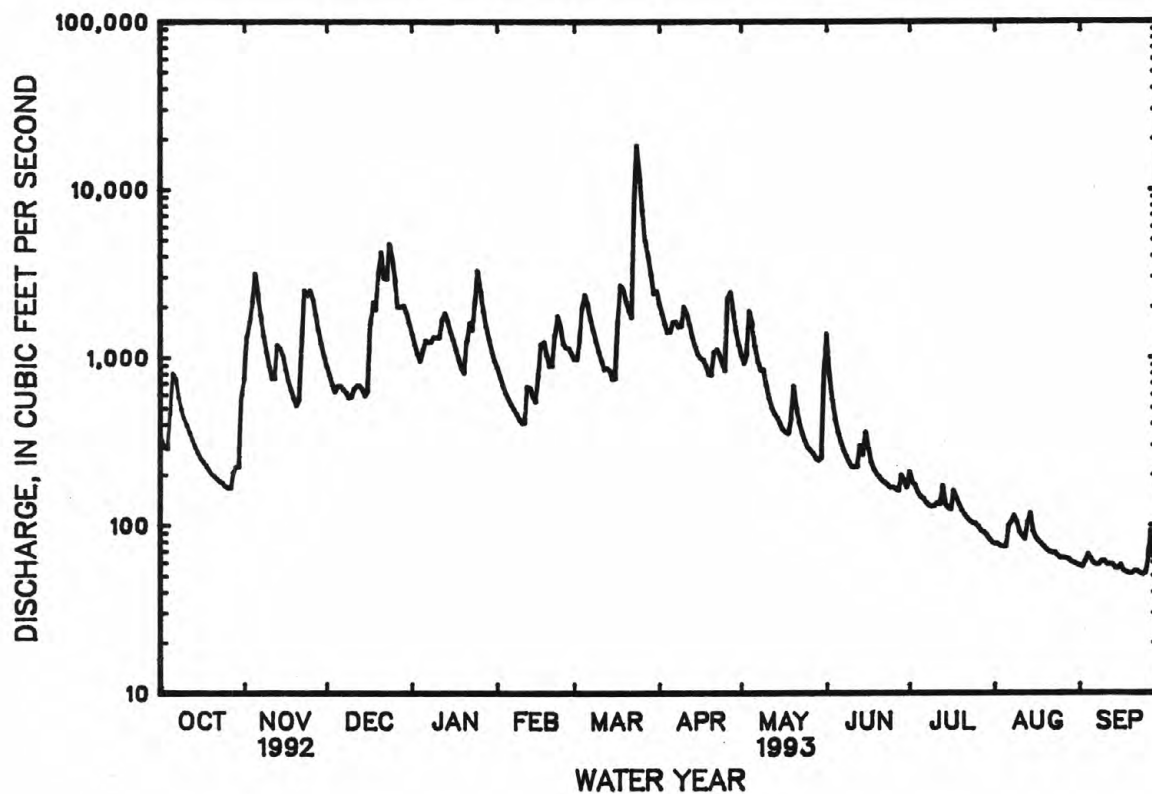
03571000 SEQUATCHIE RIVER NEAR WHITWELL, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 1993, BY WATER YEAR (WY)

MEAN	186	474	1024	1353	1527	1608	1201	677	365	276	206	171
MAX	1626	3471	3935	3736	3589	3508	2887	2795	2381	1770	863	1152
(WY)	1990	1958	1991	1937	1939	1973	1983	1984	1928	1989	1926	1950
MIN	27.1	32.4	51.9	74.0	271	364	228	179	71.6	68.6	46.9	23.1
(WY)	1932	1932	1940	1981	1941	1988	1986	1941	1988	1986	1957	1925

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1921 - 1993	
ANNUAL TOTAL	295206		345516			
ANNUAL MEAN	807		947		752	
HIGHEST ANNUAL MEAN					1284	
LOWEST ANNUAL MEAN					305	
HIGHEST DAILY MEAN	5510	Jan 4	18400	Mar 24	32300	Dec 23 1990
LOWEST DAILY MEAN	141	Jun 2	50	Sep 24	16	Sep 6 1925
ANNUAL SEVEN-DAY MINIMUM	146	May 28	52	Sep 18	18	Sep 6 1925
INSTANTANEOUS PEAK FLOW			21900	Mar 24	35400	Dec 23 1990
INSTANTANEOUS PEAK STAGE			16.30	Mar 24	18.02	Dec 23 1990
INSTANTANEOUS LOW FLOW			a50	Sep 24	16	Sep 6 1925
ANNUAL RUNOFF (CFSM)	2.01		2.35		1.87	
ANNUAL RUNOFF (INCHES)	27.32		31.97		25.42	
10 PERCENT EXCEEDS	1820		2030		1750	
50 PERCENT EXCEEDS	566		593		338	
90 PERCENT EXCEEDS	195		66		62	

a Also occurred on Sept. 25.



## Lower Tennessee River Basin

Map number	Station number	Station name	Page
146	03571800	BATTLE CREEK NEAR MONTEAGLE	307
147	03578455	BRADLEY CREEK TRIB AT AEDC NEAR MANCHESTER	188-190
148	03578600	BRUMALOW CREEK AT AEDC NEAR MANCHESTER	191-193
149	03578970	ROWLAND CREEK AT AEDC NEAR MANCHESTER	194-197
150	03579620	ROCK CREEK AT TULLAHOMA	198-200,328
151	03580995	EAST FORK MULBERRY CREEK AT LYNCHBURG	202-203,328
152	03583300	RICHLAND CREEK NEAR CORNERSVILLE	307
153	03584600	ELK RIVER AT PROSPECT	204-205,329
154	03588500	SHOAL CREEK AT IRON CITY	206-207,329
155	03593005	TENNESSEE RIVER AT PICKWICK LANDING DAM	208-209
156	03593500	TENNESSEE RIVER AT SAVANNAH	210-211
157	035944242	OWL CREEK AT LEXINGTON	307
158	03597210	GARRISON FORK ABOVE L&N RAILROAD AT WARTRACE	212-213,329
159	03597300	WARTRACE CREEK ABOVE BELL BUCKLE	308
160	03597590	WARTRACE CREEK BELOW COUNTY ROAD AT WARTRACE	214-215,329
161	03597860	DUCK RIVER AT SHELBYVILLE	216-220
162	03598000	DUCK RIVER NEAR SHELBYVILLE	222-223,329
163	03599500	DUCK RIVER AT COLUMBIA	224-225,330
164	035999716	RUTHERFORD CREEK TRIB AT MOORES LANE NEAR KEDRON	308
165	03600085	CARTERS CREEK AT PETTY LANE NEAR CARTERS CREEK	226
166	03600086	CARTERS CREEK TRIB NEAR CARTERS CREEK	227
167	03600088	CARTERS CREEK AT BUTLER ROAD AT CARTERS CREEK	228-230
168	03602170	WEST PINEY RIVER NEAR DICKSON	308
169	03602219	PINEY RIVER AT CEDAR HILL	231,330
170	03602500	PINEY RIVER AT VERNON	228-230,326
171	03603000	DUCK RIVER ABOVE HURRICANE MILLS	236-237,330
172	03604000	BUFFALO RIVER NEAR FLATWOODS	238-241
173	03604070	COON CREEK TRIB NEAR HOHENWALD	308
174	03604080	HUGH HOLLOW BRANCH NEAR HOHENWALD	308
175	03604090	COON CREEK ABOVE CHOP HOLLOW NEAR HOHENWALD	308
176	03604400	BUFFALO RIVER BELOW LOBELVILLE	242-243,330
177	03604580	BLUE CREEK NEAR NEW HOPE	308
178	03604595	LITTLE BLUE CREEK TRIB NEAR GORMAN	308
179	03605078	CYPRESS CREEK AT CAMDEN, TN	244
180	03605555	TRACE CREEK ABOVE DENVER	309
181	03605880	CANE CREEK NEAR STEWART	309

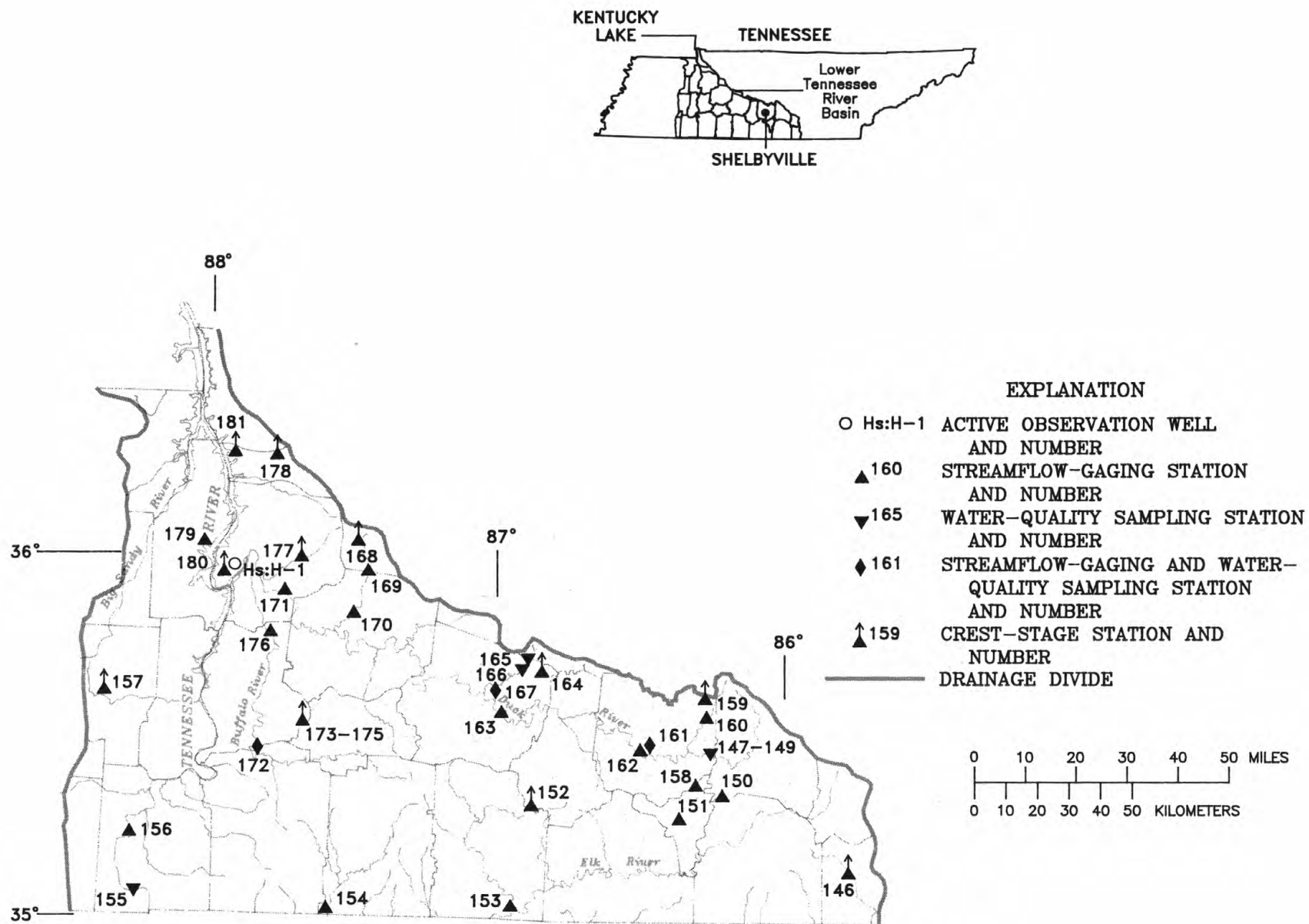


Figure 6.—Location of gaging sites in the lower Tennessee River Basin.



## TENNESSEE RIVER BASIN

03578455 BRADLEY CREEK TRIBUTARY AT AEDC NEAR MANCHESTER, TN

LOCATION.--Lat 35°23'27", long 86°02'16", Coffee County, Hydrologic Unit 06030003, on right bank 0.4 mi northeast of fire station, 0.8 mi northwest of entrance gate to Arnold Engineering Development Center, 7.1 mi southwest of Manchester.

DRAINAGE AREA.--

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1993 to September 1993.

GAGE.--Pressure transducer, crest-stage gage, and satellite telemeter at station. Datum of gage is 1064.36 ft above sea level.

NOTE.--Records not available for inclusion in this report. These records will be included in the 1994 report.

TENNESSEE RIVER BASIN

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03578455 BRADLEY CREEK TRIBUTARY AT AEDC NEAR MANCHESTER, TN--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 1993.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April to September 1993.

pH: April to September 1993.

INSTRUMENTATION.--Water-quality monitor since April 1993.

REMARKS.--Flow regulated by Arnold Engineering and Development Center

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum, 30.8°C, June 17; minimum, 13.7°C, Apr. 17.

pH: Maximum, 8.8 units, June 22; minimum, 5.2 units, Sept. 15.

TEMPERATURE, WATER (DEG. C), WATER YEAR APRIL 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	20.2	17.8	19.1
2	---	---	---	---	---	---	---	---	---	19.6	18.8	19.2
3	---	---	---	---	---	---	---	---	---	19.2	15.7	18.0
4	---	---	---	---	---	---	---	---	---	19.2	14.9	17.2
5	---	---	---	---	---	---	---	---	---	23.3	16.7	19.4
6	---	---	---	---	---	---	---	---	---	23.7	18.4	20.7
7	---	---	---	---	---	---	---	---	---	24.5	19.2	21.5
8	---	---	---	---	---	---	---	---	---	26.3	19.4	21.9
9	---	---	---	---	---	---	---	---	---	25.9	20.8	22.3
10	---	---	---	---	---	---	---	---	---	25.9	20.6	22.2
11	---	---	---	---	---	---	---	---	---	24.9	19.8	22.0
12	---	---	---	---	---	---	---	---	---	24.5	20.4	22.4
13	---	---	---	---	---	---	---	---	---	22.2	19.8	20.9
14	---	---	---	---	---	---	---	---	---	25.7	19.4	21.8
15	---	---	---	---	---	---	19.5	16.6	17.8	25.5	19.2	21.5
16	---	---	---	---	---	---	17.0	15.2	16.0	25.5	19.6	22.1
17	---	---	---	---	---	---	21.6	13.7	16.8	24.9	21.4	23.5
18	---	---	---	---	---	---	22.8	15.3	17.7	26.7	18.8	23.2
19	---	---	---	---	---	---	22.5	15.8	18.2	22.5	18.7	20.2
20	---	---	---	---	---	---	18.5	16.0	17.4	21.3	17.8	19.3
21	---	---	---	---	---	---	17.9	14.9	15.9	20.7	17.4	18.9
22	---	---	---	---	---	---	21.8	13.9	16.4	24.4	16.6	19.6
23	---	---	---	---	---	---	22.2	14.0	16.9	25.0	18.1	20.5
24	---	---	---	---	---	---	20.6	15.1	17.9	24.2	18.7	21.3
25	---	---	---	---	---	---	20.8	14.3	17.5	22.1	21.2	21.7
26	---	---	---	---	---	---	20.2	14.3	16.4	25.7	20.1	22.0
27	---	---	---	---	---	---	22.4	14.3	17.5	27.2	18.9	22.1
28	---	---	---	---	---	---	23.3	15.3	18.4	26.2	20.3	22.6
29	---	---	---	---	---	---	23.1	16.5	18.8	29.8	19.3	23.3
30	---	---	---	---	---	---	21.6	17.6	19.1	26.7	19.0	22.5
31	---	---	---	---	---	---	---	---	---	21.2	19.0	20.0
MONTH	---	---	---	---	---	---	23.3	13.7	17.4	29.8	14.9	21.1

## TENNESSEE RIVER BASIN

03578455 BRADLEY CREEK TRIBUTARY AT AEDC NEAR MANCHESTER, TN--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR APRIL 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	25.0	18.5	20.7	28.4	25.3	26.5	26.5	23.5	24.9	29.6	25.7	27.3
2	25.2	18.3	21.4	28.7	25.0	26.3	28.6	25.1	26.3	27.5	25.9	26.5
3	27.3	20.7	23.4	29.1	24.8	26.1	28.0	25.3	26.2	27.5	25.7	26.5
4	26.9	23.5	25.0	29.3	24.6	26.3	26.5	25.3	25.8	27.5	24.5	26.1
5	24.9	21.3	23.6	28.4	25.1	26.2	28.4	25.1	26.2	27.3	23.3	24.8
6	27.8	19.9	23.0	29.4	24.5	26.4	25.7	21.4	24.4	27.3	23.3	24.9
7	29.7	22.7	25.6	29.6	24.3	26.6	27.8	20.0	23.6	28.0	24.1	26.0
8	30.8	24.5	26.8	29.9	25.6	27.2	29.5	22.4	24.7	27.3	24.5	26.0
9	29.8	24.7	26.4	27.6	25.6	26.6	27.2	23.2	25.1	26.5	24.9	25.7
10	30.2	23.7	26.1	29.1	25.4	26.5	27.8	24.4	25.9	27.3	23.5	25.3
11	29.4	23.9	26.1	30.6	25.1	26.6	27.9	25.6	26.5	26.5	21.6	23.5
12	29.7	24.2	25.8	28.6	25.3	26.4	28.1	25.6	26.7	27.1	22.0	23.9
13	28.3	23.6	25.5	28.8	24.9	26.5	28.7	26.4	27.6	27.7	22.1	25.6
14	28.9	24.4	26.2	29.3	25.6	27.1	27.9	26.0	26.7	28.2	25.3	26.6
15	28.3	23.2	25.6	29.0	26.0	27.2	28.5	25.6	26.8	26.9	24.1	25.8
16	29.9	24.0	26.2	28.8	25.9	27.0	29.9	25.6	27.1	26.5	24.1	25.1
17	30.8	24.6	26.9	29.8	25.5	27.1	30.7	26.6	28.6	26.5	24.1	25.3
18	29.6	24.9	26.4	29.9	26.2	27.5	30.3	24.6	27.6	28.2	22.0	24.1
19	28.2	24.1	25.7	29.7	26.6	27.6	30.5	26.0	27.7	27.3	21.8	23.8
20	26.7	23.9	25.1	29.1	25.6	27.0	30.2	26.6	27.8	26.5	22.7	24.6
21	27.5	24.3	25.5	29.7	25.4	27.1	28.6	26.1	26.9	27.8	23.7	25.5
22	27.8	24.1	25.8	29.0	25.7	27.2	29.0	25.3	26.7	27.5	21.8	24.3
23	30.1	24.2	26.9	29.4	25.9	27.7	28.8	25.3	26.7	26.7	23.3	24.8
24	29.5	25.2	26.7	30.0	26.3	27.5	29.0	25.9	27.1	27.5	24.3	25.3
25	27.4	24.2	25.6	30.0	26.3	27.7	29.2	26.1	27.5	27.3	23.5	25.4
26	28.1	24.8	26.1	30.6	26.5	28.0	28.6	26.3	27.4	25.7	23.7	24.9
27	27.8	24.2	25.6	29.9	26.4	27.6	29.4	25.7	27.5	25.7	20.6	23.5
28	28.2	24.7	26.0	29.5	25.8	27.3	30.4	24.9	27.4	25.5	19.8	22.2
29	29.2	25.3	26.5	29.1	25.4	26.7	29.0	23.7	26.2	24.9	20.4	22.3
30	28.2	25.3	26.6	28.3	24.2	25.5	28.6	25.7	26.7	24.2	19.1	21.5
31	---	---	---	28.4	23.3	25.2	29.2	24.9	26.9	---	---	---
MONTH	30.8	18.3	25.4	30.6	23.3	26.8	30.7	20.0	26.6	29.6	19.1	24.9

PH (STANDARD UNITS), WATER YEAR APRIL 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	8.5	7.9	7.3	6.8	7.7	7.3	6.3	5.8	8.3	7.7
2	---	---	8.5	8.0	7.4	6.9	7.7	7.1	7.8	6.0	8.1	7.9
3	---	---	8.3	8.0	7.4	6.9	7.7	7.1	6.5	5.9	8.1	7.9
4	---	---	8.7	7.7	7.6	6.9	7.8	7.0	6.1	5.8	8.2	7.9
5	---	---	8.1	7.8	7.6	7.0	7.9	7.1	6.5	5.8	8.3	7.8
6	---	---	8.3	8.1	8.3	6.9	8.0	7.0	6.8	5.8	8.4	7.6
7	---	---	8.2	7.4	8.2	7.2	8.1	7.2	7.9	6.7	8.4	7.5
8	---	---	7.3	6.9	8.5	8.0	7.8	7.2	8.1	7.6	8.6	7.7
9	---	---	7.3	6.9	8.2	7.1	7.8	7.4	7.6	6.9	8.3	7.6
10	---	---	7.4	6.9	7.1	6.8	7.9	7.2	6.9	6.7	8.2	7.5
11	---	---	8.2	7.1	7.2	6.7	7.9	7.8	6.8	6.5	8.4	7.5
12	---	---	8.7	7.7	7.2	6.8	7.9	7.6	7.1	6.6	8.5	7.5
13	---	---	7.6	7.3	7.4	6.6	7.9	7.7	7.6	6.9	7.7	7.5
14	---	---	7.5	6.0	7.7	7.2	7.8	7.6	7.1	6.8	7.8	5.6
15	8.3	7.3	7.0	6.0	7.8	7.3	7.7	6.2	7.2	6.7	7.3	5.2
16	8.1	7.5	6.8	6.0	8.2	7.6	6.7	6.2	7.3	6.7	7.1	5.7
17	8.4	7.5	7.1	6.1	8.0	7.7	6.8	6.0	8.4	6.7	6.3	5.8
18	8.6	7.0	7.5	6.5	7.9	7.7	6.7	6.0	8.4	7.2	7.4	6.3
19	8.3	6.8	7.9	7.6	8.0	7.6	6.8	6.0	8.1	7.1	7.4	7.1
20	7.7	6.9	8.1	7.8	7.9	7.3	6.5	5.8	8.1	7.5	7.2	7.0
21	8.0	7.2	8.1	7.8	8.5	7.2	6.7	5.7	7.9	7.7	7.3	7.0
22	8.2	7.4	8.2	7.8	8.8	8.0	6.9	5.8	7.8	7.3	7.5	7.1
23	8.3	6.2	8.4	7.6	8.5	7.7	7.4	6.9	7.7	7.2	7.4	6.8
24	8.4	6.1	8.0	6.9	8.3	7.9	7.6	7.1	7.8	7.3	7.0	6.7
25	7.1	5.3	7.5	6.8	8.5	7.9	7.7	7.3	8.1	7.1	7.2	6.7
26	7.7	5.3	7.5	6.6	8.6	8.3	7.5	7.0	8.2	6.3	7.1	6.7
27	8.3	7.3	7.4	6.2	8.6	8.3	7.2	6.4	8.2	6.2	7.9	6.7
28	8.6	7.7	6.5	6.0	8.5	8.0	6.9	6.2	8.2	7.1	7.9	7.6
29	8.6	7.8	6.9	6.1	8.0	7.7	6.8	6.1	7.6	6.8	7.8	7.5
30	8.6	7.9	6.9	6.3	7.9	7.4	6.7	5.9	7.3	6.8	7.9	7.5
31	---	---	7.3	6.9	---	---	6.8	5.7	8.3	6.9	---	---
MONTH	8.6	5.3	8.7	6.0	8.8	6.6	8.1	5.7	8.4	5.8	8.6	5.2

TENNESSEE RIVER BASIN

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03578600 BRUMALOW CREEK AT AEDC NEAR MANCHESTER, TN

LOCATION.--Lat 35°22'20", long 86°02'33", Coffee County, Hydrologic Unit 06030003, on right bank 200 ft upstream from culvert under Avenue C, at Arnold Engineering Development Center, 7.1 mi southwest of Manchester.

DRAINAGE AREA.--

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1993 to September 1993.

GAGE.--Pressure transducer, crest-stage gage, and satellite telemeter at station. Datum of gage is 1080.10 ft above sea level.

NOTE.--Records not available for inclusion in this report. These records will be included in the 1994 report.

## TENNESSEE RIVER BASIN

03578600 BRUMALOW CREEK AT AEDC NEAR MANCHESTER, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 1993.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April to September 1993.

pH: April to September 1993.

INSTRUMENTATION.--Water-quality monitor since April 1993.

REMARKS.--Flow regulated by Arnold Engineering and Development Center. Interruptions in the record were due to instrument malfunctions.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum, 28.1°C, June 17; minimum, 13.9°C, Apr. 18.

pH: Maximum, 8.7 units, June 20, Sept. 9; minimum, 6.3 units, Aug. 28, 29.

## TEMPERATURE, WATER (DEG. C), WATER YEAR APRIL 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	---	---	---	21.4	17.2	19.1
2	---	---	---	---	---	---	---	---	---	21.8	18.8	20.1
3	---	---	---	---	---	---	---	---	---	21.6	15.7	18.6
4	---	---	---	---	---	---	---	---	---	20.0	15.5	17.9
5	---	---	---	---	---	---	---	---	---	20.7	17.8	19.3
6	---	---	---	---	---	---	---	---	---	23.6	19.5	21.6
7	---	---	---	---	---	---	---	---	---	24.0	21.4	22.9
8	---	---	---	---	---	---	---	---	---	23.9	20.6	22.4
9	---	---	---	---	---	---	---	---	---	23.1	21.6	22.4
10	---	---	---	---	---	---	---	---	---	23.4	20.1	21.5
11	---	---	---	---	---	---	---	---	---	24.8	19.1	21.7
12	---	---	---	---	---	---	---	---	---	24.8	21.2	22.6
13	---	---	---	---	---	---	---	---	---	24.7	20.4	21.6
14	---	---	---	---	---	---	---	---	---	25.5	19.2	21.8
15	---	---	---	---	---	---	---	---	---	22.7	16.9	19.4
16	---	---	---	---	---	---	18.6	14.3	17.1	24.7	18.0	20.8
17	---	---	---	---	---	---	19.4	14.1	16.5	24.7	21.8	22.8
18	---	---	---	---	---	---	16.1	13.9	14.7	24.3	19.2	21.7
19	---	---	---	---	---	---	17.7	14.0	15.5	22.0	19.1	20.4
20	---	---	---	---	---	---	---	---	---	22.3	17.9	19.6
21	---	---	---	---	---	---	18.9	15.0	16.8	21.3	17.4	19.1
22	---	---	---	---	---	---	18.5	16.8	17.5	21.9	17.7	20.1
23	---	---	---	---	---	---	19.8	15.0	17.2	20.1	18.5	19.4
24	---	---	---	---	---	---	21.6	17.3	19.3	21.1	18.3	19.7
25	---	---	---	---	---	---	20.2	15.1	18.1	24.4	20.1	22.6
26	---	---	---	---	---	---	18.3	15.5	17.1	25.3	20.8	22.7
27	---	---	---	---	---	---	18.7	15.4	16.8	23.7	19.2	20.7
28	---	---	---	---	---	---	19.5	14.6	17.5	20.7	19.7	20.2
29	---	---	---	---	---	---	19.1	17.4	18.1	20.9	19.1	20.1
30	---	---	---	---	---	---	20.3	17.7	19.2	22.3	18.5	19.5
31	---	---	---	---	---	---	---	---	---	20.7	18.8	19.7
MONTH	---	---	---	---	---	---	21.6	13.9	17.2	25.5	15.5	20.7



03578600 BRUMALOW CREEK AT AEDC NEAR MANCHESTER, TN--Continued

## TEMPERATURE, WATER (DEG. C), WATER YEAR APRIL 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE												
1	22.0	18.4	19.9	25.6	23.6	24.4	25.2	20.3	22.8	26.2	24.6	25.3
2	22.5	20.4	21.4	25.5	23.5	24.3	25.3	23.2	24.2	27.8	24.4	25.9
3	25.0	19.8	22.4	23.9	23.1	23.6	25.3	23.3	24.0	26.8	25.4	26.1
4	25.4	23.4	24.6	24.1	22.9	23.5	24.7	23.7	24.2	27.0	22.8	24.8
5	24.8	21.5	22.9	24.0	23.2	23.6	25.1	23.3	24.3	24.1	22.4	23.3
6	25.2	21.3	22.5	24.8	22.8	23.8	23.9	22.2	23.3	24.3	22.8	23.6
7	26.4	22.1	24.6	27.8	22.3	24.5	22.4	20.6	21.2	23.9	22.8	23.4
8	27.1	24.3	25.7	27.5	24.1	25.6	23.0	21.8	22.4	26.5	22.0	24.3
9	27.3	24.3	25.7	28.0	23.9	25.9	23.0	21.1	22.0	24.1	22.4	23.3
10	27.1	24.9	26.0	27.4	24.5	25.9	26.0	21.5	23.6	26.3	21.8	24.0
11	26.5	24.1	25.2	27.4	24.0	25.5	26.2	24.2	25.1	22.9	21.2	21.9
12	27.8	25.5	26.4	26.8	24.4	25.7	26.8	24.8	25.5	23.3	21.0	22.5
13	26.1	25.1	25.6	26.9	24.0	25.1	26.4	24.4	25.5	25.1	22.8	24.1
14	27.1	24.9	25.8	26.9	24.7	25.7	24.8	23.0	24.0	27.8	23.3	26.2
15	27.8	24.0	25.6	26.7	24.5	25.4	24.8	23.2	24.1	27.7	22.3	24.1
16	26.8	25.6	26.1	25.2	24.1	24.6	26.8	23.6	25.1	23.2	21.7	22.4
17	28.1	25.4	26.9	25.8	23.6	24.5	26.4	23.6	24.8	24.1	21.2	22.5
18	27.6	26.0	26.7	27.3	24.6	25.7	26.4	24.0	25.2	22.7	21.1	21.6
19	27.8	25.6	26.6	26.7	25.3	26.0	26.4	24.0	25.0	23.0	20.7	22.0
20	26.4	23.8	24.4	26.1	24.9	25.5	25.7	23.6	24.6	22.2	21.0	21.5
21	24.8	23.4	24.0	26.2	24.8	25.5	25.3	23.5	24.1	23.9	20.2	22.5
22	25.2	23.4	24.3	27.1	25.2	26.2	23.5	22.9	23.3	21.6	19.8	20.7
23	24.4	23.2	24.0	26.9	24.9	25.9	24.9	22.9	23.8	22.7	20.4	21.6
24	24.6	23.4	23.9	26.9	24.9	25.9	25.5	23.5	24.4	24.3	21.4	22.9
25	25.1	22.6	23.5	26.9	24.7	25.7	25.1	23.9	24.4	24.6	23.0	24.0
26	25.5	23.1	24.5	27.8	25.1	26.4	27.2	23.7	25.4	24.0	22.1	23.0
27	24.1	22.8	23.4	27.8	25.1	26.3	27.6	24.4	25.5	22.3	19.9	21.1
28	24.7	22.8	23.6	26.8	24.7	25.6	27.0	24.4	25.4	22.5	20.1	21.2
29	25.1	23.9	24.5	25.6	23.8	24.8	26.0	24.4	25.3	23.8	17.7	20.2
30	24.8	23.7	24.2	23.8	22.1	22.9	25.8	24.4	25.1	21.5	16.8	18.7
31	---	---	---	24.0	21.1	22.5	25.8	23.2	24.6	---	---	---
MONTH	28.1	18.4	24.5	28.0	21.1	25.0	27.6	20.3	24.3	27.8	16.8	23.0
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL												
1	---	---	7.8	7.5	7.9	7.6	7.2	7.0	7.7	7.6	6.7	6.5
2	---	---	7.9	7.5	7.7	7.4	7.1	6.9	7.8	7.3	6.9	6.7
3	---	---	7.9	7.2	7.4	7.3	7.1	6.9	7.3	6.6	7.6	6.9
4	---	---	7.9	6.9	7.8	6.6	7.0	6.9	6.6	6.4	7.8	7.5
5	---	---	7.5	7.1	7.9	7.5	7.0	6.9	6.6	6.5	7.9	7.7
6	---	---	7.7	7.3	7.6	7.5	7.0	6.9	6.8	6.5	8.0	7.8
7	---	---	7.9	7.5	7.6	7.5	7.0	6.9	6.8	6.7	8.2	7.9
8	---	---	8.0	7.6	7.6	7.4	7.1	7.0	6.7	6.6	8.2	8.1
9	---	---	8.2	7.9	8.0	7.6	7.3	7.1	6.7	6.6	8.7	8.7
10	---	---	8.3	7.9	8.2	8.0	7.4	7.3	6.7	6.7	8.6	8.1
11	---	---	8.2	7.5	8.3	8.1	7.4	7.2	6.9	6.5	8.2	8.0
12	---	---	7.6	7.3	8.4	8.0	7.6	7.4	6.8	6.6	8.1	7.9
13	---	---	7.9	7.5	8.3	8.1	7.7	7.6	6.7	6.6	8.0	7.8
14	---	---	8.0	7.6	8.3	7.7	7.8	7.7	6.9	6.6	8.0	7.7
15	---	---	8.3	7.6	7.9	7.7	---	---	6.9	6.8	7.8	7.5
16	8.0	7.5	8.2	7.9	7.9	7.7	---	---	6.9	6.6	7.6	7.4
17	7.8	7.5	8.2	7.7	8.1	7.9	---	---	6.7	6.5	7.4	7.3
18	7.7	7.4	8.3	7.6	8.6	8.0	---	---	6.9	6.6	7.3	7.2
19	7.6	7.3	7.8	7.5	8.5	8.4	---	---	6.9	6.6	7.2	7.2
20	7.7	7.1	8.3	7.5	8.7	8.5	---	---	6.7	6.5	7.8	7.2
21	7.6	7.2	8.4	7.8	8.6	8.4	---	---	6.8	6.5	7.8	7.4
22	7.6	7.2	8.0	7.8	8.5	8.4	---	---	7.2	6.4	7.6	7.5
23	7.8	7.2	8.0	7.7	8.5	8.2	---	---	7.1	6.5	7.6	7.5
24	7.9	7.5	7.8	7.6	8.3	8.1	7.8	7.1	7.2	6.7	7.5	7.4
25	7.9	7.0	7.7	7.4	8.3	8.0	7.1	6.9	8.1	6.8	---	---
26	7.5	7.1	8.2	7.6	8.0	7.8	7.0	6.9	7.9	6.8	7.5	7.3
27	7.7	7.4	8.5	7.6	8.1	8.0	7.0	6.9	6.9	6.4	7.5	7.5
28	7.7	7.4	8.0	7.6	8.3	7.7	7.1	6.9	6.5	6.3	7.5	7.4
29	7.7	7.4	8.3	8.0	8.1	7.9	7.3	7.1	6.5	6.3	7.5	7.4
30	7.8	7.5	8.3	8.0	8.1	7.2	7.4	7.2	6.5	6.4	7.7	7.5
31	---	---	8.5	7.8	---	---	7.6	7.4	6.6	6.5	---	---
MONTH	8.0	7.0	8.5	6.9	8.7	6.6	7.8	6.9	8.1	6.3	8.7	6.5

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TENNESSEE RIVER BASIN

03578970 ROWLAND CREEK AT AEDC NEAR MANCHESTER, TN

LOCATION.--Lat 35°22'11", long 86°03'32", Coffee County, Hydrologic Unit 06030003, on right bank 100 ft above bridge on South Sixth Street, at Arnold Engineering Development Center, 7.2 mi southwest of Manchester.

DRAINAGE AREA.--

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1993 to September 1993.

GAGE.--Pressure transducer, crest-stage gage, and satellite telemeter at station. Datum of gage is 1065.17 ft above sea level.

NOTE.--Records not available for inclusion in this report. These records will be included in the 1994 report.

## TENNESSEE RIVER BASIN

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03578970 ROWLAND CREEK AT AEDC NEAR MANCHESTER, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--March to September 1993.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: March to September 1993.

pH: March to September 1993.

INSTRUMENTATION.--Water-quality monitor since March 1993.

REMARKS.--Flow regulated by Arnold Engineering and Development Center. Interruptions in the record were due to instrument malfunctions.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURES: Maximum, 33.2°C, July 29; minimum, 5.1°C, Mar. 12.

pH: Maximum, 8.6 units, Mar. 14 ; minimum, 6.4 units, May 21.

## TEMPERATURE, WATER (DEG. C), WATER YEAR MARCH 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	---	---	---	---	18.6	12.5	15.3	19.7	17.2	18.3
2	---	---	---	---	---	---	14.2	12.4	13.1	19.1	18.2	18.8
3	---	---	---	---	---	---	14.9	11.9	13.1	20.4	17.6	18.5
4	---	---	---	---	---	---	13.5	12.2	12.8	20.8	16.3	18.5
5	---	---	---	---	---	---	13.2	11.9	12.6	19.2	16.9	18.1
6	---	---	---	---	---	---	14.9	11.8	13.3	20.2	17.5	18.6
7	---	---	---	---	---	---	16.4	12.3	13.7	20.5	17.7	19.2
8	---	---	---	---	---	---	17.3	13.4	15.0	23.6	19.7	22.3
9	---	---	---	---	---	---	18.4	13.1	14.3	22.5	21.5	22.0
10	---	---	---	---	---	---	15.9	12.6	14.1	24.0	20.5	21.9
11	---	---	---	---	---	---	17.5	13.5	15.1	21.3	18.4	20.2
12	---	---	---	9.4	7.3	8.9	22.8	14.2	16.5	24.1	19.6	21.3
13	---	---	---	7.1	5.1	6.0	16.2	14.0	15.2	21.7	19.1	20.7
14	---	---	---	7.5	5.5	6.3	16.8	14.4	15.5	21.7	18.3	19.5
15	---	---	---	9.0	6.1	7.6	19.1	14.2	15.6	24.6	17.4	20.2
16	---	---	---	9.1	6.4	7.9	16.1	11.8	14.1	22.1	18.7	20.2
17	---	---	---	9.1	7.7	8.4	17.5	14.7	15.9	22.3	18.7	21.2
18	---	---	---	11.7	7.0	8.3	17.8	15.1	16.2	26.2	17.9	22.0
19	---	---	---	8.5	7.4	8.1	20.8	15.5	18.3	23.6	19.2	21.1
20	---	---	---	8.5	7.6	8.1	16.7	15.9	16.4	21.4	18.8	20.4
21	---	---	---	9.5	7.9	8.5	22.3	15.1	19.4	26.5	16.1	20.1
22	---	---	---	15.6	8.1	10.5	21.9	15.2	18.1	20.0	18.2	19.5
23	---	---	---	16.8	10.1	12.8	20.3	15.6	17.8	23.3	19.0	21.1
24	---	---	---	17.8	9.5	12.3	18.9	16.2	17.5	25.1	19.0	20.7
25	---	---	---	17.8	9.8	11.6	19.6	16.5	17.7	26.9	19.6	22.6
26	---	---	---	13.1	10.0	11.2	22.6	16.7	17.9	26.3	20.2	21.8
27	---	---	---	12.8	11.4	12.3	20.4	15.9	17.9	23.5	20.8	22.1
28	---	---	---	15.1	11.8	13.2	23.7	16.1	19.0	25.9	20.4	23.5
29	---	---	---	15.3	12.4	13.0	20.9	15.6	18.1	30.0	19.6	25.3
30	---	---	---	17.9	11.7	13.8	19.1	16.4	17.6	28.2	23.5	26.3
31	---	---	---	17.8	11.9	14.4	---	---	---	26.5	20.4	23.3
MONTH	---	---	---	17.9	5.1	10.2	23.7	11.8	15.9	30.0	16.1	20.9

## TENNESSEE RIVER BASIN

03578970 ROWLAND CREEK AT AEDC NEAR MANCHESTER, TN--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR MARCH 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	25.3	19.2	22.0	26.9	23.5	25.1	27.0	23.2	24.6	28.1	24.9	26.2
2	25.1	22.2	23.2	27.5	23.5	25.4	27.4	25.0	26.5	28.7	25.4	26.8
3	23.1	21.2	22.2	25.9	22.9	24.2	26.7	23.9	25.3	30.9	25.8	27.6
4	25.9	22.4	23.8	24.2	22.9	23.5	29.4	23.9	27.1	29.6	24.7	26.0
5	25.9	21.0	23.3	25.0	23.2	23.9	27.5	24.1	25.5	26.5	24.5	25.7
6	25.5	21.6	23.5	28.7	23.6	25.8	26.1	22.6	24.2	25.8	24.6	25.2
7	25.7	21.2	23.5	30.3	24.0	26.7	27.8	21.8	24.3	27.5	24.0	26.3
8	27.8	23.7	24.8	28.9	24.0	25.9	27.5	22.9	24.2	30.3	24.2	27.7
9	27.7	22.4	25.9	29.5	23.6	25.8	27.8	23.5	25.2	28.8	24.9	26.6
10	25.7	22.0	23.7	27.6	25.0	26.5	31.6	23.5	26.0	28.4	24.9	26.5
11	30.0	22.4	24.7	29.1	23.8	25.8	28.0	25.1	26.4	26.6	23.2	24.9
12	29.4	23.3	27.1	29.2	24.1	26.5	27.1	23.7	25.3	26.2	23.2	24.5
13	26.5	22.7	24.2	28.4	23.7	26.2	28.2	24.7	26.8	29.2	23.5	25.8
14	28.0	23.1	25.5	30.2	25.5	27.3	27.8	24.7	26.2	32.0	24.5	27.1
15	25.9	22.0	24.2	30.0	24.1	26.1	29.0	24.9	26.3	29.8	25.9	27.6
16	28.2	22.0	25.3	28.1	23.8	26.1	28.8	25.1	27.3	27.9	24.4	26.2
17	31.2	22.7	25.7	28.3	24.0	25.5	28.8	25.9	27.2	---	---	---
18	27.1	22.9	25.1	27.8	23.8	25.4	28.8	24.7	26.8	---	---	---
19	26.9	22.4	24.0	27.2	25.0	26.0	28.6	24.5	26.8	---	---	---
20	24.4	22.3	23.2	27.9	24.6	25.7	29.8	26.1	27.1	---	---	---
21	27.9	22.1	25.1	28.7	23.8	25.6	30.6	27.3	28.6	25.7	23.3	24.7
22	27.9	22.1	25.0	31.7	23.6	25.9	28.2	24.9	25.9	28.2	23.3	24.8
23	25.8	22.5	24.3	30.5	24.4	25.6	29.4	24.7	26.6	27.3	24.3	25.4
24	25.6	22.6	24.1	29.9	24.0	26.2	28.4	24.9	26.6	28.4	23.5	25.8
25	27.0	23.2	24.4	30.1	25.0	27.0	27.8	24.3	26.2	30.2	24.1	26.2
26	27.9	22.6	25.0	29.3	25.4	27.0	29.0	25.1	27.5	25.1	24.3	24.6
27	28.7	23.8	26.0	28.3	25.2	27.4	29.2	25.1	27.7	26.1	23.3	24.1
28	25.2	23.0	24.2	28.1	24.4	25.9	30.5	24.8	27.7	27.8	22.9	25.0
29	27.0	23.4	24.8	33.2	24.2	26.1	27.9	24.4	26.0	29.0	23.3	24.9
30	26.1	23.5	24.4	27.9	23.4	24.4	28.2	24.5	26.0	26.7	22.7	24.7
31	---	---	---	29.9	23.4	27.0	27.8	24.7	26.3	---	---	---
MONTH	31.2	19.2	24.4	33.2	22.9	25.9	31.6	21.8	26.3	32.0	22.7	25.8

PH (STANDARD UNITS), WATER YEAR MARCH 1993 TO SEPTEMBER 1993

[illegible]

TENNESSEE RIVER BASIN

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03578970 ROWLAND CREEK AT AEDC NEAR MANCHESTER, TN--Continued

PH (STANDARD UNITS), WATER YEAR MARCH 1993 TO SEPTEMBER 1993

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.4	7.2	7.9	7.5	7.4	6.9	7.4	7.2	7.4	7.3	7.9	7.3
2	7.2	7.2	7.9	7.6	7.8	7.3	7.3	7.1	7.4	7.1	7.8	7.4
3	7.2	7.1	7.6	7.3	7.7	7.5	7.4	7.3	7.4	7.2	7.8	7.6
4	7.2	7.1	7.6	7.2	7.6	7.4	7.3	7.3	7.2	7.1	7.8	7.7
5	7.1	7.0	7.8	7.5	7.8	7.3	7.3	7.3	7.3	7.1	7.9	7.7
6	7.0	6.8	7.8	7.5	7.8	7.3	7.3	7.2	7.3	7.1	7.8	7.7
7	7.0	6.8	7.7	7.5	7.5	7.2	7.5	7.2	7.4	7.1	7.8	7.7
8	7.1	6.9	8.0	7.6	7.4	6.9	7.5	6.9	7.4	7.2	8.0	7.7
9	7.9	7.0	7.5	6.9	7.5	7.2	7.4	6.9	7.3	7.1	8.3	8.0
10	8.1	7.8	6.9	6.7	7.4	7.3	7.5	7.3	7.5	7.0	8.2	8.0
11	8.1	7.8	7.1	6.7	7.6	7.3	7.6	7.3	7.5	7.2	8.2	6.8
12	7.9	7.3	7.2	7.0	7.6	7.3	7.6	7.3	7.7	7.2	7.4	7.0
13	7.8	7.6	7.7	7.1	7.6	7.3	7.3	7.2	7.5	7.1	7.4	6.8
14	7.9	7.3	7.9	7.6	7.4	7.2	7.4	7.2	7.6	7.3	7.8	7.1
15	7.9	7.3	7.9	7.6	7.5	7.1	7.4	7.3	7.6	7.4	7.5	6.5
16	7.7	7.2	7.6	7.2	7.4	7.2	7.4	7.3	7.4	7.3	---	---
17	7.9	7.6	7.2	6.9	7.3	6.9	7.5	7.4	7.4	7.2	---	---
18	8.0	7.7	7.2	6.8	7.3	7.1	7.6	7.3	7.5	7.3	---	---
19	7.9	7.4	6.9	6.6	7.4	7.2	7.4	7.3	7.5	7.1	---	---
20	7.8	7.5	6.8	6.5	7.4	7.4	7.4	7.3	7.4	7.3	---	---
21	7.6	7.1	6.9	6.4	7.5	7.2	7.4	7.1	7.8	7.4	7.8	7.4
22	7.3	7.1	6.9	6.7	7.3	7.2	7.3	7.0	7.7	7.2	7.6	7.1
23	7.9	7.3	6.9	6.5	7.4	7.2	7.3	7.1	7.4	7.2	7.7	7.3
24	8.0	7.6	7.3	6.6	7.4	7.3	7.6	7.3	7.4	7.3	7.7	7.4
25	7.9	7.5	7.3	6.8	7.8	7.3	7.7	7.4	7.7	7.3	7.7	7.4
26	7.9	7.1	7.2	7.0	8.0	7.6	7.5	7.4	7.6	7.3	7.6	7.4
27	8.0	7.5	7.3	7.1	7.9	7.5	7.4	7.3	7.7	7.5	7.5	7.4
28	7.6	7.2	7.3	7.0	7.6	7.3	7.4	7.3	7.9	7.4	7.9	7.5
29	7.8	7.2	7.3	6.7	7.5	7.3	7.4	7.0	7.8	7.2	7.9	7.3
30	7.9	7.3	6.9	6.7	7.4	7.3	7.4	7.3	7.8	7.5	7.9	7.3
31	---	---	6.9	6.7	---	---	7.4	7.3	7.7	7.6	---	---
MONTH	8.1	6.8	8.0	6.4	8.0	6.9	7.7	6.9	7.9	7.0	8.3	6.5



## TENNESSEE RIVER BASIN

03579620 ROCK CREEK AT TULLAHOMA, TN

LOCATION.--Lat 35°21'34", long 86°12'47", Coffee County, Hydrologic Unit 06040002, on downstream side of bridge on Lincoln Street, 0.2 mi southwest of intersection of US Highway 41A and Lincoln Street, 0.9 mi downstream from the confluence of North Fork and West Fork Rock Creek and at mile 12.3.

DRAINAGE AREA.--12.3 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1991 to September 1993. Occasional low-flow measurements, water years 1960, 1966-67, 1969-70.

GAGE.--Water-stage encoder, crest-stage gage, and satellite telemeter at station. Datum of gage is 1013.00 ft above sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT PERIOD.--October 1991 to September 1993: Peak discharges greater than base discharge of 800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 2, 1991	1130	1,180	8.04	Mar. 23, 1993	0845	909	7.27
Dec. 13, 1991	1645	846	7.08	May 4, 1993	0030	1,120	7.88
Sept. 22, 1992	1000	*1,390	*8.57				

Minimum daily discharge, .85, Sept. 29, 1993.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.2	3.0	351	21	4.2	9.6	9.0	5.9	1.5	2.0	1.6	1.5
2	e1.2	2.3	678	159	3.8	8.0	7.0	5.1	1.5	1.9	1.3	12
3	e1.2	2.3	275	220	3.8	6.3	5.5	4.8	9.5	8.0	2.3	9.9
4	e1.3	2.4	44	93	3.5	5.2	5.0	4.1	5.7	2.9	1.5	9.7
5	e1.5	2.8	25	46	3.3	4.7	4.2	3.8	3.4	12	1.3	4.3
6	e1.3	3.0	17	33	3.1	4.5	3.9	3.4	2.2	5.6	1.3	3.0
7	e1.2	2.9	11	23	2.9	5.2	7.3	3.1	2.8	3.2	1.3	2.4
8	e1.2	2.9	7.7	34	2.7	4.1	6.4	3.5	2.1	2.3	1.3	2.1
9	e1.1	2.9	145	72	2.4	5.6	5.1	3.5	20	1.9	1.6	1.7
10	e1.1	3.4	76	39	2.3	311	4.8	3.0	7.4	1.7	91	1.9
11	e1.1	3.3	32	24	2.3	57	4.3	2.6	4.2	1.6	5.0	1.4
12	e1.0	3.0	21	24	2.3	33	3.5	5.7	118	1.5	1.7	1.3
13	e1.0	2.9	370	56	3.2	22	2.9	13	45	1.3	2.7	1.3
14	e1.0	3.0	156	75	3.9	16	3.0	5.3	16	3.0	1.4	1.2
15	e2.0	3.0	47	32	16	12	81	4.2	9.0	1.6	1.2	1.1
16	e1.5	2.9	30	19	8.5	8.3	41	3.3	5.3	1.4	1.2	1.1
17	e1.2	2.8	23	15	5.9	7.5	14	2.8	3.9	1.9	1.2	1.4
18	e1.0	3.0	17	13	10	45	7.7	2.6	21	1.7	1.1	2.9
19	e1.0	2.9	11	11	6.9	46	6.2	2.3	34	1.3	1.1	1.2
20	e1.0	16	8.7	7.7	4.5	32	27	2.2	7.4	1.3	1.0	1.0
21	e1.0	14	8.6	6.4	3.9	19	235	3.1	4.3	1.2	3.0	.99
22	e1.5	56	13	7.9	3.5	34	47	2.6	3.2	1.3	1.4	584
23	e3.0	11	68	41	87	48	25	2.0	2.8	1.3	1.5	56
24	e1.5	7.7	84	26	58	24	19	2.0	2.5	1.2	16	11
25	e1.3	7.0	36	16	67	26	13	2.0	4.3	1.2	1.8	6.6
26	e1.1	6.6	24	12	120	27	9.3	1.9	4.1	1.1	1.3	7.7
27	e1.0	6.2	20	10	36	22	8.9	1.9	3.3	1.2	7.5	9.8
28	e1.0	6.2	161	9.1	21	14	8.5	1.8	2.3	1.2	28	5.6
29	e1.0	6.3	72	6.6	14	12	7.5	1.9	2.1	1.2	3.4	4.2
30	e1.0	43	40	5.4	---	14	6.4	1.7	2.0	1.2	2.0	3.8
31	e1.3	---	28	4.9	---	13	---	1.6	---	2.1	1.6	---
TOTAL	38.8	234.7	2900.0	1162.0	505.9	896.0	628.4	106.7	350.8	72.3	189.6	752.09
MEAN	1.25	7.82	93.5	37.5	17.4	28.9	20.9	3.44	11.7	2.33	6.12	25.1
MAX	3.0	56	678	220	120	311	235	13	118	12	91	584
MIN	1.0	2.3	7.7	4.9	2.3	4.1	2.9	1.6	1.5	1.1	1.0	.99
CFSM	.10	.64	7.61	3.05	1.42	2.35	1.70	.28	.95	.19	.50	2.04
IN.	.12	.71	8.77	3.51	1.53	2.71	1.90	.32	1.06	.22	.57	2.27

e Estimated

TENNESSEE RIVER BASIN  
03579620 ROCK CREEK AT TULLAHOMA, TN--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.3	32	6.4	9.7	8.2	11	27	8.7	14	2.1	1.5	1.1
2	3.2	151	5.9	8.2	7.2	28	24	8.6	7.1	2.0	1.4	1.1
3	3.0	18	5.2	7.0	6.6	31	15	140	5.2	2.0	1.4	2.7
4	6.2	202	9.6	25	5.9	22	12	471	4.4	2.0	1.4	2.3
5	5.6	75	12	48	5.8	19	64	42	4.7	1.9	2.7	1.1
6	4.0	24	8.6	17	5.5	14	37	22	3.6	1.9	25	1.1
7	3.3	14	8.4	14	5.2	12	20	16	3.1	1.9	1.8	1.0
8	3.0	11	7.5	54	5.1	11	14	19	2.9	1.8	1.5	2.1
9	3.1	8.7	6.8	22	4.7	8.8	29	19	2.7	1.8	1.6	1.3
10	3.1	7.7	12	14	4.7	7.9	26	11	6.0	1.8	1.7	1.2
11	2.9	7.4	11	68	11	6.7	15	9.1	5.1	1.9	1.8	1.1
12	2.7	32	8.1	43	16	7.1	11	9.6	4.4	3.2	1.8	1.1
13	2.5	18	7.2	28	11	9.9	11	11	4.1	1.8	1.8	1.0
14	2.3	12	6.6	15	8.5	12	8.8	9.4	2.8	1.7	1.6	1.1
15	2.2	9.6	6.5	12	8.0	14	25	7.6	37	1.6	1.5	4.0
16	4.6	8.1	11	11	71	37	42	6.5	6.0	1.6	1.5	1.6
17	3.0	7.4	44	9.6	23	85	18	5.5	4.0	1.5	1.4	1.1
18	2.5	7.0	15	8.1	14	36	13	11	3.0	1.5	1.4	1.1
19	2.4	6.7	11	10	11	21	10	33	2.7	1.8	1.4	1.0
20	2.5	5.9	278	12	11	14	29	12	2.7	1.8	5.9	1.1
21	2.0	8.4	50	70	45	12	29	9.6	8.5	1.5	2.0	1.3
22	1.8	34	35	27	39	40	15	8.3	5.3	1.6	1.4	1.0
23	1.8	17	265	15	18	536	11	6.7	3.8	1.5	1.4	1.1
24	1.9	25	67	78	13	82	9.4	5.7	2.8	1.5	1.3	1.0
25	2.1	20	30	27	28	40	88	6.7	2.9	1.5	1.3	1.3
26	2.1	13	27	15	33	74	152	6.3	2.7	1.5	1.2	3.9
27	17	9.3	22	13	17	54	29	5.2	3.2	1.5	1.2	1.2
28	5.9	8.1	37	12	13	31	16	4.4	2.7	1.5	1.2	.87
29	4.6	7.2	18	11	---	21	11	4.0	2.5	1.5	1.3	.85
30	13	6.7	13	8.9	---	16	9.4	3.8	2.2	1.4	1.4	.90
31	11	---	11	8.4	---	32	---	42	---	1.4	1.3	---
TOTAL	128.6	806.2	1055.8	720.9	449.4	1345.4	819.2	974.7	162.1	54.0	75.1	42.62
MEAN	4.15	26.9	34.1	23.3	16.0	43.4	27.3	31.4	5.40	1.74	2.42	1.42
MAX	17	202	278	78	71	536	152	471	37	3.2	25	4.0
MIN	1.8	5.9	5.2	7.0	4.7	6.7	8.8	3.8	2.2	1.4	1.2	.85
CFSM	.34	2.18	2.77	1.89	1.30	3.53	2.22	2.56	.44	.14	.20	.12
IN.	.39	2.44	3.19	2.18	1.36	4.07	2.48	2.95	.49	.16	.23	.13

## TENNESSEE RIVER BASIN

03579620 ROCK CREEK AT TULLAHOMA, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

MEAN	2.70	17.3	63.8	30.4	16.8	36.2	24.1	17.4	8.55	2.04	4.27	13.2
MAX	4.15	26.9	93.5	37.5	17.4	43.4	27.3	31.4	11.7	2.33	6.12	25.1
(WY)	1993	1993	1992	1992	1992	1993	1993	1993	1992	1992	1992	1992
MIN	1.25	7.82	34.1	23.3	16.0	28.9	20.9	3.44	5.40	1.74	2.42	1.42
(WY)	1992	1992	1993	1993	1993	1992	1992	1992	1993	1993	1993	1993

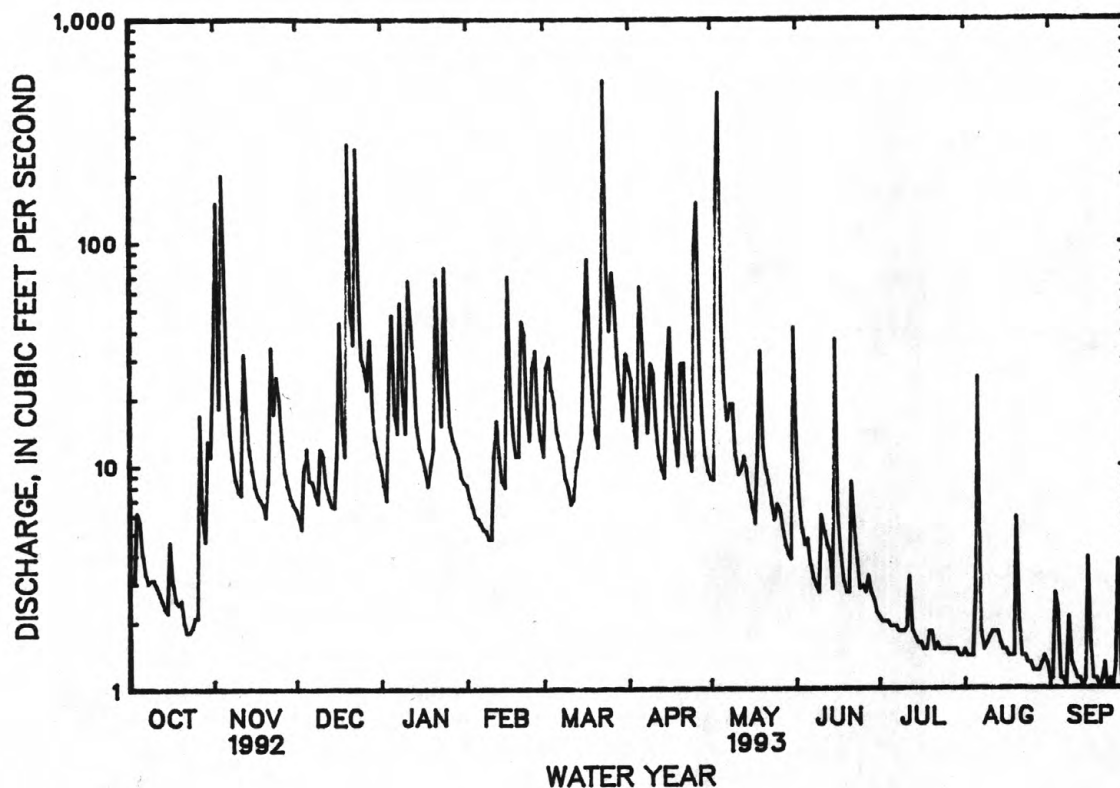
## SUMMARY STATISTICS

## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

## WATER YEARS 1992 - 1993

ANNUAL TOTAL	6654.39			6634.02								
ANNUAL MEAN	18.2			18.2						19.8		
HIGHEST ANNUAL MEAN										21.4		1992
LOWEST ANNUAL MEAN										18.2		1993
HIGHEST DAILY MEAN	584	Sep 22		536	Mar 23					678	Dec 2	1991
LOWEST DAILY MEAN	.99	Sep 21		.85	Sep 29					.85	Sep 29	1993
ANNUAL SEVEN-DAY MINIMUM	1.2	Aug 14		1.1	Sep 18					1.1	Oct 8	1991
INSTANTANEOUS PEAK FLOW				1120	May 4					1390	Sep 22	1992
INSTANTANEOUS PEAK STAGE				7.88	May 4					8.57	Sep 22	1992
ANNUAL RUNOFF (CFSM)	1.48			1.48						1.61		
ANNUAL RUNOFF (INCHES)	20.13			20.06						21.87		
10 PERCENT EXCEEDS	36			36						40		
50 PERCENT EXCEEDS	5.6			7.5						5.9		
90 PERCENT EXCEEDS	1.4			1.4						1.3		





## TENNESSEE RIVER BASIN

03580995 EAST FORK MULBERRY CREEK BELOW JACK DANIEL DISTILLERY AT LYNCHBURG, TN

LOCATION.--Lat 35°16'56", long 86°22'17", Moore County, Hydrologic Unit 06030003, on right bank 160 ft above county road bridge, 0.2 mi below State Highway 55 bridge, 1.4 mi above Price Branch, and at mile 13.2

DRAINAGE AREA.--23.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1987 to current year. Miscellaneous low-flow measurements made in vicinity since 1932.

GAGE.--Water-stage encoder, crest-stage gage and satellite telemeter at station. Elevation of the gage is 774.31 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 850 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 2	0015	1,080	5.79	May 3	2345	*3,000	*8.34
Dec. 20	0400	1,110	5.87	June 12	1915	1,830	7.03
Mar. 23	0830	1,500	6.64				

Minimum discharge, 2.6 ft<sup>3</sup>/s, Sept. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	68	23	41	29	36	60	43	29	18	8.3	5.0
2	13	267	21	36	25	45	50	38	23	16	8.9	5.4
3	12	99	18	33	23	49	46	293	20	16	8.3	6.1
4	16	209	21	46	22	46	43	629	19	13	8.4	7.7
5	17	163	23	65	21	42	54	184	18	13	11	4.3
6	13	111	19	55	20	38	55	113	16	13	37	3.9
7	12	72	20	51	19	36	52	80	15	11	15	4.7
8	12	51	18	83	18	33	49	62	14	11	9.9	5.8
9	12	39	18	74	16	30	51	49	14	11	8.6	6.3
10	11	32	27	63	15	29	46	42	31	11	8.1	5.1
11	12	28	26	91	19	25	40	36	29	10	7.6	4.0
12	11	52	25	101	22	24	37	35	179	11	7.5	3.4
13	10	45	23	93	18	28	33	35	83	11	7.8	4.0
14	10	36	22	76	16	25	32	30	40	10	7.0	4.0
15	9.9	31	22	64	15	24	41	27	70	10	6.5	5.6
16	13	27	24	55	75	49	41	24	35	20	6.6	5.9
17	11	26	55	45	44	111	35	23	29	12	5.9	4.7
18	11	24	47	37	36	94	33	30	24	11	6.1	4.3
19	10	22	41	34	32	71	31	52	21	11	5.9	4.1
20	9.7	20	414	32	32	58	37	29	20	9.8	5.7	4.2
21	10	22	179	73	55	48	35	25	36	9.6	5.9	4.8
22	9.3	44	119	68	53	60	31	23	30	9.0	5.5	4.0
23	9.9	40	327	59	43	775	31	21	23	9.1	5.1	4.5
24	10	47	222	98	36	261	30	20	21	12	5.6	6.3
25	11	53	136	74	42	148	96	20	27	10	5.9	6.1
26	12	45	92	64	47	140	175	18	25	9.6	5.5	7.5
27	70	39	72	54	41	121	106	17	28	9.2	4.8	8.0
28	29	33	71	45	39	105	73	16	28	9.2	4.5	5.5
29	22	28	66	38	---	84	56	16	22	9.0	4.1	4.6
30	29	25	57	33	---	70	48	16	20	8.3	4.9	4.7
31	37	---	50	30	---	72	---	59	---	8.3	5.2	---
TOTAL	488.8	1798	2298	1811	873	2777	1547	2105	989	352.1	247.1	154.5
MEAN	15.8	59.9	74.1	58.4	31.2	89.6	51.6	67.9	33.0	11.4	7.97	5.15
MAX	70	267	414	101	75	775	175	629	179	20	37	8.0
MIN	9.3	20	18	30	15	24	30	16	14	8.3	4.1	3.4
CFSM	.67	2.56	3.17	2.50	1.33	3.83	2.20	2.90	1.41	.49	.34	.22
IN.	.78	2.86	3.65	2.88	1.39	4.41	2.46	3.35	1.57	.56	.39	.25



TENNESSEE RIVER BASIN

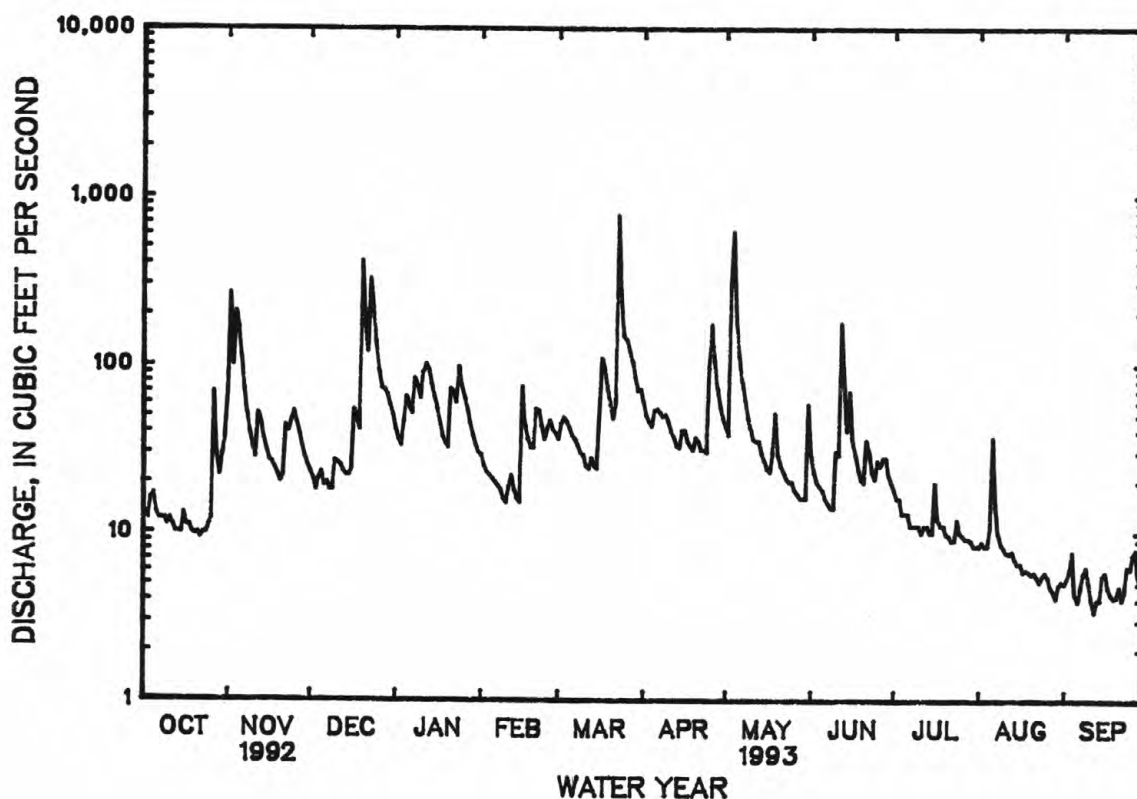
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03580995 EAST FORK MULBERRY CREEK BELOW JACK DANIEL DISTILLERY AT LYNCHBURG, TN

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1993, BY WATER YEAR (WY)

MEAN	20.2	27.7	104	78.0	98.2	83.7	46.1	34.4	35.0	18.6	8.46	21.8
MAX	80.1	59.9	282	112	233	150	69.9	73.1	112	63.7	14.5	50.5
(WY)	1990	1993	1991	1989	1991	1991	1989	1991	1989	1989	1989	1992
MIN	3.22	6.54	15.3	45.0	29.6	15.1	23.4	9.59	3.88	6.23	4.35	4.30
(WY)	1988	1988	1988	1988	1988	1988	1990	1988	1988	1988	1991	1991

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1988 - 1993
ANNUAL TOTAL	13904.9	15440.5	
ANNUAL MEAN	38.0	42.3	47.8
HIGHEST ANNUAL MEAN			78.2
LOWEST ANNUAL MEAN			16.1
HIGHEST DAILY MEAN	767	775	2570
LOWEST DAILY MEAN	6.5	3.4	1.7
ANNUAL SEVEN-DAY MINIMUM	6.8	4.4	2.1
INSTANTANEOUS PEAK FLOW		3000	5370
INSTANTANEOUS PEAK STAGE		8.34	10.01
INSTANTANEOUS LOW FLOW		2.6	1.6
ANNUAL RUNOFF (CFSM)	1.62	1.81	2.04
ANNUAL RUNOFF (INCHES)	22.11	24.55	27.76
10 PERCENT EXCEEDS	75	78	97
50 PERCENT EXCEEDS	19	25	19
90 PERCENT EXCEEDS	8.1	5.9	4.4



## TENNESSEE RIVER BASIN

03584600 ELK RIVER AT PROSPECT, TN

LOCATION.--Lat 35°00'51", long 86°59'41", Giles County, Hydrologic Unit 06030004, on right bank 25 ft upstream from county road bridge, 800 ft above abandoned L and N Railroad bridge, 0.4 mi above Ford Creek, 0.8 mi south of Prospect, 2.9 mi upstream from Tennessee-Alabama State line, and at mile 36.5.

DRAINAGE AREA.--1,805 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1904 to February 1908, January 1919 to current year. Published as "near Elkmont, Ala." 1904-8, 1919-34. Record for both sites published January to March 1934. Published as "near Prospect, Tenn." 1935-89.

REVISED RECORDS.--WSP 523: 1904-8, 1919-20. WSP 823: Drainage area. WSP 1436: 1920-22, 1923(M), 1924, 1927, 1929, 1931-32(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 558.70 ft above sea level. July 1, 1904, to Feb. 2, 1908, and Jan. 20, 1919, to Mar. 31, 1934; nonrecording gage 6.9 mi downstream at datum 8.93 ft lower. January 1934 to September 1989, water-stage recorder at site 5.0 mi upstream at datum 4.59 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Woods Reservoir (station 03579000) since May 1952, and Tims Ford Lake (station 03580740) since December 1970. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data. Tennessee Valley Authority satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1902 reached a stage of 40.9 ft, site and datum then in use, discharge, 130,000 ft<sup>3</sup>/s, and may have been equaled by a flood in March 1897, from reports of Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23,200 ft<sup>3</sup>/s, Mar. 24, gage height 20.38 ft; minimum, 204 ft<sup>3</sup>/s, Sept. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1520	2630	3130	4690	1820	2180	7560	2800	2120	1600	605	247
2	1310	10200	3410	4160	1640	2570	6780	2000	2160	1840	375	564
3	1160	7790	3300	4040	1470	3580	6310	1880	4490	1510	299	874
4	1080	5780	3140	3970	1330	3690	4690	11800	4070	638	363	1010
5	1110	7700	3520	7390	1230	3310	3360	16100	2560	534	440	666
6	1090	6540	2810	7020	1190	2910	4560	10600	1540	482	649	366
7	1240	5460	2610	6100	1100	2580	4360	6910	780	443	1070	274
8	1500	4780	2700	6830	1050	2290	3940	6180	654	911	840	239
9	1460	4310	3150	7160	1320	2000	3990	5730	859	1440	526	533
10	1410	3780	3380	5560	1810	1820	4040	4190	860	1440	414	696
11	1050	3670	3450	4210	2270	1680	3090	4050	1570	1400	446	684
12	774	4220	3620	6830	3280	1550	2100	3150	2500	728	493	565
13	704	6270	3110	7210	2620	1600	2500	2190	2430	646	1410	334
14	659	5280	2460	6720	2290	1610	3410	2270	1400	1320	1860	229
15	629	3730	2770	6050	1630	1490	3290	1880	1390	1310	875	224
16	625	2150	3360	5670	5300	2190	4110	1620	2200	1250	553	233
17	653	2400	5680	4370	5320	4470	3700	1010	1770	1140	450	242
18	654	3450	5740	3190	3780	4960	3170	935	1110	1290	477	251
19	597	3390	5000	3280	3340	3590	2170	1710	989	565	494	229
20	536	2980	11500	3440	3780	2950	1610	2920	983	465	460	234
21	1310	3570	12200	4960	2650	2530	1830	2530	680	653	574	225
22	1380	8490	7650	7090	3210	2920	1720	2320	1150	668	500	227
23	1630	7210	9690	6300	2680	17200	1490	1200	1400	674	380	221
24	1500	5700	15200	6740	2220	23100	1360	1220	1110	655	293	222
25	886	5940	10400	7730	2020	16700	1550	1170	978	650	344	241
26	529	5670	7380	6250	2870	11700	5940	1540	1470	411	434	302
27	519	4800	6000	4720	2760	12900	6050	1660	1380	343	489	571
28	2280	3830	5760	4260	2410	10300	4210	1470	1010	559	419	548
29	2620	4090	5500	4610	---	8420	3160	1520	973	651	410	434
30	1790	3080	5180	4070	---	7360	2710	1360	1370	615	316	533
31	2960	---	4480	3160	---	7380	---	1080	---	577	230	---
TOTAL	37165	148890	167280	167780	68390	173530	108760	106995	47956	27408	17488	12218
MEAN	1199	4963	5396	5412	2442	5598	3625	3451	1599	884	564	407
MAX	2960	10200	15200	7730	5320	23100	7560	16100	4490	1840	1860	1010
MIN	519	2150	2460	3160	1050	1490	1360	935	654	343	230	221

CAL YR 1992 MEAN‡ 2777 CFSM‡ 1.54 IN.‡ 20.94  
WTR YR 1993 MEAN‡ 2962 CFSM‡ 1.64 IN.‡ 22.28

‡ Adjusted for change in contents in Woods Reservoir and Tims Ford Lake.

NOTE.--Contents (cfs-days) for adjustments furnished by Arnold Engineering Development Center and Tennessee Valley Authority.

TENNESSEE RIVER BASIN  
03584600 ELK RIVER AT PROSPECT, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1993, BY WATER YEAR (WY)

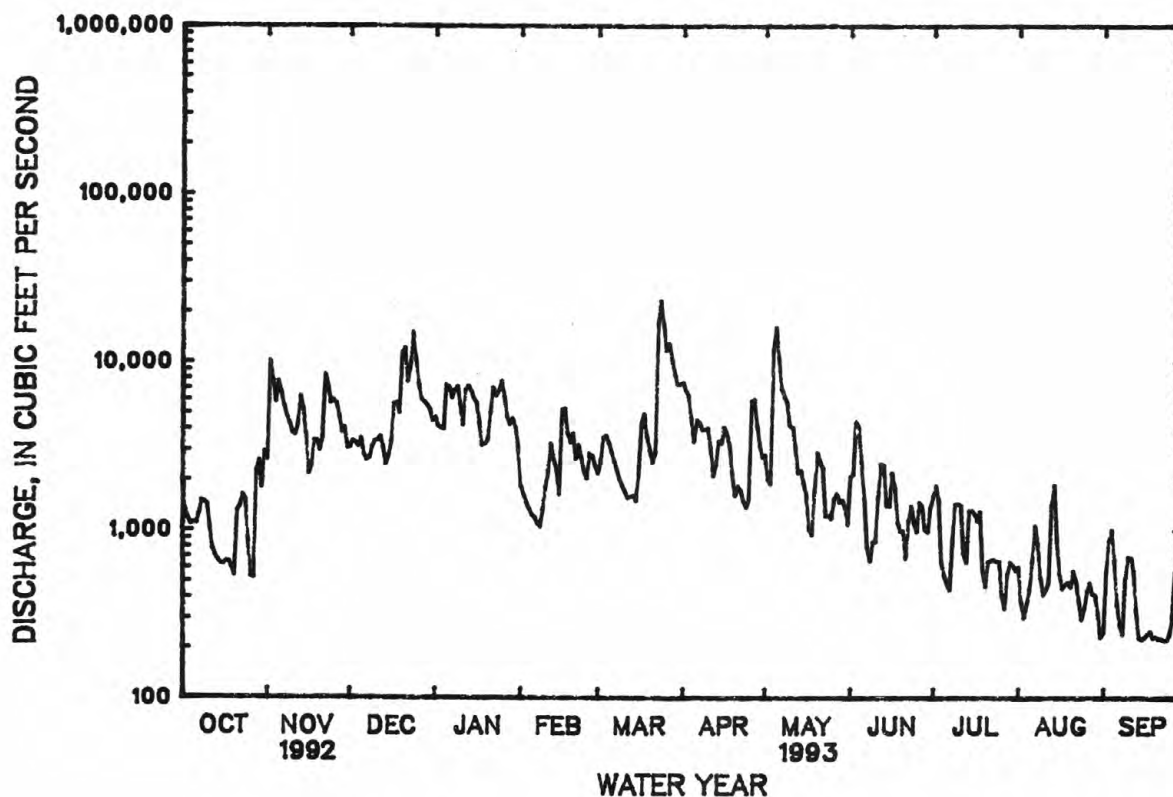
MEAN	1811	3228	5848	6002	5226	6210	3923	2942	1833	1131	766	1166
MAX	8699	8888	15320	17290	13360	17700	10220	9806	8011	6260	1739	4389
(WY)	1976	1978	1991	1974	1991	1973	1983	1983	1989	1989	1972	1979
MIN	209	619	1256	799	2017	1464	728	445	201	341	241	339
(WY)	1988	1988	1981	1981	1981	1985	1986	1988	1988	1988	1987	1991

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		*WATER YEARS 1972 - 1993	
ANNUAL TOTAL	1011992		1083860			
ANNUAL MEAN	2765		2969			
HIGHEST ANNUAL MEAN					3335	
LOWEST ANNUAL MEAN					5214	1973
HIGHEST DAILY MEAN					1013	1981
LOWEST DAILY MEAN	21500	Mar 11	23100	Mar 24	105000	Mar 17 1973
ANNUAL SEVEN-DAY MINIMUM	387	May 29	221	Sep 23	132	Sep 4 1987
INSTANTANEOUS PEAK FLOW	398	May 24	228	Sep 19	153	Jun 13 1988
INSTANTANEOUS PEAK STAGE			23200	Mar 24	a117000	Mar 17 1973
INSTANTANEOUS LOW FLOW			20.38	Mar 24	40.12	Mar 17 1973
10 PERCENT EXCEEDS	6430		204	Sep 1	b78	Sep 29 1961
50 PERCENT EXCEEDS	1650		6730		7310	
90 PERCENT EXCEEDS	575		2020		1730	
			448		419	

\* Regulated period only.

a Maximum discharge from rating curve extended above 63,000 ft<sup>3</sup>/s, on basis of slope-area measurement of gage height 38.17 and contracted-opening measurement at gage height 38.96 ft, site and datum then in use.

b Caused by highway construction.



## 03588500 SHOAL CREEK AT IRON CITY, TN

LOCATION.--Lat 35°01'27", Long 87°34'44", Lawrence County, Hydrologic Unit 06030005, near center of span on downstream side of bridge on county road, 400 ft downstream from Holly Creek, 1,350 ft upstream from Louisville and Nashville Railroad bridge, 1,350 ft northeast of Iron City Post Office, and at mile 22.3.

DRAINAGE AREA.--348 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1925 to current year.

REVISED RECORDS.--WSP 823: Drainage area. WSP 1113: 1927(M). WSP 1436: 1926(M), 1927-29, 1930(M), 1932, 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 534.22 ft above sea level. Prior to Feb. 25, 1931, nonrecording gage at railroad bridge, 1,350 ft downstream at datum 0.85 ft lower. Feb. 25, 1931, to Sept. 30, 1933, nonrecording gage at site 825 ft downstream and Oct. 1, 1933, to Sept. 30, 1957, water-stage recorder at site 750 ft downstream at datum 0.69 ft higher.

REMARKS.--Records good. Maximum gage height at present site and datum, 24.4 ft, from high water profile. Prior to January 1951, diurnal fluctuation at low flow caused by powerplant near Lawrenceburg. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1902 reached a stage about 3 ft higher than that of Mar. 21, 1955, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 4	0800	*8,090	*11.69	No other peak greater than base discharge.			

Minimum discharge, 157 ft<sup>3</sup>/s, Sept. 13, 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	438	e308	526	586	495	509	1200	669	430	323	179	171
2	394	e370	480	538	464	600	1000	706	368	301	220	170
3	364	426	437	512	440	857	904	2190	355	275	239	176
4	354	423	441	523	424	832	830	6250	338	264	219	264
5	335	497	460	903	410	766	838	2430	328	254	262	219
6	314	541	417	863	403	676	819	1490	320	247	724	189
7	301	471	410	802	396	617	728	1080	309	236	405	178
8	294	418	394	902	383	572	678	864	298	229	289	173
9	287	382	391	904	382	524	760	750	289	225	240	178
10	281	357	487	830	382	496	807	632	296	227	219	186
11	284	342	505	889	382	461	763	562	440	337	210	171
12	268	738	478	1310	490	439	726	561	371	260	205	161
13	261	1160	456	1160	550	451	673	591	339	316	231	159
14	256	799	433	988	550	429	633	590	312	307	296	159
15	251	655	417	882	550	414	1310	553	291	275	235	161
16	267	523	465	811	565	417	1560	518	280	262	216	167
17	296	467	464	720	938	554	1150	445	268	263	204	169
18	262	429	444	633	812	564	961	434	258	259	199	170
19	250	399	435	640	711	517	878	1760	250	234	198	164
20	244	376	1440	649	654	492	920	1020	250	220	191	177
21	244	410	1440	800	641	471	1100	767	272	212	200	226
22	243	648	1040	950	645	522	923	619	290	207	195	198
23	240	963	1520	850	575	2440	832	530	261	201	187	177
24	238	776	2080	879	519	2170	755	472	262	198	184	190
25	238	1520	1400	873	516	1550	699	482	311	192	179	231
26	238	1530	1110	790	550	3050	794	620	407	188	177	793
27	318	1030	936	728	548	3980	879	483	373	191	176	846
28	281	839	848	663	526	2110	880	476	905	208	175	370
29	267	698	770	601	---	1660	778	402	472	207	194	315
30	e295	589	694	539	---	1170	706	382	370	196	192	315
31	e320	---	641	507	---	1160	---	413	---	183	175	---
TOTAL	8923	19084	22459	24225	14901	31470	26484	29741	10313	7497	7215	7223
MEAN	288	636	724	781	532	1015	883	959	344	242	233	241
MAX	438	1530	2080	1310	938	3980	1560	6250	905	337	724	846
MIN	238	308	391	507	382	414	633	382	250	183	175	159
CFSM	.83	1.83	2.08	2.25	1.53	2.92	2.54	2.76	.99	.69	.67	.69
IN.	.95	2.04	2.40	2.59	1.59	3.36	2.83	3.18	1.10	.80	.77	.77

e Estimated

TENNESSEE RIVER BASIN

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03588500 SHOAL CREEK AT IRON CITY, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1993, BY WATER YEAR (WY)

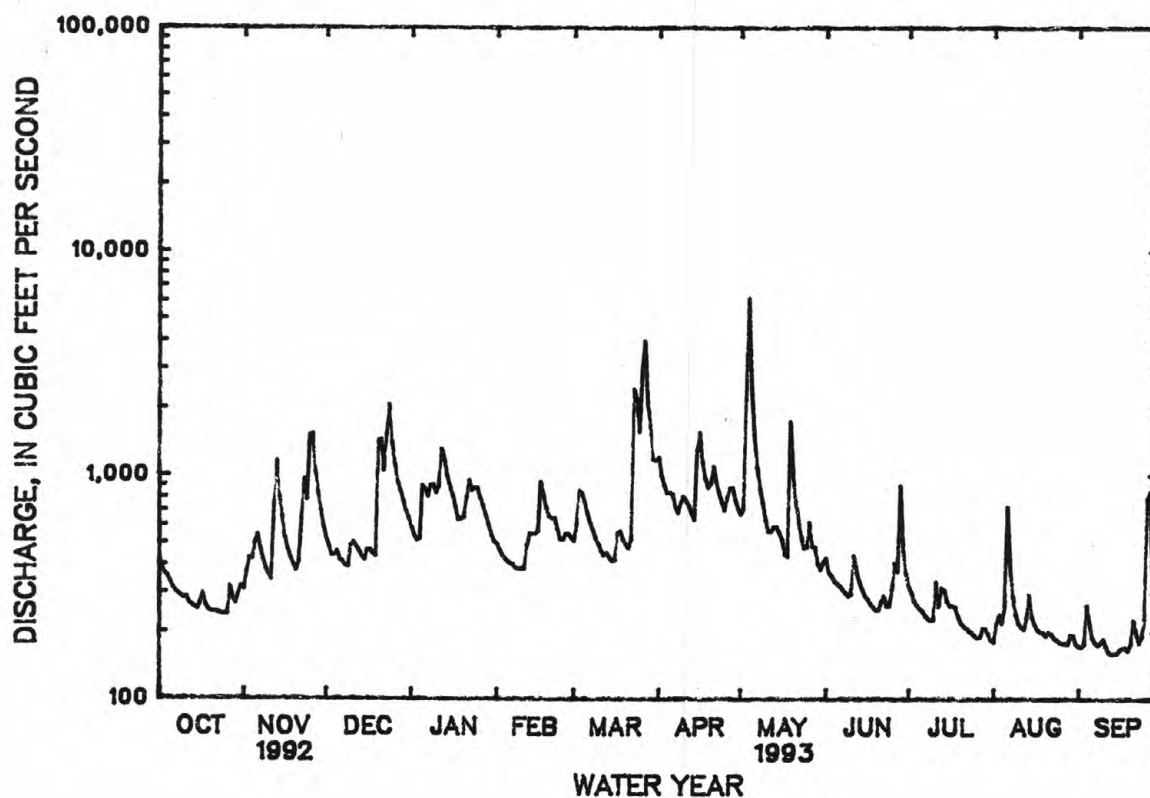
MEAN	230	439	765	1037	1199	1299	987	733	374	294	222	220
MAX	1290	1894	2968	3604	3562	3626	2227	3425	1876	1131	615	1295
(WY)	1933	1978	1927	1974	1948	1975	1964	1991	1928	1932	1926	1979
MIN	69.4	123	165	170	273	373	222	169	118	105	94.8	64.8
(WY)	1932	1955	1964	1981	1941	1966	1986	1936	1988	1943	1988	1925

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1925 - 1993	
ANNUAL TOTAL	208492		209535			
ANNUAL MEAN	570		574		648	
HIGHEST ANNUAL MEAN					1178	
LOWEST ANNUAL MEAN					281	
HIGHEST DAILY MEAN	9850	Mar 10	6250	May 4	44000	Feb 13 1948
LOWEST DAILY MEAN	196	Aug 10	159	Sep 13	41	Sep 22 1925
ANNUAL SEVEN-DAY MINIMUM	201	Aug 4	164	Sep 12	55	Sep 3 1925
INSTANTANEOUS PEAK FLOW			8090	May 4	a132000	Mar 21 1955
INSTANTANEOUS PEAK STAGE			11.69	May 4	b27.25	Mar 21 1955
INSTANTANEOUS LOW FLOW			c157	Sep 13	38	Aug 31 1943
ANNUAL RUNOFF (CFSM)	1.64		1.65		1.86	
ANNUAL RUNOFF (INCHES)	22.29		22.40		25.30	
10 PERCENT EXCEEDS	987		973		1290	
50 PERCENT EXCEEDS	386		439		311	
90 PERCENT EXCEEDS	229		196		128	

a From rating curve extended above 50,000 ft<sup>3</sup>/s on basis of slope-area measurement.

b Site and datum then in use (see REMARKS).

c Also occurred Sept. 14, 15.





## TENNESSEE RIVER BASIN

03593005 TENNESSEE RIVER AT PICKWICK LANDING DAM (LL), TN  
(National stream-quality accounting network station)

LOCATION.--Lat 35°03'54", long 88°15'08", Hardin County, Hydrologic Unit 06040001, at downstream end of lockwall in lower pool at Pickwick Landing Dam, 16.8 mi upstream from Savannah, and at mile 206.7.

DRAINAGE AREA.--32,820 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: April 1976 to September 1981.

WATER TEMPERATURE: April 1976 to September 1981.

REMARKS.--Flow regulated by Pickwick Landing Dam and many other reservoirs above the station. Continuous discharge records are published under station 03593500 Tennessee River at Savannah, TN.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 326 microsiemens, Sept. 18, 19, 1978; minimum, 116 microsiemens, Apr. 27, 1979.

WATER TEMPERATURES: Maximum, 31.5°C, July 7, 1978; minimum, 2.0°C, Feb. 8, 9, 1978.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
DEC 03...	1315	78000	144	7.7	11.0	769	5.1	9.7	87	22	K7
MAR 04...	1045	77800	161	8.1	8.0	765	3.7	10.2	85	K6	K1
JUN 10...	1045	11600	157	8.9	25.0	771	2.5	7.4	89	77	67
AUG 13...	0945	30200	172	--	29.0	769	1.8	6.2	80	K2	35

DATE	HARD- NESS TOTAL (MG/L AS CaCO3)	HARD- NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS Ca)	MAGNE- SIUM, DIS- SOLVED (MG/L AS Mg)	SODIUM, DIS- SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CaCO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS Cl)
DEC 03...	68	3	21	3.7	6.4	17	0.3	1.7	63	11	6.6
MAR 04...	64	0	20	3.4	4.5	13	0.2	1.5	67	9.8	5.0
JUN 10...	62	0	19	3.4	4.4	13	0.2	1.6	62	10	4.6
AUG 13...	66	0	19	4.5	7.2	19	0.4	1.8	--	13	6.6

K--Results based on non-ideal colony count.

TENNESSEE RIVER BASIN  
03593005 TENNESSEE RIVER AT PICKWICK LANDING DAM (LL), TN  
WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	FLUORIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
DEC 03...	0.10	4.8	104	96	0.14	21900	0.010	0.390	0.420	0.05	0.040
MAR 04...	<0.10	4.9	86	91	0.12	18100	0.030	0.550	0.580	0.05	0.040
JUN 10...	0.10	2.1	84	84	0.11	2620	<0.010	0.160	0.160	0.09	0.070
AUG 13...	0.10	4.5	96	112	0.13	7830	<0.010	--	<0.050	0.04	0.030

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)
DEC 03...	0.30	0.070	0.040	0.09	0.030	20	19	<3	38	<4
MAR 04...	0.20	0.060	0.030	0.09	0.030	30	18	<3	42	<4
JUN 10...	0.30	0.060	0.050	0.03	0.010	20	19	<3	<3	<4
AUG 13...	0.40	0.050	0.010	0.06	0.020	<10	22	<3	6	<4

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 03...	4	<10	<1	<1	<1.0	63	<6	--	--	--
MAR 04...	7	10	<1	<1	<1.0	56	<6	6	1260	100
JUN 10...	<1	<10	<1	<1	<1.0	59	<6	--	--	--
AUG 13...	<1	<10	1	<1	<1.0	61	<6	--	--	--

## TENNESSEE RIVER BASIN

## 03593500 TENNESSEE RIVER AT SAVANNAH, TN

LOCATION.--Lat 35°13'29", long 88°15'26", Hardin County, Hydrologic Unit 06040001, on right bank at upstream side of bridge on U.S. Highway 64, at Savannah, 16.8 mi downstream from Pickwick Landing Dam, and at mile 189.9.

DRAINAGE AREA.--33,140 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--September 1930 to current year. Gage-height records collected in this vicinity since June 1905, are in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 853: Drainage area. WSP 1306: 1936 (monthly runoff). WSP 2110: 1966. WRD TN-74-1: 1973. WRD TN-85-1: 1973. WRD TN-90-1: 1989.

GAGE.--Water-stage recorder. Datum of gage is 350.06 ft above sea level (Levels by Tennessee Valley Authority). Prior to Oct. 1, 1992, at datum 50.06 ft lower, prior to Apr. 7, 1945, at datum 8.45 ft lower. Oct. 1, 1948 to Apr. 13, 1978 and Oct. 1, 1989 to present, auxiliary water-stage recorder on downstream end of lockwall in lower pool at Pickwick Landing Dam. Apr. 13, 1978 to Sept. 30, 1989, auxiliary water-stage recorder over tailwater elevation well adjacent to the powerhouse which is an integral part of Pickwick Landing Dam, both sites 16.8 mi. upstream from base gage at same datum. Apr. 5, 1937, to Jan. 31, 1939, auxiliary nonrecording gage 4.0 mi downstream and Feb. 1, 1939, to Sept. 30, 1948, water-stage recorder 4.3 mi downstream from base gage at same datum.

REMARKS.--Records fair. Slight regulation since 1924 by Wilson Lake and increasing regulation since 1936 as other reservoirs have been built above station ((see p. 245) and Water Resources Data for adjoining states).

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1867, 101.2 ft, Mar. 21, 1897, datum then in use, from floodmarks, discharge, 450,000 ft<sup>3</sup>/s, from rating curve extended above 320,000 ft<sup>3</sup>/s. Flood of Jan. 2, 1927, reached a stage of 92.7 ft datum then in use, discharge, 349,000 ft<sup>3</sup>/s. Minimum stage since 1905, 38.8 ft datum then in use, Sept. 8, 1925.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 209,000 ft<sup>3</sup>/s, Mar. 27; maximum gage height, 26.57 ft, Mar. 28; minimum daily discharge, 8,670 ft<sup>3</sup>/s, May 23, minimum gage height, 5.12 ft, Feb. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44300	25500	e91300	134000	66100	62500	150000	39700	28900	29300	17300	35000
2	40200	42100	e86600	133000	78300	77700	104000	36400	47400	25700	24700	31600
3	19600	60500	e85600	132000	77400	60700	89900	39400	44000	19600	23700	31700
4	22400	72400	66700	132000	53000	70600	74600	76200	41800	22100	24100	19200
5	38600	77000	41700	131000	39100	70100	57300	90800	27100	19100	24800	15800
6	40600	78700	34200	129000	31100	53900	59300	90700	21600	17100	29000	16400
7	40900	70900	72100	125000	28800	58600	75300	89500	34100	17700	19500	43000
8	42000	66600	83300	117000	53300	81700	74500	78900	38700	18300	27400	44600
9	46300	71000	78800	113000	50900	85300	67900	50000	19000	20800	46700	40800
10	36400	71100	68500	113000	48300	81100	43100	71300	31700	20900	40800	37500
11	24800	71100	67600	107000	43700	55000	36700	44500	25500	21200	40400	28400
12	40900	61100	54700	98800	53100	44500	51700	31500	21000	29000	37100	30500
13	37900	57500	54600	102000	57300	65600	59200	38400	37100	17300	44400	26300
14	39400	e48500	59000	108000	25800	68300	72600	45100	27800	21500	25000	26200
15	41000	e50200	64000	107000	57400	71200	73800	22300	26000	17500	20300	32100
16	41800	e66600	56100	104000	58100	67100	74400	17700	22800	17300	47500	15500
17	35700	e72600	54700	104000	69000	68900	56900	35900	28500	29800	49700	19300
18	32700	e66000	70600	104000	76800	70300	40800	46400	23600	27900	47100	30300
19	37500	e68600	72600	103000	63600	48500	57800	52100	17500	41900	45600	24600
20	47200	e57000	78300	100000	46200	32300	47900	53100	27200	29000	40800	30200
21	42100	e43400	106000	100000	25100	29900	47600	41600	21200	38600	32200	29100
22	38900	e58700	134000	92800	34600	45500	58100	14900	23900	31100	35900	40900
23	35300	e83800	141000	81800	46100	78100	54800	8670	27800	37800	37700	43800
24	15100	e87300	147000	60600	63100	150000	17400	36000	36500	21600	25300	24800
25	15000	e97600	154000	78100	62300	162000	16600	24400	27200	24600	28900	28200
26	42000	e109000	152000	94500	71500	179000	56300	24600	24300	38400	35000	25700
27	53000	e109000	152000	95400	55900	203000	72500	34100	35000	33500	45000	28800
28	63700	e109000	150000	95500	41400	203000	58700	35900	25700	32000	32900	47800
29	60800	e108000	148000	90600	---	197000	60700	24200	25200	31300	25700	51600
30	57700	e102000	146000	84900	---	192000	63700	21300	23900	29400	26900	52100
31	35400	---	140000	77400	---	185000	---	20900	---	30000	32600	---
TOTAL	1209200	2162800	2911000	3248400	1477300	2918400	1874100	1336470	862000	811300	1034000	951800
MEAN	39010	72090	93900	104800	52760	94140	62470	43110	28730	26170	33350	31730
MAX	63700	109000	154000	134000	78300	203000	150000	90800	47400	41900	49700	52100
MIN	15000	25500	34200	60600	25100	29900	16600	8670	17500	17100	17300	15500

e Estimated

TENNESSEE RIVER BASIN

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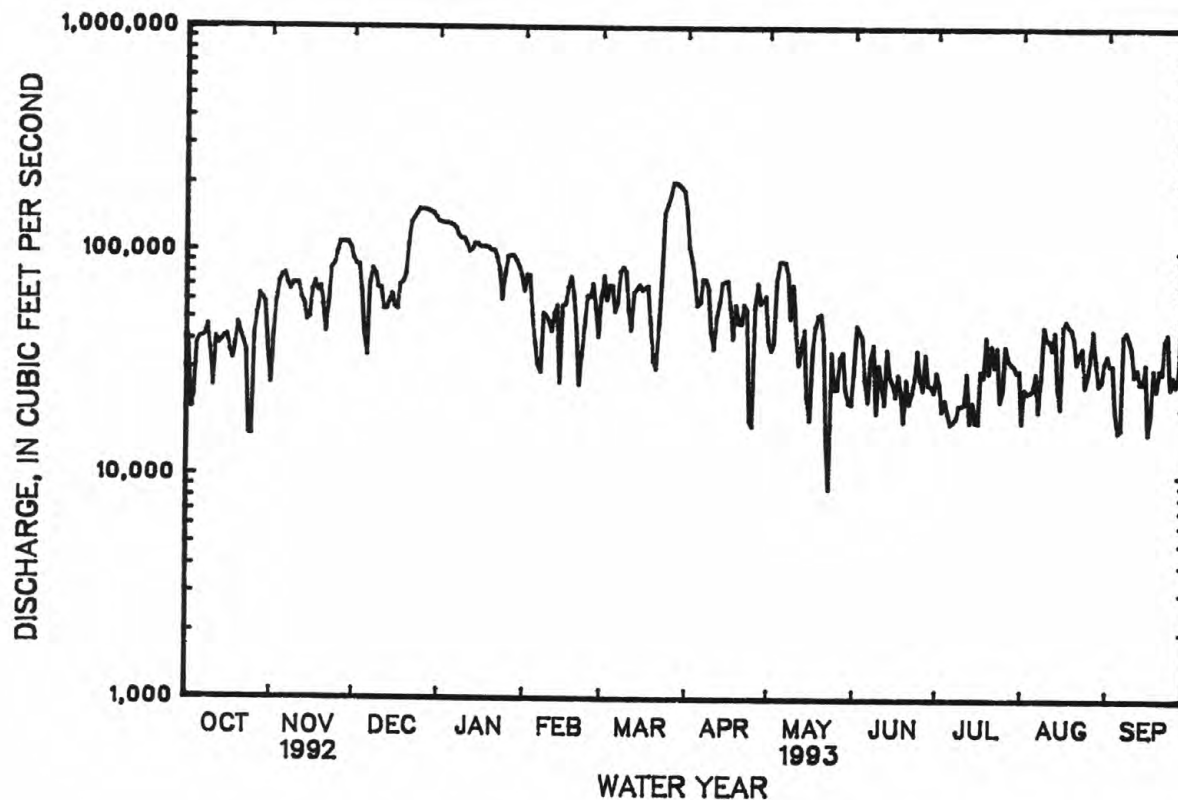
03593500 TENNESSEE RIVER AT SAVANNAH, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1993, BY WATER YEAR (WY)

MEAN	36100	47350	73660	88540	92830	84870	54390	49010	39950	38680	37250	34850
MAX	97010	147000	160100	223100	228100	179600	117600	140400	103100	84810	64740	71700
(WY)	1990	1958	1992	1974	1957	1973	1964	1984	1989	1989	1967	1950
MIN	18820	20510	26850	23710	39170	19840	11150	8977	10490	12910	15910	15800
(WY)	1955	1954	1981	1986	1988	1988	1986	1988	1988	1988	1988	1968

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		*WATER YEARS 1946 - 1993	
ANNUAL TOTAL	18337510		20796770		56320	
ANNUAL MEAN	50100		56980		86040	
HIGHEST ANNUAL MEAN					23090	
LOWEST ANNUAL MEAN					554000	
HIGHEST DAILY MEAN	154000	Dec 25	203000	Mar 27	60	Mar 17 1973
LOWEST DAILY MEAN	7700	Apr 18	8670	May 23	5890	Apr 23 1966
ANNUAL SEVEN-DAY MINIMUM	11000	May 2	19200	Jul 3	507000	May 20 1986
INSTANTANEOUS PEAK FLOW			209000	Mar 27	96.11	Mar 18 1973
INSTANTANEOUS PEAK STAGE			26.57	Mar 28	60	Mar 20 1973
INSTANTANEOUS LOW FLOW					1.70	Apr 23 1966
ANNUAL RUNOFF (CFSM)	1.51		1.72		23.09	
ANNUAL RUNOFF (INCHES)	20.58		23.34			
10 PERCENT EXCEEDS	90900		106000			
50 PERCENT EXCEEDS	43700		46100			
90 PERCENT EXCEEDS	16000		21900			

\* Regulated period only.



## TENNESSEE RIVER BASIN

03597210 GARRISON FORK ABOVE L&amp;N RAILROAD AT WARTRACE, TN

LOCATION.--Lat 35°30'42", long 86°19'26", Bedford County, Hydrologic Unit 06040002, on right bank 0.3 mi above L&N Railroad bridge, 0.6 mi below Knob Creek, 1.2 mi southeast of Wartrace, and at mile 3.2.

DRAINAGE AREA.--85.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage encoder, crest-stage gage and satellite telemeter at station. Datum of gage is 769.30 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Periodic regulation by a small powerplant, 6.8 miles upstream. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Dec. 23	1230	3,340	10.99	May 4	0300	*5,030	*12.63
Mar. 23	1230	3,220	10.84				

Minimum discharge, 6.2 ft<sup>3</sup>/s, Aug. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	111	73	155	92	131	166	100	205	27	9.0	6.4
2	40	887	66	129	82	181	154	88	109	23	9.1	6.4
3	37	302	58	114	71	203	132	272	77	21	9.0	7.6
4	45	297	57	283	67	177	122	1990	62	19	8.9	8.9
5	109	439	66	614	64	159	257	512	55	17	9.0	8.3
6	72	330	57	332	62	139	253	271	47	16	32	8.1
7	54	208	58	243	59	126	209	184	42	14	29	8.1
8	47	144	52	510	57	117	178	137	38	13	17	8.1
9	43	106	52	330	54	102	171	111	35	14	13	8.5
10	37	85	106	250	52	96	207	90	32	14	10	8.0
11	34	70	115	414	55	85	168	78	36	14	10	7.6
12	31	130	104	395	62	79	145	74	31	13	9.2	7.5
13	30	161	93	311	58	90	129	75	30	23	11	7.5
14	28	112	81	231	52	84	117	69	29	16	14	7.4
15	26	90	73	190	49	88	154	59	279	14	11	7.6
16	31	74	76	161	196	261	173	53	59	16	9.0	8.4
17	37	63	296	135	110	698	122	55	41	17	7.6	9.6
18	29	57	190	111	85	443	105	50	33	15	7.0	10
19	25	52	152	106	75	286	98	110	29	13	7.0	10
20	24	48	690	104	74	210	97	73	27	12	7.2	9.4
21	24	54	436	262	379	170	95	58	85	11	12	9.5
22	24	430	353	200	305	342	82	51	62	10	11	9.1
23	23	228	1660	167	183	2090	76	45	41	11	8.2	8.9
24	22	265	859	658	137	937	74	42	33	9.3	6.9	8.9
25	21	278	479	375	210	491	240	47	33	8.9	9.2	9.8
26	22	206	341	260	247	447	828	70	37	8.5	9.9	17
27	124	156	304	199	183	490	334	45	34	7.7	8.7	32
28	81	122	422	158	153	383	196	40	52	8.4	7.3	17
29	55	97	318	129	---	276	144	36	37	8.5	6.7	12
30	69	82	246	106	---	212	116	34	33	8.3	6.5	9.9
31	128	---	198	96	---	198	---	623	---	8.6	6.4	---
TOTAL	1418	5684	8131	7728	3273	9791	5342	5542	1743	431.2	331.8	297.5
MEAN	45.7	189	262	249	117	316	178	179	58.1	13.9	10.7	9.92
MAX	128	887	1660	658	379	2090	828	1990	279	27	32	32
MIN	21	48	52	96	49	79	74	34	27	7.7	6.4	6.4
CFSM	.53	2.22	3.07	2.92	1.37	3.69	2.08	2.09	.68	.16	.13	.12
IN.	.62	2.47	3.54	3.36	1.42	4.26	2.32	2.41	.76	.19	.14	.13



03597210 GARRISON FORK ABOVE L&amp;N RAILROAD AT WARTRACE, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

MEAN	64.6	110	482	263	369	288	137	113	52.0	31.9	22.0	71.2
MAX	179	189	825	335	793	404	192	179	88.1	43.0	58.7	240
(WY)	1990	1993	1991	1990	1991	1991	1991	1993	1991	1990	1992	1992
MIN	11.6	46.1	121	209	117	195	84.1	30.8	19.5	13.9	8.76	9.92
(WY)	1992	1991	1990	1991	1993	1992	1992	1992	1990	1993	1990	1993

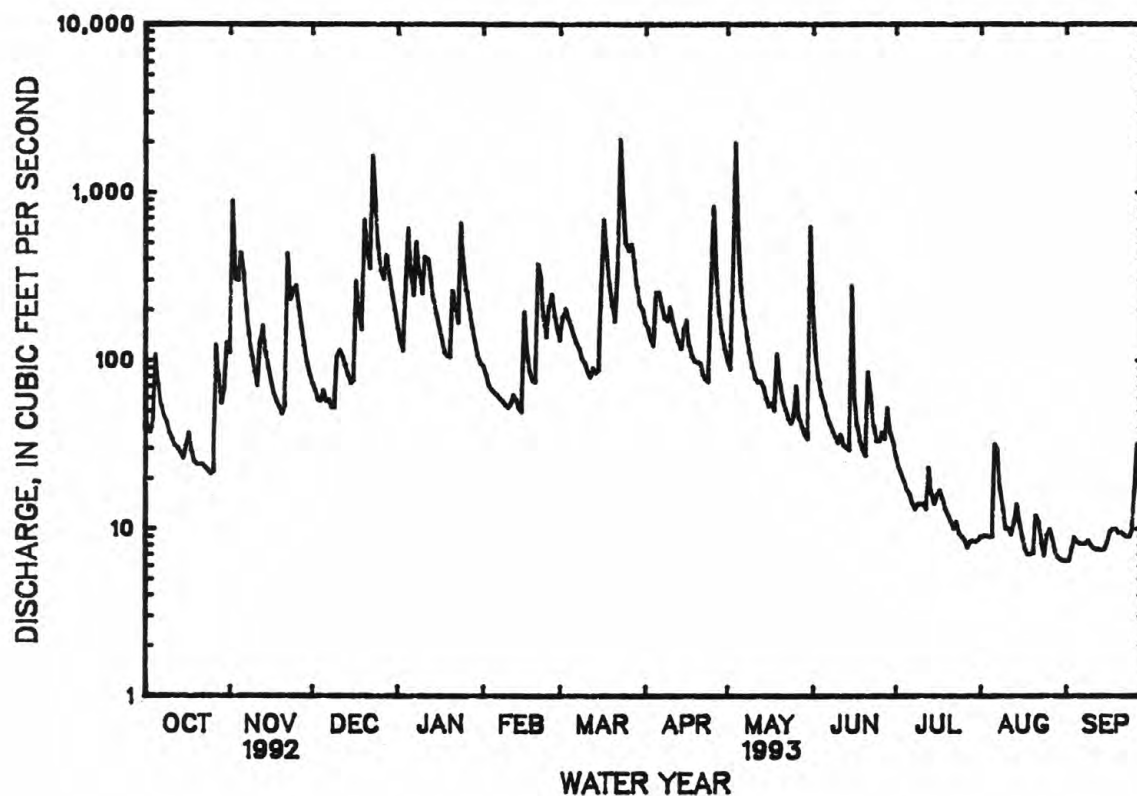
## SUMMARY STATISTICS

## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

## WATER YEARS 1990 - 1993

ANNUAL TOTAL	47757		49712.5									
ANNUAL MEAN	130		136									
HIGHEST ANNUAL MEAN												
LOWEST ANNUAL MEAN												
HIGHEST DAILY MEAN	4750	Sep 22	2090	Mar 23								
LOWEST DAILY MEAN	10	Jul 30	6.4	Aug 31								
ANNUAL SEVEN-DAY MINIMUM	11	Jul 28	6.8	Aug 28								
INSTANTANEOUS PEAK FLOW			5030	May 4								
INSTANTANEOUS PEAK STAGE			12.63	May 4								
INSTANTANEOUS LOW FLOW			6.2	Aug 20								
ANNUAL RUNOFF (CFSM)	1.53		1.59									
ANNUAL RUNOFF (INCHES)	20.78		21.63									
10 PERCENT EXCEEDS	269		314									
50 PERCENT EXCEEDS	57		70									
90 PERCENT EXCEEDS	19		8.9									



## TENNESSEE RIVER BASIN

03597590 WARTRACE CREEK BELOW COUNTY ROAD AT WARTRACE, TN

LOCATION.--Lat 35°31'38", long 86°20'25", Bedford County, Hydrologic Unit 06040002, on right bank 300 ft below county road bridge, 0.4 mi upstream from Louisville and Nashville Railroad bridge, 0.4 mi west of Wartrace, and at mile 2.3.

DRAINAGE AREA.--35.7 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage encoder, crest-stage gage and satellite telemeter at station. Datum of gage is 781.66 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 5	0145	*2,110	*9.29				

No flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	46	23	47	27	46	46	24	51	14	.04	.00
2	11	831	20	40	24	91	50	21	28	9.2	.03	.00
3	9.4	93	17	36	22	89	39	132	20	6.0	.02	.10
4	17	103	20	283	20	65	34	547	16	4.8	.01	.12
5	59	205	24	344	19	58	120	79	13	3.9	.09	.05
6	28	107	19	117	17	49	78	51	10	3.2	1.7	.03
7	20	66	19	81	17	43	56	38	8.6	2.4	1.3	.02
8	16	46	18	272	15	38	45	29	6.8	2.1	.55	.04
9	15	36	17	106	14	32	51	24	5.5	2.3	.32	.04
10	11	30	63	78	13	29	52	20	4.4	2.0	.22	.02
11	10	26	48	228	17	25	39	17	5.6	1.8	.16	.00
12	8.1	107	37	148	29	24	33	17	4.6	1.8	.13	.00
13	7.1	79	31	104	22	29	29	17	4.2	1.9	.30	.00
14	6.3	46	26	74	18	28	26	16	3.8	1.5	.23	.00
15	5.1	35	24	60	16	34	25	12	75	1.5	.15	.03
16	11	29	30	49	117	206	28	10	16	1.2	.13	.04
17	15	25	255	41	43	332	22	12	9.5	1.3	.12	.01
18	9.1	22	76	34	32	106	19	10	6.0	1.5	.09	.00
19	6.9	20	53	37	27	68	17	38	4.5	1.3	.06	.00
20	5.8	18	398	43	26	52	18	21	4.3	.96	.11	.00
21	5.1	22	133	161	347	42	22	15	57	.64	.13	.00
22	5.3	673	126	80	122	108	17	29	30	.48	.06	.00
23	4.8	110	914	59	63	956	15	9.5	16	.27	.04	.00
24	5.0	185	240	422	46	176	14	7.8	11	.27	.02	.00
25	5.0	128	135	114	137	95	191	20	12	.22	.01	.02
26	5.5	73	122	76	122	176	319	36	24	.19	.03	1.5
27	44	51	119	59	72	177	70	15	39	.15	.08	1.7
28	29	40	170	47	56	99	45	11	29	.14	.07	.87
29	20	31	101	38	---	67	34	8.7	47	.09	.04	.47
30	24	26	75	32	---	52	27	7.1	21	.08	.02	.28
31	40	---	60	29	---	53	---	294	---	.05	.00	---
TOTAL	472.5	3309	3413	3339	1500	3445	1581	1588.1	582.8	67.24	6.26	5.34
MEAN	15.2	110	110	108	53.6	111	52.7	51.2	19.4	2.17	.20	.18
MAX	59	831	914	422	347	956	319	547	75	14	1.7	1.7
MIN	4.8	18	17	29	13	24	14	7.1	3.8	.05	.00	.00
CFSM	.43	3.09	3.08	3.02	1.50	3.11	1.48	1.43	.54	.06	.01	.00
IN.	.49	3.45	3.56	3.48	1.56	3.59	1.65	1.65	.61	.07	.01	.01

TENNESSEE RIVER BASIN

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03597590 WARTRACE CREEK BELOW COUNTY ROAD AT WARTRACE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1993, BY WATER YEAR (WY)

MEAN	28.9	58.0	211	111	153	112	46.8	35.9	11.3	10.5	20.0	34.3
MAX	96.0	110	350	147	326	160	89.6	62.2	19.4	23.7	79.5	167
(WY)	1990	1993	1991	1990	1991	1991	1991	1991	1993	1992	1992	1992
MIN	1.28	19.3	55.4	91.6	51.2	78.8	20.4	2.23	1.57	2.17	.012	.002
(WY)	1992	1992	1990	1992	1992	1992	1992	1992	1990	1993	1991	1989

SUMMARY STATISTICS

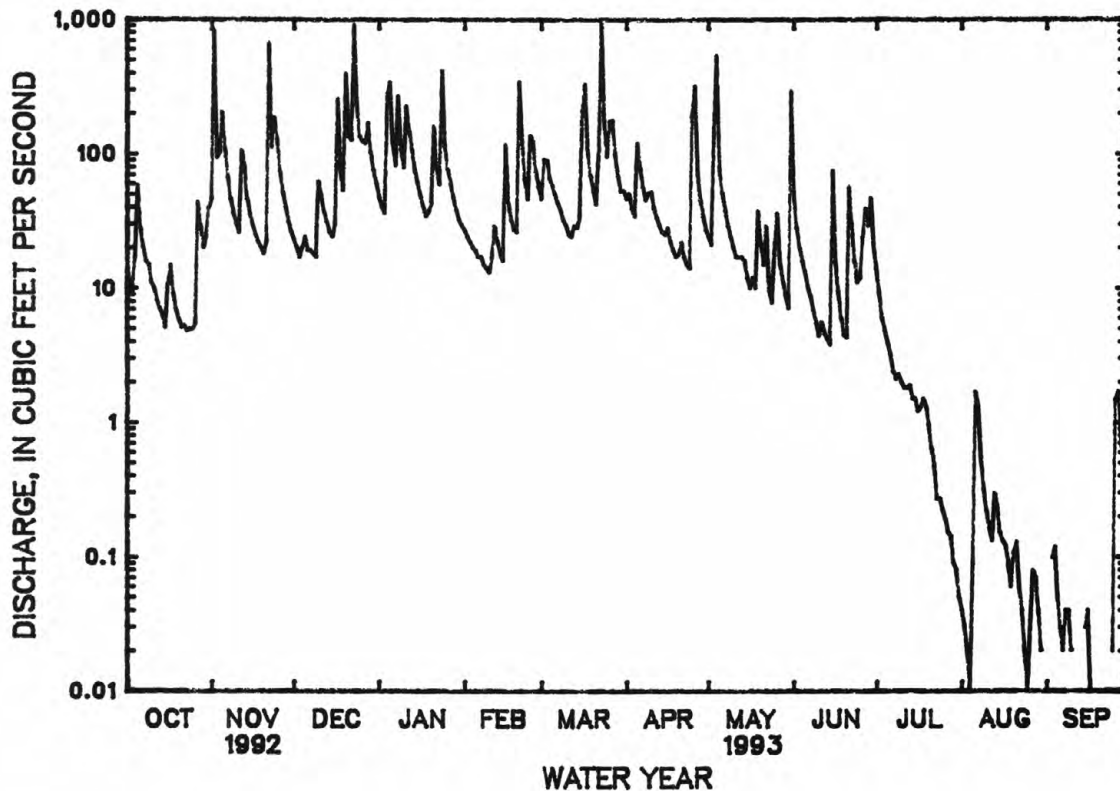
FOR 1992 CALENDAR YEAR

FOR 1993 WATER YEAR

WATER YEARS 1989 - 1993

ANNUAL TOTAL	23343.05	19309.24	
ANNUAL MEAN	63.8	52.9	69.8
HIGHEST ANNUAL MEAN			92.6
LOWEST ANNUAL MEAN			52.9
HIGHEST DAILY MEAN	4000	956	4000
LOWEST DAILY MEAN	.42	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.63	.00	.00
INSTANTANEOUS PEAK FLOW		2110	8690
INSTANTANEOUS PEAK STAGE		9.29	15.12
INSTANTANEOUS LOW FLOW		a.00	a.00
ANNUAL RUNOFF (CFSM)	1.79	1.48	1.96
ANNUAL RUNOFF (INCHES)	24.32	20.12	26.57
10 PERCENT EXCEEDS	107	121	118
50 PERCENT EXCEEDS	19	22	15
90 PERCENT EXCEEDS	2.2	.06	.06

a No flow many days most years.



## TENNESSEE RIVER BASIN

03597860 DUCK RIVER AT SHELBYVILLE, TN

LOCATION.--Lat 35°28'51", long 86°27'45", Bedford County, Hydrologic Unit 06040002, on right bank 125 ft upstream from U.S. Highway 231 bridge, one block west of the southwest corner of the public square, and at mile 221.4.

DRAINAGE AREA.--425 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1991 to current year, discharge for stage of 12.00 ft and below only. Continuous stage records were collected by Tennessee Valley Authority from December 1981 to September 1991.

GAGE.--Water-stage encoder and satellite telemeter at station. Datum of gage is 680.00 ft above sea level. Prior to Oct. 10, 1991, datum 10.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Normandy Reservoir (station 03596460) since January 1976.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined; maximum gage height, 31.15 ft, Dec. 3, 1991; minimum discharge, 129 ft<sup>3</sup>/s, May 20, 1992; minimum daily 131 ft<sup>3</sup>/s, May 20, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, not determined; maximum gage height, 22.07 ft, May 4; minimum discharge, 152 ft<sup>3</sup>/s, Sept. 11, minimum daily, 160 ft<sup>3</sup>/s, Sept. 11, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	282	768	586	---	771	470	---	511	---	249	184	175
2	261	760	548	742	720	506	---	480	---	231	183	170
3	247	---	389	703	349	---	---	666	---	219	183	215
4	268	---	392	---	314	580	---	---	340	215	183	200
5	367	---	443	---	302	534	---	---	310	213	192	171
6	336	---	404	---	294	486	695	---	268	202	659	169
7	287	---	399	---	288	456	529	---	249	197	276	168
8	263	---	434	---	279	440	453	---	201	181	230	166
9	249	---	474	---	271	407	437	---	186	199	212	166
10	239	---	607	---	264	388	484	---	186	251	169	166
11	231	---	638	---	273	424	412	401	244	253	173	160
12	223	---	595	---	309	347	369	289	202	210	180	163
13	212	---	564	---	293	293	336	279	205	214	186	163
14	210	---	537	---	274	277	313	267	193	199	187	160
15	203	---	518	---	263	269	299	240	628	192	185	170
16	224	---	541	---	648	449	449	226	386	193	181	180
17	303	---	---	---	490	---	344	217	291	193	179	170
18	294	---	---	---	408	---	296	217	255	191	168	168
19	280	---	735	---	369	709	269	341	238	187	166	168
20	274	---	---	471	357	556	261	305	254	186	178	166
21	342	---	---	753	526	462	288	241	502	182	210	163
22	351	---	---	731	---	505	286	227	479	182	197	162
23	350	---	---	768	---	---	245	209	312	179	193	165
24	351	---	---	---	---	---	226	197	286	290	189	163
25	347	---	---	---	---	---	287	197	307	208	188	169
26	345	---	---	---	---	---	---	273	323	198	180	259
27	474	---	---	---	618	---	---	223	301	177	180	221
28	514	---	---	---	528	---	---	251	356	189	183	188
29	616	---	---	---	---	---	591	248	299	190	179	172
30	644	---	---	---	---	---	551	251	277	185	174	165
31	---	---	---	---	---	---	---	---	---	184	172	---
TOTAL	---	---	---	---	---	---	---	---	---	6339	6299	5261
MEAN	---	---	---	---	---	---	---	---	---	204	203	175
MAX	---	---	---	---	---	---	---	---	---	290	659	259
MIN	---	---	---	---	---	---	---	---	---	177	166	160

## TENNESSEE RIVER BASIN

03597860 DUCK RIVER AT SHELBYVILLE, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1991 to September 1993.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1991 to current year.

DISSOLVED OXYGEN: October 1991 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1991.

REMARKS.--Records good. Interruptions in the record were due to equipment malfunctions.

EXTREME FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 26.7°C, June 10, 1993; minimum, 2.5°C, Mar. 15, 1993.

DISSOLVED OXYGEN: Maximum, 14.2 mg/L, Mar. 15, 1993; minimum 5.8 mg/L, Sept. 22, 1992.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 26.7°C, June 10; minimum, 2.5°C, Mar. 15.

DISSOLVED OXYGEN: Maximum, 14.2 mg/L, Mar. 15; minimum, 6.3 mg/L, May 31.

## TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	16.5	15.7	16.0	16.3	15.5	15.8	9.4	9.0	9.2	9.4	8.0	9.1
2	17.1	15.7	16.1	17.0	16.1	16.6	9.2	8.8	9.1	7.9	7.6	7.8
3	16.5	15.7	16.1	16.2	15.0	15.3	8.9	8.1	8.5	9.1	7.9	8.6
4	16.1	15.7	15.8	15.6	14.6	15.2	8.3	7.9	8.1	10.5	9.1	9.6
5	16.1	15.5	15.8	14.4	12.4	13.4	8.3	7.5	8.1	11.5	9.7	10.8
6	16.1	15.5	15.7	12.4	12.0	12.1	7.5	6.4	6.8	9.5	8.5	8.9
7	16.0	15.2	15.6	12.2	11.8	12.0	6.8	6.4	6.5	8.6	8.4	8.6
8	16.4	15.2	15.8	12.3	11.8	12.0	7.2	6.8	7.0	9.0	8.8	9.0
9	17.2	15.8	16.3	12.8	12.3	12.6	7.2	7.0	7.0	9.6	9.0	9.2
10	16.2	15.4	15.8	13.8	12.8	13.3	7.3	7.0	7.1	10.0	9.6	9.8
11	15.4	14.6	15.0	14.8	13.8	14.4	7.3	7.0	7.1	10.1	9.8	9.8
12	15.2	14.0	14.5	15.5	14.8	15.3	7.2	6.8	7.0	10.9	10.1	10.4
13	15.2	13.6	14.3	14.9	12.9	13.9	7.3	7.0	7.2	11.1	9.7	10.7
14	15.8	13.8	14.7	12.9	12.2	12.4	7.5	7.0	7.3	9.7	7.7	8.5
15	16.9	14.8	15.7	12.3	11.9	12.1	8.3	7.5	7.8	7.7	7.3	7.6
16	16.5	15.9	16.2	12.1	11.5	11.7	9.3	8.3	8.8	8.2	7.6	7.9
17	16.1	14.3	15.3	12.5	12.1	12.3	9.4	9.3	9.3	8.6	8.0	8.3
18	14.1	13.1	13.8	12.8	12.3	12.6	9.4	8.6	9.0	8.4	7.5	8.0
19	13.1	12.2	12.8	13.1	12.6	12.8	8.6	8.2	8.3	7.5	7.4	7.4
20	12.4	11.8	12.1	13.3	13.1	13.2	10.2	8.4	9.5	8.1	7.5	7.8
21	13.1	11.8	12.4	14.1	13.3	13.8	9.6	8.8	9.1	9.8	8.1	8.9
22	14.7	13.1	14.1	14.9	14.1	14.6	10.3	9.2	9.6	9.8	9.6	9.7
23	15.3	14.7	14.9	14.9	12.7	13.8	11.5	10.3	10.8	9.6	8.8	9.1
24	15.4	14.7	14.9	12.7	12.2	12.3	10.7	8.3	9.4	10.7	8.8	9.9
25	15.4	14.8	15.0	13.7	12.2	12.9	8.1	7.5	7.8	9.7	7.9	8.6
26	15.0	14.2	14.6	13.7	12.0	12.9	7.9	7.4	7.5	7.7	7.4	7.5
27	15.0	14.2	14.6	12.0	10.8	11.4	7.6	7.0	7.2	7.7	7.3	7.5
28	15.4	14.8	15.1	10.8	10.0	10.3	8.4	7.5	7.9	8.1	7.7	7.8
29	15.2	14.6	14.8	10.2	9.8	9.9	9.2	8.4	8.8	8.7	8.1	8.5
30	14.9	14.6	14.8	10.0	9.2	9.4	9.4	8.6	9.0	7.9	7.0	7.4
31	15.5	14.7	15.1	---	---	---	9.4	8.8	9.2	7.2	6.6	6.9
MONTH	17.2	11.8	15.0	17.0	9.2	13.0	11.5	6.4	8.2	11.5	6.6	8.7



## TENNESSEE RIVER BASIN

03597860 DUCK RIVER AT SHELBYVILLE, TN--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.9	7.2	7.5	6.5	4.9	5.5	12.1	9.0	10.1	17.1	16.4	16.7
2	7.5	7.2	7.3	8.0	6.7	7.2	9.6	8.0	8.5	16.9	16.4	16.6
3	7.4	6.7	7.0	9.0	8.0	8.5	9.6	7.8	8.6	16.9	16.5	16.8
4	7.2	6.7	6.9	9.2	8.8	9.1	10.7	9.6	10.2	16.3	15.7	15.9
5	7.2	6.5	6.9	8.6	7.2	8.0	10.7	10.5	10.6	16.5	14.9	15.6
6	7.8	6.9	7.3	7.6	6.7	7.2	11.5	10.5	10.9	16.7	15.3	16.1
7	8.2	7.2	7.6	8.2	7.8	8.0	13.0	11.5	12.0	17.2	15.7	16.5
8	8.2	7.2	7.6	9.0	7.8	8.4	14.6	13.0	13.6	18.0	16.7	17.2
9	8.8	7.4	8.0	10.2	9.2	9.6	14.6	14.6	14.6	18.5	16.9	17.8
10	9.2	7.8	8.5	11.2	10.4	10.8	14.4	13.6	14.1	18.9	17.3	18.1
11	9.8	8.6	9.4	11.2	10.4	10.9	15.8	14.4	15.0	19.3	18.3	18.8
12	10.4	9.8	10.1	10.4	7.3	9.0	16.8	15.8	16.3	20.7	19.1	19.9
13	10.0	8.9	9.6	7.1	3.9	5.7	18.1	16.9	17.6	20.3	19.3	19.9
14	8.9	7.5	8.4	3.9	2.7	3.4	19.2	17.5	18.3	19.5	18.3	19.0
15	7.5	6.4	7.0	3.9	2.5	3.3	19.4	17.8	18.6	20.4	18.0	19.0
16	6.6	6.2	6.3	5.9	3.5	4.7	17.8	14.9	16.5	21.2	18.4	19.6
17	6.4	5.6	6.0	6.9	6.1	6.4	14.7	12.9	13.7	21.4	19.4	20.4
18	5.6	4.2	4.9	7.8	6.9	7.2	15.1	12.9	13.9	22.5	20.4	21.3
19	4.2	3.4	3.7	8.6	7.6	8.0	16.9	14.1	15.6	21.9	20.6	21.3
20	5.0	3.6	4.1	9.0	8.6	8.7	17.0	15.9	16.5	20.8	18.8	20.0
21	9.7	5.2	7.0	10.6	9.0	9.6	16.5	14.9	15.7	18.6	17.0	18.1
22	10.9	9.9	10.6	12.3	10.8	11.4	14.9	13.7	14.4	17.8	16.1	16.8
23	9.7	7.2	8.1	13.1	12.2	12.6	15.3	13.3	14.1	19.1	16.0	17.3
24	7.2	6.2	6.5	13.1	12.2	12.6	16.0	13.8	14.8	19.5	17.1	18.3
25	6.2	5.8	6.0	12.9	10.4	11.3	16.2	15.2	15.7	19.3	18.5	19.0
26	6.2	5.8	5.9	11.6	10.2	10.6	16.2	14.4	15.0	19.6	18.7	19.2
27	6.0	5.2	5.7	11.6	11.2	11.3	15.2	14.2	14.8	21.4	18.8	19.9
28	5.2	4.6	5.0	11.4	9.6	10.5	16.2	15.0	15.5	22.1	19.6	20.8
29	---	---	---	11.4	9.4	10.5	17.0	15.8	16.4	22.8	20.9	21.9
30	---	---	---	11.8	10.0	10.9	17.3	16.6	16.9	23.4	21.7	22.4
31	---	---	---	12.1	11.0	11.5	---	---	---	22.4	19.1	21.3
MONTH	10.9	3.4	7.1	13.1	2.5	8.8	19.4	7.8	14.3	23.4	14.9	18.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	18.9	18.1	18.5	25.1	22.7	23.9	24.5	23.1	23.8	24.7	23.5	24.0
2	18.1	16.1	16.8	25.7	23.7	24.5	23.5	22.7	23.1	24.1	23.3	23.7
3	18.2	16.7	17.3	26.1	24.1	25.0	23.5	22.3	22.8	---	---	---
4	20.2	18.2	19.0	26.5	24.3	25.2	23.3	22.5	22.8	---	---	---
5	21.8	20.2	21.1	26.5	24.5	25.3	23.5	22.3	22.9	---	---	---
6	21.6	20.6	21.0	26.6	24.5	25.3	22.5	20.5	21.3	---	---	---
7	22.6	20.3	21.2	26.6	24.5	25.4	21.1	20.3	20.6	---	---	---
8	24.4	21.1	22.7	26.6	24.7	25.6	22.4	20.5	21.5	21.9	21.5	21.6
9	26.0	22.8	24.3	26.2	25.4	25.8	23.2	21.5	22.2	21.7	21.1	21.3
10	26.7	24.4	25.3	26.0	24.0	25.2	24.0	21.9	22.7	21.1	20.7	20.8
11	26.2	24.8	25.4	24.2	22.8	23.6	24.0	22.2	23.0	21.5	19.9	20.4
12	25.3	24.5	24.8	24.6	22.4	23.4	24.1	22.9	23.5	20.7	19.5	19.9
13	25.3	23.7	24.4	25.0	23.2	24.0	24.5	23.5	23.8	21.1	19.3	19.9
14	24.9	23.7	24.3	25.8	23.4	24.4	23.7	23.1	23.4	21.9	19.7	20.7
15	23.9	22.1	23.1	25.4	24.0	24.7	24.1	22.9	23.5	21.3	20.6	20.9
16	22.8	22.3	22.5	---	---	---	25.1	23.1	23.9	21.0	20.0	20.6
17	24.4	22.8	23.5	26.0	24.4	25.1	25.6	23.5	24.3	20.0	19.2	19.6
18	25.0	23.4	24.1	25.8	24.4	25.0	25.2	24.4	24.8	19.2	18.6	18.9
19	25.6	24.0	24.6	26.0	24.4	25.1	26.0	24.6	25.2	19.4	18.2	18.7
20	24.8	23.8	24.3	26.2	24.8	25.5	---	---	---	19.0	18.0	18.4
21	23.6	21.2	22.5	26.2	25.2	25.7	---	---	---	19.0	18.4	18.6
22	21.5	20.8	21.1	26.6	25.0	25.5	---	---	---	20.0	18.4	19.0
23	22.2	21.4	21.9	26.2	24.8	25.4	---	---	---	20.2	18.8	19.3
24	23.6	21.8	22.7	---	---	---	24.5	22.9	23.5	20.0	19.4	19.6
25	22.8	21.8	22.6	---	---	---	24.3	23.1	23.7	21.2	19.6	20.3
26	21.8	21.3	21.6	---	---	---	24.9	23.1	23.8	20.8	20.4	20.5
27	22.4	21.3	21.7	---	---	---	24.3	23.1	23.6	20.4	19.1	20.0
28	22.4	21.6	22.0	---	---	---	24.3	23.1	23.7	19.1	17.9	18.5
29	22.9	21.9	22.4	26.0	24.8	25.4	24.9	23.3	24.0	17.9	16.8	17.2
30	23.9	22.3	23.0	25.8	24.6	25.2	25.1	23.5	24.1	17.1	16.0	16.4
31	---	---	---	25.2	24.1	24.6	25.1	23.5	24.1	---	---	---
MONTH	26.7	16.1	22.3	26.6	22.4	25.0	26.0	20.3	23.3	24.7	16.0	20.0

## TENNESSEE RIVER BASIN

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03597860 DUCK RIVER AT SHELBYVILLE, TN--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	9.3	5.5	5.3	9.1	8.8	9.0	10.8	10.5	10.7	10.6	10.0	10.3
2	9.2	5.4	5.0	8.7	7.1	7.8	10.8	10.5	10.7	10.9	10.5	10.7
3	9.1	5.6	5.0	9.2	8.4	8.9	10.8	10.5	10.7	10.8	10.4	10.6
4	9.1	5.5	5.3	9.2	8.8	9.0	10.8	10.5	10.7	10.6	9.7	10.3
5	9.3	5.6	5.3	9.3	9.0	9.2	10.9	10.5	10.7	9.8	8.6	9.2
6	9.4	---	---	9.9	9.4	9.7	11.2	10.8	11.0	10.6	9.8	10.2
7	9.4	5.1	4.8	10.1	9.9	10.0	11.1	10.8	11.0	10.7	10.3	10.5
8	9.4	5.0	4.7	10.1	10.0	10.1	11.0	10.7	10.8	10.6	9.9	10.2
9	9.3	9.0	9.2	10.1	9.9	10.0	11.0	10.6	10.9	10.6	10.1	10.3
10	9.4	9.0	9.2	10.0	9.7	9.8	10.9	10.3	10.6	10.6	10.3	10.5
11	9.6	9.2	9.4	9.8	9.4	9.5	10.8	10.4	10.6	10.5	9.9	10.4
12	9.7	9.3	9.5	9.4	9.1	9.2	11.0	10.6	10.8	10.2	9.8	10.0
13	9.8	9.4	9.6	9.9	9.2	9.4	11.1	10.7	10.8	10.8	9.9	10.3
14	9.8	9.4	9.6	10.1	9.8	10.0	11.1	10.7	10.9	11.1	10.6	10.8
15	9.6	9.2	9.4	10.3	10.0	10.1	10.8	9.8	10.3	11.2	10.7	11.0
16	9.2	9.0	9.1	10.3	10.1	10.3	10.1	9.5	9.7	11.2	10.7	11.0
17	9.4	9.0	9.2	10.3	10.0	10.1	9.6	8.9	9.2	11.3	10.9	11.0
18	10.0	9.4	9.7	10.2	10.0	10.1	9.8	9.1	9.4	11.5	10.9	11.1
19	10.1	9.7	9.9	10.3	10.1	10.2	9.9	9.7	9.8	11.5	11.1	11.3
20	10.2	9.9	10.1	10.1	9.8	10.0	9.8	8.2	8.9	11.4	10.9	11.1
21	10.3	9.8	10.1	9.9	9.4	9.7	9.5	8.6	9.1	11.1	10.5	10.9
22	9.9	9.5	9.7	9.3	8.1	8.7	9.3	9.1	9.2	10.8	10.3	10.5
23	9.6	9.3	9.5	9.7	8.8	9.2	9.3	8.1	8.6	11.3	10.6	10.9
24	9.6	9.3	9.5	9.8	9.5	9.7	9.9	8.5	9.3	11.3	9.3	10.4
25	9.5	9.2	9.3	9.6	9.5	9.5	10.1	9.7	9.9	11.7	10.2	10.8
26	9.6	9.2	9.4	10.0	9.4	9.7	10.3	9.9	10.2	11.8	11.3	11.5
27	9.6	9.1	9.4	10.2	9.9	10.1	10.4	10.1	10.3	12.0	11.3	11.7
28	9.2	8.9	9.0	10.4	10.2	10.3	10.2	9.9	10.0	12.0	11.4	11.7
29	9.3	9.0	9.1	10.6	10.3	10.5	10.2	9.8	10.0	12.2	11.4	11.7
30	9.3	9.1	9.3	10.8	10.5	10.6	10.2	9.9	10.1	12.6	11.5	12.0
31	9.2	9.0	9.1	---	---	---	10.4	10.0	10.2	12.6	11.9	12.1
MONTH	10.3	5.0	8.4	10.8	7.1	9.7	11.2	8.1	10.2	12.6	8.6	10.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	12.2	11.5	11.9	12.0	10.5	11.3	10.9	10.1	10.5	11.2	10.4	10.9
2	12.3	11.8	12.0	11.2	10.4	10.9	11.4	10.5	11.0	11.7	10.3	10.7
3	12.3	11.4	11.9	10.8	9.9	10.4	11.9	11.3	11.6	11.6	10.1	10.9
4	12.2	11.5	11.8	10.6	9.9	10.2	11.6	10.9	11.2	11.1	10.1	10.6
5	12.2	11.3	11.8	10.9	10.0	10.5	11.1	10.5	10.8	11.5	10.5	10.8
6	12.1	11.2	11.7	11.3	10.6	11.0	10.7	10.2	10.5	10.9	9.7	10.2
7	12.0	11.1	11.5	11.5	11.1	11.3	10.6	10.0	10.2	9.7	8.7	9.1
8	11.9	11.2	11.5	11.7	10.7	11.4	10.2	9.6	10.0	8.9	8.2	8.6
9	11.9	11.1	11.6	11.8	10.9	11.5	9.8	9.4	9.6	9.5	8.1	8.7
10	11.9	11.1	11.4	11.8	10.8	11.4	9.9	9.6	9.8	9.7	8.3	8.9
11	11.2	10.5	10.9	11.8	10.9	11.4	10.2	9.6	9.9	9.6	8.6	8.8
12	10.5	10.0	10.3	11.8	11.3	11.6	10.1	9.4	9.8	8.7	8.1	8.4
13	10.8	10.2	10.5	12.5	11.6	12.1	10.2	9.2	9.7	8.4	8.1	8.3
14	11.2	10.3	10.7	13.7	12.6	13.3	9.9	9.0	9.4	8.9	8.2	8.5
15	11.7	10.8	11.2	14.2	13.3	13.8	9.5	8.7	9.1	9.2	8.5	8.8
16	11.7	10.8	11.3	13.8	12.8	13.3	9.1	8.7	9.0	9.4	8.5	8.9
17	11.6	10.8	11.1	13.1	11.5	11.9	9.7	9.1	9.4	9.3	8.5	8.8
18	12.4	11.2	11.7	12.2	11.4	11.8	10.5	9.5	9.9	9.2	8.3	8.7
19	12.8	11.8	12.2	12.1	11.6	11.9	10.0	9.2	9.7	9.1	8.1	8.5
20	12.6	11.5	12.1	12.0	11.3	11.6	9.6	9.2	9.4	8.9	8.3	8.5
21	12.0	10.5	11.3	11.8	11.0	11.4	9.6	9.1	9.4	9.3	8.3	8.8
22	10.4	8.9	9.7	11.5	10.5	11.1	10.5	9.4	10.1	9.6	8.7	9.1
23	11.9	10.2	11.1	10.5	9.0	9.5	11.1	10.2	10.6	9.5	8.8	9.1
24	12.4	11.1	11.8	10.3	9.4	10.0	11.1	10.4	10.7	9.2	8.6	8.8
25	12.1	11.2	11.7	10.9	10.1	10.4	10.6	10.2	10.4	8.8	8.3	8.5
26	11.8	10.8	11.4	10.9	10.2	10.7	10.5	9.0	9.9	8.7	8.0	8.3
27	11.8	10.8	11.5	10.5	10.2	10.4	11.4	10.4	10.9	8.8	8.0	8.3
28	12.1	11.2	11.6	11.2	10.4	10.9	11.5	10.0	11.1	8.3	7.7	8.0
29	---	---	---	11.4	10.7	11.0	11.6	10.5	11.2	8.4	7.5	7.9
30	---	---	---	11.3	10.4	10.8	11.5	10.6	11.0	8.2	7.4	7.7
31	---	---	---	10.7	10.2	10.4	---	---	---	7.8	6.3	7.1
MONTH	12.8	8.9	11.4	14.2	9.0	11.3	11.9	8.7	10.2	11.7	6.3	8.9

## TENNESSEE RIVER BASIN

03597860 DUCK RIVER AT SHELBYVILLE, TN--Continued

OXYGEN, DISSOLVED (DO), MG/L, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.2	7.2	7.9	7.6	6.9	7.3	8.2	7.8	8.0	9.1	8.6	8.9
2	8.9	8.0	8.5	7.3	6.7	7.0	8.3	7.9	8.1	9.3	8.8	9.0
3	8.8	8.6	8.8	7.2	6.7	7.0	8.5	8.2	8.3	9.1	7.7	8.3
4	8.6	7.9	8.3	7.4	6.9	7.1	8.5	8.2	8.3	9.1	8.5	8.9
5	8.2	7.7	8.0	7.3	6.8	7.0	8.5	8.2	8.3	9.5	8.9	9.2
6	8.3	7.7	8.0	7.2	6.8	7.1	8.7	8.3	8.5	9.7	9.0	9.5
7	8.7	8.0	8.3	7.2	6.8	7.0	8.4	8.1	8.3	---	---	---
8	8.3	7.7	8.0	7.1	6.6	6.8	8.5	8.2	8.3	---	---	---
9	8.1	7.4	7.7	6.9	6.5	6.7	8.8	8.3	8.6	8.2	8.0	8.1
10	7.7	7.2	7.4	7.2	6.5	6.8	8.8	8.3	8.6	8.4	8.1	8.2
11	7.6	6.9	7.2	7.4	6.9	7.2	8.7	8.3	8.5	8.5	8.2	8.3
12	7.4	6.9	7.1	7.0	6.4	6.7	8.6	8.2	8.4	8.6	8.3	8.4
13	7.3	6.7	7.0	7.1	6.5	6.8	8.6	8.0	8.3	8.7	8.3	8.5
14	7.2	6.7	7.0	7.0	6.4	6.8	8.7	8.1	8.4	8.6	8.1	8.4
15	7.5	6.8	7.1	6.7	6.4	6.5	8.8	8.1	8.4	8.3	8.1	8.2
16	7.1	6.7	7.0	---	---	---	8.5	7.9	8.3	8.2	8.0	8.1
17	7.2	6.8	7.0	6.8	6.4	6.7	8.6	8.0	8.3	8.4	8.1	8.3
18	7.3	6.9	7.0	6.9	6.5	6.7	8.3	7.9	8.1	8.7	8.3	8.5
19	7.3	6.9	7.1	6.9	6.7	6.8	8.4	7.9	8.1	8.7	8.5	8.6
20	7.4	7.0	7.2	7.1	6.7	6.9	---	---	---	8.8	8.6	8.7
21	7.6	7.1	7.4	7.3	6.8	7.0	---	---	---	8.9	8.6	8.7
22	7.7	7.2	7.5	7.4	6.9	7.1	---	---	---	8.8	8.4	8.7
23	7.9	7.1	7.3	7.5	7.1	7.3	---	---	---	8.8	8.4	8.6
24	7.8	7.3	7.5	7.8	7.3	7.5	8.9	8.3	8.7	8.6	8.3	8.5
25	7.9	7.5	7.7	7.4	7.1	7.3	9.0	8.5	8.8	8.4	8.1	8.3
26	8.0	7.6	7.8	7.8	7.1	7.6	9.0	8.6	8.8	8.3	8.1	8.2
27	8.1	7.8	7.9	7.9	7.6	7.7	9.0	8.5	8.8	8.4	8.1	8.2
28	9.1	7.5	8.0	7.7	7.4	7.5	9.0	8.7	8.9	8.8	8.4	8.6
29	8.8	7.4	7.8	7.8	7.3	7.6	9.1	8.7	8.9	9.2	8.7	9.0
30	7.7	7.2	7.6	7.9	7.5	7.6	9.1	8.5	8.8	9.6	9.1	9.4
31	---	---	---	8.1	7.6	7.8	9.1	8.7	8.9	---	---	---
MONTH	9.1	6.7	7.6	8.1	6.4	7.1	9.1	7.8	8.5	9.7	7.7	8.6



## TENNESSEE RIVER BASIN

03598000 DUCK RIVER NEAR SHELBYVILLE, TN

LOCATION.--Lat 35°28'49", long 86°29'57", Bedford County, Hydrologic Unit 06040002, on right bank 150 ft downstream from Sims Bridge, 2.1 mi upstream from Sugar Creek, 2.2 mi west of Shelbyville, 2.9 mi downstream from Flat Creek, and at mile 216.2.

DRAINAGE AREA.--481 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1933 to current year. Prior to April 1934, monthly discharge only, published in WSP 1306.

REVISED RECORDS.--WSP 783: 1934. WSP 853: Drainage area.

GAGE.--Water-stage encoder and satellite telemeter at station. Datum of gage is 683.51 ft above sea level. Prior to Sept. 2, 1966, at datum 2.0 ft higher.

REMARKS.--Records good. Maximum discharge prior to regulation, 62,900 ft<sup>3</sup>/s, Feb. 13, 1948, gage height, 38.40 ft, present datum, from floodmarks, from rating curve extended above 35,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow. Prior to 1948, diurnal fluctuation caused by powerplant upstream. Flow regulated by Normandy Reservoir (station 03596460) since January 1976. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in March 1929 reached a stage of 39.6 ft present datum, discharge, about 70,000 ft<sup>3</sup>/s, from high-water profile by Tennessee Valley Authority. Flood in March 1902 reached a stage about 2.0 ft higher than that in March 1929, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,880 ft<sup>3</sup>/s, at 0800 hours May 4, gage height 16.97 ft; minimum 204 ft<sup>3</sup>/s, Sept. 11; minimum daily 209 ft<sup>3</sup>/s Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	364	912	709	1010	897	599	2200	594	995	334	233	185
2	321	3620	653	901	841	632	2040	561	1920	308	234	181
3	302	1740	493	844	459	852	1010	814	1230	291	232	262
4	361	1670	479	999	390	719	912	6960	e440	281	230	248
5	482	2190	544	2690	372	662	1090	4060	e400	281	234	188
6	442	2030	499	1530	362	606	892	3190	e350	267	1100	180
7	365	1510	490	1230	352	567	670	2770	e300	260	389	180
8	331	1250	517	2030	342	546	583	2370	264	244	299	178
9	313	1100	554	1550	330	509	563	2200	241	257	268	183
10	295	1040	724	1280	323	479	606	1950	246	290	227	181
11	284	1040	769	1550	337	506	528	545	312	375	216	176
12	270	1240	712	1820	400	431	471	389	266	280	223	177
13	262	1470	670	1710	367	380	422	370	337	281	232	175
14	256	1190	646	1470	341	358	392	352	270	264	228	174
15	247	1100	626	1310	324	347	390	313	761	253	225	190
16	274	1030	652	1210	985	573	526	290	507	253	221	197
17	361	985	1490	1120	693	2020	421	277	374	252	216	187
18	350	952	1110	1040	553	1330	364	278	324	249	212	184
19	332	924	938	1020	488	932	331	470	299	242	208	183
20	321	903	3300	631	463	717	324	416	320	238	219	182
21	392	952	2180	1040	679	603	359	313	668	233	244	181
22	415	2770	2010	995	1500	630	342	288	687	231	229	180
23	410	1640	4870	968	1180	6010	307	267	430	226	222	183
24	408	1480	5120	2440	1050	3710	278	252	376	371	218	180
25	408	1800	3330	1660	1100	2260	362	258	552	271	211	195
26	403	1410	2880	1230	1510	2290	2310	345	524	248	207	360
27	619	1220	2510	1260	797	2250	1550	284	472	228	204	287
28	662	1090	2850	1130	665	3000	874	303	523	233	201	225
29	712	1010	2480	1050	---	2700	693	304	413	237	197	198
30	756	938	2230	970	---	2380	638	305	382	233	193	188
31	943	---	1940	929	---	2300	---	1220	---	232	188	---
TOTAL	12661	42206	48975	40617	18100	41898	22448	33308	15183	8243	7960	5968
MEAN	408	1407	1580	1310	646	1352	748	1074	506	266	257	199
MAX	943	3620	5120	2690	1510	6010	2310	6960	1920	375	1100	360
MIN	247	903	479	631	323	347	278	252	241	226	188	174
(+)	-4300	-8700	-1800	+100	+1200	+8600	+6100	+1600	-1800	-3000	-2000	-2800
MEAN±	270	1117	1522	1313	689	1629	952	1126	446	169	192	106
CFSM±	.56	2.32	3.16	2.73	1.43	3.39	1.98	2.34	.93	.35	.40	.22
IN.±	.65	2.59	3.65	3.15	1.49	3.90	2.21	2.70	1.04	.40	.46	.24

CAL YR 1992 MEAN± 763 CFSM± 1.59 IN.± 21.59  
WTR YR 1993 MEAN± 800 CFSM± 1.66 IN.± 22.58

e Estimated

± Change in contents, in cfs-days, in Normandy Lake

± Adjusted for change in contents.

NOTE.--Contents (cfs-days) for adjustments furnished by Tennessee Valley Authority.



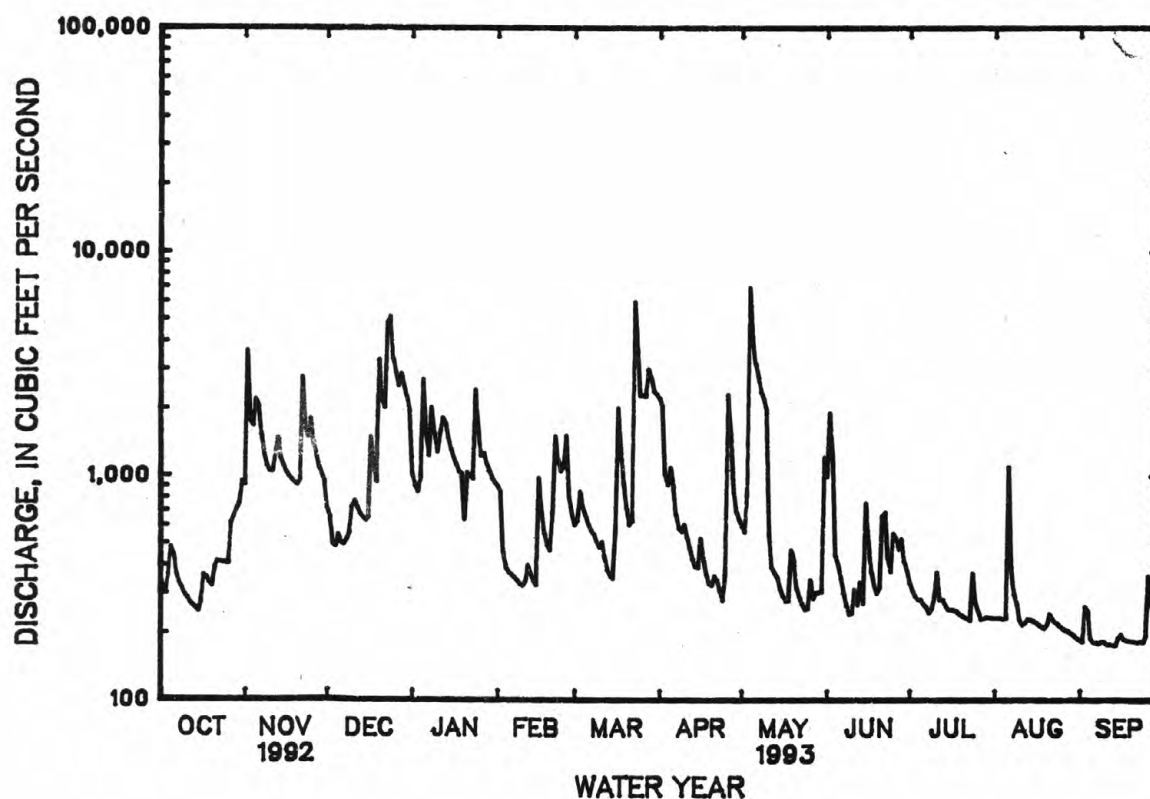
TENNESSEE RIVER BASIN  
03598000 DUCK RIVER NEAR SHELBYVILLE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1993, BY WATER YEAR (WY)

MEAN	378	1000	1446	1232	1204	1303	832	769	473	342	257	321
MAX	1314	2277	4132	2873	3432	3649	2230	2753	2151	1670	728	1036
(WY)	1990	1987	1992	1979	1991	1980	1983	1983	1989	1989	1982	1992
MIN	157	170	337	175	339	308	165	137	166	166	154	163
(WY)	1988	1988	1981	1986	1978	1988	1986	1988	1988	1987	1983	1980

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		*WATER YEARS 1977 - 1993	
ANNUAL TOTAL	280673		297567		795	
ANNUAL MEAN	767		815		1253	
HIGHEST ANNUAL MEAN					257	
LOWEST ANNUAL MEAN					1991	
HIGHEST DAILY MEAN	7350	Sep 22	6960	May 4	21700	Dec 23 1990
LOWEST DAILY MEAN	142	May 20	174	Sep 14	72	Oct 1 1982
ANNUAL SEVEN-DAY MINIMUM	156	May 23	178	Sep 8	88	Sep 25 1982
INSTANTANEOUS PEAK FLOW			8880	May 4	26100	Dec 23 1990
INSTANTANEOUS PEAK STAGE			16.97	May 4	29.88	Dec 23 1990
INSTANTANEOUS LOW FLOW			204	Sep 11	71	Sep 30 1982
10 PERCENT EXCEEDS	1900		2010		2000	
50 PERCENT EXCEEDS	393		463		287	
90 PERCENT EXCEEDS	200		217		166	

\* Regulated period only.



## TENNESSEE RIVER BASIN

## 03599500 DUCK RIVER AT COLUMBIA, TN

LOCATION.--Lat 35°37'05", long 87°01'56", Maury County, Hydrologic Unit 06040003, on right bank 4 ft downstream from bridge on former U.S. Highway 31, 2 blocks north of public square in Columbia, 2.4 mi upstream from Rutherford Creek, and at mile 132.8.

DRAINAGE AREA.--1,208 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1904 to December 1908, April 1920 to current year. Monthly discharge only for some periods, published in WSP 1305. Gage-height records collected at same site, 1887-95, 1911 (fragmentary), 1947-71, published in reports of U.S. Weather Bureau. 1983-1991, discharge records furnished by Tennessee Valley Authority.

REVISED RECORD.--WSP 783: 1929(M). WSP 853: Drainage area. WSP 1306: 1905-9, 1920-22, 1923(M).

GAGE.--Water-stage encoder and satellite telemeter at station. Datum of gage is 535.33 ft above sea level, supplementary adjustment of 1955. Prior to Jan. 9, 1925, nonrecording gages near this site; all gages at datum 2.37 ft higher prior to Oct. 1, 1933.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge prior to regulation, 61,500 ft<sup>3</sup>/s, Mar. 17, 1973; maximum gage height, 51.75 ft Feb. 14, 1948; minimum no flow Oct. 22, 1922, caused by regulation by power plant .75 mi upstream. Flow regulated by Normandy Lake (station 03596460) since January 1976.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 30, 1902, reached a stage of 48.0 ft, present datum, discharge, 50,700 ft<sup>3</sup>/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,600 ft<sup>3</sup>/s, Mar. 24, gage height, 22.85 ft; minimum, 145 ft<sup>3</sup>/s, Sept. 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1670	1280	1720	3080	1670	1870	4030	1280	1020	703	196	159
2	1250	4880	1500	2250	1570	1840	3690	1140	1780	544	195	154
3	875	9390	1270	1820	1470	2930	3310	2340	1770	442	191	175
4	762	4730	1130	1720	1220	3770	2450	6960	1720	378	189	208
5	729	4260	978	3880	906	2870	2590	11600	1130	336	203	253
6	983	5430	1050	6290	816	2280	3570	6800	648	311	376	299
7	961	4280	1020	3790	762	1930	3020	4510	590	294	655	213
8	783	3030	957	3220	722	1710	2220	3670	471	271	844	186
9	660	2370	941	4440	685	1550	1890	3080	406	257	437	181
10	579	1990	1060	3580	651	1400	1730	2800	343	488	310	166
11	529	1770	1480	3240	706	1260	1660	2520	361	417	260	163
12	480	2050	1630	4380	1220	1150	1460	1640	693	678	222	161
13	443	4030	1460	4530	1370	1110	1260	980	1970	590	413	153
14	412	3550	1330	3720	1130	1030	1110	823	1130	585	361	149
15	383	2500	1230	3090	962	944	1150	788	1220	439	299	153
16	374	2050	1170	2640	1260	1050	1090	676	682	394	254	162
17	372	1810	1290	2320	2430	2440	1140	580	1020	339	222	166
18	462	1670	3020	2070	2010	4620	1060	525	652	291	206	176
19	524	1540	2440	1940	1510	3230	890	694	486	304	204	172
20	476	1440	2640	2080	1290	2300	799	1340	409	308	191	170
21	438	1430	5900	2760	1360	1840	790	1130	419	274	189	170
22	414	3220	4960	4680	2560	1750	806	812	544	244	181	166
23	466	7910	6070	3420	3220	8400	760	642	1200	230	207	173
24	479	4540	11100	3450	2230	14000	689	539	842	219	196	179
25	466	4970	9740	6710	2060	9350	786	485	735	209	182	229
26	461	4640	6100	4530	3050	7960	2930	461	1120	285	175	396
27	483	3290	5020	3040	3630	9690	4810	573	1100	276	191	538
28	595	2590	4500	2560	2440	7210	2930	607	924	225	227	692
29	1030	2170	4940	2260	---	5760	1960	466	1250	223	199	474
30	924	1900	4210	1960	---	4810	1500	437	925	213	179	326
31	963	---	3580	1780	---	4090	---	480	---	203	166	---
TOTAL	20426	100710	95436	101230	44910	116144	58080	61378	27560	10970	8320	6962
MEAN	659	3357	3079	3265	1604	3747	1936	1980	919	354	268	232
MAX	1670	9390	11100	6710	3630	14000	4810	11600	1970	703	844	692
MIN	372	1280	941	1720	651	944	689	437	343	203	166	149
(†)	-4300	-8700	-1800	+100	+1200	+8600	+6100	+1600	-1800	-3000	-2000	-2800
MEAN±	520	3067	3021	3269	1647	4024	2139	2032	859	257	204	139
CSFM±	.43	2.54	2.50	2.71	1.36	3.33	1.77	1.68	.71	.21	.17	.12
IN.±	.50	2.83	2.88	3.12	1.42	3.84	1.98	1.94	.79	.25	.20	.13

CAL YR 1992 MEAN± 1817 CFSM± 1.50 IN.± 20.47  
WTR YR 1993 MEAN± 1768 CFSM± 1.46 IN.± 19.87

† Change in contents, in cfs-days, in Normandy Lake.

± Adjusted for change in contents.

NOTE.--Contents (cfs-days) for adjustments furnished by Tennessee Valley Authority.

TENNESSEE RIVER BASIN

225

03599500 DUCK RIVER AT COLUMBIA, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1993, BY WATER YEAR (WY)

MEAN	831	2361	3761	3369	3489	3745	2498	2239	884	704	393	699
MAX	3642	5925	10360	8513	9901	10090	6984	9105	4117	4740	938	3832
(WY)	1990	1987	1991	1979	1991	1980	1983	1983	1989	1989	1982	1979
MIN	180	236	418	273	953	1104	325	244	167	220	185	163
(WY)	1988	1981	1981	1986	1978	1985	1986	1988	1988	1988	1991	1984

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

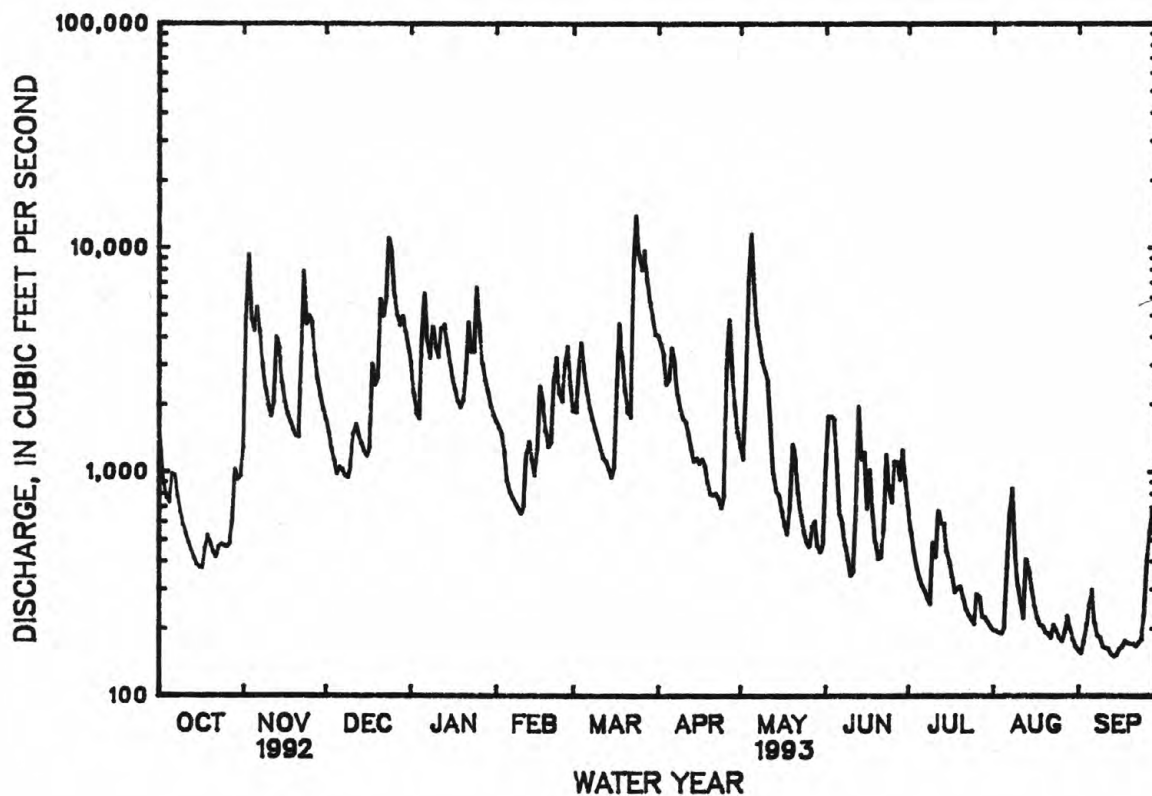
FOR 1993 WATER YEAR

\*WATER YEARS 1977 - 1993

ANNUAL TOTAL	666382	652126	2076
ANNUAL MEAN	1821	1787	3282
HIGHEST ANNUAL MEAN			553
LOWEST ANNUAL MEAN			1989
HIGHEST DAILY MEAN	19000	14000	52300
LOWEST DAILY MEAN	178	149	86
ANNUAL SEVEN-DAY MINIMUM	195	158	100
INSTANTANEOUS PEAK FLOW		14600	52300
INSTANTANEOUS PEAK STAGE		22.85	45.82
INSTANTANEOUS LOW FLOW		a145	
10 PERCENT EXCEEDS	4510	4460	4810
50 PERCENT EXCEEDS	959	1090	760
90 PERCENT EXCEEDS	282	204	187

\* Regulated period only.

a Also occurred Sept. 15.



## TENNESSEE RIVER BASIN

03600085 CARTERS CREEK AT PETTY LANE NEAR CARTERS CREEK, TN

LOCATION.--Lat 35°43'39", Long 86°59'19", Maury County, Hydrologic Unit 06040003, at bridge on Petty Lane, 0.8 mile north of Carters Creek, and at mile 4.7.

DRAINAGE AREA.--16.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 21...	0800	1.7	433	12.0	7.6	757	6.8	63
JAN 13...	0830	61	356	10.0	7.8	752	10.5	95
APR 14...	0730	21	373	15.0	7.7	742	7.7	79
AUG 17...	0900	0.42	384	23.0	7.0	750	3.2	38
								K1600

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)
OCT 21...	250	<1	<100	<1	<1	2	<1	<0.10	<1
JAN 13...	270	<1	<100	<1	8	2	2	<0.10	2
APR 14...	140	<1	<100	<1	<1	2	<1	<0.10	1
AUG 17...	1900	1	<100	<1	<1	<1	<1	<0.10	<1

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	OIL AND GREASE, TOTAL RECOV- ERABLE GRAVI- METRIC (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 21...	<1	<1	<10	0.020	<1	7	0.03	73
JAN 13...	<1	<1	20	<0.010	<1	8	1.3	88
APR 14...	<1	<1	<10	<0.010	<1	10	0.58	62
AUG 17...	<1	<1	10	<0.010	<1	25	0.03	75

K--Results based on non-ideal colony count.

## TENNESSEE RIVER BASIN

03600086 CARTERS CREEK TRIBUTARY NEAR CARTERS CREEK, TN

LOCATION.--Lat 35°43'34", long 86°59'19", Maury County, Hydrologic Unit 06040003, at culvert on Carters Creek Road, 0.7 mile north of Carters Creek.

DRAINAGE AREA.--2.94 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1986 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 21...	1000	0.46	678	15.0	7.5	757	6.9	69	110
JAN 13...	1000	10	726	10.0	7.7	752	10.7	96	53
APR 14...	0930	2.9	615	15.0	8.2	742	11.7	119	31
AUG 17...	1015	0.72	516	24.5	7.3	750	6.0	73	140

DATE	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)
OCT 21...	240	<1	<100	<1	<1	<1	<1	<0.10	<1
JAN 13...	100	<1	<100	<1	13	1	<1	<0.10	2
APR 14...	43	<1	<100	<1	<1	2	<1	<0.10	1
AUG 17...	680	<1	<100	<1	<1	<1	<1	<0.10	<1

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	OIL AND GREASE, TOTAL RECOV- ERABLE GRAVI- METRIC (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 21...	<1	<1	<10	<0.010	<1	6	0.01	88
JAN 13...	<1	<1	30	<0.010	<1	12	0.33	96
APR 14...	<1	<1	10	<0.010	<1	11	0.09	93
AUG 17...	<1	<1	<10	<0.010	<1	24	0.05	75



## TENNESSEE RIVER BASIN

## 03600088 CARTERS CREEK AT BUTLER ROAD AT CARTERS CREEK, TN

LOCATION.--Lat 35°43'02", long 86°59'45", Maury County, Hydrologic Unit 06040003, on left bank at end of Butler road bridge, 0.1 mi west of Carters Creek, 0.3 mi upstream from Terrell Branch, 3.7 mi upstream from Rutherford Creek, and at mile 3.7.

DRAINAGE AREA.--20.1 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1986 to current year. Occasional low-flow measurements, water year 1986.

GAGE.--Water-stage recorder, crest-stage gage and concrete weir. Datum of gage is 605.94 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuation caused by industrial development upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 25	0515	1,130	8.42	May 3	2200	*1,780	*10.61

Minimum discharge, .41 ft<sup>3</sup>/s, July 31, Aug. 1, 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	15	23	32	24	35	41	26	16	4.4	.51	1.7
2	5.6	40	21	29	21	67	37	25	10	3.4	.92	1.4
3	4.8	26	17	27	19	80	32	415	7.7	2.8	.83	16
4	4.8	29	18	81	17	64	29	445	6.5	2.4	.63	10
5	5.3	35	17	97	16	50	75	120	6.4	2.1	.75	5.1
6	4.5	31	15	63	15	42	60	81	5.4	1.9	3.2	3.1
7	3.9	24	14	48	14	37	46	59	4.7	1.7	2.2	2.1
8	3.5	18	13	58	15	34	40	45	4.1	1.6	1.6	1.6
9	3.2	15	13	47	13	30	38	37	3.7	1.5	1.1	1.3
10	2.9	13	26	43	12	28	36	31	3.5	1.4	.82	1.0
11	2.9	12	24	86	31	24	32	27	4.0	1.4	.69	.78
12	2.6	54	22	83	38	22	28	28	3.7	1.3	.58	.67
13	2.5	43	19	70	29	22	26	29	4.6	1.4	5.8	.58
14	2.3	30	17	54	24	20	24	26	7.7	1.4	5.3	.52
15	2.1	24	16	45	23	20	60	21	5.3	2.0	2.7	.65
16	3.2	19	21	39	51	25	42	18	4.2	3.1	1.7	1.5
17	4.2	16	22	35	35	56	34	16	3.4	2.2	1.3	1.2
18	3.4	14	21	30	30	39	29	14	2.9	1.7	.98	1.0
19	2.8	13	21	31	26	33	26	22	2.5	1.4	.77	.79
20	2.4	11	120	32	25	30	26	16	2.3	1.1	.64	.90
21	2.3	13	67	99	50	27	24	13	2.8	.98	.78	1.3
22	2.3	109	53	66	42	98	20	11	3.1	.88	.70	1.1
23	2.2	47	327	50	34	252	18	9.9	2.7	1.1	.57	.92
24	2.1	56	114	101	29	106	16	8.9	6.5	1.1	.50	.94
25	1.9	203	81	63	46	95	128	8.9	11	.87	.67	1.9
26	1.9	73	61	49	64	252	111	8.2	11	.76	2.7	5.5
27	9.4	49	49	41	48	132	63	7.4	8.8	.69	1.8	4.1
28	8.9	38	56	36	40	93	44	7.3	9.7	.66	1.3	3.0
29	6.5	31	46	31	---	71	35	9.9	7.0	.61	1.9	2.2
30	5.5	27	41	27	---	55	30	7.5	5.9	.54	3.9	1.7
31	5.9	---	36	25	---	48	---	26	---	.46	2.4	---
TOTAL	122.5	1128	1411	1618	831	1987	1250	1619.0	177.1	48.85	50.24	74.55
MEAN	3.95	37.6	45.5	52.2	29.7	64.1	41.7	52.2	5.90	1.58	1.62	2.48
MAX	9.4	203	327	101	64	252	128	445	16	4.4	5.8	16
MIN	1.9	11	13	25	12	20	16	7.3	2.3	.46	.50	.52
CFSM	.20	1.87	2.26	2.60	1.48	3.19	2.07	2.60	.29	.08	.08	.12
IN.	.23	2.09	2.61	2.99	1.54	3.68	2.31	3.00	.33	.09	.09	.14

TENNESSEE RIVER BASIN

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03600088 CARTERS CREEK AT BUTLER ROAD AT CARTERS CREEK, TN--Continued

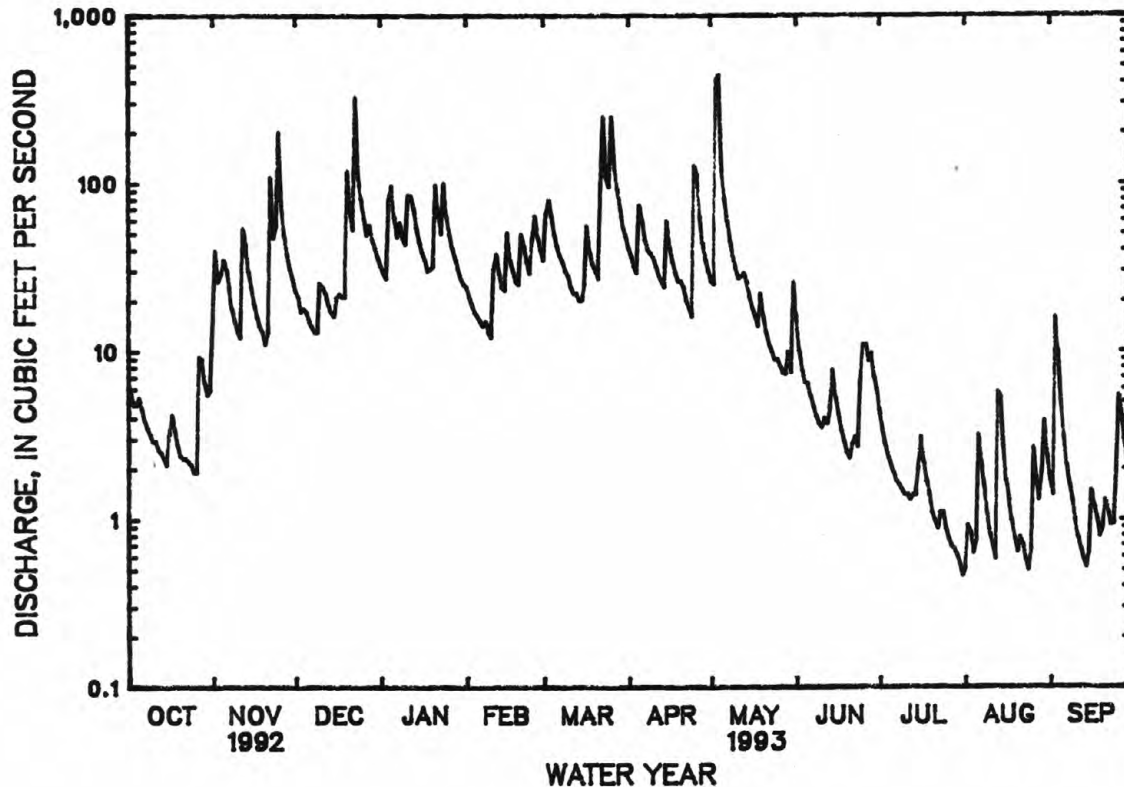
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1993, BY WATER YEAR (WY)

MEAN	8.48	34.2	66.1	55.0	83.0	55.2	32.8	30.3	13.8	12.4	3.08	6.42
MAX	44.8	64.7	126	93.4	146	85.1	72.9	93.4	42.0	45.5	6.09	20.3
(WY)	1990	1989	1991	1989	1990	1989	1991	1989	1989	1989	1989	1989
MIN	.51	3.88	18.7	33.6	29.3	20.5	13.9	3.11	.51	.54	.47	.99
(WY)	1988	1988	1990	1987	1988	1988	1992	1988	1988	1988	1987	1987

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1987 - 1993	
ANNUAL TOTAL	9852.7		10317.24		33.1	
ANNUAL MEAN	26.9		28.3		50.0	
HIGHEST ANNUAL MEAN					17.4	
LOWEST ANNUAL MEAN					1430	
HIGHEST DAILY MEAN	695	Mar 10	445	May 4	1430	Feb 3 1990
LOWEST DAILY MEAN	1.0	Sep 17	.46	Jul 31	.12	Aug 15 1987
ANNUAL SEVEN-DAY MINIMUM	1.2	Aug 16	.60	Jul 26	.15	Jun 25 1988
INSTANTANEOUS PEAK FLOW			1780	May 3	2990	Feb 3 1990
INSTANTANEOUS PEAK STAGE			10.61	May 3	14.83	Feb 3 1990
INSTANTANEOUS LOW FLOW			a.41	Jul 31	b.11	Aug 15 1987
ANNUAL RUNOFF (CFSM)	1.34		1.41		1.65	
ANNUAL RUNOFF (INCHES)	18.23		19.09		22.41	
10 PERCENT EXCEEDS	53		63		68	
50 PERCENT EXCEEDS	13		16		12	
90 PERCENT EXCEEDS	2.5		1.1		.66	

a Also occurred on Aug. 1, 24, 25.

b Also occurred on Aug. 16, 1987, and June 26, 1988.



## TENNESSEE RIVER BASIN

03600088 CARTERS CREEK AT BUTLER ROAD AT CARTERS CREEK, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1986 to current year.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
OCT 21...	1130	2.5	491	13.5	7.7	758	9.8	93	56
JAN 13...	1130	72	412	10.0	8.0	752	12.0	108	60
APR 14...	1030	25	386	17.0	8.7	742	12.3	126	130
AUG 17...	1130	1.2	472	25.0	7.9	750	6.6	79	190

DATE	STREP- TOCOCCI FECAL KF AGAR (COLS. PER 100 ML)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOV- ERABLE (UG/L AS BA)	CADMIUM TOTAL RECOV- ERABLE (UG/L AS CD)	CHRO- MIUM, TOTAL RECOV- ERABLE (UG/L AS CR)	COPPER, TOTAL RECOV- ERABLE (UG/L AS CU)	LEAD, TOTAL RECOV- ERABLE (UG/L AS PB)	MERCURY TOTAL RECOV- ERABLE (UG/L AS HG)	NICKEL, TOTAL RECOV- ERABLE (UG/L AS NI)
OCT 21...	130	<1	<100	<1	2	<1	<1	<0.10	<1
JAN 13...	100	<1	<100	<1	9	1	<1	<0.10	1
APR 14...	47	<1	<100	<1	<1	2	<1	<0.10	1
AUG 17...	390	1	<100	<1	<1	3	<1	<0.10	2

DATE	SELE- NIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOV- ERABLE (UG/L AS AG)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	OIL AND GREASE, TOTAL RECOV- ERABLE GRAVI- METRIC (MG/L)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 21...	<1	<1	<10	<0.010	<1	1	0.01	100
JAN 13...	<1	<1	<10	<0.010	<1	7	1.4	87
APR 14...	<1	<1	<10	<0.010	<1	5	0.33	80
AUG 17...	<1	<1	20	<0.010	<1	19	0.06	88

TENNESSEE RIVER BASIN

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03602219 PINEY RIVER AT CEDAR HILL, TN

LOCATION.--Lat 35°59'43", long 87°26'22", Dickson County, Hydrologic Unit 06040003, on right bank 300 ft upstream of Interstate Highway 40 bridge, 0.2 mi southeast of Cedar Hill, 0.5 mi upstream from Double Branch, and at mile 22.

DRAINAGE AREA.--46.6 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1987 to current year, discharge for stage of 7.00 ft and below only.

GAGE.--Water-stage encoder and satellite telemeter at station. Datum of gage is 552.20 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. The City of Dickson diverts water for municipal water supply at confluence of West Piney River, 1.6 mi upstream from gage. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined; maximum gage height, 19.78 ft, May 27, 1991; minimum discharge, 7.6 ft<sup>3</sup>/s, Sept. 4, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, not determined; maximum gage height, 7.82 ft, Mar. 26; minimum discharge 10 ft<sup>3</sup>/s, Sept. 13, 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	26	28	56	55	103	122	63	38	27	15	15
2	25	28	27	50	51	157	108	60	35	26	16	14
3	24	25	26	47	48	194	96	---	34	25	15	13
4	24	26	24	67	45	154	89	---	33	24	15	13
5	24	25	23	137	44	127	87	212	33	23	16	13
6	23	24	23	101	42	108	81	151	30	22	21	12
7	22	22	22	87	40	98	75	119	30	21	17	12
8	22	22	21	87	38	90	71	102	29	21	16	12
9	21	22	21	80	37	82	87	90	26	21	15	12
10	22	22	29	75	35	76	106	79	27	21	14	12
11	21	22	26	79	45	69	98	71	27	20	14	12
12	21	32	24	90	55	63	93	109	83	19	14	12
13	19	31	24	91	51	59	87	109	94	19	35	11
14	18	26	24	83	49	56	82	109	60	19	19	11
15	19	25	24	76	53	51	174	90	43	23	17	12
16	23	24	25	70	172	52	178	78	37	22	16	13
17	22	23	24	64	141	55	142	71	33	19	15	13
18	21	19	23	59	110	50	121	79	30	19	14	12
19	20	18	23	55	102	49	108	70	28	20	14	12
20	19	18	37	52	86	48	107	61	27	19	14	14
21	20	37	35	57	207	44	97	55	27	18	14	13
22	20	53	37	54	168	---	87	51	26	18	13	12
23	19	43	148	51	124	241	80	47	25	19	13	19
24	19	47	111	140	102	172	76	46	57	18	13	19
25	20	49	88	115	108	286	82	44	54	17	13	16
26	20	44	73	97	151	---	92	42	50	16	13	22
27	23	39	66	87	132	414	81	40	40	16	13	15
28	21	37	74	77	115	268	75	38	35	15	13	14
29	20	33	70	69	---	198	70	37	32	15	13	13
30	24	30	66	62	---	158	66	38	29	14	13	13
31	27	---	62	58	---	139	---	47	---	14	13	---
TOTAL	669	892	1328	2373	2406	---	2918	---	1152	610	476	406
MEAN	21.6	29.7	42.8	76.5	85.9	---	97.3	---	38.4	19.7	15.4	13.5
MAX	27	53	148	140	207	---	178	---	94	27	35	22
MIN	18	18	21	47	35	---	66	---	25	14	13	11
CFSM	.46	.64	.92	1.64	1.84	---	2.09	---	.82	.42	.33	.29
IN.	.53	.71	1.06	1.89	1.92	---	2.33	---	.92	.49	.38	.32

## TENNESSEE RIVER BASIN

03602500 PINEY RIVER AT VERNON, TN

LOCATION.--Lat 35°52'16", long 87°30'05", Hickman County, Hydrologic Unit 06040003, on right bank at county highway bridge, 40 ft upstream from Pretty Creek, 0.2 mi northwest of Vernon, 2.3 mi downstream from Mill Creek, 6.5 mi north of Centerville, and at mile 8.3.

DRAINAGE AREA.--193 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1925 to December 1993 (discontinued).

REVISED RECORDS.--WSP 758: 1927(M). WSP 823: Drainage area. WSP 1306: Drainage area at site used Feb. 9, 1931, to May 10, 1934. WSP 1436: 1926(M), 1927, 1929, 1930-31(M), 1932, 1934(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 461.72 ft above sea level. Prior to May 11, 1934, nonrecording gage; July 3, 1925, to Feb. 8, 1931, at site 350 ft upstream at datum 3.17 ft higher; Feb. 9, 1931, to May 10, 1934, at site 0.4 mi downstream at datum 0.40 ft higher. May 11, 1934, to Sept. 30, 1970, water-stage recorder at site 350 ft upstream; prior to June 29, 1965, at datum 3.17 ft higher, and 2.17 ft higher thereafter.

REMARKS.--No estimated daily discharge. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1897 reached a stage of 20.7 ft, present site and datum, discharge, 37,000 ft<sup>3</sup>/s, from reports by Tennessee Valley Authority.

EXTREME FOR PERIOD.--October 1992 to December 1993: Peak discharge greater than base discharge of 4,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage Height (ft)
May 4	0400	*2,380	*7.46				

Minimum discharge, 63 ft<sup>3</sup>/s, Sept. 14, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	103	107	122	209	197	437	495	248	162	136	89	76
2	102	110	117	192	182	491	442	240	148	131	93	85
3	101	105	111	183	169	689	387	340	145	123	91	77
4	102	103	111	194	158	622	351	1450	142	120	88	79
5	105	102	106	416	148	547	334	855	147	117	90	75
6	100	97	101	371	140	481	316	669	136	113	108	73
7	100	95	101	327	135	432	292	564	132	111	97	71
8	100	95	98	317	131	394	277	496	127	109	90	69
9	98	94	98	302	126	353	299	434	125	107	87	72
10	98	94	117	285	122	325	344	379	123	109	85	72
11	98	94	116	277	142	297	336	341	133	110	84	68
12	95	107	110	308	189	272	321	379	122	105	84	67
13	95	121	108	340	181	255	303	380	122	105	156	66
14	94	108	107	322	174	241	292	383	205	104	117	65
15	92	102	108	301	177	226	453	329	164	116	97	71
16	102	99	109	282	404	216	600	295	145	121	90	77
17	105	96	106	261	474	229	536	271	137	108	88	75
18	97	95	102	238	406	212	468	264	130	105	86	73
19	94	93	101	222	349	202	431	260	123	104	85	70
20	92	93	141	207	323	196	401	237	121	102	84	81
21	93	124	163	225	552	190	358	221	124	99	82	81
22	93	201	163	233	687	234	319	207	121	97	79	72
23	91	218	389	221	549	795	297	196	118	103	78	76
24	91	183	456	346	461	659	280	189	172	99	78	93
25	91	212	356	395	440	732	283	187	198	95	77	88
26	92	187	303	339	528	1500	332	177	233	93	79	102
27	107	167	266	305	514	1390	300	167	178	91	81	87
28	99	151	272	280	476	910	284	161	175	97	78	77
29	92	138	261	251	---	726	270	156	152	91	79	74
30	97	128	247	225	---	615	258	153	145	87	81	72
31	107	---	230	209	---	549	---	175	---	85	77	---
TOTAL	3026	3719	5296	8583	8534	15417	10659	10803	4569	3293	2758	2284
MEAN	97.6	124	171	277	305	497	355	348	152	106	89.0	76.1
MAX	107	218	456	416	687	1500	600	1450	286	136	156	102
MIN	91	93	98	183	122	190	258	153	118	85	77	65
CFSM	.51	.64	.89	1.43	1.58	2.58	1.84	1.81	.79	.55	.46	.39
IN.	.58	.72	1.02	1.65	1.64	2.97	2.05	2.08	.88	.63	.53	.44



[illegible]

TENNESSEE RIVER BASIN  
03602500 PINEY RIVER AT VERNON, TN--Continued

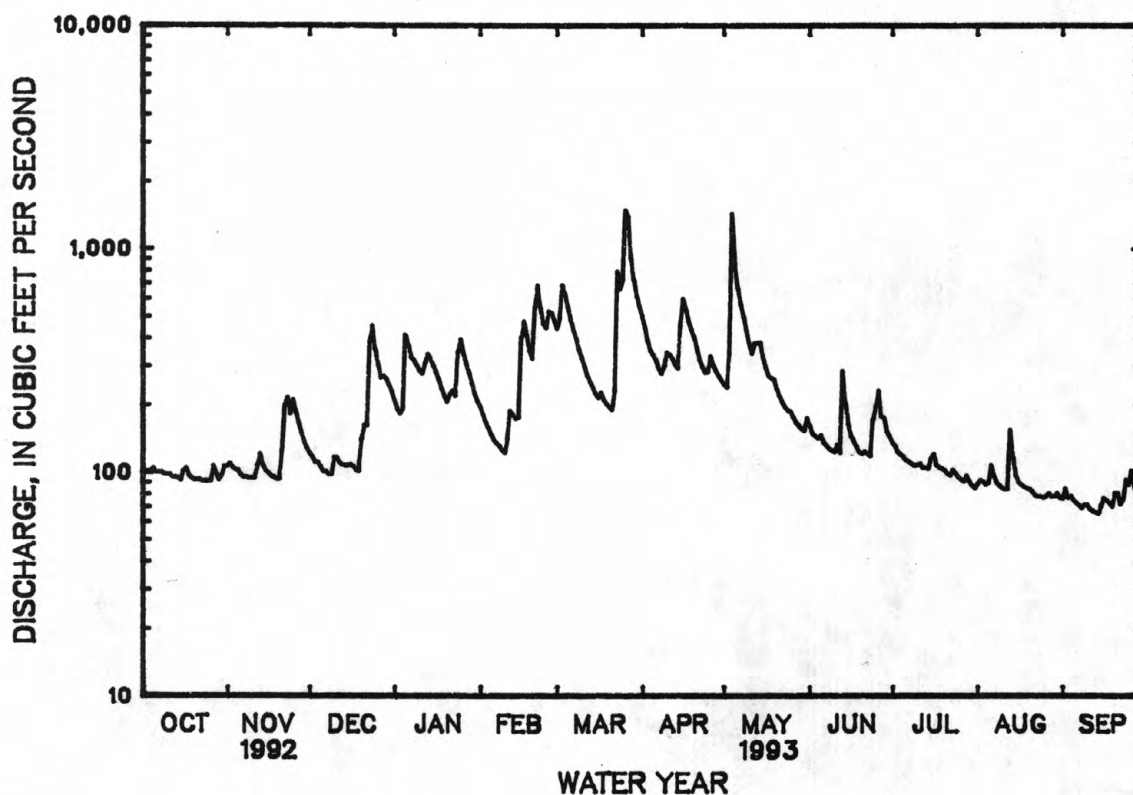
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 1993, BY WATER YEAR (WY)

MEAN	101	173	359	498	566	616	504	398	215	140	114	106
MAX	265	749	2535	1930	1704	2091	1393	1715	1041	340	258	685
(WY)	1978	1958	1927	1937	1932	1975	1927	1983	1974	1972	1938	1979
MIN	52.5	64.9	66.2	84.4	115	109	137	84.9	59.8	61.4	49.3	47.0
(WY)	1932	1957	1936	1940	1941	1941	1967	1941	1941	1942	1936	1936

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1925 - 1993	
ANNUAL TOTAL	84299		78941			
ANNUAL MEAN	230		216		315	
HIGHEST ANNUAL MEAN					684	
LOWEST ANNUAL MEAN					102	
HIGHEST DAILY MEAN	3950		1500		31200	
LOWEST DAILY MEAN	89		65		38	
ANNUAL SEVEN-DAY MINIMUM	90		68		38	
INSTANTANEOUS PEAK FLOW			2380		49400	
INSTANTANEOUS PEAK STAGE			7.46		24.42	
INSTANTANEOUS LOW FLOW			a63		b35	
ANNUAL RUNOFF (CFSM)	1.19		1.12		1.63	
ANNUAL RUNOFF (INCHES)	16.25		15.22		22.18	
10 PERCENT EXCEEDS	396		435		615	
50 PERCENT EXCEEDS	167		140		150	
90 PERCENT EXCEEDS	98		83		72	

a Also occurred on Sept. 15.

b Also occurred on Sept. 20, 1936.





## TENNESSEE RIVER BASIN

03603000 DUCK RIVER ABOVE HURRICANE MILLS, TN

LOCATION.--Lat 35°55'48", long 87°44'35", Humphreys County, Hydrologic Unit 06040003, on left bank 0.4 mi downstream from Tumbling Creek, 1.3 mi upstream from bridge on State Highway 13, 3.6 mi southeast of Hurricane Mills, and at mile 26.0.

DRAINAGE AREA.--2,557 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1925 to current year. Prior to October 1951, published as "near Hurricane Mills."

REVISED RECORDS.--WSP 803: 1935. WSP 823: 1927(M). WSP 853: Drainage area. WSP 1436: 1926-28, 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 370.53 ft above sea level. Prior to Feb. 21, 1934, nonrecording gage and Feb. 21, 1934, to Sept. 30, 1951, water-stage recorder at bridge 5.6 mi downstream at datum 8.80 ft lower.

REMARKS.--No estimated daily discharges. Records good. Maximum discharge prior to regulation, 122,000 ft<sup>3</sup>/s, Feb. 14, 1948, gage height, 30.70 ft, from floodmark in gage house, present site and datum. Flow regulated since January 1976 by Normandy Lake (station 03596460). Prior to 1953 occasional regulation at low flow from small dams upstream. Minor diversions for irrigation. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,400 ft<sup>3</sup>/s, Mar. 25, gage height, 14.55 ft; minimum, 532 ft<sup>3</sup>/s, Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3860	1590	3470	5790	3480	5730	8070	3780	1660	1780	721	642
2	2960	1670	3080	5100	3180	4850	7400	3290	1580	1540	740	616
3	2470	3590	2760	4340	2950	5640	6760	3430	2430	1340	716	616
4	1920	10200	2410	3580	2750	6920	6060	9770	2400	1200	694	609
5	1650	7310	2190	3950	2560	7640	5240	17400	2810	1090	680	619
6	1520	5450	1980	5970	2150	6620	5100	16700	2470	1010	880	731
7	1490	6610	1830	9160	1900	5480	6150	12800	1830	946	1170	685
8	1630	6020	1850	7080	1770	4750	5820	8920	1490	897	1120	711
9	1540	4620	1760	5970	1680	4200	4890	7190	1370	857	1210	671
10	1390	3710	1800	6610	1630	3730	4500	6030	1280	835	1260	616
11	1290	3120	1950	6380	1630	3330	4180	5310	1290	866	992	589
12	1220	2830	2200	6460	1910	2990	3900	4910	1220	1030	843	567
13	1160	2960	2570	7690	2640	2740	3610	4360	1230	1040	996	547
14	1110	4770	2470	8000	2820	2620	3260	3380	2470	1220	1320	538
15	1060	5350	2270	6850	2660	2460	3380	2910	2360	1200	1590	556
16	1060	4130	2130	5910	2810	2300	5030	2570	2210	1260	1160	579
17	1050	3360	2050	5130	3660	2310	4980	2320	1690	1150	961	597
18	1070	2930	2030	4540	4340	3180	4310	2100	1480	1110	863	603
19	1010	2640	3060	4100	4540	5910	3960	2010	1530	1000	796	591
20	1050	2430	4030	3860	3720	5420	3520	2000	1300	906	751	628
21	1100	2370	4540	3950	3620	4240	3180	2230	1190	855	716	642
22	1060	2480	7270	4860	4640	3600	2950	2510	1150	863	708	641
23	1020	3810	8340	6790	5260	5560	2690	2120	1190	897	686	637
24	991	9100	11500	6460	6130	14200	2540	1810	1300	870	653	649
25	1020	7570	14800	6280	5060	19300	2420	1660	1860	799	658	736
26	1040	8140	14500	9040	5040	19400	3190	1570	1910	751	697	839
27	1080	7750	10100	8030	6050	19100	5980	1490	1990	715	697	968
28	1140	5920	8170	5860	6850	18600	7790	1420	2010	711	640	1170
29	1180	4770	7190	4910	---	14200	6180	1470	1880	789	737	1160
30	1300	4020	7270	4380	---	11000	4720	1450	1790	732	736	1180
31	1610	---	6640	3880	---	9370	---	1480	---	696	683	---
TOTAL	44051	141220	148210	180910	97430	227390	141760	140390	52370	30955	27074	20933
MEAN	1421	4707	4781	5836	3480	7335	4725	4529	1746	999	873	698
MAX	3860	10200	14800	9160	6850	19400	8070	17400	2810	1780	1590	1180
MIN	991	1590	1760	3580	1630	2300	2420	1420	1150	696	640	538

CAL YR 1992 MEAN‡ 3406 CFSM‡ 1.33 IN.‡ 18.13

WTR YR 1993 MEAN‡ 3413 CFSM‡ 1.33 IN.‡ 18.12

‡ Adjusted for change in contents in Normandy Lake.

NOTE.--Contents (cfs-days) for adjustments furnished by Tennessee Valley Authority.

## TENNESSEE RIVER BASIN

03603000 DUCK RIVER ABOVE HURRICANE MILLS, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1993, BY WATER YEAR (WY)

MEAN	1663	3929	7102	6271	6833	7593	5827	5529	2192	1646	1010	1483
MAX	5684	10120	16340	15490	16510	19430	13790	18140	6475	7116	1668	7207
(WY)	1990	1980	1992	1979	1990	1980	1979	1983	1989	1989	1984	1979
MIN	580	955	1190	958	2997	2235	1373	1058	574	667	575	606
(WY)	1988	1981	1981	1986	1978	1981	1986	1987	1988	1988	1987	1987

## SUMMARY STATISTICS

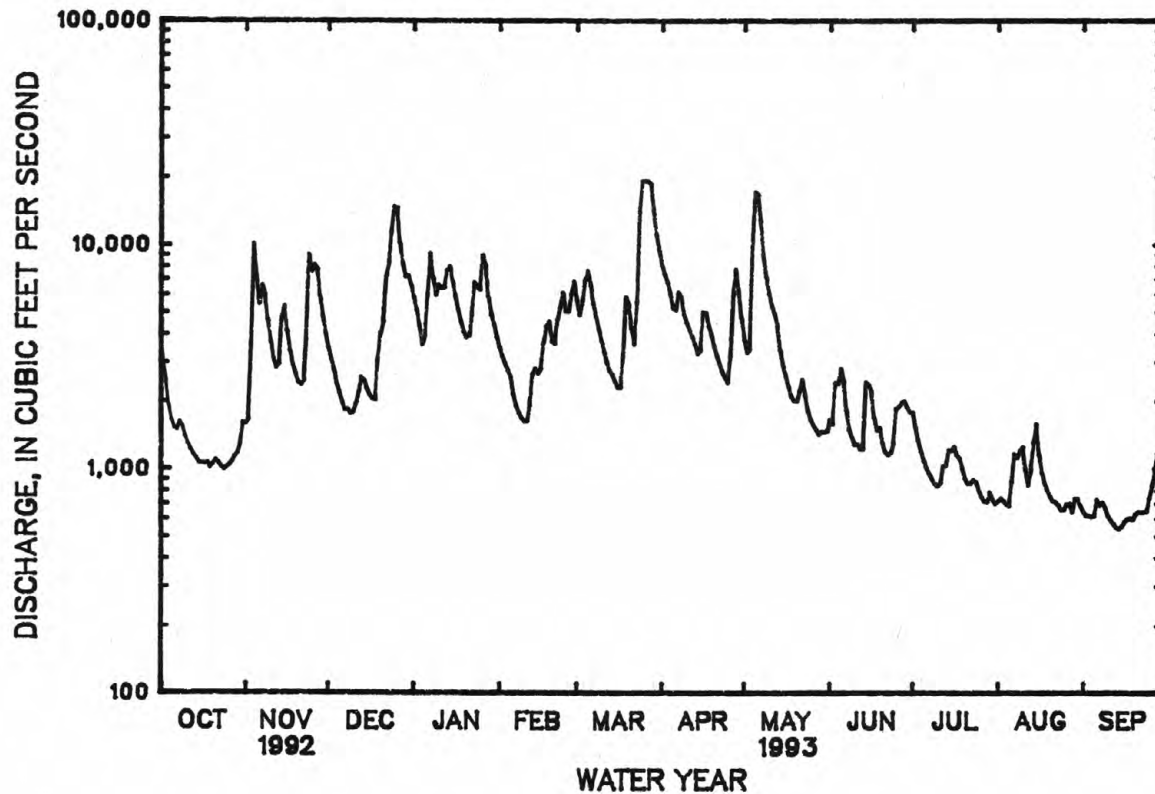
## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

## \*WATER YEARS 1977 - 1993

ANNUAL TOTAL	1247991			1252693								
ANNUAL MEAN	3410			3432								
HIGHEST ANNUAL MEAN										4247		
LOWEST ANNUAL MEAN										6546		1979
HIGHEST DAILY MEAN										1646		1981
LOWEST DAILY MEAN	32400	Mar 11		19400	Mar 26					72300	May 28	1991
ANNUAL SEVEN-DAY MINIMUM	777	Aug 22		538	Sep 14					428	Jul 10	1988
INSTANTANEOUS PEAK FLOW	891	Aug 18		568	Sep 11					455	Aug 31	1987
INSTANTANEOUS PEAK STAGE				20400	Mar 25					89700	May 27	1991
INSTANTANEOUS LOW FLOW				14.55	Mar 25					27.71	May 27	1991
10 PERCENT EXCEEDS	7040			532	Sep 14					412	Jul 7	1988
50 PERCENT EXCEEDS	2140			7220						9370		
90 PERCENT EXCEEDS	1060			2370						2060		
				716						717		

\* Regulated period only.





## TENNESSEE RIVER BASIN

03604000 BUFFALO RIVER NEAR FLAT WOODS, TN  
(Hydrologic bench-mark station)

LOCATION.--Lat 35°29'45", long 87°49'58", Perry County, Hydrologic Unit 06040004, on right bank 0.4 mi downstream from Little Opossum Creek, 0.5 mi downstream from bridge on State Highway 13, 1.3 mi north of Flat Woods, 3.9 mi upstream from Sinking Creek, and at mile 58.7.

DRAINAGE AREA.--447 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1920 to current year.

REVISED RECORDS.--WSP 758: 1933. WSP 803: 1935. WSP 823: Drainage area. WSP 1436: 1921(M), 1922-24, 1925(M), 1927(M), 1934(M), WRD TN-71: 1970.

GAGE.--Water-stage recorder. Datum of gage is 513.58 ft above sea level. Prior to May 27, 1934, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1897, that of May 27, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 4	1630	*6,270	*11.50	No other peak greater than base discharge.			

Minimum discharge, 207 ft<sup>3</sup>/s, Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	499	370	644	758	584	700	1290	849	446	363	267	248
2	470	384	595	708	558	777	1170	800	425	340	410	248
3	441	422	548	671	529	1150	1040	1100	400	322	350	227
4	421	438	519	661	507	1090	946	5260	389	309	298	297
5	408	485	516	896	490	958	930	3320	508	298	282	374
6	389	490	488	990	474	853	943	1810	569	289	330	311
7	372	458	470	875	463	768	884	1310	463	281	427	261
8	359	426	458	911	451	705	812	1120	413	274	361	234
9	351	404	457	979	441	656	873	927	391	269	297	224
10	344	387	506	933	430	607	1010	809	374	272	270	228
11	345	379	523	958	475	564	969	731	369	314	258	226
12	336	409	499	1300	687	531	904	1310	372	317	251	218
13	330	533	482	1330	694	515	845	1600	383	368	251	211
14	340	578	468	1210	609	504	787	1150	383	415	268	209
15	332	507	456	1070	576	482	1310	893	362	366	295	218
16	349	463	464	968	707	471	2210	786	356	390	280	235
17	389	439	470	882	873	505	1680	736	347	369	253	244
18	364	433	464	807	793	527	1380	687	344	333	237	235
19	342	421	456	769	723	503	1210	668	338	305	230	225
20	332	413	592	755	674	481	1080	675	327	288	226	232
21	331	489	803	748	709	471	1050	654	329	277	224	277
22	339	1370	806	798	842	474	915	610	340	267	224	279
23	338	1690	1390	765	801	2610	819	553	340	267	221	253
24	335	1080	2230	836	689	3020	759	529	327	284	220	276
25	324	1040	1680	965	667	1830	1070	515	335	261	233	342
26	320	1430	1400	886	819	1920	3160	508	463	249	250	388
27	330	1130	1220	817	839	3620	2210	516	425	243	238	532
28	370	921	1090	760	755	2340	1450	469	420	272	224	530
29	373	799	987	709	---	1700	1130	435	452	327	222	384
30	360	711	892	664	---	1430	951	423	406	308	239	308
31	380	---	819	613	---	1320	---	416	---	263	251	---
TOTAL	11313	19499	23392	26992	17859	34082	35787	32169	11796	9500	8387	8474
MEAN	365	650	755	871	638	1099	1193	1038	393	306	271	282
MAX	499	1690	2230	1330	873	3620	3160	5260	569	415	427	532
MIN	320	370	456	613	430	471	759	416	327	243	220	209
CFSM	.82	1.45	1.69	1.95	1.43	2.46	2.67	2.32	.88	.69	.61	.63
IN.	.94	1.62	1.95	2.25	1.49	2.84	2.98	2.68	.98	.79	.70	.71

## TENNESSEE RIVER BASIN

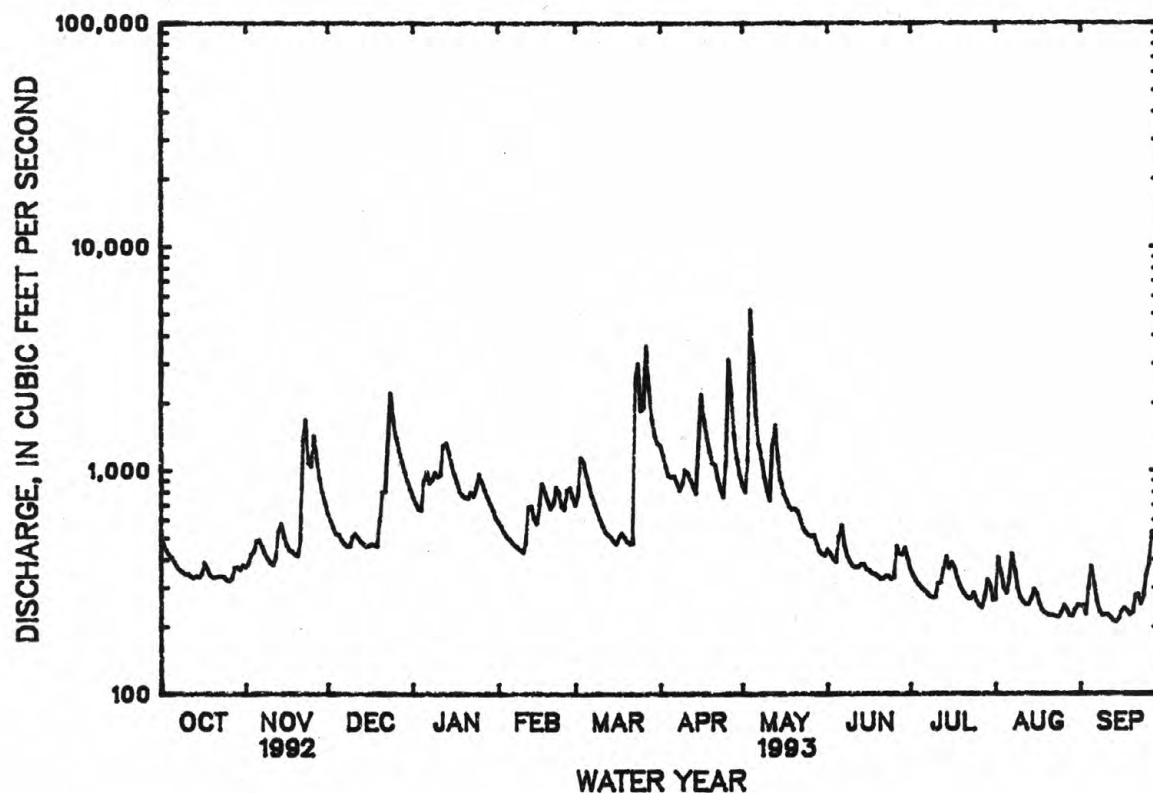
03604000 BUFFALO RIVER NEAR FLAT WOODS, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 1993, BY WATER YEAR (WY)

MEAN	279	518	923	1200	1378	1455	1180	896	446	346	278	266
MAX	1418	2554	3568	3854	4901	4405	3034	5227	1642	1824	1008	1286
(WY)	1933	1958	1927	1937	1948	1973	1964	1991	1974	1932	1923	1979
MIN	112	174	213	234	316	458	303	210	146	121	117	94.2
(WY)	1932	1925	1964	1940	1926	1966	1986	1942	1941	1943	1925	1925

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1920 - 1993	
ANNUAL TOTAL	251564		239250			
ANNUAL MEAN	687		655			
HIGHEST ANNUAL MEAN					760	
LOWEST ANNUAL MEAN					1583	
HIGHEST DAILY MEAN	12300		5260		323	
LOWEST DAILY MEAN	262		209		75800	
ANNUAL SEVEN-DAY MINIMUM	271		219		65	
INSTANTANEOUS PEAK FLOW			6270		71	
INSTANTANEOUS PEAK STAGE			11.50		a96300	
INSTANTANEOUS LOW FLOW			207		a32.19	
ANNUAL RUNOFF (CFSM)	1.54		1.47		65	
ANNUAL RUNOFF (INCHES)	20.94		19.91		1.70	
10 PERCENT EXCEEDS	1100		1160		23.10	
50 PERCENT EXCEEDS	489		474		1450	
90 PERCENT EXCEEDS	338		256		382	
					176	

a Maximum discharge and gage height from high water mark in gage house and rating curve extended above 50,000 ft<sup>3</sup>/s on basis of slope-area and contracted opening measurements and rainfall-runoff study.



## TENNESSEE RIVER BASIN

03604000 BUFFALO RIVER NEAR FLAT WOODS, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: June 1964 to January 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURES: Maximum, 31.0°C, July 13-15, 1966; minimum, 0.0°C, many days during winter periods.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 20...	1000	333	95	7.6	13.0	757	1.0	9.2	88	33	87
JAN 12...	1030	1380	87	7.6	10.0	751	2.9	10.4	94	250	150
APR 13...	1030	869	81	7.6	16.0	749	4.6	8.6	89	42	66
AUG 16...	1045	286	97	7.2	25.0	752	2.4	6.8	84	90	390

DATE	HARD-NESS TOTAL (MG/L AS CaCO3)	HARD-NESS NONCARB DISSOLV FLD. AS CaCO3 (MG/L)	CALCIUM DIS-SOLVED (MG/L AS Ca)	MAGNE-SIUM, DIS-SOLVED (MG/L AS Mg)	SODIUM, DIS-SOLVED (MG/L AS Na)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS Cl)
OCT 20...	45	2	15	1.8	1.2	5	0.1	1.0	43	3.0	1.7
JAN 12...	37	5	12	1.6	1.4	7	0.1	1.2	32	4.0	1.8
APR 13...	37	2	12	1.7	1.7	9	0.1	0.80	35	3.6	1.8
AUG 16...	45	3	15	1.9	1.7	7	0.1	1.2	42	2.6	2.3

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)
OCT 20...	<0.10	5.7	77	57	0.10	69.2	<0.010	0.390	0.130	0.03	0.020
JAN 12...	<0.10	5.9	51	51	0.07	190	0.020	0.360	0.380	0.03	0.020
APR 13...	<0.10	4.2	55	48	0.08	129	<0.010	0.200	0.200	0.01	0.010
AUG 16...	<0.10	6.8	61	61	0.08	47.1	0.020	0.490	0.510	0.31	0.240

## TENNESSEE RIVER BASIN

03604000 BUFFALO RIVER NEAR FLAT WOODS, TN--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO <sub>4</sub> )	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)
OCT 20...	<0.20	0.010	0.020	0.03	0.010	<10	15	<3	31	<4
JAN 12...	<0.20	0.020	0.030	0.03	0.010	30	15	<3	39	<4
APR 13...	<0.20	0.020	<0.010	0.03	0.010	40	15	<3	59	<4
AUG 16...	<0.20	<0.010	<0.010	--	<0.010	10	18	<3	27	<4

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 20...	9	<10	<1	<1	<1.0	49	<6	3	2.7	100
JAN 12...	4	<10	<1	<1	<1.0	43	<6	13	48	95
APR 13...	13	<10	2	<1	<1.0	45	<6	9	21	91
AUG 16...	12	<10	2	<1	<1.0	54	<6	--	--	--

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	ALPHA, COUNT, 2 SIGMA WAT DIS AS NAT U (UG/L)	ALPHA, COUNT, 2 SIGMA WAT DIS AS TH-230 (PCI/L)	ALPHA, 2 SIGMA SED SUS TOT DRY AS TH-230 (PCI/L)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	BETA, 2 SIGMA WATER, DISS, AS SR90 /Y90 (PCI/L)
OCT 20...	<0.6	<0.6	0.27	0.18	0.29	1.1	<0.6	0.47
AUG 16...	<0.6	<0.6	0.48	0.30	0.39	1.2	<0.6	0.48

DATE	BETA, 2 SIGMA SED, SUSP, TOT DRY SR90Y90 (PCI/L)	GROSS BETA, DIS- SOLVED (PCI/L AS SR/ YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L)	RA-226 2 SIGMA WATER, DISS, (PCI/L)
OCT 20...		0.49	1.0	<0.6	0.21	0.04	<1.0 0.040
AUG 16...		0.49	1.0	<0.6	0.20	0.03	<1.0 0.040

## TENNESSEE RIVER BASIN

03604400 BUFFALO RIVER BELOW LOBELVILLE, TN

LOCATION.--Lat 35°48'44", long 87°46'44", Perry County, Hydrologic Unit 06040004, on left bank at downstream end of bridge on State Highway 13, 1.1 mi downstream from Lost Creek, 1.4 mi above Standing Rock bridge, 2.8 mi north of Lobelville, and at mile 19.1.

DRAINAGE AREA.--702 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1927 to September 1989 (published as "near Lobelville"), October 1989 to current year. Monthly discharge only for October 1927, published in WSP 1306.

REVISED RECORDS.--WSP 803: 1935. WSP 823: Drainage area. WSP 853: 1928-37. WSP 1436: 1932(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 405.25 ft above sea level. Nov. 1, 1927, to May 31, 1934, nonrecording gage. June 1, 1934, to September 30, 1989, water-stage recorder at Standing Rock bridge 1.4 mi downstream at datum 2.23 ft lower.

REMARKS.--No estimated daily discharges. Records good. Minimum natural discharge 142 ft<sup>3</sup>/s Oct. 1-8, 1931. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1897, 25.99 ft, Feb. 14, 1948. Flood of March 1902 reached a stage of about 24.0 ft, present datum, discharge not determined, from flood profile by Tennessee Valley Authority.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,200 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 5	1515	*7,680	*12.34	No other peak greater than base discharge.			

Minimum discharge, 330 ft<sup>3</sup>/s, Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	850	589	1050	1100	1060	1430	1840	1550	770	628	430	405
2	774	596	973	1040	1010	1420	1730	1460	750	576	456	404
3	726	589	906	980	968	1780	1600	1600	731	540	519	392
4	691	620	862	960	931	1990	1490	5000	700	516	512	383
5	663	634	829	1200	898	1850	1430	7220	887	495	469	431
6	639	676	801	1320	872	1680	1420	4460	878	475	674	500
7	617	691	774	1330	850	1540	1390	2660	887	459	594	442
8	594	675	746	1260	833	1430	1330	2290	790	445	601	396
9	573	649	724	1260	816	1320	1330	1870	716	431	550	376
10	560	625	759	1270	801	1230	1460	1570	718	426	484	369
11	552	608	798	1250	840	1140	1530	1380	740	434	439	364
12	544	626	806	1320	1040	1070	1490	1400	668	465	418	368
13	536	699	788	1590	1150	1020	1420	2240	677	577	540	348
14	530	743	768	1580	1140	979	1350	2230	661	564	499	342
15	529	793	753	1460	1080	948	1550	1760	654	577	466	342
16	534	748	745	1340	1210	918	2600	1480	618	544	474	363
17	552	705	739	1250	1340	937	2980	1310	601	547	448	379
18	572	672	737	1160	1430	948	2300	1180	587	530	419	391
19	566	656	727	1100	1350	959	1930	1140	565	500	403	372
20	543	647	831	1080	1280	932	1720	1100	551	467	391	383
21	532	714	1030	1080	1390	907	1580	1060	548	446	380	403
22	527	997	1180	1110	1550	916	1490	986	565	430	372	413
23	529	2070	1680	1120	1530	1100	1370	918	566	419	374	426
24	531	2030	2960	1150	1430	3270	1280	866	549	409	368	429
25	527	1600	2980	1260	1350	3200	1250	835	534	415	379	461
26	520	1510	2250	1310	1510	2760	2230	817	557	403	394	533
27	519	1740	1820	1400	1560	3640	3680	803	675	391	400	595
28	525	1470	1560	1320	1530	4620	2650	815	655	411	418	693
29	544	1300	1400	1250	---	3020	2030	772	647	423	385	684
30	576	1150	1280	1170	---	2270	1740	740	708	450	378	564
31	584	---	1190	1110	---	1970	---	773	---	447	400	---
TOTAL	18059	27822	35446	38130	32749	53194	53190	54285	20153	14840	14034	12951
MEAN	583	927	1143	1230	1170	1716	1773	1751	672	479	453	432
MAX	850	2070	2980	1590	1560	4620	3680	7220	887	628	674	693
MIN	519	589	724	960	801	907	1250	740	534	391	368	342
CFSM	.83	1.32	1.63	1.75	1.67	2.44	2.53	2.49	.96	.68	.64	.61
IN.	.96	1.47	1.88	2.02	1.74	2.82	2.82	2.88	1.07	.79	.74	.69



TENNESSEE RIVER BASIN

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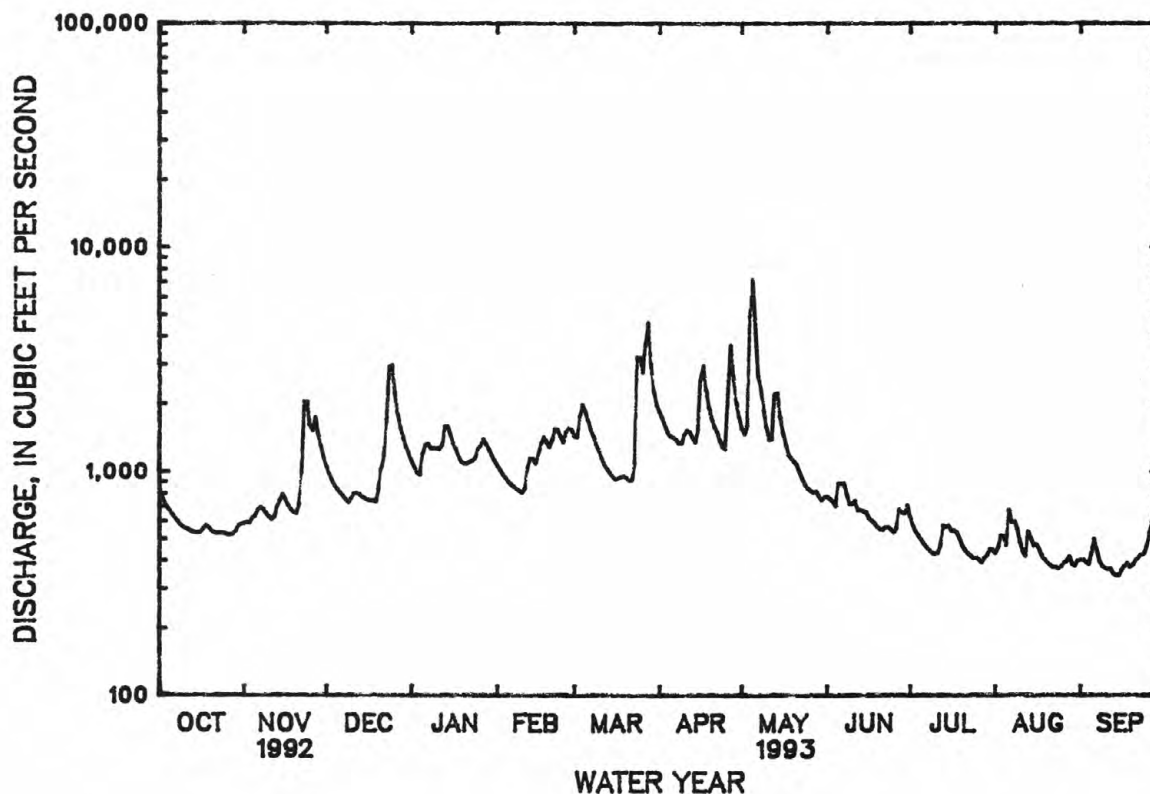
03604400 BUFFALO RIVER BELOW LOBELVILLE, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 1993, BY WATER YEAR (WY)

MEAN	459	796	1416	1959	2150	2225	1856	1450	730	570	415	423
MAX	2107	3195	4790	7029	7231	6161	4659	7547	3320	2201	925	1989
(WY)	1933	1958	1992	1937	1948	1975	1964	1991	1974	1932	1967	1979
MIN	159	285	331	359	530	666	479	320	233	198	233	180
(WY)	1932	1955	1936	1940	1934	1941	1966	1942	1941	1943	1936	1941

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1928 - 1993	
ANNUAL TOTAL	388781		374853		1200	
ANNUAL MEAN	1062		1027		2410	
HIGHEST ANNUAL MEAN					523	
LOWEST ANNUAL MEAN					82100	
HIGHEST DAILY MEAN	16800	Mar 11	7220	May 5	Feb 14	1948
LOWEST DAILY MEAN	399	Aug 22	342	Sep 14	Oct 1	1931
ANNUAL SEVEN-DAY MINIMUM	415	Aug 18	357	Sep 10	Oct 1	1931
INSTANTANEOUS PEAK FLOW			7680	May 5	Feb 14	1948
INSTANTANEOUS PEAK STAGE			12.34	May 5	Feb 14	1948
INSTANTANEOUS LOW FLOW			330	Sep 14	Aug 18	1953
ANNUAL RUNOFF (CFSM)	1.51		1.46		1.71	
ANNUAL RUNOFF (INCHES)	20.60		19.86		23.22	
10 PERCENT EXCEEDS	1690		1740		2370	
50 PERCENT EXCEEDS	794		790		634	
90 PERCENT EXCEEDS	529		417		285	

- a From rating curve extended above 40,000 ft<sup>3</sup>/s on basis of slope-area measurement of peak flow.  
b Present datum, from high-water mark in gage house.  
c Caused by unknown regulation (see REMARKS).



## TENNESSEE RIVER BASIN

## 03605078 CYPRESS CREEK AT CAMDEN, TN

LOCATION.--Lat 36°02'49", long 88°04'33", Benton County, Hydrologic Unit 06040005, on left bank, adjacent to southwest corner of third sewage lagoon at Camden Sewage Treatment Plant, 1.5 mi southeast of Camden and 1.4 mi upstream from Kentucky Lake.

DRAINAGE AREA.--27.3 mi<sup>2</sup>.

PERIOD OF RECORD.--January 1992 to current year, discharge for stage of 4.30 ft and below only.

GAGE.--Water-stage recorder. Datum of gage is 360.00 ft above sea level.

REMARKS.--Records fair. Station operated as hydrograph release for City of Camden sewage treatment facility.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, not determined; maximum gage height, 8.99 ft, Mar. 26; minimum discharge, 1.2 ft<sup>3</sup>/s, July 10, 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	6.5	11	16	15	25	37	8.9	19	3.1	4.9	4.8
2	4.1	6.7	8.4	13	13	---	36	14	9.7	2.7	2.7	4.3
3	4.4	6.3	7.1	13	11	---	31	---	6.8	2.3	2.1	3.5
4	4.3	7.2	11	---	9.8	31	28	---	---	2.1	2.4	3.2
5	4.6	6.3	10	---	9.2	28	30	45	---	1.9	3.4	3.0
6	4.0	6.3	7.2	30	9.0	26	27	34	18	1.6	7.3	3.0
7	4.0	5.2	7.0	24	8.2	24	25	28	11	1.5	2.6	2.8
8	3.7	4.6	6.7	35	7.8	22	23	29	7.8	1.4	2.2	2.8
9	3.8	4.7	8.3	26	7.6	21	---	21	6.1	1.3	2.0	2.7
10	4.0	4.6	16	27	7.1	19	---	15	---	1.2	1.8	e2.5
11	4.8	5.3	11	41	---	16	40	12	18	1.3	1.7	e2.3
12	4.7	14	9.0	38	47	15	34	26	13	2.1	1.6	e2.1
13	5.0	9.5	9.2	29	34	15	31	---	---	3.0	---	e1.9
14	6.1	6.1	8.5	21	27	13	28	44	23	---	12	e2.2
15	5.7	5.0	8.8	19	---	12	---	29	10	---	6.3	e6.0
16	11	4.7	10	17	---	13	48	21	6.8	5.2	4.6	e4.5
17	6.1	4.6	9.0	16	37	20	37	16	5.3	3.5	3.8	e3.5
18	4.4	5.1	8.0	13	31	17	33	18	4.4	2.8	3.3	e3.0
19	4.1	5.8	8.5	13	28	16	30	14	3.6	2.6	3.0	e2.9
20	4.3	5.8	47	15	27	15	31	10	3.3	2.2	2.9	e16
21	4.4	6.9	16	59	---	14	26	10	3.3	2.1	2.6	e11
22	5.5	12	14	31	32	---	22	7.9	3.3	---	2.4	e5.6
23	5.4	9.6	---	23	27	---	20	6.6	2.9	---	2.1	e5.2
24	5.6	13	28	---	24	25	17	5.7	2.8	9.7	2.1	e10
25	7.5	16	23	49	---	---	20	6.4	18	5.7	1.9	e17
26	6.6	11	24	36	39	---	24	5.5	9.6	4.1	---	e11
27	6.4	9.2	24	29	29	---	17	4.3	5.0	3.2	---	e6.0
28	3.8	13	33	24	27	47	13	3.8	3.9	2.8	8.8	e5.6
29	3.2	12	22	19	---	38	11	3.3	6.8	2.7	6.4	e5.2
30	8.0	11	18	16	---	34	9.3	6.0	4.0	2.4	5.1	e5.8
31	9.3	---	18	15	---	37	---	---	---	2.2	4.3	---
TOTAL	162.9	238.0	---	---	---	---	---	---	---	---	---	159.4
MEAN	5.25	7.93	---	---	---	---	---	---	---	---	---	5.31
MAX	11	16	---	---	---	---	---	---	---	---	---	17
MIN	3.2	4.6	---	---	---	---	---	---	---	---	---	1.9
CFSM	.19	.29	---	---	---	---	---	---	---	---	---	.19
IN.	.22	.32	---	---	---	---	---	---	---	---	---	.22

e Estimated

## RESERVOIRS IN TENNESSEE RIVER BASIN

03468500 DOUGLAS LAKE.--Lat 35°57'40", long 83°32'20", Sevier County, Hydrologic Unit 06010107, at Douglas Dam on French Broad River, 6.5 mi north of Sevierville, and at mile 32.3. DRAINAGE AREA, 4,541 mi<sup>2</sup>. PERIOD OF RECORD, February 1943 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir formed by concrete main dam and 10 saddle dams. Spillway equipped with 11 radial gages, each 32 ft high by 40 ft wide and 8 sluice gates 10 ft high by 5.67 ft wide. Closure of dam was made Feb. 19, 1943; water in reservoir first reached minimum pool elevation Feb. 25, 1943. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 1,002.00 ft, top of gates, is 743,600 cfs-days, of which 631,200 cfs-days is controlled storage above elevation 940.00 ft, normal minimum pool. Reservoir is used for navigation, flood control, and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 760,000 cfs-days, July 25, 1949, elevation, 1,001.79 ft; minimum after first filling, 1,000 cfs-days, Jan. 16, 1956, elevation, 883.7 ft, estimated.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 624,300 cfs-days, June 2, elevation, 994.52 ft; minimum, 116,400 cfs-days, Jan. 21, elevation, 942.09 ft.

03476000 SOUTH HOLSTON LAKE.--Lat 36°31'15", long 82°05'11", Sullivan County, Hydrologic Unit 06010102, 470 ft upstream from South Holston Dam on South Fork Holston River, 7.0 mi southeast of Bristol, Virginia-Tennessee, and at mile 49.8. DRAINAGE AREA, 703 mi<sup>2</sup>. PERIOD OF RECORD, November 1950 to current year. GAGE, water-stage recorder. Datum of gage is sea level. Prior to May 11, 1951, non-recording gage at same site and datum.

REMARKS.--Reservoir is formed by rock and rolled earthfill dam. Spillway is uncontrolled morning-glory type, 128 ft in diameter with six piers, each 3 ft wide to guide flow spilling into a concrete-lined shaft and tunnel 34 ft in diameter. Closure of dam was made Nov. 20, 1950; water in reservoir first reached minimum pool elevation Jan. 25, 1951. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 1,742.00 ft, spillway crest, is 385,200 cfs-days, of which 220,800 cfs-days is controlled storage above elevation 1,675.00 ft, normal minimum pool. Reservoir is used for navigation, flood control, and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 363,800 cfs-days, May 10, 1984, elevation, 1,736.86 ft; minimum after first filling, 57,700 cfs-days, Jan. 13, 1956, elevation, 1,614.15 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 333,200 cfs-days, May 17, elevation 1,729.38 ft; minimum, 241,400 cfs-days, Sept. 30, elevation, 1,702.83 ft.

03483500 WATAUGA LAKE.--Lat 36°19'20", long 82°07'16", Carter County, Hydrologic Unit 06010103, at Watauga Dam on Watauga River, 5 mi east of Elizabethton, and at mile 36.7. DRAINAGE AREA, 468 mi<sup>2</sup>. PERIOD OF RECORD, December 1948 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by rock and rolled earthfill dam. Spillway is uncontrolled morning-glory type, 128 ft in diameter with six piers, each 3 ft wide to guide flow spilling into a concrete-lined shaft and tunnel 34 ft in diameter. Closure of dam was made Dec. 1, 1948; water in reservoir first reached minimum pool elevation Dec. 31, 1948. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 1,975.00 ft, spillway crest, is 341,300 cfs-days, of which 178,500 cfs-days is controlled storage above elevation 1,915.00 ft, normal minimum pool. Reservoir is used for navigation, flood control, and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 300,800 cfs-days, Apr. 19, 1987, elevation, 1,963.28 ft; minimum after first filling, 25,100 cfs-days, Jan. 13, 1956, elevation, 1,813.47 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 288,400 cfs-days, May 13, elevation, 1,959.56 ft; minimum, 230,700 cfs-days, Sept. 30, elevation, 1,940.65 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
03468500 DOUGLAS LAKE				03476000 SOUTH HOLSTON LAKE			03483500 WATAUGA LAKE		
Sept. 30...	980.56	443,100	-	1,711.17	268,100	-	1,944.92	243,000	-
Oct. 31...	967.90	309,200	-133,900	1,707.09	254,800	-13,300	1,943.15	237,900	-5,100
Nov. 30...	968.85	318,400	+9,200	1,703.65	244,000	-10,800	1,946.22	246,800	+8,900
Dec. 31...	953.35	186,400	-132,000	1,708.80	260,400	+16,400	1,944.37	241,400	-5,400
CAL YR 1992	-	-	+49,400	-	-	+8,300	-	-	+7,500
Jan. 31...	944.32	128,500	-57,900	1,707.39	255,800	-4,600	1,943.43	238,700	-2,700
Feb. 28...	953.92	190,600	+62,100	1,711.28	268,500	+12,700	1,943.80	239,800	+1,100
Mar. 31...	978.48	419,300	+228,700	1,725.69	319,200	+50,700	1,958.02	283,400	+43,600
Apr. 30...	990.25	564,500	+145,200	1,727.76	327,000	+7,800	1,956.47	278,400	-5,000
May 31...	994.28	620,800	+56,300	1,728.95	331,500	+4,500	1,958.77	285,900	+7,500
June 30...	992.14	590,500	-30,300	1,725.29	317,700	-13,800	1,955.32	274,700	-11,200
July 31...	988.26	538,000	-52,500	1,720.60	300,600	-17,100	1,948.77	254,400	-20,300
Aug. 31...	975.45	386,000	-152,000	1,713.70	276,600	-24,000	1,941.92	234,400	-20,000
Sept. 30...	960.97	246,100	-139,900	1,702.84	241,500	-35,100	1,940.65	230,700	-3,700
WTR YR 1993	-	-	-197,000	-	-	-26,600	-	-	-12,300

## RESERVOIRS IN TENNESSEE RIVER BASIN--Continued

03486800 BOONE LAKE.--Lat 36°26'26", long 82°26'16", Sullivan County, Hydrologic Unit 06010102, at Boone Dam on South Fork Holston River, 0.7 mi northeast of Spurgeon, 1.3 mi downstream from Watauga River, and at mile 18.6. DRAINAGE AREA, 1,840 mi<sup>2</sup>. PERIOD OF RECORD, December 1952 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by gravity nonover-flow type concrete dam. Spillway is equipped with five radial gates, each 35 ft high by 35 ft wide. Storage began Dec. 16, 1952; water in reservoir first reached minimum pool elevation Jan. 5, 1953. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 1,385.0 ft, top of gates, is 97,500 cfs-days, of which 74,800 cfs-days is controlled storage above elevation 1,330 ft, normal minimum pool. Reservoir is used for navigation, flood control, and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 99,100 cfs-days, May 19, 1964, elevation 1,384.99 ft; minimum after first filling, 21,300 cfs-days, Jan. 23, 1956, elevation, 1,327.06 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 93,500 cfs-days, May 26, elevation, 1,383.18 ft; minimum, 47,400 cfs-days, Jan. 1, elevation, 1,355.17 ft.

03487000 FORT PATRICK HENRY LAKE.--Lat 36°29'53", long 82°30'32", Sullivan County, Hydrologic Unit 06010102, at Fort Patrick Henry Dam on South Fork Holston River, 0.2 mi upstream from bridge on U. S. Highway 23, 4.5 mi southeast of Kingsport, and at mile 8.2. DRAINAGE AREA, 1,903 mi<sup>2</sup>. PERIOD OF RECORD, October 1953 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by gravity nonover-flow type concrete dam. Spillway is equipped with five radial gates, each 35 ft high by 35 ft wide. Storage began Oct. 27, 1953; water in reservoir first reached minimum pool elevation Dec. 8, 1953. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 1,263 ft, top of gates, is 13,600 cfs-days, of which 2,200 cfs-days is controlled storage above elevation 1,258 ft, normal minimum pool. Reservoir is used for navigation, flood control and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 14,000 cfs-days, Feb. 11, 1954, elevation, 1,263.80 ft, minimum after first filling, 2,690 cfs-days, Sept. 19, 1986, elevation, 1,226.33 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 13,600 cfs-days, Aug. 14, elevation, 1,263.00 ft; minimum, 11,200 cfs-days, Sept. 15, elevation, 1,257.35 ft.

03493500 CHEROKEE LAKE.--Lat 36°10'00", long 83°29'55", Jefferson County, Hydrologic Unit 06010104, at Cherokee Dam on Holston River, 0.3 mi upstream from bridge on State Highway 92, 2.7 mi upstream from Mill Spring Creek, 2.8 mi north of Jefferson City, and at mile 52.3. DRAINAGE AREA, 3,429 mi<sup>2</sup>. PERIOD OF RECORD, December 1941 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with nine radial gates, each 32 ft high by 40 ft wide. Storage began Dec. 5, 1941; water in reservoir first reached minimum pool elevation Jan. 6, 1942. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 1,075.0 ft, top of gates, is 778,400 cfs-days, of which 580,300 cfs-days is controlled storage above elevation 1,020.0 ft, normal minimum pool. Reservoir is used for navigation, flood control, and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 779,400 cfs-days, May 11, 1944, maximum elevation, 1,074.47 ft May 30, 1973; minimum after first filling, 48,400 cfs-days, Jan. 7, 1954, elevation, 980.77 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 718,200 cfs-days, June 7, elevation, 1,071.06 ft; minimum, 277,600 cfs-days, Jan. 22, elevation, 1,031.40 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
	03486800 BOONE LAKE			03487000 FORT PATRICK HENRY LAKE			03493500 CHEROKEE LAKE		
Sept. 30...	1,377.51	82,000	-	1,261.08	12,700	-	1,050.37	455,500	-
Oct. 31...	1,372.75	73,300	-8,700	1,261.65	13,000	+300	1,043.31	382,300	-73,200
Nov. 30...	1,365.42	61,400	-11,900	1,261.98	13,100	+100	1,038.45	336,800	-45,500
Dec. 31...	1,356.27	48,700	-12,700	1,262.64	13,400	+300	1,037.08	324,700	-12,100
CAL YR 1992	-	-	-2,400	-	-	+700	-	-	+8,600
Jan. 31...	1,359.17	52,500	+3,800	1,261.88	13,100	-300	1,034.57	303,200	-21,500
Feb. 28...	1,366.93	63,800	+11,300	1,261.01	12,700	-400	1,042.21	371,700	+68,500
Mar. 31...	1,373.48	74,600	+10,800	1,260.38	12,400	-300	1,060.15	570,600	+198,900
Apr. 30...	1,381.07	89,100	+14,500	1,262.01	13,100	+700	1,066.02	647,400	+76,800
May 31...	1,381.44	89,800	+700	1,261.43	12,900	-200	1,070.90	715,900	+68,500
June 30...	1,381.89	90,800	+1,000	1,260.73	12,600	-300	1,066.76	657,500	-58,400
July 31...	1,381.94	90,900	+100	1,260.20	12,300	-300	1,058.06	544,600	-112,900
Aug. 31...	1,382.13	91,300	+400	1,260.77	12,600	+300	1,047.60	425,800	-118,800
Sept. 30...	1,378.55	84,000	-7,300	1,260.84	12,600	0	1,039.51	346,400	-79,400
WTR YR 1993	-	-	+2,000	-	-	-100	-	-	-109,100



## RESERVOIRS IN TENNESSEE RIVER BASIN--Continued

03499500 FORT LOUDOUN LAKE.--Lat 35°47'30", long 84°14'35", Loudon County, Hydrologic Unit 06010201, at Fort Loudoun Dam on Tennessee River, 1 mi northeast of Lenoir City, and at mile 602.3. DRAINAGE AREA, 9,550 mi<sup>2</sup>. PERIOD OF RECORD, July 1943 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir formed by concrete dam with earth embankment. Spillway equipped with 14 radial gates, each 32 ft high by 40 ft wide. Closure of dam was made Aug. 2, 1943; water in reservoir first reached ordinary minimum pool elevation Sept. 4, 1943. Revised capacity table put into use Jan. 19, 1980. Total level pool capacity at elevation 815.00 ft, top of gates, is 424,000 cfs-days, of which 120,000 cfs-days is controlled flood storage above elevation 807.00 ft, minimum navigation pool. Reservoir is used for navigation, flood control, and power. Tellico-Fort Loudoun canal was opened Jan. 19, 1980. Canal is 1,000 ft long, and interconnects Tellico and Fort Loudoun Lakes at the dam. Spillway gates of Tellico Dam were closed Feb. 7, 1980, diverting all flow from Little Tennessee River.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 815.14 ft, May 8, 1984; minimum first filling, 805.54 ft, Jan. 18, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum midnight contents, 183,400 cfs-days, June 15; maximum elevation, 813.22 ft Sept. 21; minimum midnight contents, 145,900 cfs-days, Feb. 15, minimum elevation, 807.36 ft, Feb. 15. Contents based on backwater profile.

03519800 TELLICO LAKE.--Lat 35°46'53", long 84°15'10", Loudon County, Hydrologic Unit 06010201, at Tellico Dam on Little Tennessee River, 1.1 mi south of Lenoir City, and at mile 0.4. DRAINAGE AREA, 2,627 mi<sup>2</sup>. PERIOD OF RECORD, December 1979 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir formed by concrete dam with earth embankment. Spillway equipped with 3 radial gates, each 42 ft high by 40 ft wide. Closure of dam was made Nov. 29, 1979; water in reservoir first reached ordinary minimum pool elevation Dec. 24, 1979. Total capacity at elevation 815.00 ft, top of gates, is 225,500 cfs-days, of which 63,800 cfs-days is controlled storage above elevation 807.00 ft, minimum navigation pool. Reservoir is used for navigation, flood control, and indirectly, power. Tellico-Fort Loudoun canal was opened Jan. 19, 1980. Canal is 1,000 ft long, and interconnects Tellico and Fort Loudoun Lakes at the dam. Spillway gates of Tellico Dam were closed Feb. 7, 1980, diverting all flow from Little Tennessee River.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 228,700 cfs-days, May 8, 1984, elevation, 815.37 ft; minimum after first filling, 155,400 cfs-days, Jan. 11, 1985, elevation, 807.31 ft; minimum elevation, 806.96 ft, Jan. 14, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 199,500 cfs-days, July 28, elevation, 813.24 ft; minimum, 156,200 cfs-days, Feb. 15, elevation, 807.42 ft.

03532500 NORRIS LAKE.--Lat 36°13'29", long 84°05'29", Anderson County, Hydrologic Unit 06010205, at Norris Dam on Clinch River, 2.5 mi northwest of Norris, and at mile 79.8. DRAINAGE AREA, 2,912 mi<sup>2</sup>. PERIOD OF RECORD, June 1935 to current year. GAGE, water-stage recorder. Datum of stage is 0.11 ft above sea level. Gage readings have been reduced to sea level.

REMARKS.--Reservoir is formed by concrete gravity dam with three drum gates, each 100 ft wide by 14 ft high. Some storage began in June 1935; dam was completely closed and placed in operation Mar. 4, 1936; water in reservoir first reached minimum pool elevation Mar. 24, 1936. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 1,034.11 ft, top of gates, is 1,286,600 cfs-days, of which 969,000 cfs-days is controlled storage above elevation 960.11 ft normal minimum pool. Reservoir is used for navigation, flood control, and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,236,700 cfs-days, Feb. 11, 1937, elevation, 1,031.21 ft; minimum after first filling, 75,500 cfs-days, Jan. 24, 1956, elevation, 909.46 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,004,500 cfs-days, June 1, elevation, 1018.69 ft; minimum, 565,100 cfs-days, Dec. 16, elevation, 987.02 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
*03499500 FORT LOUDOUN LAKE				03519800 TELLICO LAKE			03532500 NORRIS LAKE		
Sept. 30...	812.58	180,300	-	812.66	195,000	-	998.48	704,000	-
Oct. 31...	812.55	180,400	+100	812.66	195,000	0	994.01	647,200	-56,800
Nov. 30...	808.31	151,600	-28,800	808.42	163,200	-31,800	990.61	606,300	-40,900
Dec. 31...	809.32	159,100	+7,500	809.40	170,300	+7,100	993.35	639,200	+32,900
CAL YR 1992	-	-	+7,300	-	-	+7,500	-	-	-2,500
Jan. 31...	809.22	156,600	-2,500	809.30	169,600	-700	992.20	625,200	-14,000
Feb. 28...	808.59	152,200	-4,400	808.61	164,600	-5,000	999.47	717,000	+91,800
Mar. 31...	808.88	155,300	+3,100	808.98	167,200	+2,600	1,014.86	941,600	+224,600
Apr. 30...	812.88	182,200	+26,900	813.00	197,600	+30,400	1,015.59	953,400	+11,800
May 31...	812.94	182,600	+400	813.00	197,600	0	1,018.65	1,003,800	+50,400
June 30...	812.60	180,100	-2,500	812.64	194,800	-2,800	1,014.98	943,600	-60,200
July 31...	812.09	176,700	-3,400	812.15	191,000	-3,800	1,009.87	864,000	-79,600
Aug. 31...	812.40	179,300	+2,600	812.46	193,400	+2,400	1,001.70	746,900	-117,100
Sept. 30...	812.40	178,900	-400	812.46	193,400	0	992.81	632,600	-114,300
WTR YR 1993	-	-	-1,400	-	-	-1,600	-	-	-71,400

\* Contents based on backwater profile.



## RESERVOIRS IN TENNESSEE RIVER BASIN--Continued

03535900 MELTON HILL LAKE.--Lat 35°53'04", long 84°18'01", Loudon-Roane County line, Hydrologic Unit 06010207, 9 mi southwest of Oak Ridge, 19 mi west of Knoxville, 57 mi downstream from Norris Dam on Clinch River, and at mile 23.1. DRAINAGE AREA, 3,343 mi<sup>2</sup>. PERIOD OF RECORD, August 1962 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete gravity dam. Spillway is equipped with three radial gates, each 42 ft high by 40 ft wide. Dam completed and storage began May 1, 1963; water in reservoir first reached minimum pool elevation May 23, 1963. Revised capacity table put into use Jan. 1, 1971. Total capacity at elevation 796 ft, top of gates, is 63,500 cfs-days, of which 16,100 cfs-days is controlled storage above elevation 790.0 ft, normal minimum pool. Reservoir is used for navigation, power, and recreation.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 64,900 cfs-days, Mar. 16, 1973, elevation, 796.45 ft; minimum after first filling, 35,100 cfs-days, Feb. 9, 1966, elevation, 784.10 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 61,100 cfs-days, Mar. 29, elevation, 795.20 ft; minimum, 47,200 cfs-days, Feb. 4, elevation, 789.89 ft.

03543000 WATTS BAR LAKE.--Lat 35°37'13", long 84°47'00", Rhea County, Hydrologic Unit 06010201, at Watts Bar Dam on Tennessee River, 6.5 mi southeast of Spring City, 72.4 mi downstream from Fort Loudoun Dam, and at mile 529.9. DRAINAGE AREA, 17,310 mi<sup>2</sup>, approximately. PERIOD OF RECORD, October 1941 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with 20 radial gates, each 32 ft high by 40 ft wide, also one 2-section leaf trashway gate 16.3 ft high by 24 ft wide. Storage began with partial closure Dec. 12, 1941, and final closure Jan. 1, 1942; water in reservoir first reached minimum navigation pool elevation Feb. 17, 1942. Revised capacity table put into use Jan. 1, 1971. Total level pool capacity at elevation 745.0 ft, top of gates, is 592,400 cfs-days, of which 191,000 cfs-days is controlled flood storage above elevation 735.0 ft, minimum navigation pool. Reservoir is used for navigation, flood control, and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 745.40 ft, Mar. 17, 1973; minimum after first filling, 733.44 ft, Mar. 20, 1945.

EXTREMES FOR CURRENT YEAR.--Maximum midnight contents, 518,500 cfs-days, Nov. 5; maximum elevation, 741.47 ft, Nov. 5; minimum midnight contents, 411,300 cfs-days, Feb. 11; minimum elevation, 735.26 ft, Feb. 11. Contents based on backwater profile.

03564000 LAKE OCOEE.--Lat 35°05'40", long 84°38'53", Polk County, Hydrologic Unit 06020003, at Lake Ocoee Dam on Ocoee River at Parksville, 13.8 mi east of Cleveland, and at mile 11.9. DRAINAGE AREA, 595 mi<sup>2</sup>. PERIOD OF RECORD, June 1914 to current year. Prior to October 1953, published as "Parksville (Ocoee No. 1) Reservoir," and October 1953 to September 1968, as "Parksville Lake." GAGE, nonrecording gage. Datum of gage is 6.89 ft above sea level. Gage readings have been reduced to sea level.

REMARKS.--Reservoir is formed by concrete dam with 347 ft of spillway. Spillway is equipped with four floodgates, each 6 ft high by 20 ft wide and 265 ft of flashboards about 5.7 ft high. Crest of spillway under gates is at elevation 830.82 ft; remainder of spillway is 1.0 ft higher. Dam completed and storage began in 1911. Capacity of reservoir has been considerably reduced by silting. Revised capacity table put into use Jan. 1, 1979. Total capacity at elevation 837.55 ft, about top of flashboards, is 42,300 cfs-days, of which 15,600 cfs-days is controlled storage above elevation 817.9 ft, normal minimum pool. Reservoir is used for power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum midnight contents observed, 53,300 cfs-days, July 9, 1916; maximum midnight elevation observed, 840.2 ft, Feb. 10, 1946; minimum contents observed, 27,300 cfs-days, Jan. 27, 1956, elevation, 817.7 ft; minimum midnight elevation observed, 814.8 ft, Dec. 14, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 41,000 cfs-days, May 6, elevation, 836.6 ft; minimum 32,300 cfs-days, Jan. 18, elevation, 826.7 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
03535900 MELTON HILL LAKE				*03543000 WATTS BAR LAKE			03564000 LAKE OCOEE		
Sept. 30...	794.10	57,900	-	740.45	498,400	-	834.3	38,700	-
Oct. 31...	793.59	56,500	-1,400	739.99	490,800	-7,600	834.7	39,100	+400
Nov. 30...	793.51	56,300	-200	736.83	434,100	-56,700	831.2	35,900	-3,200
Dec. 31...	793.50	56,200	-100	737.41	446,800	+12,700	832.2	36,800	+900
CAL YR 1992	-	-	-400	-	-	+32,500	-	-	+4,200
Jan. 31...	793.87	57,300	+1,100	736.87	434,800	-12,000	827.3	32,700	-4,100
Feb. 28...	793.95	57,500	+200	736.98	435,000	+200	828.4	33,600	+900
Mar. 31...	793.75	56,900	-600	736.61	431,600	-3,400	832.5	37,100	+3,500
Apr. 30...	794.14	58,000	+1,100	740.69	503,100	+71,500	835.9	40,300	+3,200
May 31...	794.42	58,800	+800	740.81	505,500	+2,400	834.5	38,900	-1,400
June 30...	793.84	57,200	-1,600	740.61	501,600	-3,900	835.1	39,500	+600
July 31...	793.52	56,300	-900	740.27	495,000	-6,600	834.8	39,200	-300
Aug. 31...	793.63	56,600	+300	740.22	494,000	-1,000	835.3	39,700	+500
Sept. 30...	793.73	57,200	+600	740.04	490,700	-3,300	834.7	39,100	-600
WTR YR 1993	-	-	-700	-	-	-7,700	-	-	+400

\* Contents based on backwater profile.

## RESERVOIRS IN TENNESSEE RIVER BASIN--Continued

03566500 CHICKAMAUGA LAKE.--Lat 35°06'07", long 85°13'42", Hamilton County, Hydrologic Unit 06020001, at Chickamauga Dam on Tennessee River, 5.8 mi northeast of Chattanooga, 58.9 mi downstream from Watts Bar Dam, and at mile 471.0. DRAINAGE AREA, 20,790 mi<sup>2</sup>, approximately. PERIOD OF RECORD, October 1939 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with eighteen 2-section lift gates, each 40.44 ft high by 40 ft wide. Storage began Feb. 6, 1940; water in reservoir first reached minimum navigation pool elevation Mar. 10, 1940. Revised capacity table put into use Jan. 1, 1971. Total level pool capacity at elevation 685.44 ft, top of gates, is 372,600 cfs-days, of which 175,000 cfs-days is controlled flood storage above elevation 675.0 ft, minimum navigation pool. Reservoir is used for navigation, flood control, and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 686.10 ft, Mar. 18, 1973; minimum after first filling, 673.27 ft, Jan. 21, 1942.

EXTREMES FOR CURRENT YEAR.--Maximum midnight contents, 322,500 cfs-days, May 31; maximum elevation, 682.99 ft, June 1; minimum midnight contents, 205,100 cfs-days, Feb. 14; minimum elevation, 675.09 ft, Mar. 13. Contents based on backwater profile.

03570520 NICKAJACK LAKE.--Lat 35°00'07", long 85°37'14", Marion County, Hydrologic Unit 06020001, at Nickajack Dam on Tennessee River, 2 mi upstream from Sequatchie River, 5 mi south of Jasper, 46.3 mi downstream from Chickamauga Dam, and at mile 424.7. DRAINAGE AREA, 21,870 mi<sup>2</sup>, approximately. PERIOD OF RECORD, December 1967 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete dam with earth embankments on each side. The spillway, with crest at elevation 595.0 ft, is equipped with 10 radial gates, each 40 ft high by 40 ft wide. A trash gate, 5.5 ft high by 15 ft wide, is located between the spillway and powerhouse. Dam was completed and storage began on Dec. 14, 1967. Revised capacity table put into use Jan. 1, 1971. Total level pool capacity at elevation 635.0 ft, top of gates, is 127,200 cfs-days, of which 16,200 cfs-days is controlled storage above elevation 632.0 ft, ordinary minimum. Reservoir is used for navigation and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 634.99 ft, Apr. 19, 1969; minimum after first filling, 630.82 ft, Feb. 20, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum midnight contents, 132,100 cfs-days, Mar. 24; maximum elevation, 634.21 ft, Oct. 26; minimum midnight contents, 114,800 cfs-days, Feb. 13; minimum elevation, 631.98 ft, Dec. 12. Contents based on backwater profile.

03579000 WOODS RESERVOIR.--Lat 35°17'54", long 86°05'48", Franklin County, Hydrologic Unit 06030003, at Elk River Dam on Elk River, 1.2 mi upstream from Spring Creek, 2.5 mi northeast of Estill Springs, 6.8 mi upstream from bridge on U.S. Highway 41-A, and at mile 170.0. DRAINAGE AREA, 263 mi<sup>2</sup>. PERIOD OF RECORD, May 1952 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete gravity and earthfill-type dam with riprapped embankments. Spillway equipped with three radial gates, each 25 ft high by 50 ft wide, and two sluice gates, each 6 ft high by 4 ft wide. Closure of dam was made May 1, 1952; water in reservoir first reached minimum pool elevation Feb. 6, 1953. Total capacity at elevation 962.0 ft, surcharge pool, is 44,400 cfs-days, of which 9,900 cfs-days is controlled storage above elevation 957.0 ft, normal minimum pool. Reservoir is used for cooling water, flood control, and recreational purposes.

COOPERATION.--Twice-daily gage readings (0600 and 2400 hours) furnished by U.S. Air Force.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 42,300 cfs-days, Apr. 21 and 22, 1956, elevation, 960.98 ft; minimum after first filling, 26,300 cfs-days, Nov. 8-11, 1953, elevation, 951.93 ft.

EXTREMES FOR CURRENT YEAR.--Maximum midnight contents, 40,300 cfs-days, Mar. 23, elevation, 960.01 ft; minimum midnight contents, 31,100 cfs-days, Feb. 4, elevation, 954.98 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
*03566500 CHICKAMAUGA LAKE				*03570520 NICKAJACK LAKE			03579000 WOODS RESERVOIR		
Sept. 30...	681.45	295,100	-	633.35	120,300	-	959.50	39,300	-
Oct. 31...	679.54	263,400	-31,700	633.95	122,400	+2,100	958.25	36,900	-2,400
Nov. 30...	677.98	245,400	-18,000	632.07	117,700	-4,700	957.99	36,400	-500
Dec. 31...	678.90	262,900	+17,500	632.25	128,200	+10,500	957.93	36,300	-100
CAL YR 1992	-	-	+36,400	-	-	+8,300	-	-	-100
Jan. 31...	676.74	222,600	-40,300	633.89	124,100	-4,100	957.84	36,100	-200
Feb. 28...	676.63	220,400	-2,200	633.53	119,300	-4,800	958.10	36,600	+500
Mar. 31...	677.37	238,700	+18,300	632.15	123,600	+4,300	959.46	39,200	+2,600
Apr. 30...	682.46	313,100	+74,400	633.29	118,800	-4,800	959.58	39,400	+200
May 31...	682.97	322,500	+9,400	633.59	119,700	+900	959.58	39,400	0
June 30...	682.05	305,700	-16,800	633.87	120,700	+1,000	959.44	39,200	-200
July 31...	681.27	292,000	-13,700	633.93	121,100	+400	959.41	39,100	-100
Aug. 31...	681.18	290,500	-1,500	633.55	120,900	-200	959.42	39,100	0
Sept. 30...	681.58	297,400	+6,900	633.10	116,600	-4,300	959.35	39,000	-100
WTR YR 1993	-	-	+2,300	-	-	-3,700	-	-	-300

\* Contents based on backwater profile.

## RESERVOIRS IN TENNESSEE RIVER BASIN--Continued

03580740 TIMS FORD LAKE.--Lat 35°11'51", long 86°16'41", Franklin County, Hydrologic Unit 06030003, in intake tower near left bank at Tims Ford Dam on Elk River, 0.4 mi upstream from bridge on State Highway 50, 9.5 mi west of Winchester, and at mile 133.4. DRAINAGE AREA, 529 mi<sup>2</sup>. PERIOD OF RECORD, December 1970 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete dam with compacted rockfill impervious earth core embankments. Spillway equipped with three radial gates, each 42 ft high by 40 ft wide. Storage began Dec. 1, 1970; water in reservoir first reached minimum pool elevation Feb. 23, 1971, and first filling was completed June 3, 1971. Total capacity at elevation 895 ft, top of gates, is 306,500 cfs-days, of which 142,400 cfs-days is controlled storage above elevation 865 ft, normal minimum pool. Reservoir is used for flood control, power, and recreation.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 298,600 cfs-days, Dec. 23, 1990, elevation, 893.62 ft; minimum after first filling 154,000 cfs-days, Oct. 15, 1972, elevation, 862.24 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 273,400 cfs-days, May 5, elevation, 889.15 ft; minimum, 204,300 cfs-days, Jan. 29 elevation, 874.98 ft.

03593000 PICKWICK LAKE.--Lat 35°04'16", long 88°15'04", Hardin County, Hydrologic Unit 06040001, at Pickwick Landing Dam on Tennessee River, 1.5 mi north of town of Pickwick Dam, 6.1 mi upstream from Lick Creek, 52.7 mi downstream from Wilson Dam, and at mile 206.7. DRAINAGE AREA, 38,820 mi<sup>2</sup>, approximately. PERIOD OF RECORD, October 1937 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete dam with riprapped earth embankments. Spillway equipped with twenty-two 2-section lift gates, each 40 ft high by 40 ft wide, one of which is used as a trash gate. Dam completed and storage began Feb. 8, 1938; water in reservoir first reached minimum pool elevation Feb. 18, 1938. Revised capacity table put into use Jan. 1, 1971. Total level pool capacity at elevation 418.0 ft, top of gates, is 557,100 cfs-days, of which 210,200 cfs-days is controlled flood storage above elevation 408.0 ft, minimum navigation pool. Reservoir is used for navigation, flood control, and power.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 419.49 ft, Mar. 30, 1944; minimum after first filling, 407.12 ft, Dec. 18, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum midnight contents, 516,200 cfs-days, Mar. 27; maximum elevation, 416.04 ft, May 6; minimum midnight contents, 353,000 cfs-days, Dec. 16, minimum elevation, 408.00 ft, Dec. 16. Contents based on backwater profile.

03596460 NORMANDY LAKE.--Lat 35°27'55", long 86°14'55", Coffee County, Hydrologic Unit 06040002, at Normandy Dam on Duck River, 1.5 mi northeast of Normandy, 2.6 mi downstream from Riley Creek, 8 mi north of Tullahoma, and at mile 248.6. DRAINAGE AREA, 195 mi<sup>2</sup>. PERIOD OF RECORD, January 1976 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete gravity dam with riprapped and rolled earthfill embankment on left side. Spillway is equipped with two radial gates, each 40 ft high by 36 ft wide. Storage began Jan. 5, 1976; water in reservoir first reached minimum pool elevation Mar. 22, 1976. Revised capacity table put into use Jan. 1, 1977. Total capacity at elevation 880 ft, top of gates, is 64,000 cfs-days, of which 30,400 cfs-days is controlled storage above elevation 859 ft, normal minimum pool. Reservoir is used for flood control, water supply, water-quality control, recreation, and shoreline development.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 63,800 cfs-days, Feb. 20, 1991, elevation, 880.12 ft; minimum after first filling, 26,800 cfs-days, Nov. 27, 1981, elevation, 853.12 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 62,200 cfs-days, May 4, elevation, 879.21 ft; minimum 39,400 cfs-days, Jan. 19, elevation, 864.05 ft.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Change in			Change in			Change in		
	Elevation (feet)	Contents (cfs-days)	contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	contents (cfs-days)	Elevation (feet)	Contents (cfs-days)	contents (cfs-days)
	03580740 TIMS FORD LAKE			*03593000 PICKWICK LAKE			03596460 NORMANDY LAKE		
Sept. 30...	884.63	249,600	-	411.05	491,900	-	874.75	54,900	-
Oct. 31...	883.01	241,400	-8,200	409.98	466,400	-25,500	871.94	50,600	-4,300
Nov. 30...	880.99	231,600	-9,800	409.35	460,900	-5,500	865.90	41,900	-8,700
Dec. 31...	879.06	222,500	-9,100	409.46	469,800	+8,900	864.58	40,100	-1,800
CAL YR 1992	-	-	+4,400	-	-	+16,400	-	-	-1,400
Jan. 31...	875.33	205,800	-16,700	409.39	459,100	-10,700	864.64	40,200	+100
Feb. 28...	877.62	215,900	+10,100	409.99	465,800	+6,700	865.49	41,400	+1,200
Mar. 31...	885.15	252,200	+36,300	413.46	565,200	+99,400	871.59	50,000	+8,600
Apr. 30...	886.26	258,000	+5,800	413.90	560,600	-4,600	875.53	56,100	+6,100
May 31...	888.52	270,000	+12,000	413.27	545,000	-15,600	876.50	57,700	+1,600
June 30...	887.28	263,400	-6,600	413.51	556,700	+11,700	875.38	55,900	-1,800
July 31...	885.44	253,700	-9,700	412.18	518,900	-37,800	873.47	52,900	-3,000
Aug. 31...	884.97	251,500	-2,200	412.03	514,600	-4,300	872.15	50,900	-2,000
Sept. 30...	884.19	247,300	-4,200	410.48	479,200	-35,400	870.25	48,100	-2,800
WTR YR 1993	-	-	-2,300	-	-	-12,700	-	-	-6,800

\* Contents based on backwater profile.



## RESERVOIRS IN TENNESSEE RIVER BASIN--Continued

03609000 KENTUCKY LAKE.--Lat 37°00'49", long 88°16'06", Marshall County, KY, Hydrologic Unit 06040006, at Kentucky Dam on Tennessee River at Gilbertsville, KY, and at mile 22.4. DRAINAGE AREA, 40,200 mi<sup>2</sup>, approximately. PERIOD OF RECORD, July 1944 to current year. GAGE, water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by concrete dam with 24 lift gates 50 ft high by 40 ft wide. Storage began Aug. 16, 1944, and final closure was Aug. 30, 1944. Water in reservoir reached minimum pool elevation Apr. 7, 1945. Revised capacity table put into use Jan. 1, 1971. Total level pool capacity at elevation 375.0 ft, top of gates, is 3,090,000 cfs-days, of which 2,020,700 cfs-days is controlled storage above 354.0 ft, ordinary minimum pool. Reservoir is used for navigation, flood control, and power. Barkley-Kentucky Canal opened July 13, 1966, for navigation and power use. Canal is 1.75 miles long and interconnects Lake Barkley and Kentucky Lake at a point 2.2 mi upstream from Barkley Dam. For daily discharges through the canal, see Kentucky reports.

COOPERATION.--Records furnished by Tennessee Valley Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 369.87 ft, May 24, 1983; minimum after first filling, 348.02 ft, Mar. 11, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum midnight contents, 1,652,900 cfs-days, Aug. 13; maximum elevation, 361.68 ft, Aug. 13; minimum midnight contents, 1,082,400 cfs-days, Mar. 21, minimum elevation, 353.15 ft, Mar. 13. Contents based on backwater profile.

## MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)	Contents (cfs-days)	Change in contents (cfs-days)
*03609000 KENTUCKY LAKE			
Sept. 30...	355.67	1,205,400	-
Oct. 31...	355.86	1,186,100	-19,300
Nov. 30...	356.18	1,277,200	+91,100
Dec. 31...	355.42	1,325,800	+48,600
CAL YR 1992	-	-	+140,500
Jan. 31...	354.31	1,138,700	-187,100
Feb. 28...	355.00	1,140,900	+2,200
Mar. 31...	357.23	1,514,600	+373,700
Apr. 30...	359.27	1,463,000	-51,600
May 31...	359.12	1,449,600	-13,400
June 30...	359.30	1,452,900	+3,300
July 31...	359.12	1,461,100	+8,200
Aug. 31...	357.14	1,289,800	-171,300
Sept. 30...	356.50	1,245,000	-44,800
WTR YR 1993	-	-	+39,600

\* Contents based on backwater profile.

OTHER RESERVOIRS.--The following small reservoirs in the Tennessee River basin are described below, but records of contents are not published herein.

03466400 DAVY CROCKETT LAKE on Nolichucky River at Nolichucky Dam, with a total capacity of 1,300 cfs-days, none of which is controlled storage.

03517900 CALDERWOOD LAKE on Little Tennessee River at Calderwood, with a total capacity of 20,800 cfs-days of which 840 cfs-days is controlled storage.

03518200 CHILHOWEE LAKE on Little Tennessee River at Chilhowee Dam, with a total capacity of 24,800 cfs-days of which 3,400 cfs-days is controlled storage.

03562500 OCOEE NO. 3 LAKE on Ocoee River at Ocoee No. 3 Dam, 5.0 miles west of Ducktown, with a total capacity of 1,660 cfs-days, of which 1,550 cfs-days is controlled storage. Records of contents previous to 1971 water year published as Ocoee No. 3 Lake near Ducktown, TN.

## West Tennessee

Map number	Station number	Station name	Page
182	07024225	NEIL DITCH NEAR HENRY	309
183	07024300	BEAVER CREEK AT HUNTINGTON	254-255, 331
184	07024370	LITTLE REEDY CREEK NEAR HUNTINGDON	309
185	07024500	SOUTH FORK OBION RIVER NEAR GREENFIELD	309
186	07025500	NORTH FORK OBION RIVER NEAR UNION CITY	256-257, 331
187	07026040	OBION RIVER AT HWY 51 NEAR OBION	258-261
188	07027000	REELFOOT LAKE NEAR TIPTONVILLE	262-267
189	07028505	NORTH FORK FORKED DEER RIVER AT TRENTON	309
190	07029090	LEWIS CREEK NEAR DYERSBURG	310
191	07029500	HATCHIE RIVER AT BOLIVAR	268-271
192	07030100	CANE CREEK AT RIPLEY	310
193	07030240	LOOAHATCHIE RIVER NEAR ARLINGTON	272-283, 331
194	07031650	WOLF RIVER AT GERMANTOWN	274-275, 331
195	07032000	MISSISSIPPI RIVER AT MEMPHIS	276-279
196	07032200	NONCONNAH CREEK NEAR GERMANTOWN	280-281, 331



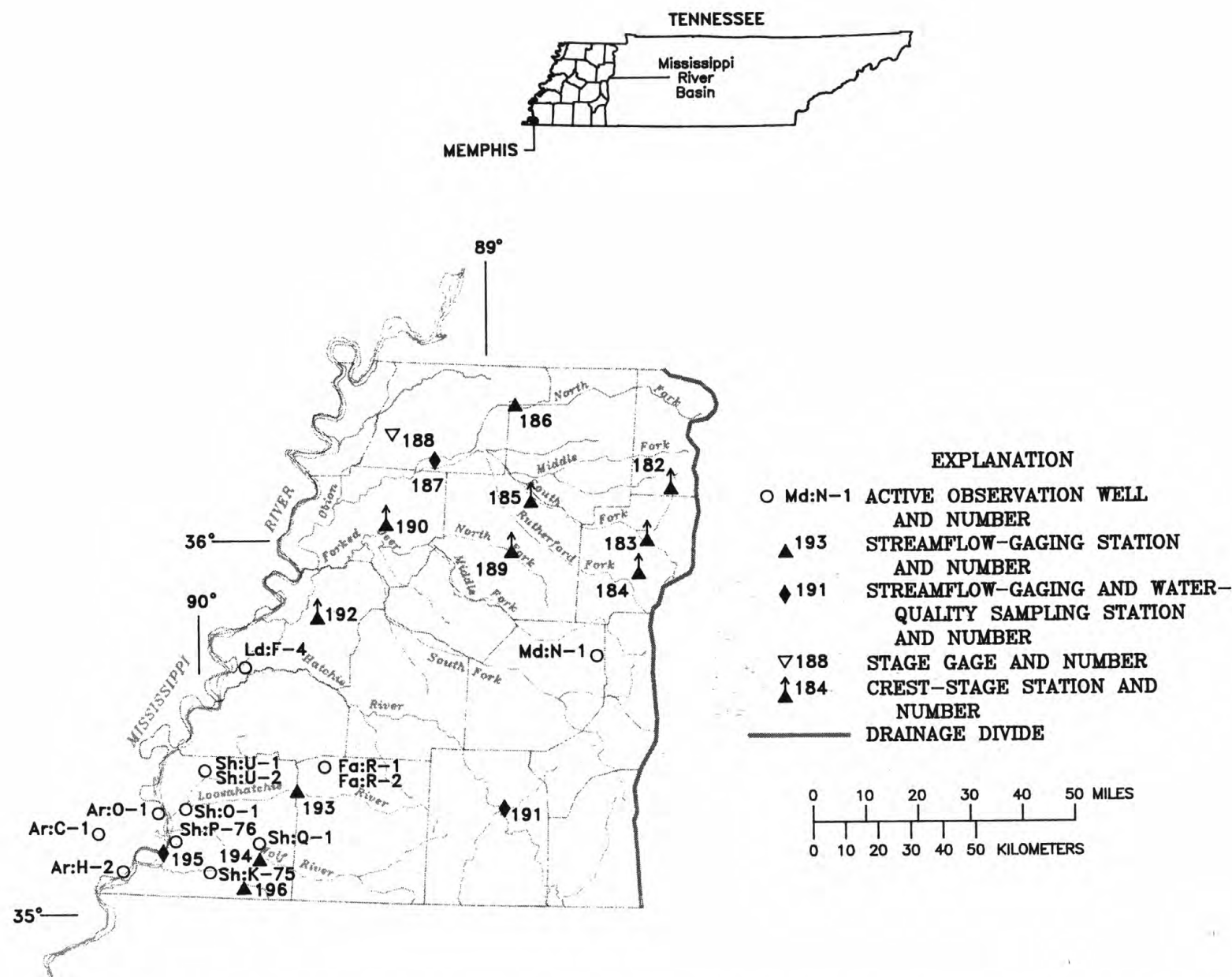


Figure 7.—Location of gaging sites in the Mississippi River Basin.

## OBION RIVER BASIN

## 07024300 BEAVER CREEK AT HUNTINGDON, TN

LOCATION.--Lat 35°59'56", long 88°26'01", Carroll County, Hydrologic Unit 08010203, on left bank on downstream end of bridge pier on U.S. Highway 70, 0.3 mi southwest of Huntingdon, 0.6 mi downstream from Brier Creek, and at mile 5.6.

DRAINAGE AREA.--55.5 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1946, 1948, 1952-54, 1956-61 and annual maximum, water years 1954-62, 1989-91. October 1962 to February 1988, July 1988 to September 1989. October 1991 to current year.

REVISED RECORDS.--WSP 1920: 1956(M).

GAGE.--Water-stage recorder. Datum of gage is 364.20 ft above sea level, from Tennessee State Highway Department benchmark. Dec. 21, 1945, to Oct. 3, 1962, nonrecording gage at site 30 ft downstream at same datum; Jan. 6, 1954, to Oct. 3, 1962, crest-stage gage at same site at datum 1.17 ft higher.

REMARKS.--No estimated daily discharges. Records good. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Mar. 27	0545	*1,860	*11.40	No other peak greater than base discharge.			

Minimum discharge, 18 ft<sup>3</sup>/s, July 9, 10-12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	65	66	64	65	67	109	43	124	32	27	29
2	50	68	64	58	63	193	98	57	51	28	27	44
3	49	67	63	55	61	294	71	197	41	26	27	35
4	49	72	65	93	61	150	62	535	55	24	26	32
5	49	69	64	191	61	101	77	317	171	23	28	28
6	49	65	67	86	61	79	69	91	57	21	39	27
7	48	64	65	68	67	67	61	58	43	20	30	26
8	50	63	63	88	60	62	57	47	39	20	27	26
9	50	64	69	72	59	56	737	42	38	19	26	26
10	50	64	112	76	59	54	986	41	86	18	26	26
11	50	64	80	151	173	51	306	45	307	18	26	25
12	51	96	70	149	297	49	103	54	167	19	26	24
13	51	87	68	96	155	48	71	63	102	24	54	24
14	62	71	66	68	91	47	63	52	49	54	33	25
15	64	65	73	61	116	46	415	42	40	207	28	41
16	73	63	77	57	416	51	568	40	35	70	27	37
17	63	63	70	54	315	71	209	39	31	37	27	33
18	56	62	65	51	110	56	89	39	30	33	27	30
19	58	62	70	55	71	55	68	39	28	30	28	29
20	56	63	195	64	70	53	86	39	27	31	26	58
21	57	82	102	252	206	51	65	38	32	30	25	47
22	57	94	83	153	259	65	54	37	29	50	25	34
23	56	78	262	79	101	130	51	37	28	75	25	47
24	57	79	160	364	70	73	48	36	28	40	25	59
25	57	94	83	360	143	235	62	37	75	32	24	49
26	58	77	89	136	250	826	72	36	81	30	25	41
27	62	71	80	91	111	1580	52	36	39	28	26	37
28	62	69	96	79	77	555	46	36	32	27	26	35
29	60	66	73	72	---	158	42	36	73	26	25	32
30	68	67	64	66	---	86	41	141	42	25	26	37
31	71	---	61	66	---	105	---	239	---	25	26	---
TOTAL	1743	2134	2685	3375	3648	5514	4838	2589	1980	1142	863	1043
MEAN	56.2	71.1	86.6	109	130	178	161	83.5	66.0	36.8	27.8	34.8
MAX	73	96	262	364	416	1580	986	535	307	207	54	59
MIN	48	62	61	51	59	46	41	36	27	18	24	24
CFSM	1.01	1.28	1.56	1.96	2.35	3.20	2.91	1.50	1.19	.66	.50	.63
IN.	1.17	1.43	1.80	2.26	2.45	3.70	3.24	1.74	1.33	.77	.58	.70

OBION RIVER BASIN

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07024300 BEAVER CREEK AT HUNTINGDON, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1993, BY WATER YEAR (WY)

MEAN	56.2	113	176	141	156	194	150	125	73.7	61.9	49.0	68.8
MAX	202	350	453	380	490	523	539	528	304	257	232	348
(WY)	1973	1980	1983	1989	1989	1975	1979	1983	1981	1972	1971	1970
MIN	24.0	34.1	34.0	33.9	46.0	54.5	36.4	26.7	25.8	25.1	21.2	25.4
(WY)	1964	1964	1966	1963	1963	1969	1967	1987	1964	1966	1986	1963

SUMMARY STATISTICS

FOR 1992 CALENDAR YEAR

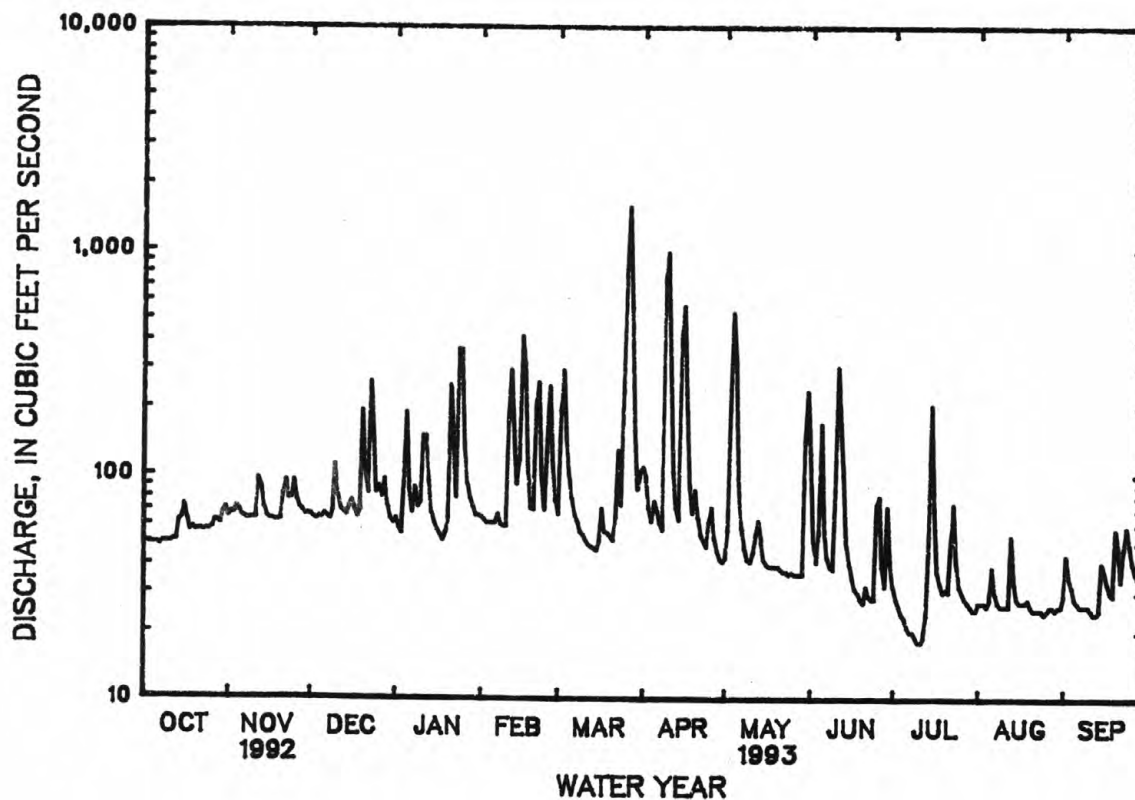
FOR 1993 WATER YEAR

WATER YEARS 1963 - 1993

ANNUAL TOTAL	33445			31554								
ANNUAL MEAN	91.4			86.4								
HIGHEST ANNUAL MEAN										113		
LOWEST ANNUAL MEAN										209		1979
HIGHEST DAILY MEAN	3410	Mar 10		1580	Mar 27					54.5		1963
LOWEST DAILY MEAN	30	Jun 22		18	Jul 10					4850	Apr 2	1979
ANNUAL SEVEN-DAY MINIMUM	31	Jun 19		19	Jul 6					18	Jul 10	1993
INSTANTANEOUS PEAK FLOW				1860	Mar 27					19	Aug 24	1986
INSTANTANEOUS PEAK STAGE				11.40	Mar 27					a8350	Sep 9	1970
INSTANTANEOUS LOW FLOW				b18	Jul 9					15.20	Sep 13	1982
ANNUAL RUNOFF (CFSM)	1.65			1.56						18	Jul 9	1993
ANNUAL RUNOFF (INCHES)	22.42			21.15						2.04		
10 PERCENT EXCEEDS	113			154						27.75		
50 PERCENT EXCEEDS	58			59						200		
90 PERCENT EXCEEDS	33			26						45		
										26		

a From rating curve extended above 3,600 ft<sup>3</sup>/s, on basis of contracted opening measurement of peak flow.

b Also occurred July 10-12



## OBION RIVER BASIN

07025500 NORTH FORK OBION RIVER NEAR UNION CITY, TN

LOCATION.--Lat 36°23'59", long 88°59'43", Obion County, Hydrologic Unit 08010202, at bridge on State Highway 22, 0.3 mi downstream from Harris Fork Creek, 0.8 mi southeast of Gibbs, 3.9 mi southeast of Union City, 4.5 mi upstream from Hoosier Creek, and 10 mi upstream from confluence with South Fork.

DRAINAGE AREA.--480 mi<sup>2</sup>, approximately.

PERIOD OF RECORD.--July 1929 to November 1966, April 1967 to January 1971. February 1989 to September 1993 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 285.80 ft above sea level. Prior to May 20, 1939 and from Aug. 26 to Dec. 9, 1959, staff gage at same site 1.08 ft lower, May 21, 1939 to Aug. 25, and Dec. 10, 1959 to Jan. 1971, water-stage recorder at same site 1.08 ft lower.

REMARKS.--Records good, except for estimated discharges which are poor. Periodic observation of water temperature and specific conductance are published in this report as miscellaneous water quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jan. 4	2130	4,150	12.43	Apr. 9	2000	*9,310	*17.48
Jan. 24	1330	5,230	13.70	May 3	2330	6,380	14.98
Mar. 26	1430	7,300	15.82				

Minimum discharge, 147 ft<sup>3</sup>/s, Sept. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	276	335	294	386	442	481	771	365	341	349	207	169
2	271	325	292	356	423	608	722	514	293	275	212	282
3	277	333	288	346	411	708	576	2590	276	255	212	234
4	270	314	285	1060	400	463	504	4390	270	247	209	270
5	265	313	284	1670	395	477	487	1270	269	234	208	187
6	263	302	283	1040	391	492	487	632	263	228	219	164
7	262	293	283	597	385	488	455	484	257	228	228	155
8	262	293	284	527	384	473	460	587	254	221	220	151
9	263	294	286	489	378	440	5890	429	249	219	212	150
10	261	290	346	488	374	421	8340	370	262	213	211	152
11	259	297	364	557	641	403	6520	387	260	209	210	151
12	260	518	327	699	608	383	2280	463	617	207	220	149
13	259	561	304	627	440	375	841	435	344	207	237	149
14	258	371	295	483	427	367	670	401	269	215	236	149
15	254	327	293	420	390	361	3150	355	257	705	225	240
16	287	304	314	406	390	366	2400	327	245	279	219	187
17	328	296	322	386	377	426	1030	362	e230	249	215	168
18	290	288	303	369	390	407	687	583	e216	234	220	166
19	272	285	298	362	401	400	578	528	e211	268	418	166
20	268	282	691	368	432	392	794	371	e215	224	293	171
21	267	288	520	1430	1580	411	612	323	e211	224	240	176
22	267	556	398	1560	547	710	496	304	e210	221	219	176
23	264	498	484	819	439	1980	454	299	e208	262	209	192
24	263	365	469	2610	418	1050	429	293	e230	260	207	225
25	264	350	385	1270	423	1430	426	294	e520	228	198	222
26	266	337	377	806	421	5430	511	289	e1650	215	190	229
27	267	313	376	621	420	3480	452	277	e600	208	186	220
28	270	311	551	545	463	1190	399	271	e350	207	185	208
29	270	306	624	492	---	754	375	267	526	207	180	203
30	294	297	468	451	---	634	366	297	935	205	176	204
31	390	---	407	441	---	1030	---	409	---	205	178	---
TOTAL	8487	10242	11495	22681	13190	27030	42162	19166	11038	7708	6799	5665
MEAN	274	341	371	732	471	872	1405	618	368	249	219	189
MAX	390	561	691	2610	1580	5430	8340	4390	1650	705	418	282
MIN	254	282	283	346	374	361	366	267	208	205	176	149
CFSM	.57	.71	.77	1.52	.98	1.82	2.93	1.29	.77	.52	.46	.39
IN.	.66	.79	.89	1.76	1.02	2.09	3.27	1.49	.86	.60	.53	.44

e Estimated

## OBION RIVER BASIN

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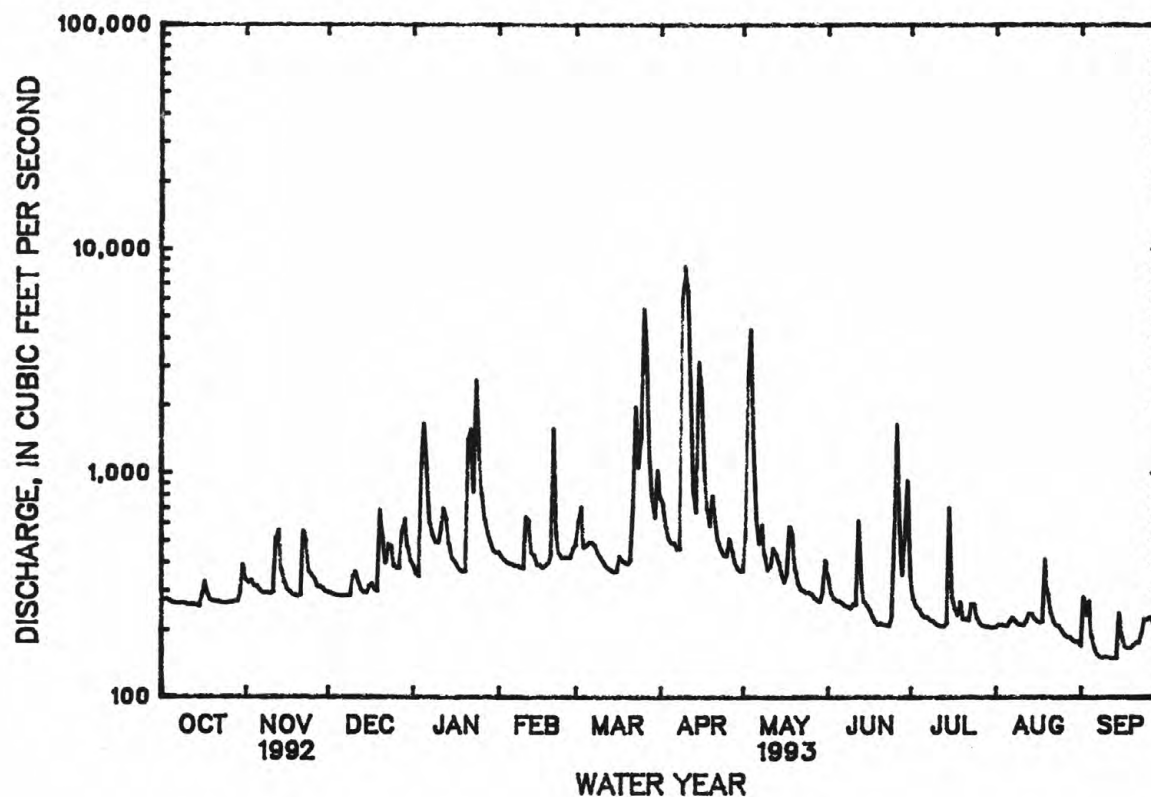
07025500 NORTH FORK OBION RIVER NEAR UNION CITY, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 1993, BY WATER YEAR (WY)

MEAN	218	429	647	1156	1187	1199	857	597	425	320	227	233
MAX	1158	4479	2165	6738	4233	3717	2510	1983	1838	1449	891	1263
(WY)	1950	1958	1958	1937	1989	1964	1933	1967	1945	1933	1950	1950
MIN	88.7	117	115	125	144	235	184	123	107	97.5	98.6	91.2
(WY)	1944	1944	1944	1944	1941	1941	1941	1936	1936	1943	1943	1941

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR		FOR 1993 WATER YEAR		WATER YEARS 1930 - 1993	
ANNUAL TOTAL	160487		185663		613	
ANNUAL MEAN	438		509		1385	
HIGHEST ANNUAL MEAN					174	
LOWEST ANNUAL MEAN					1950	
HIGHEST DAILY MEAN	5280	Mar 19	8340	Apr 10	44300	Jan 22 1937
LOWEST DAILY MEAN	218	May 18	149	Sep 12	84	Sep 26 1941
ANNUAL SEVEN-DAY MINIMUM	225	May 12	150	Sep 8	85	Sep 26 1941
INSTANTANEOUS PEAK FLOW			9310	Apr 9	49200	Jan 22 1937
INSTANTANEOUS PEAK STAGE			17.48	Apr 9	23.08	Jan 22 1937
INSTANTANEOUS LOW FLOW			a147	Sep 13	82	Oct 5 1943
ANNUAL RUNOFF (CFSM)	.91		1.06		1.28	
ANNUAL RUNOFF (INCHES)	12.44		14.39		17.35	
10 PERCENT EXCEEDS	651		706		1380	
50 PERCENT EXCEEDS	307		323		199	
90 PERCENT EXCEEDS	247		208		111	

a Also occurred Sept. 14.





## OBION RIVER BASIN

07026040 OBION RIVER AT U.S. HIGHWAY 51 NEAR OBION, TN  
(National stream-quality accounting network station)

LOCATION.--Lat 36°14'27", long 89°13'03", Obion County, Hydrologic Unit 08010202, on right downstream bank, at end of main channel bridge on U.S. Highway 51, 3.2 mi northeast of Trimble, 2.0 mi southwest of Obion and 1.6 river miles downstream of the former gage location, Obion River at Obion.

DRAINAGE AREA.--1,875 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1929 to September 1958, October 1966 to current year. Gage height and discharge records at this site from 1964 to 1975 are in reports of U.S. Army Corps of Engineers. Prior to Oct. 1990 published as "at Obion".

REVISED RECORD.--WSP 1211: 1930, 1943. WSP 2120: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 245.17 ft above sea level. Prior to Oct. 1990 water-stage recorder at site 1.6 mi upstream at a datum 1.31 ft higher (levels by the U.S. Army Corps of Engineers). Prior to Oct. 1, 1932, nonrecording gage at site 1.6 mi upstream at datum 6.31 ft higher; Oct. 1, 1932, to Aug. 2, 1939, nonrecording gage, and Aug. 3, 1939, to Sept. 1958, water-stage recorder at site 1.6 mi upstream at datum 16.31 ft higher.

REMARKS.--Records poor.

COOPERATION.--Thirty-five discharge measurements furnished by the U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge and gage height, Apr. 10, not determined; minimum discharge, 568 ft<sup>3</sup>/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	773	874	838	1290	e1400	2420	e3500	e1050	4360	1250	675	645
2	767	895	817	1190	e1300	4180	e3300	e2000	2810	923	669	788
3	765	837	802	1110	e1220	8150	e2600	e5800	2340	851	671	950
4	743	820	782	2510	e1170	5200	e1950	9660	1940	814	659	821
5	731	803	780	10200	e1140	3290	e1850	9250	3380	781	659	718
6	719	794	799	e5800	e1120	2690	e1800	6680	1830	753	713	642
7	712	773	800	e3300	e1110	2250	e1600	4390	1380	732	724	616
8	708	760	784	e1100	e1110	1990	e1700	2720	1270	721	699	607
9	704	749	776	e990	1110	1730	e5200	2190	1150	712	671	609
10	701	741	925	e960	1080	1540	e12000	1710	1140	695	659	612
11	699	742	1040	e1900	2100	1400	e11200	1700	1270	683	641	599
12	699	1210	937	e2500	7600	1270	e10400	2190	1920	684	665	582
13	699	1510	877	e2000	5460	1210	e2700	1990	1840	768	872	575
14	697	1000	845	e1200	2740	1180	e2200	2210	1300	732	860	580
15	687	860	825	e1020	2210	1140	e6000	1670	1170	1130	684	770
16	841	820	871	e980	5800	1160	e5200	1480	1040	1010	672	723
17	815	803	894	e960	7260	1360	e2700	1400	950	887	673	636
18	761	792	858	e930	4140	1370	e2050	1630	894	918	742	626
19	730	776	846	e900	2770	1250	e1700	1770	850	906	1390	627
20	725	765	3210	e880	2250	1220	e1600	1410	858	832	872	666
21	720	779	2860	e3500	4590	1220	e1550	1230	911	788	693	678
22	706	2580	1510	e3900	9020	1340	e2300	1150	819	801	657	654
23	707	2250	1840	e3200	5970	6430	e1800	1080	792	997	641	650
24	708	1240	2740	e10500	3180	4750	e1500	1030	856	1160	645	821
25	701	1080	1690	e4500	3100	4610	e1200	1020	2650	833	631	887
26	700	1050	1540	e3300	7530	10200	e1500	997	3150	769	622	913
27	704	955	1510	e2600	5220	11500	e1320	958	1320	747	627	779
28	711	909	2010	e2200	3060	e6000	e1200	919	984	726	801	708
29	714	888	2200	e1950	---	e4000	e1100	904	1390	709	849	671
30	805	855	1600	e1800	---	e3000	e1050	1680	1940	686	710	655
31	1050	---	1340	e1600	---	e5400	---	3580	---	670	759	---
TOTAL	22902	29910	40146	80770	95760	104450	95770	77448	48504	25668	22505	20808
MEAN	739	997	1295	2605	3420	3369	3192	2498	1617	828	726	694
MAX	1050	2580	3210	10500	9020	11500	12000	9660	4360	1250	1390	950
MIN	687	741	776	880	1080	1140	1050	904	792	670	622	575
CFSM	.39	.53	.69	1.39	1.82	1.80	1.70	1.33	.86	.44	.39	.37
IN.	.45	.59	.80	1.60	1.90	2.07	1.90	1.54	.96	.51	.45	.41

e Estimated

07026040 OBION RIVER AT U.S. HIGHWAY 51 NEAR OBION, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1993, BY WATER YEAR (WY)

MEAN	926	2092	3452	4895	4952	4401	3923	2926	1912	1418	996	938
MAX	3576	15500	14260	26640	17120	15810	11770	15540	10970	4783	6643	5041
(WY)	1991	1958	1991	1937	1990	1975	1973	1983	1970	1975	1971	1950
MIN	249	372	495	587	543	628	678	487	323	301	277	264
(WY)	1944	1955	1944	1944	1941	1941	1941	1936	1936	1944	1936	1956

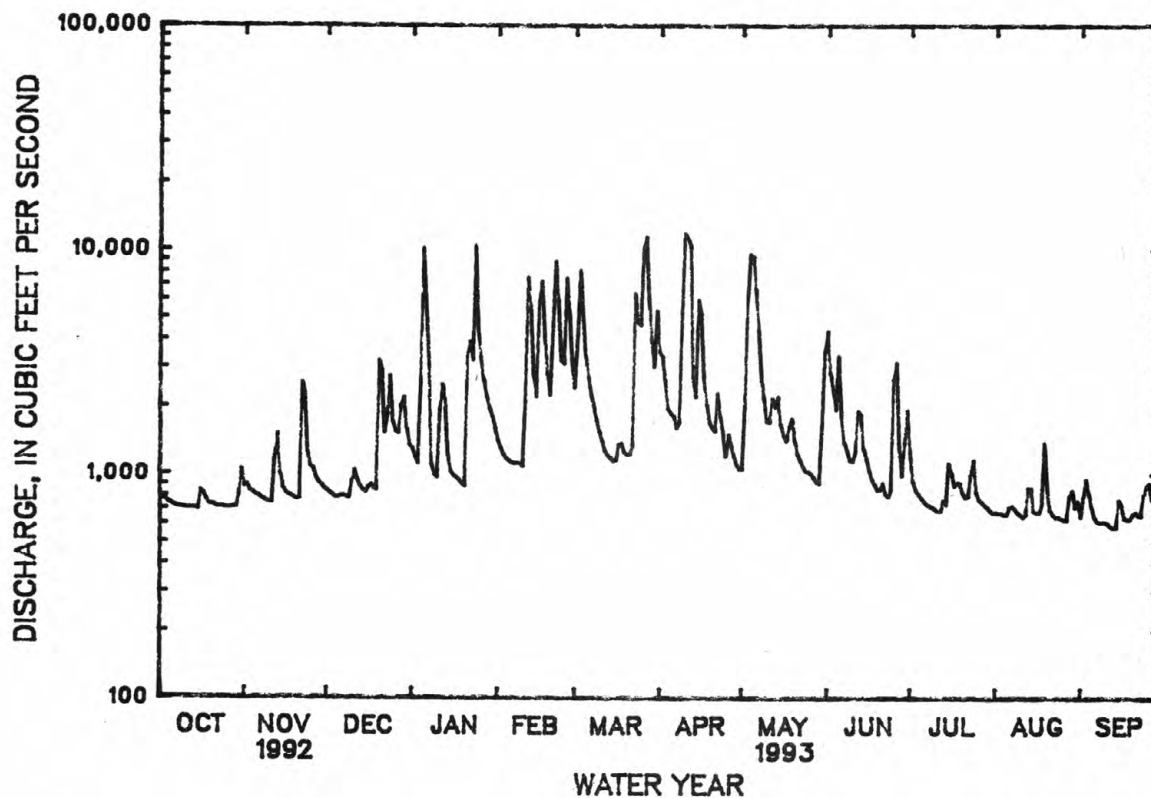
## SUMMARY STATISTICS

## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

## WATER YEARS 1929 - 1993

ANNUAL TOTAL	578734			664641								
ANNUAL MEAN	1581			1821						2725		
HIGHEST ANNUAL MEAN										5351		1973
LOWEST ANNUAL MEAN										569		1941
HIGHEST DAILY MEAN	15500	Mar 19		12000	Apr 10					99500	Jan 24	1937
LOWEST DAILY MEAN	687	Oct 15		575	Sep 13					15	Feb 4	1937
ANNUAL SEVEN-DAY MINIMUM	698	Oct 9		595	Sep 8					233	Oct 6	1943
INSTANTANEOUS PEAK FLOW				NOT DETERMINED	Apr 10					99500	Jan 24	1937
INSTANTANEOUS PEAK STAGE				NOT DETERMINED	Apr 10					40.40	Jan 24	1937
INSTANTANEOUS LOW FLOW				568	Sep 12					230	Oct 7	1943
ANNUAL RUNOFF (CFSM)	.84			.97						1.45		
ANNUAL RUNOFF (INCHES)	11.48			13.19						19.74		
10 PERCENT EXCEEDS	3170			4060						7000		
50 PERCENT EXCEEDS	982			1040						1010		
90 PERCENT EXCEEDS	720			677						407		



## OBION RIVER BASIN

07026040 OBION RIVER AT U.S. HIGHWAY 51 NEAR OBION, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1975 to September 1981.

WATER TEMPERATURE: June 1975 to September 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 488 microsiemens, Dec. 14, 1976; minimum, 35 microsiemens, July 21 and 22, 1975.

WATER TEMPERATURES: Maximum, 33.5°C, June 18, 1978; minimum, -0.5°C, several days in Jan. and Feb. 1979.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
DEC 01...	1300	827	88	7.4	6.0	770	11	11.2	89	75	35
MAR 02...	1230	2790	123	7.5	7.0	760	110	10.1	84	450	120
JUN 08...	1130	1180	86	8.0	24.5	770	38	7.0	83	380	210
AUG 11...	1115	700	82	7.8	26.0	772	22	8.4	102	--	53

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
DEC 01...	29	1	6.8	2.8	6.9	32	0.6	2.1	29	4.9	6.1
MAR 02...	41	0	10	3.8	5.6	22	0.4	2.6	42	9.1	6.6
JUN 08...	26	0	6.7	2.3	5.3	28	0.5	2.6	28	4.6	5.2
AUG 11...	23	0	5.9	2.0	6.7	37	0.6	1.3	33	3.3	4.1

DATE	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	SOLIDS, DIS- SOLVED (TONS PER DAY)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRATE TOTAL (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS NH4)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)
DEC 01...	0.10	12	70	61	0.09	156	0.030	0.520	0.550	0.12	0.090
MAR 02...	<0.10	8.1	77	76	0.10	580	0.030	0.650	0.680	0.17	0.130
JUN 08...	0.10	11	61	58	0.08	194	<0.010	0.500	0.500	0.06	0.050
AUG 11...	0.10	14	61	60	0.08	115	<0.010	0.400	0.400	0.05	0.040

## OBION RIVER BASIN

07026040 OBION RIVER AT U.S. HIGHWAY 51 NEAR OBION, TN--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO <sub>4</sub> )	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)
DEC 01...	0.30	0.100	0.030	0.09	0.030	<10	24	<3	130	<4
MAR 02...	0.80	0.280	0.050	0.15	0.050	160	38	<3	220	<4
JUN 08...	0.30	0.120	0.060	0.12	0.040	30	29	<3	160	<4
AUG 11...	0.30	0.090	0.030	0.09	0.030	20	19	<3	92	<4

DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 01...	160	<10	<1	<1	<1.0	41	<6	100	223	20
MAR 02...	100	<10	2	<1	<1.0	49	<6	852	6420	88
JUN 08...	56	<10	1	<1	<1.0	43	<6	116	370	91
AUG 11...	72	<10	<1	<1	<1.0	36	<6	63	119	86

## OBION RIVER BASIN

## 07027000 REELFOOT LAKE NEAR TIPTONVILLE, TN

LOCATION.--Lat 36°21'09", long 89°25'07", Lake County, Hydrologic Unit 08010202, at Middle Landing in Reelfoot Lake State Park, 0.4 mi east of Blue Bank, 0.8 mi west of the spillway, and 3.3 mi southeast of Tiptonville.

DRAINAGE AREA.--240 mi<sup>2</sup>.

PERIOD OF RECORD.--July 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 270.22 ft above sea level.

REMARKS.--Gage heights for period Oct. 1, 1991 to Mar. 4, 1992 based on once daily observer readings. Records poor prior to Mar. 4, 1992 and good thereafter.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 15.65 ft, from recorded range in stage, about Apr. 26, 1973; minimum, 9.59 ft, July 6, 7, 8, 1985.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1937 reached a stage of about 17.0 ft, at spillway, present datum, from information by local resident. Minimum stage at spillway, 9.30 ft, Nov. 20, 21, 1953 at a datum of 270.29 ft above mean sea level.

EXTREMES FOR WATER YEAR 1992.--Maximum gage height, 12.84 ft, Apr. 1; minimum 11.13 ft, Oct. 24, 25, may have been lower during period of once daily observer readings.

EXTREMES FOR WATER YEAR 1993.--Maximum gage height, 13.28 ft, Apr. 15; minimum 11.56 ft, Sept. 14.

## GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	11.37	---	---	e11.40	---	---	e11.96	---	---	e12.71
2	---	---	11.34	---	---	e11.39	---	---	11.98	---	---	12.70
3	---	---	11.34	---	---	e11.38	---	---	12.05	---	---	12.74
4	---	---	11.32	---	---	11.38	---	---	12.05	---	---	e12.73
5	---	---	e11.33	---	---	11.37	---	---	12.12	---	---	e12.72
6	---	---	e11.34	---	---	11.37	---	---	12.16	---	---	12.72
7	---	---	11.34	---	---	11.37	---	---	12.19	---	---	12.71
8	---	---	11.31	---	---	11.34	---	---	e12.22	---	---	12.76
9	---	---	11.29	---	---	e11.34	---	---	12.25	---	---	12.78
10	---	---	11.27	---	---	e11.34	---	---	12.30	---	---	12.80
11	---	---	11.26	---	---	e11.35	---	---	12.31	---	---	e12.82
12	---	---	e11.26	---	---	11.36	---	---	12.28	---	---	e12.84
13	---	---	e11.26	---	---	11.35	---	---	12.46	---	---	12.85
14	---	---	e11.26	---	---	11.34	---	---	e12.52	---	---	12.90
15	---	---	e11.26	---	---	11.35	---	---	e12.58	---	---	12.90
16	---	---	11.23	---	---	e11.35	---	---	12.62	---	---	12.88
17	---	---	11.21	---	---	e11.35	---	---	12.58	---	---	12.86
18	---	---	11.19	---	---	11.35	---	---	12.58	---	---	e12.84
19	---	---	e11.18	---	---	11.36	---	---	e12.58	---	---	e12.83
20	---	---	e11.17	---	---	11.64	---	---	12.58	---	---	e12.82
21	---	---	11.16	---	---	11.69	---	---	e12.62	---	---	12.80
22	---	---	11.15	---	---	11.76	---	---	e12.66	---	---	12.82
23	---	---	11.14	---	---	e11.78	---	---	12.70	---	---	12.80
24	---	---	11.13	---	---	e11.80	---	---	12.74	---	---	12.80
25	---	---	11.13	---	---	11.82	---	---	e12.75	---	---	e12.79
26	---	---	11.20	---	---	11.84	---	---	12.76	---	---	e12.78
27	---	---	e11.28	---	---	e11.86	---	---	12.76	---	---	12.78
28	---	---	11.34	---	---	e11.89	---	---	e12.76	---	---	12.76
29	---	---	11.37	---	---	e11.91	---	---	e12.76	---	---	12.75
30	---	---	11.42	---	---	e11.94	---	---	12.76	---	---	12.74
31	---	---	11.45	---	---	---	---	---	12.73	---	---	12.73
MONTH	---	---	11.27	---	---	11.53	---	---	12.46	---	---	12.79



## OBION RIVER BASIN

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07027000 REELFOOT LAKE NEAR TIPTONVILLE, TN--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	---	---	e12.72	---	---	e12.84	12.84	12.67	12.74	12.27	12.14	12.23
2	---	---	e12.70	---	---	e12.84	12.76	12.64	12.70	12.26	12.16	12.21
3	---	---	12.68	---	---	e12.85	12.66	12.56	12.61	12.29	12.21	12.25
4	---	---	12.64	12.80	12.78	12.80	12.68	12.54	12.61	12.41	12.15	12.24
5	---	---	12.63	12.81	12.74	12.79	12.67	12.56	12.60	12.32	12.18	12.24
6	---	---	12.62	12.77	12.69	12.74	12.59	12.54	12.56	12.32	12.14	12.23
7	---	---	12.61	12.74	12.69	12.71	12.55	12.53	12.54	12.25	12.14	12.21
8	---	---	e12.60	12.69	12.62	12.66	12.53	12.49	12.52	12.24	12.12	12.18
9	---	---	e12.59	12.75	12.58	12.65	12.56	12.47	12.51	12.16	12.13	12.14
10	---	---	12.58	12.96	12.62	12.81	12.54	12.48	12.52	12.13	12.07	12.11
11	---	---	12.57	12.89	12.78	12.82	12.53	12.47	12.51	12.11	12.07	12.09
12	---	---	12.56	12.98	12.75	12.84	12.66	12.49	12.56	12.11	12.03	12.07
13	---	---	12.57	12.91	12.80	12.84	12.55	12.47	12.50	12.16	12.05	12.10
14	---	---	12.68	12.93	12.78	12.83	12.47	12.44	12.46	12.11	12.07	12.08
15	---	---	12.75	12.98	12.76	12.84	12.45	12.37	12.41	12.08	12.06	12.07
16	---	---	12.90	12.81	12.73	12.77	12.41	12.30	12.36	12.07	12.03	12.05
17	---	---	e12.87	12.73	12.65	12.70	12.42	12.33	12.38	12.05	11.98	12.02
18	---	---	12.92	12.84	12.68	12.75	12.40	12.34	12.37	12.08	12.01	12.03
19	---	---	12.92	12.96	12.83	12.90	12.43	12.38	12.40	12.05	11.99	12.03
20	---	---	12.92	12.99	12.92	12.95	12.45	12.33	12.41	12.04	12.01	12.02
21	---	---	12.90	12.95	12.89	12.93	12.45	12.34	12.40	12.03	11.99	12.01
22	---	---	e12.92	13.10	12.86	12.95	12.44	12.39	12.41	12.01	11.98	11.99
23	---	---	e12.93	13.06	12.91	12.93	12.41	12.34	12.38	12.01	11.93	11.99
24	---	---	12.94	12.91	12.83	12.88	12.52	12.33	12.40	12.09	11.95	12.01
25	---	---	12.92	12.89	12.86	12.88	12.48	12.34	12.39	12.01	11.96	11.97
26	---	---	12.90	12.98	12.78	12.85	12.43	12.23	12.37	12.05	11.92	11.96
27	---	---	12.89	12.97	12.81	12.87	12.40	12.30	12.35	12.01	11.91	11.95
28	---	---	12.88	12.83	12.78	12.81	12.33	12.29	12.32	12.01	11.90	11.96
29	---	---	e12.86	12.79	12.73	12.75	12.31	12.25	12.28	12.10	11.94	12.02
30	---	---	---	12.95	12.68	12.78	12.29	12.24	12.27	12.06	11.98	12.02
31	---	---	---	12.78	12.69	12.72	---	---	---	12.03	12.00	12.01
MONTH	---	---	12.76	---	---	12.82	12.84	12.23	12.46	12.41	11.90	12.08

## OBION RIVER BASIN

07027000 REELFOOT LAKE NEAR TIPTONVILLE, TN--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.01	11.99	12.00	12.07	12.03	12.05	11.69	11.64	11.66	11.57	11.54	11.56
2	12.03	11.97	12.00	12.05	11.97	12.01	11.65	11.61	11.62	11.55	11.48	11.53
3	12.10	11.97	12.06	12.08	12.00	12.02	11.67	11.61	11.64	11.56	11.52	11.54
4	12.13	12.06	12.09	12.04	11.97	12.01	11.70	11.63	11.66	11.55	11.53	11.54
5	12.09	12.07	12.08	12.07	11.97	12.02	11.65	11.61	11.62	11.54	11.51	11.53
6	12.16	12.04	12.07	12.07	12.04	12.05	11.63	11.59	11.61	11.68	11.48	11.52
7	12.20	12.15	12.17	12.07	11.98	12.02	11.59	11.56	11.57	11.63	11.58	11.61
8	12.24	12.19	12.22	12.00	11.88	11.95	11.56	11.52	11.54	11.71	11.63	11.68
9	12.29	12.22	12.25	11.96	11.93	11.95	11.55	11.52	11.54	11.76	11.70	11.73
10	12.30	12.24	12.26	11.95	11.91	11.93	11.73	11.53	11.58	11.85	11.75	11.81
11	12.34	12.25	12.29	11.92	11.87	11.91	11.73	11.66	11.68	11.86	11.80	11.83
12	12.30	12.24	12.27	11.91	11.80	11.86	11.71	11.63	11.68	11.85	11.81	11.84
13	12.28	12.25	12.27	11.86	11.81	11.84	11.71	11.60	11.66	11.84	11.82	11.83
14	12.38	12.28	12.31	11.84	11.72	11.78	11.69	11.58	11.63	11.82	11.80	11.81
15	12.33	12.31	12.32	11.80	11.77	11.78	11.67	11.57	11.61	11.81	11.79	11.80
16	12.33	12.29	12.31	11.81	11.75	11.78	11.61	11.55	11.57	11.81	11.78	11.79
17	12.31	12.22	12.26	11.81	11.76	11.79	11.59	11.54	11.55	11.78	11.76	11.78
18	12.32	12.23	12.27	11.83	11.78	11.80	11.54	11.52	11.53	11.81	11.75	11.77
19	12.31	12.25	12.27	11.79	11.72	11.77	11.53	11.50	11.51	11.84	11.75	11.80
20	12.39	12.23	12.29	11.77	11.73	11.75	11.54	11.50	11.52	11.82	11.77	11.78
21	12.33	12.18	12.26	11.78	11.71	11.74	11.53	11.48	11.50	11.85	11.73	11.79
22	12.21	12.18	12.20	11.73	11.70	11.71	11.50	11.47	11.48	11.95	11.83	11.88
23	12.18	12.12	12.15	11.72	11.70	11.72	11.59	11.47	11.51	11.95	11.82	11.89
24	12.18	12.10	12.13	11.74	11.71	11.72	11.56	11.53	11.55	11.88	11.83	11.85
25	12.15	12.10	12.13	11.72	11.69	11.71	11.54	11.52	11.53	11.83	11.82	11.82
26	12.21	12.10	12.15	11.72	11.63	11.67	11.53	11.52	11.52	11.91	11.85	11.88
27	12.19	12.11	12.14	11.78	11.69	11.73	11.75	11.51	11.61	11.93	11.88	11.90
28	12.12	12.08	12.10	11.77	11.73	11.74	11.70	11.59	11.64	11.98	11.86	11.91
29	12.09	12.07	12.08	11.73	11.70	11.72	11.62	11.58	11.60	11.99	11.86	11.91
30	12.09	12.05	12.07	11.70	11.64	11.67	11.58	11.55	11.57	11.90	11.84	11.87
31	---	---	---	11.75	11.65	11.68	11.58	11.57	11.57	---	---	---
MONTH	12.39	11.97	12.18	12.08	11.63	11.83	11.75	11.47	11.58	11.99	11.48	11.76

e Estimated

## OBION RIVER BASIN

265

07027000 REELFOOT LAKE NEAR TIPTONVILLE, TN--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.88	11.84	11.86	11.84	11.75	11.79	12.03	11.96	12.01	12.52	12.35	12.41
2	11.87	11.83	11.84	11.83	11.70	11.76	12.06	11.98	12.01	12.48	12.36	12.37
3	11.85	11.82	11.83	11.86	11.72	11.79	12.04	11.98	12.02	12.36	12.32	12.34
4	11.85	11.81	11.82	11.93	11.72	11.85	12.15	11.97	12.03	12.52	12.26	12.36
5	11.87	11.80	11.83	11.93	11.82	11.85	12.12	11.96	12.05	12.57	12.40	12.51
6	11.83	11.79	11.80	11.90	11.82	11.86	12.05	11.99	12.02	12.60	12.53	12.57
7	11.79	11.75	11.76	11.87	11.83	11.84	12.04	12.02	12.03	12.66	12.59	12.61
8	11.75	11.62	11.69	11.84	11.80	11.83	12.03	12.02	12.03	12.74	12.62	12.68
9	11.71	11.67	11.70	11.82	11.79	11.81	12.07	12.02	12.04	12.70	12.62	12.65
10	11.73	11.68	11.69	11.83	11.80	11.82	12.09	12.00	12.04	12.71	12.63	12.67
11	11.76	11.68	11.71	11.83	11.79	11.82	12.11	12.05	12.07	12.74	12.64	12.69
12	11.70	11.66	11.69	12.03	11.79	11.86	12.08	12.06	12.07	12.68	12.63	12.66
13	11.70	11.65	11.68	11.91	11.84	11.87	12.12	12.07	12.08	12.72	12.59	12.63
14	11.65	11.58	11.63	11.93	11.77	11.86	12.07	12.05	12.06	12.72	12.64	12.67
15	11.72	11.57	11.63	11.89	11.85	11.87	12.06	11.96	12.02	12.69	12.66	12.67
16	11.99	11.70	11.84	11.87	11.83	11.85	12.09	12.05	12.07	12.67	12.62	12.65
17	11.93	11.80	11.85	11.85	11.80	11.84	12.13	12.08	12.09	12.71	12.63	12.65
18	11.89	11.79	11.84	11.86	11.84	11.85	12.10	12.07	12.08	12.75	12.63	12.69
19	11.87	11.80	11.82	11.87	11.85	11.86	12.17	12.07	12.10	12.76	12.62	12.67
20	11.82	11.77	11.80	11.87	11.78	11.83	12.29	12.15	12.20	12.65	12.57	12.61
21	11.83	11.81	11.82	11.90	11.84	11.87	12.24	12.15	12.18	12.66	12.61	12.64
22	11.83	11.82	11.83	12.01	11.79	11.88	12.20	12.17	12.19	12.70	12.64	12.67
23	11.83	11.76	11.82	11.99	11.88	11.94	12.34	12.20	12.22	12.75	12.62	12.68
24	11.85	11.81	11.82	12.09	11.96	12.01	12.35	12.10	12.23	13.06	12.75	12.91
25	11.83	11.81	11.82	12.03	11.90	11.97	12.32	12.18	12.23	13.08	12.95	13.02
26	11.81	11.79	11.80	12.07	11.95	12.00	12.32	12.25	12.28	13.09	13.03	13.05
27	11.85	11.76	11.81	12.08	11.99	12.04	12.29	12.26	12.27	13.05	13.03	13.04
28	11.85	11.78	11.80	12.07	12.03	12.04	12.29	12.27	12.28	13.11	12.97	13.00
29	11.81	11.77	11.79	12.04	12.01	12.02	12.30	12.28	12.29	13.14	12.99	13.08
30	11.88	11.78	11.81	12.06	11.99	12.02	12.31	12.27	12.30	13.08	12.94	12.98
31	11.82	11.79	11.80	---	---	---	12.51	12.30	12.38	12.94	12.87	12.90
MONTH	11.99	11.57	11.78	12.09	11.70	11.88	12.51	11.96	12.13	13.14	12.26	12.70

## OBION RIVER BASIN

07027000 REELFOOT LAKE NEAR TIPTONVILLE, TN--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	12.99	12.88	12.94	12.82	12.81	12.81	12.97	12.78	12.88	12.78	12.71	12.73
2	12.99	12.87	12.91	12.85	12.80	12.83	12.97	12.86	12.90	12.72	12.68	12.70
3	12.88	12.85	12.86	12.95	12.85	12.89	12.92	12.87	12.89	12.74	12.68	12.71
4	12.86	12.82	12.84	12.98	12.90	12.92	13.00	12.85	12.91	12.77	12.72	12.75
5	12.83	12.80	12.82	12.98	12.92	12.95	12.97	12.85	12.91	12.78	12.74	12.76
6	12.84	12.79	12.81	12.96	12.93	12.95	12.88	12.84	12.85	12.77	12.74	12.76
7	12.82	12.75	12.77	12.94	12.86	12.91	12.84	12.78	12.81	12.75	12.70	12.73
8	12.81	12.73	12.75	12.98	12.89	12.91	12.88	12.77	12.83	12.76	12.72	12.74
9	12.77	12.71	12.73	12.93	12.89	12.90	13.07	12.88	13.00	12.77	12.72	12.75
10	12.71	12.67	12.69	12.93	12.80	12.87	13.07	13.03	13.05	12.76	12.71	12.74
11	12.77	12.69	12.75	12.95	12.83	12.88	13.09	13.03	13.06	12.76	12.71	12.75
12	12.85	12.75	12.79	12.94	12.81	12.88	13.15	13.08	13.12	12.72	12.68	12.70
13	12.82	12.73	12.78	12.98	12.68	12.84	13.18	13.10	13.15	12.81	12.64	12.73
14	12.81	12.76	12.79	12.79	12.70	12.73	13.27	13.11	13.14	12.73	12.68	12.69
15	12.89	12.77	12.82	12.71	12.59	12.64	13.28	13.10	13.21	12.68	12.64	12.67
16	12.88	12.76	12.83	12.73	12.58	12.68	13.24	13.11	13.19	12.71	12.64	12.67
17	12.91	12.81	12.86	12.90	12.71	12.81	13.20	13.12	13.17	12.68	12.65	12.67
18	12.92	12.80	12.84	12.84	12.74	12.78	13.15	13.06	13.10	12.74	12.63	12.69
19	12.81	12.75	12.79	12.74	12.67	12.70	13.06	12.83	12.93	12.69	12.60	12.65
20	12.79	12.75	12.77	12.76	12.68	12.71	12.94	12.84	12.89	12.63	12.55	12.58
21	12.79	12.59	12.71	12.75	12.71	12.73	12.93	12.81	12.86	12.61	12.57	12.58
22	12.79	12.73	12.76	12.77	12.71	12.74	12.82	12.69	12.73	12.58	12.54	12.57
23	12.85	12.75	12.80	12.80	12.76	12.78	12.71	12.64	12.68	12.55	12.49	12.52
24	12.83	12.74	12.79	12.84	12.79	12.80	12.72	12.61	12.67	12.56	12.51	12.54
25	12.81	12.74	12.80	12.89	12.81	12.85	12.81	12.63	12.72	12.61	12.55	12.57
26	12.92	12.74	12.84	12.96	12.85	12.90	12.81	12.75	12.77	12.60	12.54	12.56
27	12.88	12.82	12.84	12.98	12.87	12.92	12.75	12.72	12.73	12.54	12.50	12.52
28	12.83	12.81	12.82	12.95	12.91	12.93	12.73	12.69	12.72	12.51	12.45	12.49
29	---	---	---	12.93	12.91	12.92	12.73	12.66	12.70	12.61	12.47	12.49
30	---	---	---	12.99	12.85	12.92	12.74	12.69	12.72	12.61	12.54	12.58
31	---	---	---	12.92	12.83	12.88	---	---	---	12.73	12.54	12.61
MONTH	12.99	12.59	12.80	12.99	12.58	12.84	13.28	12.61	12.91	12.81	12.45	12.65

## OBION RIVER BASIN

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07027000 REELFOOT LAKE NEAR TIPTONVILLE, TN--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.61	12.56	12.58	12.55	12.46	12.52	11.92	11.83	11.89	11.88	11.83	11.85
2	12.56	12.48	12.54	12.52	12.46	12.50	11.91	11.83	11.88	11.84	11.79	11.82
3	12.55	12.50	12.53	12.52	12.45	12.48	11.87	11.81	11.85	11.88	11.74	11.83
4	12.58	12.42	12.51	12.47	12.41	12.45	11.86	11.82	11.84	11.84	11.83	11.84
5	12.61	12.48	12.55	12.44	12.34	12.39	11.88	11.81	11.84	11.83	11.81	11.82
6	12.55	12.49	12.52	12.38	12.33	12.35	11.86	11.82	11.84	11.83	11.80	11.81
7	12.51	12.40	12.46	12.37	12.30	12.34	11.83	11.81	11.82	11.83	11.77	11.80
8	12.54	12.37	12.45	12.35	12.31	12.33	11.83	11.80	11.81	11.81	11.75	11.77
9	12.52	12.43	12.48	12.32	12.29	12.30	11.80	11.77	11.78	11.78	11.72	11.74
10	12.67	12.41	12.52	12.31	12.27	12.29	11.77	11.73	11.76	11.79	11.71	11.74
11	12.67	12.62	12.64	12.28	12.24	12.26	11.75	11.73	11.74	11.73	11.68	11.71
12	12.67	12.63	12.65	12.26	12.20	12.24	11.83	11.73	11.77	11.69	11.63	11.65
13	12.64	12.61	12.63	12.25	12.22	12.23	11.91	11.80	11.87	11.65	11.58	11.63
14	12.65	12.60	12.62	12.25	12.13	12.21	11.88	11.85	11.87	11.71	11.56	11.61
15	12.65	12.61	12.62	12.23	12.20	12.22	11.87	11.84	11.86	11.76	11.66	11.71
16	12.62	12.58	12.60	12.20	12.17	12.19	11.84	11.82	11.83	11.72	11.68	11.70
17	12.58	12.54	12.56	12.18	12.15	12.17	11.83	11.79	11.81	11.71	11.68	11.68
18	12.54	12.50	12.53	12.16	12.12	12.14	11.89	11.79	11.81	11.69	11.67	11.68
19	12.51	12.47	12.49	12.16	12.12	12.13	11.85	11.84	11.85	11.68	11.64	11.66
20	12.49	12.46	12.47	12.16	12.11	12.12	11.88	11.83	11.85	11.74	11.62	11.69
21	12.47	12.45	12.47	12.13	12.10	12.11	11.88	11.84	11.85	11.70	11.68	11.69
22	12.46	12.44	12.45	12.12	12.07	12.09	11.85	11.82	11.83	11.68	11.62	11.66
23	12.44	12.40	12.42	12.10	12.07	12.09	11.82	11.76	11.80	11.75	11.65	11.70
24	12.54	12.39	12.43	12.08	12.05	12.07	11.81	11.78	11.80	11.77	11.71	11.73
25	12.54	12.44	12.50	12.07	12.01	12.04	11.80	11.78	11.79	11.76	11.67	11.73
26	12.55	12.52	12.54	12.03	12.01	12.02	11.80	11.77	11.79	11.77	11.73	11.75
27	12.54	12.50	12.52	12.03	11.99	12.01	11.78	11.76	11.77	11.76	11.69	11.72
28	12.59	12.47	12.50	11.99	11.96	11.98	11.76	11.74	11.75	11.73	11.70	11.71
29	12.59	12.53	12.55	12.01	11.94	11.97	11.74	11.72	11.73	11.73	11.69	11.71
30	12.58	12.53	12.55	11.97	11.94	11.96	11.87	11.71	11.75	11.72	11.66	11.69
31	---	---	---	11.94	11.86	11.92	11.88	11.82	11.85	---	---	---
MONTH	12.67	12.37	12.53	12.55	11.86	12.20	11.92	11.71	11.82	11.88	11.56	11.73



## HATCHIE RIVER BASIN

07029500 HATCHIE RIVER AT BOLIVAR, TN  
(National stream-quality accounting network station)

LOCATION.--Lat 35°16'31", long 88°58'36", Hardeman County, Hydrologic Unit 08010208, on left bank 25 ft upstream from bridge on State Highway 18, 250 ft upstream from Illinois Central Gulf Railroad bridge, 0.6 mi downstream from Spring Creek, 1.5 mi northeast of Bolivar, and at mile 135.1.

DRAINAGE AREA.--1,480 mi<sup>2</sup>.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1929 to current year.

GAGE.--Water-stage recorder. Datum of gage is 323.49 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
May 8	1500	*10,100	*15.56	No other peak greater than base discharge.			

Minimum discharge, 329 ft<sup>3</sup>/s, Aug. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3780	1290	3430	4010	3380	3220	2720	3700	1080	1960	373	421
2	3710	1470	3080	3640	2770	3250	3010	3940	984	1460	340	429
3	3290	1520	2390	3110	2130	3680	3100	4910	888	940	369	514
4	2210	1520	1720	2510	1670	3780	3180	6060	819	699	423	547
5	1280	1410	1380	2410	1410	3740	3310	5750	e780	588	391	499
6	929	1350	1340	2710	1270	3640	3410	6530	e720	527	570	471
7	780	1330	1350	2990	1170	3590	3340	8390	e670	482	1090	422
8	704	1280	1300	3280	1110	3550	3120	9930	e640	447	1420	387
9	654	1190	1260	3440	1050	3400	4140	9500	e610	415	1480	383
10	628	1080	1430	3580	997	3080	5080	8420	572	400	1420	421
11	641	975	1760	3680	1110	2530	5640	7430	e570	396	1020	496
12	658	921	2050	3810	1840	1960	5320	6850	e580	433	762	528
13	661	1100	2160	3820	2370	1540	5480	6060	e590	518	645	464
14	639	1630	2210	3710	2470	1300	5670	5310	e630	589	584	412
15	604	1970	2130	3600	2480	1160	6900	4700	e660	807	534	427
16	615	2030	1930	3480	2730	1100	7090	4190	659	736	498	473
17	677	1740	1780	3320	3130	1270	6760	3680	571	572	466	601
18	930	1520	1740	3110	3300	1510	6210	3150	517	472	444	613
19	965	1230	1700	2950	3290	1660	5730	2770	481	426	446	535
20	881	1030	1900	3270	3380	1640	5460	2710	458	465	406	530
21	775	1210	e2650	3870	3720	1490	5080	2870	449	443	384	577
22	724	2110	e3750	4110	4020	1400	4730	2980	461	405	369	702
23	684	2840	e4100	4070	4000	2120	4230	2910	492	500	371	749
24	650	3150	e4200	4210	3840	2450	3840	2560	521	564	399	673
25	628	3250	e4150	4320	3710	2420	3830	2010	536	541	432	812
26	607	3300	e4350	4330	3730	2350	2870	1620	676	494	421	951
27	611	3450	e4600	4280	3620	2600	e2700	1530	785	400	406	1350
28	634	3570	e4650	4250	3430	2800	e2880	1490	885	353	417	1890
29	687	3640	e4550	4180	---	2750	e3200	1330	1530	364	402	2200
30	765	3600	e4550	4040	---	2480	3390	1210	2030	421	434	2430
31	945	---	4360	3810	---	2410	---	1120	---	411	445	---
TOTAL	32946	57706	83950	111900	73127	75870	131420	135610	21844	18228	18161	21907
MEAN	1063	1924	2708	3610	2612	2447	4381	4375	728	588	586	730
MAX	3780	3640	4650	4330	4020	3780	7090	9930	2030	1960	1480	2430
MIN	604	921	1260	2410	997	1100	2700	1120	449	353	340	383
CFSM	.72	1.30	1.83	2.44	1.76	1.65	2.96	2.96	.49	.40	.40	.49
IN.	.83	1.45	2.11	2.81	1.84	1.91	3.30	3.41	.55	.46	.46	.55

e Estimated

## HATCHIE RIVER BASIN

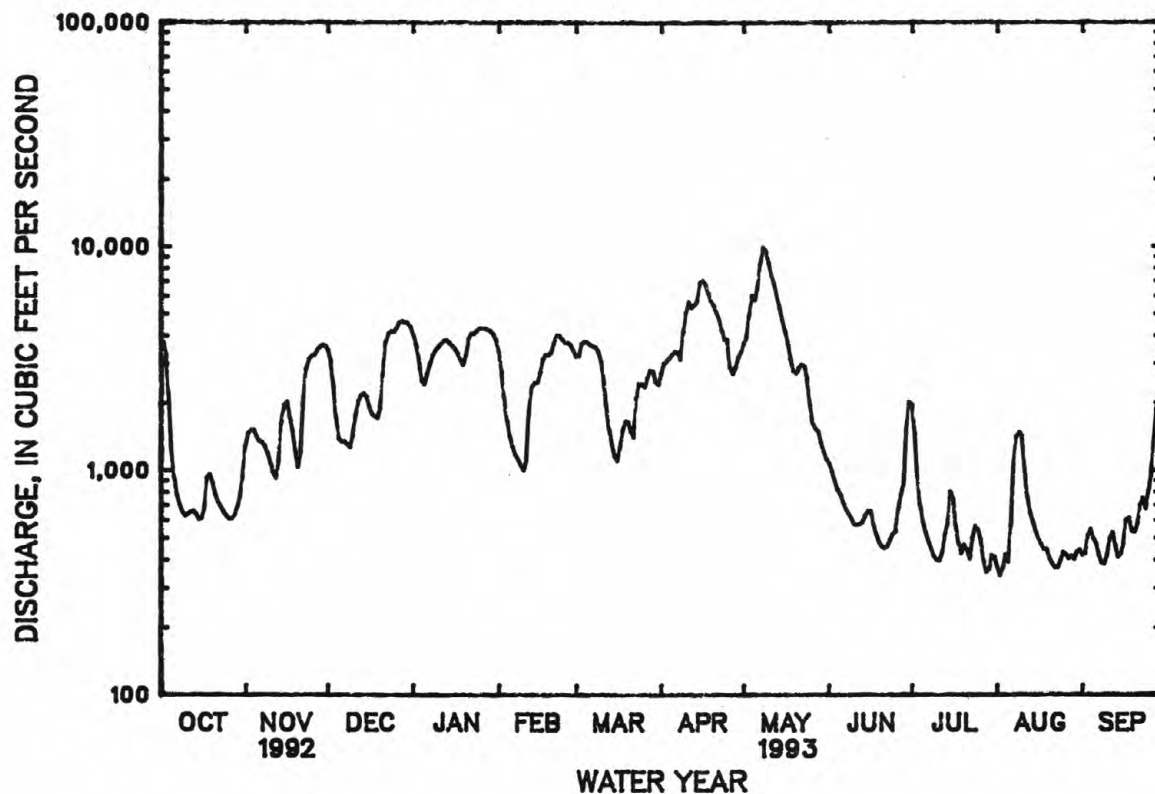
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07029500 HATCHIE RIVER AT BOLIVAR, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 1993, BY WATER YEAR (WY)

MEAN	697	1677	3202	4495	4683	4512	4015	2740	1357	900	589	719
MAX	4447	7457	12490	13420	14060	12110	10960	13540	6319	5933	2678	4651
(WY)	1933	1958	1983	1974	1948	1973	1979	1991	1939	1932	1931	1979
MIN	150	233	422	555	829	1053	711	444	209	189	193	127
(WY)	1957	1957	1955	1955	1934	1941	1986	1942	1941	1943	1954	1956

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1929 - 1993
ANNUAL TOTAL	787103	782669	
ANNUAL MEAN	2151	2144	
HIGHEST ANNUAL MEAN			2454
LOWEST ANNUAL MEAN			5003
HIGHEST DAILY MEAN	12800	9930	971
LOWEST DAILY MEAN	487	340	59300
ANNUAL SEVEN-DAY MINIMUM	506	376	80
INSTANTANEOUS PEAK FLOW		10100	85
INSTANTANEOUS PEAK STAGE		15.56	a61600
INSTANTANEOUS LOW FLOW		329	21.66
ANNUAL RUNOFF (CFSM)	1.45	1.45	78
ANNUAL RUNOFF (INCHES)	19.78	19.67	1.66
10 PERCENT EXCEEDS	4270	4240	22.52
50 PERCENT EXCEEDS	1530	1520	6060
90 PERCENT EXCEEDS	619	444	1080
			265

a From rating curve extended above 34,000 ft<sup>3</sup>/s.

## HATCHIE RIVER BASIN

07029500 HATCHIE RIVER AT BOLIVAR, TN--Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1964, 1968, 1977 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1980 to September 1982, October 1983 to September 1986.

WATER TEMPERATURE: June 1980 to September 1982, October 1983 to September 1986.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 380 microsiemens, Sept. 5, 6, 1985; minimum, 28 microsiemens, Apr. 18, 1982.

WATER TEMPERATURE: Maximum, 31.5°C, July 15, 16, 1980; minimum recorded, 0.0°C, Dec. 23, 1983 to Jan. 3, 1984, several days in 1985, minimum observed, -0.5°C, Jan. 3, 1984.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH WATER WHOLE FIELD (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	TURBIDITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML)
DEC 02...	1030	3790	73	7.0	7.0	772	9.5	9.1	74	48	83
MAR 03...	1000	4340	61	6.8	8.0	759	21	12.1	103	120	120
JUN 09...	1000	600	73	7.1	25.0	769	18	5.8	70	62	120
AUG 12...	0830	920	79	7.2	25.5	770	15	6.4	77	140	K25

DATE	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
DEC 02...	24	3	7.0	1.6	3.2	20	0.3	2.4	23	7.3	5.2
MAR 03...	20	10	5.8	1.4	3.0	23	0.3	1.4	10	8.0	3.7
JUN 09...	25	0	7.5	1.6	3.4	22	0.3	1.0	26	3.5	3.7
AUG 12...	24	3	7.2	1.5	4.7	27	0.4	2.4	22	5.0	5.3

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N)
DEC 02...	<0.10	8.4	49	49	0.07	501	<0.010	0.100	0.130	0.03	0.020
MAR 03...	<0.10	6.7	35	38	0.05	410	0.030	0.120	0.150	0.04	0.030
JUN 09...	0.10	7.9	50	47	0.07	81.0	<0.010	0.220	0.220	0.10	0.080
AUG 12...	0.10	11	60	52	0.08	149	<0.010	0.270	0.270	0.10	0.080

K--Results based on non-ideal colony count.

## HATCHIE RIVER BASIN

07029500 HATCHIE RIVER AT BOLIVAR, TN--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)
DEC 02...	0.40	0.060	0.040	0.03	0.010	10	26	<3	240	<4
MAR 03...	0.30	0.060	0.020	0.03	0.010	130	22	<3	220	5
JUN 09...	0.30	0.040	0.030	0.03	0.010	40	22	<3	350	<4
AUG 12...	0.40	0.060	<0.010	0.09	0.030	20	24	<3	230	<4
DATE	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 02...	63	<10	<1	<1	<1.0	52	<6	--	--	--
MAR 03...	43	10	<1	<1	<1.0	45	<6	54	633	56
JUN 09...	220	<10	<1	<1	<1.0	62	<6	42	68	90
AUG 12...	160	<10	1	<1	<1.0	59	<6	--	--	--

## LOOSAHATCHIE RIVER BASIN

07030240 LOOSAHATCHIE RIVER NEAR ARLINGTON, TN

LOCATION.--Lat 35°18'37", long 89°38'23", Shelby County, Hydrologic Unit 08010209, on left bank 20 ft downstream from bridge on U.S. Highways 70 and 79, 1.5 mi upstream from Beaver Creek, 1.5 mi northeast of Arlington, and at mile 30.4.

DRAINAGE AREA.--262 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 246.43 ft above sea level.

REMARKS.--Records fair. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,500 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Jan. 24	1000	5,560	14.01	Apr. 9	0830	*8,730	*17.39

Minimum daily discharge, 78 ft<sup>3</sup>/s, Jan. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	119	97	99	112	e130	331	198	125	136	97	89
2	106	130	97	99	105	e1100	191	557	121	117	388	86
3	104	113	94	94	100	e1500	148	430	119	109	140	86
4	102	131	93	171	95	e560	128	327	117	103	126	86
5	100	111	94	419	92	e345	129	189	114	101	149	86
6	99	102	86	203	90	e250	124	147	113	97	929	86
7	99	97	88	137	89	e200	112	131	113	96	227	86
8	99	95	82	253	85	e160	110	118	109	93	146	86
9	97	94	100	210	82	149	6800	106	107	91	130	120
10	95	93	237	172	81	141	2630	101	107	91	125	105
11	94	92	134	277	323	130	434	111	107	90	121	91
12	92	130	102	306	571	124	237	110	106	90	119	88
13	91	156	92	175	e600	121	172	511	105	124	116	88
14	90	111	84	117	e400	117	148	319	113	105	114	88
15	90	103	86	99	e120	117	1610	167	216	188	112	91
16	94	99	168	90	e700	134	397	150	129	128	110	96
17	93	97	122	83	e500	231	202	144	113	109	108	91
18	88	96	98	78	e270	158	151	146	107	105	106	91
19	87	97	91	367	e150	132	132	172	103	103	104	91
20	86	99	980	522	e130	126	344	146	103	116	101	91
21	85	122	312	3260	e600	119	213	137	103	105	98	91
22	84	1040	188	675	e500	144	126	131	103	98	96	91
23	84	315	1490	274	e180	446	104	125	103	186	93	93
24	84	220	500	3100	e120	219	91	127	109	122	92	104
25	84	278	227	609	e600	555	1650	353	119	109	89	370
26	84	154	194	262	e1000	421	1740	247	113	104	87	187
27	109	120	153	195	e700	552	346	149	107	102	104	123
28	94	111	140	163	e300	266	227	138	105	101	90	113
29	89	103	128	141	---	182	177	138	127	107	120	109
30	140	94	119	122	---	173	179	130	324	101	91	105
31	159	---	109	116	---	778	---	136	---	98	99	---
TOTAL	3018	4722	6585	12888	8695	9780	19383	6091	3660	3425	4627	3208
MEAN	97.4	157	212	416	311	315	646	196	122	110	149	107
MAX	159	1040	1490	3260	1000	1500	6800	557	324	188	929	370
MIN	84	92	82	78	81	117	91	101	103	90	87	86
CFSM	.37	.60	.81	1.59	1.19	1.20	2.47	.75	.47	.42	.57	.41
IN.	.43	.67	.93	1.83	1.23	1.39	2.75	.86	.52	.49	.66	.46

e Estimated



LOOSAHATCHIE RIVER BASIN

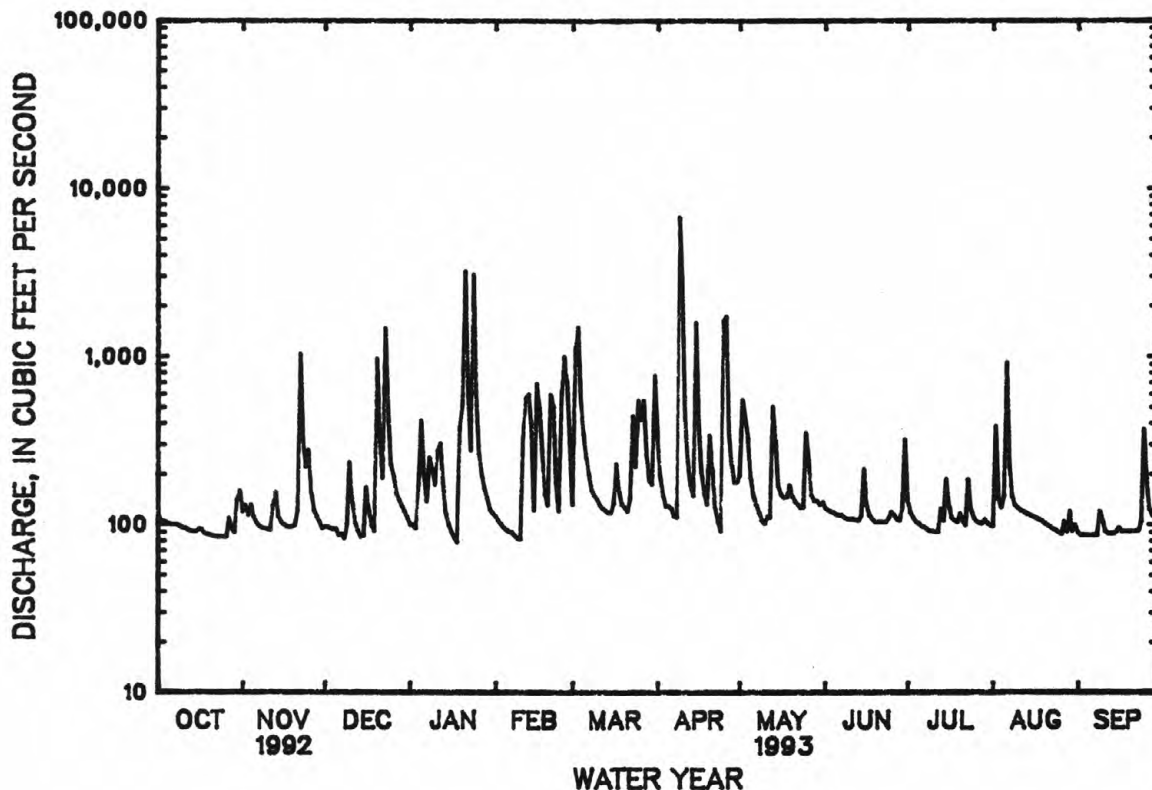
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07030240 LOOSAHATCHIE RIVER NEAR ARLINGTON, TN--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1993, BY WATER YEAR (WY)

MEAN	135	343	641	503	669	578	626	397	280	191	140	144
MAX	379	1344	1962	1479	2064	1548	2306	1497	1609	1155	521	292
(WY)	1989	1989	1988	1974	1990	1980	1991	1983	1974	1989	1974	1977
MIN	73.4	75.6	106	94.5	143	141	107	93.8	86.7	87.5	84.3	80.7
(WY)	1970	1972	1977	1981	1978	1986	1978	1988	1972	1970	1982	1982

SUMMARY STATISTICS	FOR 1992 CALENDAR YEAR	FOR 1993 WATER YEAR	WATER YEARS 1970 - 1993
ANNUAL TOTAL	109302	86082	
ANNUAL MEAN	299	236	
HIGHEST ANNUAL MEAN			386
LOWEST ANNUAL MEAN			769
HIGHEST DAILY MEAN	12300	6800	154
LOWEST DAILY MEAN	82	78	19900
ANNUAL SEVEN-DAY MINIMUM	84	84	66
INSTANTANEOUS PEAK FLOW		8730	68
INSTANTANEOUS PEAK STAGE		17.39	27400
INSTANTANEOUS LOW FLOW		75	25.27
ANNUAL RUNOFF (CFSM)	1.14	.90	66
ANNUAL RUNOFF (INCHES)	15.52	12.22	1.47
10 PERCENT EXCEEDS	413	420	20.00
50 PERCENT EXCEEDS	120	117	601
90 PERCENT EXCEEDS	97	90	114
			84



## WOLF RIVER BASIN

07031650 WOLF RIVER AT GERMANTOWN, TN

LOCATION.--Lat 35°06'59", long 89°48'05", Shelby County, Hydrologic Unit 08010210, on left bank, 30 ft downstream of bridge on Germantown Road, 1.7 mi north of U.S. Hwy 72, 3.6 mi downstream of Grays Creek, 4.0 mi northeast of I-240 and U.S. Highway 72 interchange, and at mile 18.9.

DRAINAGE AREA.--699 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1969 to September 1986, October 1990 to current year. Prior to September 1977 published as "near Germantown".

GAGE.--Water-stage recorder. Datum of gage is 235.76 ft above sea level. Apr. 21, 1986, to Dec. 30, 1990, water-stage recorder at site 2.1 mi downstream at datum 9.94 ft lower.

REMARKS.--Records good except for estimated days, which are fair. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data. National Weather Service rain gage and telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 9	0845	*6,370	*13.18				

Minimum discharge, 278 ft<sup>3</sup>/s, Aug. 25, 26, Sept. 14-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	416	731	536	579	622	918	1110	863	446	726	296	e310
2	414	590	506	550	566	1450	786	1220	417	614	604	e303
3	383	557	477	527	526	1570	613	1060	394	496	378	e301
4	362	617	479	632	513	1540	576	1050	379	436	375	e300
5	347	561	470	904	478	1350	591	949	367	404	414	e298
6	333	525	476	867	467	1130	553	928	359	378	656	e297
7	324	482	463	707	446	896	489	828	360	358	667	e297
8	317	449	459	765	431	766	492	734	345	345	584	e298
9	311	428	543	824	423	656	4240	659	337	335	486	e350
10	312	412	665	874	421	576	3550	638	338	331	458	311
11	313	404	638	864	597	514	e2800	663	368	327	437	299
12	321	538	575	841	980	467	e1620	688	329	325	404	286
13	322	490	535	774	970	435	e1310	794	320	323	369	282
14	335	461	531	702	811	413	e1100	669	344	361	344	283
15	328	429	566	633	764	397	e3350	625	471	450	326	278
16	433	418	625	592	1110	427	1910	599	321	520	313	279
17	500	423	608	561	997	467	1490	720	316	518	303	284
18	421	431	560	563	862	467	1110	766	306	451	297	286
19	378	431	548	1020	718	441	977	879	298	395	291	286
20	376	483	1010	1490	654	418	1230	727	447	353	286	404
21	382	510	1050	2950	1020	415	980	650	372	333	284	478
22	381	1210	974	2260	949	487	837	562	345	322	300	406
23	370	983	1460	2380	895	569	736	532	328	311	307	367
24	358	977	1240	3550	747	552	681	522	1180	309	296	414
25	347	1030	1190	2770	1060	647	2490	775	910	337	283	559
26	432	996	1070	2560	1300	643	2180	660	617	310	e280	542
27	528	923	898	2050	1200	676	2020	593	673	297	e291	490
28	440	768	783	1650	1100	746	1280	526	587	294	e308	447
29	426	646	709	1120	---	707	914	558	2200	303	e350	411
30	636	578	654	821	---	742	864	471	1380	293	e328	410
31	639	---	611	681	---	1430	---	591	---	288	e325	---
TOTAL	12185	18481	21909	38061	21627	22912	42879	22499	15854	11843	11640	10556
MEAN	393	616	707	1228	772	739	1429	726	528	382	375	352
MAX	639	1210	1460	3550	1300	1570	4240	1220	2200	726	667	559
MIN	311	404	459	527	421	397	489	471	298	288	280	278
CFSM	.56	.88	1.01	1.76	1.10	1.06	2.04	1.04	.76	.55	.54	.50
IN.	.65	.98	1.17	2.03	1.15	1.22	2.28	1.20	.84	.63	.62	.56

e Estimated

## WOLF RIVER BASIN

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07031650 WOLF RIVER AT GERMANTOWN, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1993, BY WATER YEAR (WY)

MEAN	422	773	1621	1400	1305	1658	1729	1378	771	424	389	443
MAX	1063	1991	4939	3504	3256	4854	4805	4542	1986	856	737	1345
(WY)	1985	1980	1983	1974	1991	1980	1991	1991	1974	1974	1979	1979
MIN	213	239	439	372	546	569	448	364	271	258	240	244
(WY)	1970	1972	1981	1981	1977	1986	1986	1992	1972	1971	1986	1986

## SUMMARY STATISTICS

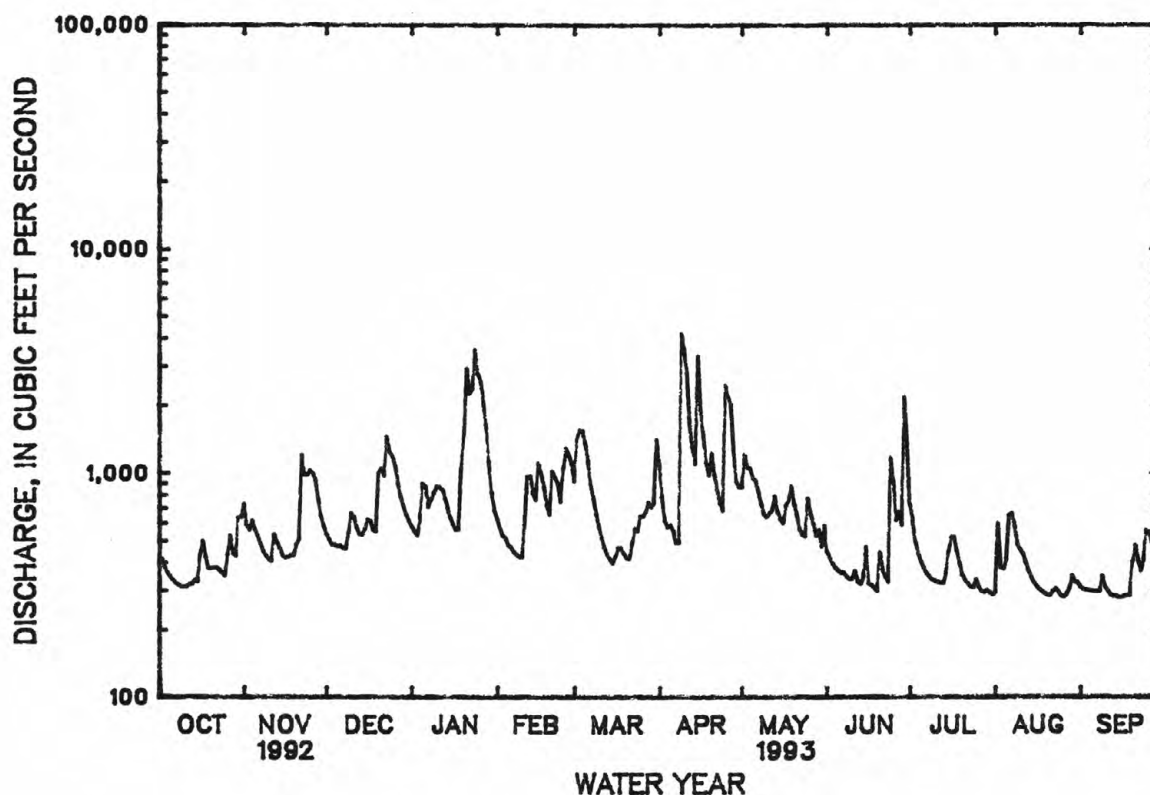
## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

## WATER YEARS 1970 - 1993

ANNUAL TOTAL	286673		250446									
ANNUAL MEAN	783		686							1025		
HIGHEST ANNUAL MEAN										1807		1991
LOWEST ANNUAL MEAN										497		1986
HIGHEST DAILY MEAN	8500	Mar 10	4240	Apr 9						30400	Mar 14	1975
LOWEST DAILY MEAN	305	Sep 16	278	Sep 15						196	Sep 15	1972
ANNUAL SEVEN-DAY MINIMUM	315	Sep 12	283	Sep 12						199	Sep 12	1972
INSTANTANEOUS PEAK FLOW			6370	Apr 9						33400	Mar 14	1975
INSTANTANEOUS PEAK STAGE			13.18	Apr 9						27.98	Mar 14	1975
INSTANTANEOUS LOW FLOW			a278	Aug 25						184	Oct 8	1987
ANNUAL RUNOFF (CFSM)	1.12		.98							1.47		
ANNUAL RUNOFF (INCHES)	15.26		13.33							19.92		
10 PERCENT EXCEEDS	1280		1180							2200		
50 PERCENT EXCEEDS	532		527							520		
90 PERCENT EXCEEDS	349		309							273		

a Also occurred Aug. 26, Sept. 14-16.



07032000 MISSISSIPPI RIVER AT MEMPHIS, TENNESSEE  
(National stream-quality accounting network station)

LOCATION.--Lat 35°07'37" long 90°04'25". Shelby County, Hydrologic Unit 08010100, on left bank 50 ft downstream from Harahan Bridge at Memphis, 1.3 mi downstream from Beale Street gage, 3.5 mi downstream from Wolf River, 62.4 mi upstream from St. Francis River, and at mile 734.8.

**DRAINAGE AREA.**--932,800 mi<sup>2</sup>, approximately.

### WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--

Discharge: January 1933 to current year. Monthly discharge only for some periods, published in WSP 1311.

Gage heights: October 1934 to September 1951 and October 1952 to current year in reports of Geological Survey. Since November 1871, at Beale Street gage, in reports of Mississippi River Commission, December 1890 to August 1932 at Beale Street gage, September 1932 to December 1934 at nonrecording gage 1,000 ft downstream, and since December 1934 at water-stage recorder at present site, in reports of National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 183.91 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 16, 1934, Beale Street nonrecording gage 1.3 mi upstream at present datum. Apr. 16 to Dec. 21, 1934, nonrecording gage 1,000 ft downstream at present datum.

REMARKS.--Flow regulated upstream by many locks, dams, and reservoirs.

**COOPERATION.**--Records furnished by U.S. Army Corps of Engineers.

**AVERAGE DISCHARGE.--**60 years, 490,500 ft<sup>3</sup>/s, 355,400,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980,000 ft<sup>3</sup>/s Feb. 8, 1937; maximum gage height, 48.69 ft Feb. 10, 1937; minimum discharge, 79,200 ft<sup>3</sup>/s Aug. 26, 1936; minimum gage height, -10.70 ft July 10, 11, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage prior to 1937, 46.55 ft Apr. 9, 1913, at Beale Street gage or about 45.2 ft at present site.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,235,000 ft<sup>3</sup>/s Apr. 9; maximum gage height, 32.14 ft, Apr. 15; minimum discharge, 234,000 ft<sup>3</sup>/s Nov. 3.

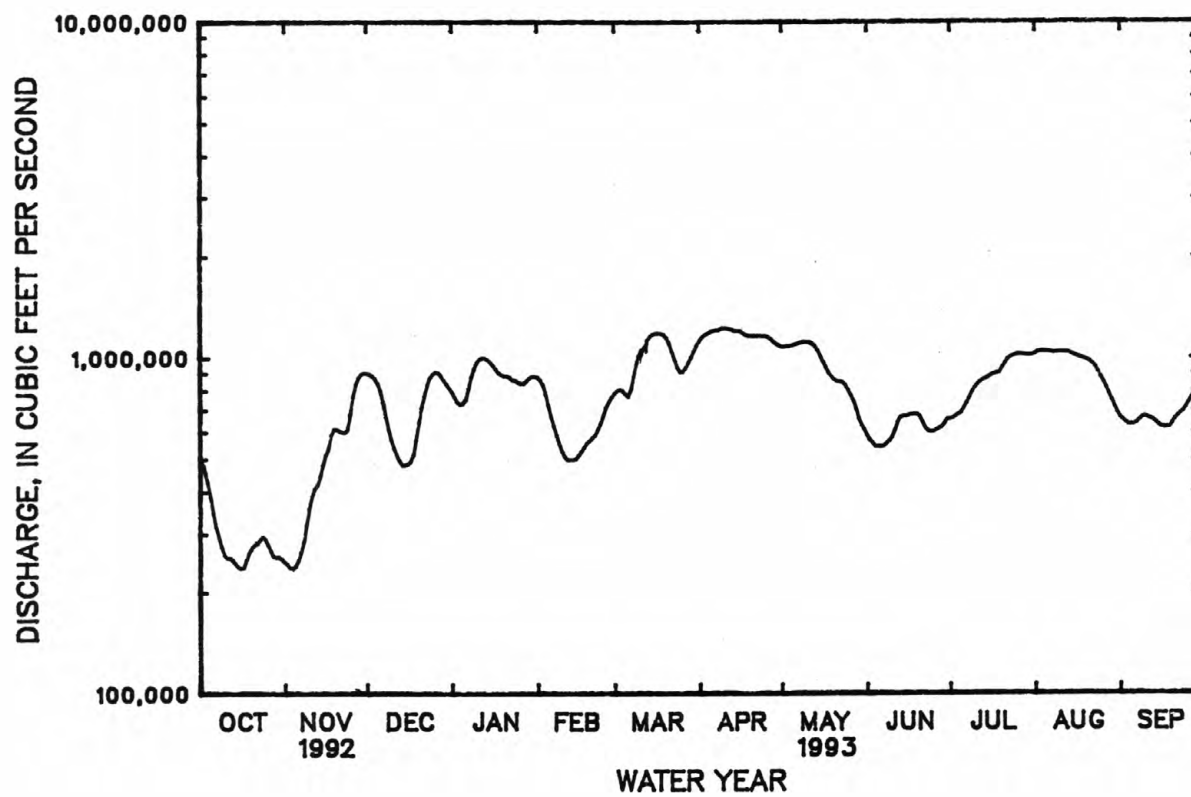
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	497000	246000	903000	790000	877000	786000	1130000	1076000	586000	659000	1029000	663000
2	478000	243000	894000	763000	859000	802000	1159000	1081000	569000	663000	1044000	650000
3	454000	237000	882000	736000	831000	808000	1174000	1085000	556000	671000	1047000	639000
4	425000	236000	865000	725000	778000	798000	1187000	1087000	544000	680000	1047000	630000
5	386000	241000	838000	731000	719000	779000	1199000	1091000	544000	688000	1041000	630000
6	346000	250000	797000	754000	668000	766000	1208000	1098000	542000	708000	1042000	633000
7	315000	265000	739000	811000	624000	802000	1213000	1107000	547000	733000	1036000	639000
8	293000	284000	668000	876000	587000	877000	1215000	115000	557000	762000	1032000	652000
9	274000	319000	613000	931000	553000	954000	1230000	1120000	568000	793000	1038000	664000
10	260000	358000	573000	971000	525000	1016000	1227000	1120000	582000	818000	1040000	669000
11	254000	389000	537000	994000	507000	1062000	1223000	1115000	608000	836000	1040000	661000
12	253000	409000	513000	1002000	496000	110000	1217000	1101000	644000	850000	1039000	656000
13	250000	420000	493000	998000	495000	1135000	1209000	1082000	667000	861000	1036000	649000
14	244000	444000	479000	985000	496000	1157000	1197000	1051000	672000	870000	1026000	640000
15	239000	480000	480000	967000	501000	1178000	1204000	1012000	673000	879000	1016000	628000
16	236000	515000	485000	947000	514000	1186000	1195000	972000	677000	890000	1008000	619000
17	238000	535000	492000	923000	528000	1190000	1178000	935000	681000	899000	1001000	617000
18	251000	591000	514000	902000	544000	1183000	1166000	902000	682000	903000	995000	616000
19	263000	614000	569000	890000	560000	1169000	1159000	880000	680000	909000	989000	622000
20	273000	612000	640000	882000	569000	1144000	1162000	859000	667000	935000	982000	639000
21	279000	605000	712000	883000	580000	1101000	1159000	849000	644000	962000	971000	657000
22	282000	600000	773000	873000	592000	1041000	1160000	847000	619000	993000	955000	671000
23	289000	597000	830000	858000	612000	986000	1161000	843000	604000	1006000	937000	683000
24	295000	612000	872000	856000	640000	935000	1159000	828000	600000	1015000	910000	694000
25	288000	679000	899000	843000	674000	909000	1157000	803000	603000	1022000	874000	713000
26	277000	767000	911000	836000	715000	912000	1151000	775000	610000	1027000	843000	737000
27	266000	834000	904000	841000	741000	936000	1133000	744000	617000	1025000	813000	763000
28	256000	873000	882000	853000	767000	970000	1114000	703000	624000	1020000	778000	787000
29	255000	897000	857000	872000	---	1006000	1096000	659000	638000	1016000	747000	811000
30	256000	905000	835000	884000	---	1049000	1084000	629000	657000	1018000	716000	839000
31	251000	---	812000	885000	---	1094000	---	608000	---	1023000	686000	---
TOTAL	9223000	15057000	22261000	27062000	17552000	29841000	35226000	29177000	18462000	27134000	29758000	20171000
MEAN	297500	501900	718100	873000	626900	962600	1174000	941200	615400	875300	959900	672400
MAX	497000	905000	911000	1000000	877000	1190000	1230000	1120000	682000	1030000	1050000	839000
MIN	236000	236000	479000	725000	495000	110000	1080000	608000	542000	659000	686000	616000
CAL YR 1992	TOTAL 175581000		MEAN 479700		MAX 911000		MIN 236000					
WTR YR 1993	TOTAL 280924000		MEAN 769700		MAX 1230000		MIN 110000					

MISSISSIPPI RIVER MAIN STEM

277

07032000 MISSISSIPPI RIVER AT MEMPHIS, TENNESSEE  
(National stream-quality accounting network station)





## MISSISSIPPI RIVER MAIN STEM

07032000 MISSISSIPPI RIVER AT MEMPHIS, TENNESSEE--CONTINUED

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--February 1973 to current year.

PERIOD OF DAILY RECORD--

SPECIFIC CONDUCTANCE: February 1973 to September 1981.

WATER TEMPERATURES: February 1973 to September 1981.

## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	AGENCY COL- LECTING SAMPLE (CODE NUMBER)	AGENCY ANA- LYZING SAMPLE (CODE NUMBER)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)
NOV											
10...	1300	80513	80020	361000	420	8.0	11.5	19	9.0	82	140
AUG											
04...	1400	80513	80020	1050000	355	7.9	27.5	82	5.0	63	110
10...	1300	80513	80020	1050000	339	8.0	26.5	110	5.6	70	100
31...	1300	80513	80020	694000	394	7.9	29.0	140	5.0	66	360

DATE	TIME	STREP- TOCOCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
NOV										
10...	1300	48	160	41	42	13	18	19	0.6	3.2
AUG										
04...	1400	190	160	37	43	13	8.7	10	0.3	4.5
10...	1300	100	160	39	45	12	8.1	9	0.3	5.0
31...	1300	92	180	35	48	14	12	13	0.4	4.0

DATE	TIME	ALKA- LINITY WAT DIS TOT FET FIELD MG/L AS CACO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
NOV										
10...	1300	117	0	143	117	53	19	0.20	5.3	230
AUG										
04...	1400	123	0	151	124	32	9.7	0.20	11	216
10...	1300	122	0	150	123	28	8.6	0.30	12	212
31...	1300	141	0	174	143	40	13	0.30	9.8	237

## MISSISSIPPI RIVER MAIN STEM

07032000 MISSISSIPPI RIVER AT MEMPHIS, TENNESSEE--CONTINUED

## WATER-QUALITY RECORDS

DATE	TIME	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV										
10...	1300	230	224000	0.31	1.18	0.020	1.20	0.050	0.45	0.50
AUG										
04...	1400	206	612000	0.29	--	<0.010	2.00	0.030	0.67	0.70
10...	1300	201	601000	0.29	--	<0.010	1.80	0.050	1.4	1.4
31...	1300	235	444000	0.32	--	<0.010	1.70	0.030	0.57	0.60

DATE	TIME	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV										
10...	1300	0.170	0.070	0.070	<10	51	<3	11	10	2
AUG										
04...	1400	0.120	0.090	0.080	<10	84	<3	5	<4	<1
10...	1300	0.430	0.090	0.090	<10	84	<3	4	12	1
31...	1300	0.280	0.110	0.100	<10	77	<3	7	5	<1

DATE	TIME	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	SEDI- MENT, SUS- PENDEED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDEED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV										
10...	1300	<10	2	<1	<1.0	180	<6	123	120000	59
AUG										
04...	1400	<10	2	<1	<1.0	160	<6	335	950000	81
10...	1300	<10	2	<1	<1.0	170	<6	323	916000	91
31...	1300	<10	2	<1	<1.0	170	<6	--	--	--

## NONCONNAH CREEK BASIN

07032200 NONCONNAH CREEK NEAR GERMANTOWN, TN

LOCATION.--Lat 35°02'59", long 89°49'08", Shelby County, Hydrologic Unit 08010211, on left bank at downstream side of bridge on Winchester Road, 2.6 mi south of Germantown, and at mile 17.3.

DRAINAGE AREA.--68.2 mi<sup>2</sup>.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1959-1964, 1969; October 1969 to May 1985, October 1985 to current year.

REVISED RECORDS.--WRD TN-74-1: Drainage area, WRD TN-87-1 (P).

GAGE.--Water-stage recorder. Datum of gage is 262.92 ft above sea level, (Levels by Soil Conservation Service).

REMARKS.--Records fair. Periodic observations of water temperature are published in this report as miscellaneous water-quality data. National Weather Service rain gage and telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,700 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Apr. 9	0900	*5,360	*15.83	June 24	1830	4,950	15.23
Apr. 25	1645	3,950	13.71				

Minimum discharge 0.07 ft<sup>3</sup>/s, Oct. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.69	e15	4.4	11	6.2	24	131	48	9.3	34	.98	164
2	.72	e30	3.7	7.4	4.5	404	54	295	4.2	14	25	37
3	1.4	e13	2.6	5.7	3.8	170	33	148	2.2	6.0	2.8	3.5
4	.74	e28	19	124	3.2	72	24	89	1.7	2.8	24	1.4
5	.53	e20	15	205	3.6	45	28	45	1.5	1.4	143	.81
6	.43	e17	9.8	46	3.3	33	23	29	1.4	.77	208	.94
7	.25	e15	7.3	30	2.8	24	20	19	1.2	.51	18	.64
8	.13	e12	7.1	80	2.3	20	29	17	1.0	.41	4.0	.71
9	.19	e10	73	49	1.5	16	2390	11	.88	.35	1.8	47
10	.71	e1.9	123	59	2.7	13	415	39	91	5.2	1.4	3.6
11	1.4	e1.8	45	85	110	11	85	46	271	1.3	.80	1.1
12	.95	e20	24	64	121	8.8	49	58	24	8.3	.67	.77
13	.50	e30	15	36	39	6.9	37	98	10	.63	.63	.74
14	.30	e10	10	22	20	5.4	39	48	71	3.6	.65	2.2
15	.20	e1.8	38	15	66	4.7	669	24	452	35	.69	2.7
16	70	e1.7	85	12	239	30	140	25	22	24	.63	2.1
17	15	e1.7	41	9.6	57	35	57	94	8.7	2.6	.53	.97
18	6.6	e1.6	24	15	27	22	35	115	3.6	1.3	.47	.79
19	1.9	e1.5	46	150	16	16	26	37	2.7	.92	.64	.69
20	.74	e1.5	359	177	14	12	111	18	291	.92	.93	361
21	.52	65	78	977	55	10	45	10	97	.63	.61	31
22	.53	376	49	133	54	33	24	5.8	20	.52	.49	5.9
23	.25	74	216	46	24	105	16	3.8	10	.50	.44	6.6
24	.19	67	76	1230	14	49	13	9.8	533	.42	.37	23
25	.45	75	41	161	302	51	1400	6.0	167	.41	.42	85
26	37	36	32	48	188	48	310	5.1	74	.34	.45	18
27	58	19	24	31	55	47	70	2.4	31	.36	2.7	6.2
28	9.4	12	22	21	34	42	38	3.0	29	.59	4.7	1.9
29	2.1	7.5	19	15	---	26	25	24	1290	.58	3.5	1.2
30	e23	5.8	16	11	---	243	52	6.2	223	.33	.83	.99
31	e38	---	13	7.6	---	616	---	52	---	.28	3.7	---
TOTAL	272.82	970.8	1537.9	3883.3	1468.9	2242.8	6388	1431.1	3744.38	148.97	453.83	812.45
MEAN	8.80	32.4	49.6	125	52.5	72.3	213	46.2	125	4.81	14.6	27.1
MAX	70	376	359	1230	302	616	2390	295	1290	35	208	361
MIN	.13	1.5	2.6	5.7	1.5	4.7	13	2.4	.88	.28	.37	.64
CFSM	.13	.47	.73	1.84	.77	1.06	3.12	.68	1.83	.07	.21	.40
IN.	.15	.53	.84	2.12	.80	1.22	3.48	.78	2.04	.08	.25	.44

e Estimated

## NONCONNAH CREEK BASIN

07032200 NONCONNAH CREEK NEAR GERMANTOWN, TN--Continued

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1993, BY WATER YEAR (WY)

MEAN	14.9	99.8	181	159	185	200	194	117	62.9	37.3	13.4	22.2
MAX	69.4	323	616	531	604	659	834	407	300	354	77.4	164
(WY)	1990	1989	1983	1974	1989	1980	1991	1979	1974	1989	1978	1977
MIN	.000	.21	2.24	.41	14.6	15.2	9.44	3.74	3.09	.70	.37	.087
(WY)	1970	1972	1977	1986	1978	1986	1978	1988	1988	1976	1980	1984

## SUMMARY STATISTICS

## FOR 1992 CALENDAR YEAR

## FOR 1993 WATER YEAR

## WATER YEARS 1970 - 1993

ANNUAL TOTAL	25184.62	23355.25	108
ANNUAL MEAN	68.8	64.0	215
HIGHEST ANNUAL MEAN			22.4
LOWEST ANNUAL MEAN			5900
HIGHEST DAILY MEAN	3510 Mar 10	2390 Apr 9	Jul 2 1989
LOWEST DAILY MEAN	.00 Sep 7	.13 Oct 8	a.00 Oct 1 1969
ANNUAL SEVEN-DAY MINIMUM	.00 Sep 7	.41 Jul 25	.00 Oct 1 1969
INSTANTANEOUS PEAK FLOW		5360 Apr 9	13100 Jul 2 1989
INSTANTANEOUS PEAK STAGE		15.83 Apr 9	
INSTANTANEOUS LOW FLOW		.07 Oct 8	a.00 Oct 1 1969
ANNUAL RUNOFF (CFSM)	1.01	.94	1.58
ANNUAL RUNOFF (INCHES)	13.74	12.74	21.46
10 PERCENT EXCEEDS	97	132	189
50 PERCENT EXCEEDS	9.2	15	4.7
90 PERCENT EXCEEDS	.44	.63	.12

a No flow at times most years.

TENNESSEE RIVER BASIN  
FLOOD-HYDROGRAPH STATION

The data given in the following tables include a description of the station and a table showing time and discharge for the highest peak that occurred during the year. Information is available on some lower peaks, but is not published herein.

03486305 SINKING CREEK AT SINKING CREEK ROAD AT JOHNSON CITY, TN

LOCATION.--Lat 36°16'49", long 82°22'05". Washington County, Hydrologic Unit 06010103, on left bank at downstream end of culvert at Sinking Creek Road, 1.5 miles south of courthouse in Johnson City, and at mile 7.2.

DRAINAGE AREA.--4.10 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 1829.20 ft above sea level.

REMARKS.--Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 136 ft<sup>3</sup>/s, December 23, gage height, 2.80 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 136 ft<sup>3</sup>/s, December 23, gage height, 2.80 ft.

UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
DECEMBER 23, 1992									
00:15:00	7.1	05:15:00	7.5	10:15:00	28	15:15:00	113	20:15:00	111
00:30:00	7.1	05:30:00	7.1	10:30:00	35	15:30:00	113	20:30:00	111
00:45:00	7.1	05:45:00	7.1	10:45:00	39	15:45:00	113	20:45:00	108
01:00:00	7.1	06:00:00	7.1	11:00:00	43	16:00:00	117	21:00:00	105
01:15:00	7.1	06:15:00	7.1	11:15:00	47	16:15:00	122	21:15:00	104
01:30:00	7.1	06:30:00	7.1	11:30:00	51	16:30:00	118	21:30:00	104
01:45:00	7.1	06:45:00	7.1	11:45:00	56	16:45:00	113	21:45:00	99.7
02:00:00	7.5	07:00:00	7.1	12:00:00	62	17:00:00	108	22:00:00	99.7
02:15:00	7.1	07:15:00	7.5	12:15:00	70	17:15:00	136	22:15:00	96
02:30:00	7.1	07:30:00	8.0	12:30:00	75	17:30:00	129	22:30:00	96
02:45:00	7.5	07:45:00	8.0	12:45:00	84	17:45:00	129	22:45:00	96
03:00:00	7.1	08:00:00	8.0	13:00:00	82	18:00:00	126	23:00:00	96
03:15:00	7.1	08:15:00	8.5	13:15:00	77	18:15:00	126	23:15:00	91
03:30:00	7.1	08:30:00	9.9	13:30:00	83	18:30:00	122	23:30:00	97
03:45:00	7.1	08:45:00	11	13:45:00	82	18:45:00	122	23:45:00	94
04:00:00	7.1	09:00:00	13	14:00:00	94	19:00:00	118	24:00:00	96
04:15:00	7.1	09:15:00	16	14:15:00	99.7	19:15:00	113		
04:30:00	7.1	09:30:00	22	14:30:00	98	19:30:00	113		
04:45:00	7.1	09:45:00	23	14:45:00	101	19:45:00	111		
05:00:00	7.1	10:00:00	25	15:00:00	104	20:00:00	110		
DECEMBER 24, 1992									
00:15:00	91	05:15:00	68	10:15:00	49	15:15:00	37	20:15:00	28
00:30:00	93	05:30:00	67	10:30:00	48	15:30:00	36	20:30:00	28
00:45:00	91	05:45:00	65	10:45:00	48	15:45:00	36	20:45:00	28
01:00:00	89	06:00:00	64	11:00:00	48	16:00:00	35	21:00:00	28
01:15:00	87	06:15:00	62	11:15:00	47	16:15:00	35	21:15:00	28
01:30:00	84	06:30:00	62	11:30:00	45	16:30:00	35	21:30:00	27
01:45:00	82	06:45:00	62	11:45:00	44	16:45:00	34	21:45:00	27
02:00:00	82	07:00:00	62	12:00:00	44	17:00:00	32	22:00:00	26
02:15:00	80	07:15:00	62	12:15:00	43	17:15:00	32	22:15:00	26
02:30:00	80	07:30:00	59	12:30:00	43	17:30:00	34	22:30:00	26
02:45:00	78	07:45:00	59	12:45:00	41	17:45:00	31	22:45:00	26
03:00:00	77	08:00:00	58	13:00:00	41	18:00:00	31	23:00:00	25
03:15:00	75	08:15:00	57	13:15:00	41	18:15:00	31	23:15:00	25
03:30:00	73	08:30:00	56	13:30:00	41	18:30:00	31	23:30:00	25
03:45:00	70	08:45:00	56	13:45:00	40	18:45:00	31	23:45:00	25
04:00:00	71	09:00:00	55	14:00:00	39	19:00:00	30	24:00:00	25
04:15:00	70	09:15:00	55	14:15:00	39	19:15:00	29		
04:30:00	69	09:30:00	51	14:30:00	39	19:30:00	29		
04:45:00	69	09:45:00	51	14:45:00	38	19:45:00	29		
05:00:00	68	10:00:00	49	15:00:00	37	20:00:00	28		



## TENNESSEE RIVER BASIN

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## FLOOD-HYDROGRAPH STATION

03486311 SINKING CREEK AT HIGHWAY 67 AT JOHNSON CITY, TN

LOCATION.--Lat 36°18'41", long 82°19'48", Washington County, Hydrologic Unit 06010103, on right bank at downstream end of culvert at State Highway 67, 1.2 miles east of Johnson City Courthouse, and at mile 3.9.

DRAINAGE AREA.--7.29 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder, recording rain gage. Datum of gage is 1594.26 ft above sea level.

REMARKS.--Periodic observations of water temperature is published in this report as miscellaneous water-quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 466 ft<sup>3</sup>/s, July 2, 1991, gage height, 3.60 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 170 ft<sup>3</sup>/s, May 12, gage height, 2.88 ft.

## UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
MAY 12, 1993									
00:15:00	22	05:15:00	9.8	10:15:00	9.0	15:15:00	9.0	20:15:00	13
00:30:00	18	05:30:00	9.4	10:30:00	9.0	15:30:00	9.0	20:30:00	12
00:45:00	15	05:45:00	9.4	10:45:00	9.0	15:45:00	9.0	20:45:00	12
01:00:00	13	06:00:00	9.0	11:00:00	9.0	16:00:00	9.0	21:00:00	12
01:15:00	12	06:15:00	9.0	11:15:00	9.0	16:15:00	9.0	21:15:00	13
01:30:00	12	06:30:00	9.0	11:30:00	9.4	16:30:00	9.0	21:30:00	12
01:45:00	12	06:45:00	9.0	11:45:00	9.0	16:45:00	9.4	21:45:00	12
02:00:00	12	07:00:00	8.5	12:00:00	9.0	17:00:00	9.8	22:00:00	12
02:15:00	11	07:15:00	8.5	12:15:00	9.0	17:15:00	12	22:15:00	12
02:30:00	11	07:30:00	8.5	12:30:00	9.0	17:30:00	11	22:30:00	46
02:45:00	11	07:45:00	8.5	12:45:00	9.0	17:45:00	25	22:45:00	170
03:00:00	10	08:00:00	8.5	13:00:00	9.0	18:00:00	38	23:00:00	140
03:15:00	9.8	08:15:00	8.5	13:15:00	9.0	18:15:00	30	23:15:00	104
03:30:00	9.4	08:30:00	9.0	13:30:00	9.0	18:30:00	23	23:30:00	78
03:45:00	9.0	08:45:00	9.0	13:45:00	9.0	18:45:00	19	23:45:00	64
04:00:00	9.0	09:00:00	9.0	14:00:00	9.0	19:00:00	17	24:00:00	58
04:15:00	10	09:15:00	9.0	14:15:00	9.0	19:15:00	15		
04:30:00	10	09:30:00	9.0	14:30:00	9.0	19:30:00	14		
04:45:00	9.8	09:45:00	9.0	14:45:00	9.0	19:45:00	13		
05:00:00	9.8	10:00:00	9.0	15:00:00	9.0	20:00:00	13		
MAY 13, 1993									
00:15:00	53	05:15:00	26	10:15:00	24	15:15:00	21	20:15:00	18
00:30:00	46	05:30:00	26	10:30:00	24	15:30:00	21	20:30:00	18
00:45:00	39	05:45:00	26	10:45:00	24	15:45:00	21	20:45:00	18
01:00:00	35	06:00:00	26	11:00:00	24	16:00:00	20	21:00:00	18
01:15:00	33	06:15:00	26	11:15:00	24	16:15:00	21	21:15:00	18
01:30:00	31	06:30:00	26	11:30:00	24	16:30:00	22	21:30:00	18
01:45:00	29	06:45:00	26	11:45:00	24	16:45:00	23	21:45:00	18
02:00:00	28	07:00:00	26	12:00:00	23	17:00:00	22	22:00:00	18
02:15:00	26	07:15:00	26	12:15:00	23	17:15:00	21	22:15:00	18
02:30:00	25	07:30:00	26	12:30:00	23	17:30:00	21	22:30:00	18
02:45:00	25	07:45:00	26	12:45:00	22	17:45:00	21	22:45:00	18
03:00:00	24	08:00:00	26	13:00:00	22	18:00:00	20	23:00:00	17
03:15:00	24	08:15:00	26	13:15:00	22	18:15:00	20	23:15:00	17
03:30:00	24	08:30:00	26	13:30:00	22	18:30:00	20	23:30:00	17
03:45:00	24	08:45:00	26	13:45:00	21	18:45:00	20	23:45:00	17
04:00:00	25	09:00:00	25	14:00:00	21	19:00:00	20	24:00:00	17
04:15:00	25	09:15:00	25	14:15:00	21	19:15:00	20		
04:30:00	26	09:30:00	25	14:30:00	21	19:30:00	19		
04:45:00	26	09:45:00	24	14:45:00	21	19:45:00	19		
05:00:00	26	10:00:00	24	15:00:00	21	20:00:00	19		

TENNESSEE RIVER BASIN  
FLOOD-HYDROGRAPH STATION

03486312 CATBIRD CREEK AT MIAMI DRIVE AT JOHNSON CITY, TN

LOCATION.--Lat 36°18'45", long 82°19'32", Washington County, Hydrologic Unit 06010103, on right bank at downstream end of culvert at Miami Drive, 1.5 miles east of Johnson City Courthouse, and at mile 0.1.

DRAINAGE AREA.--2.91 mi<sup>2</sup>, includes 0.14 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 1581.02 ft above sea level.

REMARKS.--Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 94 ft<sup>3</sup>/s, July 18, 1991, gage height, 5.38 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 46 ft<sup>3</sup>/s, December 23, and May 13, gage height, 4.77 ft.

UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
DECEMBER 23, 1992									
00:15:00	11	05:15:00	10	10:15:00	43	15:15:00	29	20:15:00	32
00:30:00	11	05:30:00	10	10:30:00	46	15:30:00	29	20:30:00	31
00:45:00	11	05:45:00	9.9	10:45:00	46	15:45:00	29	20:45:00	31
01:00:00	11	06:00:00	9.7	11:00:00	46	16:00:00	29	21:00:00	31
01:15:00	11	06:15:00	9.7	11:15:00	45	16:15:00	28	21:15:00	31
01:30:00	11	06:30:00	9.5	11:30:00	45	16:30:00	28	21:30:00	31
01:45:00	11	06:45:00	9.5	11:45:00	45	16:45:00	28	21:45:00	31
02:00:00	11	07:00:00	9.5	12:00:00	45	17:00:00	29	22:00:00	30
02:15:00	11	07:15:00	9.5	12:15:00	43	17:15:00	29	22:15:00	30
02:30:00	11	07:30:00	9.3	12:30:00	40	17:30:00	29	22:30:00	29
02:45:00	11	07:45:00	9.3	12:45:00	37	17:45:00	29	22:45:00	29
03:00:00	11	08:00:00	9.5	13:00:00	36	18:00:00	30	23:00:00	29
03:15:00	11	08:15:00	10	13:15:00	37	18:15:00	31	23:15:00	28
03:30:00	10	08:30:00	11	13:30:00	37	18:30:00	31	23:30:00	28
03:45:00	10	08:45:00	12	13:45:00	37	18:45:00	31	23:45:00	28
04:00:00	10	09:00:00	15	14:00:00	36	19:00:00	31	24:00:00	28
04:15:00	10	09:15:00	18	14:15:00	34	19:15:00	31		
04:30:00	10	09:30:00	27	14:30:00	32	19:30:00	32		
04:45:00	10	09:45:00	34	14:45:00	31	19:45:00	32		
05:00:00	10	10:00:00	40	15:00:00	30	20:00:00	31		

MAY 12, 1993

00:15:00	3.1	05:15:00	4.3	10:15:00	3.9	15:15:00	3.8	20:15:00	11
00:30:00	17	05:30:00	4.2	10:30:00	3.9	15:30:00	3.8	20:30:00	9.7
00:45:00	20	05:45:00	4.2	10:45:00	3.9	15:45:00	3.8	20:45:00	8.5
01:00:00	20	06:00:00	4.1	11:00:00	3.9	16:00:00	3.8	21:00:00	7.7
01:15:00	18	06:15:00	4.1	11:15:00	3.9	16:15:00	3.8	21:15:00	7.0
01:30:00	15	06:30:00	4.0	11:30:00	3.9	16:30:00	3.8	21:30:00	6.5
01:45:00	12	06:45:00	4.0	11:45:00	3.9	16:45:00	3.8	21:45:00	6.1
02:00:00	10	07:00:00	4.0	12:00:00	3.9	17:00:00	3.8	22:00:00	5.7
02:15:00	8.5	07:15:00	4.0	12:15:00	3.9	17:15:00	3.8	22:15:00	5.5
02:30:00	7.6	07:30:00	4.0	12:30:00	3.9	17:30:00	3.9	22:30:00	7.6
02:45:00	6.8	07:45:00	3.9	12:45:00	3.9	17:45:00	5.5	22:45:00	18
03:00:00	6.1	08:00:00	3.9	13:00:00	3.9	18:00:00	7.2	23:00:00	22
03:15:00	5.6	08:15:00	4.0	13:15:00	3.9	18:15:00	12	23:15:00	36
03:30:00	5.3	08:30:00	3.9	13:30:00	3.9	18:30:00	11	23:30:00	42
03:45:00	5.0	08:45:00	3.9	13:45:00	3.9	18:45:00	11	23:45:00	43
04:00:00	4.9	09:00:00	3.9	14:00:00	3.9	19:00:00	9.7	24:00:00	41
04:15:00	4.7	09:15:00	3.9	14:15:00	3.9	19:15:00	9.0		
04:30:00	4.6	09:30:00	3.9	14:30:00	3.8	19:30:00	9.5		
04:45:00	4.5	09:45:00	3.9	14:45:00	3.8	19:45:00	11		
05:00:00	4.4	10:00:00	3.9	15:00:00	3.8	20:00:00	12		

TENNESSEE RIVER BASIN

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03486312 CATBIRD CREEK AT MIAMI DRIVE AT JOHNSON CITY, TN--Continued

UNIT DISCHARGE (CUBIC FEET/SECOND)

MAY 13, 1993

00:15:00	40	05:15:00	13	10:15:00	13	15:15:00	12	20:15:00	10
00:30:00	42	05:30:00	13	10:30:00	12	15:30:00	12	20:30:00	10
00:45:00	44	05:45:00	13	10:45:00	12	15:45:00	12	20:45:00	10
01:00:00	45	06:00:00	13	11:00:00	12	16:00:00	12	21:00:00	10
01:15:00	46	06:15:00	13	11:15:00	12	16:15:00	12	21:15:00	10
01:30:00	41	06:30:00	13	11:30:00	12	16:30:00	12	21:30:00	10
01:45:00	32	06:45:00	13	11:45:00	12	16:45:00	12	21:45:00	10
02:00:00	24	07:00:00	13	12:00:00	12	17:00:00	11	22:00:00	9.9
02:15:00	20	07:15:00	13	12:15:00	12	17:15:00	11	22:15:00	9.9
02:30:00	18	07:30:00	13	12:30:00	12	17:30:00	11	22:30:00	9.9
02:45:00	17	07:45:00	13	12:45:00	12	17:45:00	12	22:45:00	9.9
03:00:00	16	08:00:00	13	13:00:00	12	18:00:00	12	23:00:00	9.9
03:15:00	15	08:15:00	13	13:15:00	12	18:15:00	12	23:15:00	9.7
03:30:00	14	08:30:00	13	13:30:00	12	18:30:00	11	23:30:00	9.7
03:45:00	14	08:45:00	13	13:45:00	12	18:45:00	11	23:45:00	9.7
04:00:00	14	09:00:00	13	14:00:00	12	19:00:00	11	24:00:00	9.7
04:15:00	13	09:15:00	13	14:15:00	12	19:15:00	11		
04:30:00	13	09:30:00	13	14:30:00	12	19:30:00	11		
04:45:00	13	09:45:00	13	14:45:00	12	19:45:00	11		
05:00:00	13	10:00:00	13	15:00:00	12	20:00:00	11		

TENNESSEE RIVER BASIN  
FLOOD-HYDROGRAPH STATION

03486485 BRUSH CREEK AT STATE OF FRANKLIN ROAD AT JOHNSON CITY, TN

LOCATION.--Lat 36°18'08", long 82°22'53", Washington County, Hydrologic Unit 06010103, on right bank at downstream end of culvert at State of Franklin Road, 1.8 miles west of Johnson City Courthouse, and at mile 8.1.

DRAINAGE AREA.--4.05 mi<sup>2</sup>, includes 0.82 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 1656.08 ft above sea level.

REMARKS.--Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 393 ft<sup>3</sup>/s, July 28, 1991, gage height, 5.63 ft, from rating curve extended above 74 ft<sup>3</sup>/s, based on step backwater analysis.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 68 ft<sup>3</sup>/s, December 23, gage height, 2.96 ft.

UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
DECEMBER 23, 1992									
00:15:00	14	05:15:00	13	10:15:00	62	15:15:00	41	20:15:00	21
00:30:00	14	05:30:00	13	10:30:00	64	15:30:00	39	20:30:00	21
00:45:00	14	05:45:00	13	10:45:00	67	15:45:00	37	20:45:00	21
01:00:00	14	06:00:00	13	11:00:00	68	16:00:00	35	21:00:00	21
01:15:00	14	06:15:00	13	11:15:00	68	16:15:00	33	21:15:00	20
01:30:00	14	06:30:00	13	11:30:00	67	16:30:00	32	21:30:00	20
01:45:00	14	06:45:00	12	11:45:00	65	16:45:00	30	21:45:00	20
02:00:00	14	07:00:00	12	12:00:00	64	17:00:00	29	22:00:00	20
02:15:00	14	07:15:00	12	12:15:00	64	17:15:00	28	22:15:00	20
02:30:00	14	07:30:00	12	12:30:00	64	17:30:00	27	22:30:00	20
02:45:00	14	07:45:00	13	12:45:00	62	17:45:00	26	22:45:00	19
03:00:00	14	08:00:00	14	13:00:00	61	18:00:00	26	23:00:00	19
03:15:00	14	08:15:00	17	13:15:00	59	18:15:00	25	23:15:00	19
03:30:00	14	08:30:00	23	13:30:00	56	18:30:00	24	23:30:00	19
03:45:00	14	08:45:00	28	13:45:00	52	18:45:00	24	23:45:00	19
04:00:00	14	09:00:00	34	14:00:00	51	19:00:00	23	24:00:00	19
04:15:00	13	09:15:00	41	14:15:00	49	19:15:00	23		
04:30:00	13	09:30:00	48	14:30:00	47	19:30:00	22		
04:45:00	13	09:45:00	53	14:45:00	46	19:45:00	22		
05:00:00	13	10:00:00	57	15:00:00	43	20:00:00	22		

## TENNESSEE RIVER BASIN

## FLOOD-HYDROGRAPH STATION

03486494 BRUSH CREEK AT JOHNSON CITY, TN

LOCATION.--Lat 36°19'15", long 82°21'01", Washington County, Hydrologic Unit 06010103, on right bank at downstream end of culvert, 1000 ft upstream from Elm Street, 0.5 mile north of Johnson City Courthouse, and at mile 5.7.

DRAINAGE AREA.--9.58 mi<sup>2</sup>, including 1.09 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder, recording rain gage. Datum of gage is 1602.76 ft above sea level.

REMARKS.--Periodic observations of water temperature are published in this report as miscellaneous water-quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 663 ft<sup>3</sup>/s, June 30, 1992, gage height, 8.39 ft, from rating curve extended above 180 ft<sup>3</sup>/s, based on step-back water analysis.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 510 ft<sup>3</sup>/s, July 19, gage height, 7.53 ft, from rating curve extended above 180 ft<sup>3</sup>/s, based on step-back water analysis.

## UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
JULY 19, 1993									
00:15:00	4.2	05:15:00	4.2	10:15:00	4.2	15:15:00	18	20:15:00	42
00:30:00	4.2	05:30:00	4.2	10:30:00	4.2	15:30:00	16	20:30:00	34
00:45:00	4.2	05:45:00	4.2	10:45:00	4.2	15:45:00	14	20:45:00	28
01:00:00	4.2	06:00:00	4.2	11:00:00	4.2	16:00:00	13	21:00:00	22
01:15:00	4.2	06:15:00	4.2	11:15:00	4.2	16:15:00	12	21:15:00	18
01:30:00	4.2	06:30:00	4.2	11:30:00	4.2	16:30:00	11	21:30:00	15
01:45:00	4.2	06:45:00	4.2	11:45:00	4.2	16:45:00	11	21:45:00	14
02:00:00	4.2	07:00:00	4.2	12:00:00	16	17:00:00	10	22:00:00	13
02:15:00	4.2	07:15:00	4.2	12:15:00	403	17:15:00	9.7	22:15:00	12
02:30:00	4.2	07:30:00	4.2	12:30:00	510	17:30:00	9.1	22:30:00	12
02:45:00	4.2	07:45:00	4.2	12:45:00	410	17:45:00	8.8	22:45:00	11
03:00:00	4.2	08:00:00	4.2	13:00:00	236	18:00:00	8.3	23:00:00	11
03:15:00	4.2	08:15:00	4.2	13:15:00	131	18:15:00	162	23:15:00	10
03:30:00	4.2	08:30:00	4.2	13:30:00	66	18:30:00	243	23:30:00	10
03:45:00	4.2	08:45:00	4.2	13:45:00	44	18:45:00	195	23:45:00	9.7
04:00:00	4.2	09:00:00	4.2	14:00:00	35	19:00:00	120	24:00:00	9.4
04:15:00	4.2	09:15:00	4.2	14:15:00	31	19:15:00	67		
04:30:00	4.2	09:30:00	4.2	14:30:00	26	19:30:00	44		
04:45:00	4.2	09:45:00	4.2	14:45:00	23	19:45:00	50		
05:00:00	4.2	10:00:00	4.2	15:00:00	20	20:00:00	59		



## TENNESSEE RIVER BASIN

## FLOOD-HYDROGRAPH STATION

03486508 BRUSH CREEK AT PINEY GROVE AT JOHNSON CITY, TN

LOCATION.--Lat 36°20'53", long 82°19'09", Washington County, Hydrologic Unit 06010103, on right downstream wingwall on driveway bridge over Brush Creek, 2.0 mi northeast of Johnson City Courthouse, and at mile 3.9.

DRAINAGE AREA.--14.0 mi<sup>2</sup>, includes 1.09 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 1521.71 ft above sea level.

REMARKS.--Periodic observations of water temperature is published in this report as miscellaneous water-quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 578 ft<sup>3</sup>/s, May 30, 1991, gage height, 5.22 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 492 ft<sup>3</sup>/s, May 29, gage height, 4.80 ft.

## UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
MAY 29, 1993									
00:15:00	7.8	05:15:00	7.8	10:15:00	7.8	15:15:00	486	20:15:00	24
00:30:00	7.8	05:30:00	7.8	10:30:00	7.8	15:30:00	492	20:30:00	23
00:45:00	7.8	05:45:00	7.8	10:45:00	7.8	15:45:00	390	20:45:00	22
01:00:00	7.8	06:00:00	7.8	11:00:00	7.8	16:00:00	243	21:00:00	22
01:15:00	7.8	06:15:00	7.8	11:15:00	7.8	16:15:00	148	21:15:00	21
01:30:00	7.8	06:30:00	7.8	11:30:00	7.8	16:30:00	98	21:30:00	21
01:45:00	7.8	06:45:00	7.8	11:45:00	7.8	16:45:00	75	21:45:00	20
02:00:00	7.8	07:00:00	7.8	12:00:00	7.8	17:00:00	62	22:00:00	20
02:15:00	7.8	07:15:00	7.8	12:15:00	7.8	17:15:00	54	22:15:00	20
02:30:00	7.8	07:30:00	7.8	12:30:00	7.8	17:30:00	48	22:30:00	19
02:45:00	7.8	07:45:00	7.8	12:45:00	7.8	17:45:00	43	22:45:00	19
03:00:00	7.8	08:00:00	7.8	13:00:00	7.8	18:00:00	39	23:00:00	19
03:15:00	7.8	08:15:00	7.8	13:15:00	7.8	18:15:00	36	23:15:00	18
03:30:00	7.8	08:30:00	7.8	13:30:00	7.8	18:30:00	34	23:30:00	18
03:45:00	7.8	08:45:00	7.8	13:45:00	7.8	18:45:00	33	23:45:00	18
04:00:00	7.8	09:00:00	7.8	14:00:00	7.8	19:00:00	31	24:00:00	18
04:15:00	7.8	09:15:00	7.8	14:15:00	8.3	19:15:00	29		
04:30:00	7.8	09:30:00	7.8	14:30:00	9.3	19:30:00	28		
04:45:00	7.8	09:45:00	7.8	14:45:00	42	19:45:00	26		
05:00:00	7.8	10:00:00	7.8	15:00:00	399	20:00:00	25		

## TENNESSEE RIVER BASIN

## FLOOD-HYDROGRAPH STATION

03486657 KNOB CREEK AT CLAUDE SIMMONS ROAD AT JOHNSON CITY, TN

LOCATION.--Lat 36°19'52", long 82°25'29", Washington County, Hydrologic Unit 06010103, on left bank at downstream end of culvert at Claude Simmons Road, 4.4 mi northwest of Johnson City Courthouse, and at mile 6.7.

DRAINAGE AREA.--3.15 mi<sup>2</sup>, includes 0.13 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder, recording rain gage. Datum of gage is 1623.62 ft above sea level.

REMARKS.--Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 68 ft<sup>3</sup>/s, June 30, 1992, gage height, 3.61 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 54 ft<sup>3</sup>/s, March 23, gage height, 3.22 ft.

## UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
MARCH 23, 1993									
00:15:00	5.0	05:15:00	5.0	10:15:00	5.4	15:15:00	9.1	20:15:00	40
00:30:00	5.0	05:30:00	5.0	10:30:00	5.6	15:30:00	9.0	20:30:00	35
00:45:00	5.0	05:45:00	5.0	10:45:00	5.7	15:45:00	8.8	20:45:00	31
01:00:00	5.0	06:00:00	5.0	11:00:00	5.8	16:00:00	8.8	21:00:00	27
01:15:00	5.0	06:15:00	5.0	11:15:00	6.0	16:15:00	8.6	21:15:00	24
01:30:00	5.0	06:30:00	5.0	11:30:00	6.1	16:30:00	8.8	21:30:00	22
01:45:00	5.0	06:45:00	5.0	11:45:00	6.3	16:45:00	9.5	21:45:00	20
02:00:00	5.0	07:00:00	5.0	12:00:00	6.4	17:00:00	11	22:00:00	18
02:15:00	5.0	07:15:00	5.0	12:15:00	6.7	17:15:00	14	22:15:00	17
02:30:00	5.0	07:30:00	5.0	12:30:00	6.9	17:30:00	27	22:30:00	16
02:45:00	5.0	07:45:00	5.0	12:45:00	7.2	17:45:00	28	22:45:00	15
03:00:00	5.0	08:00:00	5.0	13:00:00	7.5	18:00:00	39	23:00:00	14
03:15:00	5.0	08:15:00	5.0	13:15:00	8.0	18:15:00	42	23:15:00	14
03:30:00	5.0	08:30:00	5.0	13:30:00	8.3	18:30:00	46	23:30:00	13
03:45:00	5.0	08:45:00	5.0	13:45:00	8.6	18:45:00	50	23:45:00	13
04:00:00	5.0	09:00:00	5.0	14:00:00	9.0	19:00:00	54	24:00:00	12
04:15:00	5.0	09:15:00	5.0	14:15:00	9.0	19:15:00	54		
04:30:00	5.0	09:30:00	5.0	14:30:00	9.0	19:30:00	52		
04:45:00	5.0	09:45:00	5.2	14:45:00	9.1	19:45:00	48		
05:00:00	5.0	10:00:00	5.3	15:00:00	9.1	20:00:00	44		

TENNESSEE RIVER BASIN  
FLOOD-HYDROGRAPH STATION

03486659 KNOB CREEK TRIBUTARY AT KNOB CREEK ROAD AT JOHNSON CITY, TN

LOCATION.--Lat 36°20'26", long 82°24'33", Washington County, Hydrologic Unit 06010103, on right bank at downstream end of culvert under Knob Creek Road, and at mile 0.1.

DRAINAGE AREA.--1.97 mi<sup>2</sup>, includes 0.66 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 590.36 ft above sea level.

REMARKS.--Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 40 ft<sup>3</sup>/s, August 14, 1991, gage height, 2.09 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 22 ft<sup>3</sup>/s, March 23, gage height, 1.84 ft.

UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
MARCH 23, 1993									
00:15:00	2.6	05:15:00	2.8	10:15:00	3.5	15:15:00	3.6	20:15:00	13
00:30:00	2.6	05:30:00	2.8	10:30:00	3.6	15:30:00	3.6	20:30:00	11
00:45:00	2.6	05:45:00	2.8	10:45:00	3.9	15:45:00	3.6	20:45:00	9.8
01:00:00	2.6	06:00:00	2.8	11:00:00	4.1	16:00:00	3.6	21:00:00	9.0
01:15:00	2.6	06:15:00	2.8	11:15:00	4.3	16:15:00	3.6	21:15:00	8.1
01:30:00	2.6	06:30:00	2.8	11:30:00	4.3	16:30:00	3.9	21:30:00	7.6
01:45:00	2.6	06:45:00	2.8	11:45:00	4.3	16:45:00	5.9	21:45:00	7.0
02:00:00	2.6	07:00:00	2.8	12:00:00	4.3	17:00:00	9.0	22:00:00	6.7
02:15:00	2.6	07:15:00	2.8	12:15:00	4.3	17:15:00	15	22:15:00	6.2
02:30:00	2.6	07:30:00	2.8	12:30:00	4.3	17:30:00	14	22:30:00	5.9
02:45:00	2.6	07:45:00	2.8	12:45:00	4.6	17:45:00	14	22:45:00	5.4
03:00:00	2.6	08:00:00	2.8	13:00:00	4.6	18:00:00	13	23:00:00	5.2
03:15:00	2.8	08:15:00	2.8	13:15:00	4.3	18:15:00	13	23:15:00	5.2
03:30:00	2.8	08:30:00	2.8	13:30:00	4.1	18:30:00	14	23:30:00	5.0
03:45:00	2.8	08:45:00	2.8	13:45:00	4.1	18:45:00	20	23:45:00	5.0
04:00:00	2.8	09:00:00	2.8	14:00:00	3.9	19:00:00	22	24:00:00	5.0
04:15:00	2.8	09:15:00	2.8	14:15:00	3.9	19:15:00	22		
04:30:00	2.8	09:30:00	2.9	14:30:00	3.9	19:30:00	20		
04:45:00	2.8	09:45:00	3.2	14:45:00	3.9	19:45:00	17		
05:00:00	2.8	10:00:00	3.3	15:00:00	3.6	20:00:00	14		

TENNESSEE RIVER BASIN  
FLOOD-HYDROGRAPH STATION

03486665 KNOB CREEK AT WAYFIELD DRIVE AT JOHNSON CITY, TN

LOCATION.--Lat 36°22'11", long 82°22'13", Washington County, Hydrologic Unit 06010103, on left bank at downstream end of culvert, 4.1 miles northwest of Johnson City Courthouse, and at mile 2.1.

DRAINAGE AREA.--11.4 mi<sup>2</sup>, including 2.4 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 1441.49 ft above sea level.

REMARKS.--Periodic observations of water temperature is published in this report as miscellaneous water-quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 317 ft<sup>3</sup>/s, July 28, 1991, gage height, 3.53 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 229 ft<sup>3</sup>/s, September 27, gage height, 2.95 ft.

UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
SEPTEMBER 27, 1993									
00:15:00	6.6	05:15:00	217	10:15:00	32	15:15:00	20	20:15:00	15
00:30:00	6.6	05:30:00	229	10:30:00	31	15:30:00	20	20:30:00	14
00:45:00	6.6	05:45:00	223	10:45:00	30	15:45:00	19	20:45:00	14
01:00:00	6.6	06:00:00	209	11:00:00	30	16:00:00	19	21:00:00	14
01:15:00	6.6	06:15:00	179	11:15:00	29	16:15:00	18	21:15:00	14
01:30:00	6.6	06:30:00	138	11:30:00	28	16:30:00	18	21:30:00	14
01:45:00	6.6	06:45:00	104	11:45:00	28	16:45:00	18	21:45:00	14
02:00:00	6.6	07:00:00	80	12:00:00	28	17:00:00	18	22:00:00	13
02:15:00	6.6	07:15:00	65	12:15:00	28	17:15:00	17	22:15:00	13
02:30:00	6.6	07:30:00	57	12:30:00	27	17:30:00	16	22:30:00	13
02:45:00	6.6	07:45:00	54	12:45:00	27	17:45:00	16	22:45:00	13
03:00:00	6.6	08:00:00	51	13:00:00	26	18:00:00	16	23:00:00	13
03:15:00	6.6	08:15:00	47	13:15:00	25	18:15:00	16	23:15:00	13
03:30:00	6.6	08:30:00	43	13:30:00	24	18:30:00	16	23:30:00	13
03:45:00	7.0	08:45:00	40	13:45:00	24	18:45:00	15	23:45:00	13
04:00:00	8.3	09:00:00	37	14:00:00	23	19:00:00	15	24:00:00	13
04:15:00	34	09:15:00	35	14:15:00	22	19:15:00	15		
04:30:00	114	09:30:00	34	14:30:00	21	19:30:00	15		
04:45:00	163	09:45:00	32	14:45:00	21	19:45:00	15		
05:00:00	189	10:00:00	32	15:00:00	21	20:00:00	15		

## TENNESSEE RIVER BASIN

## FLOOD-HYDROGRAPH STATION

03486670 COBB CREEK AT EAST OAKLAND AVENUE AT JOHNSON CITY, TN

LOCATION.--Lat 36°21'24", long 82°25'29", Washington County, Hydrologic Unit 06010103, on right bank at downstream end of culvert at Oakland Avenue, 3.1 miles north of Johnson City Courthouse, and at mile 3.1.

DRAINAGE AREA.--3.75 mi<sup>2</sup>, includes 1.45 mi<sup>2</sup> without surface drainage.

PERIOD OF RECORD.--October 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 1533.56 ft above sea level.

REMARKS.--Periodic observations of water temperature is published in this report as miscellaneous water quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 374 ft<sup>3</sup>/s, May 27, 1991, gage height, 5.95 ft, from rating curve extended above 52 ft<sup>3</sup>/s, on basis of slope-area measurement at gage height 5.95 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 115 ft<sup>3</sup>/s, May 29, gage height, 4.02 ft, from rating curve extended above 52 ft<sup>3</sup>/s, on basis of slope-area measurement at gage height 5.95 ft.

## UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
MAY 29, 1993									
00:15:00	1.2	05:15:00	1.3	10:15:00	1.2	15:15:00	98	20:15:00	4.0
00:30:00	1.2	05:30:00	1.3	10:30:00	1.2	15:30:00	65	20:30:00	3.6
00:45:00	1.2	05:45:00	1.3	10:45:00	1.2	15:45:00	32	20:45:00	3.4
01:00:00	1.2	06:00:00	1.3	11:00:00	1.2	16:00:00	26	21:00:00	3.1
01:15:00	1.3	06:15:00	1.2	11:15:00	1.2	16:15:00	25	21:15:00	2.9
01:30:00	1.3	06:30:00	1.2	11:30:00	1.2	16:30:00	22	21:30:00	2.8
01:45:00	1.3	06:45:00	1.3	11:45:00	1.2	16:45:00	18	21:45:00	2.6
02:00:00	1.3	07:00:00	1.3	12:00:00	1.2	17:00:00	15	22:00:00	2.5
02:15:00	1.3	07:15:00	1.3	12:15:00	1.2	17:15:00	13	22:15:00	2.4
02:30:00	1.3	07:30:00	1.3	12:30:00	1.2	17:30:00	12	22:30:00	2.3
02:45:00	1.3	07:45:00	1.3	12:45:00	1.2	17:45:00	10	22:45:00	2.3
03:00:00	1.2	08:00:00	1.3	13:00:00	1.2	18:00:00	9.4	23:00:00	2.2
03:15:00	1.2	08:15:00	1.3	13:15:00	1.2	18:15:00	8.4	23:15:00	2.2
03:30:00	1.3	08:30:00	1.3	13:30:00	1.2	18:30:00	7.7	23:30:00	2.1
03:45:00	1.3	08:45:00	1.3	13:45:00	1.3	18:45:00	6.9	23:45:00	2.1
04:00:00	1.2	09:00:00	1.3	14:00:00	1.9	19:00:00	6.2	24:00:00	2.0
04:15:00	1.2	09:15:00	1.3	14:15:00	7.1	19:15:00	5.7		
04:30:00	1.3	09:30:00	1.3	14:30:00	31	19:30:00	5.1		
04:45:00	1.3	09:45:00	1.3	14:45:00	66	19:45:00	4.8		
05:00:00	1.2	10:00:00	1.2	15:00:00	115	20:00:00	4.4		



TENNESSEE RIVER BASIN  
FLOOD-HYDROGRAPH STATION

03495547 LOVE CREEK AT I-40 AT KNOXVILLE, TN

LOCATION.--Lat 36°00'39" long 83°50'36", Knox County, Hydrologic Unit 06010201, on left downstream wingwall of culvert under I-40, at mile 1.2.

DRAINAGE AREA.--8.01 mi<sup>2</sup>.

PERIOD OF RECORD.--June 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 830.42 ft above sea level.

REMARKS.--Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 692 ft<sup>3</sup>/s, December 23, 1990, gage height, 7.98 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 353 ft<sup>3</sup>/s, January 24, gage height, 5.58 ft.

UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
JANUARY 24, 1993									
00:15:00	11	05:15:00	11	10:15:00	331	15:15:00	104	20:15:00	40
00:30:00	11	05:30:00	11	10:30:00	345	15:30:00	98	20:30:00	39
00:45:00	11	05:45:00	11	10:45:00	352	15:45:00	89	20:45:00	38
01:00:00	11	06:00:00	11	11:00:00	353	16:00:00	83	21:00:00	37
01:15:00	11	06:15:00	11	11:15:00	339	16:15:00	78	21:15:00	36
01:30:00	11	06:30:00	11	11:30:00	323	16:30:00	73	21:30:00	35
01:45:00	11	06:45:00	11	11:45:00	307	16:45:00	68	21:45:00	34
02:00:00	11	07:00:00	11	12:00:00	286	17:00:00	66	22:00:00	34
02:15:00	11	07:15:00	11	12:15:00	267	17:15:00	61	22:15:00	33
02:30:00	11	07:30:00	11	12:30:00	248	17:30:00	59	22:30:00	33
02:45:00	11	07:45:00	12	12:45:00	231	17:45:00	56	22:45:00	32
03:00:00	11	08:00:00	14	13:00:00	213	18:00:00	53	23:00:00	32
03:15:00	11	08:15:00	20	13:15:00	196	18:15:00	51	23:15:00	31
03:30:00	11	08:30:00	32	13:30:00	181	18:30:00	49	23:30:00	31
03:45:00	11	08:45:00	55	13:45:00	166	18:45:00	47	23:45:00	31
04:00:00	11	09:00:00	114	14:00:00	154	19:00:00	46	24:00:00	30
04:15:00	11	09:15:00	190	14:15:00	141	19:15:00	45		
04:30:00	11	09:30:00	249	14:30:00	130	19:30:00	43		
04:45:00	11	09:45:00	288	14:45:00	120	19:45:00	41		
05:00:00	11	10:00:00	315	15:00:00	111	20:00:00	41		

TENNESSEE RIVER BASIN  
FLOOD-HYDROGRAPH STATION

03495957 WHITES CREEK AT NORA ROAD, AT KNOXVILLE, TN

LOCATION.--Lat 36°01'21", long 83°54'52", Knox County, Hydrologic Unit 0601201, on left downstream wingwall of bridge on Nora Road, and at mile 0.6.

DRAINAGE AREA.--9.51 mi<sup>2</sup>.

PERIOD OF RECORD.--April 1990 to September 1992. Flood hydrograph, October 1992 to September 1993.

GAGE.--Water-stage recorder. Datum of gage is 948.46 ft above sea level.

REMARKS.--Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

MAXIMUM FOR PERIOD OF RECORD.--Maximum discharge, 485 ft<sup>3</sup>/s, December 23, 1990, gage height, 6.53 ft.

MAXIMUM FOR CURRENT YEAR.--Maximum discharge, 169 ft<sup>3</sup>/s, March 23, gage height, 4.54 ft.

UNIT DISCHARGE (CUBIC FEET/SECOND)

TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE	TIME	VALUE
MARCH 23, 1993									
00:15:00	22	05:15:00	23	10:15:00	37	15:15:00	88	20:15:00	153
00:30:00	22	05:30:00	24	10:30:00	37	15:30:00	90	20:30:00	158
00:45:00	22	05:45:00	24	10:45:00	36	15:45:00	92	20:45:00	162
01:00:00	22	06:00:00	25	11:00:00	36	16:00:00	94	21:00:00	165
01:15:00	22	06:15:00	27	11:15:00	36	16:15:00	95	21:15:00	168
01:30:00	22	06:30:00	28	11:30:00	36	16:30:00	99	21:30:00	169
01:45:00	22	06:45:00	29	11:45:00	36	16:45:00	102	21:45:00	168
02:00:00	22	07:00:00	29	12:00:00	36	17:00:00	105	22:00:00	168
02:15:00	22	07:15:00	29	12:15:00	36	17:15:00	106	22:15:00	166
02:30:00	22	07:30:00	29	12:30:00	36	17:30:00	109	22:30:00	166
02:45:00	22	07:45:00	29	12:45:00	37	17:45:00	110	22:45:00	165
03:00:00	22	08:00:00	29	13:00:00	38	18:00:00	111	23:00:00	164
03:15:00	22	08:15:00	30	13:15:00	39	18:15:00	113	23:15:00	162
03:30:00	22	08:30:00	30	13:30:00	42	18:30:00	115	23:30:00	160
03:45:00	22	08:45:00	31	13:45:00	49	18:45:00	117	23:45:00	156
04:00:00	22	09:00:00	32	14:00:00	57	19:00:00	122	24:00:00	152
04:15:00	22	09:15:00	34	14:15:00	62	19:15:00	128		
04:30:00	22	09:30:00	36	14:30:00	71	19:30:00	133		
04:45:00	22	09:45:00	36	14:45:00	81	19:45:00	140		
05:00:00	22	10:00:00	37	15:00:00	85	20:00:00	146		

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

#### Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device that will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from current meter or indirect measurements of peak flow. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Maximum discharge at crest-stage partial-record stations

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
CUMBERLAND RIVER BASIN								
Whiteoak Creek at Sunbright, TN (03409000)	Lat 36°14'38", long 84°40'14", Morgan County, Hydrologic Unit 05130104, at bridge on U.S. Highway 27 in Sunbright. Datum of gage is 1,294.05 ft above sea level. Drainage area is 13.5 mi <sup>2</sup> .	1934, 1955-82, 1985-93	3-23-93	10.31	-	5-27-73	17.24a	5,560
East Fork Obey River near Jamestown, TN (03414500)	Lat 36°24'58", long 85°01'35", Fentress County, Hydrologic Unit 05130105, on right bank 200 ft upstream from bridge on State Highway 52, 0.5 mi upstream from Poplar Cove Creek, 5.3 mi west of Jamestown, and at mi 12.7. Datum of gage is 680.30 ft, Sandy Hook Datum. Drainage area is 202 mi <sup>2</sup> include 6.0 mi <sup>2</sup> without surface drainage.	1942-91† 1992-93	12- 3-91 3-23-93	21.85 13.68	21,900 8,940	5-27-73	30.46	44,800
Wolf River near Byrdstown, TN (03416000)	Lat 36°33'37", long 85°04'23", Pickett County, Hydrologic Unit 05130105, on right bank 0.3 mi upstream from bridge on county road, 0.5 mi upstream from Widow Creek, 3.2 mi east of Byrdstown, 5.4 mi upstream from Lick Creek, and at mi 26.2. Datum of gage is 707.54 ft, Sandy Hook Datum. Drainage area is 106 mi <sup>2</sup> .	1942-91† 1992-93	1- 3-92 12-23-92	7.94 5.62	6,800 2,580	9- 2-82	17.14	23,500

See footnotes at the end of the table.

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
CUMBERLAND RIVER BASIN--Continued								
Roaring River above Gainesboro, TN (03418070)	Lat 36°21'04", long 85°32'45", Jackson County, Hydrologic Unit 05130106, near left bank of downstream end of county road bridge, 1.1 mi upstream from Blackburn Fork, 6.3 mi east of Gainesboro, and at mi 9.1. Datum of gage is 520.56 ft above sea level. Drainage area is 210 mi <sup>2</sup> , includes 34 mi <sup>2</sup> without surface drainage.	1974-91† 1992-93	12- 3-91 5- 4-93	14.66 11.26	7,840 4,590	3-12-75	21.83	22,400
Doe Creek at Gainesboro, TN (03418201)	Lat 36°21'23", long 85°39'20", Jackson County, Hydrologic Unit 05130106, at bridge on Highway 56, at Gainesboro. Datum of gage is 519.37 ft above sea level. Drainage area is 5.72 mi <sup>2</sup> .	1978-93	1993	<3.81	-	8-31-82	7.28	-
Charles Creek near McMinn- ville, TN (03421200)	Lat 35°43'00", long 85°46'05", Warren County, Hydrologic Unit 05130107, at bridge on county road at Faulkner Springs, 2.7 mi north of McMinnville. Drainage area is 31.1 mi <sup>2</sup> .	1955-93	1993	<7.13	-	6-22-89	17.03	24,800
Mulherrin Creek near Gordons- ville, TN (03424900)	Lat 36°11'28", long 85°57'11", Smith County, Hydrologic Unit 05130108, at bridge on State Highway 53, 1.3 mi upstream from mouth, 1.5 mi northwest of Gordonsville. Drainage area is 26.9 mi <sup>2</sup> .	1982, 1986-93	1- 4-93	13.94	-	2-14-89	23.85	-
Peyton Creek at Monoville, TN (03425045)	Lat 36°18'37", long 85°59'21", Smith County, Hydrologic Unit 05130201, at county road bridge 0.9, mi northwest of Monoville. Datum of gage is 459.39 ft above sea level. Drainage area is 44.7 mi <sup>2</sup> .	1986-93	1993	<27.71	-	3- 6-89	40.41	-
Darwin Branch tributary at Hartsville, TN (03425357)	Lat 36°23'54", long 86°09'08", Trousdale County, Hydrologic Unit 05130201, at culvert on New Hall Town Road, 0.9 mi northwest of Hartsville. Drainage area is 0.66 mi <sup>2</sup> .	1986-93	1993	<19.45	-	9-23-89	23.97	-
Second Creek near Walnut Grove, TN (03425365)	Lat 36°24'01", long 86°12'48", Trousdale County, Hydrologic Unit 05130201, at culvert on State Highways 10 and 25, 2.6 mi west of Hartsville. Drainage area is 3.47 mi <sup>2</sup> .	1986-93	5- 3-93	23.51	-	9-23-89	29.24	-

See footnotes at the end of the table.

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
CUMBERLAND RIVER BASIN--Continued								
East Fork Stones River at Wood- bury, TN (03426800)	Lat 35°49'41", long 86°04'36", Cannon County, Hydrologic Unit 05130203, at bridge on U.S. Highway 70S at Woodbury. Datum of gage is 676.23 ft above sea level. Drainage area is 39.1 mi <sup>2</sup> .	1962-89† 1990-93	5- 3-93	7.97	1,690	3-15-73	16.75	13,200
Brawleys Fork below Bradyville, TN (03426874)	Lat 35°44'44", long 86°10'14", Cannon County, Hydrologic Unit 05130203, at bridge on Bradyville Pike, 0.5 mi northwest of Bradyville. Drainage area is 15.4 mi <sup>2</sup> .	1983-93	5- 3-93	25.52	2,260	10- 1-89	27.94	2,850
Reed Creek near Bradyville, TN (034269424)	Lat 35°44'44", long 86°12'31", Rutherford County, Hydrologic Unit 05130203, at bridge on Bradyville Pike, 2.4 mi northwest of Bradyville. Drainage area is 3.52 mi <sup>2</sup> .	1983-93	5- 3-93	2.79	-	9- 4-86	4.55	-
East Fork Stones River near Lascassas, TN (03427500)	Lat 35°55'06", long 86°20'02", Rutherford County, Hydrologic Unit 05130203, on left bank 50 (revised) ft upstream from highway bridge, 2.5 mi southwest of Lascassas, 3.7 mi downstream from Bradley Creek, 6.0 mi northeast of the courthouse in Murfreesboro, and at mi 15.4. Datum of gage is 507.88 ft, Sandy Hook Datum. Drainage area is 262 mi <sup>2</sup> .	1950-58†, 1963-91† 1992-93a	12- 3-91 12-23-92	29.80 17.45	18,000 7,320	3-13-75	39.48	41,200
Bushman Creek at Pitts Lane Ford near Compton, TN (03427690)	Lat 35°53'08", long 86°20'47", Rutherford County, Hydrologic Unit 05130203, on right bank 75 ft upstream of bridge on De Jarnett Lane, 0.1 mi west of intersection of De Jarnett Lane and State Highway 96, 1.6 mi southwest of Compton. Datum of gage is 569.74 ft above sea level. Drainage area is 9.67 mi <sup>2</sup> .	1989-92† 1993	1993	<3.93	-	2- 3-90	6.43	1,610
Lytle Creek at Sanbyrne Drive at Murfreesboro, TN (03428043)	Lat 35°49'38", long 86°23'28", Rutherford County, Hydrologic Unit 05130203, at bridge on Sanbyrne Drive, 1 mi south of intersection of Highways 41 and 231 in Murfreesboro. Datum of gage is 591.91 ft above sea level.	1978-90 1991-92† 1993	1993	<0.00	-	9- 4-86	2.55	-

See footnotes at the end of the table.



## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
CUMBERLAND RIVER BASIN--Continued								
West Fork Stones River near Smyrna, TN (03428500)	Lat 35°56'25", long 86°27'54", Rutherford County, Hydrologic Unit 05130203, near left bank at county bridge on Sulphur Springs Road, 400 ft upstream from Nice's Mill dam, 1.6 mi downstream from Overall Creek, 4.2 mi southeast of Smyrna, and at mi 6.4. Datum of gage is 500.00 ft above sea level. Drainage area is 237 mi <sup>2</sup> , includes 43 mi <sup>2</sup> without surface drainage.	1965-91† 1992-93	12- 3-91 12-23-92	14.00 7.39	15,000 4,730	3-13-75	19.18	63,800
McCrory Creek at Ironwood Drive at Donelson, TN (03430118)	Lat 36°09'07", long 86°39'02", Davidson County, Hydrologic Unit 05130203, at bridge under Ironwood Drive, 1.3 mi southeast of inter- section of U.S. Highway 70 (Lebanon Road) and Donelson Pike in Donelson. Datum of gage is 430.63 ft above sea level. Drainage area is 7.31 mi <sup>2</sup> .	1977-93b	7-15-93	4.18	358	5- 6-84	9.87	2,850
Mill Creek at Nolensville, TN (03430400)	Lat 35°57'32", long 86°40'31", Williamson County, Hydrologic Unit 05130202, at bridge on Sunset Road, 0.6 mi north- west of Nolensville. Datum of gage is 586.18 ft above sea level. Drainage area is 12.0 mi <sup>2</sup> .	1965-93	3-23-93	4.85	1,240	5- 7-84	9.82	11,400
Sevenmile Creek at Blackman Road, near Nashville, TN (03431040)	Lat 36°04'21", long 86°44'00", Davidson County, Hydrologic Unit 05130202, at bridge on Blackman Road, 7.0 mi southeast of State capitol in Nashville. Datum of gage is 499.08 ft above sea level. Drainage area is 12.2 mi <sup>2</sup> .	1965-93	4-25-93	8.18	-	9-13-79	9.58	-
Mill Creek at Thompson Lane, near Woodbine, TN (03431060)	Lat 36°07'04", long 86°43'08", Davidson County, Hydrologic Unit 05130202, at bridge on Thompson Lane, 1.5 mi northeast of intersection of Thompson Lane and Nolensville Road (U.S. Highway 31-A, 41-A) in Woodbine. Datum of gage is 432.55 ft above sea level. Drainage area is 93.4 mi <sup>2</sup> .	1965-93	1993	<9.67	-	5- 4-79	20.63	26,200

See footnotes at the end of the table.

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
CUMBERLAND RIVER BASIN--Continued								
Mill Creek trib- utary at Glen- rose Avenue, at Woodbine, TN (03431062)	Lat 36°07'02", long 86°43'37", Davidson County, Hydrologic Unit 05130202, at culvert under Glenrose Avenue, 1.1 mi northeast of intersection of Nolensville Road and Thompson Lane in Woodbine, and 750 ft upstream from mouth. Datum of gage is 443.52 ft above sea level. Drainage area is 1.17 mi <sup>2</sup> .	1977-93b	5- 3-93	6.97	546	5- 6-84	9.12	833
West Fork Browns Creek at General Bates Drive, at Nashville, TN (03431120)	Lat 36°06'29", long 86°47'07", Davidson County, Hydrologic Unit 05130202, at bridge on General Bates Drive, 4.0 mi south of State capitol in Nashville. Datum of gage is 499.94 ft above sea level. Drainage area is 3.30 mi <sup>2</sup> .	1965-93	5- 3-93	6.42	1,650	3-29-75	7.00	2,110
East Fork Browns Creek at Baird-Ward Printing Company, at Nashville, TN (03431240)	Lat 36°06'33", long 86°46'00", Davidson County, Hydrologic Unit 05130202, at bridge on access road to Baird-Ward Printing Co., Plant No. 1, 500 ft west of 100-Oaks Shopping Center, and 4.0 mi southeast of State capitol in Nashville. Datum of gage is 497.91 ft above sea level. Drainage area is 1.58 mi <sup>2</sup> .	1965-93	5- 3-93	5.37	690	5- 3-93	5.37	690
Browns Creek at Factory Street, at Nashville, TN (03431340)	Lat 36°08'26", long 86°45'31", Davidson County, Hydrologic Unit 05130202, at bridge on Factory Street, 800 ft downstream from Louisville and Nashville Railroad bridge, and 2.3 mi southeast of State capitol in Nashville. Datum of gage is 420.66 ft above sea level. Drainage area is 13.2 mi <sup>2</sup> .	1965-93	5- 3-93	8.05	-	9-13-79	10.89	7,800
Pages Branch at Avondale, TN (03431490)	Lat 36°12'22", long 86°46'24", Davidson County, Hydrologic Unit 05130202, at culvert under Trinity Lane, 900 ft east of intersection of Interstate 65 and Trinity Lane at Avondale, 0.9 mi upstream from mouth. Drain- age area is 2.01 mi <sup>2</sup> .	1977-93b	5- 3-93	4.99	1,120	12- 3-78	6.20	-

See footnotes at the end of the table.

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
CUMBERLAND RIVER BASIN--Continued								
Earthman Fork at Whites Creek, TN (03431550)	Lat 36°15'55", long 86°49'51", Davidson County, Hydrologic Unit 05130202, at bridge on Whites Creek Pike in town of Whites Creek, 1,800 ft upstream from mouth. Drain- age area is 6.29 mi <sup>2</sup> .	1965-93	5- 3-93	9.43	2,510	5- 3-93	9.43	2,510
Ewing Creek at Richmond Hill Drive at Park- wood, TN (03431573)	Lat 36°13'50", long 86°46'28", Davidson County, Hydrologic Unit 05130202, at bridge on Richmond Hill Drive, 1.0 mi southeast of Parkwood. Datum of gage is above sea level. Drainage area is 2.17 mi <sup>2</sup> .	1976-93	5- 3-93	496.03	-	6- 9-86	497.32	-
Ewing Creek at Brick Church Pike at Parkwood, TN (03431575)	Lat 36°13'58", long 86°46'54", Davidson County, Hydrologic Unit 05130202, at bridge on Brick Church Pike, 0.4 mi upstream from North Fork, 0.8 mi south of Parkwood. Datum of gage is above sea level. Drainage area is 3.02 mi <sup>2</sup> .	1976-93	5- 3-93	477.36	-	6- 9-86	478.15	-
Ewing Creek at Gwynwood Drive near Jordonia, TN (03431578)	Lat 36°13'58", long 86°47'32", Davidson County, Hydrologic Unit 05130202, at bridge on county road, 0.3 mi down- stream from North Fork, 3.4 mi northeast of Bordeaux, 4.5 mi northeast of Jordonia, and at mi 2.1. Datum of gage is above sea level. Drainage area is 9.98 mi <sup>2</sup> .	1976-93	5- 3-93	462.51	-	6- 9-86	463.10	-
Ewing Creek below Knight Road, near Bordeaux, TN (03431581)	Lat 36°13'55", long 86°48'14", Davidson County, Hydrologic Unit 05130202, at downstream side of bridge on Knight Road, 3.0 mi northeast of Bordeaux. Datum of gage is above sea level. Drainage area is 13.3 mi <sup>2</sup> .	1976-93	5- 3-93	448.12	-	6- 9-86	449.80	-
Sugartree Creek at YMCA Access Road, at Green Hills, TN (03431677)	Lat 36°06'13", long 86°49'12", Davidson County, Hydrologic Unit 05130202, at bridge on YMCA Access Road, 0.5 mi southwest of Hillsboro High School, at Green Hills. Datum of gage is above sea level. Drainage area is 1.51 mi <sup>2</sup> .	1976-93	5- 3-93	544.69	-	9-13-79	545.23	-

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
CUMBERLAND RIVER BASIN--Continued								
Sugartree Creek at Abbott Martin Road, at Green Hills, TN (03431679)	Lat 36°06'23", long 86°49'17", Davidson County, Hydrologic Unit 05130202, at bridge on Abbott Martin Road, at inter- section of Bedford Avenue and Abbott Martin Road, at Green Hills. Datum of gage is above sea level. Drainage area is 2.19 mi <sup>2</sup> .	1976-93	5- 3-93	531.42	-	9-13-79	531.30	-
Bednigo Branch tributary at Chestnut Grove, TN (03431795)	Lat 36°25'10", long 86°54'11", Robertson County, Hydrologic Unit 05130206, at culvert on Coopertown Road, 0.6 mi southwest of Crunk, 0.6 mi northeast of Chestnut Grove. Drainage area is 0.47 mi <sup>2</sup> .	1986-93	1993	<20.05	-	12-25-84 12-25-87	21.06	-
Sycamore Creek near Ashland City, TN (03431800)	Lat 36°19'12", long 87°03'04", Cheatham County, Hydrologic Unit 05130202, near right bank on downstream end of pier of bridge on State Highway 49, at Sycamore, 3.2 mi north of Ashland City, 4.4 mi upstream from Spring Creek, and at mi 8.6. Elevation of gage is 400 ft above sea level, from topographic map. Drainage area is 97.2 mi <sup>2</sup> .	1961-87† 1988-91† 1992-93	12- 3-91 5- 4-93	12.87 11.86	15,000 10,400	2-21-89	13.50	18,500
Murfrees Fork above Burwood, TN (03432470)	Lat 35°48'58", long 86°57'20", Williamson County, Hydrologic Unit 05130204, at county road bridge, just downstream from Cayce Branch, 1.6 mi east of Burwood. Drainage area is 7.43 mi <sup>2</sup> .	1986-93	5- 3-93	22.84	-	9- 4-86	26.85	-
Little Harpeth River at Granny White Pike, at Brentwood, TN (03432925)	Lat 36°01'30", long 86°49'09", Williamson County, Hydrologic Unit 05130204, at bridge on Granny White Pike, 2.0 mi southwest of Brentwood. Datum of gage is 618.29 ft above sea level. Drainage area is 22.0 mi <sup>2</sup> .	1978-93	5- 3-93	12.51	3,280	5- 4-79	17.55	9,260
Jones Creek near Burns, TN (03434590)	Lat 36°06'15", long 87°19'05", Dickson County, Hydrologic Unit 05130204, at bridge on Rock Church Road, 3.5 mi north of Burns and at mi 21.9. Drainage area is 13.3 mi <sup>2</sup> .	1984-93	3-22-93	4.62	680	5- 6-84	9.87	3,750

See footnotes at the end of the table.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
CUMBERLAND RIVER BASIN--Continued								
Hall Branch near Charlotte, TN (03434616)	Lat 36°11'48", long 87°20'30", Dickson County, Hydrologic Unit 05130204, at Culvert under State Highway 48, 1.4 mi north of Charlotte and at mi 2.6. Drainage area is 0.50 mi <sup>2</sup> .	1984-93	1993	<7.69	-	5- 6-84	15.71	385
Bartons Creek near Cumberland Furnace, TN (034350021)	Lat 36°15'02", long 87°20'00", Dickson County, Hydrologic Unit 05130205, at bridge on Stayton road, 1.9 mi south- east of Cumberland Furnace. Drainage area is 22.3 mi <sup>2</sup> .	1984-93	1993	<10.21	-	5-27-91	14.93	-
Bartons Creek tributary near Stayton, TN (0343500213)	Lat 36°15'19", long 87°19'12", Dickson County, Hydrologic Unit 05130205, at Culvert under Jackson Lane road, 1.5 mi southeast of Stayton, 2.5 mi southeast of Cumberland Furnace. Drainage area is 0.51 mi <sup>2</sup> .	1984-93	1993	<8.92	-	5-27-91	13.49	-
Honey Run Creek below Cross Plains, TN (034351113)	Lat 36°32'31", long 86°42'14", Robertson County, Hydrologic Unit 05130206, at Empson Bridge on county road, 0.4 mi above mouth of Empson branch, 0.6 mi southwest of Cross Plains. Drainage area is 25.8 mi <sup>2</sup> .	1986-93	4- 4-93	22.65	-	2- 3-90	23.11	-
Sulphur Fork Red River above Springfield, TN (03435770)	Lat 36°30'47", long 86°51'44", Robertson County, Hydrologic Unit 05130206, on left bank 150 ft downstream from new bridge on State Highway 49, 1.2 mi downstream from Beaver Dam Creek, 1.3 mi northeast of Springfield. Datum of gage is 538.17 ft above sea level. Drainage area is 65.6 mi <sup>2</sup> .	1975-88† 1988-93	5- 4-93	13.11	8,210	2-21-89	14.29	11,200
Spring Creek tributary near Cedar Hill, TN (03435930)	Lat 36°32'08", long 86°59'26", Robertson County, Hydrologic Unit 05130206, at culvert on Kinney Road, 1.2 mi southeast of Cedar Hill. Drainage area is 1.40 mi <sup>2</sup> .	1986-93	5- 3-93	21.75	-	5-17-90	22.23	-
Red River at Port Royal, TN (03436100)	Lat 36°33'17", long 87°08'31", Montgomery County, Hydrologic Unit 05130206, on left bank at county road bridge at Port Royal, 250 ft downstream from Sulphur Fork, and at mi 25.5. Datum of gage is 376.25 ft above sea level. Drainage area is 935 mi <sup>2</sup> , includes 437 mi <sup>2</sup> without surface drainage.	1961-91† 1992-93	12- 3-91 5- 4-93	30.45 25.00	18,300 12,200	3-13-75	48.26	60,300

See footnotes at the end of the table.



## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
CUMBERLAND RIVER BASIN--Continued								
Cummings Creek near Dotson- ville, TN (03436505)	Lat 36°29'18", long 87°28'06", Montgomery County, Hydrologic Unit 05130205, at bridge on Dotsonville Road, 1.1 mi northeast of Dotsonville. Drainage area is 2.65 mi <sup>2</sup> .	1984-93	7-22-93	7.65	-	12-25-87	9.45	-
Yellow Creek at Ellis Mills, TN (03436690)	Lat 36°18'39", long 87°33'15", Houston County, Hydrologic Unit 05130205, on right bank at downstream end of bridge on county road, 0.3 mi northeast of Ellis Mills, 1.0 mi upstream from Leather- wood Creek, 1.0 mi downstream from Williamson Branch. Elevation of gage is 417 ft above sea level from topographic map. Drainage area is 103 mi <sup>2</sup> .	1980-91† 1992-93	12- 3-91 5- 3-93	11.83 8.18	4,530 1,800	5- 6-84	18.47	14,400
Yellow Creek near Shiloh, TN (03436700)	Lat 36°20'55", long 87°32'20", Montgomery County, Hydrologic Unit 05130205, at bridge on State Highway 13, 2.6 mi west of Shiloh, 3.0 mi downstream from Leatherwood Creek, 9.0 mi east of Erin. Datum of gage is 390.13 ft above sea level. Drainage area is 124 mi <sup>2</sup> .	1957-80†, 1982-93	1993	<9.13	-	5- 6-84	17.75	16,200
TENNESSEE RIVER BASIN								
Caney Creek near Cosby, TN (03461230)	Lat 35°47'03", long 83°12'11", Cocke County, Hydrologic Unit 06010106, at culvert under State Highway 32, 3.3 mi southeast of Cosby. Drainage area is 1.62 mi <sup>2</sup> .	1967-93	12-20-92	3.34	24	3-16-73	6.05	240
Cherokee Creek near Embree- ville, TN (03465607)	Lat 36°12'24", long 82°29'23", Washington County, Hydrologic Unit 06010108, at culvert on county road, 0.5 mi southeast of Mayday, 1.4 mi northwest of Kansas City, and at mi 1.3. Drainage area is 22.9 mi <sup>2</sup> .	1984-93	12-17-92	13.85	-	5- 7-84	18.37	-
Clear Fork near Fairview, TN (03465780)	Lat 36°19'33", long 82°33'47", Washington County, Hydrologic Unit 06010108, at culvert on State Highway 81, 2.0 mi southwest of Sulfur Springs, and at mi 3.8. Drainage area is 10.5 mi <sup>2</sup> .	1983-93	3-23-93	4.64	-	5- 7-84	7.26	-

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued								
Lick Creek near Albany, TN (03466890)	Lat 36°14'54", long 82°55'34", Greene County, Hydrologic Unit 06010108, at State Highway 70 bridge, 0.3 mi downstream from Puncheon Camp Creek, 1.0 mi northwest of Albany, and at mi 33.7. Drainage area is 172 mi <sup>2</sup> .	1984-93	1993	<11.74	<1,910	2-26-92	13.72	4,150
Bent Creek at Taylor Gap, TN (03467480)	Lat 36°14'08", long 83°06'41", Hamblen County, Hydrologic Unit 06010108, at bridge on county road (Mountain Valley Road), 2.1 mi southwest of Bulls Gap, 5.0 mi southeast of Russellville. Drainage area is 2.18 mi <sup>2</sup> .	1986-93	8-13-93	12.85	1,560	9-15-89	15.55	2,540
Carter Branch near White Pine, TN (03467992)	Lat 36°07'05", long 83°18'55", Jefferson County, Hydrologic Unit 06010108, at bridge on county road, 1.6 mi north- east of Kimbrough Crossroad, 1.8 mi northwest of White Pine. Drainage area is 4.25 mi <sup>2</sup> .	1986-93	3-23-93	6.08	-	8- 9-91	9.09	-
Cedar Creek near Valley Home, TN (03467993)	Lat 36°08'03", long 83°18'47", Jefferson County, Hydrologic Unit 06010108, at culvert on county road, 1.7 mi southeast of Valley Home, 1.9 mi south- east of Witt, 2.2 mi northwest of White Pine. Drainage area is 2.01 mi <sup>2</sup> .	1986-93	3-23-93	11.72	86	8- 9-91	13.19	193
Sinking Fork at White Pine, TN (03467998)	Lat 36°07'21", long 83°17'44", Jefferson County, Hydrologic Unit 06010108, at culvert on county road, 0.9 mi north- west of White Pine, 2.7 mi northeast of Kimbrough Cross- road. Drainage area is 6.38 mi <sup>2</sup> .	1986-93	3-23-93	5.22	419	5-28-90	6.68	1,180
Dumplin Creek at Mt. Hareb, TN (03470215)	Lat 36°04'59", long 83°25'51", Jefferson County, Hydrologic Unit 06010107, at culvert on county road, 0.8 mi southeast of Mt. Hareb, 4.3 mi south- east of Jefferson City, 4.6 mi north of Dandridge. Drainage area is 3.65 mi <sup>2</sup> .	1986-93	3-23-93	9.74	59	5-28-90	10.92	211
Indian Creek at Childress, TN (03476960)	Lat 36°25'38", long 82°15'54", Sullivan County, Hydrologic Unit 06010102, at bridge on U.S. Highway 19, 3.3 mi south of Bluff City, and at mi 4.6. Drainage area is 6.79 mi <sup>2</sup> .	1983-93	3-23-93	7.93	-	5- 7-84	10.73	-

See footnotes at the end of the table.

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis-charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis-charge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued								
Evans Creek near Blountville, TN (03478615)	Lat 36°31'19", long 82°18'12", Sullivan County, Hydrologic Unit 06010102, at State Highway 37 bridge, 1.5 mi southeast of Blountville. Datum of gage is 1500.00 ft above sea level. Drainage area is 2.50 mi <sup>2</sup> .	1983-93	2-21-93	9.58	33	7-21-84	12.38	92
Reedy Creek at Orebank, TN (03487550)	Lat 36°33'42", long 82°27'36", Sullivan County, Hydrologic Unit 06010102, 80 ft upstream from culvert, 0.3 mi north of Orebank, 1.0 mi upstream from Gaines Branch, and at mi 9.8. Drainage area is 36.3 mi <sup>2</sup> .	1963-89†, 1990-93	2-21-93	6.82	859	10- 2-77	11.61	4,940c
Forgey Creek at Zion Hill, TN (03490522)	Lat 36°29'12", long 82°53'08", Hawkins County, Hydrologic Unit 06010104, at culvert on county road (Carter Valley Road), 0.9 mi north of Zion Hill, 7.8 mi northeast of Rogersville. Drainage area is 0.86 mi <sup>2</sup> .	1986-93	2-21-93	18.03	-	7- 7-89	21.03	-
Dodson Creek tributary near Rogersville, TN (03491490)	Lat 36°21'19", long 82°57'03", Hawkins County, Hydrologic Unit 06010104, at bridge on county road, 1.4 mi northwest of Enterprise, and at mi 0.5. Drainage area is 0.32 mi <sup>2</sup> .	1983-93	8-13-93	6.01	-	9-16-89	8.05	-
Robertson Creek near Persia, TN (03491540)	Lat 36°20'24", long 83°02'27", Hawkins County, Hydrologic Unit 06010104, at bridge on State Highway 113, 0.25 mi below Mooney Branch, and at mi 3.0. Drainage area is 14.6 mi <sup>2</sup> .	1986-93	8-13-93	12.50	714	8-13-93	12.50	714
Dry Land Creek tributary near New Market, TN (03494714)	Lat 36°03'33", long 83°34'13", Jefferson County, Hydrologic Unit 06010104, at culvert on county road (Rocky Valley Road), 3.0 mi south of New Market, 3.3 mi northwest of Piedmont. Drainage area is 0.20 mi <sup>2</sup> .	1986-93	4- 9-93	10.29	-	5- 5-89	12.42	-
Flat Creek at Luttrell, TN (03494990)	Lat 36°11'45", long 83°44'44", Union County, Hydrologic Unit 06010104, at bridge on State Highway 61, 0.3 mi southwest of Luttrell, 3.5 mi northwest of Blaine. Drainage area is 22.4 mi <sup>2</sup> .	1986-93	3-23-93	10.39	-	12-23-90	12.37	-
Baker Creek tributary near Binfield, TN (03519610)	Lat 35°41'56", long 84°02'46", Blount County, Hydrologic Unit 06010204, at culvert under county road, 1.5 mi east of Binfield. Drainage area is 2.10 mi <sup>2</sup> .	1966-77, 1979-93	1-24-93	3.80	91	6-23-81	8.29	-

See footnotes at the end of the table.

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued								
Baker Creek near Greenback, TN (03519640)	Lat 35°40'21", long 84°06'28", Blount County, Hydrologic Unit 06010204, at county road bridge, 1.0 mi upstream from Little Baker Creek, 3.4 mi east of Greenback, and at mi 15.0. Datum of gage is 845.01 ft above sea level. Drainage area is 16.0 mi <sup>2</sup> .	1965-75†, 1976-93	1-24-93	6.26	340	5-30-74	9.70	2,900
Big War Creek at Luther, TN (03527800)	Lat 36°27'18", long 83°14'29", Hancock County, Hydrologic Unit 06010205, at bridge on county road, 0.4 mi south of Luther 0.8 mi northwest of Yount Town, 6.0 mi southwest of Sneedville. Drainage area is 22.3 mi <sup>2</sup> .	1986-93	3-23-93	7.05	-	6- 4-91	8.95	-
Crooked Creek near Maynard- ville, TN (03528390)	Lat 36°15'56", long 83°50'25", Union County, Hydrologic Unit 06010205, at culvert on State Highway 170, 2.5 mi northwest of Maynardville, 5.5 mi north- east of Paulette. Drainage area is 2.23 mi <sup>2</sup> .	1986-93	3-23-93	4.39	-	12-23-90	5.57	-
Coal Creek at Lake City, TN (03534000)	Lat 36°13'14", long 84°09'27" Anderson County, Hydrologic Unit 06010207, at bridge on U.S. Highway 25-W, at Lake City. Datum of Gage is 842.76 ft above sea level. Drainage area is 24.5 mi <sup>2</sup> .	1932-34†, 1955-93	3-23-93	9.80	7,140	4- 5-77	10.57	7,950d
Willow Fork near Halls Cross- roads, TN (03535180)	Lat 36°05'59", long 83°54'27", Knox County, Hydrologic Unit 06010207, at culvert under Quarry Road, 1.7 mi northeast of Halls Crossroads. Datum of gage is 1,027.82 ft above sea level. Drainage area is 3.23 mi <sup>2</sup> .	1967-93	3-23-93	6.35	275	3-16-73	8.08	878
Coker Creek near Ironsburg, TN (03555900)	Lat 35°13'05", long 84°20'28", Monroe County, Hydrologic Unit 06020002, at bridge on State Highway 68, 4.2 mi southwest of Coker Creek. Drainage area is 22.4 mi <sup>2</sup> .	1983-93	12-17-92	3.01	-	2-16-90	5.06	-
Wolftever Creek near Ooltewah, TN (03566420)	Lat 35°03'43", long 85°03'59", Hamilton County, Hydrologic Unit 06020001, on right downstream wingwall of county road bridge, 0.6 mi downstream from Southern Railway bridge, 0.9 mi south of Ooltewah, 1.6 mi upstream from Little Wolftever Creek, and at mi 16.1. Drainage area is 18.8 mi <sup>2</sup> .	1964-89†, 1993	3-23-93	5.63	879	3-16-73	9.75	7,300

See footnotes at the end of the table.

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis-charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis-charge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued								
North Chickamauga Creek at Greens Mill, near Hixson, TN (03566599)	Lat 35°10'30", long 85°13'40", Hamilton County, Hydrologic Unit 06020001, at bridge on Boy Scout Road, 2.3 mi north of Hixson. Drainage area is 99.5 mi <sup>2</sup> .	1925,1944, 1953-56, 1980-93	3-23-93	29.61	-	12-22-90	36.19	-
Stringers Branch at Leawood Drive, at Red Bank, TN (03569168)	Lat 35°07'00", long 85°17'28", Hamilton County, Hydrologic Unit 06020001, at bridge on Leawood Drive at Red Bank. Drainage area is 1.54 mi <sup>2</sup> .	1980-93	3-23-93	25.03	-	4-15-87	25.70	-
Little Sequatchie River at Sequatchie, TN (03571500)	Lat 35°07'47", long 85°35'10", Marion County, Hydrologic Unit 06020004, at Highway 27 bridge, 1.0 mi northeast of Sequatchie. Drainage area is 116 mi <sup>2</sup> .	1925,1929, 1930, 1932-34†, 1944, 1951-54, 1965,1979-93	3-24-93	11.03	-	12-22-90	11.78	-
Standifer Branch at Jasper, TN (03571730)	Lat 35°04'22", long 85°36'56", Marion County, Hydrologic Unit 06020004, at bridge on U.S. Highways 41, 64, and 72, 0.6 mi east of courthouse, 0.8 mi above Town Creek, at Jasper. Drainage area is 15.3 mi <sup>2</sup> .	1982-93	3-24-93	17.51	-	12-22-90	19.59	-
Battle Creek near Mont-eagle, TN (03571800)	Lat 35°08'03", long 85°46'15", Marion County, Hydrologic Unit 06030001, at bridge on former U.S. Highways 41 and 64, 9.2 mi southeast of Monteagle. Datum of gage is 621.51 ft above sea level. Drainage area is 50.4 mi <sup>2</sup> .	1955-93	3-24-93	8.87	-	3-12-63	12.20	10,200
Richland Creek near Corners-ville, TN (03583300)	Lat 35°19'10", long 86°52'20", Marshall County, Hydrologic Unit 06030004, at bridge on U.S. Highway 31-A, 3.4 mi southwest of Corners-ville. Datum of gage is 754.28 ft above sea level. Drainage area is 47.5 mi <sup>2</sup> .	1962-68†, 1969-93	11-21-92	10.94	-	7-11-89	16.58	11,400
Owl Creek at Lexington, TN (035944242)	Lat 35°38'26", long 88°22'13", Henderson County, Hydrologic Unit 06040001, on State Highway 20, 1.37 mi east of Lexington, and at mi 1.3. Datum of gage is 400.00 ft above sea level, prior to March 15, 1990 unknown. Drainage area is 2.50 mi <sup>2</sup> .	1984-93	4- 9-93	22.96	-	12- 3-90	26.35	-

See footnotes at the end of the table.



## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued								
Wartrace Creek above Bell Buckle, TN (03597300)	Lat 35°37'45", long 86°21'22", Bedford County, Hydrologic Unit 06040002, at culvert under county road, 2.7 mi north of Bell Buckle. Drain- age area is 4.99 mi <sup>2</sup> .	1966-93	5- 3-93	5.06	1,980	3-15-73	12.64	3,220
Rutherford Creek tributary at Moores Lane near Kedron, TN (035999716)	Lat 35°42'03", long 86°55'03", Maury County, Hydrologic Unit 06040003, at culvert under Moores Lane, 1.1 mi southwest of Kedron. Drain- age area is 0.25 mi <sup>2</sup> .	1987-93	6-13-93	27.29	-	6-13-93	27.29	-
West Piney River at Hwy 70 near Dickson, TN (03602170)	Lat 36°05'21", long 87°28'12", Dickson County, Hydrologic Unit 06040003, at U.S. Highway 70 bridge, 4.0 mi west of Dickson. Drainage area is 2.16 mi <sup>2</sup> .	1984-93	1993	<20.80	577	5- 6-84	28.17	1,230
Coon Creek trib- utary near Hohenwald, TN (03604070)	Lat 35°34'07", long 87°40'02", Perry County, Hydrologic Unit 06040004, at culvert under State Highway 20, 7.0 mi northwest of Hohenwald. Drainage area is 0.51 mi <sup>2</sup> .	1967-93	3-27-93	3.46	-	5- 8-84	6.58	301
Hugh Hollow Branch near Hohenwald, TN (03604080)	Lat 35°34'59", long 87°40'36", Perry County, Hydrologic Unit 06040004, at culvert under State Highway 20, 8.0 mi northwest of Hohenwald. Drainage area is 1.52 mi <sup>2</sup> .	1967-93	1993	<1.12	-	5- 8-84	5.55	1,400
Coon Creek above Chop Hollow, near Hohen- wald, TN (03604090)	Lat 35°35'19", long 87°41'09", Perry County, Hydrologic Unit 06040004, at bridge on State Highway 20, 9.0 mi northwest of Hohenwald. Drainage area is 6.02 mi <sup>2</sup> .	1967-93	1993	<2.43	-	12- 9-72	6.80	3,150
Blue Creek near New Hope, TN (03604580)	Lat 36°03'52", long 87°38'58", Humphreys County, Hydrologic Unit 06040003, at county road bridge, 1.8 mi north- west of New Hope, 3.1 mi southeast of McEwen, and at mi 3.9. Drainage area is 13.2 mi <sup>2</sup> .	1984-93	4-24-93	<16.46	-	6-13-89	18.82	-
Little Blue Creek trib- utary near Gorman, TN (03604595)	Lat 36°19'44", long 87°42'13", Humphreys County, Hydrologic Unit 06040003, at culvert under county road, 1.8 mi south of Gorman, 4.4 mi southwest of McEwen, and at mi 0.3. Drainage area is 0.62 mi <sup>2</sup> .	1984-93	1993	<17.10	-	5- 6-84	21.89	-

See footnotes at the end of the table.

## Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued								
Trace Creek above Denver, TN (03605555)	Lat 36°03'08", long 87°54'27", Humphreys County, Hydrologic Unit 06040005, on left bank at bridge on U.S. Highway 70, 1.0 mi northeast of New Johnson- ville. Datum of gage is 377.05 ft above sea level. Drainage area is 31.9 mi <sup>2</sup> .	1963-88† 1989-93	1993	<7.06	-	5- 6-84	13.61	11,700
Cane Creek at Stewart, TN (03605880)	Lat 36°19'09", long 87°50'21", Houston County, Hydrologic Unit 06040005, at bridge on county road, 200 ft north of intersection of county road and State Highway 147, and at mi 7.0. Drainage area is 4.12 mi <sup>2</sup> .	1984-93	4- 9-93	16.78	-	12-25-87	18.74	-
OBION RIVER BASIN								
Neil Ditch near Henry, TN (07024225)	Lat 36°10'19", long 88°23'33", Henry County, Hydrologic Unit 08010203, located on county road, 2.7 mi southeast of Henry, 1.6 mi north of Henry-Carroll county line. Drainage area is 4.07 mi <sup>2</sup> .	1984-93	12-23-92	12.31	-	12-21-90	14.48	-
Little Reedy Creek near Huntingdon, TN (07024370)	Lat 35°55'44", long 88°29'50", Carroll County, Hydrologic Unit 08010203, located on U.S. High- way 70, 0.6 mi southwest of Leach, 5.6 mi northeast of Cedar Grove. Drainage area is 0.91 mi <sup>2</sup> .	1984-93	4-15-93	14.35	-	12-25-87	15.38	-
South Fork Obion River near Greenfield, TN (07024500)	Lat 36°07'05", long 88°48'39", Weakly County, Hydrologic Unit 08010203, at bridge on U.S. Highway 45 E, 1.1 mi down- from Mosley Branch, 2.5 mi south of Greenfield, and 9.7 mi upstream from confluence with Middle Fork. Datum of gage is 300.36 ft above sea level. Drainage area is 383 mi <sup>2</sup> .	1929-89†, 1990-93	1993	<13.58	-	1-22-37	17.82	25,600
North Fork Forked Deer River at U.S. Highway 45W Bypass at Trenton, TN (07028505)	Lat 35°58'58", long 88°55'49", Gibson County, Hydrologic Unit 08010204, at bridge on U.S. Highway 45W Bypass, 0.25 mi north of intersection of U.S. Highway 45W Bypass and State Highways 77 and 104 in Trenton. Datum of gage is 306.85 ft above sea level. Drainage area is 73.9 mi <sup>2</sup> .	1987-93	5- 4-93	7.03	-	12-21-90	12.00	-

## DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Maximum discharge at crest-stage partial-record stations--Continued

Station name and number	Location and drainage area	Period of record	Water year 1993 maximum			Period of record maximum		
			Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)	Date	Gage height (ft)	Dis- charge (ft <sup>3</sup> /s)
OBION RIVER BASIN--Continued								
Lewis Creek near Dyersburg, TN (07029090)	Lat 36°03'14", long 89°21'42", Dyer County, Hydrologic Unit 08010204, at bridge on U.S. Highway 51 (Business Route), 2.1 mi northeast of square in Dyersburg. Datum of gage is 276.52 ft above sea level. Drainage area is 25.5 mi <sup>2</sup> .	1955-78, 1980-83, 1985-93	5- 3-93	14.07	910	3- 9-64	19.31	5,450
Cane Creek at Ripley, TN (07030100)	Lat 35°45'25", long 89°33'05", Lauderdale County, Hydrologic Unit 08010208, at bridge on State Highway 19, 1.3 mi upstream from Hyde Creek, 1.5 mi northwest of Ripley. Datum of gage is 295.93 ft above sea level. Drainage area is 33.9 mi <sup>2</sup> .	1957-62†, 1963-70, 1986-88†, 1989-93	6-26-93	16.83	2,650	7- 1-89	23.16	6,360

† Operated as a continuous-record gaging station.

a A gage height of 17.45 ft occurred on 3-23-29.

b Operated as a flood hydrograph station.

c A peak discharge of 11,000 ft<sup>3</sup>/s occurred on 3-23-29.d A peak discharge of 8,000 ft<sup>3</sup>/s occurred on 3-23-29.

## Miscellaneous Sites

Measurements of streamflow at points other than gaging stations are given in the following table. Measurements of base flow are designed by an asterisk (\*); measurements of peak flow by a dagger(†).

Discharge measurements made at miscellaneous sites during water year 1993

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN						
03469400 West Prong Little Pigeon River	Little Pigeon River	Lat 35°44'01", long 83°31'13" Sevier County, Hydrologic Unit 06010107, at bridge between North-bound and South-bound lanes of US Hwy 441, 1.4 mi north of intersection of Hwys 441 and 73 in Gatlinburg.	59.9	1966-69 1992	2-10-93	66
03469500 West Fork Little Pigeon River	Little Pigeon River	Lat 35°48'21", long 83°34'28", Sevier County, Hydrologic Unit 06010107, at US Hwy 411 bridge, in Pigeon Forge.	76.2	1946-49 1952-59 1961 1965 1991-92	2-10-93	81
03470000 Little Pigeon River	French Broad River	Lat 35°52'42", long 83°34'40", Sevier County, Hydrologic Unit 06010107, 0.2 mi downstream from West Prong Little Pigeon River, in Sevierville, and at mi 4.4.	353	1920-82 1991-92	2-10-93	286
03537000 Whiteoak Creek below ORNL near Oak Ridge, Tn	Clinch River	Lat 35°54'44", long 84°18'59", Roane County, Hydrologic Unit 06010207, 0.1 mi upstream from Melton Branch, 1 mi south of Oak Ridge National Laboratory, and 7 mi south of Oak Ridge.	3.62	1950-53 1955-64	12-10-92 12-16-92 12-16-92 12-16-92 1-11-93 3-23-93 3-23-93 3-23-93	5.6 15 15 13 14 53 447 121 72
03537500 Melton Branch near Oak Ridge, Tn	Whiteoak Creek	Lat 35°54'38", long 84°18'54", Roane County, Hydrologic Unit 06010207, 0.1 mi above mouth, 1 mi south of Oak Ridge National Laboratory, and 7 mi south of Oak Ridge.	1.48	1955-64	12-10-92 12-16-92 12-16-92 12-16-92 1-11-93 3-23-93 3-23-93 3-23-93 3-23-93	1.4 6.5 6.5 6.2 6.2 32 29 84 67 50
035785015 Dry Creek	Bradley Creek to Elk River to Tennessee River	Lat 35°22'47", long 86°01'06", Coffee County, Hydrologic Unit 06030003, at culvert on county road 0.6 mi southeast of main gate to AEDC, near Manchester.	-		9-30-92 11-10-92 12-16-92	.05 .11 1.0

## Discharge measurements made at miscellaneous sites during water year 1993--Continued

Stream	Tributary to	Location	Drainage area (mi <sup>2</sup> )	Measured previously (water years)	Measurements	
					Date	Discharge (ft <sup>3</sup> /s)
TENNESSEE RIVER BASIN--Continued						
03600085 Carters Creek	Duck River to Tennessee River	Lat 35°43'39", long 86°59'19", Maury County, Hydrologic Unit 06040003, at bridge on Petty Lane, 0.8 mi north of Carters Creek, and at mi 4.7.	16.6	1986-92	10-21-92 1-13-93 4-14-93 8-17-93	*1.7 61 21 * .42
03600086 Carters Creek Tributary	Carters Creek to Duck River to Tennessee River	Lat 35°43'34", long 86°59'19", Maury County, Hydrologic Unit 06040003, at culvert on Carters Creek Road, 0.7 mi north of Carters Creek.	2.94	1986-92	10-21-92 1-13-93 4-14-93 8-17-93	* .46 10 2.9 * .72
03602629 Duck River	Tennessee River	Lat 35°52'14", long 87°42'21", Hickman County, Hydrologic Unit 06040003, at Tennessee secondary road 229, 1.0 mi northwest of Only, and at mi 32.3.	2452		12-10-92 2- 2-93 3-26-93	1,810 3,150 20,200



## DISCHARGE AT PARTIAL RECORD STATIONS AND MISCELLANEOUS SITES

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## Springs

In 1931 a study of large springs in Tennessee was made and the results published in WSP 713. From 1950 to 1954 a more detailed study, including some of these springs, was made. Results of this study and all subsequent spring measurements were published annually in WSP's from 1950 to 1960. Since 1960 results of measurements have been published in annual State reports. Measurements made in the 1993 water year are given in the following table.

Discharge measurement of springs during water year 1993

Site number and name	Location	Tributary to	Date	Discharge	
				(gpm)	(ft <sup>3</sup> /sec)
MONTGOMERY COUNTY					
03436385 Noah Spring	Lat 36°38'20", long 87°33'08", Hydrologic Unit 05130206, 200 ft south of Tennessee Kentucky state line, 2.1 mi south of Garrettsburg, Kentucky.	Little West Fork to Red River to Cumberland River	9-13-93	140	.31
03436424 Unnamed Spring	Lat 36°36'33", long 87°29'49", Hydrologic Unit 05130206, on county road 0.9 mi southeast of pumping station.	Little West Fork to Red River to Cumberland River	9-13-93	540	1.2
03436435 Unnamed Spring	Lat 36°32'44", long 87°30'42", Hydrologic Unit 05130206, on old Dover road, 0.1 mi northwest of Woodlawn.	Fletchers Fork to Little West Fork to Red River to Cumberland River	9-13-93	0	0
03436445 Britton Spring	Lat 36°35'35", long 87°25'56", Hydrologic Unit 05130206, 0.7 mi west of Ringgold.	Fletchers Fork to Little West Fork to Red River to Cumberland River	9-13-93	630	1.4

Fort Campbell, TN-KY (Stewart, Montgomery, TN and Christian, KY counties), special study

A series of low-flow discharge measurements were made September 13, 1993, in the vicinity of Fort Campbell, TN-KY (Stewart, Montgomery, Tennessee and Christian, Kentucky counties), to define areas of potential ground-water supplies, low-flow hydrology and quality of water at base flow conditions. The measurements were made during a period of constant base flow.

Stream	Tributary to	Location	Measurements discharge (ft <sup>3</sup> /s)	Water temperature (°C)	Specific conductance (us/cm)
CUMBERLAND RIVER BASIN					
03436360 Noah Spring Branch	Little West Fork to Red River to Cumberland River	Lat 36°38'24", long 87°39'15", Christian County, KY, Hydrologic Unit 05130206, 0.1 mile north of Kentucky-Tennessee state line, on Angel road, 1.3 mi south of LaFayette, KY.	0.0	---	---
03436361 Noah Spring Branch Tributary	Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°38'21", long 87°39'01", Christian County, KY, Hydrologic Unit 05130206, 0.1 mile north of Kentucky-Tennessee state line, on Angel road, 1.5 mi southeast of LaFayette, KY.	0.0	---	---
03436362 Noah Spring Branch	Little West Fork to Red River to Cumberland River	Lat 36°38'50", long 87°38'00", Christian County, KY, Hydrologic Unit 05130206, 1.6 miles southeast of LaFayette, KY.	0.0	---	---
03436364 Noah Spring Branch Tributary	Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°40'42", long 87°38'30", Christian County, KY, Hydrologic Unit 05130206, 1.5 miles northeast of LaFayette, KY.	0.0	---	---
03436365 Noah Spring Branch Tributary	Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°39'02", long 87°38'00", Christian County, KY, Hydrologic Unit 05130206, 1.8 miles southeast of LaFayette, KY.	0.0	---	---
03436366 Noah Spring Branch Tributary	Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°38'50", long 87°38'01", Christian County, KY, Hydrologic Unit 05130206, 1.6 miles southeast of LaFayette, KY.	0.0	---	---
03436368 Noah Spring Branch Tributary	Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°38'19", long 87°37'18", Christian County, KY, Hydrologic Unit 05130206, 0.6 miles west of intersection of Angels Road and Mabry Road, 2.5 mi southeast of LaFayette, KY.	0.0	---	---
03436369 Noah Spring Branch	Little West Fork to Red River to Cumberland River	Lat 36°38'41", long 87°36'53", Christian County, KY, Hydrologic Unit 05130206, 0.41 mile northwest of intersection of Angels Road and Mabry Road, 2.7 mi east of LaFayette, KY.	0.0	---	---

Fort Campbell, TN-KY (Stewart, Montgomery, TN and Christian, KY counties), special study--Continued

Stream	Tributary to	Location	Measurements discharge (ft <sup>3</sup> /s)	Water temperature (°C)	Specific conductance (us/cm)
CUMBERLAND RIVER BASIN--Continued					
03436370 Noah Spring Branch Tributary	Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°38'39", long 87°36'51", Christian County, KY, Hydrologic Unit 05130206, 0.4 miles northwest of intersection Angels Road and Mabry Road 2.7 mi east of LaFayette, KY.	0.0	---	---
03436372 Noah Branch Tributary	Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°38'37", long 87°35'24", Christian County, KY, Hydrologic Unit 05130206, 1.2 miles northeast of intersection of Mabry Road, on Angels Road, 3.1 mi southwest of Garrettsburg, KY.	0.0	---	---
03436373 Noah Spring Branch	Little West Fork to Red River to Cumberland River	Lat 36°38'42", long 87°35'07", Christian County, KY, Hydrologic Unit 05130206, 1.5 miles northeast of intersection of Mabry Road, on Angels road, 2.8 mi southwest of Garrettsburg, KY.	0.0	---	---
03436375 Noah Spring Branch	Little West Fork to Red River to Cumberland River	Lat 36°38'19", long 87°33'26", Montgomery County, Hydrologic Unit 05130206, intersection of Kentucky-Tennessee state line and Palmyra Road, 2.1 mi south of Garrettsburg, KY.	0.0	---	---
03436378 Unnamed Tributary to Noah Cave	Noah Cave	Lat 36°39'46", long 87°34'28", Christian County, KY, Hydrologic Unit 05130206, 1.6 miles north of Kentucky-Tennessee state line, at Loveland Road, 1.8 mi west of Garrettsburg, KY.	0.0	---	---
03436379 Unnamed Tributary to Noah Cave	Noah Cave	Lat 36°40'03", long 87°34'04", Christian County, KY, Hydrologic Unit 05130206, on Brodie Road 1.4 miles southwest of Garrettsburg, KY.	0.0	---	---
03436382 Unnamed Tributary to Noah Cave	Noah Cave	Lat 36°39'47", long 87°32'43", Christian County, KY, Hydrologic Unit 05130206, on Route 345, 0.4 mile south of Garrettsburg, KY.	0.0	---	---
03436384 Noah Cave Sink		Lat 36°38'47", long 87°33'21", Christian County, KY, Hydrologic Unit 05130206, 0.3 mile southwest of intersection of Route 345 and Angels Road, 1.7 mi south of Garrettsburg, KY.	0.0	---	---
03436388 Noah Spring Branch	Little West Fork to Red River to Cumberland River	Lat 36°38'02", long 87°32'12", Montgomery County, Hydrologic Unit 05130206, at On the Line Road, 0.3 mile south of Kentucky-Tennessee state line, 2.3 mi south of Garrettsburg, KY.	3.6	16.0	385

Fort Campbell, TN-KY (Stewart, Montgomery, TN and Christian, KY counties), special study--Continued

Stream	Tributary to	Location	Measurements discharge (ft <sup>3</sup> /s)	Water temperature (°C)	Specific conductance (us/cm)
CUMBERLAND RIVER BASIN--Continued					
03436390 Dry Fork Creek Tributary	Dry Fork Creek to Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°40'57", long 87°29'03", Christian County, KY, Hydrologic Unit 05130206, near Army Airfield, 1.9 miles southwest of intersection of Highway 117 and 41A, at Ft. Campbell TN-KY.	0.0	---	---
03436391 Dry Fork Creek Tributary	Dry Fork Creek to Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°40'39", long 87°30'37", Christian County, KY, Hydrologic Unit 05130206, at Army Airfield tower, 1.9 miles northeast of Garrettsburg, KY.	0.0	---	---
03436394 Dry Fork Creek Tributary	Dry Fork Creek to Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°40'07", long 87°30'50", Christian County, KY, Hydrologic Unit 05130206, at Army Airfield water tank, 1.6 miles east of Garrettsburg, KY.	0.0	---	---
03436396 Dry Fork Creek	Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°39'13", long 87°31'02", Christian County, KY, Hydrologic Unit 05130206, at Angels Road, 1.0 mile north of Kentucky-Tennessee state line 1.8 mi southeast of Garrettsburg, KY.	3.5	17.1	375
03436397 Dry Fork Creek Tributary	Dry Fork Creek to Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°39'19", long 87°30'22", Christian County, KY, Hydrologic Unit 05130206, at Angels Road, 1.0 mile north of Kentucky-Tennessee state line, 2.2 mi southeast of Garrettsburg, KY.	0.0	---	---
03436398 Dry Fork Creek	Noah Spring Branch to Little West Fork to Red River to Cumberland River	Lat 36°38'06", long 87°28'33", Montgomery County, Hydrologic Unit 05130206, 0.4 mile south of intersection of Range Corp BDY road and Kentucky-Tennessee state line, at Ft. Campbell TN-KY.	0.0	---	---
03436400 Noah Spring Branch	Little West Fork to Red River to Cumberland River	Lat 36°37'22", long 87°30'47", Montgomery County, Hydrologic Unit 05130206, 1.9 miles northeast of Ghost Corp Road and Jordan Spring Road intersection.	8.4	19.5	360
03436401 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°34'51", long 87°42'24", Stewart County, Hydrologic Unit 05130206, at Destiny Trail, 1.9 miles northwest of Legate.	0.0	---	---
034364015 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°35'17", long 87°41'48", Stewart County, Hydrologic Unit 05130206, 0.5 mile south of Jordan Spring Road and Normandy Loop intersection, 1.4 mi north of Legate.	0.0	---	---

Fort Campbell, TN-KY (Stewart, Montgomery, TN and Christian, KY counties), special study--Continued

Stream	Tributary to	Location	Measurements discharge (ft <sup>3</sup> /s)	Water temperature (°C)	Specific conductance (us/cm)
CUMBERLAND RIVER BASIN--Continued					
03436402 Piney Fork Tributary	Piney Fork to Little West Fork to Red River to Cumberland River	Lat 36°35'19", long 87°41'48", Stewart County, Hydrologic Unit 05130206, 0.5 mile south of Jordan Spring Road and Normandy Loop intersection, 1.4 mi north of Legate.	0.0	---	---
03436403 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°35'16", long 87°40'37", Stewart County, Hydrologic Unit 05130206, 1.3 miles southeast of Jordan Spring Road and Normandy Loop intersection, 2.5 mi northeast of Legate.	0.0	---	---
03436404 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°35'16", long 87°39'54", Stewart County, Hydrologic Unit 05130206, at Rendevous Road, 1.9 miles southeast of Legate.	0.0	---	---
03436405 Lake Kyle Outflow	Piney Fork to Little West Fork to Red River to Cumberland River	Lat 36°34'58", long 87°39'24", Stewart County, Hydrologic Unit 05130206, 0.4 mile west of intersection of Indian Mound Road and Destiny Trail Road, 3.0 mi northeast of Legate.	.02	25.3	184
03436406 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°35'22", long 87°38'46", Stewart County, Hydrologic Unit 05130206, 0.6 mile south on Indian Mound Road from Jordan Spring Road intersection, 3.8 mi northeast of Legate.	0.0	---	---
03436407 Piney Fork Tributary	Piney Fork Creek to Little West Fork to Red River to Cumberland River	Lat 36°35'24", long 87°38'44", Stewart County, Hydrologic Unit 05130206, 0.6 mile south on Indian Mound Road from Jordan Spring Road intersection, 3.8 mi north- east of Legate.	0.0	---	---
03436408 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°35'38", long 87°37'49", Montgomery County, Hydrologic Unit 05130206, 1.0 mile southeast of Indian Mound Road and Jordan Road intersection, 4.8 mi south of LaFayette, KY.	0.0	---	---
03436409 Elk Fork Creek	Piney Fork to Little West Fork to Red River to Cumberland River	Lat 36°35'14", long 87°36'50", Montgomery County, Hydrologic Unit 05130206, 0.7 mile southeast of Ghost Corp Road and Jordan Spring Road intersection, 4.1 mi north of Oakwood.	0.0	---	---



Fort Campbell, TN-KY (Stewart, Montgomery, TN and Christian, KY counties), special study--Continued

Stream	Tributary to	Location	Measurements discharge (ft <sup>3</sup> /s)	Water temperature (°C)	Specific conductance (us/cm)
CUMBERLAND RIVER BASIN--Continued					
03436410 Elk Fork Creek	Piney Fork to Little West Fork to Red River to Cumberland River	Lat 36°35'38", long 87°37'47", Montgomery County, Hydrologic Unit 05130206, at mouth, 1.0 mile southeast of Indian Mound Road and Jordan Spring Road intersection, 4.8 mi south of LaFayette, KY.	0.0	---	---
034364104 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°36'22", long 87°37'56", Montgomery County, Hydrologic Unit 05130206, 0.7 mile northeast of Grant Road and Jordan Spring Road intersection, near LaFayette, KY.	.08	19.8	245
034364105 Piney Fork Tributary	Piney Fork Creek to Little West Fork to Red River to Cumberland River	Lat 36°36'23", long 87°37'38", Montgomery County, Hydrologic Unit 05130206, 0.7 mile northeast of Grant Road and Jordan Spring Road intersection, near LaFayette, KY.	0.0	---	---
03436411 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°37'06", long 87°36'38", Montgomery County, Hydrologic Unit 05130206, 1.8 miles northeast of Ghost Corp Road and Jordan Spring Road, near LaFayette, KY.	0.0	---	---
03436412 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°37'37", long 87°35'54", Montgomery County, Hydrologic Unit 05130206, at Engineers Road, near Garrettsburg, KY.	.13	21.2	128
03436413 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°37'03", long 87°34'53", Montgomery County, Hydrologic Unit 05130206, 1.9 miles northwest of Jordan Spring Road and Palmyra Road, near Oakwood.	.06	22.3	232
03436414 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°36'59", long 87°33'17", Montgomery County, Hydrologic Unit 05130206, 2.0 miles northeast of intersection of Jordan Springs Road and Ghost Corps Road, near Oakwood.	0.0	---	---
03436415 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°36'59", long 87°32'21", Montgomery County, Hydrologic Unit 05130206, at mouth, 1.4 miles northwest of intersection of Ghost Corps Road and Jordan Spring Road, near Oakwood.	0.0	---	---
03436416 Jordan Creek	Piney Fork to Little West Fork to Red River to Cumberland River	Lat 36°35'40", long 87°33'16", Montgomery County, Hydrologic Unit 05130206, 1.1 miles east of Jordan Spring Road and Palmyra Road, near Oakwood.	.39	20.3	371

Fort Campbell, TN-KY (Stewart, Montgomery, TN and Christian, KY counties), special study--Continued

Stream	Tributary to	Location	Measurements discharge (ft <sup>3</sup> /s)	Water temperature (°C)	Specific conductance (us/cm)
CUMBERLAND RIVER BASIN--Continued					
03436417 Moss Creek	Jordan Creek to Piney Fork to Little West Fork to Red River to Cumberland River	Lat 36°35'53", long 87°34'37", Montgomery County, Hydrologic Unit 05130206, at Palmyra Road, 0.4 mile north of Jordan Spring and Palmyra Road intersection, near Oakwood.	0.0	---	---
03436418 Jordan Creek	Piney Fork to Little West Fork to Red River to Cumberland River	Lat 36°36'29", long 87°32'42", Montgomery County, Hydrologic Unit 05130206, 1.2 miles northwest of Jordan Spring Road and Ghost Corps Road, near Oakwood.	.13	19.2	347
03436419 Jordan Creek	Piney Fork to Little West Fork to Red River to Cumberland River	Lat 36°36'56", long 87°32'21", Montgomery County, Hydrologic Unit 05130206, at mouth, 1.4 miles northwest of intersection of Ghost Corp Road and Jordan Spring Road, near Oakwood.	0.0	---	---
03436420 Piney Fork	Little West Fork to Red River to Cumberland River	Lat 36°36'59", long 87°30'51", Montgomery County, Hydrologic Unit 05130206, 1.4 miles northeast of Ghost Corps Road and Jordan Spring Road intersection, near Oakwood.	0.0	---	---
03436426 Little West Fork	Red River to Cumberland River	Lat 36°36'38", long 87°28'11", Montgomery County, Hydrologic Unit 05130206, 3 miles northwest of Ringgold.	8.5	19.5	371
03436430 Little West Fork	Red River to Cumberland River	Lat 36°36'28", long 87°26'57", Montgomery County, Hydrologic Unit 05130206, 1.2 miles southwest of GATE #1 at Ft. Campbell TN-KY.	13.4	19.9	453
03436433 Fletchers Fork	Little West Fork to Red River to Cumberland River	Lat 36°33'26", long 87°31'25", Montgomery County, Hydrologic Unit 05130206, 1.1 miles northwest of Woodlawn.	0.0	---	---
03436437 Fletchers Fork Tributary	Fletchers Fork to Little West Fork to Red River to Cumberland River	Lat 36°33'24", long 87°31'22", Montgomery County, Hydrologic Unit 05130206, 1.1 miles northwest of Woodlawn.	0.0	---	---
03436440 Fletchers Fork	Little West Fork to Red River to Cumberland River	Lat 36°34'27", long 87°30'42", Montgomery County, Hydrologic Unit 05130206, 1.2 miles south of Ghost Corp Road and Jordan Spring Road intersection, near Woodlawn.	.64	19.1	331

## CUMBERLAND RIVER BASIN

Fort Campbell, TN-KY (Stewart, Montgomery, TN and Christian, KY counties), special study--Continued

Stream	Tributary to	Location	Measurements discharge (ft <sup>3</sup> /s)	Water temperature (°C)	Specific conductance (us/cm)
CUMBERLAND RIVER BASIN--Continued					
03436441 Fletchers Fork	Little West Fork to Red River to Cumberland River	Lat 36°35'19", long 87°27'57", Montgomery County, Hydrologic Unit 05130206, 2.6 miles west of Ringgold.	0.0	---	---
03436442 Raccoon Branch	Fletchers Fork to Little West Fork to Red River to Cumberland River	Lat 36°35'17", long 87°27'56", Montgomery County, Hydrologic Unit 05130206, at mouth, 2.7 miles west of Ringgold.	.08	17.6	407
03436443 Raccoon Branch	Fletchers Fork to Little West Fork to Red River to Cumberland River	Lat 36°34'31", long 87°27'57", Montgomery County, Hydrologic Unit 05130206, 0.3 mile southwest of Walnut Grove Church, near LaFayette, KY.	0.0	---	---
03436444 Fletchers Fork	Little West Fork to Red River to Cumberland River	Lat 36°35'34", long 87°26'58", Montgomery County, Hydrologic Unit 05130206, 1.8 miles west of Ringgold.	0.0	---	---
03436446 Fletchers Fork Tributary	Fletchers Fork to Little West Fork to Red River to Cumberland River	Lat 36°35'30", long 87°25'54", Montgomery County, Hydrologic Unit 05130206, 0.8 mile west of Ringgold.	0.0	---	---
03436460 Little West Fork	Red River to Cumberland River	Lat 36°35'30", long 87°23'23", Montgomery County, Hydrologic Unit 05130206, 1.6 miles east of Ringgold.	18.	19.4	660

## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

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## WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
BARREN RIVER BASIN									
03312255 - SALT LICK CREEK AT RED BOILING SPRINGS, TN									
OCT 05...	1230	8.2	152	17.5	APR 21...	1430	15	142	9.5
NOV 19...	0835	9.2	163	8.5	JUN 03...	0940	12	179	16.0
DEC 17...	1130	19	133	10.0	JUL 12...	1300	4.4	229	25.0
FEB 01...	1000	16	128	6.0	AUG 25...	1455	2.0	233	26.5
MAR 09...	0925	20	129	8.5					
CUMBERLAND RIVER BASIN									
03408500 - NEW RIVER AT NEW RIVER, TN									
JUL 13...	1210	21	420	27.5					
03409500 - CLEAR FORK NEAR ROBBINS, TN									
JUL 08...	1735	12	73	30.5					
03414500 - EAST FORK OBEY RIVER NEAR JAMESTOWN, TN									
NOV 18...	1200	257	212	9.0	APR 28...	1115	657	160	--
JAN 29...	1200	471	220	--	JUL 14...	1348	24	341	25.0
OCT 02...	1130	16	450	17.5	MAY 07...	1115	98	182	13.5
JAN 30...	1130	235	142	7.0	JUL 23...	0900	171	226	18.5
03416000 - WOLF RIVER NEAR BYRDSTOWN, TN									
NOV 18...	0935	158	216	9.0	APR 28...	0830	316	172	11.5
JAN 29...	1000	180	205	8.0	JUL 14...	1000	17	342	27.5
03418070 - ROARING RIVER ABOVE GAINESBORO, TN									
JAN 28...	1410	268	219	7.0	JUL 13...	1515	0.0	294	27.5
APR 27...	1500	461	197	15.5					

## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
CUMBERLAND RIVER BASIN--Continued									
03421000 - COLLINS RIVER NEAR MCMINNVILLE, TN									
OCT					MAR				
06...	1230	942	182	18.5	08...	1145	1570	146	7.3
NOV					APR				
16...	1115	1050	120	11.0	23...	1030	876	222	12.5
DEC					JUN				
22...	1000	4380	148	11.0	02...	1245	2680	111	16.5
JAN					JUL				
28...	0750	1800	150	7.5	15...	1230	198	294	25.0
					AUG				
					24...	1515	128	301	27.0
03422500 - CANEY FORK NEAR ROCK ISLAND, TN									
NOV					JUN				
16...	1330	3320	115	11.5	02...	0845	3540	128	17.5
DEC					JUL				
22...	1240	8220	159	9.0	15...	0825	61	218	18.5
JAN					AUG				
28...	1020	4270	139	9.0	24...	1050	68	251	21.0
03423152 - FALLING WATER RIVER BELOW BURGESS FALLS DAM, TN									
OCT					APR				
07...	1135	91	202	19.5	29...	1330	192	210	16.0
NOV					JUN				
17...	1345	96	182	10.0	01...	1315	186	269	19.0
DEC					JUL				
15...	1335	112	190	--	15...	1540	40	300	26.0
JAN					AUG				
27...	1404	334	150	8.5	25...	1030	23	372	26.5
MAR									
11...	1130	161	152	8.5					
03423400 - TAYLOR CREEK NEAR CASSVILLE, TN									
OCT					APR				
07...	0950	21	207	14.0	29...	1435	33	179	16.5
NOV					JUN				
17...	1200	19	211	11.0	01...	1530	18	204	16.5
25...	0955	91	130	13.0	JUL				
DEC					16...	0815	3.8	297	21.0
15...	1220	21	210	8.5	AUG				
JAN					25...	0810	2.2	337	22.0
27...	1520	59	140	8.0					
MAR									
11...	1020	34	173	9.0					



## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
CUMBERLAND RIVER BASIN--Continued									
03424730 - SMITH FORK AT TEMPERANCE HALL, TN									
OCT 08...	0930	181	197	13.5	APR 29...	1115	296	326	16.5
NOV 17...	0920	180	371	9.0	JUN 01...	0930	159	286	18.5
DEC 15...	1000	179	192	8.0	JUL 12...	0930	47	246	27.5
JAN 27...	1200	416	158	9.0	AUG 26...	0910	17	276	28.0
MAR 09...	1230	240	338	12.0					
03427500 - EAST FORK STONES RIVER NEAR LASCASSAS, TN									
JAN 25...	0900	1210	328	9.0	APR 19...	1150	206	372	15.5
MAR 05...	1330	635	318	9.5	JUL 13...	1500	223	207	25.5
03428500 - WEST FORK STONES RIVER NEAR SMYRNA, TN									
NOV 05...	1120	1290	410	13.5	APR 20...	0900	191	417	17.0
JAN 26...	0845	680	360	8.0	JUL 13...	1010	89	443	25.0
03430147 - STONERS CREEK NEAR HERMITAGE, TN									
OCT 01...	1245	2.6	540	15.5	APR 13...	1155	14	433	17.0
NOV 02...	1325	39	360	17.5	MAY 11...	1155	13	442	20.0
DEC 09...	1120	5.8	492	5.0	JUN 09...	1300	1.6	472	26.5
JAN 04...	1330	17	465	12.0	JUL 08...	1235	1.2	490	28.0
FEB 19...	0940	24	490	2.0	AUG 04...	1015	0.28	512	23.0
MAR 17...	1155	51	385	8.5	SEP 09...	1235	0.44	410	24.5
23...	1055	359	270	12.0					
03430550 - MILL CREEK NEAR NOLENSVILLE, TN									
OCT 01...	0955	2.8	540	14.0	APR 13...	0910	36	448	14.5
NOV 02...	1115	40	370	17.0	MAY 11...	0855	29	483	18.5
DEC 09...	0850	9.0	341	4.5	JUN 09...	1010	1.1	443	23.5
JAN 04...	0910	29	510	10.5	JUL 08...	1000	1.6	500	25.5
FEB 19...	1230	44	525	1.5	AUG 02...	1315	0.31	450	25.0
MAR 17...	0930	139	375	7.5	SEP 10...	0850	0.10	425	20.5

## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
CUMBERLAND RIVER BASIN--Continued									
03431000 - MILL CREEK NEAR ANTIOCH, TN									
JAN					JUN				
04...	1120	42	525	11.0	08...	1330	4.6	476	26.0
FEB					JUL				
19...	0840	75	510	2.5	08...	0820	3.1	482	26.5
MAR					AUG				
16...	1310	57	485	6.5	02...	1025	1.7	420	26.0
APR					SEP				
13...	1400	55	461	18.0	08...	0950	1.8	490	23.0
MAY									
11...	0930	50	490	17.0					
034315005 - CUMBERLAND RIVER AT WOODLAND STREET AT NASHVILLE, TN									
FEB					JUN				
03...	1000	26100	232	7.5	15...	0910	6650	208	22.5
24...	1045	25400	236	6.5	29...	1230	11300	215	25.5
MAR					SEP				
29...	0915	60300	225	10.5	27...	1040	7520	314	22.0
APR									
06...	0930	49000	203	9.0					
MAY									
06...	1030	47800	227	15.5					
14...	1230	9980	223	17.5					
20...	0900	9340	235	18.5					
03431800 - SYCAMORE CREEK NEAR ASHLAND CITY, TN									
NOV					APR				
16...	1205	42	300	6.5	22...	1305	110	230	15.0
JAN					JUL				
29...	0850	108	265	4.0	12...	1615	24	309	25.0
03432350 - HARPETH RIVER AT FRANKLIN, TN									
OCT					APR				
13...	1000	18	440	13.0	19...	0905	120	391	15.0
NOV					JUN				
04...	1030	305	465	15.0	03...	1210	64	367	19.0
DEC					28...	0915	125	330	22.5
07...	0830	94	425	9.0	JUL				
JAN					07...	1400	20	417	26.5
05...	0945	1280	297	11.0	29...	0825	1.0	400	26.0
FEB					AUG				
10...	1130	68	320	9.5	09...	1050	6.1	395	22.0
MAR					24...	1130	4.2	387	25.5
05...	0840	604	361	7.5					
03432400 - HARPETH RIVER BELOW FRANKLIN, TN									
OCT					JUN				
14...	1015	18	499	16.0	03...	1350	78	397	20.0
NOV					28...	1210	145	325	24.0
04...	1325	304	400	14.5	JUL				
DEC					16...	1400	20	428	27.0
07...	1025	116	279	6.0	AUG				
FEB					09...	1245	14	455	24.0
10...	1245	90	345	10.0	24...	1410	12	542	27.0
APR									
19...	1135	160	414	16.0					

## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
CUMBERLAND RIVER BASIN--Continued									
03433500 - HARPETH RIVER AT BELLEVUE, TN									
NOV					JUL				
18...	1500	292	315	10.5	12...	1045	41	419	26.5
JAN					26...	0820	22	393	29.0
26...	1320	992	396	7.0	SEP				
MAR					09...	1030	39	344	23.5
15...	1100	404	378	5.0	10...	0930	20	339	21.5
APR					15...	1230	13	400	21.0
20...	1215	368	375	16.5					
JUN									
03...	1100	176	316	19.5					
03434500 - HARPETH RIVER NEAR KINGSTON SPRINGS, TN									
OCT					JUN				
06...	0825	217	365	15.5	03...	0905	355	313	19.5
NOV					JUL				
16...	0850	604	370	7.5	16...	0940	198	266	26.0
DEC					AUG				
15...	0735	400	375	6.0	17...	1050	123	279	26.0
MAR									
15...	0900	616	326	4.0					
03436100 - RED RIVER AT PORT ROYAL, TN									
NOV					APR				
20...	1200	226	376	10.5	21...	1025	1070	351	14.5
MAR					JUL				
12...	0830	1100	353	9.5	14...	1040	218	320	26.5
03436690 - YELLOW CREEK AT ELLIS MILLS, TN									
NOV					APR				
17...	1000	29	295	10.0	20...	1110	252	225	15.0
JAN					JUL				
26...	1120	159	260	6.0	14...	150	38	270	28.0
TENNESSEE RIVER BASIN									
03455000 - FRENCH BROAD RIVER NEAR NEWPORT, TN									
MAR									
02...	1320	3330	60	5.5					
03465500 - NOLICHUCKY RIVER AT EMBREEVILLE, TN									
JAN									
22...	1320	2370	48	6.0					
03466228 - SINKING CREEK AT AFTON, TN									
OCT					JAN				
13...	1100	4.3	--	12.0	04...	1100	17	460	11.0
NOV									
23...	1035	5.0	--	11.0					

## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
TENNESSEE RIVER BASIN--Continued									
03469175 - LITTLE PIGEON RIVER ABOVE SEVIERVILLE, TN									
OCT 13...	1050	146	75	12.0	FEB 09...	1000	151	110	5.5
JAN 04...	1500	273	100	9.5					
03486305 - SINKING CREEK AT SINKING CREEK ROAD AT JOHNSON CITY, TN									
OCT 23...	1230	0.71	158	12.0	JAN 06...	1630	5.1	--	9.0
03486311 - SINKING CREEK AT HIGHWAY 67 AT JOHNSON CITY, TN									
OCT 06...	1725	4.5	--	16.0	JAN 06...	1220	8.1	--	12.0
03486312 - CATBIRD CREEK AT MIAMI DRIVE AT JOHNSON CITY, TN									
OCT 17...	1615	2.1	--	16.0	JAN 06...	1100	4.9	--	12.0
					08...	1200	6.4	396	12.0
03486485 - BRUSH CREEK AT STATE OF FRANKLIN ROAD AT JOHNSON CITY, TN									
OCT 08...	1110	3.5	--	14.0	JAN 06...	1355	6.3	--	12.0
					08...	1520	10	448	12.0
03486494 - BRUSH CREEK AT JOHNSON CITY, TN									
OCT 06...	1540	9.3	--	17.0					
03486508 - BRUSH CREEK AT PINEY GROVE AT JOHNSON CITY, TN									
OCT 08...	1350	11	--	15.0	JAN 07...	1325	17	--	12.0
03486657 - KNOB CREEK AT CLAUDE SIMMONS ROAD AT JOHNSON CITY, TN									
OCT 06...	1155	1.6	--	13.0	JAN 07...	1150	3.2	499	13.0
03486659 - KNOB CREEK TRIB AT KNOB CREEK ROAD AT JOHNSON CITY, TN									
OCT 18...	0950	0.69	--	14.0	JAN 07...	1320	1.5	402	13.5
03486665 - KNOB CREEK AT WAYFIELD DRIVE AT JOHNSON CITY, TN									
OCT 07...	0920	11	--	12.5	JAN 07...	1125	18	--	12.0
03486670 - COBB CREEK AT EAST OAKLAND AVENUE AT JOHNSON CITY, TN									
OCT 07...	1050	1.3	--	15.0	JAN 07...	0835	1.8	--	11.0

## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

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WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
TENNESSEE RIVER BASIN--Continued									
03491000 - BIG CREEK NEAR ROGERSVILLE, TN									
OCT 26...	1000	4.8	--	9.5	JAN 22...	1000	92	--	9.5
03491544 - CROCKETT CREEK BELOW ROGERSVILLE, TN									
OCT 26...	1230	0.49	--	10.0					
03495547 - LOVE CREEK AT I-40 AT KNOXVILLE, TN									
NOV 09...	1140	7.2	529	11.0	FEB 18...	1210	10	480	8.5
03495957 - WHITES CREEK AT NORA ROAD AT KNOXVILLE, TN									
NOV 09...	1510	5.1	420	10.5	FEB 18...	1015	12	370	5.5
03498500 - LITTLE RIVER NEAR MARYVILLE, TN									
OCT 14...	0930	152	--	13.0	JAN 07...	0940	506	112	10.0
03498850 - LITTLE RIVER NEAR ALCOA, TN									
OCT 15...	0930	128	129	14.0					
03528000 - CLINCH RIVER ABOVE TAZEWEEL, TN									
OCT 08...	1345	590	370	16.0	JAN 20...	1120	1180	--	7.0
03536320 - WHITEOAK CREEK NEAR MELTON HILL, TN									
FEB 17...	0845	1.3	--	7.0	MAY 11...	0850	0.12	--	16.0
03537100 - MELTON BRANCH NEAR MELTON HILL NEAR OAK RIDGE, TN									
DEC 14...	1100	0.26	--	4.5					
03538256 - BEAR CREEK AT BEAR CREEK ROAD NEAR OAK RIDGE, TN									
SEP 01...	1155	0.02	--	25.5					
03538600 - OBED RIVER AT CROSSVILLE, TN									
OCT 26...	1030	1.8	--	11.0	FEB 24...	1020	16	--	4.0
03540500 - EMORY RIVER AT OAKDALE, TN									
DEC 31...	1625	2650	47	9.0					



## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
TENNESSEE RIVER BASIN--Continued									
03543500 - SEWEE CREEK NEAR DECATUR, TN									
OCT 15...	1355	39	307	15.0	JUN 24...	1440	37	290	22.0
MAY 06...	1225	109	245	17.5					
03560500 - DAVIS MILL CREEK AT COPPERHILL, TN									
OCT 01...	1215	50	315	22.0	MAR 01...	1300	39	698	15.0
NOV 10...	1505	56	592	22.0	APR 01...	1355	40	634	17.0
DEC 01...	1240	44	569	17.0	JUL 01...	1310	60	388	25.0
JAN 04...	1340	43	548	16.5	AUG 02...	1305	31	758	25.5
FEB 01...	1215	32	732	15.0					
03563000 - OCOEE RIVER AT EMF, TN									
FEB 09...	1445	2190	41	9.0					
03564500 - OCOEE RIVER AT PARKSVILLE, TN									
FEB 10...	1115	3590	43	7.5	FEB 10...	1130	3110	43	7.5
03566000 - HIWASSEE RIVER AT CHARLESTON, TN									
FEB 11...	1205	3870	86	8.5					
03571000 - SEQUATCHIE RIVER NEAR WHITWELL, TN									
MAY 19...	1300	360	188	19.5	JUL 14...	1315	126	189	25.5
JUN 01...	1340	1180	135	17.5	AUG 25...	1541	63	258	27.0
03579620 - ROCK CREEK AT TULLAHOMA, TN									
OCT 08...	1235	3.1	94	16.5	DEC 15...	0910	6.3	68	7.5
NOV 16...	1350	8.1	68	10.5	JAN 27...	1220	14	59	6.0
03580995 - EAST FORK MULBERRY CREEK BELOW JACK DANIEL DISTILLERY AT LYNCHBURG, TN									
OCT 08...	0930	13	354	17.5	APR 21...	0940	36	266	12.0
NOV 17...	1115	25	286	10.5	JUN 01...	1705	26	235	19.0
DEC 15...	0735	22	299	8.5	JUL 13...	0805	13	255	22.0
JAN 27...	1430	53	229	10.5	AUG 24...	1415	5.2	258	26.0
MAR 09...	0820	31	247	8.0					

## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
TENNESSEE RIVER BASIN--Continued									
03584600 - ELK RIVER AT PROSPECT, TN									
OCT					MAR				
07...	1535	1450	292	16.5	08...	0940	2280	307	9.0
NOV					APR				
17...	1510	3020	314	10.5	21...	1410	1900	258	15.5
DEC					JUN				
14...	1400	2640	268	8.0	02...	1015	1270	250	19.0
JAN					JUL				
29...	0905	3870	253	8.0	12...	1505	640	242	23.5
03588500 - SHOAL CREEK AT IRON CITY, TN									
OCT					APR				
07...	1130	299	123	16.0	22...	0845	933	102	12.0
NOV					JUN				
18...	0925	431	115	9.5	02...	1415	382	110	18.5
DEC					JUL				
14...	1015	443	110	7.0	12...	1030	257	118	24.5
JAN					AUG				
28...	0835	663	104	6.0	23...	1215	183	131	26.5
MAR									
08...	1330	581	96	10.5					
03597210 - GARRISON FORK ABOVE L&N RAILROAD AT WARTRACE, TN									
OCT					MAR				
09...	0800	44	364	15.5	12...	0815	80	303	7.5
NOV					APR				
16...	1140	74	353	9.0	21...	1015	95	282	13.0
DEC					JUN				
15...	1420	73	334	9.0	01...	1315	182	270	18.0
FEB					AUG				
01...	1035	93	300	6.5	25...	0900	9.8	279	25.5
03597590 - WARTRACE CREEK BELOW COUNTY ROAD AT WARTRACE, TN									
OCT					MAR				
09...	1015	14	442	15.5	12...	0940	22	399	7.5
NOV					APR				
16...	0905	29	447	7.0	21...	1245	21	374	14.0
DEC					JUN				
15...	1215	24	433	7.5	01...	1120	51	355	16.5
FEB					JUL				
01...	0840	27	420	5.0	14...	1110	1.5	310	24.5
03598000 - DUCK RIVER NEAR SHELBYVILLE, TN									
OCT					MAR				
06...	1140	428	259	16.0	16...	0910	534	302	4.0
NOV					APR				
17...	0735	1000	191	11.5	20...	1300	343	280	16.0
DEC					JUN				
14...	1120	656	243	8.0	04...	0930	432	160	18.5
FEB					AUG				
01...	1000	902	185	6.5	24...	1730	216	190	26.0

## MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
TENNESSEE RIVER BASIN--Continued									
03599500 - DUCK RIVER AT COLUMBIA, TN									
OCT					APR				
13...	1020	445	346	15.5	22...	0940	801	340	16.5
NOV					JUN				
18...	1305	1700	327	11.0	04...	0900	1790	331	20.5
DEC					JUL				
15...	1055	1280	351	7.0	15...	1225	431	260	27.5
JAN					AUG				
20...	1145	2040	315	7.5	25...	1430	190	259	30.5
MAR									
08...	1200	1740	355	14.0					
03602219 - PINEY RIVER AT CEDAR HILL, TN									
OCT					APR				
06...	1220	20	300	15.5	22...	0915	87	215	9.5
NOV					JUN				
18...	1050	18	300	12.5	01...	1220	39	250	17.0
DEC					JUL				
15...	0950	25	300	9.0	15...	1440	21	244	24.0
JAN					AUG				
25...	1220	112	230	7.5	30...	1210	12	280	23.0
MAR									
08...	1220	89	220	10.5					
03602500 - PINEY RIVER AT VERNON, TN									
OCT					JAN				
07...	0950	100	250	15.5	26...	1505	332	220	7.0
NOV					MAR				
18...	1020	96	255	11.0	09...	0855	353	200	9.0
DEC					APR				
15...	1200	108	250	8.5	21...	1130	360	195	13.5
03603000 - DUCK RIVER ABOVE HURRICANE MILLS, TN									
OCT					APR				
08...	0725	1670	290	17.5	21...	0800	3260	260	15.0
NOV					JUN				
18...	1420	2700	310	12.0	02...	1555	1570	260	19.0
DEC					JUL				
17...	0835	2100	320	7.5	13...	1745	1020	152	--
JAN					AUG				
27...	0925	8290	300	7.5	31...	1745	712	276	--
MAR									
11...	0945	3380	308	10.0					
03604400 - BUFFALO RIVER BELOW LOBELVILLE, TN									
OCT					MAR				
08...	1105	571	115	17.5	11...	1300	1170	100	10.5
NOV					APR				
19...	1030	642	105	13.0	20...	1520	1710	110	15.5
DEC					JUN				
16...	1410	727	105	9.5	02...	1320	773	152	19.0
JAN					JUL				
27...	1300	1420	105	8.0	13...	1415	630	109	--
FEB					AUG				
02...	0815	995	104	7.0	31...	0920	414	181	22.0

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS  
WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	DATE	TIME	DIS- CHARGE, INSTAN- TANEOUS (Ft <sup>3</sup> /S)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)
OBION RIVER BASIN									
07024300 - BEAVER CREEK AT HUNTINGDON, TN									
FEB 09...	1635	62	72	10.5	JUN 16...	0915	35	64	21.0
MAR 24...	1320	72	78	11.0	SEP 10...	0755	26	58	18.5
07025500 - NORTH FORK OBION RIVER NEAR UNION CITY, TN									
FEB 09...	1220	380	65	10.0	SEP 09...	1410	188	52	21.5
MAR 23...	1405	2730	69	11.0					
LOOSAHATCHIE RIVER BASIN									
07030240 - LOOSAHATCHIE RIVER NEAR ARLINGTON, TN									
JUN 08...	1245	106	55	24.0	SEP 10...	1445	98	55	21.0
WOLF RIVER BASIN									
07031650 - WOLF RIVER AT GERMANTOWN, TN									
JUN 07...	1815	348	49	27.5					
NONCONNAH CREEK BASIN									
07032200 - NONCONNAH CREEK NEAR GERMANTOWN, TN									
NOV 17...	1040	1.7	--	11.0	SEP 08...	1020	0.74	197	25.0
JUN 07...	1245	1.0	166	27.0					

## GROUND-WATER LEVELS

## DAVIDSON COUNTY

360835086441100. Local number, Dv:L-10.

LOCATION.--Lat 36°08'35", long 86°44'11", Hydrologic Unit 05130202, 220 ft south of Elm Hill Pike, 0.3 mi west of Louisville and Nashville Railroad crossing, 0.4 mi east of Fesslers Lane in Nashville.  
Owner: U.S. Geological Survey.

AQUIFER.--Carters and Lebanon Limestones of middle Ordovician age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in., depth 262 ft, cased to 40 ft, open end.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 515 ft above sea level, from topographic map. Measuring point: Top of casing 2.5 ft above land-surface datum.

REMARKS.--No record May 31, June 1. Records good.

PERIOD OF RECORD.--June 1985 to current year.

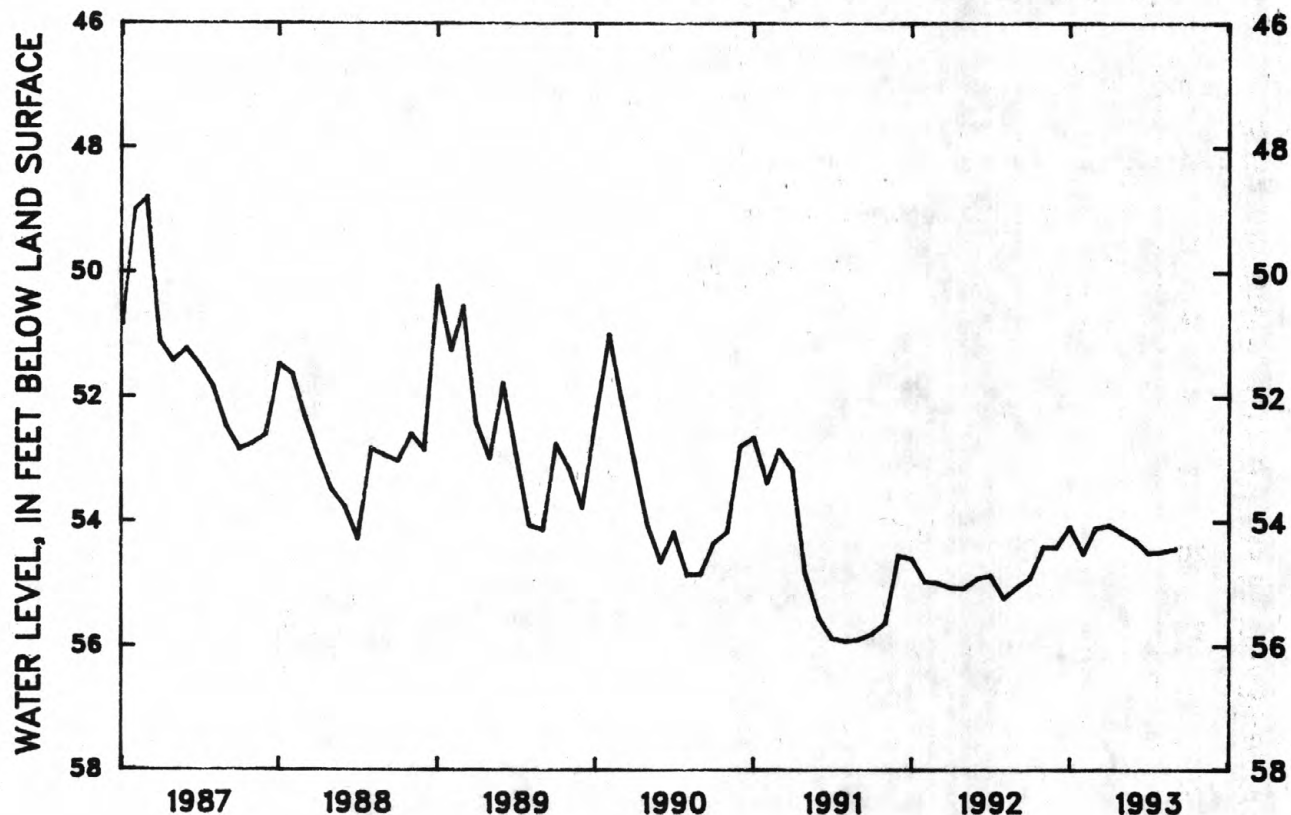
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 36.52 ft below land-surface datum, Feb. 21, 1989; lowest water level 55.94 ft below land-surface datum, Aug. 5, 6, 7, and 8, 1991.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	54.25	53.72	54.20	52.09	54.26	50.11	52.85	46.46	54.21	54.21	54.34	54.30
10	54.64	54.33	54.17	52.84	54.50	53.29	52.59	52.04	54.32	54.48	54.20	53.54
15	54.90	53.99	54.32	52.85	54.53	53.96	53.83	52.59	53.37	53.73	54.04	54.19
20	54.87	54.35	54.27	53.99	54.20	53.95	53.76	52.87	54.09	54.06	54.32	54.15
25	54.86	51.65	52.45	52.64	53.47	51.59	54.06	53.86	54.08	53.74	54.49	53.62
EOM	54.47	53.86	53.24	53.99	52.79	50.81	53.57	---	53.64	54.16	54.42	53.78

WTR YR 1993 HIGHEST 44.80 MAY 4, 1993 LOWEST 54.91 OCT 16, 1992

LOWEST MONTHLY WATER LEVEL





## HAMILTON COUNTY

350234085181200. Local number, Hm:G-36.

LOCATION.--Lat 35°02'34", long 85°18'12", Hydrologic Unit 06020001, in Tennessee Valley Authority parking lot, Douglas Street in Chattanooga.  
Owner: Tennessee Valley Authority.

AQUIFER.--Knox Dolomite of Cambrian and Ordovician age.

WELL CHARACTERISTICS.--Drilled artesian test well, diameter 16 in. to 120 ft, 6 in. to 250 ft, cased to 27 ft, open end.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 670.3 ft above sea level. Measuring point: Top of instrument shelf, 1.5 ft above land-surface datum.

REMARKS.--No record Dec. 21 to Feb. 2. Records good. The well has been pumped at rates up to 1,200 gal/min over a 68 hour period indicating a specific capacity of 20.4 [(gal/min)/ft].

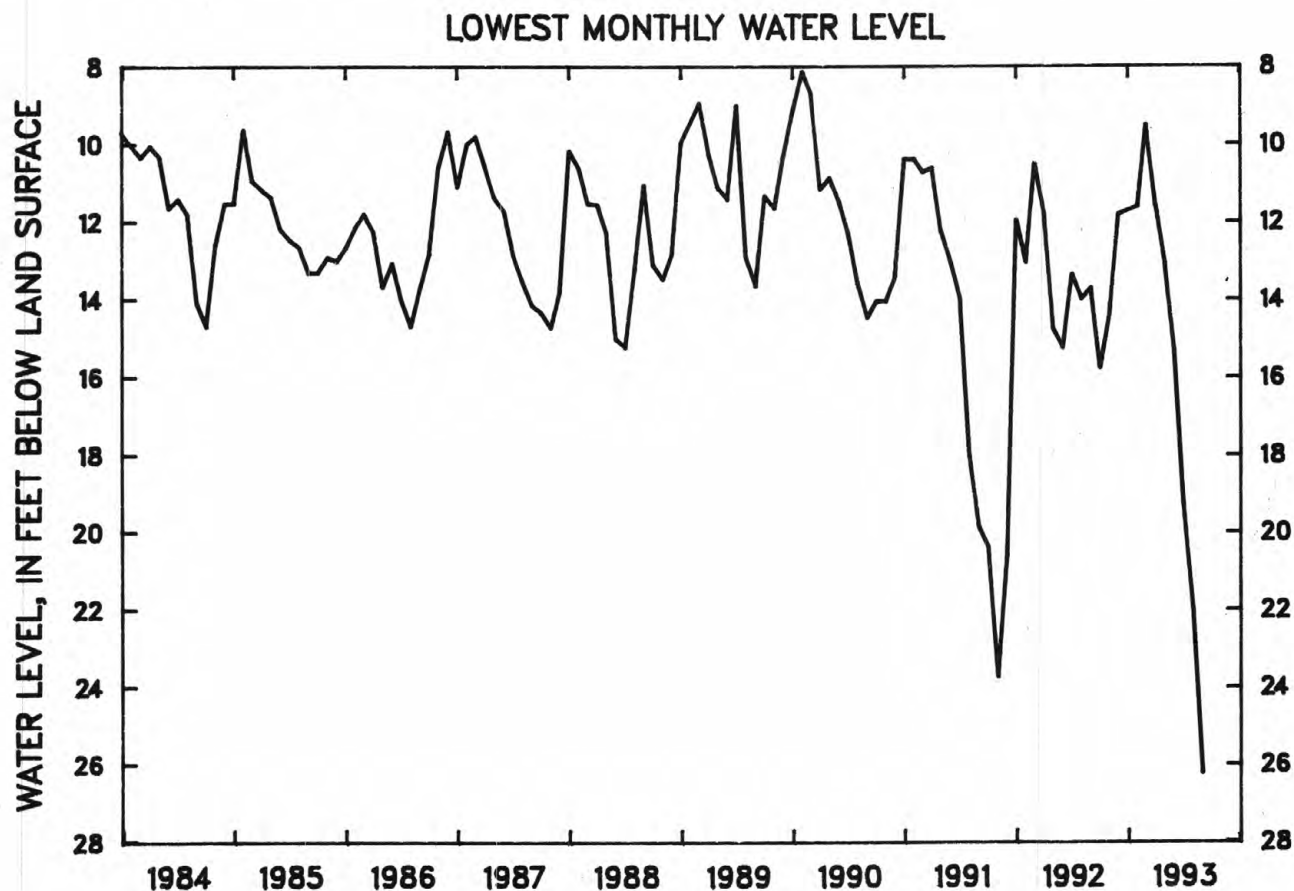
PERIOD OF RECORD.--April 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.57 ft below land-surface datum, Feb. 16, 1990; lowest recorded, 26.24 ft below land-surface datum, Sept. 30, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	11.46	12.02	10.98	---	10.61	7.73	8.21	9.56	13.27	14.89	20.00	22.65
10	11.52	11.97	11.47	---	11.62	8.69	8.43	10.32	13.42	15.55	19.22	23.57
15	12.51	11.06	11.82	---	11.30	8.18	9.68	11.55	14.17	16.41	18.98	23.65
20	13.50	11.97	10.37	---	10.79	8.00	10.87	12.27	14.50	17.16	20.19	23.58
25	14.60	8.91	---	---	10.06	7.45	11.29	12.81	15.06	17.85	21.21	25.34
EOM	14.90	10.01	---	---	9.56	7.02	11.61	12.77	15.16	19.29	22.02	26.24

WTR YR 1993 HIGHEST 5.95 MAR 27, 1993 LOWEST 26.24 SEPT 30, 1993



## HAMILTON COUNTY--Continued

351428085003600. Local number, Hm:0-15.

LOCATION.--Lat 35°14'28", long 85°00'36", Hydrologic Unit 06020001, at Smith Road and State Highway 58, near Snow Hill.

Owner: Savannah Valley Utility District.

AQUIFER.--Knox Dolomite of Cambrian and Ordovician age.

WELL CHARACTERISTICS.--Drilled artesian test well, diameter 10 in., depth 262 ft, cased to 50 ft, open end.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 735 ft above sea level, from topographic map. Measuring point: Top of back shelter panel, 8.00 ft above land-surface datum.

REMARKS.--No missing record. Record goods. Well previously published as "at Savannah Valley". Water level affected by pumping from municipal supply well 300 ft south. Negative values indicate water levels above land-surface.

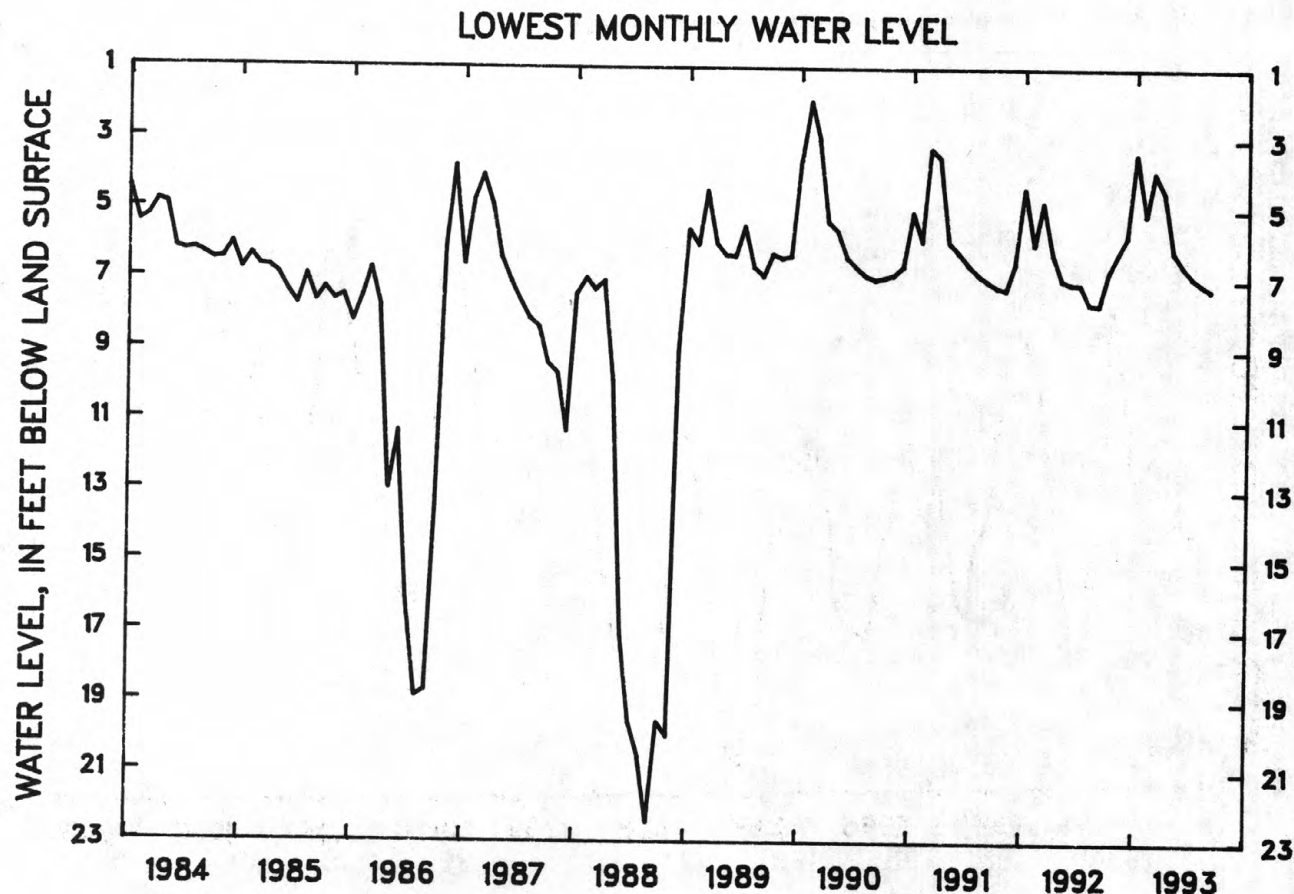
PERIOD OF RECORD.--May 1975 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, -3.57 ft above land-surface datum, Feb. 19, 1991; lowest, 22.45 ft below land-surface datum, Sept. 3, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.32	4.96	4.89	3.27	3.53	.25	1.36	4.72	6.09	6.55	6.94	7.20
10	4.75	5.72	5.60	.99	5.08	1.71	1.58	5.22	6.30	6.68	6.93	7.24
15	5.94	5.04	5.63	.18	4.47	3.66	2.54	5.54	6.40	6.74	6.96	7.24
20	6.35	6.02	1.26	2.08	3.72	-.11	3.88	5.89	6.50	6.68	7.01	7.27
25	6.67	.62	-.14	-.54	3.31	-.74	4.49	6.10	6.56	6.85	7.02	7.23
EOM	6.16	2.30	1.09	1.35	3.12	-.11	4.46	6.14	6.60	6.90	7.02	7.14

WTR YR 1993 HIGHEST -2.29 MAR 23, 1993 LOWEST 7.27 SEPT 20, 1993



## GROUND-WATER LEVELS

## HUMPHREYS COUNTY

360020087573300. Local number, Hs:H-1.

LOCATION.--Lat 36°00'20", long 87°57'33", Hydrologic Unit 06040005, 100 ft north of Woodland Drive, at New Johnsonville.

Owner: A.M. Powers.

AQUIFER.--Camden Chert of early Devonian age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in., depth 187 ft, cased to 72 ft, open end.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 470 ft above sea level, from topographic map. Measuring point: Top of casing, 1.00 ft above land-surface datum.

REMARKS.--Records good.

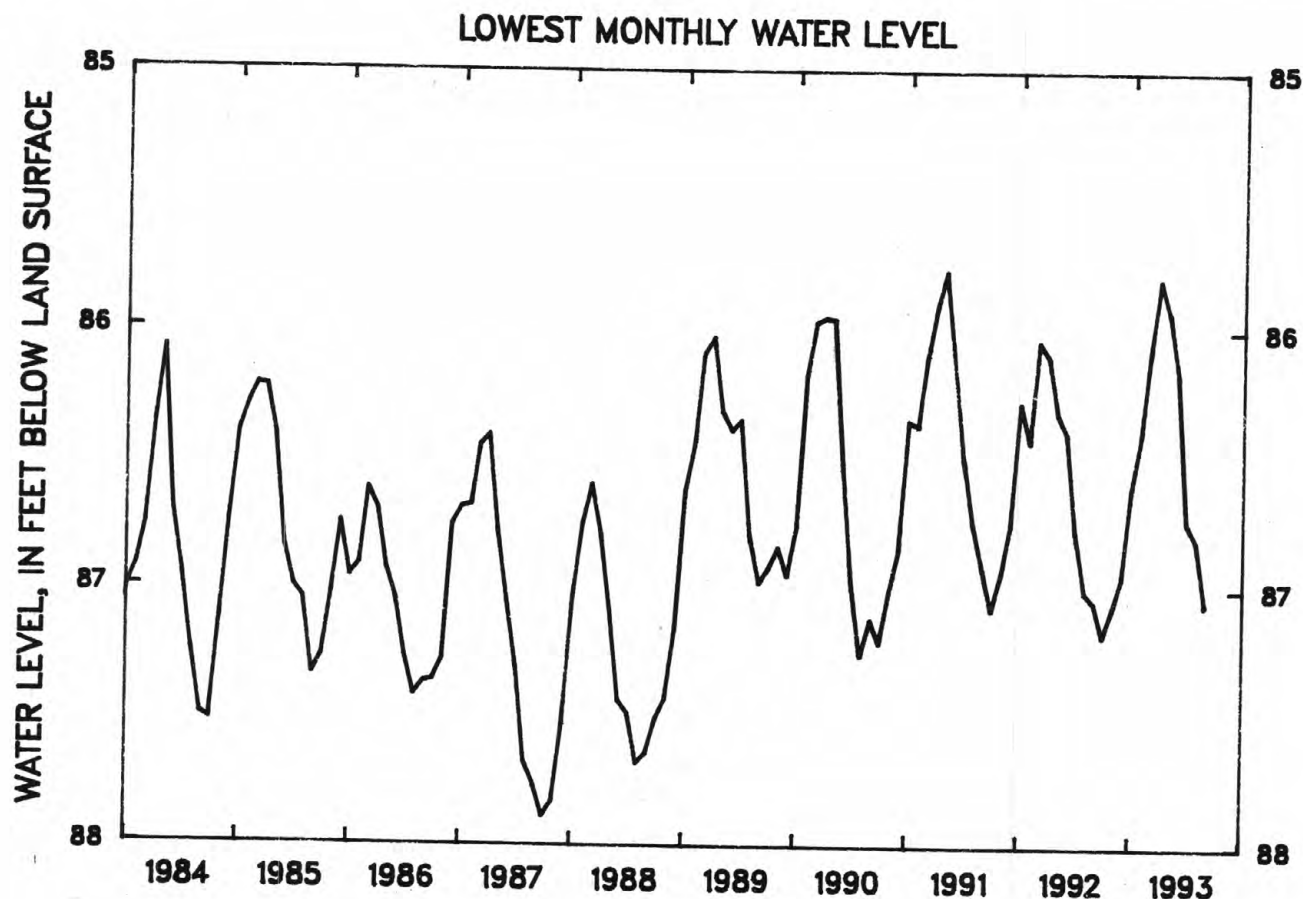
PERIOD OF RECORD.--February 1962 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 84.31 ft below land-surface datum, May 25, 1983; lowest, 90.20 ft below land-surface datum, Nov. 25, 1968.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	86.95	87.05	86.95	86.45	86.37	85.90	85.74	85.59	85.91	86.30	86.61	86.88
10	87.02	87.05	86.86	86.44	86.39	85.97	85.69	85.64	86.00	86.48	86.64	87.00
15	87.18	86.98	86.84	86.35	86.29	86.06	85.57	85.56	85.98	86.48	86.68	86.98
20	87.12	86.91	86.88	86.42	86.05	86.07	85.60	85.72	86.12	86.56	86.64	86.99
25	87.08	86.83	86.60	86.36	86.11	85.90	85.67	85.81	86.17	86.55	86.78	86.85
EOM	87.02	86.81	86.58	86.30	86.01	85.59	85.69	85.84	86.13	86.69	86.76	87.06

WTR YR 1993    HIGHEST    85.47    APR 15, 1993    LOWEST    87.18    OCT 15, 1992



## GROUND-WATER LEVELS

## LAUDERDALE COUNTY

353839089493500. Local number, Ld:F-4.

LOCATION.--Lat 35°38'39", Long 89°49'35", Hydrologic Unit 08010208, 1.1 mi north of State Highway 87, at Fort Pillow State Park.

Owner: Tennessee Division of Geology and U.S. Geological Survey.

AQUIFER.--Memphis Sand of Claiborne Group of middle Eocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 8 to 6 to 3 in., depth 879 ft, cased to 869 ft, screened 869 to 879 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 437.05 ft above sea level. Measuring point: Top of casing, 2.80 ft above land-surface datum.

REMARKS.--No record Nov. 11 to 16, Nov. 26 to 30, and June 12 to 17. Records good.

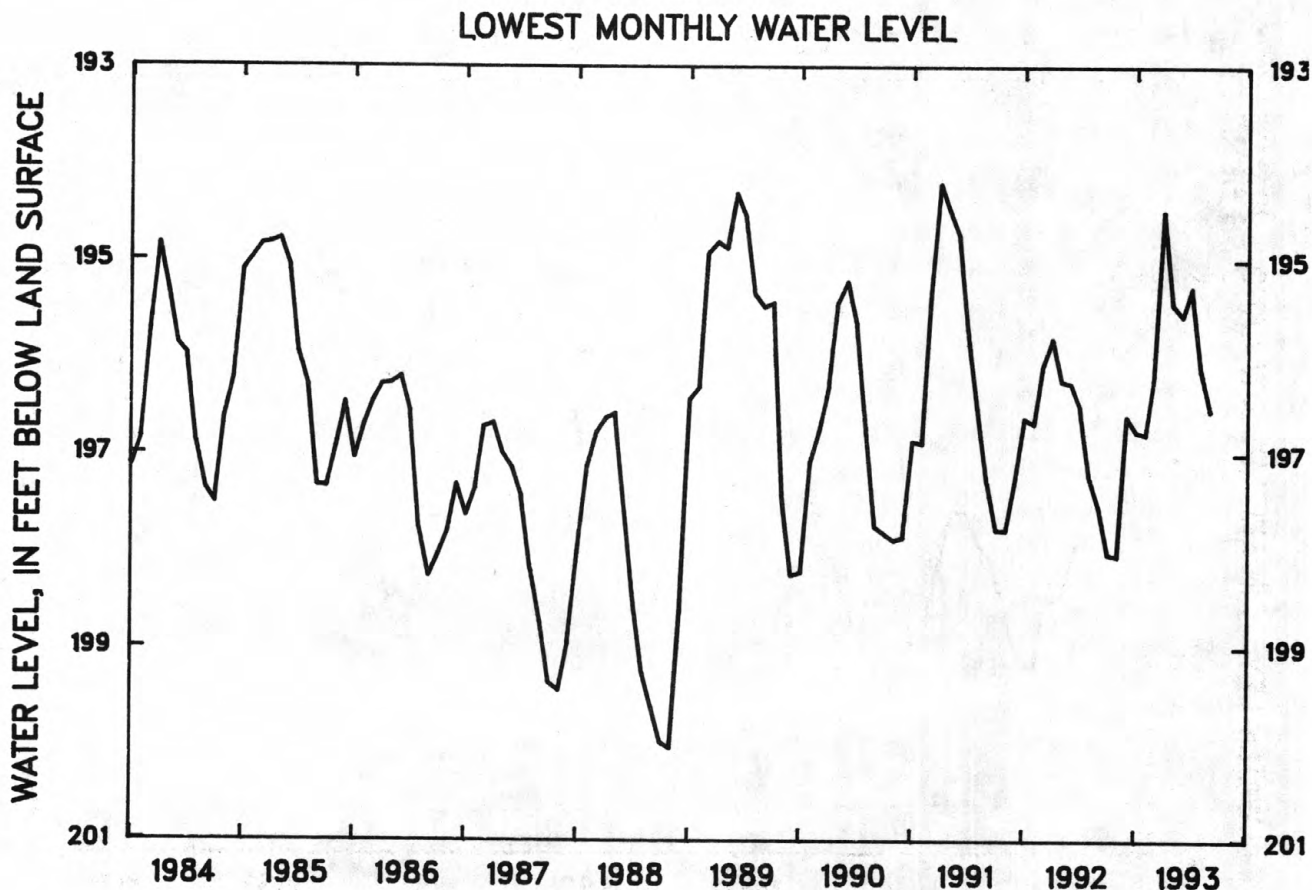
PERIOD OF RECORD.--April 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 187.76 ft below land-surface datum, Apr. 7, 1975; lowest, 200.05 ft below land-surface datum, Nov. 11, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	197.39	197.98	---	196.75	196.43	195.98	193.96	194.27	195.55	195.26	194.34	196.33
10	197.65	198.00	---	196.00	196.63	195.27	193.52	193.95	195.55	194.96	194.50	196.39
15	197.88	---	---	196.02	196.76	194.66	193.39	194.45	---	194.70	194.79	196.50
20	198.01	197.40	---	196.31	196.65	194.62	194.05	195.00	195.30	194.50	195.08	196.55
25	197.92	197.15	---	196.28	196.55	195.53	194.05	195.20	195.45	194.19	195.63	196.38
EOM	197.93	---	196.61	196.07	196.30	194.46	194.49	195.43	195.30	194.44	196.14	196.22

WTR YR 1993      HIGHEST    194.18    JULY 26, 1993      LOWEST    198.04    OCT 22, 23, 1992



## MADISON COUNTY

354223088380200. Local number, Md:N-1.

LOCATION.--Lat 35°42'23", long 88°38'02", Hydrologic Unit 08010205, about 0.4 mi east of Claybrook.

Owner: Tennessee Division of Geology and U.S. Geological Survey.

AQUIFER.--McNairy Sand of late Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 to 4 in., depth 659 ft, cased to 639 ft, screened 639 to 659 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 562.70 ft above sea level. Measuring point: Top of casing, 2.80 ft above land-surface datum.

REMARKS.--Records good.

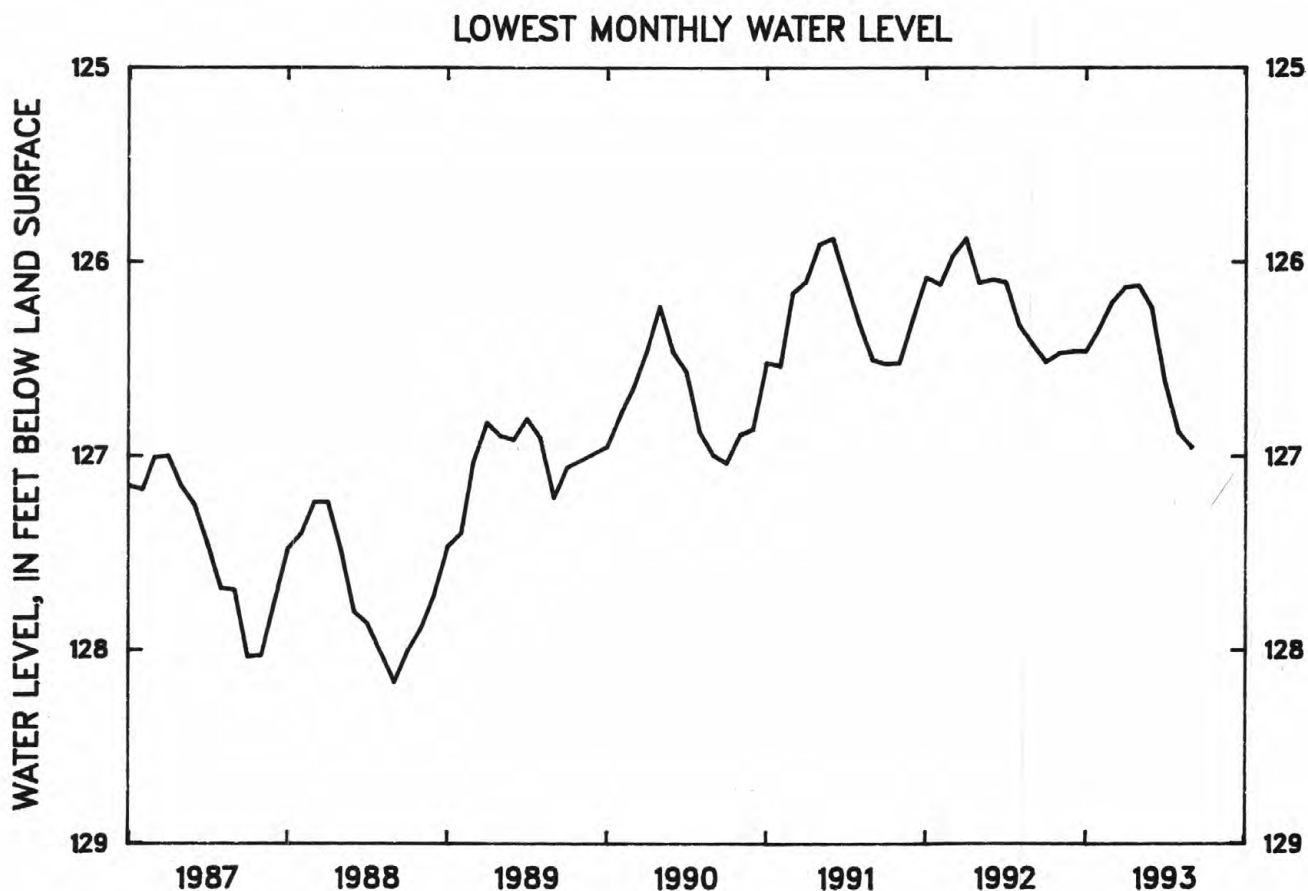
PERIOD OF RECORD.--June 1949 to current year. Analog record June 1949 to February 1971, periodic tape measurements or monthly maximum-minimum recorder March 1971 to April 1986.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 124.50 ft below land-surface datum, Mar. 10, 1952; lowest recorded, 129.13 ft below land-surface datum, Nov. 15, 1963; highest water level measured, 124.98 ft below land-surface datum, Apr. 8, 1980; lowest measured, 131.17 ft below land-surface datum, June 20, 1979.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	126.33	126.43	126.46	126.39	126.33	126.14	126.09	125.98	126.14	126.35	126.72	126.85
10	126.35	126.47	126.34	126.36	126.27	126.16	125.95	126.03	126.16	126.47	126.72	126.93
15	126.40	126.47	126.38	126.37	126.24	126.21	125.88	125.96	126.18	126.51	126.78	126.94
20	126.42	126.45	126.39	126.39	126.16	126.18	125.98	125.99	126.22	126.52	126.83	126.92
25	126.45	126.37	126.39	126.29	126.22	126.12	126.01	126.12	126.24	126.54	126.86	126.84
EOM	126.45	126.40	126.43	126.34	126.19	126.01	126.06	126.05	126.22	126.61	126.83	126.95

WTR YR 1993                      HIGHEST    125.79    APR 15, 1993                      LOWEST    126.96    SEPT 11, 1993





## GROUND-WATER LEVELS

## MORGAN COUNTY

360543084343101. Local number, Mg:F-5.

LOCATION.--Lat 36°05'43", long 84°34'31", Hydrologic Unit 06010208, 1.0 mi southeast of Wartburg.  
Owner: Plateau Utility District.

AQUIFER.--Sandstone of Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in., depth 394 ft, cased to 20 ft, open end.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 1,265 ft above sea level, from topographic map. Measuring point: Floor of recorder shelter, 2.4 ft above land-surface datum.

REMARKS.--Highest water level readings may be influenced for short periods by surface inflow. No record Feb. 11-26, and Sept. 23, 24, 1993. Records fair.

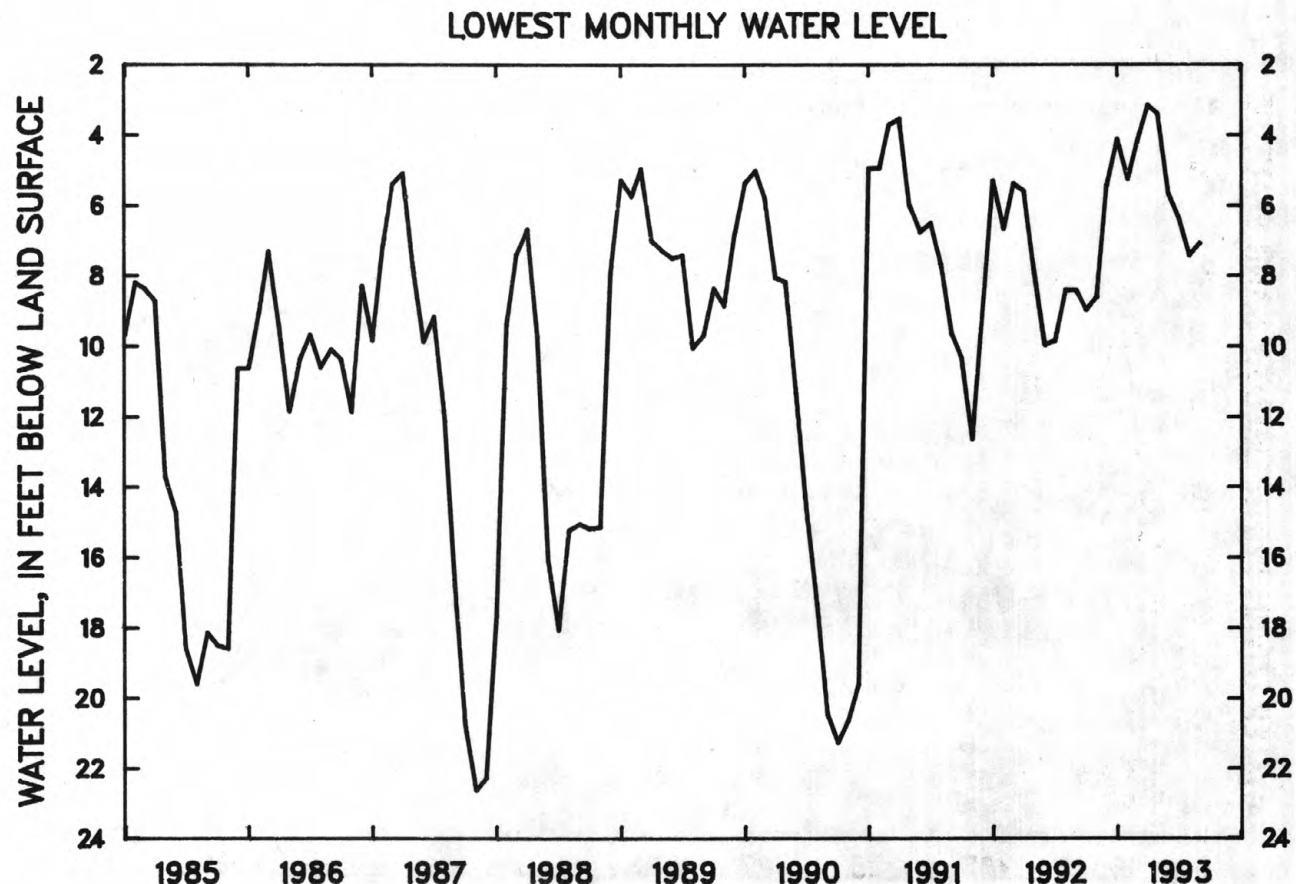
PERIOD OF RECORD.--November 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.48 ft below land-surface datum, June 15, 1989; lowest recorded, 22.75 ft below land-surface datum, Nov. 18, 1987, but may have been lower during period of no gage height record Oct. 21 to Nov. 18, 1987.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	6.09	5.15	5.08	2.86	4.61	2.71	3.16	1.64	3.88	5.99	7.38	6.49
10	6.50	5.60	5.22	3.07	5.25	3.70	2.38	2.39	4.35	6.07	6.70	6.70
15	7.35	5.04	5.39	3.07	---	4.17	2.92	2.89	4.67	6.00	6.41	6.92
20	8.04	5.55	3.04	4.12	---	2.76	2.78	2.97	5.03	5.50	6.20	6.93
25	8.48	2.97	2.81	3.81	---	2.34	2.51	3.36	5.43	5.86	6.16	6.98
EOM	8.63	4.25	3.11	3.98	3.75	2.76	1.98	3.41	5.70	6.38	6.58	5.89

WTR YR 1993      HIGHEST 0.77    MAR 23, 1993      LOWEST 8.98    OCT 30, 1992



## PUTNAM COUNTY

360521085432600. Local number, Pm:C-1.

LOCATION.--Lat 36°05'21", long 85°43'26", Hydrologic Unit 05130108, at Interstate 40 and State Highway 56, at Silver Point.

Owner: Tennessee Department of Transportation.

AQUIFER.--Fort Payne Formation of early Mississippian age.

WELL CHARACTERISTICS.--Drilled test water-table well, diameter 6 in., depth 175 ft, cased to 60 ft, open end.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 1,030 ft above sea level, from topographic map. Measuring point: Top of instrument shelf, 2.88 ft above land surface datum.

REMARKS.--No record June 1 to July 16. Records good.

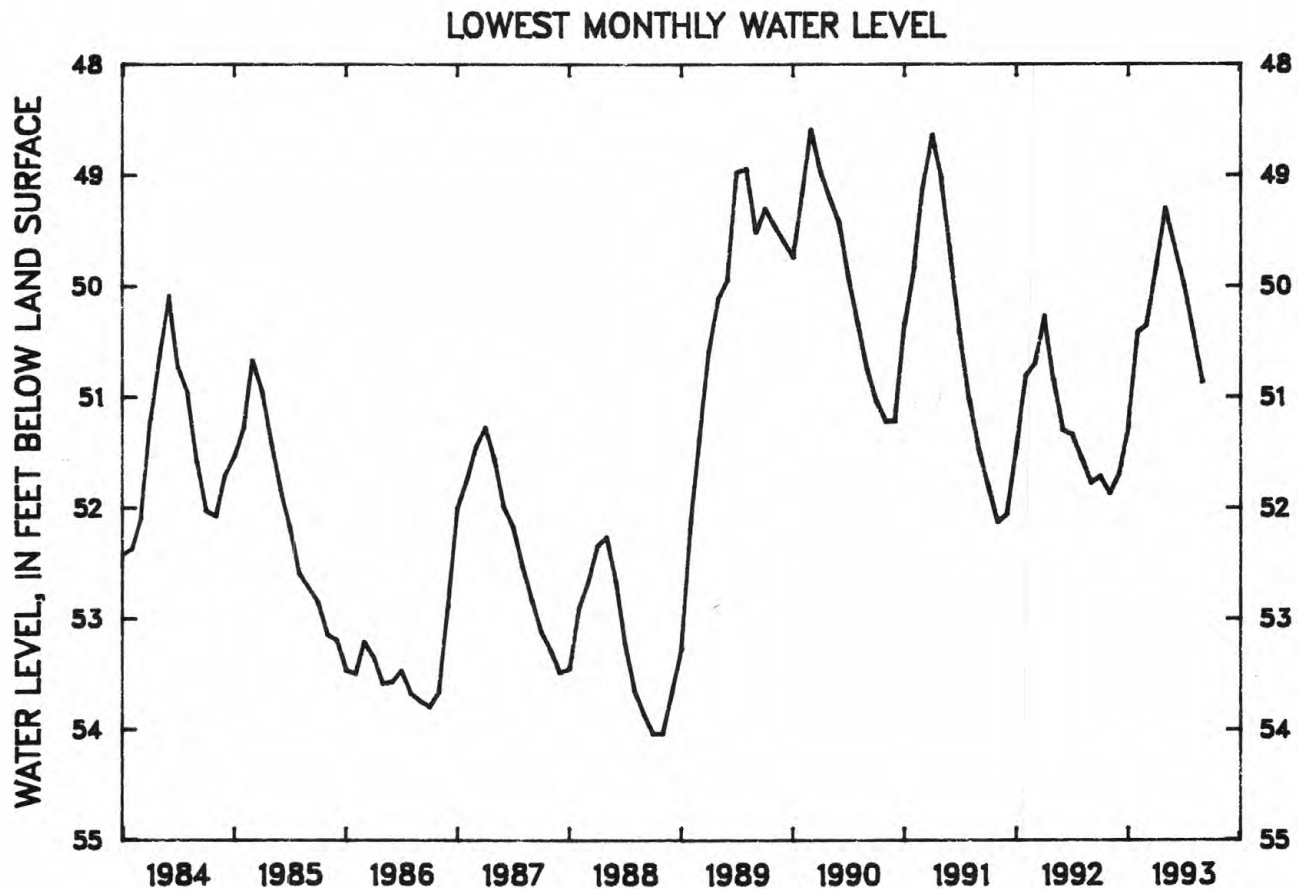
PERIOD OF RECORD.--March 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 48.00 ft below land-surface datum, Feb. 22, 1990; lowest, 54.04 ft below land-surface datum, Oct. 28, Nov. 10, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	51.61	51.78	51.69	51.13	50.17	50.35	49.60	49.30	---	---	50.07	50.50
10	51.51	51.76	51.59	50.90	50.18	50.33	49.53	49.21	---	---	50.14	50.62
15	51.56	51.78	51.55	50.62	50.29	50.32	49.40	49.19	---	---	50.22	50.68
20	51.61	51.67	51.65	50.51	50.20	50.15	49.32	49.17	---	49.82	50.26	50.72
25	51.62	51.66	51.44	50.48	50.33	49.98	49.30	49.23	---	49.87	50.36	50.73
EOM	51.71	51.61	51.29	50.16	50.36	49.69	49.27	49.22	---	49.98	50.42	50.87

WTR YR 1993    HIGHEST    49.00    MAY 12, 1993       LOWEST    51.87    NOV 12, 1992



## GROUND-WATER LEVELS

## ROANE COUNTY

355634084243701. Local number, Rn:BRW-6.

LOCATION.--Lat 35°52'34", long 84°24'37", Hydrologic Unit 06010207, 2.7 mi southwest of intersection of State Highways 58 and 95, 9.7 mi southwest of Oak Ridge.

AQUIFER.--Knox Group of Cambrian and Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 100 ft, cased to 91 ft, screened 81 to 91 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute recording interval.

DATUM.--Elevation of land-surface datum is 812.89 ft above sea level, from Department of Energy records. Measuring point: Top of casing, 2.90 ft above land-surface datum.

REMARKS.--No missing record. Records good.

PERIOD OF RECORD.--July to September 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 44.10 ft below land-surface datum, July 21, 1993; lowest, 48.33 ft below land-surface datum, Sept. 23, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR JULY 1993 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	---	45.58	47.48
10	---	---	---	---	---	---	---	---	---	---	45.80	47.73
15	---	---	---	---	---	---	---	---	---	---	46.15	47.98
20	---	---	---	---	---	---	---	---	---	---	46.48	48.21
25	---	---	---	---	---	---	---	---	---	44.59	46.85	48.20
EOM	---	---	---	---	---	---	---	---	---	45.16	47.22	48.00

WTR YR 1993    HIGHEST 44.10 JULY 21, 1993    LOWEST 48.33 SEPT 23, 1993

## GROUND-WATER LEVELS

341

## ROANE COUNTY--Continued

355535084241901. Local number, Rn:BRW-21.

LOCATION.--Lat 35°55'35", long 84°24'19", Hydrologic Unit 06010207, 2.5 mi southwest of intersection of State Highways 58 and 95, 9.5 mi southwest of Oak Ridge.

AQUIFER.--Chickamauga Group of Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 123 ft, cased to 118 ft, screened 97 to 118 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute recording interval.

DATUM.--Elevation of land-surface datum is 803.56 ft above sea level, from Department of Energy records. Measuring point: Top of stainless steel casing, 2.80 ft above land-surface datum.

REMARKS.--No missing record. Records good.

PERIOD OF RECORD.--April to September 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 53.64 ft below land-surface datum, Apr. 29, 1993; lowest, 57.11 ft below land-surface datum, Sept. 26, 27, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR APRIL 1993 TO SEPTEMBER 1993  
 LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	54.25	55.05	55.77	56.54	56.87
10	---	---	---	---	---	---	---	54.51	55.12	55.96	56.48	56.95
15	---	---	---	---	---	---	---	54.70	55.17	56.09	56.52	57.00
20	---	---	---	---	---	---	---	54.83	55.24	56.20	56.60	57.06
25	---	---	---	---	---	---	---	54.92	55.38	56.30	56.71	57.07
EOM	---	---	---	---	---	---	53.76	54.99	55.55	56.45	56.79	57.05
WTR YR 1993	HIGHEST 53.64			APR 29, 1993			LOWEST 57.11			SEPT 26, 27, 1993		

## GROUND-WATER LEVELS

## ROANE COUNTY--Continued

355537084242401. Local number, Rn:BRW-24.

LOCATION.--Lat 35°55'37", long 84°24'24", Hydrologic Unit 06010207, 2.5mi southwest of intersection of State Highways 58 and 95, 9.5 mi southwest of Oak Ridge.

AQUIFER.--Chickamauga Group of Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in., depth 95 ft, cased to 92 ft, screened 71 to 92 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute recording interval.

DATUM.--Elevation of land-surface datum is 788.28 ft above sea level, from Department of Energy Records. Measuring point: Top of casing, 3.40 ft above land-surface datum.

REMARKS.--No missing record. Records good.

PERIOD OF RECORD.--April to September 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 41.67 ft below land-surface datum, Apr. 10, 1993; lowest, 48.20, ft below land-surface datum, Aug. 4, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR APRIL 1993 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	46.69	47.35	47.96	48.14	48.01
10	---	---	---	---	---	---	42.66	47.21	47.73	47.52	47.71	48.01
15	---	---	---	---	---	---	46.28	47.21	47.93	47.80	47.56	48.02
20	---	---	---	---	---	---	47.03	47.36	47.50	47.91	47.61	47.64
25	---	---	---	---	---	---	47.10	47.46	47.47	47.92	48.03	47.88
EOM	---	---	---	---	---	---	46.72	47.55	47.79	47.89	47.93	47.98

WTR YR 1993    HIGHEST 41.67 APR 10, 1993    LOWEST 48.20 AUG 4, 1993



## 343

355632084243801. Local number, Rn:BRW-25.

AQUIFER.--Knox Group of Cambrian and Ordovician age.

**INSTRUMENTATION.**--Water-level recorder -- 60-minute recording interval.

REMARKS.--No missing record. Records good.

PERIOD OF RECORD.--July to September 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR JULY 1993 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	---	---	---	44.76	45.69
10	---	---	---	---	---	---	---	---	---	43.63	44.84	45.81
15	---	---	---	---	---	---	---	---	---	43.83	45.03	45.92
20	---	---	---	---	---	---	---	---	---	44.14	45.20	46.04
25	---	---	---	---	---	---	---	---	---	44.28	45.41	46.00
EOM	---	---	---	---	---	---	---	---	---	44.59	45.62	45.97

WTR YR 1993      HIGHEST 43.50    JULY 11, 1993      LOWEST 46.09    SEPT 23, 1993

## GROUND-WATER LEVELS

## ROANE COUNTY--Continued

355609084240001. Local number, Rn:BRW-30.

LOCATION.--Lat 35°56'09", long 84°24'00", Hydrologic Unit 06010207, 1.7 mi southwest of intersection of State Highways 58 and 95, 8.5 mi southwest of Oak Ridge.

AQUIFER.--Chickamauga Group of Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 55 ft, cased to 54 ft, screened 34 to 54 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute recording interval.

DATUM.--Elevation of land-surface datum is 760.29 ft above sea level, from Department of Energy records. Measuring point: Top of casing, 2.40 ft above land-surface datum.

REMARKS.--No record Sept. 28-30. Records good.

PERIOD OF RECORD.--April to September 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 18.70 ft below land-surface datum, Apr. 15, 1993; lowest, 20.29 ft below land-surface datum, Apr. 5, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR APRIL 1993 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	20.29	18.86	19.30	19.78	19.95	19.75
10	---	---	---	---	---	---	19.01	19.25	19.61	19.49	19.59	19.88
15	---	---	---	---	---	---	18.94	19.20	19.74	19.65	19.40	19.85
20	---	---	---	---	---	---	19.24	19.31	19.41	19.71	19.46	19.52
25	---	---	---	---	---	---	19.33	19.41	19.44	19.77	19.83	19.59
EOM	---	---	---	---	---	---	19.03	19.46	19.68	19.78	19.79	---
WTR YR 1993	HIGHEST 18.70 APR 15, 1993						LOWEST 20.29 APR 5, 1993					

355603084244301. Local number, Rn:BRW-35.

**AQUIFER.**--Chickamauga Group of Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 45 ft, cased to 45 ft, screened 35 to 45 ft.

**INSTRUMENTATION.**--Water-level recorder -- 60-minute recording interval.

DATUM.--Elevation of land-surface datum is 749.41 above sea level, from Department of Energy records. Measuring point: Top of casing, 2.90 ft above land-surface datum.

REMARKS.--No missing record. Records good.

PERIOD OF RECORD.--April to September 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 8.54 ft below land-surface datum, Aug. 14, 1993; lowest, 40.79 ft below land-surface datum, Apr. 28, 1993.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	36.41	15.18	10.77	9.58	8.94
10	---	---	---	---	---	---	---	31.86	14.06	10.49	8.99	8.96
15	---	---	---	---	---	---	---	26.54	13.10	10.22	8.55	8.99
20	---	---	---	---	---	---	---	22.41	12.33	9.94	8.57	8.95
25	---	---	---	---	---	---	---	19.37	11.72	9.80	8.89	8.96
EOM	---	---	---	---	---	---	40.76	16.66	11.19	9.66	8.92	9.07
WTR YR 1993		HIGHEST	8.54	AUG 14, 1993		LOWEST	40.79	APR 28, 1993				

## GROUND-WATER LEVELS

## ROANE COUNTY--Continued

355624084235601. Local number, Rn:BRW-61.

LOCATION.--Lat 35°56'24", long 84°23'56", Hydrologic Unit 06010207, 1.7 mi southwest of intersection of State Highways 58 and 95, 8.5 mi southwest of Oak Ridge.

AQUIFER.--Chickamauga Group of Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in., depth 30 ft, cased to 28 ft, screened 18 to 28 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute recording interval.

DATUM.--Elevation of land-surface datum is 751.05 ft above sea level, from Department of Energy Records. Measuring point: Top of casing, 3.00 ft above land-surface datum.

REMARKS.--No missing record. Records good.

PERIOD OF RECORD.--April to September 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 9.32 ft below land-surface datum, Apr. 29, 1993; lowest, 11.23, ft below land-surface datum, Aug. 6, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR APRIL 1993 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	10.14	10.81	11.17	11.18	11.12
10	---	---	---	---	---	---	---	10.55	10.86	10.46	10.87	11.09
15	---	---	---	---	---	---	---	10.34	11.00	10.71	10.68	11.07
20	---	---	---	---	---	---	---	10.68	10.82	11.13	10.69	10.78
25	---	---	---	---	---	---	---	10.83	10.41	10.96	11.07	10.98
EOM	---	---	---	---	---	---	10.29	10.45	10.75	11.03	11.02	11.09
WTR YR 1993	HIGHEST		9.32	APR 29, 1993		LOWEST		11.23	AUG 6, 1993			

## GROUND-WATER LEVELS

ROANE COUNTY--Continued

355619084240301. Local number, Rn:BRW-63.

LOCATION.--Lat 35°56'19", long 84°24'03", Hydrologic Unit 06010207, 1.7 mi southwest of intersection of State Highways 58 and 95, 8.5 mi southwest of Oak Ridge.

AQUIFER.--Chickamauga Group of Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 80 ft, cased to 77 ft, screened 67 to 77 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute recording interval.

DATUM.--Elevation of land-surface datum is 767.52 ft above sea level, from Department of Energy records. Measuring point: Top of casing, 2.90 ft above land-surface datum.

REMARKS.--No missing record. Records good.

PERIOD OF RECORD.--April to September 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.22 ft below land-surface datum, Apr. 29, 1993; lowest, 25.89 ft below land-surface datum, Sept. 1, 2, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR APRIL 1993 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	22.68	24.09	23.06	25.07	25.43
10	---	---	---	---	---	---	---	23.27	24.68	23.08	24.70	25.58
15	---	---	---	---	---	---	---	23.42	24.85	22.92	24.86	25.66
20	---	---	---	---	---	---	---	23.72	24.28	23.11	25.13	25.45
25	---	---	---	---	---	---	---	24.28	23.11	23.26	25.64	25.19
EOM	---	---	---	---	---	---	22.52	24.42	22.96	23.87	25.85	24.77
WTR YR 1993	HIGHEST		22.22	APR 29, 1993		LOWEST	25.89	SEPT 1, 2, 1993				



## GROUND-WATER LEVELS

## ROANE COUNTY--Continued

355604084241201. Local number, Rn:BRW-66.

LOCATION.--Lat 35°56'04", long 84°24'12", Hydrologic Unit 06010207, 2.0 mi southwest of intersection of State Highways 58 and 95, 9.0 mi southwest of Oak Ridge.

AQUIFER.--Chickamauga Group of Ordovician age.

WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in, depth 52 ft, cased to 52 ft, screened 47 to 52 ft.

INSTRUMENTATION.--Water-level recorder --60-minute recording interval.

DATUM.--Elevation of land-surface datum is 760.64 ft above sea level, from Department of Energy records. Measuring point: Top of casing, 2.90 ft above land-surface datum.

REMARKS.--No missing record. Records good.

PERIOD OF RECORD.--April to September 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 17.36 ft below land-surface datum, Apr. 28, 1993; lowest, 19.67 ft below land-surface datum, Sept. 13, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR APRIL 1993 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	17.65	18.53	19.33	19.37	19.28
10	---	---	---	---	---	---	---	18.08	18.99	19.35	19.16	19.61
15	---	---	---	---	---	---	---	18.15	19.07	18.99	18.96	19.63
20	---	---	---	---	---	---	---	18.06	18.95	18.93	19.15	19.16
25	---	---	---	---	---	---	---	18.37	19.22	19.31	19.42	19.02
EOM	---	---	---	---	---	---	17.57	18.20	19.33	19.49	19.52	18.84
WTR YR 1993	HIGHEST 17.36			APR 28, 1993			LOWEST 19.67			SEPT 13, 1993		

## SEVIER COUNTY

353922083345600. Local number, Sv:E-2.

LOCATION.--Lat 35°39'22", long 83°34'56", Hydrologic Unit 06010201, 3.3 mi southwest of Great Smoky Mountains National Park Headquarters, near Gatlinburg.

AQUIFER.--Elkmont Sandstone of Precambrian age.

WELL CHARACTERISTICS.--Drilled unused water-table well in phyllite, sandstone, diameter 6 in., depth 220 ft, cased to 27 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 2,150 ft above sea level, from topographic map. Measuring point: Floor of recorder shelter 1.5 ft above land-surface datum.

REMARKS.--Highest water level readings may be influenced for short periods by surface inflow. No missing record. Records good.

PERIOD OF RECORD.--May 1979 to current year.

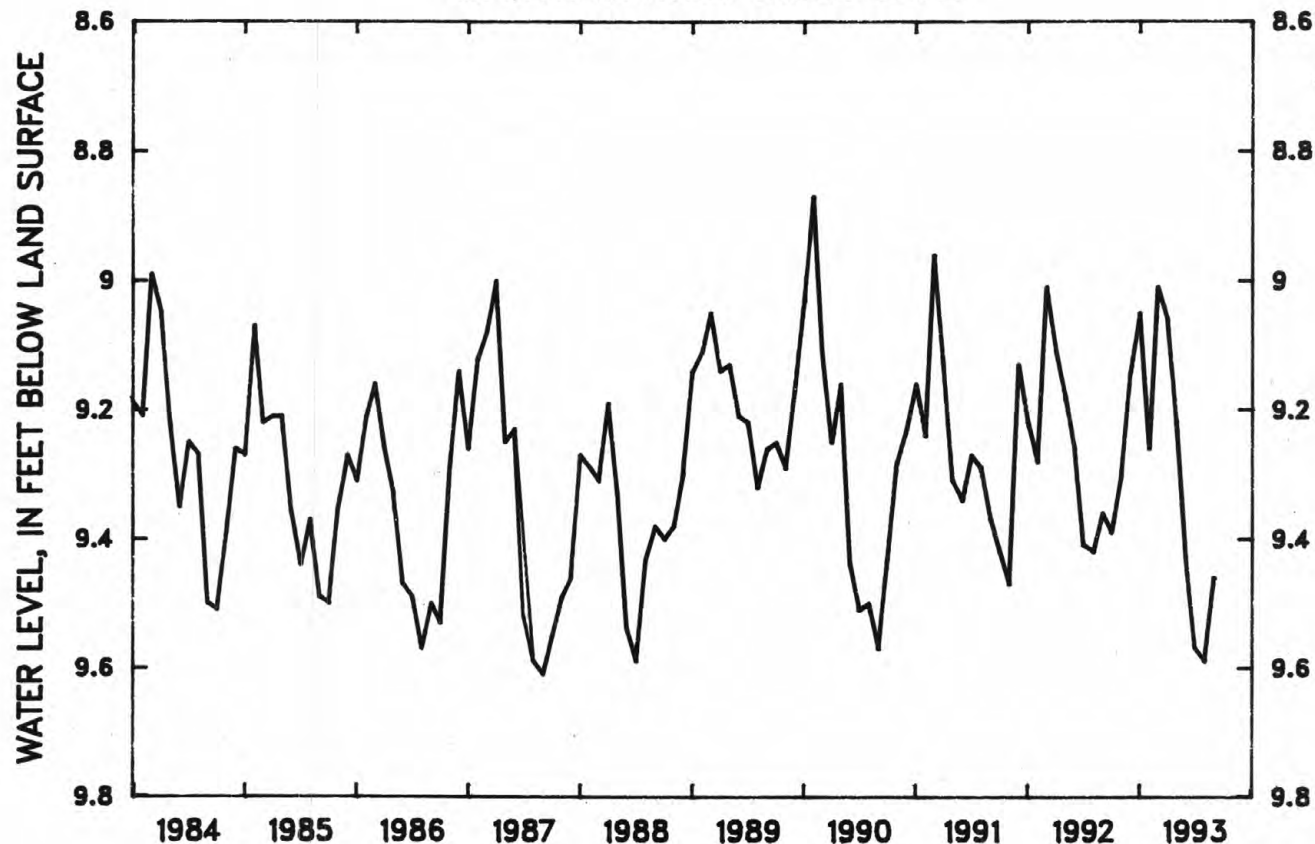
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.36 ft below land-surface datum, Mar. 17, 1990; lowest, 9.68 ft below land-surface datum, Aug. 10, Sept. 16, 17, 1980.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	8.74	8.89	9.07	8.97	9.16	8.40	8.83	9.04	9.17	9.45	9.35	9.24
10	9.16	9.14	9.14	8.70	9.25	8.83	8.52	9.12	9.31	9.49	9.28	9.32
15	9.30	8.95	9.02	8.81	9.13	9.01	8.86	9.13	9.31	9.38	9.26	9.46
20	9.35	9.15	8.45	9.05	9.01	8.83	8.95	8.88	9.35	9.42	9.40	9.42
25	9.38	8.61	8.38	8.45	8.86	8.00	9.05	9.11	9.40	9.50	9.41	9.43
EOM	9.31	8.94	8.83	8.99	8.92	8.48	8.95	9.15	9.41	9.57	9.40	9.37

WTR YR 1993      HIGHEST 6.85 MAR 24, 1993      LOWEST 9.59 AUG 1, 2, 3, 1993

### LOWEST MONTHLY WATER LEVEL



## GROUND-WATER LEVELS

## SHELBY COUNTY

350514089553700. Local number, Sh:K-75.

LOCATION.--Lat 35°05'14", long 89°55'37", Hydrologic Unit 08010211, at Willowview Avenue and Getwell Road, at Memphis.

Owner: Memphis Light, Gas and Water Division, City of Memphis.

AQUIFER.--Fluvial sand and gravel of Pleistocene age and possibly sand of Eocene age.

WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 6 in., depth 91 ft, cased to 81 ft, screened 81 to 91 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 260 ft above sea level, from topographic map. Measuring point: Top of casing, 1.20 ft above land-surface datum.

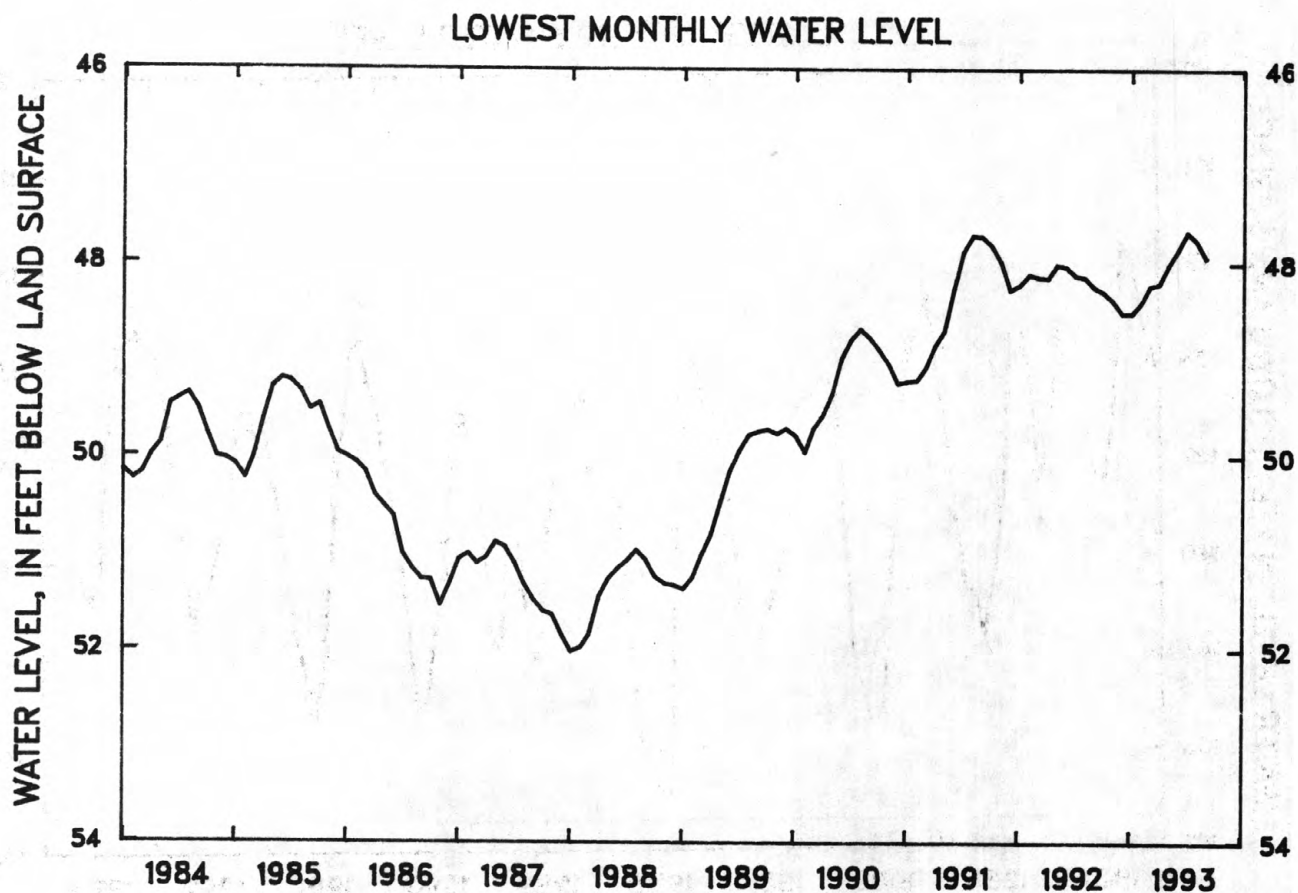
REMARKS.--Water levels affected by pumpage for Memphis municipal water supply. No record Nov. 29 to Dec. 1. Records good.

PERIOD OF RECORD.--August 1948 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.28 ft below land-surface datum, Apr. 2, 1950; lowest, 52.03 ft below land-surface datum, Jan. 13, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	48.25	48.29	48.43	48.41	48.20	48.23	48.04	48.01	47.85	47.64	47.64	47.79
10	48.22	48.24	48.35	48.42	48.19	48.20	48.07	47.88	47.77	47.64	47.63	47.87
15	48.24	48.29	48.35	48.27	48.20	48.13	48.15	47.87	47.71	47.63	47.66	47.90
20	48.23	48.10	48.45	48.23	48.06	48.11	48.15	47.84	47.68	47.61	47.68	47.85
25	48.21	48.26	48.36	48.42	48.17	47.99	48.04	47.83	47.68	47.62	47.77	47.80
EOM	48.28	---	48.44	48.19	48.18	48.01	47.87	47.81	47.66	47.64	47.77	47.89
WTR YR 1993	HIGHEST 47.49			AUG 5, 1993			LOWEST 48.52			JAN 24, 1993		



## SHELBY COUNTY--Continued

350735089593300. Local number, Sh:P-76.

LOCATION.--Lat 35°07'35", long 89°59'33", Hydrologic Unit 08010210, at Central Avenue and Tanglewood Street, at Memphis.

Owner: Memphis Light, Gas and Water Division, City of Memphis.

AQUIFER.--Memphis Sand of Claiborne Group of middle Eocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 12 in., depth 488 ft, cased to 428 ft, screened 428 to 488 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 286.70 ft above sea level. Measuring point: Top of casing, 1.30 ft above land-surface datum.

REMARKS.--Water levels affected by pumpage for municipal and industrial water supply in the Memphis area. Records good.

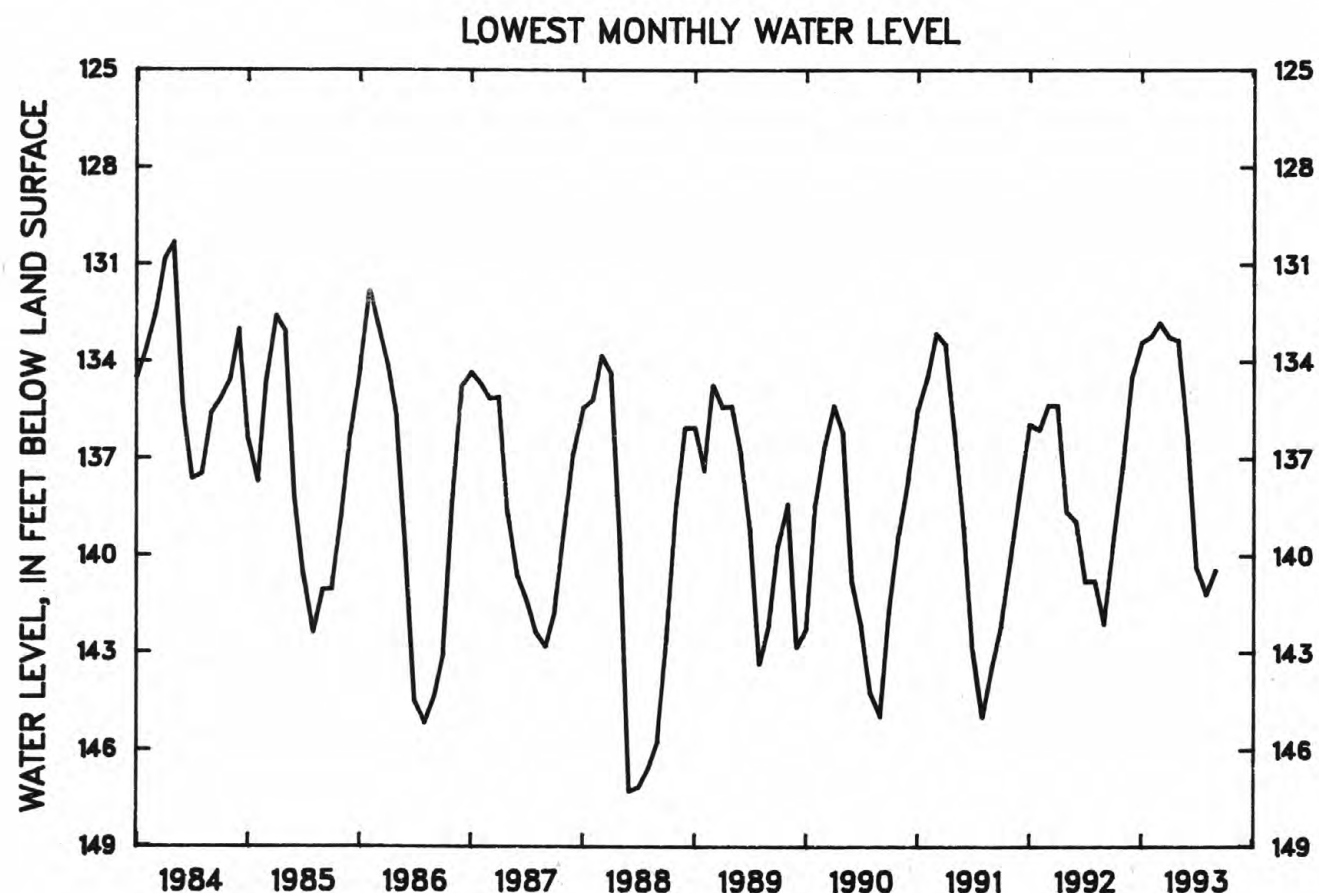
PERIOD OF RECORD.--October 1928 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 58.65 ft below land-surface datum, Apr. 3, 1933; lowest, 147.31 ft below land-surface datum, June 30, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	139.17	136.96	134.24	133.28	132.65	132.68	132.22	132.47	133.59	135.33	140.16	139.37
10	139.42	136.58	134.12	133.41	132.80	132.47	131.76	133.38	136.05	136.66	138.84	137.33
15	139.27	136.13	134.34	132.25	132.46	132.62	132.07	133.01	135.33	137.10	139.55	137.42
20	138.43	135.55	134.13	132.12	132.05	132.63	132.50	132.96	136.29	137.28	140.66	136.97
25	138.15	135.09	133.76	132.65	132.95	132.03	132.65	132.97	136.07	138.84	141.03	137.47
EOM	137.44	134.05	133.01	132.22	132.92	132.28	133.27	132.94	135.33	140.41	140.64	137.04

WTR YR 1993                      HIGHEST      130.00      APR 18, 1993                      LOWEST      141.21      AUG 29, 1993



## GROUND-WATER LEVELS

## SHELBY COUNTY--Continued

350900089482300. Local number, Sh:Q-1.

LOCATION.--Lat 35°09'00", long 89°48'23", Hydrologic Unit 08010210, south of Macon Road, 0.6 mi west of Germantown Road, near Memphis.

Owner: Memphis Light, Gas and Water Division, City of Memphis.

AQUIFER.--Memphis Sand of Claiborne Group of middle Eocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in., depth 384 ft, cased to 375 ft, screened 375 to 384 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 330.40 ft above sea level. Measuring point: Top of casing, 2.40 ft above land-surface datum.

REMARKS.--Water levels affected by pumpage for municipal and industrial water supply in the Memphis area. Records good.

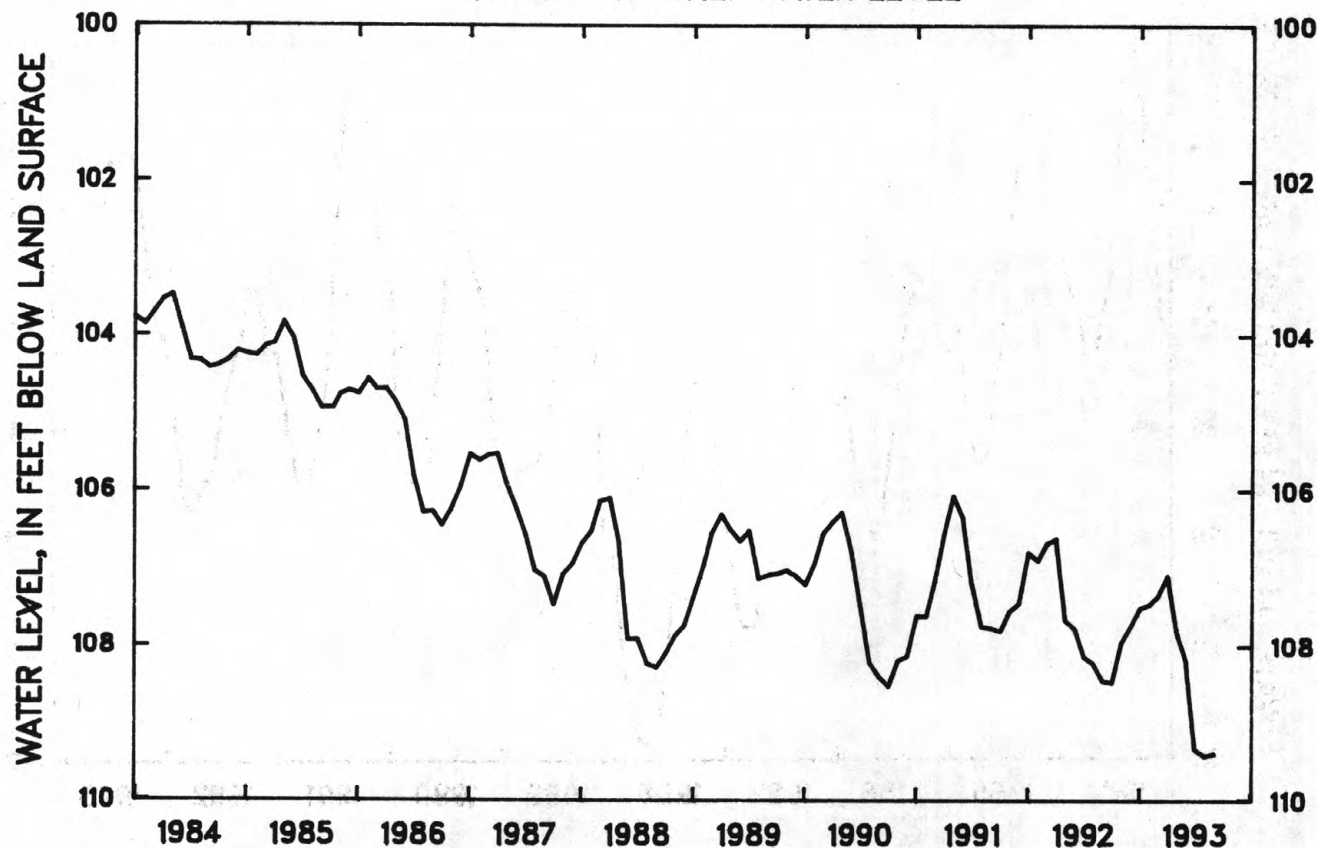
PERIOD OF RECORD.--October 1940 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 74.08 ft below land-surface datum, Dec. 27, 1940; lowest 109.43 ft below land-surface datum, Aug. 27, 1993.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	108.22	107.90	107.75	107.35	107.37	107.17	106.91	107.26	107.50	108.13	108.86	109.13
10	108.26	107.78	107.41	107.38	107.18	107.17	106.79	107.48	107.96	108.54	108.70	109.03
15	108.42	107.80	107.45	107.37	107.30	107.23	106.68	107.34	107.95	108.43	109.12	108.92
20	108.13	107.67	107.55	107.36	107.15	107.08	106.90	107.25	108.21	108.77	109.29	108.82
25	108.09	107.68	107.59	107.40	107.31	106.87	106.88	107.75	108.14	109.00	109.20	108.70
EOM	107.83	---	107.45	107.39	107.33	106.72	107.10	107.34	107.59	109.34	108.99	108.94
WTR YR 1993	HIGHEST			106.51	APR 15, 1993			LOWEST	109.43	AUG 27, 1993		

### LOWEST MONTHLY WATER LEVEL





## CRITTENDEN COUNTY, AR

350344090130000. Local number, Ar:H-2.

LOCATION.--Lat 35°03'44", long 90°13'00", Hydrologic Unit 08020203, 0.7 mi east of Millers.

Owner: Memphis Light, Gas, and Water Division, City of Memphis, and U.S. Geological Survey.

AQUIFER.--Memphis Sand of Claiborne Group of middle Eocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in., depth 502 ft, cased to 482 ft, screened 482 to 502 ft.

INSTRUMENTATION.--Water-level recorder -- 60-minute punch.

DATUM.--Elevation of land-surface datum is 211 ft above sea level, from topographic map. Measuring point: Inside top of shelter base plate, 3.30 ft above land-surface datum.

REMARKS.--Water level affected by pumpage for municipal and industrial water supply in the Memphis, Tennessee area. Records good.

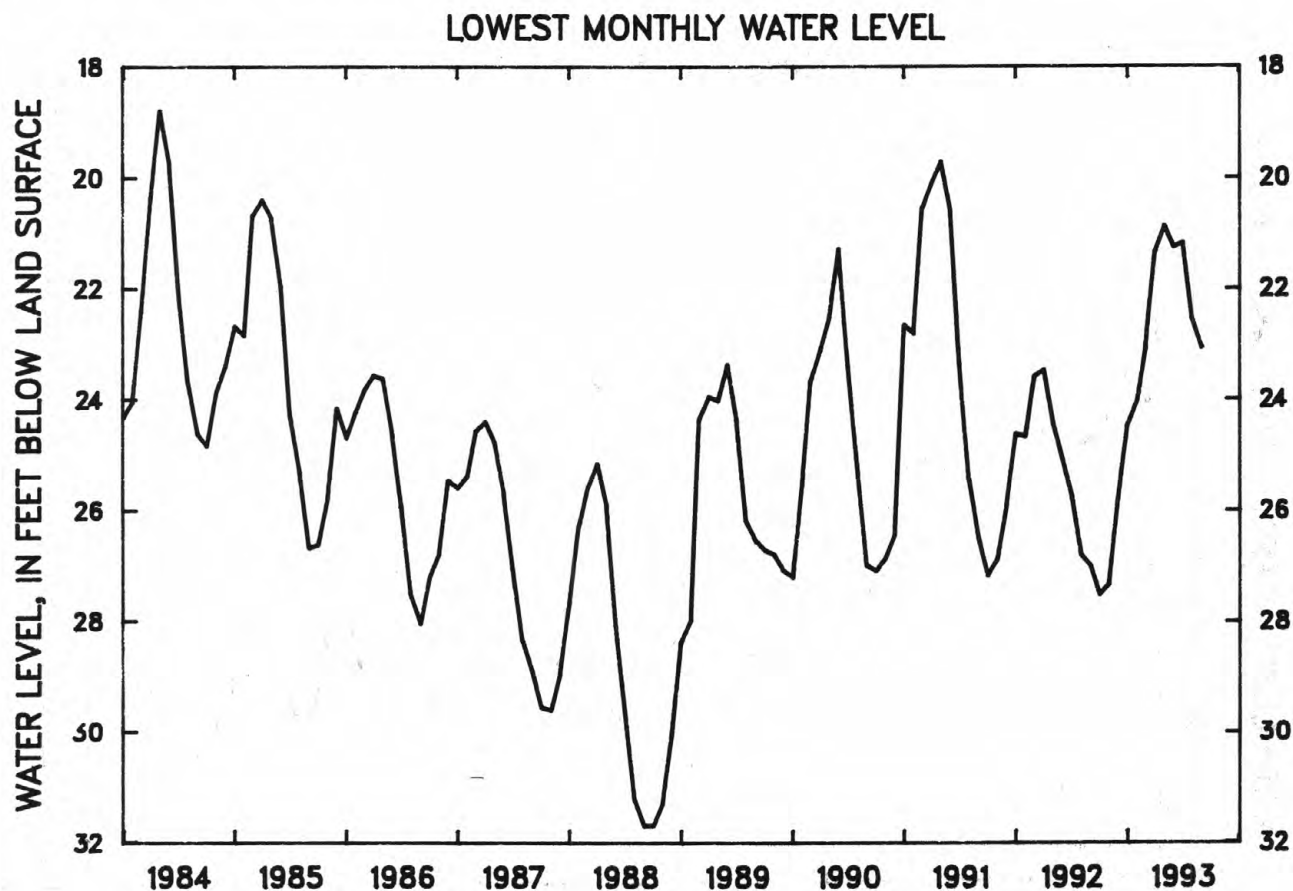
PERIOD OF RECORD.--May 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.28 ft below land-surface datum, May 30, 31, 1983; lowest, 31.71 ft below land-surface datum, Sept. 21, 1988.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993  
LOWEST WATER LEVEL FOR THE DAY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	26.95	27.30	25.03	24.46	23.39	22.98	20.99	20.01	21.11	21.16	21.08	22.86
10	27.38	27.03	25.58	23.64	23.89	22.47	20.42	19.69	20.99	20.97	21.12	22.89
15	27.45	26.53	25.74	23.35	24.01	21.95	20.16	19.73	20.69	20.89	21.28	23.03
20	27.41	25.88	25.24	23.54	23.71	21.72	20.36	20.19	20.89	20.93	21.52	23.07
25	27.18	25.78	24.21	23.47	23.43	22.21	20.14	20.40	21.23	20.87	21.98	22.84
EOM	27.19	24.92	24.37	23.17	23.19	21.46	20.18	20.88	21.15	21.11	22.59	22.66

WTR YR 1993      HIGHEST 19.47      MAY 13, 1993      LOWEST 27.53      OCT 17, 1992



## PERIODIC MEASUREMENTS OF GROUND-WATER LEVELS

## FAYETTE COUNTY

352226089330101. Local number, Fa:R-1.

LOCATION.--Lat 35°22'26", long 89°33'01", Hydrologic Unit 08010209, 80 ft south of State Highway 59, 1.2 mi southeast of U.S. Highway 70, near Braden.

Owner: Tennessee Division of Geology and U.S. Geological Survey.

AQUIFER.--Fort Pillow Sand of Wilcox Group of early Eocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 to 4 in., depth 1,025 ft, cased to 1,008 ft, screened 1,008 to 1,025 ft.

INSTRUMENTATION.--Periodic measurements with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 317.50 ft above sea level. Measuring point: Top of casing, 3.70 ft above land-surface datum.

PERIOD OF RECORD.--August 1949 to current year. Analog record August 1949 to December 1970, periodic tape measurements or monthly maximum-minimum recorder thereafter.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 64.89 ft below land-surface datum, Aug. 31, 1949; lowest recorded, 76.26 ft below land-surface datum, Dec. 5, 1970; highest water level measured, 73.61 ft below land-surface datum, Apr. 28, 1976; lowest measured, 87.73 ft below land-surface datum, Oct. 28, 1993.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	87.73	NOV 23	87.62	DEC 29	87.52	JAN 27	87.42	FEB 24	87.34	MAR 29	87.00
APR 26	86.90	MAY 25	86.47	JUN 29	86.40	JUL 26	86.57	AUG 26	86.72	SEP 27	86.98

352226089330102. Local number, Fa:R-2.

LOCATION.--Lat 35°22'26", long 89°33'01", Hydrologic Unit 08010209, 80 ft south of State Highway 59, 1.1 mi southeast of U.S. Highway 70, near Braden.

Owner: Tennessee Division of Geology and U.S. Geological Survey.

AQUIFER.--Memphis Sand of Claiborne Group of middle Eocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 to 4 in., depth 365 ft, cased to 345 ft, screened 345 to 365 ft.

INSTRUMENTATION.--Periodic measurements with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 317.20 ft above sea level. Measuring point: Top of casing, 4.20 ft above land-surface datum.

PERIOD OF RECORD.--October 1949 to current year. Analog record October 1949 to December 1970, periodic tape measurements or monthly maximum-minimum recorder thereafter.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 37.25 ft below land-surface datum, Mar. 10, 1952; lowest recorded, 42.12 ft below land-surface datum, Nov. 30, 1967; highest water level measured, 39.15 ft below land-surface datum, May 28, 1991; lowest measured, 41.75 ft below land-surface datum, Oct. 4, 1988.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	40.37	NOV 23	40.38	DEC 29	40.32	JAN 27	40.11	FEB 24	40.10	MAR 29	39.70
APR 26	39.66	MAY 25	39.56	JUN 28	39.66	JUL 26	39.97	AUG 26	40.32	SEP 27	39.30

## SHELBY COUNTY

351435090005200. Local number, Sh:O-1.

LOCATION.--Lat 35°14'35", long 90°00'52", Hydrologic Unit 08010209, west side of O.K. Robertson Road, 0.4 mi north of U.S. Highway 51, at Memphis.

Owner: Memphis Light, Gas and Water Division, City of Memphis.

AQUIFER.--Memphis Sand of Claiborne Group of middle Eocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in., depth 434 ft, cased to 424 ft, screened 424 to 434 ft.

INSTRUMENTATION.--Periodic measurements with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 228.70 ft above sea level. Measuring point: Top of casing, 4.30 ft above land-surface datum.

REMARKS.--Water levels affected by pumpage for municipal and industrial water supply in the Memphis area.

PERIOD OF RECORD.--September 1940 to current year. Analog record September 1940 to January 1992, periodic tape measurements thereafter.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 12.65 ft below land-surface datum, Sept. 3, 1940; lowest, 68.82 ft below land-surface datum, Aug. 24, 1988; highest water level measured, 50.75 ft below land-surface datum, Apr. 30, 1992; lowest measured, 59.88 ft below land-surface datum, Aug. 26, 1992.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	58.47	NOV 23	55.55	DEC 29	52.99	JAN 27	52.70	FEB 24	53.63	MAR 29	52.35
APR 26	50.75	MAY 25	52.30	JUN 29	55.35	JUL 26	57.48	AUG 25	56.64	SEP 27	56.44

352112089571200. Local number, Sh:U-1.

LOCATION.--Lat 35°21'12", long 89°57'12", Hydrologic Unit 08010209, 3 mi west of Millington at Shelby Road and Shake Rag Road, Sloanville.

Owner: Mrs. T.S. Welch

AQUIFER.--Fort Pillow Sand of Wilcox Group of early Eocene age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 24 to 16 in., depth 1,558 ft, cased to 1,497 ft, screened 1,497 to 1,558 ft.

INSTRUMENTATION.--Periodic measurements with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 264.20 ft above sea level. Measuring point: Top of casing, 0.60 ft above land-surface datum.

REMARKS.--Water levels affected by pumpage for municipal and industrial water supply at Millington and Memphis.

PERIOD OF RECORD.--August 1946 to current year. Analog record March 1948 to January 1971, periodic tape measurements or monthly maximum-minimum recorder thereafter.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 35.5 ft below land-surface datum, Apr. 11, 1948; lowest recorded, 60.42 ft below land-surface datum, Dec. 20, 1970; highest water level measured, 33.20 ft, Apr. 21, 1947; lowest measured, 78.55 ft below land-surface datum, Aug. 26, 1992.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	78.51	NOV 23	78.02	DEC 29	77.04	JAN 27	77.00	FEB 24	77.23	MAR 29	76.48
APR 26	75.80	MAY 25	76.37	JUN 29	76.98	JUL 26	77.22	AUG 25	77.97	SEP 27	78.31

## PERIODIC MEASUREMENTS OF GROUND-WATER LEVELS

## SHELBY COUNTY--Continued

352112089571300. Local number, Sh:U-2.

LOCATION.--Lat 35°21'12", long 89°57'13", Hydrologic Unit 08010209, 3 mi west of Millington at Shelby Road and Shake Rag Road, Sloanville.  
Owner: Mrs. F.E. Byrd

AQUIFER.--Memphis Sand of Claiborne Group of middle Eocene age.

WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 18 to 12 in., depth 440 ft, cased to 360 ft, screened 360 to 440 ft.

INSTRUMENTATION.--Periodic measurements with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 268.76 ft above sea level. Measuring point: Top of casing, 1.60 ft above land-surface datum.

REMARKS.--Water levels affected by pumpage for municipal and industrial water supply at Millington and Memphis.

PERIOD OF RECORD.--June 1953 to current year. Analog record June 1953 to December 1970, periodic tape measurements or monthly maximum-minimum recorder thereafter.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 39.59 ft below land-surface datum, June 29, 1953; lowest, 63.74 ft below land-surface datum, Sept. 1, 1988.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	58.78	NOV 23	57.62	DEC 29	56.70	JAN 27	56.10	FEB 24	56.23	MAR 29	55.21
APR 26	54.50	MAY 25	54.90	JUN 29	55.86	JUL 26	56.80	AUG 25	57.25	SEP 27	57.65

## WILLIAMSON COUNTY

355505086541100. Local number, Wm:M-1.

LOCATION.--Lat 35°55'05", long 86°54'11", Hydrologic Unit 05130204, on Horton Lane, 0.8 mi west of Carter's Creek Road, near Franklin.  
Owner: Tennessee Division of Geology and U.S. Geological Survey.

AQUIFER.--Knox Dolomite of late Cambrian and early Ordovician age.

WELL CHARACTERISTICS.--Drilled artesian test well, diameter 6 in., depth 1,160 ft, cased to 473 ft, open end.

INSTRUMENTATION.--Periodic measurements with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 712 ft above sea level, from topographic map. Measuring point: Top of casing 2.80 ft above land-surface datum.

REMARKS.--Period of record low resulted from water-level measurements on the well during a 72 hour aquifer test.

PERIOD OF RECORD.--January 1950 to current year. Water-level recorder December 1951 to February 1971, periodic tape measurements thereafter.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 84.21 ft below land-surface datum, Mar. 10, 1952; lowest recorded 87.11 ft below land-surface datum, Sept. 10, 1970; highest water level measured, 85.43 ft below land-surface datum, Feb. 19, 1974; lowest measured, 114.81 ft below land-surface datum, Jan. 31, 1950.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	91.09	DEC 7	93.39	MAR 5	90.70	JUL 29	90.66



## CRITTENDEN COUNTY, AR

350958090173800. Local number, Ar:C-1.

LOCATION.--Lat 35°09'58", long 90°17'38", Hydrologic Unit 08020203, 450 ft west of Highway 147, 1.3 mi north of Lehi.

Owner: Memphis Light, Gas, and Water Division, City of Memphis, and U.S. Geological Survey.

AQUIFER.--Memphis Sand of Claiborne Group of middle Eocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in., depth 622 ft, cased to 602 ft, screened 602 to 622 ft.

INSTRUMENTATION.--Periodic measurements with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 209 ft above sea level, from topographic map. Measuring point: Inside top of shelter base plate, 3.30 ft above land-surface datum.

REMARKS.--Water levels affected by pumpage for municipal and industrial water supply in the Memphis area. Records good.

PERIOD OF RECORD.--May 1983 to current year. Analog record May 1983 to June 1989, periodic tape measurements thereafter.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 15.29 ft below land-surface datum, June 11, 12, 13, 1983; lowest, 25.31 ft below land-surface datum, Oct. 5, 6, 1988.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	22.63	NOV 30	22.40	DEC 29	21.77	JAN 27	21.03	FEB 26	20.77	MAR 30	20.38
APR 27	19.25	MAY 26	18.70	JUN 29	19.10	JUL 27	20.02	AUG 27	20.57	SEP 28	20.87

351349090062800. Local number, Ar:O-1.

LOCATION.--Lat 35°13'49", long 90°06'28", Hydrologic Unit 08020203, 0.3 mi east of blacktop road, 0.8 mi north of St. Claire.

Owner: Memphis Light, Gas, and Water Division, City of Memphis, and U.S. Geological Survey.

AQUIFER.--Memphis Sand of Claiborne Group of middle Eocene age.

WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in., depth 497 ft, cased to 477 ft, screened 477 to 497 ft.

INSTRUMENTATION.--Periodic measurements with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 217 ft above sea level, from topographic map. Measuring point: Inside top of shelter base plate, 3.60 ft above land-surface datum.

REMARKS.--Water levels affected by pumpage for municipal and industrial water supply in the Memphis area.

PERIOD OF RECORD.--May 1983 to current year. Analog record May 1983 to June 1989, periodic tape measurements or monthly maximum-minimum recorder thereafter.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.42 ft below land surface datum, May 29, 30, 31, 1983; lowest, 41.68 ft below land-surface datum, Sept. 6, 1988.

## WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	36.35	NOV 30	32.47	DEC 29	31.52	JAN 27	30.63	FEB 26	30.99	MAR 30	28.36
APR 27	26.59	MAY 26	28.39	JUN 29	29.89	JUL 27	28.63	AUG 27	30.71	SEP 28	31.03



## QUALITY OF GROUND WATER

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

## SHELBY COUNTY

350540090061701 - SH:J-84

DATE	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO
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AUG 20...	192	6.4	18.0	76	18	7.5	8.1	19	0.4
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DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
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AUG 20...	0.60	2.7	2.9	0.10	10	102	106	<1	56
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DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)
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AUG 20...	<1.0	<1	<50	<10	3400	<1	10	<0.1	<3
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350114090071701 - SH:J-146 MLGW-DAVIS

DATE	DEPTH OF WELL, TOTAL (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO
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AUG 20...	446.00	158	6.3	17.5	63	14	6.8	7.8	21	0.4
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DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	CADMIUM DIS- SOLVED (UG/L AS CD)
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AUG 20...	0.90	2.8	3.0	0.20	15	96	96	<1	41	<1.0
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DATE	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)
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AUG 20...	<1	<50	<10	230	<1	4	<0.1	3
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QUALITY OF GROUND WATER

359

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

SHELBY COUNTY--Continue

350446090013500 - SH:J-154 MLGW-ALLEN

DATE	DEPTH OF WELL, TOTAL (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	
AUG 20...	370.00	138	6.1	18.0	51	12	5.1	8.9	27	0.5
DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	
AUG 20...	1.0	2.2	3.3	0.10	13	86	85	<1	64	
DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)	
AUG 20...	<1.0	<1	<50	<10	490	<1	14	<0.1	<3	

350642089555000 - SH:K-142 MLGW 99 SHEAHAN WELL FIELD

DATE	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO	
AUG 19...	278	103	6.0	17.5	32	7.2	3.3	8.3	36	0.6
DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	
AUG 19...	0.50	3.9	3.9	0.10	15	62	67	<1	20	
DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)	
AUG 19...	<1.0	<1	<50	<10	170	<1	9	<0.1	15	

## QUALITY OF GROUND WATER

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

SHELBY COUNTY--Continue

350218089511701 - SH:L-36

DATE	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO
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AUG 19...	86	6.2	18.5	36	9.0	3.2	3.2	16	0.2
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DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
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AUG 19...	0.50	2.5	1.4	0.10	10	56	53	<1	12
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DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)
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AUG 19...	<1.0	<1	<50	<10	170	<1	3	0.1	14
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350507089482401 - SH:L-90-GERMANTOWN 7

DATE	DEPTH OF WELL, TOTAL (FEET)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
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AUG 19...	304.00	360	81	6.1	17.0	23	5.7	2.2	7.9	42	0.7	0.60
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DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
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AUG 19...	2.3	5.4	0.10	13	51	56	0.200	0.020	<0.20	0.010	<0.010	<0.010
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DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)
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AUG 19...	<10	19	<3	3	<4	<1	<0.1	<10	<1	<1	<1.0	16
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## QUALITY OF GROUND WATER

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

SHELBY COUNTY--Continue

350507089482401 - SH:L-90-GERMANTOWN 7--Continued

DATE	VANA- DIUM, DIS- SOLVED (UG/L AS V)	XYLENE WATER UNFLTRD REC (UG/L)	DI- CHLORO- BROMO- METHANE TOTAL (UG/L)	CARBON- TETRA- CHLO- RIDE TOTAL (UG/L)	1,2-DI- CHLORO- ETHANE TOTAL (UG/L)	BROMO- FORM TOTAL (UG/L)	CHLORO- DI- BROMO- METHANE TOTAL (UG/L)	CHLORO- FORM TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	BENZENE TOTAL (UG/L)	CHLORO- BENZENE TOTAL (UG/L)	CHLORO- ETHANE TOTAL (UG/L)
AUG 19...	<6	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.2
DATE	ETHYL- BENZENE TOTAL (UG/L)	METHYL- BROMIDE TOTAL (UG/L)	METHYL- CHLO- RIDE TOTAL (UG/L)	METHYL- ENE CHLO- RIDE TOTAL (UG/L)	TETRA- CHLORO- ETHYL- ENE TOTAL (UG/L)	TRI- CHLORO- FLUORO- METHANE TOTAL (UG/L)	1,1-DI- CHLORO- ETHANE TOTAL (UG/L)	1,1-DI- CHLORO- ETHANE TOTAL (UG/L)	1,1,1- TRI- CHLORO- ETHANE TOTAL (UG/L)	1,1,2- TRI- CHLORO- ETHANE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA- CHLORO- WAT UNF REC (UG/L)	BENZENE O- CHLORO- WATER UNFLTRD REC (UG/L)
AUG 19...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20
DATE	1,2-DI- CHLORO- PROPANE TOTAL (UG/L)	1,2- TRANS DI CHLORO- ETHENE TOTAL (UG/L)	1,3-DI- CHLORO- PROPENE TOTAL (UG/L)	BENZENE 1,3-DI- CHLORO- WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI- CHLORO- WATER UNFLTRD REC (UG/L)	2- CHLORO- ETHYL- VINYL- ETHER TOTAL (UG/L)	DI- CHLORO- DI- FLUORO- METHANE TOTAL (UG/L)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L)	CIS 1,3-DI- CHLORO- PROPENE TOTAL (UG/L)	VINYL CHLO- RIDE TOTAL (UG/L)	TRI- CHLORO- ETHYL- ENE TOTAL (UG/L)	STYRENE TOTAL (UG/L)
AUG 19...	<0.2	<0.2	<0.20	<0.20	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

350449089480501 - SH:L-92-GERMANTOWN 9

DATE	DEPTH OF WELL, TOTAL (FEET)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
AUG 17...	309.00	380	63	6.1	17.0	18	4.2	1.7	6.4	43	0.7	0.50
DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DIS- SOLVED (MG/L AS P)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)
AUG 17...	1.8	3.0	0.10	13	35	46	0.110	0.020	<0.20	<0.010	<0.010	<0.010
DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	BARIUM, DIS- SOLVED (UG/L AS BA)	COBALT, DIS- SOLVED (UG/L AS CO)	IRON, DIS- SOLVED (UG/L AS FE)	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)
AUG 17...	<10	14	<3	4	<4	<1	<0.1	<10	<1	<1	<1.0	12

## QUALITY OF GROUND WATER

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

SHELBY COUNTY--Continue

350449089480501 - SH:L-92-GERMANTOWN 9--Continued

DATE	VANA- DIUM, DIS- SOLVED (UG/L AS V)	XYLENE WATER UNFLTRD REC (UG/L)	DI- CHLORO- BROMO- METHANE TOTAL (UG/L)	CARBON- TETRA- CHLO- RIDE TOTAL (UG/L)	1,2-DI- CHLORO- ETHANE TOTAL (UG/L)	BROMO- FORM TOTAL (UG/L)	CHLORO- DI- BROMO- METHANE TOTAL (UG/L)	CHLORO- FORM TOTAL (UG/L)	TOLUENE TOTAL (UG/L)	BENZENE TOTAL (UG/L)	CHLORO- BENZENE TOTAL (UG/L)	CHLORO- ETHANE TOTAL (UG/L)
AUG 17...	<6	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.2
DATE	ETHYL- BENZENE TOTAL (UG/L)	METHYL- BROMIDE TOTAL (UG/L)	METHYL- CHLO- RIDE TOTAL (UG/L)	METHYL- ENE CHLO- RIDE TOTAL (UG/L)	TETRA- CHLORO- ETHYL- ENE TOTAL (UG/L)	TRI- CHLORO- FLUORO- METHANE TOTAL (UG/L)	1,1-DI- CHLORO- ETHANE TOTAL (UG/L)	1,1-DI- CHLORO- ETHYL- ENE TOTAL (UG/L)	1,1,1- TRI- CHLORO- ETHANE TOTAL (UG/L)	1,1,2- TRI- CHLORO- ETHANE TOTAL (UG/L)	ETHANE, 1,1,2,2 TETRA- CHLORO- WAT UNF (UG/L)	BENZENE O- CHLORO- WATER UNFLTRD REC (UG/L)
AUG 17...	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20
DATE	1,2-DI- CHLORO- PROPANE TOTAL (UG/L)	1,2- TRANSDI CHLORO- ETHENE TOTAL (UG/L)	1,3-DI- CHLORO- PROPENE TOTAL (UG/L)	BENZENE 1,3-DI- CHLORO- WATER UNFLTRD REC (UG/L)	BENZENE 1,4-DI- CHLORO- WATER UNFLTRD REC (UG/L)	2- CHLORO- ETHYL- VINYL- ETHER TOTAL (UG/L)	DI- CHLORO- DI- FLUORO- METHANE TOTAL (UG/L)	TRANS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L)	CIS- 1,3-DI- CHLORO- PROPENE TOTAL (UG/L)	VINYL CHLO- RIDE TOTAL (UG/L)	TRI- CHLORO- ETHYL- ENE TOTAL (UG/L)	STYRENE TOTAL (UG/L)
AUG 17...	<0.2	<0.2	<0.20	<0.20	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

350917090012000 - SH:O-231 MLGW-MALLORY

DATE	DEPTH OF WELL, TOTAL (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM AD- SORP- TION RATIO
AUG 18...	518.00	140	6.1	17.0	53	12	5.6	7.8	24 0.5
DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
AUG 18...	1.0	2.5	2.2	0.10	15	82	87	<1	56
DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)
AUG 18...	<1.0	<1	<50	<10	900	<1	12	<0.1	4



## QUALITY OF GROUND WATER

363

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

SHELBY COUNTY--Continue

351440089572301 - SH:P-134 MORTON WELL FIELD

DATE	DEPTH OF WELL, TOTAL (FEET)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT
AUG 18...	460.00	301	123	6.2	18.0	49	12	4.7	5.3	19
DATE	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
AUG 18...	0.3	1.1	3.2	2.1	0.20	10	69	73	<1	71
DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)	
AUG 18...	<1.0	<1	<50	<10	1400	<1	22	<0.1	7	

351109089512901 - SH:Q-40

DATE	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO
AUG 17...	118	6.1	17.0	39	9.1	4.0	7.2	28	0.5
DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)
AUG 17...	0.80	7.0	4.3	0.10	12	67	72	<1	52
DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)
AUG 17...	<1.0	<1	<50	<10	1200	<1	17	<0.1	8

## QUALITY OF GROUND WATER

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

SHELBY COUNTY--Continue

350835089434100 - SH:R-29

DATE	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO
AUG 17...	315	47	5.9	18.5	16	3.9	1.4	3.5	32	0.4
DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	
AUG 17...	0.40	1.3	1.7	<0.10	10	30	35	<1	7	
DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)	
AUG 17...	<1.0	<1	<50	<10	22	<1	2	<0.1	<3	

351654089575001 - SH:U- 21 GRACE CHEMICAL

DATE	DEPTH OF WELL, TOTAL (FEET)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH WATER WHOLE FIELD (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO
AUG 18...	475.00	282	6.6	18.0	120	26	13	8.5	13	0.3
DATE	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	
AUG 18...	2.5	2.9	2.0	0.20	9.5	125	152	<1	280	
DATE	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	ZINC, DIS- SOLVED (UG/L AS ZN)	
AUG 18...	<1.0	<1	<50	<10	5600	<1	98	<0.1	<3	

## CHEMICAL QUALITY OF PRECIPITATION

365

00441400 HATCHIE NATIONAL WILDLIFE REFUGE RAIN GAGE AT HILLVILLE, TN  
(NATIONAL TRENDS NETWORK)

LOCATION.--Lat 35°28'08", Long 89°10'14", Haywood County, Hydrologic Unit 08010208, 0.9 mi north of Hillville, 12 mi southeast of Brownsville.

PERIOD OF RECORD.--October 1984 to current year.

INSTRUMENTATION.--An automatic wet-dry precipitation collector is used to collect 7-day accumulations. The collector is equipped with a precipitation sensor which activates a motor to operate the sample bucket cover. The sample bucket remains uncovered for the duration of each precipitation event and covered during dry periods. Dryfall samples are not collected. A standard 8.0-inch recording rain gage is used to obtain on-site precipitation records.

REMARKS.--These data are part of the data for this site verified by the National Atmospheric Deposition Program/National Trends Network (NADP/NTN) Coordinator. Additional data are available from the NADP/NTN Coordinator, Natural Resource Ecology Laboratory, Fort Collins, Co. 80523. Data for all sites in the network are published quarterly by the NADP/NTN Coordinator's Office. Laboratory analyses were performed by the Central Analytical Laboratory of the Illinois State Water Survey. Data for the 1993 water year will be published in "Water Resources Data for Tennessee, Water Year 1994."

## PRECIPITATION QUALITY, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM)	PH FIELD ATM DEP WET T (UNITS)	CALCIUM ATM DEP WET DIS (MG/L)	MAG- NESIUM ATM DEP WET DIS (MG/L)	SODIUM ATM DEP WET DIS (MG/L)
OCT 1991							
01-08	1225	0.36	15.2	4.66	0.110	0.018	0.123
OCT 08-15	1224	0.43	37.6	4.20	0.340	0.028	0.047
OCT 15-22	1227	0.0	--	--	--	--	--
OCT 22-29	1233	0.31	22.8	4.52	0.090	0.092	0.774
OCT 29- NOV 05	1312	1.55	5.1	4.95	0.050	0.034	0.262
NOV 05-12	1324	0.0	--	--	--	--	--
NOV 12-19	1328	0.20	23.1	4.52	0.140	0.049	0.336
NOV 19-26	1321	2.67	5.7	5.02	<0.010	0.005	0.211
NOV 26- DEC 03	1325	4.64	7.9	4.93	0.040	0.009	0.081
DEC 03-10	1327	1.38	1.2	4.67	0.060	0.008	0.081
DEC 10-17	1327	1.96	6.8	4.88	<0.010	0.006	0.046
DEC 17-24	1833	1.00	29.0	4.42	0.080	0.128	0.989
DEC 24-31	2004	0.19	21.4	4.39	0.030	0.006	0.025

## CHEMICAL QUALITY OF PRECIPITATION

00441400 HATCHIE NATIONAL WILDLIFE REFUGE RAIN GAGE AT HILLVILLE, TN--Continued  
(NATIONAL TRENDS NETWORK)

PRECIPITATION QUALITY, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM)	PH FIELD ATM DEP WET T (UNITS)	CALCIUM ATM DEP WET DIS (MG/L)	MAG- NESIUM ATM DEP WET DIS (MG/L)	SODIUM ATM DEP WET DIS (MG/L)
DEC 31 1991-							
JAN 07 1992	1649	0.55	10.0	4.71	0.010	0.005	0.060
JAN 07-14	1319	1.14	12.5	4.60	<0.010	0.008	0.042
JAN 14-21	1326	0.0	--	--	--	--	--
JAN 21-28	1322	0.07	31.5	4.25	0.060	0.016	0.110
JAN 28- FEB 04	1322	0.0	--	--	--	--	--
FEB 04-11	1318	0.01	--	--	<0.200	<0.065	0.611
FEB 11-18	1321	1.61	22.1	4.43	0.080	0.016	0.070
FEB 18-25	1325	0.55	14.1	4.57	0.020	0.006	0.045
FEB 25- MAR 03	1319	0.62	36.1	4.22	0.050	0.008	0.018
MAR 03-10	1338	3.82	4.7	5.03	0.040	0.006	0.053
MAR 10-17	1705	0.0	--	--	--	--	--
MAR 17-24	1326	2.68	12.5	4.67	0.050	0.014	0.072
MAR 24-31	1336	0.20	26.3	4.33	0.240	0.039	0.115
MAR 31- APR 07	1329	0.22	25.1	4.32	0.160	0.016	0.032
APR 07-14	1240	0.07	45.1	4.15	0.500	0.061	0.058
APR 14-21	1234	1.54	14.7	4.64	0.100	0.031	0.193
APR 21-28	1232	0.01	--	--	--	--	--
APR 28- MAY 05	1232	0.03	--	--	4.63	0.451	1.15
MAY 05-12	1229	--	--	--	--	--	--
MAY 12-19	1559	0.19	39.4	4.24	0.540	0.085	0.287
MAY 19-26	1552	0.26	29.4	4.24	0.100	0.027	0.142
MAY 26- JUN 02	1703	1.14	33.0	4.24	0.060	0.013	0.046

## CHEMICAL QUALITY OF PRECIPITATION

367

00441400 HATCHIE NATIONAL WILDLIFE REFUGE RAIN GAGE AT HILLVILLE, TN--Continued  
(NATIONAL TRENDS NETWORK)

PRECIPITATION QUALITY, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	TIME	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM)	PH FIELD ATM DEP WET T (UNITS)	CALCIUM ATM DEP WET DIS (MG/L)	MAG- NESIUM ATM DEP WET DIS (MG/L)	SODIUM ATM DEP WET DIS (MG/L)
JUN 1992							
02-09	2133	4.23	13.6	4.69	0.010	<0.003	0.023
JUN							
09-16	2221	1.19	35.8	4.18	0.090	0.012	0.052
JUN							
16-23	2052	--	--	--	3.31	0.417	2.95
JUN							
23-30	2228	1.14	16.1	4.53	0.180	0.023	0.046
JUN 30-							
JUL 07	1338	0.76	11.6	4.80	0.140	0.023	0.126
JUL							
07-14	1533	0.05	147.8	3.58	1.55	0.225	1.10
JUL							
14-21	1834	2.03	7.2	4.93	0.080	0.017	0.087
JUL							
21-28	1315	0.83	24.5	4.37	0.120	0.010	0.034
JUL 28-							
AUG 04	2012	0.53	21.1	4.45	0.140	0.026	0.108
AUG							
04-11	1605	0.16	28.0	4.30	0.110	0.017	0.046
AUG							
11-18	1443	0.01	--	--	1.46	0.251	1.23
AUG							
18-25	1341	0.20	139.6	3.61	1.04	0.084	0.027
AUG 25-							
SEP 01	1554	0.90	9.0	4.73	0.030	0.015	0.132
SEP							
01-08	1655	0.03	22.6	4.38	0.160	0.025	0.120
SEP							
08-15	1648	0.04	--	--	0.320	0.029	0.176
SEP							
15-22	1500	2.00	6.6	4.87	0.030	0.007	0.044
SEP							
22-29	1602	0.62	17.2	4.47	0.030	0.006	0.042



## CHEMICAL QUALITY OF PRECIPITATION

00441400 HATCHIE NATIONAL WILDLIFE REFUGE RAIN GAGE AT HILLVILLE, TN--Continued  
(NATIONAL TRENDS NETWORK)

PRECIPITATION QUALITY, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	POTAS- SIUM	SULFATE	CHLO- RIDE	NI- TROGEN NITRATE	NI- TROGEN AMMON.	PHOS- PHORUS ORTHO
	ATM DEP	ATM DEP	ATM DEP	ATM DEP	ATM DEP	ATM DEP
	WET DIS (MG/L)	WET DIS AS SO4 (MG/L)	WET DIS (MG/L)	WET DIS AS NO3 (MG/L)	WET DIS AS NH4 (MG/L)	WET DIS AS PO4 (MG/L)
OCT 1991						
01-08	0.014	1.15	0.12	1.02	0.270	<0.020
OCT						
08-15	0.038	2.96	0.11	2.21	0.450	<0.020
OCT						
15-22	--	--	--	--	--	--
OCT						
22-29	0.048	1.31	1.31	1.25	0.050	<0.020
OCT 29- NOV 05	0.012	1.05	0.46	0.74	0.030	<0.020
NOV						
05-12	--	--	--	--	--	--
NOV						
12-19	0.031	1.98	0.64	1.40	0.220	<0.020
NOV						
19-26	0.018	0.34	0.13	0.20	0.050	<0.020
NOV 26- DEC 03	<0.003	0.57	0.13	0.25	0.040	<0.020
DEC						
03-10	0.004	0.89	0.11	0.59	0.060	<0.020
DEC						
10-17	<0.003	0.43	0.09	0.23	0.050	<0.020
DEC						
17-24	0.044	1.88	1.72	1.36	0.140	<0.020
DEC						
24-31	0.009	1.36	0.04	1.67	0.110	<0.020

## CHEMICAL QUALITY OF PRECIPITATION

00441400 HATCHIE NATIONAL WILDLIFE REFUGE RAIN GAGE AT HILLVILLE, TN--Continued  
(NATIONAL TRENDS NETWORK)

PRECIPITATION QUALITY, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	POTAS- SIUM ATM DEP WET DIS (MG/L)	SULFATE ATM DEP WET DIS AS SO4 (MG/L)	CHLO- RIDE ATM DEP WET DIS (MG/L)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L)	PHOS- PHORUS ORTHO ATM DEP WET DIS AS PO4 (MG/L)
DEC 31 1991-						
JAN 07 1992	0.006	0.73	0.07	0.50	0.070	<0.020
JAN						
07-14	<0.003	1.03	0.08	0.54	0.090	<0.020
JAN						
14-21	--	--	--	--	--	--
JAN						
21-28	0.017	2.46	0.24	1.68	0.200	<0.020
JAN 28-						
FEB 04	--	--	--	--	--	--
FEB						
04-11	<0.065	0.87	0.87	1.53	<0.440	<0.440
FEB						
11-18	0.018	1.87	0.12	1.23	0.220	<0.020
FEB						
18-25	0.011	0.98	0.08	0.79	0.080	<0.020
FEB 25-						
MAR 03	0.013	3.24	0.08	2.20	0.490	<0.020
MAR						
03-10	0.009	0.34	0.08	0.29	0.050	<0.020
MAR						
10-17	--	--	--	--	--	--
MAR						
17-24	0.015	1.12	0.13	0.57	0.230	<0.020
MAR						
24-31	0.057	2.51	0.20	2.14	0.290	<0.020
MAR 31-						
APR 07	0.022	2.01	0.07	1.04	0.120	<0.020
APR						
07-14	0.136	4.00	0.16	3.38	0.600	<0.020
APR						
14-21	0.039	1.21	0.29	1.02	0.220	<0.020
APR						
21-28	--	--	--	--	--	--
APR 28-						
MAY 05	0.167	14.5	0.95	8.96	4.16	<0.060
MAY						
05-12	--	--	--	--	--	--
MAY						
12-19	0.077	4.06	0.33	3.17	0.800	<0.020
MAY						
19-26	0.040	1.83	0.18	2.40	0.190	<0.020
MAY 26-						
JUN 02	0.010	2.90	0.09	1.53	0.390	<0.020

## CHEMICAL QUALITY OF PRECIPITATION

00441400 HATCHIE NATIONAL WILDLIFE REFUGE RAIN GAGE AT HILLVILLE, TN--Continued  
(NATIONAL TRENDS NETWORK)

PRECIPITATION QUALITY, WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	POTAS- SIUM ATM DEP WET DIS (MG/L)	SULFATE ATM DEP WET DIS AS SO <sub>4</sub> (MG/L)	CHLO- RIDE ATM DEP WET DIS (MG/L)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO <sub>3</sub> (MG/L)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH <sub>4</sub> (MG/L)	PHOS- PHORUS ORTHO ATM DEP WET DIS AS PO <sub>4</sub> (MG/L)
JUN 1992						
02-09	0.007	1.08	0.05	0.69	0.130	<0.020
JUN						
09-16	0.019	3.05	0.09	1.58	0.320	<0.020
JUN						
16-23	0.338	9.13	2.09	12.3	2.09	<0.200
JUN						
23-30	0.032	1.44	0.08	1.51	0.310	<0.020
JUN 30-						
JUL 07	0.026	0.88	0.19	1.09	0.190	<0.020
JUL						
07-14	0.090	11.6	0.99	10.4	1.04	0.090
JUL						
14-21	0.014	0.47	0.13	0.58	0.060	<0.020
JUL						
21-28	0.007	1.80	0.09	1.76	0.220	<0.020
JUL 28-						
AUG 04	0.025	1.52	0.18	1.33	0.100	<0.020
AUG						
04-11	0.034	1.58	0.11	2.48	0.240	<0.020
AUG						
11-18	0.105	13.4	0.65	10.1	1.21	<0.080
AUG						
18-25	0.047	14.5	0.60	6.28	0.990	<0.020
AUG 25-						
SEP 01	0.006	0.57	0.23	0.52	<0.020	<0.020
SEP						
01-08	0.017	0.99	0.23	2.47	<0.020	<0.020
SEP						
08-15	0.020	4.72	0.40	3.21	0.350	0.120
SEP						
15-22	0.006	0.49	0.08	0.46	0.050	<0.020
SEP						
22-29	0.008	1.49	0.07	0.78	0.090	<0.020

## DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Tennessee have been discontinued. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (\*) after the station number are currently operated as crest-stage partial-record stations.

[Letters after station name designate type of data collected: (d) discharge, (e) elevation (stage only);  
Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Period of record
Red Boiling Spring at Red Boiling Springs (d)	03312250	USGS		1986
Crabapple Branch near La Follette (d)	03403718	USGS	1.07	1981-84
Indian Fork above Braytown (d)	03407804	USGS	4.32	1975-78
Green Branch near Hembree (d)	03407874	USGS	1.38	1976-78
Smoky Creek above Hembree (361240084245800) (d)	034078745	USGS	8.07	1982-83
Bills Branch near Hembree (d)	03407875	USGS	.67	1975-83
Shack Creek at Hembree (361341084253900) (d)	034078755	USGS	5.08	1982-84
Smoky Creek near Hembree (d)	03407876	USGS	17.2	1977-84
Bowling Branch above Smoky Junction (d)	03407877	USGS	2.19	1976-81
Anderson Branch near Montgomery (d)	03407881	USGS	.69	1976-80
Lowe Branch near Montgomery (d)	03407882	USGS	.92	1975-80
New River at Cordell (d)	03407908	USGS	198	10/75-77, 5/77-12/87
New River near New River (d)	03408000	USGS	314	1923-35
Long Branch near Grimsley (d)	03408600	USGS	1.11	1976-81
Crooked Creek tributary near Allardt (d)	03408810	USGS	.25	1976-79
Crooked Creek near Allardt (d)	03408815	USGS	3.62	1976-81
White Oak Creek at Sunbright (d)	03409000*	USGS	13.5	1932-33
White Oak Creek at Rugby (d)	03409400	USGS	98.0	1980-82
Pine Creek tributary at Oneida (d)	03410000	USGS	1.21	1932-33
South Fork Cumberland River at Leatherwood Ford (d)	03410210	USGS	806	1983-87
West Fork Obey River near Alpine (d)	03415000	USGS	115	1943-71, 1980-81
Obey River near Byrdstown (d)	03415500	USGS	445	1919-43
Obey River below Dale Hollow Dam (d)	03417000	USGS	936	1939-42, 1945-58
Roaring River near Hilham (d)	03418000	USGS	78.7	1932-75
Roaring River near Gainesboro (d)	03418188	USGS	276	1975
Caney Fork at Clifty (d)	03418500	USGS	111	1931-49
Bee Creek at Herbert (d)	03419000	USGS	101	1931-37
Calkiller River at Sparta (d)	03419500	USGS	157	1932-41
Calkiller River below Sparta (d)	03420000	USGS	175	1940-71
Barren Fork near Trousdale (d)	03420500	USGS	126	1932-57
Collins River near Rowland (d)	03421500	USGS	755	1916-24
Falling Water River near Cookeville (d)	03423000	USGS	67.0	1932-56
Caney Fork below Center Hill Dam, near Lancaster (d)	03424500	USGS	2,183	1923-58
Spring Creek near Lebanon (d)	03425500	USGS	35.3	1955-61
Town Creek at Maple Street at Gallatin (d)	03425646	USGS	4.74	1984
Drakes Creek above Hendersonville (d)	03426000	USGS	19.2	1955-61
Cumberland River at Dam 3, near Old Hickory (d)	03426210	USGS	11,688	1931-42, 1947-53
East Fork Stones River at Woodbury (d)	03426800*	USGS	39.1	1932-33, 1950, 1954, 1962-89
Bradley Creek at Lascassas (d)	03427000	USGS	37.0	1955-61
Bushman Creek at Pitts Lane Ford near Compton (d)	03427690	USGS	9.67	1989-92
West Fork Stones River near Murfreesboro (d)	03428000	USGS	128	1932-69
Lytle Creek at Sanbyrn Drive at Murfreesboro (d)	03428043	USGS	17.6	1990-92
Fox Camp Spring at Mankinville (d)	03428047	USGS		1978-80
West Fork Stones River at Manson Pike, at Murfreesboro (d)	03428070	USGS	165	1973-81
Stones River near Smyrna (d)	03429000	USGS	571	1925-67
Stewart Creek near Smyrna (Smyrna Airport) (d)	03429500	USGS	69.7	1953-58
Stones River below J. Percy Priest Dam (d)	03430100	USGS	892	1939-67

## DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

[Letters after station name designate type of data collected: (d) discharge, (e) elevation (stage only);  
Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Period of record
Collins Creek at Bell Road, near Antioch (d)	03430800	USGS	3.61	1976-77
Mill Creek near Antioch (d)	03431000	USGS	64.0	1954-61, 1964-75
Browns Creek at State Fairgrounds, at Nashville (d)	03431300	USGS	11.8	1964-75
Cumberland River at Nashville (d)	03431500	USGS	12,856	1893-54
Cummings Branch at Lickton (d)	03431517	USGS	2.40	1976-90
Whites Creek at Tucker Road, near Bordeaux (d)	03431600	USGS	51.6	1965-75
Richland Creek at Charlotte Ave, at Nashville (d)	03431700	USGS	24.3	1964-90
West Harpeth River near Leipers Fork (d)	03432500	USGS	66.9	1955-61
Red River near Portland (d)	03435030	USGS	15.1	1967-75
Red River near Adams (d)	03435500	USGS	706	1920-69
Sulphur Fork Red River near Adams (d)	03436000	USGS	186	1938-91
Cumberland River at Clarksville (lock C) (d)	03436500	USGS	15,897	1925-44
Yellow Creek near Shiloh (d)	03436700*	USGS	124	1958-80
Cumberland River at Dover (gaging station) (d)	03437000	USGS	16,437	1938-65
Pigeon River at Hartford (d)	03461000	USGS	547	1925-48
Cosby Creek above Cosby (d)	03461200	USGS	10.1	1967-87
Pigeon River at Newport (d)	03461500	USGS	666	1900-29, 1945-46, 1948-82, 1982-83
North Indian Creek near Unicoi (d)	03465000	USGS	15.9	1944-57
Nolichucky River below Nolichucky Dam (d) (e)	03466500	USGS	1,184	1902-09, 1919-26, 1946-73
Lick Creek at Mohawk (d)	03467000	USGS	220	1946-71
Nolichucky River near Morristown (d)	03467500	USGS	1,679	1921-57
Long Creek near White Pine (d)	03468050	TVA	30.8	1964-81
French Broad River below Douglas Dam (d)	03469000	USGS	4,543	1919-74
Millican Creek near Douglas Dam (d)	03469010	TVA	4.22	1942-62
Roaring Fork Creek at Hwy 441, at Gatlinburg (d)	03469282	TVA	7.23	1977-82
Dudley Creek at Gatlinburg (d)	03469390	TVA	8.84	1977-82
West Prong Little Pigeon River near Pigeon Forge (d)	03469500	USGS	76.2	1946-49, 1967-69
Little Pigeon River at Sevierville (d)	03470000	USGS	353	1921-82
South Fork Holston River below South Holston Dam (d)	03476500	USGS	703	1951-74
South Fork Holston River at Bluff City (d)	03477000	USGS	813	1900-53
Beaver Creek at Bristol (d)	03478500	USGS	44.8	1932-34
Beaver Creek at Buffalo School, near Bluff City (d)	03478620	TVA	108	1934-38
Watauga River at North Carolina-Tennessee State Line (d)	03479500	USGS	152	1943-55
Watauga River at Stump Knob (d)	03480000	USGS	171	1928-31, 1934-45
Roan Creek near Neva (d)	03482000	USGS	102	1942-55
Roan Creek at Butler (d)	03482500	USGS	166	1901-02, 1934-48
Watauga River at Butler (d)	03483000	USGS	427	1900-02, 1921-48
Watauga River below Wilbur Dam (d)	03484000	USGS	471	1903-09, 1948-82
Watauga River at Siam (d)	03484110	TVA	480	1946
Doe River at Old Hopson School (d)	03484490	TVA	59.3	1967-69
Doe River at Blevins (d)	03484500	USGS	60.8	1912-15
Laurel Fork above Braemar (d)	03484900	TVA	23.0	1945-51
Laurel Fork above Hampton (d)	03484910	TVA	25.3	1948-52
Doe River at Elizabethton (d)	03485500	USGS	137	1912-16, 1921-82



## DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

[Letters after station name designate type of data collected: (d) discharge, (e) elevation (stage only);  
Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Period of record
Watauga River at Elizabethton (d)	03486000	USGS	692	1926-49, 1953-82
Buffalo Creek at Milligan College (d)	03486200	TVA	28.1	1965-81
Brush Creek at Johnson City (Tennessee Street) (d)	03486490	TVA	6.78	1969-73
Brush Creek at Johnson City (Elm Street) (d)	03486495	TVA	9.58	1969-72
Brush Creek at Johnson City (d)	03486500	USGS	10.3	1932-34
Fall Creek near Fort Patrick Henry Dam (d)	03486900	TVA	13.1	1953-56
South Fork Holston River at Kingsport (d)	03487500	USGS	1,935	1926-77
South Fork Holston River at Kingsport (auxiliary channel) (d)	03487501	USGS	1.0	1953-77
Reedy Creek at Orebank (d)	03487550*	USGS	36.3	1963-89
South Fork Holston River near Ridgefields Bridge, at Kingsport (d)	03487640	TVA	2,047	1968-69
Holston River at Surgoinsville (d)	03490500	USGS	2,874	1941-88
Holston River near Rogersville (d)	03491500	USGS	3,035	1901-42
Poor Valley Creek near Mooresburg (near Spruce Pine School) (d)	03491800	USGS	32.3	1958-61
Poor Valley Creek near Mooresburg (d)	03491820	TVA	43.3	1959-60
Holston River near Morristown (d)	03492000	USGS	3,244	1937-42
Mossy Spring near Jefferson City (d)	03492500	USGS		1950-59
Mossy Creek at Jefferson City (d)	03493000	USGS	30.8	1932-34
Holston River near Jefferson City (d)	03494000	USGS	3,429	1937-74
Mill Spring near Jefferson City (d)	03494500	TVA		1941-48
		USGS		1951-59
First Creek at Mineral Springs Avenue, at Knoxville (d)	03496000	USGS	15.7	1945-63
First Creek above Powers Avenue, at Knoxville (d)	03496200	USGS	17.2	1964-70
First Creek at Fifth Avenue, at Knoxville (d)	03496500	USGS	21.1	1932-34, 1945-59
Tennessee River at Knoxville (Gay Street Bridge) (d)	03497000	USGS	8,934	1900-82
Fourth Creek at Knoxville (d)	03497110	TVA	9.65	1942-43
Little River at Walland (d)	03497500	USGS	175	1925-31
Little River near Walland (d)	03498000	USGS	192	1931-52
Pistol Creek at Maryville (d)	03499000	USGS	13.5	1932-33
Little River below Rockford Dam, at Rockford (d)	03499100	TVA	346	1940-44
Little River near Rockford (d)	03499110	TVA	352	1936-37
Ten Mile Creek near Ebenezer (d)	03499200	TVA	13.2	1941-45
Muddy Creek near Fort Loudon Dam (d)	03499600	TVA	10.7	1941-59
Little Tennessee River at Calderwood (d)	03518000	USGS	1,862	1912-19, 1921-57
Little Tennessee River below Chilhowee Dam (d)	03518300	USGS	1,987	1958-79
North Fork Citico Creek near Tellico Plains (d)	03518400	TVA	7.04	1960-71
Tellico River at Tellico Plains (d)	03518500	USGS	118	1925-82
Little Tennessee River at McGhee (d)	03519500	USGS	2,443	1905-69
Baker Creek near Greenback (d)	03519640*	USGS	16.0	1966-75
Tennessee River at Loudon (d)	03520000	USGS	12,220	1923-55
Sweetwater Creek below Sweetwater (d)	03520045	TVA	26.4	1970-81
Sweetwater Creek near Sweetwater (d)	03520050	TVA	28.2	1964-70
Big Sycamore Creek near Sneedville (d)	03528100	TVA	5.49	1935-45
Big Barren Creek near New Tazewell (d)	03528300	TVA	22.5	1935-45
White Creek near Sharps Chapel (d)	03528400	TVA	2.68	1935-72
Powell River near Arthur (d)	03532000	USGS	685	1920-82
Davis Creek near Speedwell (d)	03532100	TVA	31.2	1936-37
Big Creek near La Follette (d)	03532220	TVA	26.2	1936-38
Clinch River below Norris Dam (d)	03533000	USGS	2,913	1904-74
Clear Creek near Norris (d)	03533100	TVA	2.83	1934-38
Coal Creek at Lake City (d)	03534000*	USGS	24.5	1932-34
Buffalo Creek at Norris (d)	03534500	USGS	9.92	1947-51
Bullrun Creek near Halls Crossroads (d)	03535000	USGS	68.5	1957-86
Scarboro Creek Tributary near Haw Ridge near Oak Ridge (d)	03535102	USGS	0.41	1989-91
Scarboro Creek Tributary near Oak Ridge (d)	03535103	USGS	0.41	1989-91
Whiteoak Creek at ORNL, near Oak Ridge (d)	03536500	USGS	2.08	1950-55

## DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

[Letters after station name designate type of data collected: (d) discharge, (e) elevation (stage only);  
Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Period of record
Whiteoak Creek below ORNL, near Oak Ridge (d)	03537000	USGS	3.62	1950-53, 1955-64
Melton Branch tributary (East Seven) near Oak Ridge (d)	03537050	USGS	.24	1987-91
Melton Branch tributary (Center Seven) near Oak Ridge (d)	03537200	USGS	.07	1987-91
Melton Branch tributary (West Seven) near Oak Ridge (d)	03537300	USGS	.15	1987-89
Melton Branch near Oak Ridge (d)	03537500	USGS	1.48	1955-64
Whiteoak Creek at Whiteoak Dam, near Oak Ridge (d)	03538000	USGS	6.01	1953-55, 1960-64
Clinch River near Oak Ridge (d)	03538150	USGS	3,385	1937-64, 1968
Poplar Creek near Oak Ridge (d)	03538225	USGS	82.5	1960-89
East Fork Poplar Creek near Oak Ridge (d)	03538250	USGS	19.5	1960-88
Bear Creek tributary above Bear Creek Road near Wheat (d)	035382672	USGS	.30	1986-91
Bear Creek near Wheat (d)	035382673	USGS	3.20	1986-91
Bear Creek tributary near Wheat (d)	035382677	USGS	.14	1986-89
Bear Creek tributary at Hwy 95 near Wheat (d)	03538272	USGS	.14	1986-89
Bear Creek at Pine Ridge near Wheat (d)	03538273	USGS	5.0	1986-91
Bear Creek near Oak Ridge (d)	03538275	USGS	7.15	1960-64
Emory River near Wartburg (d)	03538500	USGS	83.2	1934-57, 1966-68
Daddys Creek near Grassy Cove (d)	03539000	USGS	51.2	1925-30
Daddys Creek near Crab Orchard (d)	03539500	USGS	93.5	1931-58
Daddys Creek near Hebbertsburg (d)	03539600	USGS	139	1957-68
Clear Creek near Lancing (d)	03539750	USGS	153	1966-68
Obed River near Lancing (d)	03539800	USGS	518	1956-68, 1973-88
Crooked Fork near Wartburg (d)	03539860	USGS	50.3	1966-68
Emory River at Deermont (d)	03540000	USGS	704	1920-28
Crab Orchard Creek near Deermont (d)	03540100	USGS	33.7	1966-68
Bitter Creek near Oakdale (d)	03541300	USGS	12.6	1967-75
Kingston Creek at Kingston (d)	03541400	TVA	.74	1940-41
Whites Creek near Glen Alice (d)	03541500	USGS	108	1934-55
Whites Creek at Glen Alice (d)	03542000	USGS	120	1931-34
Piney River at Spring City (d)	03542500	USGS	95.9	1927-31
Tennessee River at Breedenton (d)	03544000	USGS	17,440	1934-40
Richland Creek near Dayton (d)	03544500	USGS	50.2	1927-31, 1934-55, 1979-82
Turtletown Creek at Turtletown (d)	03556000	USGS	26.9	1934-71
Hiwassee River near McFarland (d)	03556500	USGS	1,136	1943-81
Hiwassee River near Reliance (d)	03557000	USGS	1,233	1900-14, 1918-48
Ocoee River at Copperhill (d)	03559500	USGS	352	1903-14, 1943-70
North Potato Creek tributary, Copper Basin area 6, near Ducktown (d)	03560700	TVA	.01	1940-51
Burra-burra Creek tributary, Copper Basin area 5, near Ducktown (d)	03560800	TVA	.02	1940-51
North Potato Creek near Ducktown (d)	03561000	USGS	13.0	1934-70
North Potato Creek tributary No. 2, Copper Basin area 1-W, near Ducktown (d)	03561200	TVA	.01	1942-52
North Potato Creek tributary No. 3, Copper Basin area 1-E, near Ducktown (d)	03561300	TVA	.01	1942-52
Ocoee River at McHarg (d)	03561500	USGS	447	1917-43
Walkertown Branch tributary, Copper Basin area 4, near Ducktown (d)	03561700	TVA	.01	1940-45
Ocoee River tributary, Copper Basin area 3, near Ducktown (d)	03561800	TVA	.01	1940-51
Brush Creek near Ducktown (d)	03562000	USGS	14.4	1934-42
Hiwassee River above Charleston (d)	03565000	USGS	2,001	1954-76
Chestuee Creek above Englewood (d)	03565040	TVA	14.8	1944-57
Little Chestuee Creek below Wilson Station (d)	03565080	TVA	8.54	1947-57
Chestuee Creek at Zion Hill (d)	03565120	TVA	37.8	1944-62
Middle Creek below Hwy 39 near Englewood (d)	03565160	TVA	32.7	1944-62

## DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

[Letters after station name designate type of data collected: (d) discharge, (e) elevation (stage only);  
Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Period of record
Chestuee Creek near Athens (d)	03565200	TVA	77.9	1944-54
Chestuee Creek at Dentville (d)	03565250	USGS	114	1944-62
South Chestuee Creek near Benton (d)	03565300	USGS	31.8	1957-86
Oostanaula Creek near Sanford (d)	03565500	USGS	57.0	1954-89
Oostanaula Creek near Calhoun (d)	03565700	TVA	67.0	1940-44
Wolftever Creek near Ooltewah (d)	03566420*	USGS	18.8	1964-89
Long Savannah Creek near Snow Hill (d)	03566450	TVA	28.3	1939-44
North Chickamauga Creek at Upper Mill, near Hixson (d)	03566600	TVA	99.5	1937-43
North Chickamauga Creek near Hixson (d)	03566630	TVA	114	1937-43
South Chickamauga Creek near McCarty (d)	03567600	TVA	458	1937-45
Sequatchie River near College Station (d)	03570650	USGS	154	1966-68
Little Sequatchie River at Sequatchie (d)	03571500*	USGS	116	1932-34
Tennessee River at South Pittsburg (d)	03571850	USGS	22,640	1930-87
Elk River near Pelham (d)	03578000	USGS	65.6	1952-88
Bradley Creek near Prairie Plains (d)	03578500	USGS	41.3	1952-60
Elk River near Estill Springs (d)	03579100	USGS	275	1921-81
Boiling Fork Creek south of Cowan (d)	03580000	USGS	20.2	1932
Boiling Fork Creek above Winchester (d)	03580300	USGS	55.9	1962-70
Boiling Fork Creek at Winchester (d)	03580500	USGS	77.1	1932-34
Elk River below Tims Ford Dam (d)	03580750	USGS	534	1966-76
Jack Daniel Spring at Lynchburg (d)	03580990	USGS		1970-78
East Fork Mulberry Creek at Lynchburg (d)	03581000	USGS	23.1	1932
East Fork Mulberry Creek near Lynchburg (d)	03581100	TVA	29.5	1967-69
East Fork Mulberry Creek near Mulberry (d)	03581200	TVA	49.4	1967-69
West Fork Mulberry Creek near Booneville at Mt. Herman (d)	03581400	TVA	17.4	1967-69
West Fork Mulberry Creek at Mulberry (d)	03581500	USGS	41.2	1954-62, 1966-68
Elk River above Fayetteville (d)	03582000	USGS	827	1934-82
Union Branch below Belleville (d)	03582140	USGS	2.37	1977
Elk River near Fayetteville (d)	03582500	USGS	897	1926-34
Bradshaw Creek at Frankewing (d)	03583000	USGS	36.5	1955-61, 1966-68
Richland Creek near Cornersville (d)	03583300*	USGS	47.5	1961-68
Factory Creek (head of Big Creek) near Campbellsville (d)	03583330	USGS	38.2	1966-68
Yokley Creek near Campbellsville (d)	03583360	USGS	20.2	1966-68
Weakley Creek near Bodenham (d)	03583500	USGS	24.4	1955-61, 1966-68
Richland Creek near Pulaski (d)	03584000	USGS	366	1934-75
Shoal Creek at Lawrenceburg (d)	03588000	USGS	55.4	1932-34
				1967-91
Chisholm Creek at Westpoint (d)	03588400	USGS	43.0	1962-88
Snake Creek near Adamsville (d)	03593300	TVA	49.4	1940-59
Holland Creek near Lowryville (d)	03593700	TVA	14.9	1965-78
Horse Creek near Savannah (d)	03594000	USGS	114	1929-34
Turkey Creek near Savannah (d)	03594040	TVA	53.7	1940-59
White Oak Creek near Milledgeville (d)	03594058	TVA	46.1	1940-59
White Oak Creek at Milledgeville (d)	03594110	TVA	49.2	1961-65
Middleton Creek near Milledgeville (d)	03594120	TVA	45.5	1940-59
Indian Creek near Cerro Gordo (d)	03594160	TVA	201	1940-59
Banjo Branch near Waynesboro (d)	03594164	USGS	2.14	1988-89
Beech River near Lexington (d)	03594415	TVA	15.9	1953-63
Wolf Creek at Graper Springs (d)	03594420	TVA	11.7	1953-55
Pine Tree Branch near Lexington (d)	03594425	TVA	.14	1941-78
Harmon Creek near Lexington (d)	03594430	TVA	6.87	1953-73
Piney Creek at Hwy 104 near Lexington (d)	03594435	TVA	19.2	1953-55, 1957-73
Cane Creek near Shady Hill (d)	03594437	TVA	20.7	1966-73
Haley Creek near Chesterfield (d)	03594441	TVA	8.30	1953-55
Beech River near Chesterfield (old channel before channelization) (d)	03594445	TVA	11.5	1940-54, 1960-65
Browns Creek near Chesterfield (d)	03594450	TVA	202	1953-63
Cane Creek near Shady Hill (d)	03594455	TVA	16.8	1953-64
Cane Creek near Chesterfield (old channel before channelization) (d)	03594460	TVA	222	1940-54

## DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

[Letters after station name designate type of data collected: (d) discharge, (e) elevation (stage only);  
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Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Period of record
Beech River near Darden (old channel before channelization) (d)	03594465	TVA	165	1954-60
Flat Creek near Middleburg (d)	03594470	TVA	13.8	1953-55
Big Creek near Darden (d)	03594475	TVA	10.6	1953-55, 1966-73
Turkey Creek near Decaturville (d)	03594480	TVA	8.40	1953-63
Turkey Creek at Middleburg Road, near Decaturville (d)	03594482	TVA	11.5	1964-73
Rushing Creek near Decaturville (d)	03594485	TVA	17.0	1953-55
Tennessee River at Perryville (d)	03594500	USGS	34,550	1931-32
Duck River near Manchester (d)	03595000	USGS	55.2	1932-34
Little Duck River at Manchester (d)	03595500	USGS	40.4	1932-34
Duck River below Manchester (d)	03596000	USGS	107	1934-88
Duck River at Normandy (d)	03596500	USGS	208	1920-31, 1972-75
Garrison Fork at Fairfield (d)	03597000	USGS	66.3	1953-58, 1966-68
Wartrace Creek at Bell Buckle (d)	03597500	USGS	16.3	1953-61, 1966-75
Wartrace Creek at Wartrace (d)	03597600	USGS	36.4	1966-68
Big Rock Creek at Lewisburg (d)	03599000	USGS	24.9	1953-61, 1966-68
Fountain Creek near Culleoka (d)	03599430	USGS	26.9	1966-68
Fountain Creek near Fountain Heights (d)	03599450	USGS	74.0	1966-68
Rutherford Creek near Carters Creek (d)	03600000	USGS	68.8	1953-58
Rutherford Creek (No. 4) near Columbia (d)	03600100	TVA	112	1948-53
Rutherford Creek (No. 3) near Columbia (d)	03600200	TVA	116	1948-49
Little Bigby Creek at Experiment Lane at Columbia (d)	03600258	USGS	42.6	1990-92
Big Bigby Creek at Sandy Hook (d)	03600500	USGS	17.5	1953-87, 1988-89
Big Bigby Creek near Mount Pleasant (d)	03601000	USGS	25.8	1953-57
Big Bigby Creek at Cross Bridges (d)	03601500	USGS	112	1938-39
Duck River at Centerville (d)	03602000	USGS	2,048	1919-55
Hurricane Creek at Hurricane Mills (d)	03603500	USGS	75.1	1932-33
Coon Creek near Hohenwald (d)	03604100	USGS	10.0	1967-74
Buffalo River near Lobelville (d)	03604500	USGS	707	1987-89
Blue Creek at State Hwy 13 near Waverly (d)	03604600	TVA	24.8	1964-71
Birdsong Creek near Holladay (d)	03604800	TVA	44.9	1940-68
Trace Creek at Waverly (d)	03605500	USGS	20.1	1932-33
Cotton Creek near Camden (d)	03606400	TVA	.43	1941-45
Big Sandy River at Big Sandy (d)	03607000	USGS	379	1935-44
Tennessee River near Buchanan (d)	03607500	USGS	39,730	1930-43
Beaver Creek at Huntingdon (d)	07024300*	USGS	55.5	1946, 1948, 1952-54, 1958-88
South Fork Obion River near Greenfield (d)	07024500*	USGS	383	1929-89
Rutherford Fork Obion River near Bradford (d)	07025000	USGS	201	1929-57
North Fork Obion River near Union City (d)	07025500	USGS	480	1929-71
North Reelfoot Creek at State Hwy 22 near Clayton (d)	07026370	USGS	56.3	1980-83, 1984-89
South Reelfoot Creek near Clayton (d)	07026400	USGS	36.6	1984-89
Reelfoot Creek near Samburg (d)	07026500	USGS	110	1951-73
Reelfoot Lake near Phillippy (e)	07026690	USGS	240	1984-88
Indian Creek near Samburg (d)	07026795	USGS	8.01	1982-86
South Fork Forked Deer River at Jackson (d)	07027500	USGS	495	1929-73, 1988-91
South Fork Forked Deer River at Chestnut Bluff (d)	07028000	USGS	1,003	1929-57
North Fork Forked Deer River at Trenton (d)	07028500	USGS	73.5	1950-71
Middle Fork Forked Deer River near Alamo (d)	07029000	USGS	369	1929-73
Hatchie River near Stanton (d)	07030000	USGS	1,975	1929-58
Cane Creek at Three Point (d)	07030137	USGS	79.8	1985-87
Kelly Branch near Clopton (d)	07030245	USGS	7.79	1975-76



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## DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS--Continued

[Letters after station name designate type of data collected: (d) discharge, (e) elevation (stage only);  
Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Period of record
Loosahatchie River tributary at New Allen Road at Memphis (d)	07030295	USGS	1.26	1977-83
Wolf River at Rossville (d)	07030500	USGS	503	1929-72
Marys Creek at Pisgah Road, near Fisherville (d)	07031500	USGS	13.6	1955-57
Fletcher Creek near Cordova (d)	07031680	USGS	1.45	1974-83
Fletcher Creek at Whitten Road at Memphis (d)	07031683	USGS	21.4	1978-82
Unnamed tributary at Charles Bryan Road, near Cordova (d)	07031685	USGS	3.18	1975-77
Lick Creek at Dickinson Street, at Memphis (d)	07031777	USGS	2.96	1975-83
Johns Creek tributary at Holmes Road, near Memphis (d)	07032222	USGS	5.83	1975-85
Johns Creek at Raines Road, at Memphis (d)	07032224	USGS	19.4	1975-82, 1985
Black Bayou at Southern Avenue, at Memphis (d)	07032241	USGS	.59	1975-83
Cane Creek at East Person Avenue, at Memphis (d)	07032248	USGS	4.98	1975-85
Cypress Creek at Neely Road, at Memphis (d)	07032260	USGS	3.18	1975-85



## DISCONTINUED SURFACE-WATER-QUALITY STATIONS

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 1991 water year. Water-quality data (daily or periodic samples with collection frequency not less than quarterly) were collected and published for the period of record shown for each station. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Chief at the address given on the back of the title page of this report.

[Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority.  
Type of record: (B) biological, (C) chemical, (S) sediment, (T) temperature.]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Type of record	Period of record (water years)
Crabapple Branch near La Follette	03403718	USGS	1.07	C,T	1981-84
Indian Fork above Braytown	03407804	USGS	4.32	C	1975-81
New River at Stainville	03407850	USGS	66.0	C,S	1975-77, 1979-81
Green Branch near Hembree	03407874	USGS	1.38	C,S	1975-81
Smoky Creek above Hembree (361240084245800)	034078745	USGS	8.07	S	1982-83
Bills Branch near Hembree	03407875	USGS	.67	C,S	1975-83
		USGS		C,S,T	1980-83
Shack Creek at Hembree (361341084253900)	034078755	USGS	5.08	C,S,T	1982-84
Smoky Creek at Hembree	03407876	USGS	17.2	S	1978-84
		USGS		C,T	1980-84
Bowling Branch above Smoky Junction	03407877	USGS	2.19	C,S	1975-83
Smoky Creek at Smoky Junction	03407879	USGS	32.8	C,S	1975-77, 1979-81
Anderson Branch near Montgomery	03407881	USGS	.69	C	1975-81
Lowe Branch near Montgomery	03407882	USGS	.92	C	1975-81
New River at Cordell	03407908	USGS	198	C,S	1976-77, 1979-82
New River at New River	03408500	USGS	382	C,T	1977-86
		USGS		C,S	1965-67, 1975-77, 1979-81
Clear Fork near Robbins	03409500	USGS	272	T	1982-86
		USGS		C	1982, 1984-86
		USGS		C,S	1964-65, 1976-77, 1979-82, 1984
South Fork Cumberland River at Leatherwood Ford	03410210	USGS	806	C,S,T	1986
		USGS		C,S	1979-80, 1984-85
Roaring River near Hilham	03418000	USGS	78.7	T	1969-71
Roaring River above Gainesboro	03418070	USGS	210	C,S	1980-83
Collins River near McMinnville	03421000	USGS	640	C,S	1964-67, 1979-82
Cumberland River at Carthage	03425000	USGS	10,690	C,T	1975-81
East Fork Stones River near Lascassas	03427500	USGS	262	C,T	1975-1990
West Fork Stones River near Murfreesboro	03428000	USGS	128	C	1964-68
West Fork Stones River at Manson Pike, at Murfreesboro	03428070	USGS	165	C,T	1973-82
West Fork Stones River near Smyrna	03428500	USGS	237	T	1974-1990
Richland Creek at Charlotte Avenue, at Nashville	03431700	USGS	24.3	C,S	1901, 1979-83
Harpeth River near Kingston Springs	03434500	USGS	681	C,S	1979-83
Sulphur Fork Red River near Greenbrier	03435637	USGS	34.9	T	1976-78
Sulphur Fork Red River above Beaverdam Creek, near Springfield	03435700	USGS	49.1	T	1975-77
Sulphur Fork Red River above Springfield	03435770	USGS	65.6	C,S	1976-83
Sulphur Fork Red River near Adams	03436000	USGS	186	C,S	1964, 1979-83
Red River at Port Royal	03436100	USGS	935	C,S	1979-83
Yellow Creek near Shiloh	03436700	USGS	124	C,S	1964-65, 1979-81
French Broad River below Hot Springs, NC	03454757	USGS	1,712	C	1970-73
French Broad River near Newport	03455000	TVA	1,858	C	1946-47, 1960-61, 1969-70, 1974-75, 1979-80
Nolichucky River at Embreeville	03465500	USGS	805	C,S	1979-82
Nolichucky River below Nolichucky Dam	03466500	TVA	1,184	C	1974-79
		TVA		T	1962
French Broad River at Douglas Dam (tailwater)	03468510	TVA	4,541	C	1975-80
Little Pigeon River at Sevierville	03470000	TVA	353	C	1967-68, 1970
		TVA		T	1969-74
		USGS		C,S	1979-82

# WATER RESOURCES DATA - TENNESSEE, 1993

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## DISCONTINUED SURFACE-WATER-QUALITY STATIONS--Continued

[Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority.  
Type of record: (B) biological, (C) chemical, (S) sediment, (T) temperature.]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Type of record	Period of record (water years)
French Broad River near Knoxville	03470500	USGS	5,101	C,T	1975-82
		USGS		B,C,S,T	1975-86
South Fork Holston River at South Holston Dam	03476010	TVA	703	C	1975-80
Watauga River at Stump Knob	03480000	TVA	171	T	1962
Elk River at Elk Mills	03481450	TVA	74.0	C	1975-76
Roan Creek near Doevoile	03482100	TVA	110	T	1962, 1971-74
		TVA		C	1975-76
Watauga River below Watauga Dam	03483950	TVA	468	C	1973, 1975-80
Doe River at Hampton	03484800	TVA	100	T	1968-73
Doe River at Elizabethton	03485500	TVA	137	C	1967-68, 1971
		TVA		T	1954-63
		USGS		C,S	1979-82
South Fork Holston River at Boone Dam (tailwater)	03486810	TVA	1,840	C	1975-78
South Fork Holston River at Ft. Patrick Henry Dam	03487010	TVA	1,903	C	1975-80
Reedy Creek at Orebank	03487550	TVA	36.3	T	1964-66
		TVA		C	1964-67
		USGS		C,S	1979-82
Holston River near Church Hill	03490350	TVA	2,819	C	1974-78
Holston River at Surgoinsville	03490500	USGS	2,874	T	1975-82
		TVA		C	1974-80
Big Creek near Rogersville	03491000	USGS	47.3	T	1972-75, 1977-79
Beech Creek at Kepler	03491300	TVA	47.0	T	1966-68
Holston River near Rogersville	03491500	TVA	3,035	T	1966-75
Holston River at Cherokee Dam (tailwater)	03493510	TVA	3,428	C	1975-80
First Creek above Powers Avenue, at Knoxville	03496200	USGS	17.2	T	1969-71
Tennessee River below Knoxville	03497100	TVA	8,963	T	1970-80
Little River above Townsend	03497300	USGS	106	T	1964-82
		USGS		C	1982
Little River near Maryville	03498500	TVA	269	C	1967-68
		USGS		C,S	1979-82
Tennessee River at Fort Loudon Dam (tailwater)	03499510	TVA	9,550	C	1975-80
Little Tennessee River at Calderwood Dam	03518210	TVA	1,977	C	1977-80
Little Tennessee River below Chilhowee Dam	03518300	TVA	1,987	T	1964-78
Tellico River at Tellico Plains	03518500	TVA	118	T	1964-78
		TVA		C	1969-70, 1973-76
		USGS		C,S	1979-82
Little Tennessee River at McGhee	03519500	TVA	2,443	T	1963
Little Tennessee River near Centersville	03519740	TVA		T	1976-79
Clinch River above Tazewell	03528000	TVA	1,474	T	1962-66, 1971-75
		TVA		C	1971-80
Powell River near Arthur	03532000	TVA	685	C,S	1965, 1969-72,
					1974-82
		TVA		T	1963-66, 1971-75
Ollis Creek at Ivydell	03532190	TVA	13.3	C	1974-78
Clinch River below Norris Dam	03533000	TVA	2,913	C	1968-70, 1972-80
Clinch River at Coal Creek	03533500	TVA	2,921	T	1976-79
Clinch River near Clinton	03534100	TVA	2,980	C	1971-74, 1977
Clinch River at Edgemoor	03534900	TVA	3,089	C	1969-78
Bullrun Creek near Halls Crossroads	03535000	USGS	68.5	T	1967-74
Clinch River near Eaton Crossroads	03535915	TVA	3,346	T	1963-79
Poplar Creek near Oak Ridge	03538225	USGS	82.5	C,S	1961-65, 1979-81
		USGS		T	1962-65
East Fork Poplar Creek near Oak Ridge	03538250	USGS	19.5	T	1962-68
Bear Creek near Oak Ridge	03538275	USGS	7.15	T	1962-63
Emory River near Wartburg	03538500	TVA	83.2	C	1965-68, 1975-76
Obed River near Lancing	03539800	TVA	518	T	1965-66
		TVA		C	1965-68

## WATER RESOURCES DATA - TENNESSEE, 1993

## DISCONTINUED SURFACE-WATER-QUALITY STATIONS--Continued

[Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority.  
Type of record: (B) biological, (C) chemical, (S) sediment, (T) temperature.]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Type of record	Period of record (water years)
Crooked Fork near Wartburg	03539860	TVA	50.3	C	1965-68
		USGS		C,S	1979-81
Crab Orchard Creek near Deermont	03540100	TVA	33.7	C	1966-68
		TVA		T	1967-68
		USGS		C,S	1979-81
Emory River at Oakdale	03540500	TVA	764	C,S	1965-67, 1974-81
Tennessee River at Watts Bar Dam (tailwater)	03543005	USGS	17,310	B,C,S,T	1975-86
		USGS		T,C	1976-81
Richland Creek near Dayton	03544500	TVA	50.2	C	1966-67
		USGS		C,S	1979-82
Hiwassee River near Wetmore	03557050	TVA	1,233	C	1973-74, 1976
Hiwassee River at Patty	03557400	TVA	1,358	T	1976-78
Hiwassee River near Benton	03557405	TVA	1,362	C	1978-80
Ocoee River at Parksville	03564500	TVA	595	C	1971-72, 1976-80
Oostanaula Creek near Sanford	03565500	USGS	57.0	C,S	1979-82
Tennessee River at Sequoyah Nuclear Plant	03566404	TVA	20,630	C	1975-78
Tennessee River near Harrison Bay State Park	03566405	TVA	20,650	C	1969-73
Tennessee River at Chickamauga Dam (tailwater)	03566510	TVA	20,790	C	1975-80
Tennessee River at Nickajack Dam (tailwater gage)	03570525	TVA	21,849	C	1975-78
Sequatchie River near Dunlap	03570835	TVA	292	C	1975-78
Sequatchie River near Whitwell	03571000	TVA	402	T	1962-71
		TVA		C	1965, 1970, 1974-75
		USGS		C,S	1979-82
Sequatchie River at Whitwell Waterworks near Whitwell	03571200	TVA	410	C	1975-79
Tennessee River at South Pittsburg	03571850	USGS	22,640	T	1975-82
		USGS		C	1975-79, 1981
		USGS		B,C,S,T	1974-86
Elk River near Estill Springs	03579100	TVA	275	C	1974-78
		TVA		T	1971-77
Boiling Fork Creek near Decherd	03580110	TVA	37.7	T	1975-77
Elk River below Tims Ford Dam	03580750	TVA	534	T	1971-79
		TVA		C	1966-67, 1973
					1975-80
Elk River above Fayetteville	03582000	TVA	827	C	1974, 1977-80
		USGS		T	1961-64
Elk River at Fayetteville	03582400	TVA	895	T	1976-78
Cane Creek near Fayetteville	03582600	TVA	106	T	1969-73
Richland Creek near Pulaski	03584000	TVA	366	T	1965-73
Elk River near Prospect	03584500	TVA	1,784	T	1961-64
Shoal Creek at Iron City	03588500	TVA	348	C,S	1974-80
		USGS		C,S	1980-83
Tennessee River at Pickwick Landing Dam	03593005	USGS	32,820	C,T	1976-82
Beech River near Chesterfield	03594439	TVA	121	C	1969-71, 1976
Duck River below Manchester	03596000	TVA	107	C	1967-68, 1970-71
		TVA		T	1976-80
		USGS		C,S	1975, 1979-83
Duck River at Normandy	03596500	TVA	208	T	1969-75
Duck River at Shelbyville Waterworks	03597850	TVA	425	C	1975-80
Duck River near Shelbyville	03598000	TVA	481	T	1961-64, 1976-78
Duck River near Columbia	03599460	TVA	1,176	T	1974-82
Duck River at Columbia Waterworks	03599482	TVA	1,195	C	1975-80
Piney River at Vernon	03602500	TVA	193	T	1964-67
Duck River above Hurricane Mills	03603000	TVA	2,557	C	1966-67, 1974-80
		TVA		T	1961-64
Buffalo River near Flat Woods	03604000	TVA	447	T	1964-68
Buffalo River near Lobelville	03604500	TVA	707	T	1961-64
		TVA		C	1967-68, 1973-76

# WATER RESOURCES DATA - TENNESSEE, 1993

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## DISCONTINUED SURFACE-WATER-QUALITY STATIONS--Continued

[Agency designations: USGS, U.S. Geological Survey; TVA, Tennessee Valley Authority.  
Type of record: (B) biological, (C) chemical, (S) sediment, (T) temperature.]

Station name	Station number	Agency	Drainage area (mi <sup>2</sup> )	Type of record	Period of record (water years)
Trace Creek above Denver	03605555	USGS	31.9	C	1979-83
Big Sandy River at Bruceton	03606500	TVA	205	T	1971-78
		TVA		C	1968, 1970-72
		USGS		C,S	1976, 1979-83
North Reelfoot Creek at Clayton	07026360	USGS	54.7	C,S	1982-84
North Reelfoot Creek at State Hwy 22 near Clayton	07026370	USGS	56.3	C,S	1983-89
South Reelfoot Creek near Clayton	07026400	USGS	38.6	C,S	1984-89
Bayou Du Chien near Walnut Log	07026695	USGS	27.8	C,T	1986-88
Indian Creek near Samburg	07026795	USGS	8.01	C,S	1982-84
Reelfoot Lake Spillway near Tiptonville	07027002	USGS	240	C,T	1975-76, 1986-88
Mosses Creek near Pocahontas	07029410	USGS	47.6	C,S	1961, 1963, 1977-78
Hatchie River near Lacy	07029425	USGS	1,033	C,S	1977-78
Big Muddy Creek at Stanton	07030010	USGS	84.4	C,S	1977-78
Cane Creek at Ripley	07030100	USGS	33.9	S	1985-87
Cane Creek at Three Point	07030137	USGS	79.8	S	1985-87
Loosahatchie River near Arlington	07030240	USGS	262	C,S	1979-82
Wolf River at Rossville	07030500	USGS	503	C	1961, 1963-68
Nonconnah Creek near Germantown	07032200	USGS	68.2	C,S	1979-82





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## CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	$2.54 \times 10^1$	millimeter
	$2.54 \times 10^{-2}$	meter
foot (ft)	$3.048 \times 10^{-1}$	meter
mile (mi)	$1.609 \times 10^0$	kilometer
<i>Area</i>		
acre	$4.047 \times 10^3$	square meter
	$4.047 \times 10^{-1}$	square hectometer
	$4.047 \times 10^{-3}$	square kilometer
square mile (mi <sup>2</sup> )	$2.590 \times 10^0$	square kilometer
<i>Volume</i>		
gallon (gal)	$3.785 \times 10^0$	liter
	$3.785 \times 10^0$	cubic decimeter
	$3.785 \times 10^{-3}$	cubic meter
million gallons (Mgal)	$3.785 \times 10^3$	cubic meter
	$3.785 \times 10^{-3}$	cubic hectometer
cubic foot (ft <sup>3</sup> )	$2.832 \times 10^1$	cubic decimeter
	$2.832 \times 10^{-2}$	cubic meter
cubic-foot-per-second day [(ft <sup>3</sup> /s) d]	$2.447 \times 10^3$	cubic meter
	$2.447 \times 10^{-3}$	cubic hectometer
acre-foot (acre-ft)	$1.233 \times 10^3$	cubic meter
	$1.233 \times 10^{-3}$	cubic hectometer
	$1.233 \times 10^{-6}$	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft <sup>3</sup> /s)	$2.832 \times 10^1$	liter per second
	$2.832 \times 10^1$	cubic decimeter per second
	$2.832 \times 10^{-2}$	cubic meter per second
gallon per minute (gal/min)	$6.309 \times 10^{-2}$	liter per second
	$6.309 \times 10^{-2}$	cubic decimeter per second
	$6.309 \times 10^{-5}$	cubic meter per second
million gallons per day (Mgal/d)	$4.381 \times 10^1$	cubic decimeter per second
	$4.381 \times 10^{-2}$	cubic meter per second
<i>Mass</i>		
ton (short)	$9.072 \times 10^{-1}$	megagram or metric ton

*Sea level:* In this report “sea level” refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.



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