

Water Resources Data California Water Year 1990

Volume 4. Northern Central Valley Basins and
The Great Basin from Honey Lake
Basin to Oregon State Line



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-90-4
Prepared in cooperation with the California Department of
Water Resources and with other agencies

CALENDAR FOR WATER YEAR 1990

1989

OCTOBER

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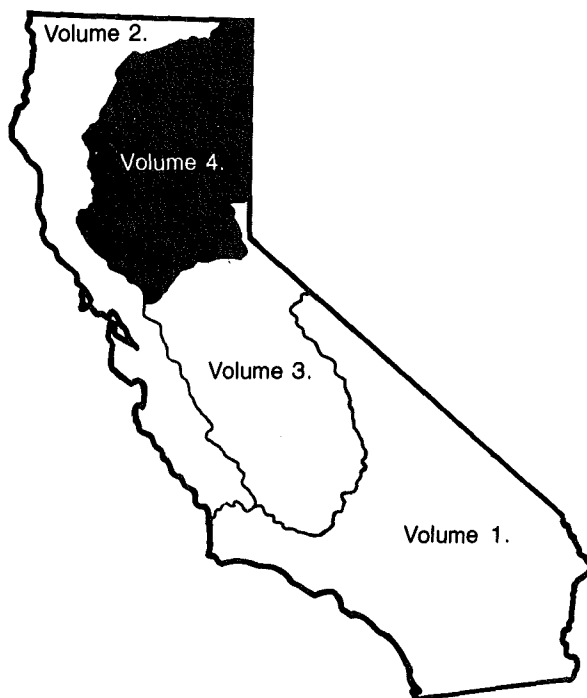
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Water Resources Data California Water Year 1990

Volume 4. Northern Central Valley Basins and The Great Basin from Honey Lake Basin to Oregon State Line

by J.R. Mullen, W.F. Shelton, K.L. Markham, and S.W. Anderson



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-90-4
Prepared in cooperation with the California Department of
Water Resources and with other agencies

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PREFACE

This volume of the annual hydrologic data report of California 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 quality of water 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. Hydrologic data for California are contained in five volumes:

- Volume 1. Southern Great Basin from Mexican Border to Mono Lake Basin and Pacific Slope Basins from the Tijuana River to Santa Maria River
- Volume 2. Pacific Slope Basins from Arroyo Grande to Oregon State Line except Central Valley
- Volume 3. Southern Central Valley Basins and The Great Basin from Walker River to Truckee River
- Volume 4. Northern Central Valley Basins and The Great Basin from Honey Lake Basin to Oregon State Line
- Volume 5. Ground-water data for California

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. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines, the individuals contributing significantly to the collection, processing, and tabulation of the data are given on page V.

This report was prepared in cooperation with the California Department of Water Resources and with other agencies, under the general supervision of John M. Klein, District Chief, California.

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SURFACE-WATER AND WATER-QUALITY STATIONS
IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

IX

[Letters after station name designate type of data: (d), discharge;
(l), lake contents; (g), gage height; (c), chemical; (b), biological;
(p), precipitation; (t), water temperature; and (s), sediment]

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WATER RESOURCES DATA - CALIFORNIA, WATER YEAR 1990
VOLUME 4--NORTHERN CENTRAL VALLEY BASINS AND THE GREAT BASIN
FROM HONEY LAKE BASIN TO OREGON STATE LINE

By J.R. Mullen, W.F. Shelton, K.L. Markham, and S.W. Anderson

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State and Federal agencies, obtains a large amount of data pertaining to the water resources of California 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 U.S. Geological Survey, the data are published annually in this report series entitled "Water Resources Data - California."

This volume of the report includes records on surface water in the State. Specifically, it contains: (1) discharge records for 182 streamflow-gaging stations; (2) stage and content records for 34 lakes and reservoirs; (3) precipitation records for 3 stations; (4) water-quality records for 12 streamflow-gaging stations; and (5) 1 low-flow partial-record station.

The series of annual reports for California began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format changed to one volume, including data on quantities of surface water, quality of surface and ground water, and ground-water levels. Beginning with the 1985 water year, a separate volume for ground-water levels and quality was published for California.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for California 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, Parts 10 and 11." For the 1961 through 1970 water 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 Waters 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." These Water-Supply Papers may be consulted in public libraries of principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports Section, Box 25425, Building 810, Federal Center, Denver, CO 80225.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. Each report has 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 CA-90-4." For archiving and general distribution, the reports for 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, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on back of title page or by telephone (916) 978-4668.

COOPERATION

The U.S. Geological Survey and organizations of the State of California have had cooperative agreements for the systematic collection of records since 1903. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

California Department of Water Resources, David N. Kennedy, Director.
 Georgetown Divide Public Utility District, Charles F. Gierau, General Manager.
 Sacramento Municipal Utility District, John P. Hiltz, Manager.
 Sacramento Regional County Sanitation District, John W. Newton, Chief of Administration.
 Yolo County Flood Control and Water Conservation District, James F. Eagan, General Manager.
 Yuba County Water Agency, Donn Wilson, Engineer-Administrator.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army; and Bureau of Reclamation, U.S. Department of Interior.

The following organizations aided in collecting records: California Department of Water Resources; Pacific Gas and Electric Co.; Rock Creek Limited Partnership; Sacramento Municipal Utility District; Nevada and Oroville-Wyandotte Irrigation Districts; and Placer and Yuba County Water Agencies.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

Runoff during the 1990 water year in the area covered by this volume was 45 percent of the 1951-80 median (based on seven representative streamflow records). Total runoff in percent of median, at selected stations in California is shown in figure 1. Runoff ranged from 24 percent of median at Willow Creek near Susanville (station 10358500) to 60 percent of median at the Sacramento River at Keswick (station 11370500). In figure 2, monthly mean discharge in the 1990 water year is compared to the 1951-80 median, maximum, and minimum monthly mean discharge at four representative gaging stations. In addition, a comparison of monthly precipitation in the 1990 water year and the long-term average is shown in figure 2. Water years 1987-90 rank as about the third driest 4-year period on record. Annual departure from 1951-80 mean discharge for four selected gaging stations is shown in figure 3. A comparison of 1990 peak discharge to peaks for period of record for selected stations is shown in table 1. A comparison of low-flow data for various years is shown in table 2.

Table 1. Comparison of peak discharge for 1990 water year with those for period of record for selected stations

| Station No. | Station name | Peak discharge (ft ³ /s) | 1990 water year | Peak discharge (ft ³ /s) | Period of record (water year) |
|-------------|--------------------------------------|-------------------------------------|-----------------|-------------------------------------|-------------------------------|
| 10358500 | Willow Creek near Susanville | 96 | Mar. 4 | 1,210 | 1986 |
| 11342000 | Sacramento River at Delta | 20,600 | May 27 | 69,800 | 1974 |
| 11382000 | Thomes Creek at Paskenta | 3,850 | Jan. 8 | 37,800 | 1964 |
| 11413000 | North Yuba River below Goodyears Bar | 2,940 | Oct. 23 | 40,000 | 1963 |

Table 2. Comparison of 7-day low flow for 1990 water year to 7-day, 10-year low flow and minimum daily flow for 30-year base period 1951-80 at selected stations

| Station No. | Station name | 7-day low flow (ft ³ /s) | | 1-day low flow (ft ³ /s) | | Period of record | |
|-------------|--------------------------------------|-------------------------------------|---------------------|-------------------------------------|---------------------|------------------------------------|------------|
| | | 1990 water year | Base period 10-year | 1990 water year | Base period 1951-80 | Minimum daily (ft ³ /s) | Water year |
| 10358500 | Willow Creek near Susanville | 3.04 | 9.2 | 2.8 | 8.9 | 2.8 | 1990 |
| 11342000 | Sacramento River at Delta | 190 | 152 | 186 | 117 | 117 | 1977 |
| 11382000 | Thomes Creek at Paskenta | .78 | .43 | .51 | 0 | 0 | several |
| 11413000 | North Yuba River below Goodyears Bar | 101 | 87.9 | 98 | 60 | 60 | 1977 |

A persistent high-pressure ridge off the California coast displaced the usual winter storm path, leaving most of the State deficient in precipitation. Three storm periods during October, January, and March produced no peaks of record. Precipitation varied from 96 percent of average at Mt. Shasta, to 49 percent of average at Paskenta Ranger Station. Precipitation in the area covered by this volume (based on six representative rain gages) was 72 percent of the long-term average.

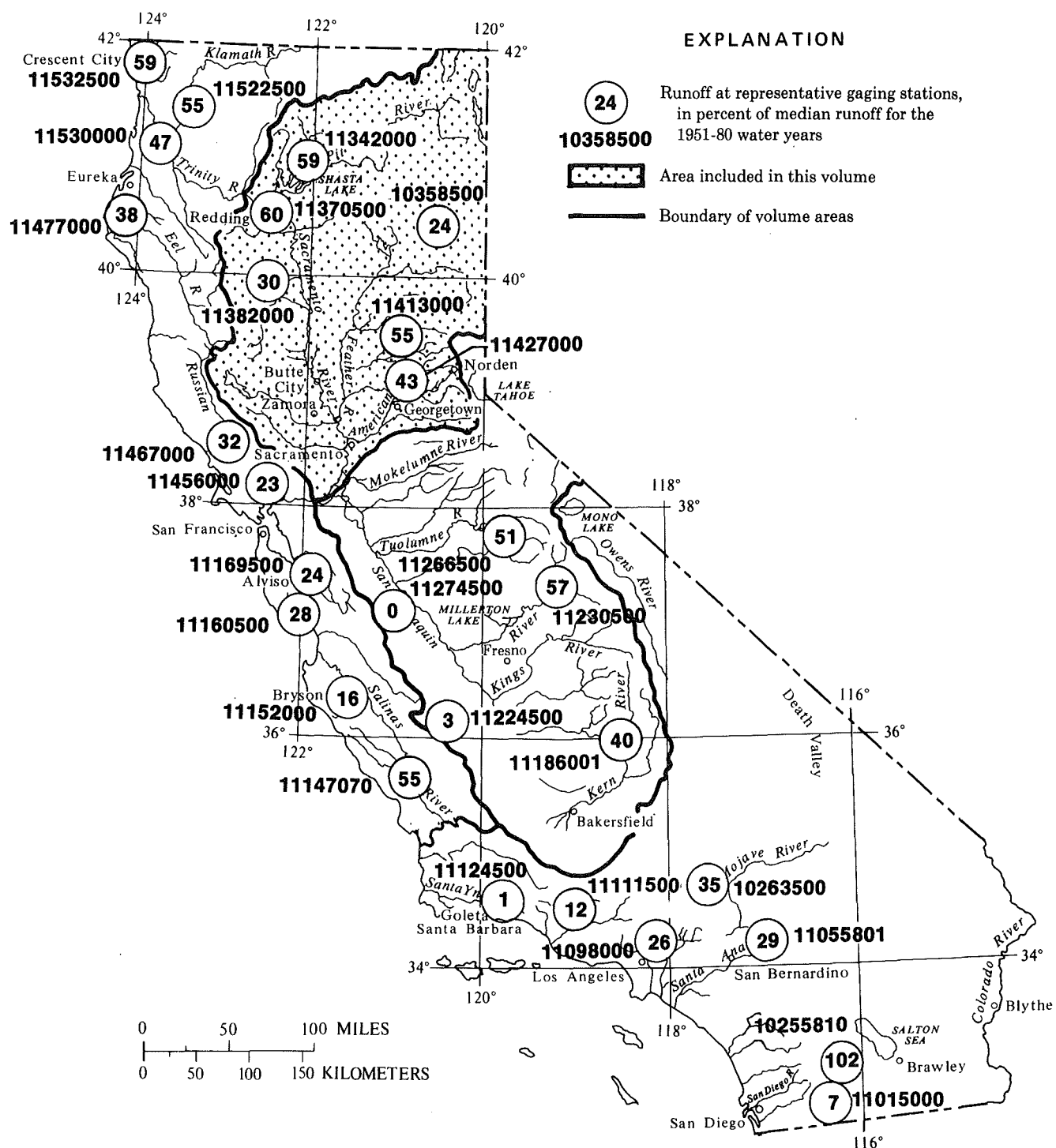


Figure 1. Runoff, in percent of median, for the 1990 water year.

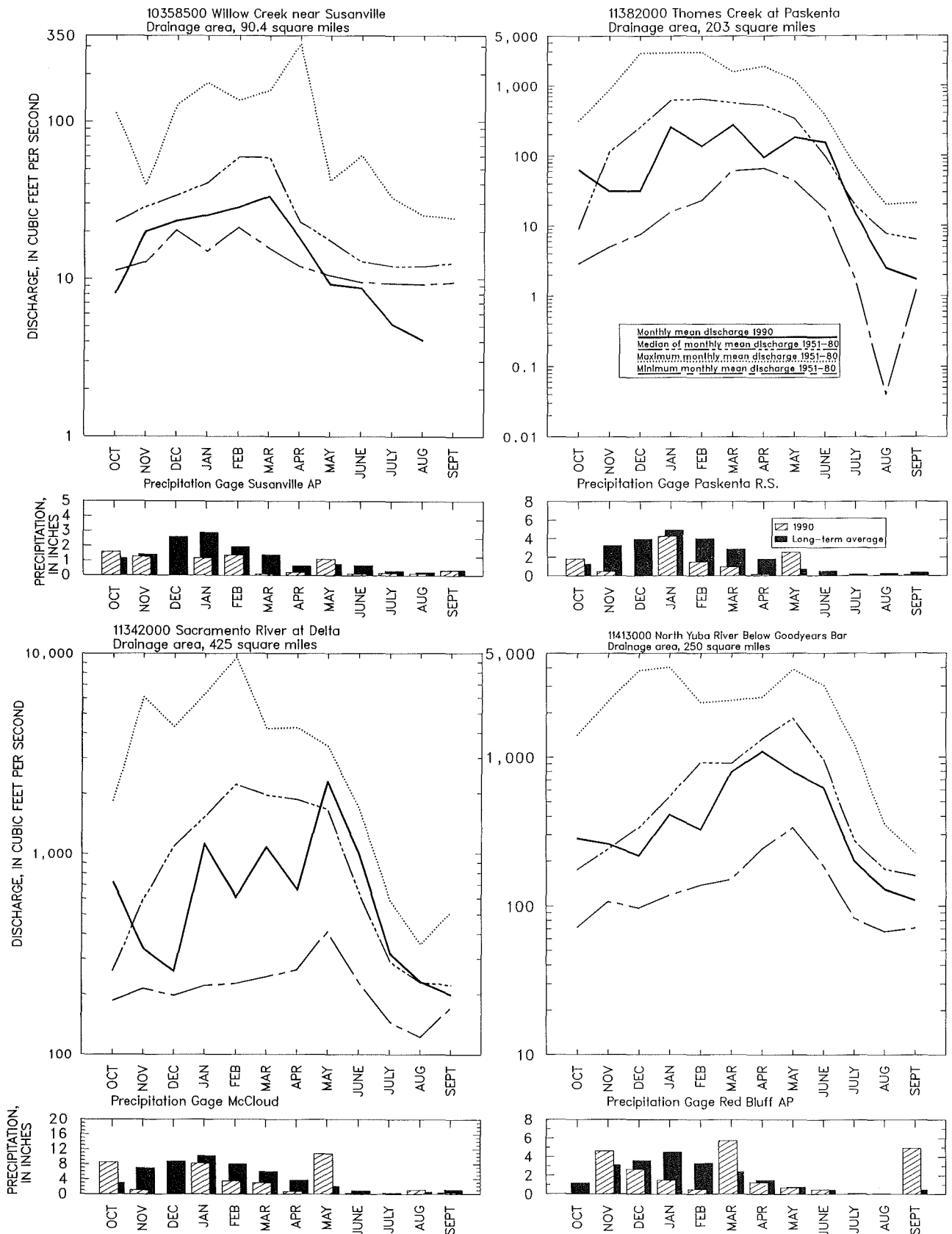


Figure 2. Discharge and precipitation during water year 1990 and long-term statistics at four representative gaging stations. Precipitation data from National Oceanic and Atmospheric Administration 1990, Climatological Data, annual summary: vol. 94.

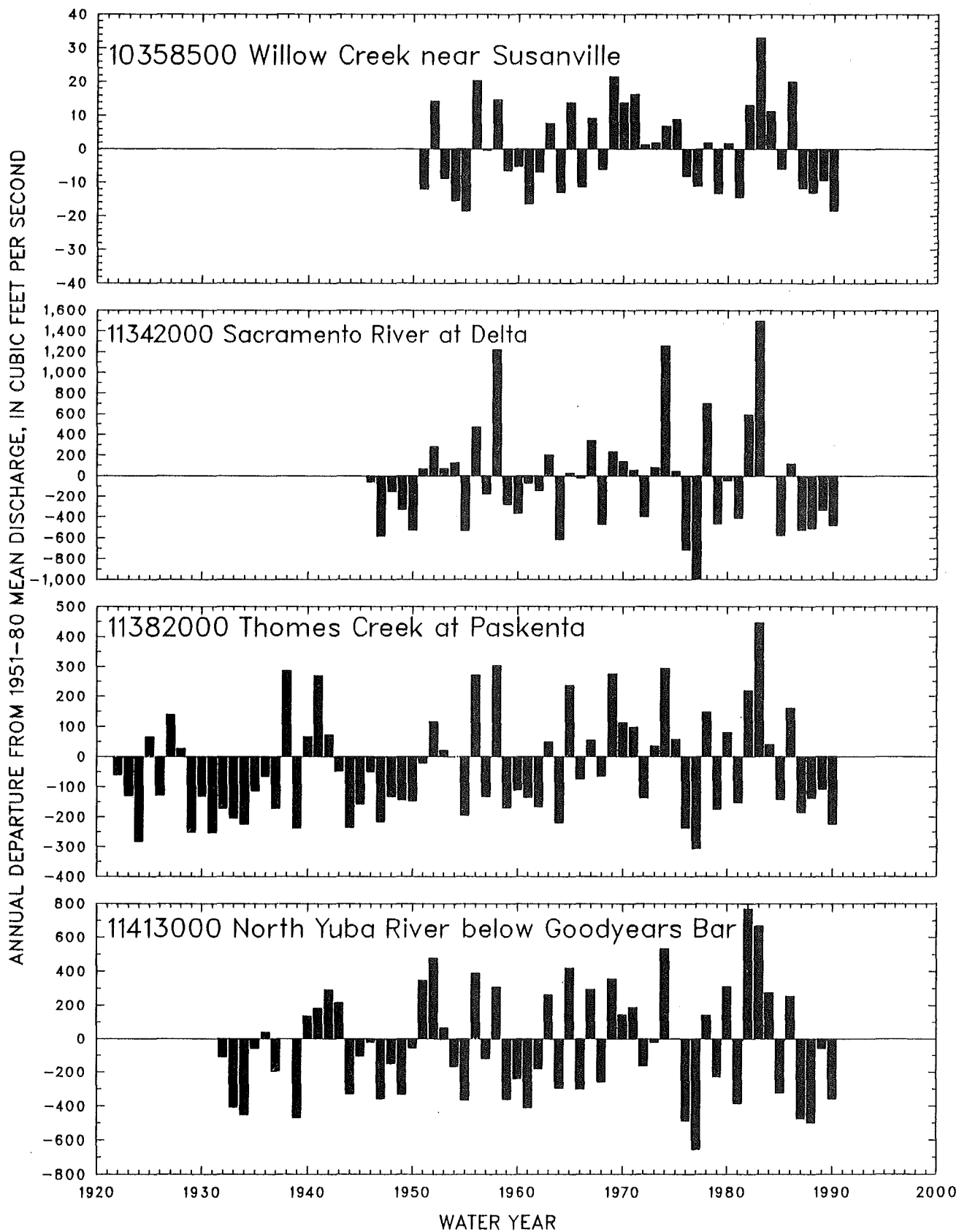


Figure 3. Annual departure from 1951-80 mean discharge for period of record at selected gaging stations.

The water year began with many reservoir levels below average. In anticipation of a fifth consecutive water year with less-than-normal precipitation, many water agencies limited reservoir releases to maximize storage. By the end of the water year, storage in major reservoirs was about 61 percent of the average. Many small- to moderate-sized reservoirs were less than 50 percent of capacity. A summary of storage in all the major reservoirs in the area covered by this volume is shown in table 3. Storage in selected reservoirs for water years 1987-90 is shown in figure 4. Both mandatory and voluntary water conservation programs were kept in force by those agencies serving metropolitan water districts that rely on water imported from Sierra Nevada reservoirs. The State Water Project cut deliveries to agricultural customers by 50 percent, and the Central Valley Project cut deliveries to most customers by 25 to 50 percent.

Table 3. Summary of storage in major reservoirs

[Data from California Department of Water Resources, 1990, Drought conditions in California: 68 p. Values in thousands of acre-feet]

| Area | Number of reservoirs | Long-term average | 1977 | 1986 | 1987 | 1988 | 1989 | 1990 |
|-------------------|----------------------|-------------------|-------|--------|-------|-------|-------|-------|
| Sacramento Valley | 43 | 11,044 | 4,336 | 12,044 | 9,191 | 7,500 | 9,359 | 7,026 |
| North Lahonton | 5 | 636 | 86 | 928 | 515 | 165 | 273 | 126 |

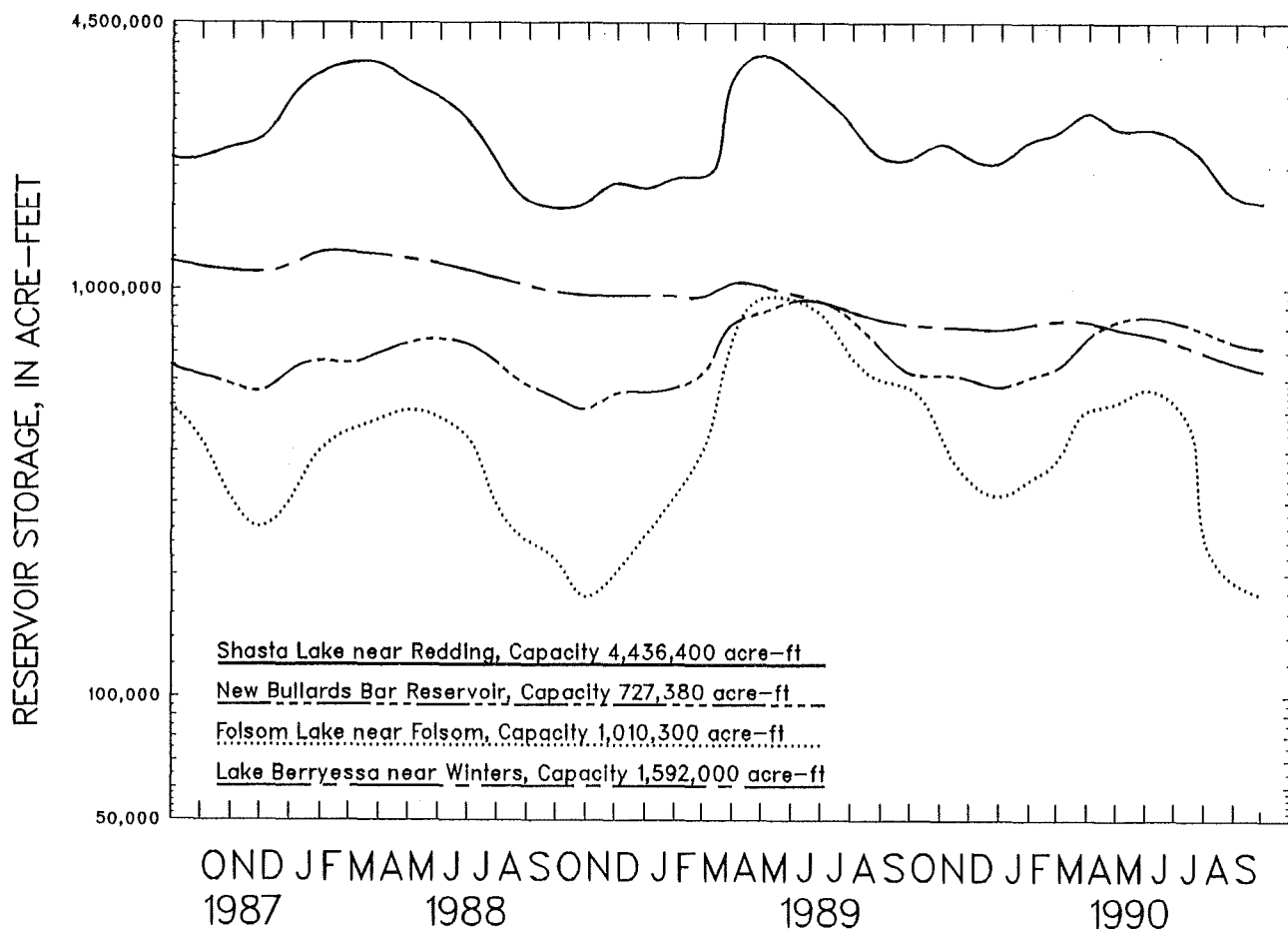


Figure 4. Storage in selected reservoirs, water years 1987-90.

Water Quality

Water samples collected at the three NASQAN stations reported in this volume were analyzed for water-quality constituents. Median dissolved-solids concentrations increased from the previous year. The monthly mean dissolved-solids concentrations during water year 1990 are compared with long-term dissolved-solids concentrations at two selected stations in figure 5. No chemical-constituent concentrations exceeded water-quality criteria recommended by the U.S. Environmental Protection Agency.

10356500 Susan River at Susanville, CA

11447650 Sacramento River at Freeport, CA

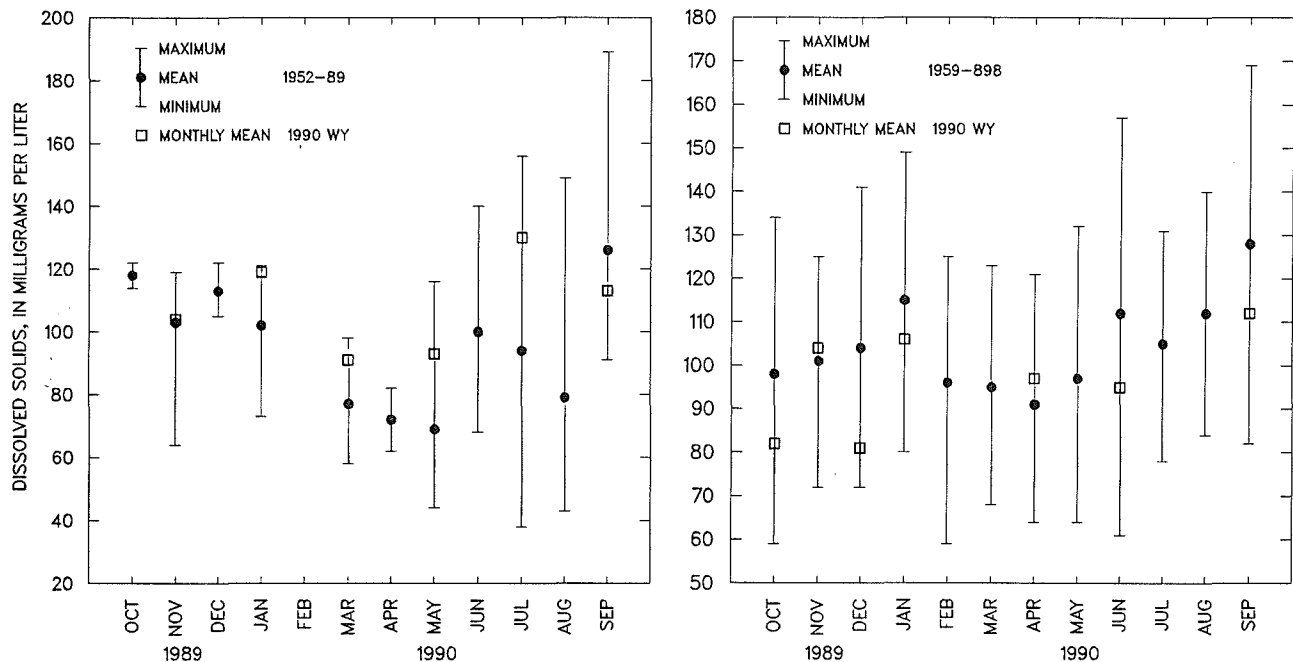


Figure 5. Comparison of monthly mean dissolved-solids concentrations during water year 1990 with long-term dissolved-solids concentrations at two selected stations.

The largest densities of fecal-coliform (100 colonies per 100 milliliters) and fecal-streptococcus bacteria (460 colonies per 100 milliliters) were in water samples from the Susan River at Susanville (station 10356500), and the Sacramento River at Freeport (station 11447650), respectively. These bacterial densities were substantially less than those measured in 1989.

Sediment

Suspended-sediment discharge and concentrations were monitored daily at two stations and periodically at two stations in the area included in this volume. The variation in precipitation, drainage-basin characteristics, and stream regulation in northern California resulted in significant differences in sediment-discharge rates and concentrations at the sampled streams.

Sediment discharge was significantly below normal during the 1990 water year, as indicated by comparison with the 1968-89 mean sediment discharge at the two long-term daily stations. Annual sediment discharge was 19 percent of the mean for the Feather River near Gridley (station 11407150) and 16 percent for the Sacramento River at Freeport (station 11447650).

Annual sediment discharge at the two daily stations ranged from 17,900 tons for the Feather River near Gridley to 341,000 tons for the Sacramento River at Freeport.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 56 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped drainage basins nationwide. The data provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 408 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 that the data may be used for, (2) to describe the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) to detect changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) to provide a nationally consistent data base useful for water-quality assessment and hydrologic research.

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1990 water year that began October 1, 1989, and ended September 30, 1990. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and contents data for lakes and reservoirs, and water-quality data for surface water. 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 streamsite data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey 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 regular surface-water stations and the "latitude-longitude" system is used for surface-water stations in California where only miscellaneous measurements are made.

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports has been 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.

The station-identification number is assigned according to downstream order. 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 eight-digit number for each station such as 11396310, which appears just to the left of the station name, includes the two-digit part number "11" plus the six-digit downstream-order number "396310." The part number designates the major river basin; for example, part "11" is the Pacific Slope Basins in California.

Latitude-Longitude System

The identification numbers for miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the other sites within a 1-second grid. This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description (fig. 6).

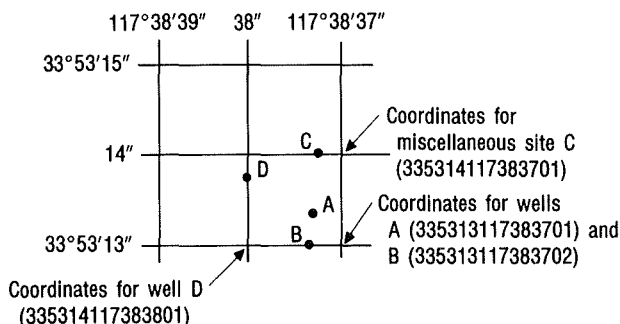


Figure 6. System for numbering miscellaneous sites (latitude and longitude).

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 and reservoir contents, similarly, are those for which stage or contents 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, but need not be. 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. Location of all complete-record stations for which data are given in this report are shown, by county, in figures 7 through 27.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships 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 relationship between stage and lake contents. 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 U.S. Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in U.S. Geological Survey Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations (TWRI), 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 are prepared for any stage within the range of the measurements. If it is necessary to define extremes of discharge outside the range of 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-dam or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or 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 determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This 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 or observations, and records for other stations in the same or nearby basins for comparable periods.

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.

In computing records of lake or reservoir contents, it is necessary to have available surveys, curves, or tables defining the relation of stage and contents. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relation. When this is done, the contents computed may become increasingly in error as time increases since the last survey. Discharges over lake or reservoir spillways are computed from stage-discharge relations, in the same manner as other stream discharges are computed.

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."

Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; 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 mileages, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

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 that was in operation at a time when the present station was not, and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later 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 published is given.

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 record 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 statement 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, to conditions that affect natural flow at the station, and, possibly, to other pertinent items. 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 U.S. Geological Survey by a cooperating organization are identified.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations with at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included 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 U.S. Geological Survey.

EXTREMES FOR CURRENT YEAR.--Extremes given are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

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

Occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possible, 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 to determine if the published records were revised after the station was discontinued. If the data 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 storage-capacity table when daily contents are given.

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

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 the 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 (ft^3/s) for values less than $1 \text{ ft}^3/\text{s}$, to the nearest tenth between 1.0 and $10 \text{ ft}^3/\text{s}$, to whole numbers between 10 and $1,000 \text{ ft}^3/\text{s}$, and to three significant figures for more than $1,000 \text{ ft}^3/\text{s}$. 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 mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the measured discharge.

Other Records Available

The National Water Data Exchange (NAWDEx), U.S. Geological Survey, Reston, VA 22092, maintains an index of sites as well as an index of records of discharge collected by other agencies but not published by the U.S. Geological Survey. 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 measurement notes, gage-height records, temperature measurements, and rating tables are on file in the California 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 obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve various 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 one 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.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 7 through 27.

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.

Onsite Measurements and Sample Collection

In obtaining water-quality data, a major concern is the assurance 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, are made onsite when samples are taken. To assure that measurements made in the laboratory also represent the in-situ water, carefully prescribed procedures are 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 "Techniques of Water-Resources Investigations," Book 1, Chapter D2; Book 3, Chapter C2; Book 5, Chapters A1, A3, and A4. All these references are listed on page 21 of this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the California District office.

One sample can adequately define 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 (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative value 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.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum and minimum values for each constituent measured and are based on 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 California District office.

Water Temperature

Water temperatures are measured at 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, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

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 discharges 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 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 observation, 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 suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Cross-Sectional Data

Cross-sectional surveys of water temperature, pH, specific conductance, dissolved oxygen, and suspended sediment are done at all NASQAN and Hydrologic Bench-mark stations during various seasons and surface-water discharges. Documentation of cross-section variation of water quality is essential in order to determine how many samples in a cross section are necessary to ensure a representative composite sample.

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 U.S. Geological Survey's Natural Water-Quality Laboratory located in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in Techniques of Water-Resources Investigations, Book 5, Chapter C1; methods used by the laboratories are given in Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters 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 other data 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 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 individual parameters.

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 U.S. Geological Survey 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 water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to ensure the most recent updates.

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.

ACCESS TO WATSTORE DATA

The National Water Data STorage and Retrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide various useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's District offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, VA 22092

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report are defined below. See the table for converting inch-pound 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.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

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 a 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; others perform an essential role in nature in the recycling of materials, for example, decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35 °C. For the membrane filter method, these bacteria are defined as the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35 °C ± 0.5 °C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milligrams per liter of sample.

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. For the membrane filter method, they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5 °C ± 0.2 °C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milligrams per liter of sample.

Fecal-streptococcal bacteria are bacteria found 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. For the membrane filter method they are defined as all the organisms which produce red or pink colonies within 48 hours at $35^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ on KF streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milligrams per liter of sample.

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

Benthic organisms (invertebrates) are the group of animals living in or on the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by micro-organisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3) and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 105°C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cell volume determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell numbers of algae are frequently used in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements on cell dimensions (that is, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (that is, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } 4/3 \pi r^3 \quad \text{cone } 1/3 \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

From cell volume, total algal biomass expressed as biovolume ($\mu\text{m}^3/\text{mL}$) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes over all species.

Cells per volume (cells/volume) refers to the number of cells of any organism that are counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually in milliliters (mL) or liters (L).

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common pigments in plants.

Color unit is produced by 1 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 or to prevent the intrusion of saltwater.

Cubic foot per second (ft^3/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 (cfs.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, or about 646,000 gallons or 2,445 cubic meters.

Discharge is the volume of water (or more broadly, total 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.

Dissolved refers to 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. It is recognized that certain kinds of samples cannot be filtered; to provide for this, procedures that are considered equivalent to filtering through a 0.45-micrometer membrane filter will be identified and announced at a later date.

Dissolved-solids concentration of water is determined either analytically or 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.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = \sum_{i=1}^s \frac{n_i}{n} \log_2 \frac{n}{n_i}$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the samples are the same; to some positive number, when some or all the organisms in the sample are different.

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 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 body of impounded surface water, together with all tributary surface streams and bodies of impounded surface water.

Gage datum is the elevation of the zero point of the reference gage from which gage height is determined as compared to the National Geodetic Vertical Datum of 1929. This elevation is established by a system of levels from known bench marks or by approximation from topographic maps.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more 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 that is required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate (CaCO_3).

Hydrologic Bench-Mark Network is a network of 56 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

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.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation

$$I = I_0 e^{-\lambda L}$$

where I_0 is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_0}$$

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that are usually arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This development process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-pupa-adult or egg-nymph-adult.

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 (UG/G, $\mu\text{g/g}$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter (UG/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 1 milligram per liter.

Milligrams per liter (MG/L, 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 milligrams per liter and is based on the mass of 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 (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 408 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 that the data may be used for, (2) to describe the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) to detect changes in trends with time in the pattern occurrence of water-quality characteristics, and (4) to provide a nationally consistent data base useful for water-quality assessment and hydrologic research.

Nekton are the consumers in the aquatic environment and consist of large free-swimming organisms that are capable of sustained, directed mobility.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area of the habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter code is a five-digit number used in the U.S. Geological Survey 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 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 a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in 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 recommendations 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..... | 0.004-0.062 | Sedimentation |
| Sand..... | 0.062-2.0 | 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 material 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 or percent of total 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, weight, or volume.

Periphyton is the assemblage of micro-organisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, the periphyton also include bacteria, fungi, protozoa, rotifers, and other small organisms. Periphyton are useful indicators of water quality.

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.

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7 are termed "acidic," and solutions with a pH greater than 7 are termed "basic." Solutions with a pH of 7 are neutral. The presence and concentration of many dissolved chemical constituents found in water are, in part, influenced by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms are also influenced, in part, by the hydrogen-ion activity of water.

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

Plankton are suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton compose the plant part of the plankton. They are usually microscopic, and their movement is subject to water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials into the surrounding water, the phytoplankton have a profound effect on the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

Blue-green algae are phytoplankton organisms having a blue pigment in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

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.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms, chiefly green plants. The rate of primary production is estimated by measuring the amount of carbon assimilated by plants (carbon method) or the amount of oxygen released (oxygen method).

Milligrams of carbon per area or volume per unit time [$\text{mg C}/(\text{m}^2/\text{time})$ for periphyton and macrophytes and $\text{mg C}/(\text{m}^3/\text{time})$ for phytoplankton] are the units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light- and dark-bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [$\text{mg O}_2/(\text{m}^2/\text{time})$ for periphyton and macrophytes and $\text{mg O}_2/(\text{m}^3/\text{time})$ for phytoplankton] are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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 readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment; 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.

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 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.

Bedload is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bedload is considered to consist of particles in transit within 0.25 ft (0.076 m) of the streambed.

Bedload discharge (tons per day) is the quantity of sediment, as measured by dry weight, that moves past a section as bedload in a given time.

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).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour period.

Suspended-sediment discharge (tons per day) is the rate at which dry weight 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 by multiplying discharge times milligrams per liter times 0.0027.

Suspended-sediment load (tons per day) is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Total-sediment discharge or total-sediment load (tons per day) is the sum of suspended-sediment discharge and the bedload discharge. It is the total quantity of sediment, as measured by dry mass, that passes a section in a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

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 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 dissolved-solids concentration in 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." Streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring emerged or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic-organism collection and plexiglass strips for periphyton collection.

Surface area of a lake is the area, in square miles or acres, outlined on the latest U.S. Geological Survey topographic map as the boundary of the lake and measured by a planimeter. In localities not covered by topographic maps, the areas are computed from the best maps available. Areas shown are for the lake stage at the time the map was made.

Surficial bed material is the part (upper 0.1 to 0.2 ft or 0.03 to 0.06 m) of the bed material that is sampled by using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) the material retained on a 0.45-micrometer filter.

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; 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."

Suspended--ContinuedSuspended, total--Continued

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.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom.....Animal
Phylum.....Arthropoda
Class.....Insecta
Order.....Ephemeroptera
Family.....Ephemeridae
Genus.....Hexagenia
Species.....Hexagenia limbata

Thermograph is a thermometer that continuously and automatically records, on a chart, the water temperature of a stream. "Temperature recorder" is the term used to indicate the presence of a thermograph or a digital mechanism that records water temperature in a digital format on punched paper tape.

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 in milligrams per liter by 0.00136.

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

Total load (tons) is the total amount of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the milligrams per liter 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; 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.

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 the dissolved and suspended phases of the sample. A knowledge of the expected form 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 sediment mixture and that the analytical method determines all the constituent in the sample.)

Turbidity of a sample is the reduction of transparency due to the presence of particulate matter. In this report it is expressed in Nephelometric turbidity units (NTU), obtained from the Nephelometric method for turbidity determination which measures the intensity of light scattered by suspended particles at 90° from the path of incident light source.

Water year in U.S. Geological Survey 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, 1990, is called the "1990 water year."

WDR is used as an abbreviation for "Water-Data Reports" in the summary REVISIONS paragraph to refer to previously published State annual basic-data reports.

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.

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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, Building 810, Denver, CO 80225. Prepayment is required. Remittance should be sent by check or money order payable to U.S. Geological Survey, Department of the Interior. 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.
- 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. 1990. 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 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.
- 3-A5. Measurement of peak discharge at dams by indirect methods, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.
- 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.
- 3-A8. Discharge measurements at gaging stations, by T.J. Buchanan and W.P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. Measurement of time of travel and dispersion in streams by dye tracing, by E.F. Hubbard, F.A. Kilpatrick, L.A. Martens, and J.F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 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. 1990. 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.
- 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-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.
- 4-A1. Some statistical tools in hydrology, by H.C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. Frequency curves, by H.C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.
- 4-B1. Low-flow investigations by H.C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. Storage analyses for water supply, by H.C. Riggs and C.H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. Regional analyses of streamflow characteristics, by H.C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.
- 4-D1. Computation of rate and volume of stream depletion by wells, by C.T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.
- 5-A1. Methods for determination of inorganic substances in water and fluvial sediments, edited by M.W. Skougstad and others: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.
- 5-A2. Determination of minor elements in water by emission spectroscopy, by P.R. Barnett and E.C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. Methods for analysis of organic substances in water, by D.F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.
- 5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, edited by P.E. Greeson, T.A. Ehlke, G.A. Irwin, B.W. Liem, and K.V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 322 pages.
- 5-A5. Methods for determination of radioactive substances in water and fluvial sediments, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L.C. Friedman, and D.E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.
- 5-C1. Laboratory theory and methods for sediment analysis, by H.P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.
- 6-A1. A modular three-dimensional finite-difference ground-water flow model, by M.G. McDonald and A.W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.
- 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.
- 7-C3. A model for simulation of flow in singular and interconnected channels by R.W. Shaffranek, R.A. Baltzer, and D.E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.
- 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.

DISCONTINUED GAGING STATIONS

The following continuous record streamflow stations in California have been discontinued or converted to partial-record stations. Daily records were collected and are stored in WATSTORE for the period of record shown for each station

| Station No. | Station name | Drainage area (mi ²) | Period of record |
|-------------|---|----------------------------------|---|
| 10354700 | MILL CREEK AT MILFORD | 2.26 | 1963-69 |
| 10355000 | BAXTER CREEK NEAR JANESVILLE | 19.6 | 1913-16, 1918-19 |
| 10355500 | SCHLOSS CREEK AT JANESVILLE | 1.05 | 1915, 1918-19 |
| 10357000 | GOLD RUN CREEK NEAR SUSANVILLE | 15.1 | 1915-16 |
| 10358470 | WILLOW CREEK TRIBUTARY NEAR SUSANVILLE | 3.08 | 1966-71 |
| 10359100 | SHAFFER CREEK NEAR LITCHFIELD | 5.63 | 1970-73 |
| 10359250 | PINE CREEK NEAR WESTWOOD | 24.8 | 1951-61 |
| 10359300 | PINE CREEK NEAR SUSANVILLE | 226 | 1961-66, 1968, 1970-82 |
| 10359350 | EAGLE LAKE TRIBUTARY NEAR SUSANVILLE | .91 | 1963-65 |
| 10360230 | EAGLE CREEK AT EAGLEVILLE | 6.36 | 1962-64, 1966-68, 1970 |
| 10360900 | BIDWELL CREEK BELOW MILL CREEK NEAR, FORT BIDWELL | 25.6 | 1961-82 |
| 10361000 | BIDWELL CREEK AT FORT BIDWELL | -- | 1912, 1918-19 |
| 11341400 | SACRAMENTO RIVER NEAR MOUNT SHASTA | 135 | 1960-87 |
| 11341500 | SACRAMENTO RIVER AT CASTELLA | 256 | 1911-17, 1920-23 |
| 11342500 | SACRAMENTO RIVER AT ANTLER | 460 | 1911, 1920-41 |
| 11343000 | PARKER CREEK NEAR ALTURAS | 80.9 | 1931 |
| 11343500 | NORTH FORK PIT RIVER NEAR ALTURAS | 203 | 1930-32, 1958-67 |
| 11344000 | NORTH FORK PIT RIVER AT ALTURAS | 212 | 1929-31, 1972-85 |
| 11344500 | SOUTH FORK PIT RIVER AT JESS VALLEY | 100 | 1929-31 |
| 11346000 | CROOKS CANYON CREEK NEAR LIKELY | 33.8 | 1929-31 |
| 11346500 | FITZHUGH CREEK NEAR ALTURAS | 36.7 | 1930-31 |
| 11347500 | PINE CREEK NEAR ALTURAS | 23.5 | 1919-31 |
| 11348000 | PIT RIVER AT ALTURAS | 857 | 1929-31 |
| 11348200 | PIT RIVER NEAR ALTURAS | 1,080 | 1966-71 |
| 11349000 | PIT RIVER NEAR LOOKOUT | 1,585 | 1929-31, 1958-71, 1978-80 |
| 11349500 | ASH CREEK AT ASH VALLEY | 136 | 1929-31 |
| 11350500 | ASH CREEK AT ADIN | 258 | 1904-6, 1929-33, 1958-70, 1972-82 |
| 11351000 | WILLOW CREEK NEAR ADIN | -- | 1930-31 |
| 11351500 | WIDOW VALLEY CREEK NEAR LOOKOUT | 27.7 | 1930-31 |
| 11352000 | PIT RIVER NEAR BIEBER | 2,475 | 1904-8, 1922-26, 1929-31, 1952-70, 1972-75 |
| 11352500 | HORSE CREEK AT LITTLE VALLEY, NEAR PITTVILLE | 237 | 1929-31, 1960-67 |
| 11352900 | BEAVER CREEK NEAR HAT CREEK | 23.2 | 1970-73 |
| 11353500 | BEAR CREEK NEAR DANA | 84 | 1921-26 |
| 11353600 | DRY CREEK NEAR DANA | 6.46 | 1967-70 |
| 11353700 | FALL RIVER NEAR DANA | 123 | 1959-67 |
| 11354500 | FALL RIVER AT FALL RIVER MILLS | -- | 1912-13, 1922 |
| 11355000 | PIT RIVER AT FALL RIVER MILLS | 3,651 | 1921-51, 1981 |
| 11356500 | HAT CREEK AT HAWKINS RANCH, NEAR HAT CREEK | 190 | 1912-13 |
| 11357000 | HAT CREEK AT WILCOX RANCH, NEAR CASSEL | 193 | 1922 |
| 11358000 | LOST CREEK NEAR BALD MOUNTAIN | 7.51 | 1930 |
| 11358500 | RISING RIVER NEAR CASSEL | 22.2 | 1912-13, 1921-22 |
| 11359500 | HAT CREEK AT CARBON | 364 | 1922 |
| 11360000 | BURNEY CREEK ABOVE BURNEY | 60.1 | 1922 |
| 11360500 | BURNEY CREEK AT PARK AVENUE, NEAR BURNEY | 94.6 | 1912-13, 1921-22, 1958-64, 1966-75, 1977-80 |
| 11362000 | PIT RIVER AT LINDSAY FLAT | 4,860 | 1923-55 |
| 11363500 | KOSK CREEK NEAR HENDERSON | 54.8 | 1911-13, 1915-16 |
| 11364000 | PIT RIVER ABOVE HATCHET CREEK | 4,819 | 1926-37 |
| 11365500 | SQUAW CREEK ABOVE SHASTA LAKE | 64 | 1945-66 |
| 11366000 | SQUAW CREEK AT YDALPOM | 99.5 | 1912-13 |
| 11366500 | PIT RIVER NEAR YDALPOM | 5,030 | 1911-43 |
| 11367000 | MUD CREEK NEAR MCCLOUD | -- | 1927-32 |
| 11367200 | MCCLOUD RIVER BELOW BIG SPRINGS, NEAR MCCLOUD | 322 | 1956-59 |
| 11367300 | ANGEL CREEK NEAR MCCLOUD | 17.1 | 1955-59 |
| 11367700 | MCCLOUD RIVER ABOVE PANTHER CREEK, NEAR MCCLOUD | 401 | 1955-59 |
| 11368500 | MCCLOUD RIVER NEAR GREGORY | 633 | 1903-88 |
| 11369000 | MCCLOUD RIVER AT BAIRD | 673 | 1911-43 |
| 11369500 | SACRAMENTO RIVER AT KENNETT | 6,355 | 1926-42 |
| 11371500 | CLEAR CREEK NEAR SHASTA | 172 | 1912-13 |
| 11372050 | CHURN CREEK NEAR REDDING | 9.35 | 1961-66 |
| 11372060 | CHURN CREEK BELOW NEWTON CREEK, NEAR REDDING | 11.9 | 1966-72 |
| 11372200 | SOUTH COW CREEK NEAR MILLVILLE | 77.3 | 1957-72 |
| 11372700 | CLOVER CREEK NEAR OAK RUN | 19 | 1957-59 |

DISCONTINUED GAGING STATIONS--Continued

| Station No. | Station name | Drainage area (mi ²) | Period of record |
|-------------|--|----------------------------------|------------------------------------|
| 11373200 | OAK RUN CREEK NEAR OAK RUN | 11.0 | 1957-62, 1964-66 |
| 11373300 | LITTLE COW CREEK NEAR INGOT | 60.8 | 1958-65 |
| 11374060 | SHINGLE CREEK NEAR SHINGLETOWN | 3.25 | 1964-67 |
| 11374100 | BEAR CREEK NEAR MILLVILLE | 75.7 | 1960-67 |
| 11374400 | MIDDLE FORK COTTONWOOD CREEK NEAR ONO | 244 | 1957-75 |
| 11375500 | NORTH FORK COTTONWOOD CREEK AT ONO | 58.8 | 1908-13 |
| 11375700 | NORTH FORK COTTONWOOD CREEK NEAR IGO | 88.7 | 1957-80 |
| 11375810 | COTTONWOOD CREEK NEAR OLINDA | 395 | 1971-86 |
| 11375815 | COTTONWOOD CREEK ABOVE SOUTH FORK, NEAR COTTONWOOD | 478 | 1982-85 |
| 11375820 | SOUTH FORK COTTONWOOD CREEK NEAR COTTONWOOD | 217 | 1963-78 |
| 11375870 | SOUTH FORK COTTONWOOD CREEK NEAR OLINDA | 371 | 1977-86 |
| 11375900 | SOUTH FORK COTTONWOOD CREEK AT EVERGREEN ROAD, NEAR COTTONWOOD | 397 | 1982-85 |
| 11376038 | MANZANITA CREEK AT PARK BOUNDARY, NEAR MANZANITA LAKE | 11.6 | 1979-81 |
| 11376450 | COLEMAN CANAL ABOVE COLEMAN FOREBAY, NEAR COTTONWOOD | -- | 1979-85 |
| 11376490 | BATTLE CREEK ABOVE COLEMAN POWERHOUSE, NEAR COTTONWOOD | 355 | 1979 |
| 11376500 | BATTLE CREEK NEAR COTTONWOOD | 356 | 1941, 1961 |
| 11377200 | SACRAMENTO RIVER AT BEND BRIDGE | 8,900 | 1968-70 |
| 11377500 | PAYNES CREEK NEAR RED BLUFF | 92.8 | 1950-66 |
| 11378500 | SACRAMENTO RIVER AT RED BLUFF | 9,077 | 1957-66 |
| 11378800 | RED BANK CREEK NEAR RED BLUFF | 89.6 | 1960-82 |
| 11378860 | RED BANK CREEK AT RAWSON ROAD BRIDGE, NEAR RED BLUFF | 109 | 1965-67 |
| 11379000 | ANTELOPE CREEK NEAR RED BLUFF | 123 | 1941-82 |
| 11380000 | ELDER CREEK NEAR HENLEYVILLE | 130 | 1931-41 |
| 11380500 | ELDER CREEK AT GERBER | 136 | 1941-69, 1977-79 |
| 11381000 | MILL CREEK NEAR MINERAL | 21.2 | 1929-32 |
| 11381595 | MILL CREEK AT SHERWOOD BRIDGE, NEAR LOS MOLINOS | 13.3 | 1977-78 |
| 11381990 | THOMES CREEK TRIBUTARY AT PASKENTA | .65 | 1968-70 |
| 11382090 | THOMES CREEK AT DAWSON ROAD BRIDGE, NEAR RICHFIELD | 28.4 | 1978-80 |
| 11382500 | DEER CREEK AT DEER CREEK MEADOWS | 50.5 | 1929-32 |
| 11382550 | DEER CREEK BELOW SLATE CREEK, NEAR DEER CREEK MEADOWS | 69.4 | 1961-70 |
| 11383000 | DEER CREEK AT POLK SPRINGS | 134 | 1929-31 |
| 11383600 | DEER CREEK AT RED BRIDGE, NEAR VINA | 210 | 1977 |
| 11383730 | SACRAMENTO RIVER AT VINA BRIDGE, NEAR CORNING | -- | 1945-78, 1980 |
| 11383800 | SACRAMENTO RIVER NEAR HAMILTON CITY | 10,833 | 1945-80 |
| 11384000 | BIG CHICO CREEK NEAR CHICO | 72.4 | 1931-86 |
| 11384340 | MUD CREEK AT COHASSET ROAD, NEAR CHICO | 21.9 | 1968-69 |
| 11384350 | MUD CREEK NEAR CHICO | 48.9 | 1966-74 |
| 11384500 | STONY CREEK NEAR STONYFORD | 102 | 1914-15, 1919-34 |
| 11384600 | LITTLE STONY CREEK ABOVE EAST PARK RESERVOIR, NEAR LODOGA | 45.6 | 1967-82 |
| 11385000 | LITTLE STONY CREEK NEAR LODOGA | 98.2 | 1909-34 |
| 11385500 | STONY CREEK ABOVE STONY GORGE RESERVOIR | 281 | 1934-41 |
| 11386500 | GRINDSTONE CREEK NEAR ELK CREEK | 157 | 1936-37, 1940, 1966-72 |
| 11387000 | STONY CREEK NEAR FRUTO | 597 | 1901-12, 1961-78 |
| 11387200 | STONY CREEK ABOVE BLACK BUTTE LAKE, NEAR ORLAND | 1.23 | 1909, 1981-83 |
| 11387500 | STONY CREEK NEAR ORLAND | 635 | 1920-34 |
| 11387800 | NORTH FORK STONY CREEK NEAR NEWVILLE | 63.4 | 1963-73 |
| 11387990 | SOUTH DIVERSION CANAL NEAR ORLAND | -- | 1955-90 |
| 11388000 | STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND | 738 | 1955-90 |
| 11388500 | STONY CREEK NEAR HAMILTON CITY | 773 | 1941-73 |
| 11389700 | BUTTE CREEK AT BUTTE MEADOWS | 44.4 | 1960-74 |
| 11389950 | LITTLE BUTTE CREEK AT MAGALIA | 11.4 | 1969-85 |
| 11390010 | BUTTE CREEK NEAR DURHAM | -- | 1959-73 |
| 11390200 | GOLD RUN CREEK TRIBUTARY NEAR NELSON | 1.31 | 1961 |
| 11390210 | CHEROKEE CANAL NEAR NELSON | -- | 1970-74 |
| 11390655 | SOUTH FORK WILLOW CREEK NEAR FRUTO | 38.9 | 1963-78 |
| 11390660 | WALKER CREEK AT ARTOIS | 60.4 | 1965-81 |
| 11390672 | STONE CORRAL CREEK NEAR SITES | 38.2 | 1958-64, 1966-71, 1973-85 |
| 11391000 | SACRAMENTO RIVER AT KNIGHTS LANDING | 14,535 | 1941-80 |
| 11391400 | LITTLE LAST CHANCE CREEK BELOW FRENCHMAN DAM, NEAR CHILCOOT | 81.1 | 1959-80 |
| 11391460 | BERRY CREEK NEAR SATTLEY | 7.54 | 1973-81 |
| 11391500 | BIG GRIZZLY CREEK AT GRIZZLY VALLEY DAM, NEAR PORTOLA | 44 | 1926-32, 1951-53, 1955-67, 1969-80 |
| 11392100 | MIDDLE FORK FEATHER RIVER NEAR PORTOLA | 586 | 1969-76, 1978-80 |
| 11392500 | MIDDLE FORK FEATHER RIVER NEAR CLIO | 686 | 1926-79 |
| 11393000 | MIDDLE FORK FEATHER RIVER AT SLOAT | 775 | 1911-27 |
| 11393500 | MIDDLE FORK FEATHER RIVER BELOW SLOAT | 819 | 1941-62 |
| 11394000 | MIDDLE FORK FEATHER RIVER NEAR NELSON POINT | 883 | 1924-32 |
| 11394500 | MIDDLE FORK FEATHER RIVER NEAR MERRIMAC | 1,062 | 1952-86 |
| 11394620 | FALL RIVER NEAR FEATHER FALLS | 9.89 | 1963-79 |
| 11394800 | SOUTH FORK FEATHER RIVER ABOVE LITTLE GRASS VALLEY RESERVOIR | 8.09 | 1961-79 |
| 11395300 | LOST CREEK ABOVE SLY CREEK RESERVOIR, NEAR STRAWBERRY VALLEY | 14.1 | 1961-70 |
| 11396300 | SOUTH FORK FEATHER RIVER NEAR FORBESTOWN | 105 | 1958-61 |
| 11396350 | SOUTH FORK FEATHER RIVER AT PONDEROSA DAM | 108 | 1962-87, 1990 |
| 11396400 | SUCKER RUN NEAR FORBESTOWN | 18.7 | 1965-87 |

DISCONTINUED GAGING STATIONS--Continued

| Station No. | Station name | Drainage area (mi ²) | Period of record |
|-------------|--|----------------------------------|---------------------------|
| 11396500 | PALERMO CANAL AT ENTERPRISE | -- | 1912-65 |
| 11397000 | SOUTH FORK FEATHER RIVER AT ENTERPRISE | 132 | 1912-66 |
| 11397500 | FEATHER RIVER AT BIDWELL BAR | 1,341 | 1912-64 |
| 11400000 | BUTT CREEK ABOVE ALMANOR-BUTT CREEK TUNNEL, NEAR PRATTVILLE | 69.0 | 1937-64 |
| 11401000 | BUTT CREEK AT BUTT VALLEY | 81.3 | 1905-21 |
| 11401100 | BUTT CREEK NEAR CARIBOU | 85.5 | 1970, 1976-81 |
| 11401125 | INDIAN CREEK NEAR BOULDER COAST GUARD STATION, NEAR TAYLORSVILLE | 68.6 | 1966-80 |
| 11401150 | RED CLOVER CREEK NEAR GENESEE | 122 | 1959-65 |
| 11401180 | LITTLE GRIZZLY CREEK NEAR GENESEE | 29.6 | 1964-79 |
| 11401200 | INDIAN CREEK NEAR TAYLORSVILLE | 526 | 1958-73, 1975-76, 1979-80 |
| 11401300 | LIGHTS CREEK NEAR TAYLORSVILLE | 57.6 | 1958-62 |
| 11401900 | SPANISH CREEK NEAR QUINCY | 69.1 | 1959-63 |
| 11401940 | MILL CREEK NEAR QUINCY | 6.72 | 1966-71 |
| 11402500 | SPANISH CREEK AT KEDDIE | 194 | 1912-33 |
| 11403000 | EAST BANK OF NORTH FORK FEATHER RIVER NEAR RICH BAR | 1,025 | 1951-61, 1968-82 |
| 11403510 | BUCKS CREEK TUNNEL INLET NEAR STORRIE | -- | 1970, 1976 |
| 11404000 | GRIZZLY CREEK NEAR STORRIE | 5.20 | 1930-44 |
| 11405000 | NORTH FORK FEATHER RIVER AT BIG BEND | 1,965 | 1905-11 |
| 11405300 | WEST BANK FEATHER RIVER NEAR PARADISE | -- | 1958-86 |
| 11405500 | SPRING VALLEY DIVERSION NEAR YANKEE HILL | -- | 1926-52 |
| 11406000 | CONCOW CREEK NEAR YANKEE HILL | 15.1 | 1928-30, 1932-52 |
| 11406500 | WEST BANK FEATHER RIVER NEAR YANKEE HILL | 146 | 1931-63 |
| 11407300 | NORTH HONCUT CREEK NEAR BANGOR | 47.1 | 1961-81 |
| 11407500 | SOUTH HONCUT CREEK NEAR BANGOR | 30.6 | 1951-86 |
| 11407700 | FEATHER RIVER AT YUBA CITY | 3,974 | 1965-84 |
| 11408500 | MIDDLE YUBA RIVER AT MILTON | 39.8 | 1926-34, 1935-64, |
| 11408700 | MIDDLE YUBA RIVER NEAR ALLEGHANY | 96.6 | 1958-66 |
| 11408850 | MIDDLE YUBA RIVER NEAR CAMPTONVILLE | 136 | 1967-89 |
| 11409000 | MIDDLE YUBA RIVER ABOVE OREGON CREEK, NEAR SAN JUAN | 162 | 1941-69 |
| 11409500 | OREGON CREEK NEAR SAN JUAN | 34.4 | 1912-69 |
| 11410000 | MIDDLE YUBA RIVER BELOW OREGON CREEK, NEAR NORTH SAN JUAN | 198 | 1912-41 |
| 11410400 | HAYPRESS CREEK NEAR SIERRA CITY | 18.2 | 1961-66 |
| 11410500 | NORTH YUBA RIVER NEAR SIERRA CITY | 94.7 | 1924-44 |
| 11411000 | DOWNIE RIVER AT DOWNIEVILLE | 72.7 | 1911-26 |
| 11411500 | NORTH YUBA RIVER AT GOODYEARS BAR | 221 | 1911-31 |
| 11412000 | ROCK CREEK AT GOODYEARS BAR | 8.98 | 1911-33 |
| 11412500 | GOODYEARS CREEK AT GOODYEARS BAR | 12.9 | 1911-33 |
| 11413100 | NORTH YUBA RIVER ABOVE SLATE CREEK, NEAR STRAWBERRY VALLEY | 351 | 1968-87 |
| 11413500 | NORTH YUBA RIVER BELOW BULLARDS BAR DAM | 487 | 1941-66 |
| 11413600 | SWEETLAND CREEK NEAR NORTH SAN JUAN | 2.68 | 1969-73 |
| 11413900 | UPPER CASTLE CREEK AT SODA SPRINGS | 3.96 | 1958-63 |
| 11413950 | SOUTH YUBA RIVER TRIBUTARY NEAR SODA SPRINGS | .92 | 1972-73 |
| 11414500 | CANYON CREEK ABOVE JACKSON CREEK | 16.6 | 1926-30 |
| 11415000 | JACKSON CREEK AT MOUTH | 5.45 | 1926-30 |
| 11417000 | SOUTH YUBA RIVER NEAR WASHINGTON | 198 | 1942-53, 1957-72 |
| 11417100 | POORMAN CREEK NEAR WASHINGTON | 23.1 | 1961-71 |
| 11419000 | YUBA RIVER AT SMARTVILLE | 1,200 | 1904-41 |
| 11420000 | DRY CREEK NEAR BROWNSVILLE | 20.4 | 1949-60 |
| 11420500 | DRY CREEK AT VIRGINIA RANCH | 71.3 | 1949-61 |
| 11420700 | DRY CREEK NEAR BROWNS VALLEY | 87.1 | 1964-80 |
| 11421500 | YUBA RIVER AT MARYSVILLE | 1,344 | 1944-57 |
| 11421700 | FEATHER RIVER BELOW SHANGHAI BEND, NEAR OLIVERHURST | 5,334 | 1970-80 |
| 11421720 | BOARDMAN CANAL NEAR EMIGRANT GAP | -- | 1965-86 |
| 11421730 | BEAR RIVER BELOW BOARDMAN DIVERSION DAM, NEAR EMIGRANT GAP | 4.01 | 1979-85 |
| 11423000 | BEAR RIVER NEAR AUBURN | 140 | 1941-67 |
| 11423500 | BEAR RIVER AT VAN TRENT | 265 | 1905-27 |
| 11424500 | DRY CREEK NEAR WHEATLAND | 99.9 | 1947-62 |
| 11424600 | WELLMAN CREEK NEAR SMARTVILLE | .59 | 1968-73 |
| 11425000 | FEATHER RIVER AT NICOLAUS | 5,921 | 1942, 1944-83, 1985 |
| 11426110 | ONION CREEK TRIBUTARY NO. 3 NEAR SODA SPRINGS | .65 | 1959-64, 1966-67 |
| 11426120 | ONION CREEK TRIBUTARY NO. 5A NEAR SODA SPRINGS | .39 | 1959-64, 1966 |
| 11426130 | ONION CREEK TRIBUTARY NO. 2 NEAR SODA SPRINGS | .48 | 1958-64, 1966-67 |
| 11426140 | ONION CREEK TRIBUTARY NO. 1 NEAR SODA SPRINGS | .19 | 1958-64, 1966-67 |
| 11426150 | ONION CREEK NEAR SODA SPRINGS | 3.58 | 1960-79 |
| 11426160 | ONION CREEK TRIBUTARY NO. 7 NEAR SODA SPRINGS | .80 | 1959-64 |
| 11426200 | NORTH FORK FORBES CREEK NEAR DUTCH FLAT | 1.68 | 1956-85 |
| 11426400 | NORTH SHIRTTAIL CREEK NEAR DUTCH FLAT | 9.10 | 1957-85 |
| 11426500 | NORTH FORK AMERICAN RIVER NEAR COLFAX | 308 | 1912-41 |
| 11428000 | RUBICON RIVER AT RUBICON SPRINGS, NEAR MEEKS BAY | 31.4 | 1910-13, 1957-86 |
| 11429000 | RUBICON RIVER AT SAWMILL, NEAR QUINTETTE | 16.1 | 1910-14 |
| 11429800 | ROBBS PEAK TUNNEL NEAR RIVERTON | -- | 1963-67 |
| 11430500 | SOUTH FORK RUBICON RIVER AT MOUTH, NEAR GEORGETOWN | 56.9 | 1956-62 |
| 11431000 | RUBICON RIVER NEAR GEORGETOWN | 195 | 1910-14, 1944-65 |
| 11431500 | GEORGETOWN DIVIDE DAM ABOVE PILOT CREEK, NEAR GEORGETOWN | -- | 1951-62 |

DISCONTINUED GAGING STATIONS--Continued

| Station No. | Station name | Drainage area (mi ²) | Period of record |
|-------------|---|----------------------------------|------------------------------------|
| 11432000 | GEORGETOWN DIVIDE DAM NEAR GEORGETOWN | -- | 1947-60 |
| 11432500 | PILOT CREEK NEAR GEORGETOWN | 15.1 | 1946-60 |
| 11433200 | RUBICON RIVER NEAR FORESTHILL | 315 | 1959-84 |
| 11433260 | NORTH FORK OF MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL | 88.9 | 1965-85 |
| 11433400 | CANYON CREEK NEAR GEORGETOWN | 12.7 | 1966-79 |
| 11433420 | MAINE BAR CANYON CREEK NEAR GREENWOOD | .75 | 1973-86 |
| 11433500 | MIDDLE FORK AMERICAN RIVER NEAR AUBURN | 614 | 1912-86 |
| 11433800 | NORTH FORK AMERICAN RIVER BELOW AUBURN DAMSITE, NEAR AUBURN | 973 | 1972-86 |
| 11434000 | NORTH FORK AMERICAN RIVER AT RATTLESNAKE BRIDGE | 996 | 1931-37, 1939-55 |
| 11435000 | PYRAMID CREEK NEAR PHILLIPS | 3.73 | 1961-64, 1966-70 |
| 11435500 | SOUTH FORK AMERICAN RIVER AT KYBURZ | 73.2 | 1924 |
| 11438000 | SILVER FORK OF SOUTH FORK AMERICAN RIVER NEAR KYBURZ | 107 | 1925-44 |
| 11439950 | ALDER CREEK PIPELINE DIVERSION NEAR WHITEHALL | -- | 1976-82 |
| 11440000 | ALDER CREEK NEAR WHITEHALL | 22.1 | 1923-81 |
| 11440500 | PLUM CREEK NEAR RIVERTON | 7.32 | 1923-39 |
| 11440850 | PICKET PEN CREEK NEAR KYBURZ | .49 | 1964-68 |
| 11441000 | SILVER CREEK AT UNION VALLEY | 83.0 | 1925-60 |
| 11442000 | SILVER CREEK NEAR PLACERVILLE | 177 | 1922-61 |
| 11443000 | AMERICAN RIVER FLUME NEAR CAMINO | -- | 1923-57 |
| 11445000 | SOUTH FORK AMERICAN RIVER AT COLOMA | 631 | 1930-41 |
| 11446000 | WEBER CREEK NEAR SALMON FALLS | 97.6 | 1943-59 |
| 11447000 | AMERICAN RIVER AT SACRAMENTO | 1,936 | 1944-59 |
| 11447030 | STRONG RANCH SLOUGH AT SACRAMENTO | 5.02 | 1972-75 |
| 11447270 | MINERS RAVINE NEAR LOOMIS | 4.00 | 1978-81 |
| 11447300 | DRY CREEK TRIBUTARY NEAR ROSEVILLE | .39 | 1964-67 |
| 11447360 | ARCADE CREEK NEAR DEL PASO HEIGHTS | 31.4 | 1963-78 |
| 11448500 | ADOBE CREEK NEAR KELSEYVILLE | 6.36 | 1955-78 |
| 11448900 | HIGHLAND CREEK ABOVE HIGHLAND CREEK DAM | 11.9 | 1963-78 |
| 11449000 | HIGHLAND CREEK NEAR KELSEYVILLE | 12.6 | 1955-62 |
| 11449010 | HIGHLAND CREEK BELOW HIGHLAND CREEK DAM, NEAR KELSEYVILLE | 14.2 | 1966-77 |
| 11449100 | SCOTT'S CREEK NEAR LAKEPORT | 55.2 | 1961-80 |
| 11449350 | BURNS VALLEY CREEK NEAR CLEARLAKE HIGHLANDS | 4.37 | 1963-69 |
| 11449450 | COPSEY CREEK NEAR LOWER LAKE | 13.2 | 1961-68 |
| 11449460 | SEIGLER CREEK AT LOWER LAKE | 12.5 | 1966-73 |
| 11450500 | CACHE CREEK AT LOWER LAKE | 488 | 1901-15 |
| 11451500 | NORTH FORK CACHE CREEK NEAR LOWER LAKE | 197 | 1931-81 |
| 11451700 | BEAR CREEK TRIBUTARY NEAR WILBUR SPRINGS | 4.49 | 1962-63 |
| 11451720 | BEAR CREEK NEAR RUMSEY | 100 | 1959-80 |
| 11451760 | CACHE CREEK ABOVE RUMSEY | 955 | 1961-62, 1965-73, 1976-82, 1984-86 |
| 11451950 | CACHE CREEK NEAR BROOKS | 1,041 | 1983-86 |
| 11452000 | CACHE CREEK NEAR CAPAY | 1,044 | 1943-77 |
| 11453170 | DRY CREEK ABOVE APPLETREE CREEK, NEAR MIDDLETOWN | .83 | 1978 |
| 11453200 | DRY CREEK NEAR MIDDLETOWN | 8.35 | 1960-72, 1979-80 |
| 11453500 | PUTAH CREEK NEAR GUENOC | 113 | 1905-6, 1931-76 |
| 11453550 | HUNTING CREEK NEAR KNOXVILLE | 37.8 | 1969-76 |
| 11453570 | ADAMS CREEK NEAR KNOXVILLE | 7.42 | 1970-76 |
| 11453580 | NEVADA CREEK NEAR KNOXVILLE | 7.06 | 1969-76 |
| 11453600 | POPE CREEK NEAR POPE VALLEY | 78.3 | 1961-80 |
| 11453700 | CAPELL CREEK TRIBUTARY NEAR WOODEN VALLEY | .87 | 1962-65 |
| 11454500 | PUTAH CREEK AT WINTERS | 635 | 1906-31 |
| 11455000 | PUTAH CREEK NEAR DAVIS | 638 | 1949-63 |

DISCONTINUED LAKES AND RESERVOIRS

The following continuous-record lake stations in California have been discontinued. Daily records were collected and are stored in WATSTORE for the period of record shown for each location.

| Station No. | Station name | Drainage area (mi ²) | Period of record |
|-------------|--|----------------------------------|------------------|
| 11362650 | PIT NO. 5 POWERPLANT FOREBAY NEAR BIG BEND | -- | 1986-89 |
| 11387995 | BLACK BUTTE LAKE NEAR ORLAND | 738 | 1964-90 |
| 11403300 | THREE LAKES RESERVOIR NEAR BUCKS LAKE | 1.0 | 1984-87 |
| 11423700 | NEW CAMP FAR WEST RESERVOIR NEAR WHEATLAND | 283 | 1967-76, 1977-83 |
| 11425300 | HALSEY FOREBAY NEAR AUBURN | -- | 1980-86 |
| 11425320 | LAKE ARTHUR NEAR AUBURN | 0.86 | 1982-83 |
| 11425330 | HALSEY AFTERBAY NEAR AUBURN | -- | 1980-85 |

DISCONTINUED WATER-QUALITY STATIONS

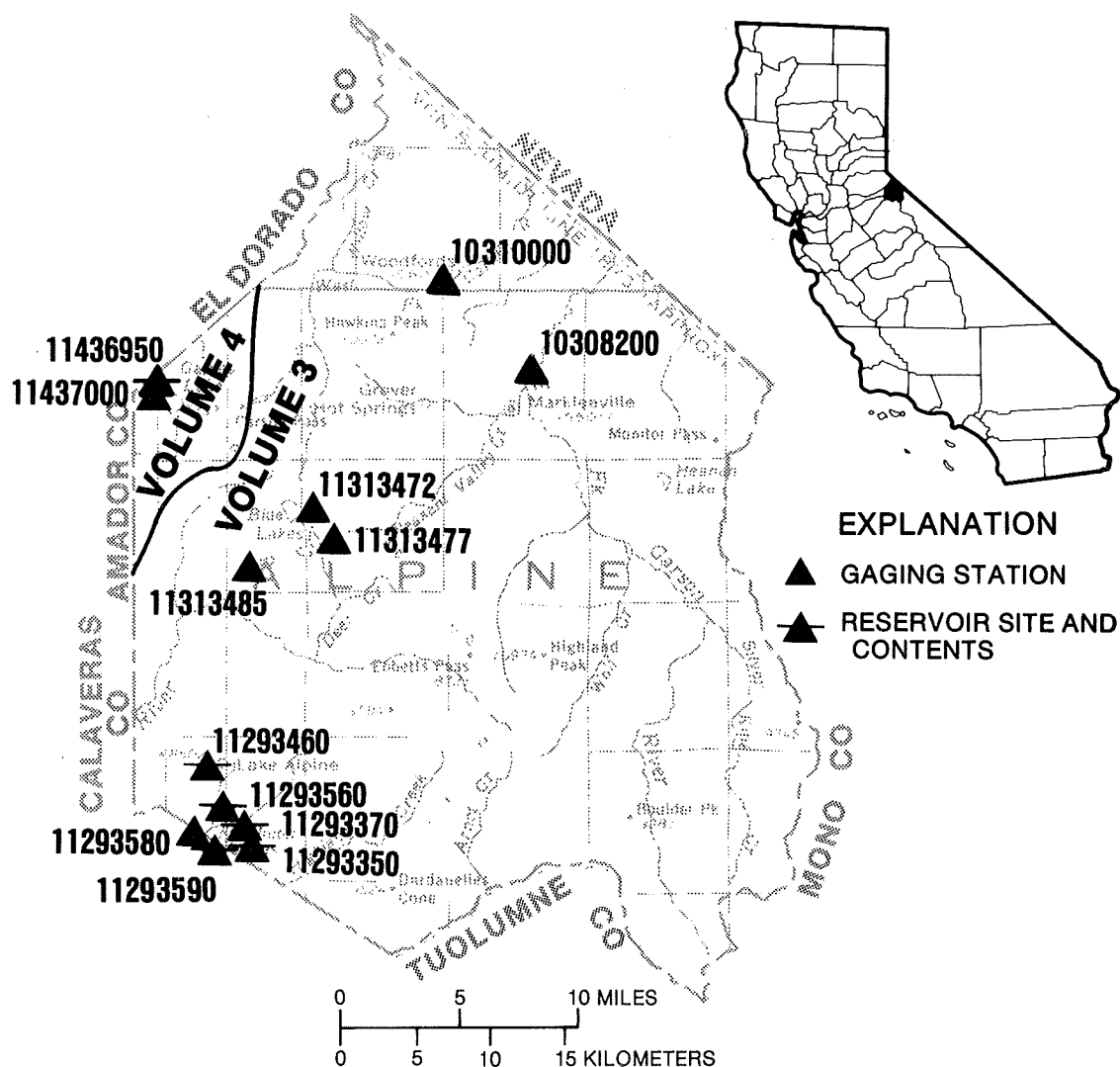
The following continuous water-quality stations in California have been discontinued. Daily records were collected and are stored in WATSTORE for the period of record shown for each location.

| Station No. | Station name | Drainage area (mi ²) | Type of record | Period of record |
|-------------|---|----------------------------------|----------------|---------------------------|
| 11341400 | SACRAMENTO RIVER NEAR MT SHASTA | 135 | T | 1966-71, 1973-87 |
| 11342000 | SACRAMENTO RIVER AT DELTA | 425 | T | 1962-79 |
| 11348500 | PIT RIVER NEAR CANBY | 1,431 | T | 1965-71, 1973-79 |
| 11365000 | PIT RIVER NEAR MONTGOMERY CREEK | 4,952 | T | 1958-59 |
| 11368000 | MCCLOUD RIVER ABOVE SHASTA LAKE | 604 | T | 1958-59 |
| 11370500 | SACRAMENTO RIVER AT KESWICK | 6,648 | C | 1981-84 |
| 11371000 | CLEAR CREEK AT FRENCH GULCH | 115 | S | 1963-64 |
| 11372000 | CLEAR CREEK NEAR IGO | 228 | T | 1965-79 |
| 11372200 | SOUTH COW CREEK NEAR MILLVILLE | 77.3 | T | 1966-71 |
| 11374000 | COW CREEK NEAR MILLVILLE | 425 | S | 1978 |
| 11374400 | MIDDLE FORK COTTONWOOD CREEK NEAR ONO | 244 | T,S | 1965, 1968-73 1977-79 |
| 11375700 | NORTH FORK COTTONWOOD CREEK NEAR IGO | 88.7 | T | 1977-79 |
| 11375810 | COTTONWOOD CREEK NEAR OLINDA | 395 | T,S | 1973-80 |
| 11375820 | SOUTH FORK COTTONWOOD CREEK NEAR COTTONWOOD | 217 | T | 1977-79 |
| 11375870 | SOUTH FORK COTTONWOOD CREEK NEAR OLINDA | 371 | T,S | 1878, 1977-80 |
| 11376000 | COTTONWOOD CREEK NEAR COTTONWOOD | 927 | S | 1963-67, 1977-80 |
| 11376038 | MANZANITA CREEK AT PARK BOUNDARY, NEAR MANZANITA LAKE | 11.6 | C,T | 1980-81 |
| 11376550 | BATTLE CREEK BELOW COLMAN FISH HATCHRY, NEAR COTTONWOOD | 357 | T | 1965-71, 1973-79 |
| 11377100 | SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF | 8,900 | S | 1977-80, 1988 |
| 11377200 | SACRAMENTO RIVER AT BEND BRIDGE | -- | T,S | 1959-63, 1967, 1969-70 |
| 11378000 | SACRAMENTO RIVER NEAR RED BLUFF | 9,020 | T,S | 1961-68 |
| 11378500 | SACRAMENTO RIVER AT RED BLUFF | 9,077 | T,S | 1958-66 |
| 11379500 | ELDER CREEK NEAR PASKENTA | 92.4 | S | 1963 |
| 11380500 | ELDER CREEK AT GERBER | 136 | T,S | 1972-79 |
| 11381595 | MILL CREEK AT SHERWOOD BRIDGE, NEAR LOS MOLINOS | 133 | T,S | 1977-79 |
| 11382000 | THOMES CREEK AT PASKENTA | 203 | S | 1963-73, 1981-83 |
| 11382090 | THOMES CREEK AT RAWSON ROAD BRIDGE, NEAR RICHFIELD | 284 | T,S | 1978-80 |
| 11383600 | DEER CREEK AT RED BRIDGE, NEAR VINA | 210 | T,S | 1977 |
| 11383800 | SACRAMENTO RIVER NEAR HAMILTON CITY | 10,833 | T,S | 1977 |
| 11384600 | LITTLE STONY CREEK ABOVE EAST PARK RESERVOIR, NEAR LODOGA | 45.6 | T | 1967-79 |
| 11387000 | STONY CREEK NEAR FRUTO | 597 | T | 1971-78 |
| 11387200 | STONY CREEK ABOVE BLACK BUTTE LAKE, NEAR ORLAND | 623 | T,S | 1981-83 |
| 11387900 | MASTERSON HOLLOW CREEK NEAR NEWVILLE | .96 | T | 1982 |
| 11389000 | SACRAMENTO RIVER AT BUTTE CITY | 12,075 | S | 1977-80 |
| 11389470 | COLUSA WIER SPILL, BUTTE BASIN, NEAR COLUSA | -- | T,S | 1975 |
| 11389500 | SACRAMENTO RIVER AT COLUSA | 12,090 | S | 1973, 1975, 1977-80 |
| 11390000 | BUTTE CREEK NEAR CHICO | 147 | T | 1961-79 |
| 11390210 | CHEROKEE CANAL NEAR NELSON | -- | T,S | 1970-74 |
| 11390425 | SUTTER BYPASS AT LONG BRIDGE, NEAR MERIDIAN | -- | T,S | 1979 |
| 11390480 | TISDALE WEIR NEAR GRIMES | -- | S | 1978-80 |
| 11390600 | SACRAMENTO RIVER AT BOYERS BEND, NEAR DUNNIG | -- | T | 1960-63 |
| 11391000 | SACRAMENTO RIVER AT KNIGHTS LANDING | 14,535 | T,S | 1959-60, 1978-80 |
| 11391050 | SUTTER BYPASS NEAR NICOLAUS | -- | T,S | 1980-81 |
| 11391500 | BIG GRIZZLY CREEK AT GRIZZLY VALLEY DAM, NEAR PORTOLA | 44 | T | 1963-67 |
| 11392500 | MIDDLE FORK FEATHER RIVER NEAR CLIO | 686 | T | 1964-82 |
| 11394500 | MIDDLE FORK FEATHER RIVER NEAR MERRIMAC | 1,062 | T | 1963-82 |
| 11396350 | SOUTH FORK FEATHER RIVER AT PONDEROSA DAM | 108 | T | 1963-67 |
| 11401180 | LITTLE GRIZZLY CREEK NEAR GENESEE | 29.6 | T | 1964-79 |
| 11401500 | INDIAN CREEK NEAR CRESCENT MILLS | 739 | T | 1963-79 |
| 11404500 | NORTH FORK FEATHER RIVER AT PULGA | 1,953 | T | 1962-83 |
| 11405300 | WEST BRANCH FEATHER RIVER NEAR PARADISE | -- | T | 1963-80 |
| 11406870 | THERMOLITO AFTERBAY AT RIVER OUTLET | -- | T | 1968 |
| 11407000 | FEATHER RIVER AT OROVILLE | 3,624 | C,S | 1972-78 |
| 11407700 | FEATHER RIVER AT YUBA CITY | 3,974 | T | 1964-76 |
| 11409000 | MIDDLE YUBA RIVER ABOVE OREGON CREEK, NEAR SAN JUAN | 162 | T | 1965-69 |
| 11409400 | OREGON CREEK BELOW LOG CABIN DAM, NEAR CAMPTONVILLE | 29.1 | T | 1971-79 |
| 11409500 | OREGON CREEK NEAR SAN JUAN | 34.4 | T | 1965-69 |
| 11410000 | MIDDLE YUBA RIVER BELOW OREGON CREEK, NEAR NORTH SAN JUAN | 198 | T | 1974-77 |
| 11413100 | NORTH YUBA RIVER ABOVE SLATE CREEK, NEAR STRAWBERRY VALLEY | 351 | T | 1968-69, 1974-77 |
| 11413520 | NORTH YUBA RIVER BELOW NEW BULLARDS BAR DAM, NEAR NORTH SAN JUAN | 490 | T | 1971-74 |
| 11413700 | YUBA RIVER BELOW COLGATE POWERHOUSE, NEAR FRENCH CORRAL | 729 | T | 1975-78 |
| 11417500 | SOUTH YUBA RIVER AT JONES BAR, NEAR GRASS VALLEY | 308 | T | 1965-79 |
| 11418000 | YUBA RIVER BELOW ENGLEBRIGHT DAM, NEAR SMARTVILLE | 1,108 | T | 1972-78 |
| 11418500 | DEER CREEK NEAR SMARTVILLE | -- | S | 1974-79 |
| 11420800 | YUBA RIVER AT DAQUERRA POINT DAM, NEAR BROWNS VALLEY | 1,330 | T | 1975-77 |

DISCONTINUED WATER-QUALITY STATIONS--Continued

| Station No. | Station name | Drainage area (mi ²) | Type of record | Period of record |
|-------------|--|----------------------------------|----------------|------------------------|
| 11421500 | YUBA RIVER AT MARYSVILLE | 1,344 | T | 1964, 1966, 1969-70 |
| 11425000 | FEATHER RIVER AT NICOLAUS | 5,921 | T,S | 1960-68, 1973-84 |
| 11425100 | FEATHER RIVER NEAR NICOLAUS | -- | T | 1969-72, 1974 |
| 11425500 | SACRAMENTO RIVER AT VERONA | 21,251 | S | 1980 |
| 11427000 | NORTH FORK AMERICAN RIVER AT NORTH FORK DAM | 342 | T | 1959-83 |
| 11433400 | CANYON CREEK NEAR GEORGETOWN | 12.7 | T | 1966-71, 1973-79 |
| 11433800 | NORTH FORK AMERICAN RIVER BELOW AUBURN DAM SITE, NEAR AUBURN | 973 | T | 1983-86 |
| 11439500 | SOUTH FORK AMERICAN RIVER NEAR KYBURZ | 193 | T | 1966-79 |
| 11446500 | AMERICAN RIVER AT FAIR OAKS | 1,888 | T | 1961-79 |
| 11447030 | STRONG RANCH SLOUGH AT SACRAMENTO | 5.02 | C | 1973-75 |
| 11447500 | SACRAMENTO RIVER AT SACRAMENTO | 23,504 | S | 1957-79 |
| 11447810 | SACRAMENTO RIVER AT GREENS LANDING | -- | C | 1974-81 |
| 11449010 | HIGHLAND CREEK BELOW HIGHLAND CREEK DAM, NEAR KELSEYVILLE | 14.2 | T,S | 1967-77 |
| 11451760 | CACHE CREEK ABOVE RUMSEY | 955 | T,S | 1960-70, 1976, 1984-86 |
| 11451950 | CACHE CREEK NEAR BROOKS | 1,041 | T,S | 1984-86 |
| 11452500 | CACHE CREEK AT YOLO | 1,139 | S | 1960-67 |
| 11453000 | YOLO BYPASS NEAR WOODLAND | -- | S | 1980 |
| 11453170 | DRY CREEK ABOVE APPLETREE CREEK, NEAR MIDDLETOWN | .83 | C,T | 1978 |
| 11453500 | PUTAH CREEK NEAR GUENOC | 113 | T,S | 1960-73 |
| 11453550 | HUNTING CREEK NEAR KNOXVILLE | 37.8 | T,S | 1973-74 |
| 11454000 | PUTAH CREEK NEAR WINTERS | 574 | T | 1965-81 |

TYPE OF RECORD: C (CONDUCTIVITY); T (TEMPERATURE); S (SEDIMENT).



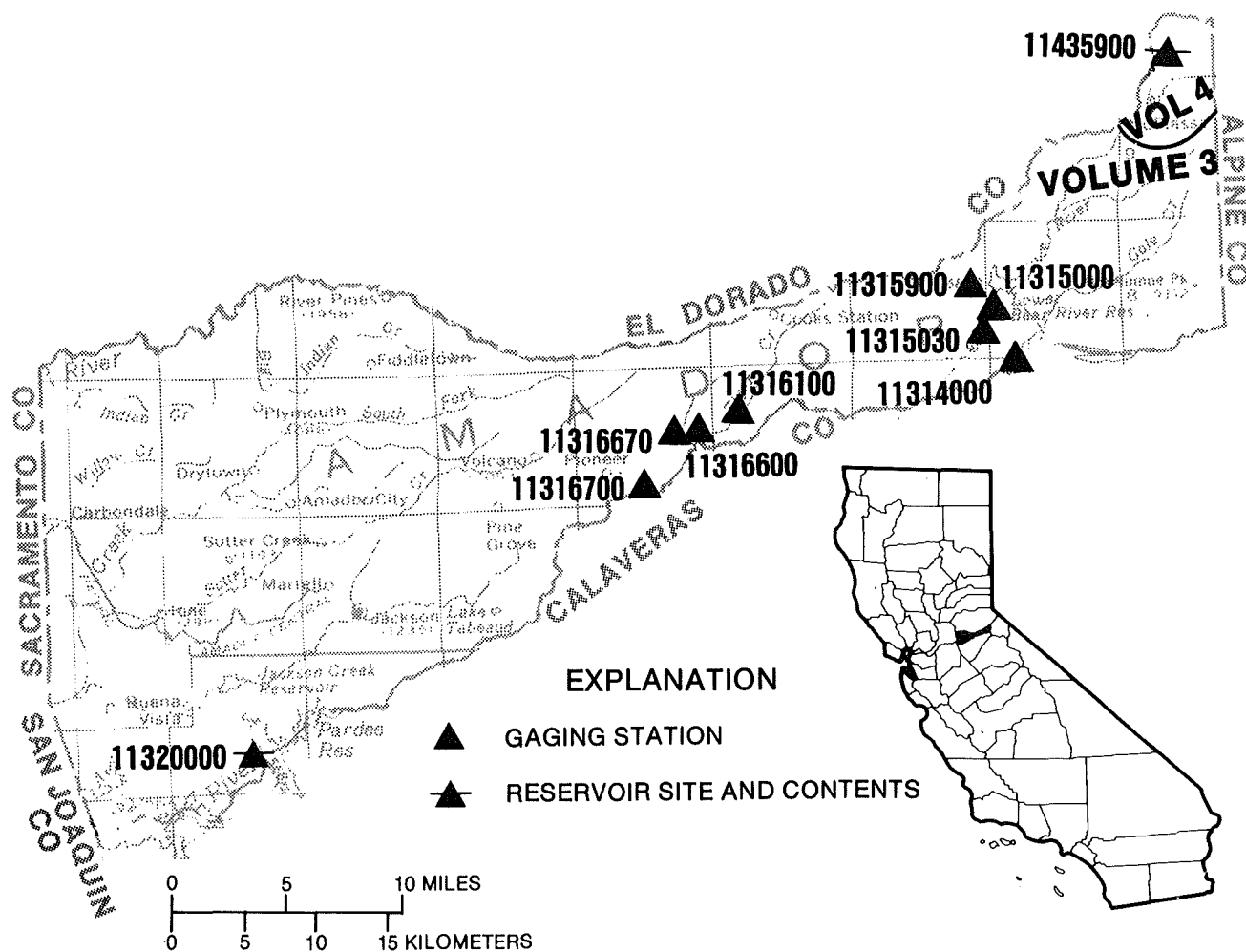
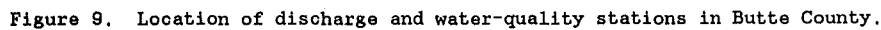


Figure 8. Location of discharge stations in Amador County.
(NOTE: Records for stations 11313510 through 11320000
are published in volume 3.)



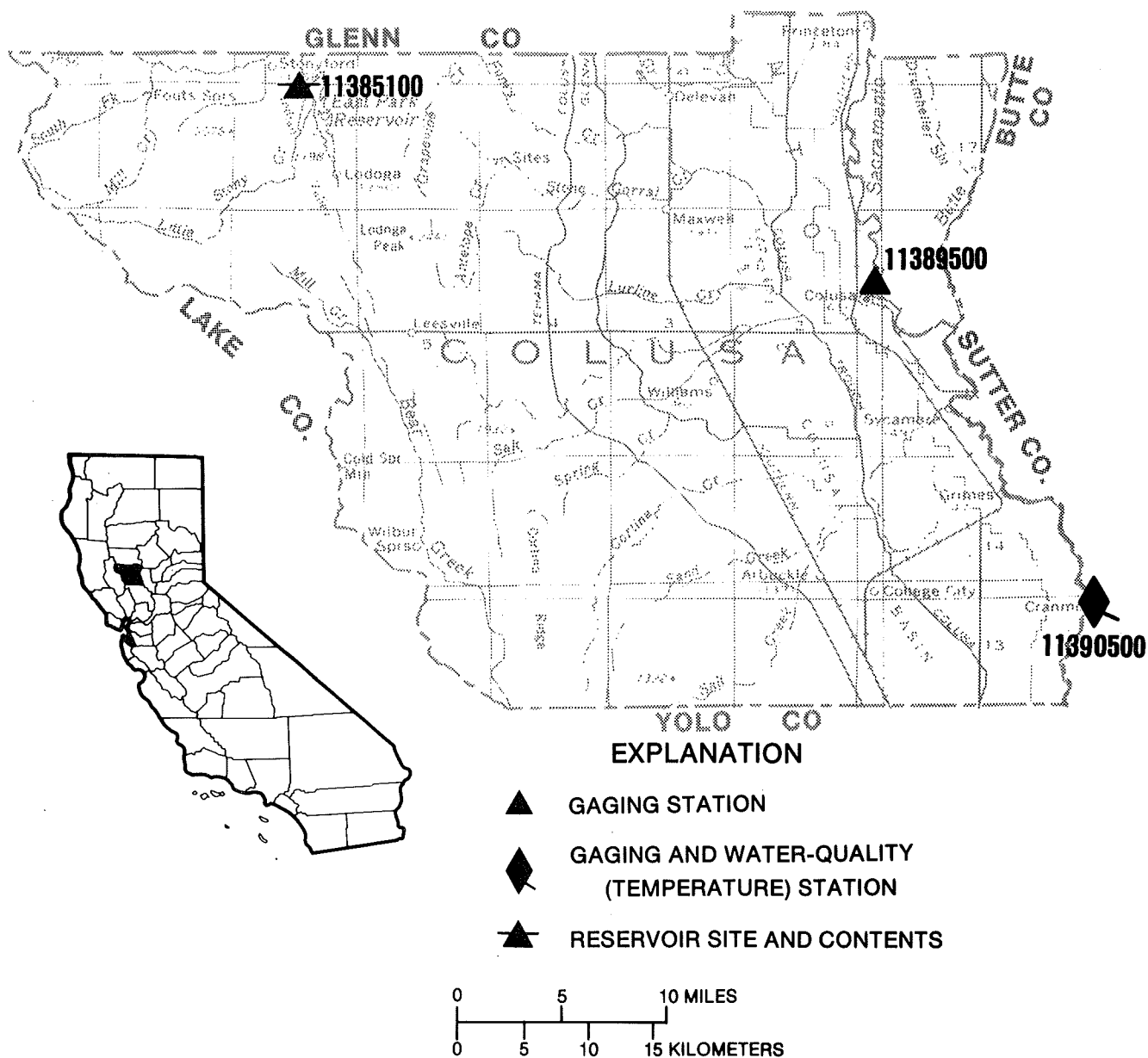


Figure 10. Location of discharge and water-quality stations in Colusa County.

EXPLANATION

- ▲ GAGING STATION
- ◆ GAGING AND WATER-QUALITY (SEDIMENT) STATION
- ◆ GAGING AND WATER-QUALITY (TEMPERATURE, CHEMICAL) STATION
- ◆ GAGING AND WATER-QUALITY (TEMPERATURE, SEDIMENT) STATION
- ▼ WATER-QUALITY (TEMPERATURE, SEDIMENT) STATION
- ▲ RESERVOIR SITE AND CONTENTS

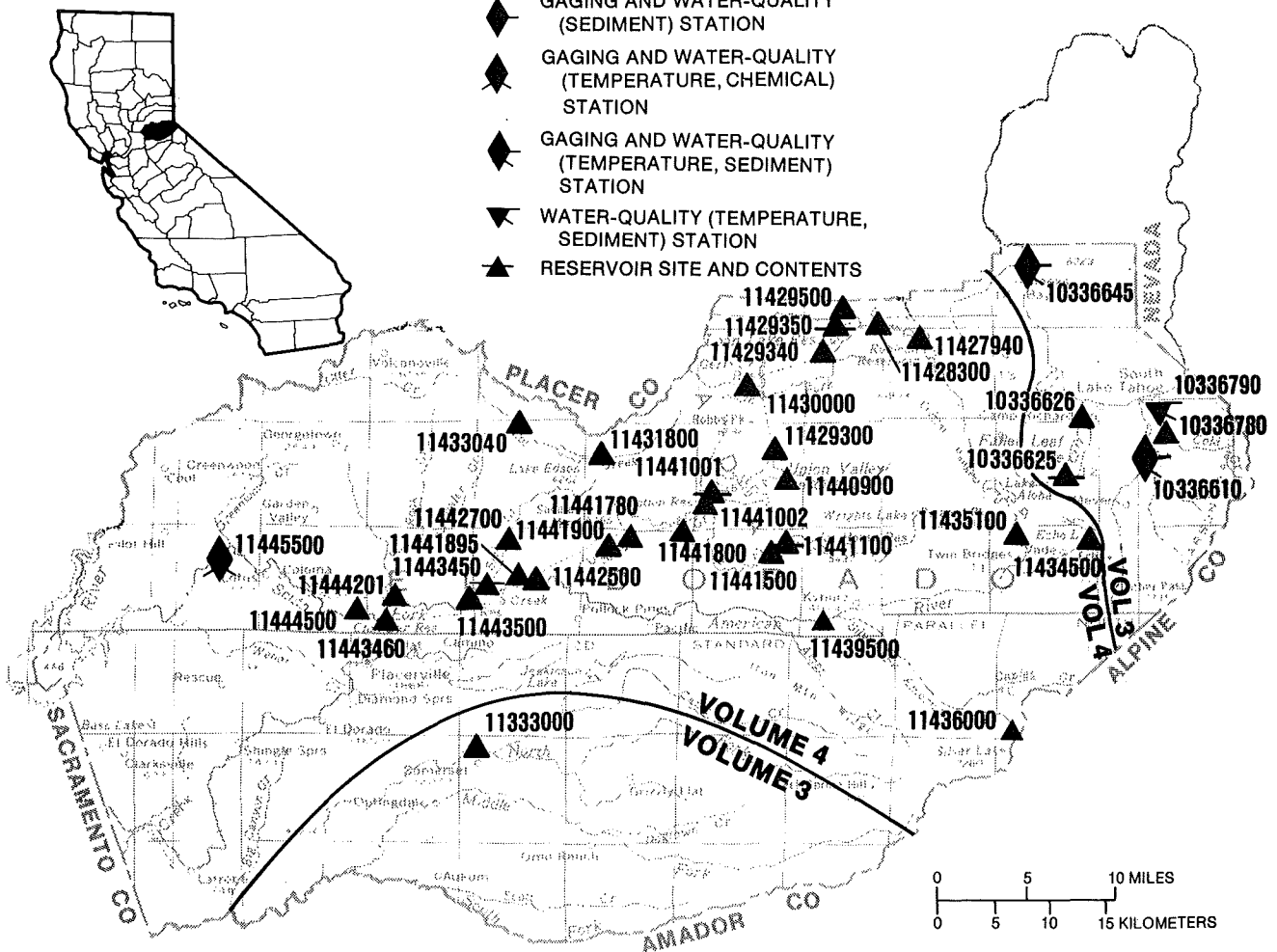


Figure 11. Location of discharge and water-quality stations in El Dorado County.
 (NOTE: Record for stations 10336610 through 10336790 and 11333000 published
 in volume 3.)

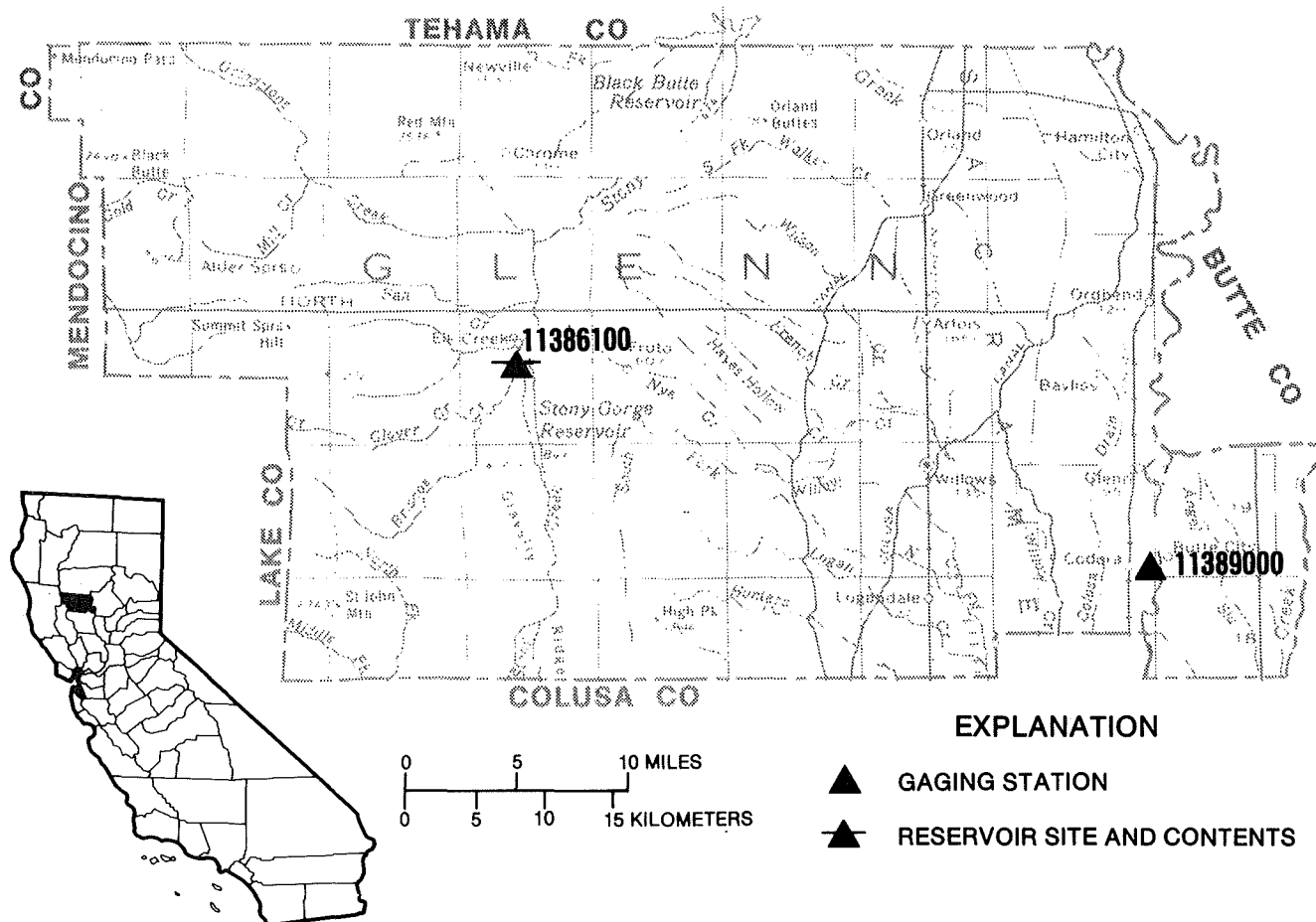


Figure 12. Location of discharge stations in Glenn County.

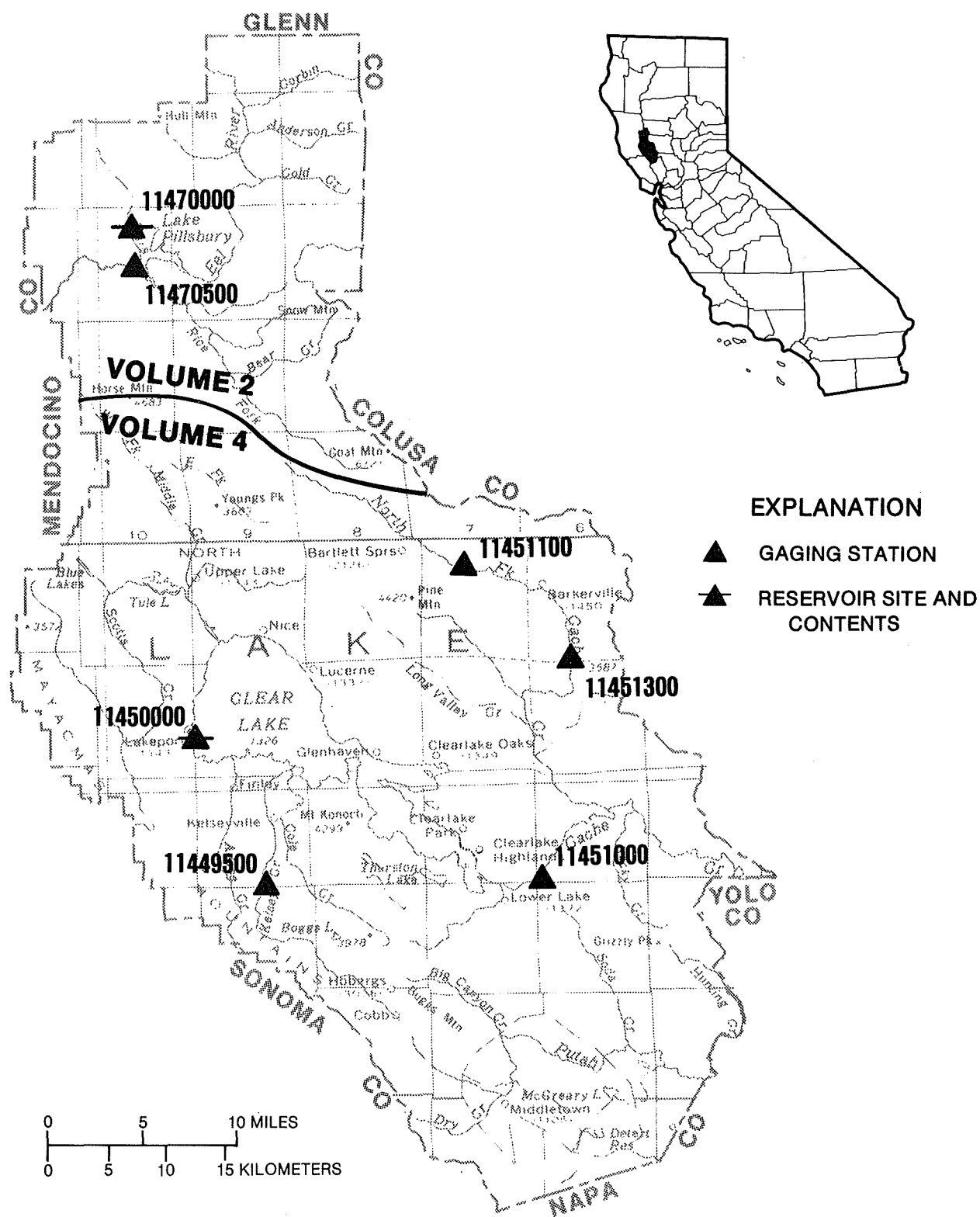


Figure 13. Location of discharge stations in Lake County.
 (NOTE: Records for stations 11470000 and 11470500
 published in volume 2.)

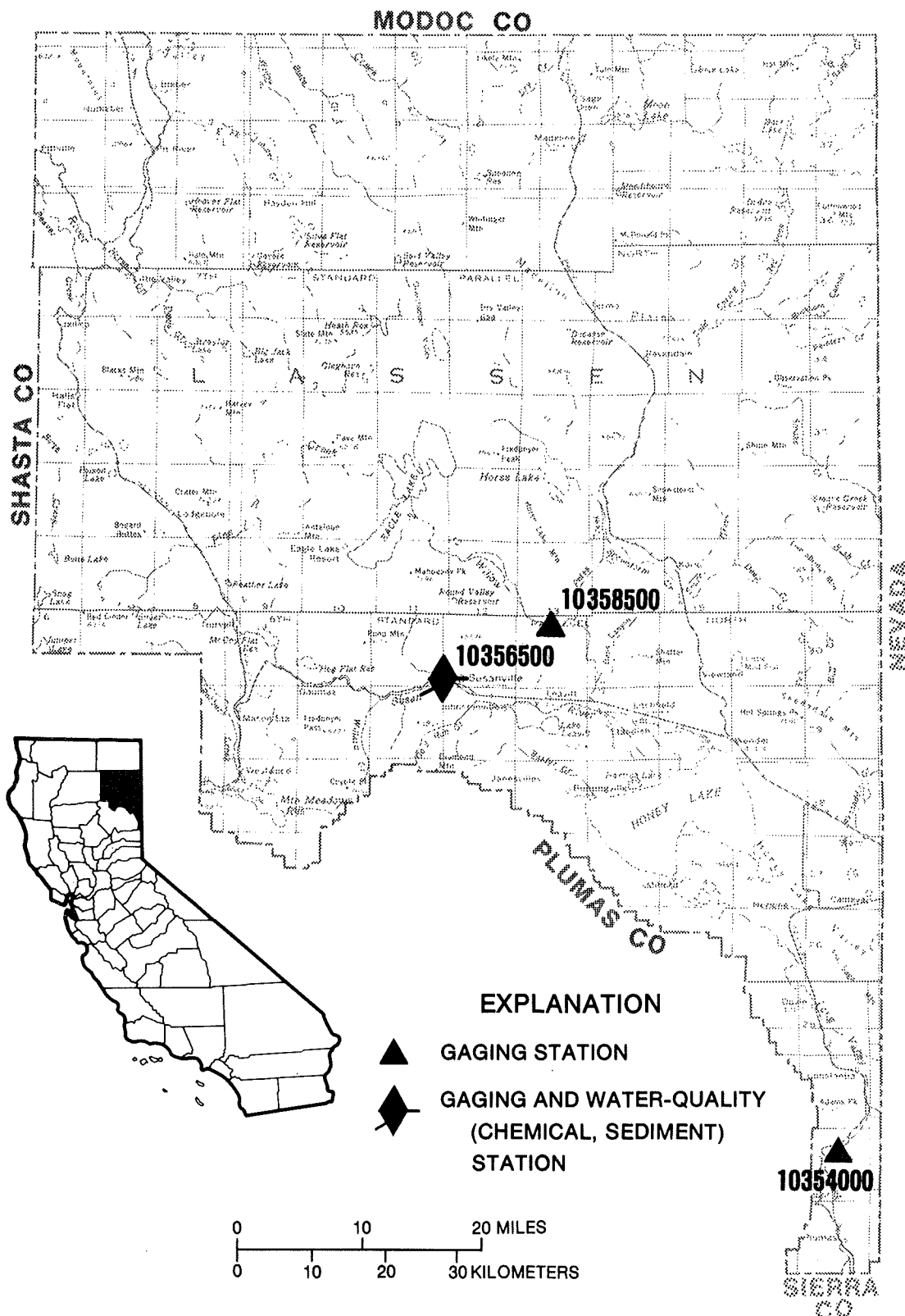
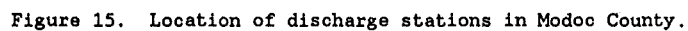
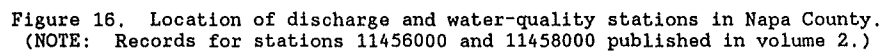


Figure 14. Location of discharge and water-quality stations in Lassen County.





(NOTE: Records for stations 11456000 and 11458000 published in volume 2.)

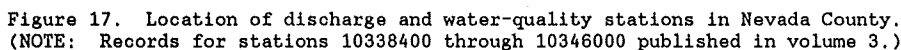


Figure 17. Location of discharge and water-quality stations in Nevada County.
(NOTE: Records for stations 10338400 through 10346000 published in volume 3.)

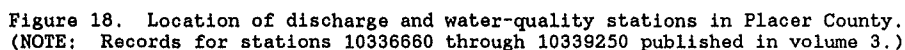


Figure 18. Location of discharge and water-quality stations in Placer County. (NOTE: Records for stations 10336660 through 10339250 published in volume 3.)

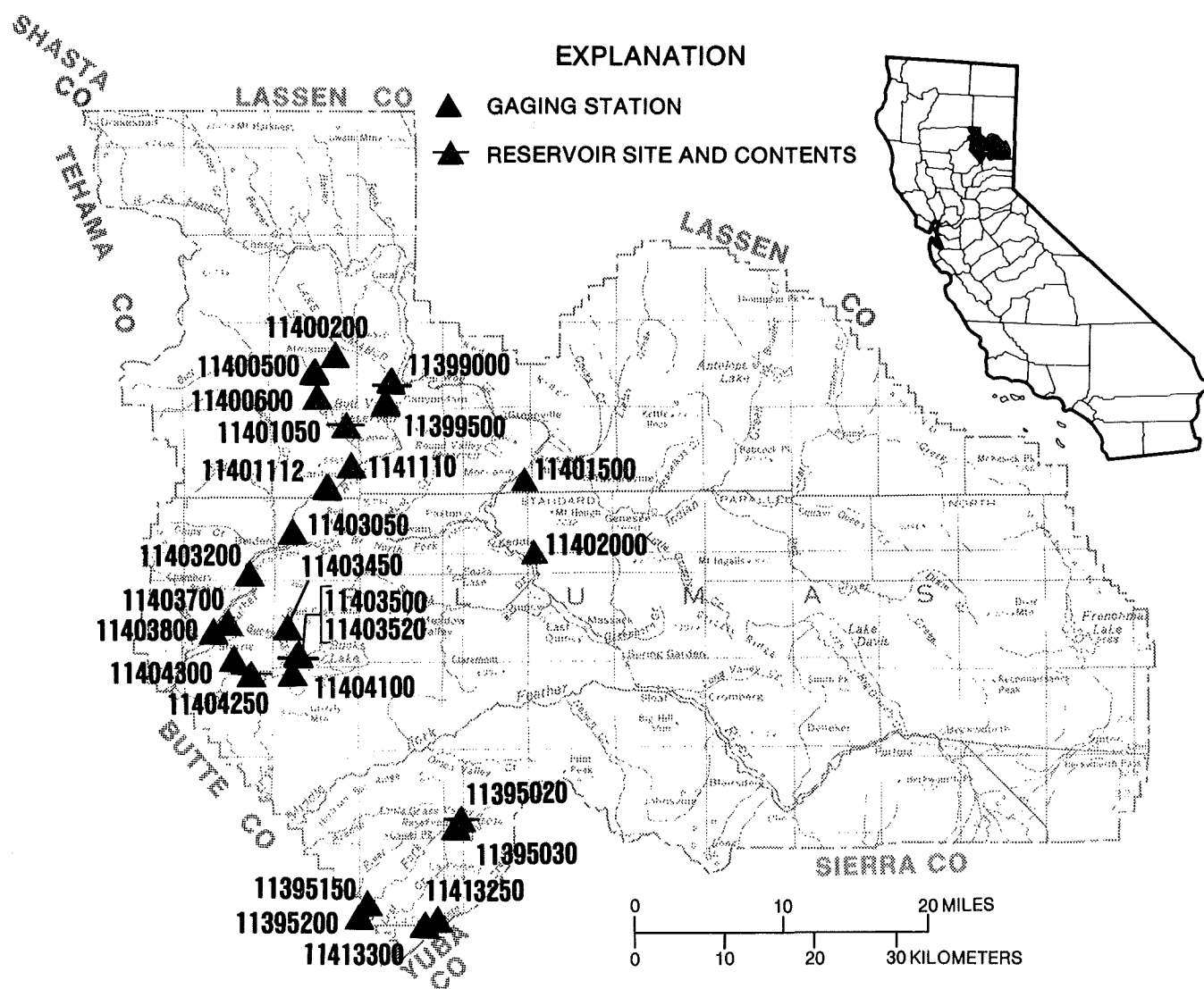


Figure 19. Location of discharge stations in Plumas County.

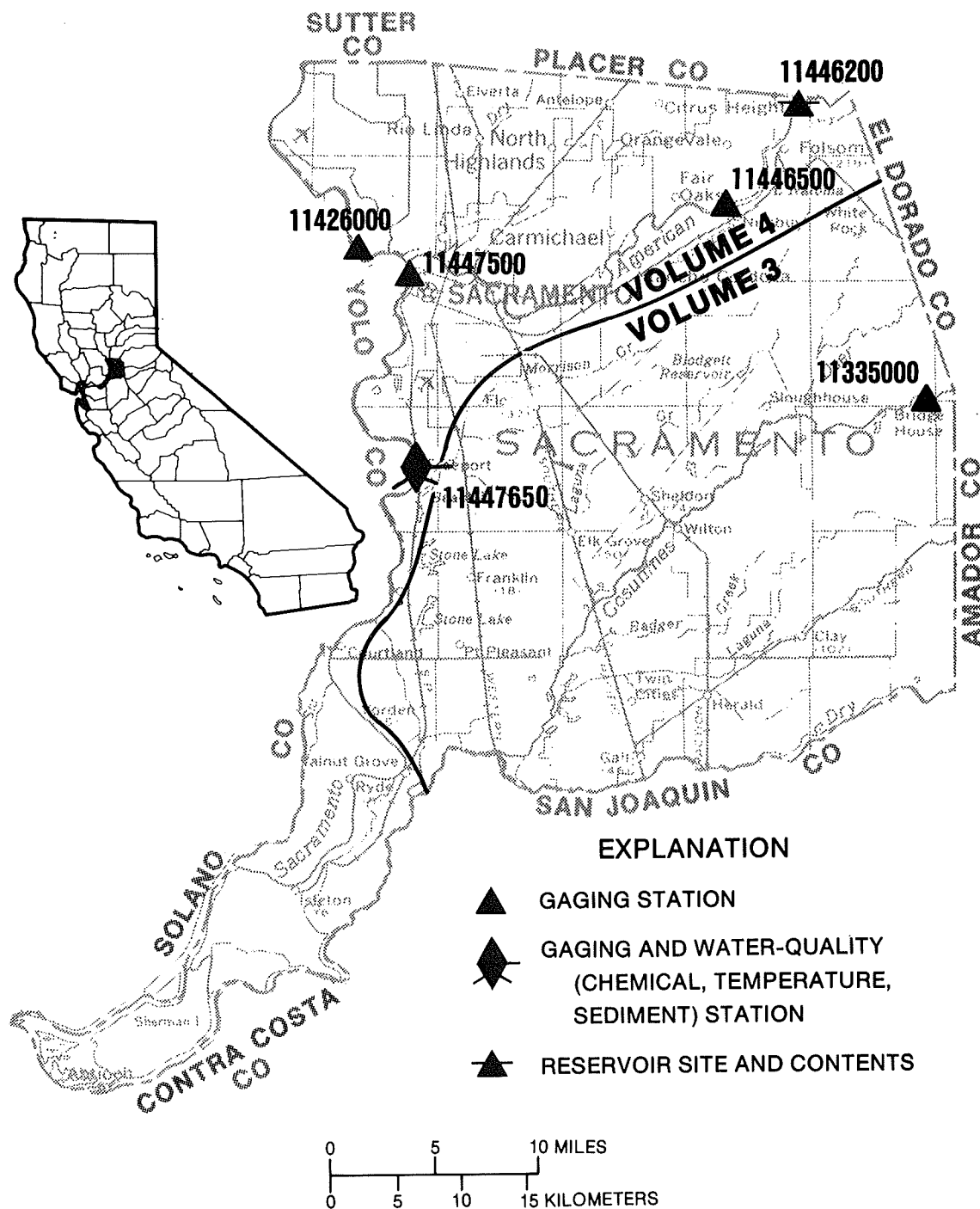
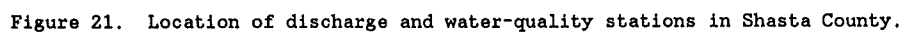


Figure 20. Location of discharge and water-quality stations in Sacramento County.
(NOTE: Record for station 11335000 published in volume 3.)



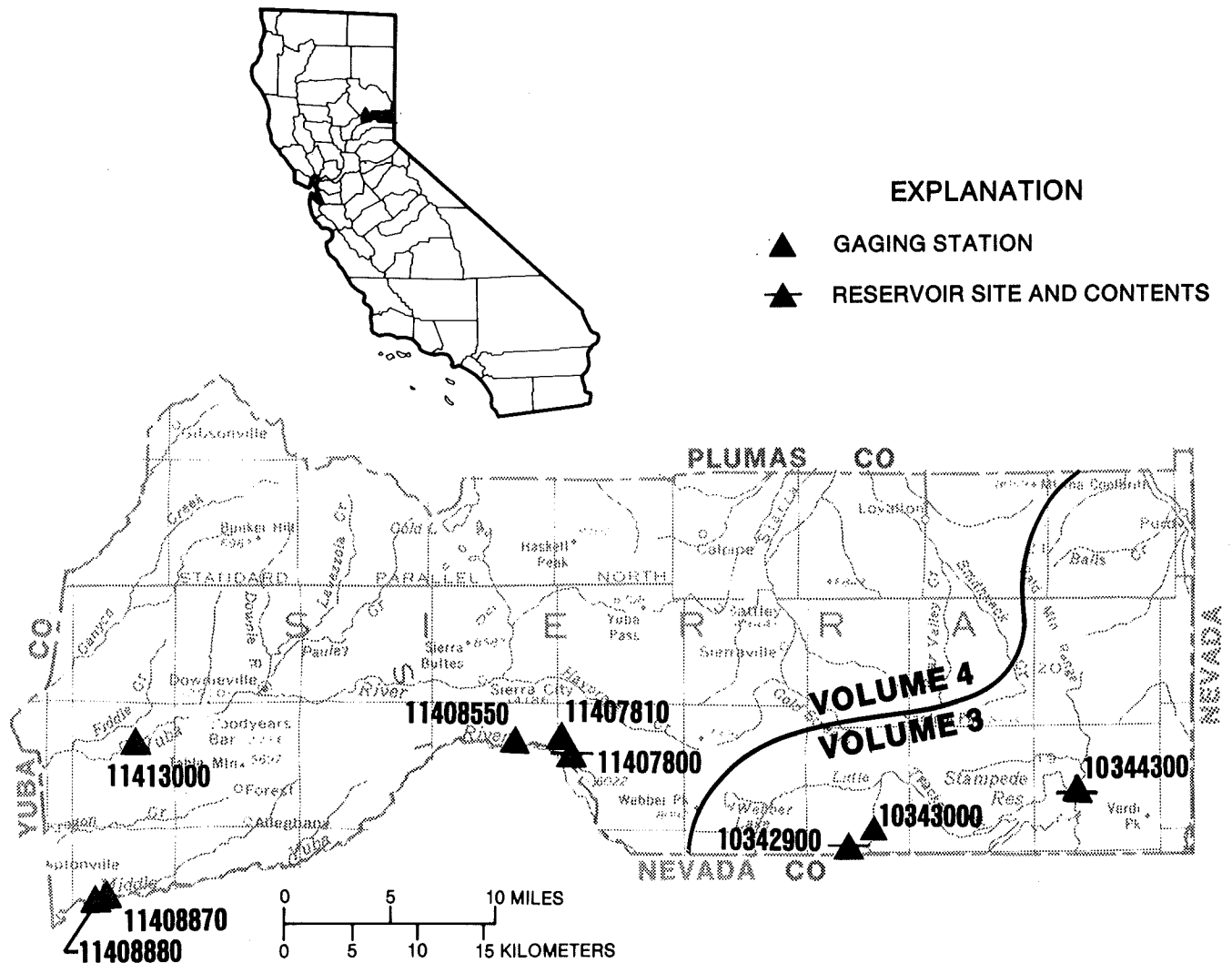


Figure 22. Location of discharge stations in Sierra County.
 (NOTE: Records for stations 10342900, 10343000, and
 10344300 published in volume 3.)

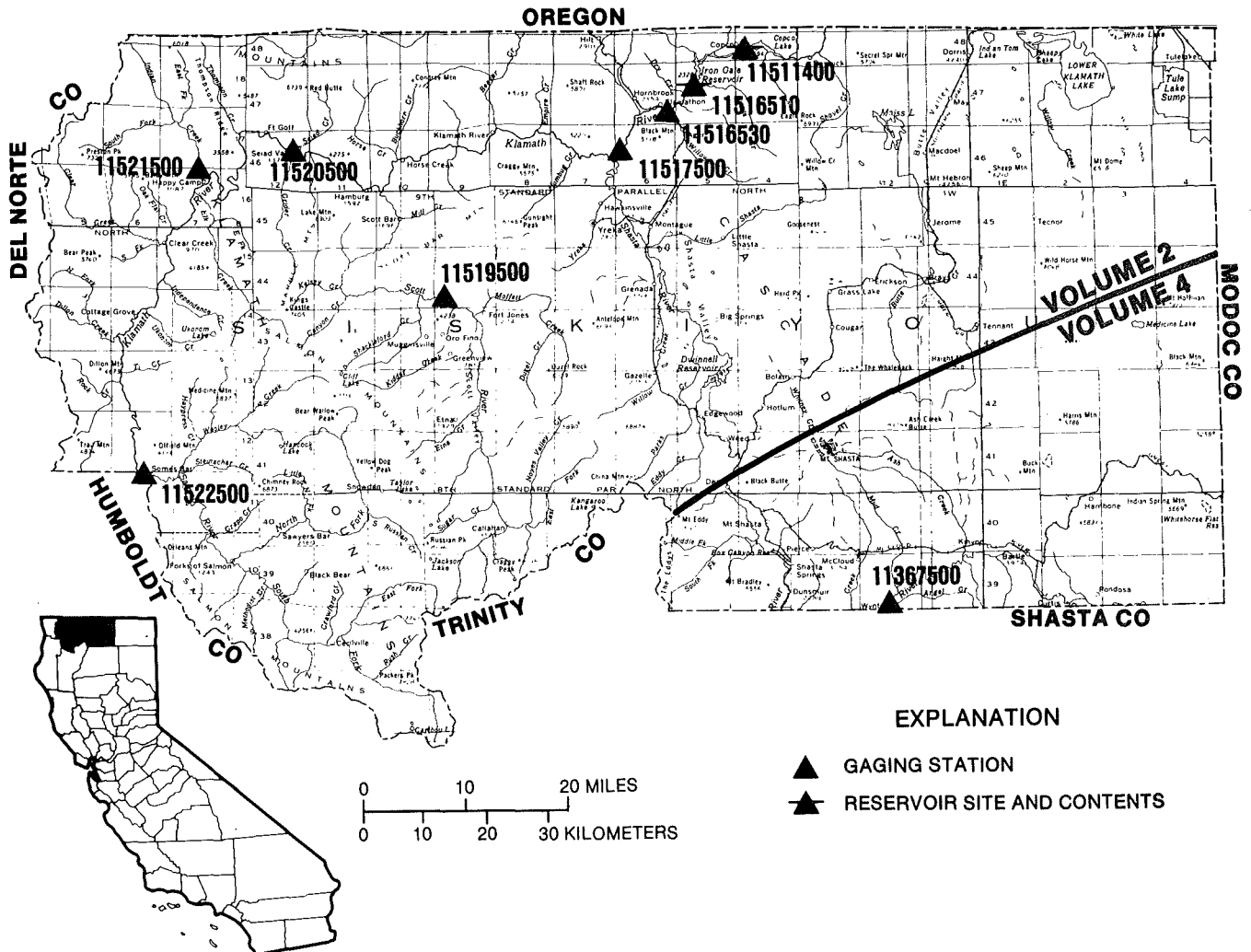


Figure 23. Location of discharge station in Siskiyou County.
 (NOTE: Records for stations 11511400 through 11522500
 published in volume 2.)

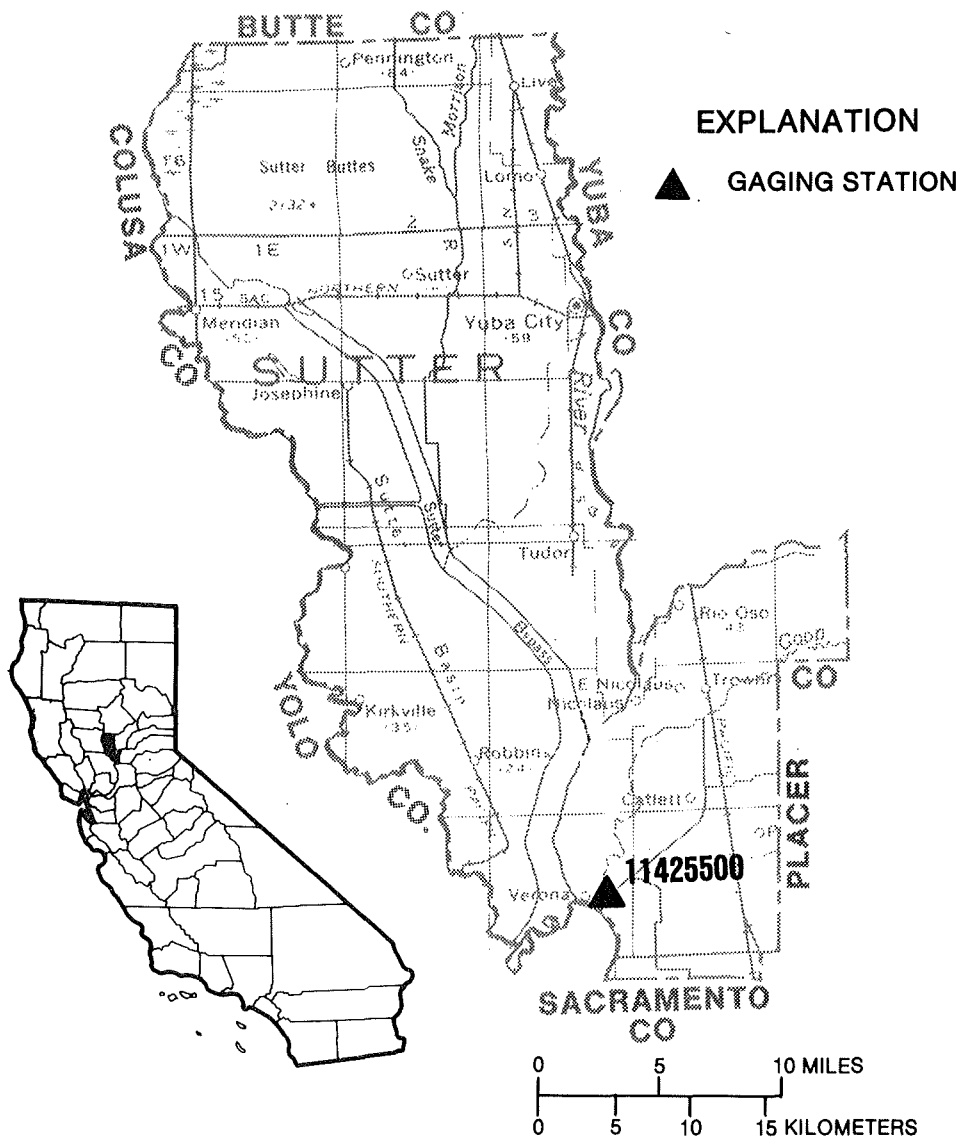


Figure 24. Location of discharge station in Sutter County.

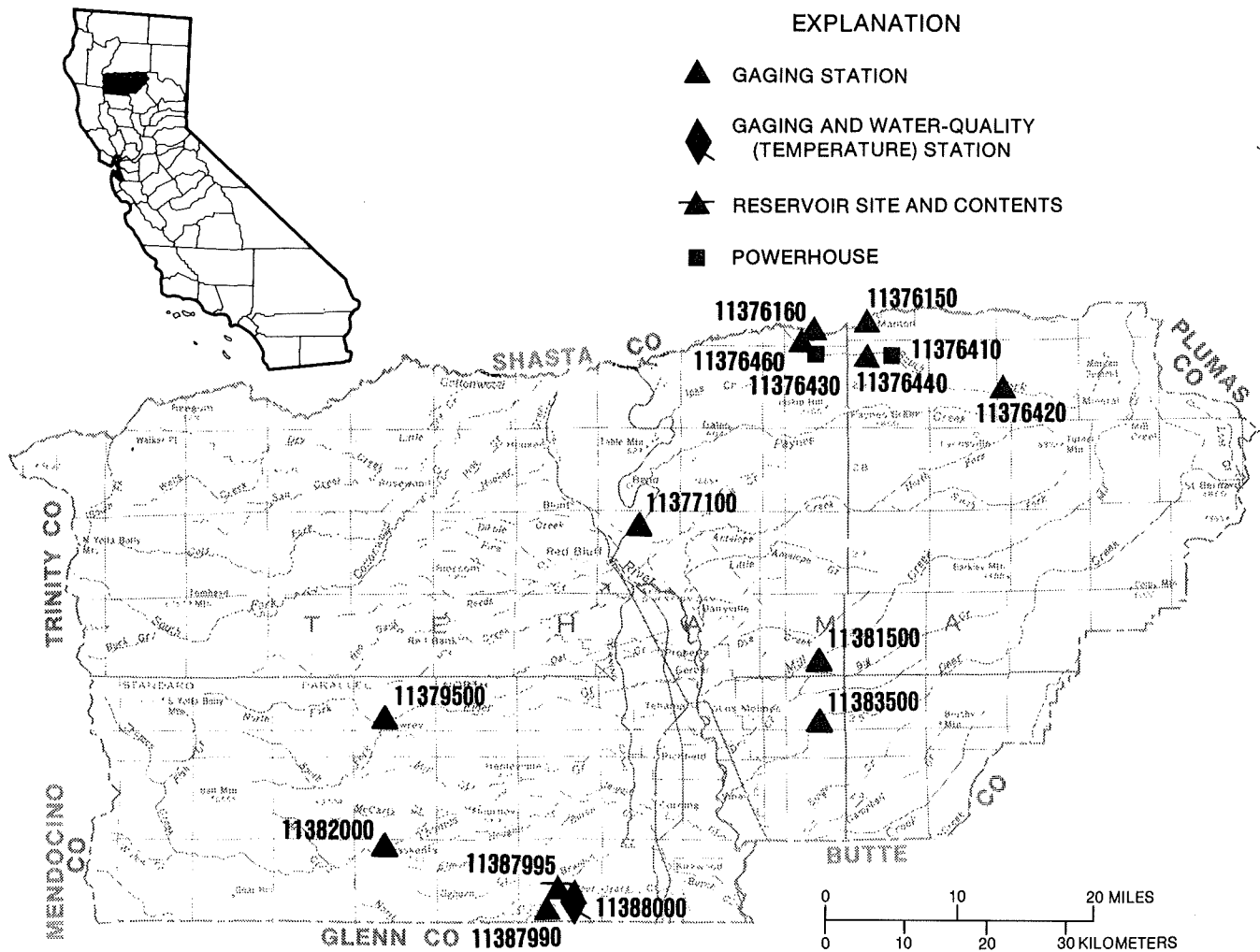


Figure 25. Location of discharge and water-quality stations in Tehama County.

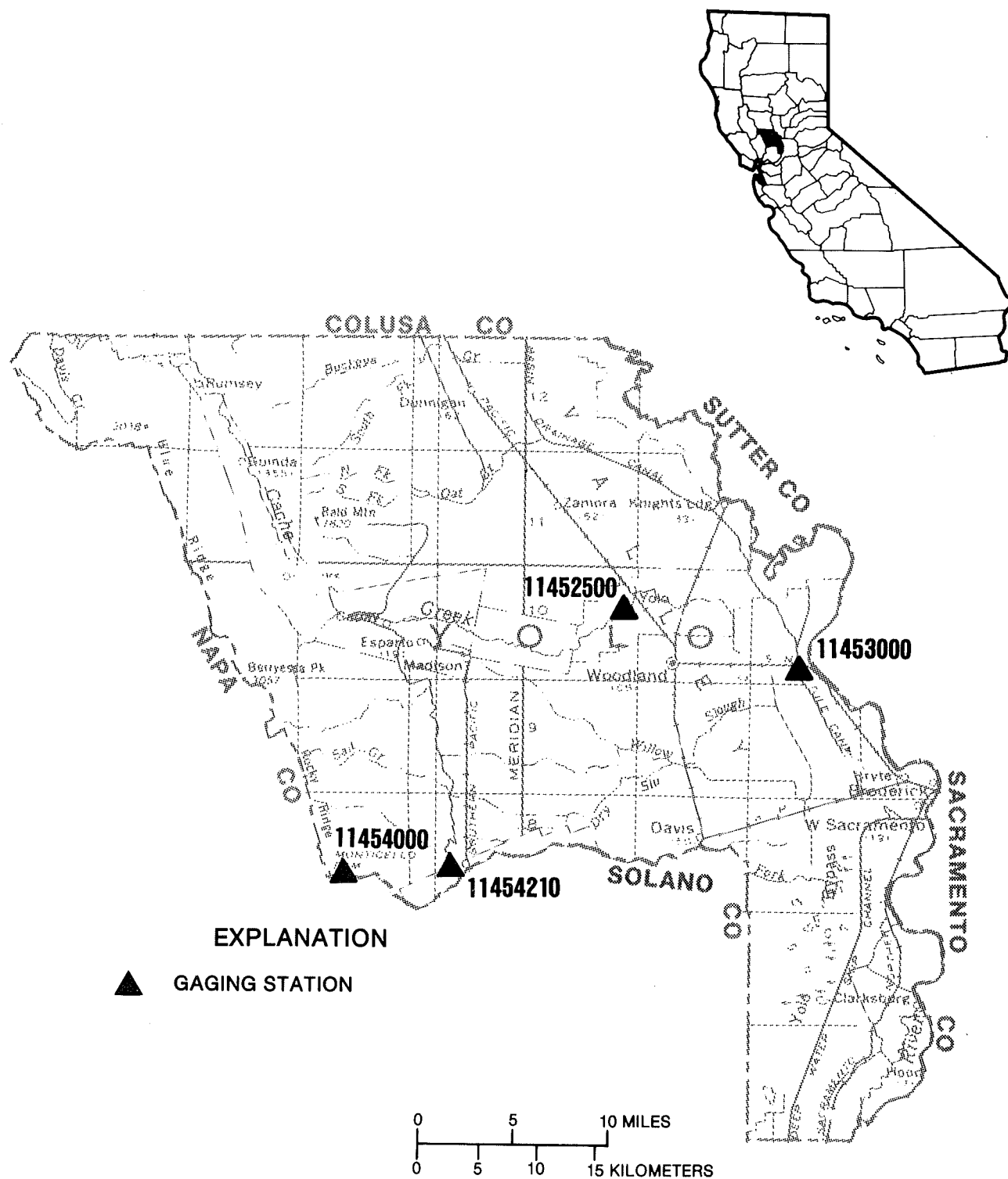


Figure 26. Location of discharge stations in Yolo County.

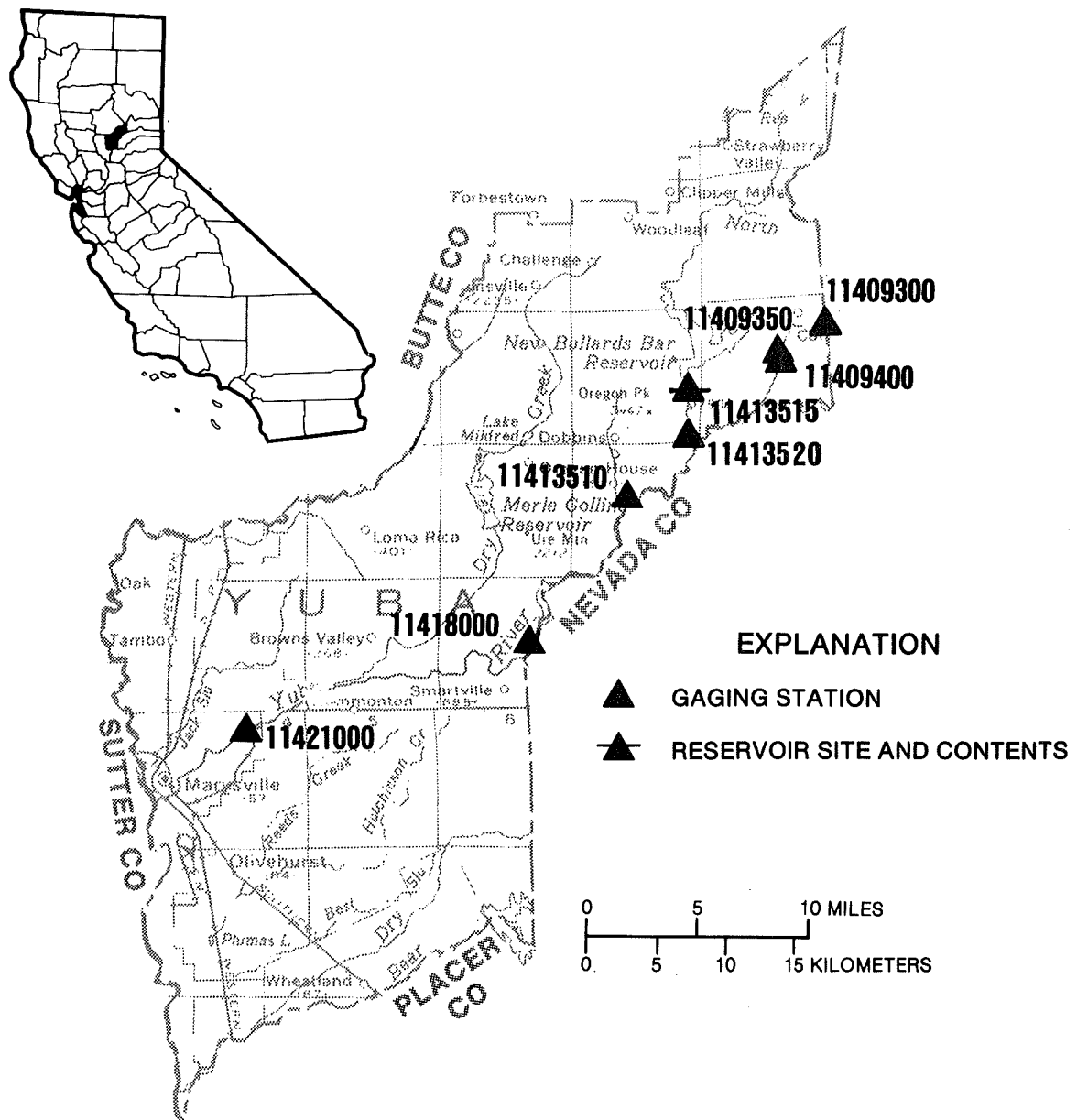


Figure 27. Location of discharge stations in Yuba County.

GAGING STATION AND WATER-QUALITY RECORDS

Remark Codes

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

PRINTED OUTPUTREMARK

| | |
|---|--|
| e | Estimated value |
| > | Actual value is greater than value shown |
| < | Actual value is less than value shown |
| K | Results based on colony count outside the acceptable range (non-ideal colony count) |
| L | Biological organism count less than 0.5 percent (organism may be observed rather than counted) |
| D | Biological organism count equal to or greater than 15 percent (dominant) |
| & | Biological organism estimated as dominant |
| * | Instantaneous streamflow at the time of cross-sectional measurement |
| 1 | Laboratory value |
| A | Samples collected by another agency |

NOTE: In March 1989, the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values less than 75 mg/L have a median positive bias of 2 mg/L greater than the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

HONEY LAKE BASIN

10354000 LONG VALLEY CREEK NEAR SCOTTS, CA

LOCATION.--Lat 39°51'20", long 120°04'00", in SW 1/4 SW 1/4 sec.10, T.23 N., R.17 E., Lassen County, Hydrologic Unit 18080003, 1.4 mi northeast of Scotts and 6 mi northwest of Hallelujah Junction.

DRAINAGE AREA.--125 mi².

PERIOD OF RECORD.--December 1988 to current year. Some daily record and miscellaneous measurements furnished by the Long Valley Irrigation Company, 1917-19. Water year 1988, monthly measurements, only in files of U.S. Geological Survey.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 4,620 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. No regulation or large diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 388 ft³/s, Mar. 8, 1989, gage height, 9.41 ft, from rating curve extended above 80 ft³/s on basis of step-backwater computation; minimum daily, 0.30 ft³/s, Aug. 4, 7-10, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Mar. 4 | 0415 | *38 | *7.66 | | | | |

Minimum daily, 0.32 ft³/s, Sept. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|
| 1 | 1.7 | 3.0 | 3.9 | 3.2 | 5.0 | 17 | 5.2 | 3.4 | 2.8 | .40 | .44 | .42 |
| 2 | 3.4 | 3.0 | 3.8 | 3.5 | 4.3 | 12 | 4.3 | 3.2 | 2.2 | .40 | .44 | .42 |
| 3 | 3.2 | 3.0 | 3.8 | 2.5 | 4.2 | 15 | 4.1 | 3.2 | 1.6 | .37 | .45 | .38 |
| 4 | 2.8 | 3.0 | 3.9 | 2.3 | 4.8 | 22 | 4.1 | 3.0 | 1.2 | .35 | .47 | .39 |
| 5 | 2.4 | 3.0 | 4.0 | 2.8 | 4.2 | 14 | 4.6 | 2.7 | 1.1 | .35 | .47 | .38 |
| 6 | 2.1 | 3.0 | 4.1 | 3.3 | 5.1 | 9.4 | 5.6 | 2.5 | .94 | .36 | .47 | .38 |
| 7 | 1.9 | 3.1 | 4.1 | 4.5 | 3.8 | 9.2 | 5.8 | 2.2 | .89 | .36 | .46 | .37 |
| 8 | 1.8 | 3.2 | 3.7 | 6.9 | 4.0 | 10 | 5.4 | 2.3 | .83 | .35 | .44 | .38 |
| 9 | 1.7 | 3.2 | 3.7 | 6.4 | 4.9 | 11 | 4.6 | 2.3 | .79 | .35 | .48 | .38 |
| 10 | 1.7 | 3.2 | 3.6 | 5.1 | 4.8 | 11 | 4.1 | 2.3 | .71 | .36 | .46 | .36 |
| 11 | 1.6 | 3.3 | 3.2 | 4.5 | 4.8 | 11 | 4.0 | 2.4 | .67 | .37 | .45 | .36 |
| 12 | 1.6 | 3.4 | 2.8 | 4.3 | 5.0 | 11 | 3.8 | 2.3 | .64 | .38 | .44 | .36 |
| 13 | 1.7 | 3.4 | 2.8 | 5.0 | 3.8 | 9.1 | 3.7 | 2.2 | .63 | .37 | .43 | .37 |
| 14 | 1.8 | 3.4 | 2.7 | 5.2 | 3.1 | 9.8 | 3.7 | 2.0 | .69 | .35 | .44 | .36 |
| 15 | 1.8 | 3.3 | 3.3 | 5.0 | 2.8 | 11 | 3.7 | 1.9 | .67 | .35 | .44 | .34 |
| 16 | 1.8 | 3.3 | 3.4 | 4.9 | e2.7 | 18 | 3.8 | 1.9 | .64 | .35 | .43 | .34 |
| 17 | 1.9 | 3.2 | 3.6 | 4.8 | 2.6 | 13 | 3.8 | 1.8 | .61 | .35 | .42 | .35 |
| 18 | 1.9 | 3.2 | 3.5 | 4.1 | 3.6 | 16 | 4.1 | 1.7 | .56 | .38 | .40 | .35 |
| 19 | 1.9 | 3.2 | 3.4 | 3.5 | e4.0 | 17 | 3.8 | 1.6 | .56 | .38 | .38 | .35 |
| 20 | 1.9 | 3.0 | 3.5 | 3.6 | e3.6 | 20 | 3.7 | 1.7 | .51 | .38 | .39 | .35 |
| 21 | 2.0 | 3.0 | 3.8 | 3.3 | 4.7 | 14 | 4.9 | 1.6 | .51 | .41 | .40 | .36 |
| 22 | 2.1 | 3.0 | 3.5 | 3.3 | 5.4 | 12 | 9.0 | 1.6 | .51 | .41 | .39 | .35 |
| 23 | 2.9 | 2.9 | 3.5 | 3.8 | 6.4 | 10 | 7.4 | 1.6 | .50 | .41 | .38 | .35 |
| 24 | 3.6 | 3.9 | 3.7 | 4.2 | 7.8 | 9.4 | 6.3 | 1.9 | .45 | .41 | .37 | .36 |
| 25 | 4.5 | 6.7 | 3.8 | 4.5 | 8.0 | 8.3 | 4.9 | 2.0 | .44 | .44 | .37 | .32 |
| 26 | 3.7 | 14 | 3.4 | 4.8 | 9.0 | 8.0 | 4.3 | 1.7 | .42 | .44 | .39 | .33 |
| 27 | 3.4 | 6.7 | 3.3 | 4.1 | 13 | 7.2 | 3.6 | 1.5 | .41 | .40 | .40 | .34 |
| 28 | 3.4 | 4.5 | 3.4 | 3.9 | 15 | 6.6 | 3.4 | 1.9 | .40 | .40 | .41 | .34 |
| 29 | 3.3 | 3.9 | 3.2 | 4.9 | --- | 6.1 | 3.4 | 1.9 | .39 | .42 | .41 | .33 |
| 30 | 3.1 | 3.8 | 2.9 | 5.9 | --- | 5.7 | 3.4 | 2.0 | .41 | .42 | .42 | .34 |
| 31 | 2.9 | --- | 3.1 | 4.7 | --- | 5.6 | --- | 2.7 | --- | .44 | .42 | --- |
| TOTAL | 75.5 | 115.8 | 108.4 | 132.8 | 150.4 | 359.4 | 136.5 | 67.0 | 23.68 | 11.91 | 13.16 | 10.81 |
| MEAN | 2.44 | 3.86 | 3.50 | 4.28 | 5.37 | 11.6 | 4.55 | 2.16 | .79 | .38 | .42 | .36 |
| MAX | 4.5 | 14 | 4.1 | 6.9 | 15 | 22 | 9.0 | 3.4 | 2.8 | .44 | .48 | .42 |
| MIN | 1.6 | 2.9 | 2.7 | 2.3 | 2.6 | 5.6 | 3.4 | 1.5 | .39 | .35 | .37 | .32 |
| AC-FT | 150 | 230 | 215 | 263 | 298 | 713 | 271 | 133 | 47 | 24 | 26 | 21 |

CAL YR 1989 TOTAL 3096.35 MEAN 8.48 MAX 150 MIN .30 AC-FT 6140
WTR YR 1990 TOTAL 1205.36 MEAN 3.30 MAX 22 MIN .32 AC-FT 2390

e Estimated.

HONEY LAKE BASIN

10356500 SUSAN RIVER AT SUSANVILLE, CA
(National stream-quality accounting network station)

LOCATION.--Lat 40°25'03", long 120°40'15", in SW 1/4 NE 1/4 sec.31, T.30 N., R.12 E., Lassen County, Hydrologic Unit 18080003, on left bank 0.5 mi west of Susanville, 1.1 mi upstream from Piute Creek, and 19.8 mi downstream from McCoy Flat Reservoir.

DRAINAGE AREA.--184 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1900 to December 1905 (gage heights only, August 1901 to January 1903), March to May 1913 (gage heights only), February 1917 to June 1921, October 1950 to current year. Published as "near Susanville" 1900-5. Discharge records for August to December 1901 and January 1903, published in WSP 300, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder. Datum of gage is 4,222.32 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1950, nonrecording gages at several sites in vicinity of old powerplant 0.9 mi upstream at various datums. Oct. 1, 1950, to Sept. 13, 1990 at datum 3.40 ft higher.

REMARKS.--Records fair except for estimated daily discharges for the ice-affected periods, Dec. 12 to Jan. 1, Jan. 19 to Feb. 22 and no gage-height record Aug. 7 to Sept. 13, which are poor. Flow regulated by McCoy Flat Reservoir and Hog Flat Reservoir, combined usable capacity, 25,300 acre-ft. Diversions for irrigation of 1,400 acres upstream from station.

AVERAGE DISCHARGE.--46 years (water years 1901, 1904-5, 1918-20, 1951-90), 92.6 ft³/s, 67,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,850 ft³/s, Jan. 24, 1970, gage height, 8.89 ft, in gage well, 10.4 ft, from floodmarks, from rating curve extended above 1,000 ft³/s on basis of slope-area measurement at gage height 6.62 ft and contracted-opening measurement of peak flow; no flow Aug. 15, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 180 ft³/s, Mar. 3, gage height, 2.33 ft; minimum daily, 0.14 ft³/s, Sept. 7-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|-------|-------|
| 1 | 5.9 | 12 | 13 | e11 | e10 | 54 | 55 | 87 | 75 | 4.7 | .82 | e.47 |
| 2 | 6.4 | 11 | 13 | e12 | e9.4 | 49 | 56 | 110 | 67 | 3.9 | .78 | e.35 |
| 3 | 6.2 | 11 | 12 | e12 | e8.5 | 119 | 55 | 106 | 58 | 4.3 | .73 | e.25 |
| 4 | 6.0 | 11 | 13 | e12 | e7.5 | 90 | 58 | 101 | 47 | 4.6 | .70 | e.20 |
| 5 | 5.8 | 11 | 16 | 12 | e8.4 | 64 | 63 | 95 | 41 | 5.1 | .65 | e.16 |
| 6 | 5.7 | 11 | 19 | 12 | e9.7 | 58 | 72 | 85 | 36 | 5.2 | .62 | e.15 |
| 7 | 5.9 | 11 | 17 | 22 | e12 | 59 | 80 | 66 | 28 | 3.7 | e.62 | e.14 |
| 8 | 6.1 | 11 | 16 | 107 | e11 | 61 | 73 | 36 | 22 | 1.8 | e.65 | e.14 |
| 9 | 6.7 | 11 | 15 | 55 | e10 | 56 | 67 | 29 | 20 | 1.7 | e.68 | e.14 |
| 10 | 7.2 | 10 | 13 | 33 | e9.6 | 56 | 60 | 22 | 17 | 1.7 | e.70 | e.15 |
| 11 | 6.9 | 10 | 11 | 26 | e8.8 | 46 | 55 | 19 | 17 | 2.0 | e.66 | e.15 |
| 12 | 6.5 | 10 | e9.8 | 26 | e8.3 | 40 | 51 | 17 | 17 | 2.0 | e.60 | e.80 |
| 13 | 6.4 | 10 | e9.7 | 51 | e8.0 | 35 | 46 | 16 | 16 | 1.9 | e.56 | e.44 |
| 14 | 6.2 | 10 | e11 | 40 | e7.4 | 35 | 44 | 15 | 18 | 1.9 | e.52 | .20 |
| 15 | 5.8 | 9.9 | e12 | 30 | e8.5 | 37 | 42 | 15 | 17 | 2.0 | e.48 | .17 |
| 16 | 5.6 | 10 | e11 | 28 | e11 | 42 | 40 | 14 | 17 | 2.0 | e.45 | .26 |
| 17 | 5.7 | 10 | e10 | 24 | e9.0 | 55 | 39 | 12 | 15 | 2.1 | e.43 | .29 |
| 18 | 5.9 | 10 | e9.8 | 21 | e7.0 | 75 | 37 | 10 | 12 | 3.1 | e.48 | .25 |
| 19 | 6.0 | 10 | e9.6 | e19 | e5.8 | 91 | 37 | 10 | 12 | 4.6 | e.52 | 3.5 |
| 20 | 6.0 | 10 | e9.7 | e17 | e5.2 | 100 | 34 | 13 | 12 | 3.7 | e.58 | 2.7 |
| 21 | 6.9 | 9.9 | e10 | e16 | e11 | 100 | 33 | 18 | 10 | 3.1 | e.62 | .73 |
| 22 | 11 | 10 | e12 | e14 | e17 | 104 | 32 | 14 | 7.8 | 2.5 | e.69 | .70 |
| 23 | 49 | 10 | e12 | e13 | 19 | 105 | 45 | 17 | 6.6 | 1.5 | e.75 | .92 |
| 24 | 36 | 12 | e11 | e13 | 19 | 100 | 44 | 21 | 6.0 | 1.1 | e.66 | 1.2 |
| 25 | 27 | 15 | e11 | e15 | 22 | 94 | 34 | 16 | 6.3 | 1.1 | e.68 | 1.6 |
| 26 | 19 | 20 | e11 | e13 | 28 | 94 | 30 | 13 | 6.1 | 1.0 | e.72 | 1.3 |
| 27 | 17 | 14 | e10 | e11 | 38 | 81 | 28 | 15 | 4.6 | 1.0 | e.76 | 1.8 |
| 28 | 16 | 14 | e11 | e9.2 | 49 | 73 | 27 | 19 | 4.7 | 1.0 | e.71 | 1.0 |
| 29 | 13 | 14 | e11 | e10 | --- | 64 | 28 | 20 | 4.8 | .93 | e.62 | 1.1 |
| 30 | 12 | 13 | e11 | e12 | --- | 58 | 26 | 25 | 5.2 | .91 | e.58 | .92 |
| 31 | 12 | --- | e11 | e9.4 | --- | 55 | --- | 88 | --- | .88 | e.59 | --- |
| TOTAL | 341.8 | 341.8 | 371.6 | 705.6 | 378.1 | 2150 | 1391 | 1144 | 626.1 | 77.02 | 19.61 | 22.18 |
| MEAN | 11.0 | 11.4 | 12.0 | 22.8 | 13.5 | 69.4 | 46.4 | 36.9 | 20.9 | 2.48 | .63 | .74 |
| MAX | 49 | 20 | 19 | 107 | 49 | 119 | 80 | 110 | 75 | 5.2 | .82 | 3.5 |
| MIN | 5.6 | 9.9 | 9.6 | 9.2 | 5.2 | 35 | 26 | 10 | 4.6 | .88 | .43 | .14 |
| AC-FT | 678 | 678 | 737 | 1400 | 750 | 4260 | 2760 | 2270 | 1240 | 153 | 39 | 44 |

CAL YR 1989 TOTAL 26445.42 MEAN 72.5 MAX 1590 MIN .94 AC-FT 52450
WTR YR 1990 TOTAL 7568.81 MEAN 20.7 MAX 119 MIN .14 AC-FT 15010

e Estimated.

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1952 to current year.

CHEMICAL DATA: Water years 1952 to current year.

BIOLOGICAL DATA: Water years 1978-81.

SEDIMENT DATA: Water years 1978 to current year.

REMARKS.--Samples are collected above Ramsey Ditch which diverts flow from right bank of river 300 ft upstream from gage.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | DIS-CHARGE, INST. CUBIC FEET PER SECOND | SPECIFIC CONDUCTANCE (US/CM) | PH (STANDARD UNITS) | TEMPERATURE WATER (DEG C) | TURBIDITY (NTU) | BAROMETRIC PRES-SURE (MM OF HG) | OXYGEN, DIS-SOLVED (MG/L) | OXYGEN, (PER-CENT SATURATION) | COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) | STREPTOCOCCI, FECAL, KF AGAR (COLS. PER 100 ML) | HARDNESS TOTAL (MG/L AS CaCO3) |
|-----------|------|---|------------------------------|---------------------|---------------------------|-----------------|---------------------------------|---------------------------|-------------------------------|---|---|--------------------------------|
| NOV 15... | 1050 | 10 | 156 | ¹ 8.0 | 1.0 | 0.50 | 660 | 12.2 | 99 | <3 | K5 | 74 |
| JAN 24... | 1130 | 12 | 142 | 8.2 | 0.5 | 1.2 | 660 | 12.2 | 98 | <3 | K3 | 64 |
| MAR 21... | 1205 | 92 | 104 | 7.3 | 5.5 | 6.9 | 650 | 11.0 | 102 | <7 | <7 | 45 |
| MAY 16... | 1215 | 14 | 130 | 8.4 | 14.0 | 1.0 | 655 | 10.0 | 113 | <5 | K8 | 56 |
| JUL 18... | 1030 | 5.6 | 184 | 8.2 | 22.0 | 1.5 | 655 | 7.4 | 99 | 100 | 220 | 80 |
| SEP 19... | 1130 | 5.0 | 183 | 7.9 | 14.5 | 1.5 | 655 | 8.4 | 96 | K12 | K33 | 83 |

| DATE | 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) | BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) | CARBONATE WATER DIS IT FIELD (MG/L AS CO3) | ALKALINITY WAT DIS TOT IT FIELD (MG/L AS CaCO3) | SULFATE DIS-SOLVED (MG/L AS SO4) | CHLORIDE, DIS-SOLVED (MG/L AS Cl) |
|-----------|---------------------------------|------------------------------------|---------------------------------|----------------|-------------------------|-----------------------------------|---|--|---|----------------------------------|-----------------------------------|
| NOV 15... | 16 | 8.3 | 6.0 | 15 | 0.3 | 1.8 | 108 | 0 | 89 | <1.0 | 3.1 |
| JAN 24... | 14 | 6.9 | 5.8 | 16 | 0.3 | 1.3 | 96 | 0 | 79 | 2.0 | 1.2 |
| MAR 21... | 11 | 4.2 | 4.5 | 18 | 0.3 | 0.90 | 67 | 0 | 55 | 2.2 | 1.9 |
| MAY 16... | 12 | 6.3 | 5.1 | 16 | 0.3 | 1.5 | 76 | 5 | 70 | 1.2 | 0.60 |
| JUL 18... | 17 | 9.1 | 7.1 | 16 | 0.3 | 3.0 | 137 | 0 | 112 | <1.0 | 0.50 |
| SEP 19... | 17 | 9.7 | 6.9 | 15 | 0.3 | 2.8 | 128 | 0 | 105 | <1.0 | 2.4 |

| 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) | NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) | NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) | NITROGEN, AMMONIA TOTAL (MG/L AS N) | NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) | NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) | PHOSPHORUS TOTAL (MG/L AS P) |
|-----------|----------------------------------|-----------------------------------|---|--|-------------------------------------|--|--|-------------------------------------|--|---|------------------------------|
| NOV 15... | <0.10 | 34 | 104 | -- | 0.14 | 0.010 | <0.100 | <0.010 | <0.010 | <0.20 | 0.040 |
| JAN 24... | 0.30 | 30 | 119 | 109 | 0.16 | <0.010 | <0.100 | 0.020 | 0.010 | 0.30 | 0.030 |
| MAR 21... | <0.10 | 23 | 91 | 81 | 0.12 | <0.010 | <0.100 | <0.010 | <0.010 | 0.30 | 0.030 |
| MAY 16... | <0.10 | 30 | 93 | 99 | 0.13 | <0.010 | <0.100 | <0.010 | 0.010 | <0.20 | 0.040 |
| JUL 18... | <0.10 | 34 | 130 | -- | 0.18 | <0.010 | <0.100 | <0.010 | 0.040 | 0.40 | 0.030 |
| SEP 19... | <0.10 | 33 | 113 | -- | 0.15 | <0.010 | <0.100 | 0.140 | <0.010 | 0.60 | 0.020 |

¹Laboratory value.

HONEY LAKE BASIN

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | PHOS- PHORUS DIS- SOLVED (MG/L AS P) | PHOS- PHORUS DIS- SOLVED (MG/L AS P) | ALUM- INUM, DIS- SOLVED (UG/L AS AL) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, DIS- SOLVED (UG/L AS BA) | BERYL- LIUM, DIS- SOLVED (UG/L AS BE) | 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) |
|--------------|---|---|---|--|--|--|--|---|--|--|--|
| NOV 15... | 0.030 | 0.030 | <10 | <1 | 20 | <0.5 | <1.0 | <1 | <3 | <1 | 62 |
| JAN 24... | 0.030 | 0.020 | 20 | <1 | 20 | <0.5 | <1.0 | <1 | <3 | 1 | 61 |
| MAR 21... | 0.030 | 0.020 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 16... | 0.020 | 0.020 | 30 | <1 | 18 | <0.5 | 1.0 | <1 | <3 | 1 | 36 |
| JUL 18... | 0.020 | <0.010 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 19... | <0.010 | <0.010 | <10 | <1 | 28 | <0.5 | <1.0 | <1 | <3 | 1 | 64 |

| DATE | LEAD, DIS- SOLVED (UG/L AS PB) | 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) | VANA- DIUM, DIS- SOLVED (UG/L AS V) | ZINC, DIS- SOLVED (UG/L AS ZN) |
|--------------|--|--|--|--|---|--|---|--|--|--|--|
| NOV 15... | <1 | <4 | 19 | <0.1 | <10 | <1 | <1 | <1.0 | 120 | <6 | 3 |
| JAN 24... | <1 | <4 | 22 | <0.1 | <10 | <1 | <1 | <1.0 | 120 | <6 | 9 |
| MAR 21... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 16... | 1 | <4 | 15 | 0.1 | <10 | <1 | <1 | <1.0 | 100 | <6 | 9 |
| JUL 18... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 19... | <1 | <4 | 22 | <0.1 | <10 | 1 | <1 | <1.0 | 140 | <6 | 4 |

CROSS SECTIONAL DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) | DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET) | SPE- CIFIC CON- DUCT- ANCE (US/CM) | PH (STAND- ARD UNITS) | TEMPER- ATURE WATER (DEG C) | BARO- METRIC PRES- SURE (MM OF HG) | OXYGEN, DIS- SOLVED (MG/L) | OXYGEN, (PER- CENT SATUR- ATION) | SEDI- MENT, SUS- PENDED (MG/L) |
|--------|------|---|--|---|--------------------------------|--------------------------------------|--|-------------------------------------|--|--|
| MAR | | | | | | | | | | |
| 21...* | 1115 | 11.0 | 1.05 | 106 | 6.8 | 5.0 | 650 | 11.3 | 104 | -- |
| 21...* | 1120 | 18.5 | 1.50 | 104 | 6.9 | 5.0 | 650 | 11.2 | 103 | -- |
| 21...* | 1125 | 23.5 | 1.45 | 103 | 6.9 | 5.0 | 650 | 11.3 | 104 | -- |
| 21...* | 1130 | 28.5 | 1.50 | 103 | 7.0 | 5.0 | 650 | 11.3 | 104 | -- |
| 21...* | 1135 | 34.0 | 1.45 | 103 | 7.0 | 5.0 | 650 | 11.2 | 103 | -- |
| SEP | | | | | | | | | | |
| 19...* | 1040 | 5.60 | 0.60 | 182 | 7.7 | 13.5 | 655 | 8.0 | 90 | 4 |
| 19...* | 1041 | 11.4 | 0.58 | 182 | 7.7 | 13.5 | 655 | 8.1 | 91 | 3 |
| 19...* | 1042 | 15.7 | 0.54 | 185 | 7.8 | 13.5 | 655 | 8.1 | 91 | 3 |
| 19...* | 1043 | 19.4 | 0.68 | 183 | 7.8 | 13.5 | 655 | 8.1 | 91 | 2 |
| 19...* | 1044 | 23.6 | 0.54 | 186 | 7.8 | 13.5 | 655 | 8.1 | 91 | 2 |

* Instantaneous discharge at the time of cross-sectional measurement: Mar. 21, 92 ft³/s;
Sept. 19, 5.1 ft³/s.

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | DIS- CHARGE, INST. CUBIC FEET PER SECOND | TEMPER- ATURE WATER (DEG C) | SEDI- MENT, SUS- PENDE (MG/L) | SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|-------|------|--|--------------------------------------|---|---|---|
| NOV | | | | | | |
| 15... | 1050 | 10 | 1.0 | 0 | 0.0 | -- |
| JAN | | | | | | |
| 24... | 1130 | 12 | 0.5 | 7 | 0.23 | 51 |
| MAR | | | | | | |
| 21... | 1110 | 92 | 5.5 | 8 | 2.0 | 92 |
| 21... | 1205 | 92 | 5.5 | 26 | 6.5 | 77 |
| MAY | | | | | | |
| 16... | 1215 | 14 | 14.0 | 4 | 0.15 | 92 |
| JUL | | | | | | |
| 18... | 1030 | 5.6 | 22.0 | 4 | 0.06 | -- |
| SEP | | | | | | |
| 19... | 1040 | 5.1 | 13.5 | 3 | 0.04 | -- |

HONEY LAKE BASIN

10358500 WILLOW CREEK NEAR SUSANVILLE, CA

LOCATION.--Lat 40°29'21", long 120°32'10", in SW 1/4 NE 1/4 sec.5, T.30 N., R.13 E., Lassen County, Hydrologic Unit 18080003, on left bank 4 mi upstream from Peters Valley Creek and 8 mi northeast of Susanville.

DRAINAGE AREA.--90.4 mi², excludes that of Eagle Lake basin.

PERIOD OF RECORD.--October 1950 to current year.

REVISED RECORDS.--WDR CA-75-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,836.27 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records fair. Diversions for irrigation of 5,200 acres upstream from station. Some flow at times enters Willow Creek from Eagle Lake through a pipe in a concrete plug in an abandoned tunnel.

AVERAGE DISCHARGE.--40 years, 34.1 ft³/s, 24,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,210 ft³/s, Feb. 18, 1986, gage height, 6.25 ft, from rating curve extended above 600 ft³/s; minimum daily, 2.8 ft³/s, Sept. 15, 16, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Mar. 4 | 1115 | *96 | *3.20 | | | | |

Minimum daily, 2.8 ft³/s, Sept. 15, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| 1 | 6.4 | 16 | 23 | 24 | 26 | 53 | 16 | 10 | 12 | 6.4 | 4.3 | 4.5 |
| 2 | 6.4 | 17 | 23 | 22 | 26 | 51 | 18 | 10 | 13 | 6.2 | 4.2 | 4.0 |
| 3 | 6.3 | 17 | 24 | 21 | 26 | 67 | 19 | 11 | 13 | 6.2 | 4.1 | 3.5 |
| 4 | 6.4 | 18 | 23 | 20 | 27 | 86 | 19 | 11 | 11 | 6.2 | 3.7 | 3.2 |
| 5 | 6.4 | 18 | 24 | 21 | 27 | 64 | 20 | 11 | 10 | 6.1 | 3.6 | 3.2 |
| 6 | 6.5 | 19 | 28 | 22 | 28 | 48 | 19 | 11 | 9.7 | 6.3 | 3.6 | 3.2 |
| 7 | 6.5 | 19 | 26 | 24 | 25 | 41 | 17 | 10 | 9.3 | 6.3 | 3.6 | 3.2 |
| 8 | 6.6 | 19 | 25 | 28 | 27 | 37 | 15 | 9.5 | 9.0 | 6.1 | 3.7 | 3.3 |
| 9 | 6.6 | 19 | 25 | 26 | 27 | 36 | 14 | 8.4 | 8.8 | 5.5 | 3.8 | 3.3 |
| 10 | 6.7 | 18 | 24 | 23 | 28 | 36 | 16 | 9.2 | 8.5 | 5.1 | 3.7 | 3.4 |
| 11 | 6.9 | 19 | 23 | 24 | 30 | 38 | 19 | 9.7 | 8.4 | 4.8 | 3.6 | 3.4 |
| 12 | 7.0 | 19 | 21 | 25 | 32 | 37 | 21 | 9.7 | 8.1 | 4.5 | 3.4 | 3.2 |
| 13 | 7.0 | 19 | 22 | 34 | 28 | 35 | 20 | 9.7 | 8.0 | 4.7 | 3.3 | 3.0 |
| 14 | 7.1 | 19 | 22 | 32 | 24 | 35 | 16 | 9.6 | 7.8 | 4.6 | 3.3 | 2.9 |
| 15 | 7.1 | 19 | 22 | 28 | 26 | 34 | 16 | 9.5 | 7.8 | 4.6 | 3.3 | 2.8 |
| 16 | 7.1 | 19 | 23 | 28 | 20 | 31 | 18 | 8.8 | 7.8 | 4.5 | 3.2 | 2.8 |
| 17 | 7.2 | 19 | 23 | 27 | 22 | 22 | 20 | 7.9 | 7.7 | 4.6 | 3.4 | 3.2 |
| 18 | 7.2 | 20 | 23 | 25 | 26 | 19 | 22 | 7.6 | 7.5 | 6.4 | 3.4 | 3.5 |
| 19 | 7.3 | 19 | 23 | 25 | 26 | 16 | 21 | 7.6 | 7.2 | 5.3 | 3.7 | 3.7 |
| 20 | 7.3 | 19 | 22 | 24 | 25 | 21 | 20 | 7.8 | 7.2 | 5.0 | 4.1 | 4.1 |
| 21 | 7.4 | 20 | 23 | 25 | 29 | 21 | 21 | 8.2 | 8.0 | 4.8 | 4.5 | 4.2 |
| 22 | 7.6 | 20 | 23 | 25 | 28 | 20 | 23 | 8.4 | 9.4 | 4.6 | 4.6 | 4.4 |
| 23 | 8.2 | 20 | 23 | 26 | 28 | 20 | 23 | 8.7 | 10 | 4.6 | 4.8 | 4.6 |
| 24 | 12 | 20 | 24 | 26 | 27 | 20 | 23 | 9.0 | 9.4 | 4.5 | 4.9 | 4.9 |
| 25 | 13 | 23 | 23 | 25 | 28 | 20 | 21 | 9.0 | 8.3 | 4.4 | 4.8 | 5.0 |
| 26 | 9.8 | 30 | 23 | 27 | 32 | 20 | 19 | 8.8 | 7.6 | 4.4 | 5.0 | 5.3 |
| 27 | 9.3 | 28 | 23 | 25 | 43 | 20 | 15 | 8.8 | 7.3 | 4.5 | 5.2 | 5.4 |
| 28 | 8.9 | 24 | 23 | 25 | 55 | 21 | 12 | 8.5 | 6.9 | 4.5 | 5.0 | 5.3 |
| 29 | 8.6 | 22 | 23 | 25 | --- | 21 | 10 | 8.1 | 6.6 | 4.8 | 4.7 | 5.3 |
| 30 | 8.5 | 23 | 22 | 26 | --- | 21 | 10 | 8.5 | 6.5 | 4.8 | 4.9 | 5.3 |
| 31 | 20 | --- | 23 | 26 | --- | 20 | --- | 11 | --- | 4.5 | 4.9 | --- |
| TOTAL | 249.3 | 601 | 722 | 784 | 796 | 1031 | 543 | 286.0 | 261.8 | 159.8 | 126.3 | 117.1 |
| MEAN | 8.04 | 20.0 | 23.3 | 25.3 | 28.4 | 33.3 | 18.1 | 9.23 | 8.73 | 5.15 | 4.07 | 3.90 |
| MAX | 20 | 30 | 28 | 34 | 55 | 86 | 23 | 11 | 13 | 6.4 | 5.2 | 5.4 |
| MIN | 6.3 | 16 | 21 | 20 | 20 | 16 | 10 | 7.6 | 6.5 | 4.4 | 3.2 | 2.8 |
| AC-FT | 494 | 1190 | 1430 | 1560 | 1580 | 2040 | 1080 | 567 | 519 | 317 | 251 | 232 |

CAL YR 1989 TOTAL 8354.5 MEAN 22.9 MAX 311 MIN 4.2 AC-FT 16570
WTR YR 1990 TOTAL 5677.3 MEAN 15.6 MAX 86 MIN 2.8 AC-FT 11260

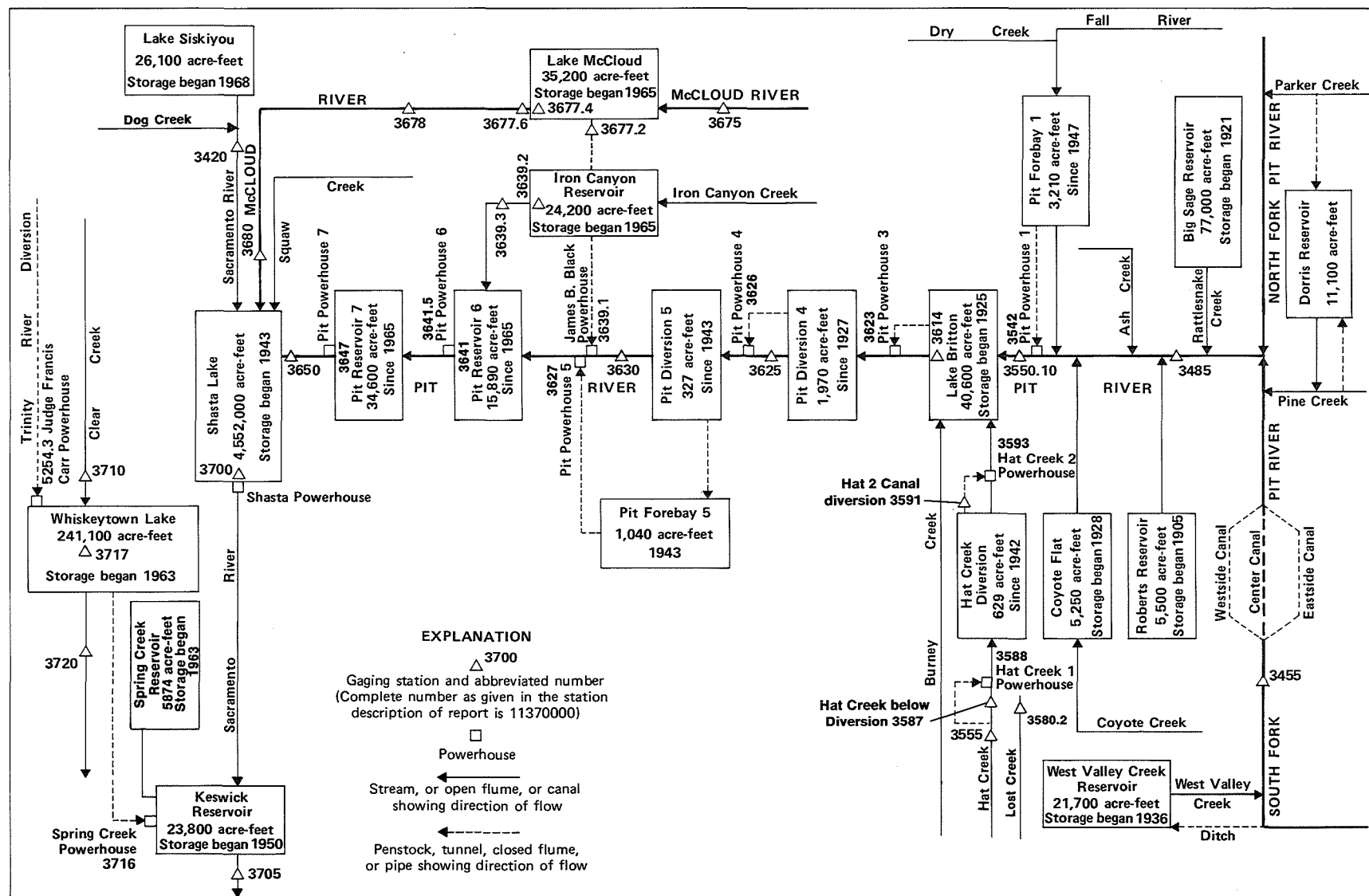


Figure 28. Diversions and storage in Pit and McCloud River basins.

SACRAMENTO RIVER BASIN

11342000 SACRAMENTO RIVER AT DELTA, CA

LOCATION.--Lat 40°56'23", long 122°24'58", in SW 1/4 NW 1/4 sec.35, T.36 N., R.5 W, Shasta County, Hydrologic Unit 18020005, U.S. Bureau of Reclamation property, on left bank 0.2 mi downstream from Dog Creek, 0.6 mi southeast of Delta, 2.8 mi south of Lamaine, and 29 mi downstream from Lake Siskiyou.

DRAINAGE AREA.--425 mi².

PERIOD OF RECORD.--October 1944 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1951-81.

WATER TEMPERATURE: Water years 1951, 1954-57, 1963-79.

GAGE.--Water-stage recorder. Datum of gage is 1,075.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--No estimated daily discharges. Records good. Some regulation by Lake Siskiyou, capacity, 26,100 acre-ft, since December 1968. Some minor diversions for irrigation upstream from station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--46 years, 1,161 ft³/s, 841,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,800 ft³/s, Jan. 16, 1974, gage height, 27.20 ft in gage well, 28.7 ft from floodmarks, from rating curve extended above 19,000 ft³/s on basis of slope-area measurements at gage height 19.50 ft, and of peak flow; minimum daily, 117 ft³/s, Aug. 5, 6, 12-15, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|--------|------|-----------------------------------|---------------------|
| Oct. 23 | 1045 | 14,300 | 11.95 | May 27 | 2230 | *20,600 | *13.58 |
| May 22 | 2115 | 18,400 | 13.00 | | | | |

Minimum daily, 186 ft³/s, Sept. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| 1 | 231 | 512 | 303 | 241 | 535 | 982 | 663 | 427 | 3390 | 425 | 240 | 216 |
| 2 | 221 | 431 | 281 | 242 | 519 | 1290 | 654 | 408 | 2710 | 413 | 237 | 212 |
| 3 | 217 | 426 | 280 | 233 | 601 | 2330 | 646 | 386 | 2310 | 410 | 235 | 210 |
| 4 | 215 | 425 | 277 | 234 | 671 | 1860 | 665 | 369 | 1820 | 399 | 235 | 207 |
| 5 | 213 | 370 | 287 | 234 | 603 | 1590 | 770 | 361 | 1550 | 389 | 233 | 204 |
| 6 | 214 | 409 | 280 | 239 | 586 | 1360 | 842 | 347 | 1420 | 394 | 229 | 202 |
| 7 | 213 | 381 | 285 | 772 | 552 | 1220 | 862 | 335 | 1250 | 375 | 226 | 199 |
| 8 | 213 | 371 | 282 | 2740 | 535 | 1370 | 882 | 324 | 1140 | 366 | 224 | 196 |
| 9 | 211 | 364 | 279 | 2120 | 524 | 1110 | 796 | 332 | 1060 | 351 | 225 | 197 |
| 10 | 211 | 357 | 275 | 1350 | 529 | 1320 | 753 | 325 | 969 | 340 | 224 | 195 |
| 11 | 210 | 345 | 265 | 985 | 558 | 1210 | 709 | 329 | 901 | 332 | 221 | 193 |
| 12 | 210 | 334 | 255 | 1350 | 574 | 1100 | 685 | 315 | 860 | 324 | 219 | 192 |
| 13 | 210 | 322 | 253 | 6330 | 559 | 1000 | 675 | 313 | 808 | 315 | 218 | 192 |
| 14 | 210 | 312 | 254 | 3820 | 558 | 952 | 675 | 308 | 778 | 310 | 217 | 192 |
| 15 | 209 | 302 | 280 | 2110 | 503 | 887 | 680 | 287 | 747 | 306 | 219 | 194 |
| 16 | 209 | 299 | 252 | 1470 | 561 | 846 | 662 | 289 | 732 | 301 | 221 | 195 |
| 17 | 209 | 292 | 247 | 1150 | 517 | 825 | 783 | 288 | 709 | 304 | 230 | 193 |
| 18 | 210 | 290 | 246 | 977 | 477 | 845 | 700 | 276 | 759 | 302 | 244 | 192 |
| 19 | 210 | 287 | 246 | 845 | 470 | 870 | 648 | 338 | 682 | 305 | 253 | 190 |
| 20 | 213 | 285 | 247 | 760 | 476 | 898 | 614 | 663 | 598 | 325 | 238 | 188 |
| 21 | 633 | 279 | 256 | 728 | 476 | 943 | 577 | 620 | 579 | 295 | 232 | 186 |
| 22 | 1820 | 276 | 256 | 650 | 551 | 995 | 567 | 6770 | 566 | 284 | 225 | 186 |
| 23 | 6690 | 271 | 252 | 639 | 640 | 1010 | 714 | 7710 | 535 | 274 | 217 | 189 |
| 24 | 2910 | 301 | 249 | 600 | 733 | 944 | 670 | 3320 | 525 | 270 | 213 | 200 |
| 25 | 1510 | 340 | 249 | 570 | 854 | 950 | 564 | 2210 | 497 | 269 | 216 | 201 |
| 26 | 1050 | 359 | 247 | 555 | 899 | 927 | 520 | 2290 | 483 | 266 | 269 | 217 |
| 27 | 971 | 307 | 241 | 528 | 945 | 907 | 502 | 14700 | 470 | 263 | 249 | 207 |
| 28 | 734 | 284 | 240 | 508 | 979 | 848 | 487 | 11700 | 464 | 259 | 235 | 198 |
| 29 | 647 | 288 | 235 | 497 | --- | 726 | 461 | 5350 | 451 | 253 | 230 | 193 |
| 30 | 598 | 289 | 234 | 631 | --- | 689 | 444 | 4810 | 435 | 248 | 226 | 190 |
| 31 | 558 | --- | 234 | 558 | --- | 668 | --- | 4360 | --- | 245 | 219 | --- |
| TOTAL | 22380 | 10108 | 8067 | 34666 | 16985 | 33472 | 19870 | 70860 | 30198 | 9912 | 7119 | 5926 |
| MEAN | 722 | 337 | 260 | 1118 | 607 | 1080 | 662 | 2286 | 1007 | 320 | 230 | 198 |
| MAX | 6690 | 512 | 303 | 6330 | 979 | 2330 | 882 | 14700 | 3390 | 425 | 269 | 217 |
| MIN | 209 | 271 | 234 | 233 | 470 | 668 | 444 | 276 | 435 | 245 | 213 | 186 |
| AC-FT | 44390 | 20050 | 16000 | 68760 | 33690 | 66390 | 39410 | 140600 | 59900 | 19660 | 14120 | 11750 |

CAL YR 1989 TOTAL 325585 MEAN 892 MAX 20500 MIN 185 AC-FT 645800
WTR YR 1990 TOTAL 269563 MEAN 739 MAX 14700 MIN 186 AC-FT 534700

11345500 SOUTH FORK PIT RIVER NEAR LIKELY, CA

LOCATION.--Lat 41°13'51", long 120°26'10", in NE 1/4 SE 1/4 sec.11, T.39 N., R.13 E., Modoc County, Hydrologic Unit 18020002, on left bank 250 ft downstream from highway bridge, 1.4 mi downstream from West Valley Creek, 2 mi downstream from West Valley Reservoir, and 3.5 mi east of Likely.

DRAINAGE AREA.--247 mi².

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1951-79.

WATER TEMPERATURE: Water years 1965-79.

SEDIMENT DATA: Water years 1957-61, 1967-70.

REVISED RECORDS.--WSP 1931: Drainage area. WDR CA-88-4: 1983(M).

GAGE.--Water-stage recorder. Datum of gage is 4,507.74 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, at site 1,000 ft downstream at different datum.

REMARKS.--Records good except for estimated daily discharges for the ice-affected periods, Nov. 28 to Dec. 2, Dec. 10 to Jan. 5, Jan. 18 to Feb. 5, and Feb 7-24, which are poor. Considerable regulation by West Valley Reservoir on West Valley Creek beginning in May 1937, usable capacity, 21,700 acre-ft. Diversions for irrigation of about 3,800 acres upstream from station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--62 years, 80.8 ft³/s, 58,540 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,620 ft³/s, June 2, 1971, gage height, 6.05 ft; minimum, 0.2 ft³/s, Feb. 3, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 147 ft³/s, June 26, gage height, 2.91 ft, maximum gage height, 3.12 ft, Dec. 20, backwater from ice; minimum daily, 3.9 ft³/s, Feb. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|------|------|------|------|------|------|------|
| 1 | 26 | 28 | e17 | e15 | e7.2 | 26 | 19 | 73 | 88 | 128 | 116 | 58 |
| 2 | 27 | 27 | e18 | e17 | e8.0 | 72 | 31 | 78 | 93 | 125 | 136 | 74 |
| 3 | 27 | 24 | 20 | e19 | e8.9 | 58 | 42 | 80 | 82 | 120 | 133 | 86 |
| 4 | 28 | 25 | 20 | e18 | e9.6 | 39 | 51 | 77 | 71 | 103 | 131 | 84 |
| 5 | 29 | 24 | 23 | e17 | e11 | 28 | 51 | 77 | 83 | 85 | 130 | 82 |
| 6 | 29 | 18 | 32 | 19 | 12 | 19 | 46 | 84 | 92 | 82 | 127 | 81 |
| 7 | 29 | 20 | 25 | 20 | e15 | 16 | 44 | 99 | 82 | 82 | 111 | 79 |
| 8 | 29 | 19 | 24 | 27 | e12 | 13 | 46 | 101 | 60 | 81 | 90 | 77 |
| 9 | 29 | 20 | 23 | 24 | e9.9 | 11 | 44 | 102 | 66 | 80 | 78 | 55 |
| 10 | 29 | 20 | e19 | 21 | e9.2 | 11 | 44 | 98 | 68 | 78 | 98 | 33 |
| 11 | 30 | 20 | e16 | 20 | e9.0 | 11 | 45 | 95 | 69 | 77 | 108 | 33 |
| 12 | 31 | 20 | e14 | 21 | e8.8 | 11 | 45 | 94 | 78 | 78 | 108 | 32 |
| 13 | 32 | 20 | e15 | 22 | e8.3 | 14 | 47 | 97 | 82 | 78 | 106 | 33 |
| 14 | 32 | 19 | e16 | 21 | e7.5 | 12 | 49 | 99 | 94 | 78 | 105 | 33 |
| 15 | 33 | 19 | e15 | 21 | e6.0 | 21 | 46 | 109 | 92 | 84 | 104 | 32 |
| 16 | 33 | 20 | e14 | 21 | e5.0 | 20 | 46 | 106 | 93 | 91 | 103 | 33 |
| 17 | 32 | 20 | e13 | 18 | e4.6 | 15 | 45 | 103 | 95 | 101 | 103 | 33 |
| 18 | 32 | 19 | e13 | e14 | e6.3 | 14 | 37 | 102 | 90 | 104 | 92 | 32 |
| 19 | 33 | 19 | e13 | e9.0 | e5.4 | 14 | 45 | 102 | 85 | 105 | 75 | 32 |
| 20 | 33 | 19 | e14 | e6.5 | e4.2 | 16 | 67 | 108 | 82 | 105 | 61 | 31 |
| 21 | 34 | 18 | e14 | e4.3 | e3.9 | 18 | 65 | 111 | 78 | 103 | 54 | 30 |
| 22 | 37 | 18 | e14 | e4.4 | e4.7 | 19 | 77 | 109 | 76 | 102 | 45 | 29 |
| 23 | 38 | 18 | e15 | e4.6 | e6.0 | 23 | 98 | 111 | 79 | 100 | 40 | 29 |
| 24 | 38 | 25 | e16 | e4.7 | e8.5 | 26 | 89 | 111 | 85 | 104 | 38 | 28 |
| 25 | 37 | 23 | e17 | e4.8 | 14 | 27 | 88 | 86 | 95 | 91 | 37 | 28 |
| 26 | 30 | 23 | e15 | e4.8 | 20 | 31 | 85 | 84 | 123 | 82 | 37 | 28 |
| 27 | 32 | 22 | e15 | e4.8 | 25 | 26 | 78 | 74 | 138 | 80 | 36 | 29 |
| 28 | 29 | e18 | e18 | e4.8 | 31 | 26 | 81 | 69 | 136 | 79 | 36 | 29 |
| 29 | 27 | e16 | e16 | e4.9 | --- | 13 | 77 | 91 | 134 | 77 | 39 | 28 |
| 30 | 27 | e19 | e15 | e5.2 | --- | 13 | 72 | 94 | 129 | 73 | 46 | 28 |
| 31 | 28 | --- | e14 | e6.2 | --- | 15 | --- | 99 | --- | 84 | 52 | --- |
| TOTAL | 960 | 620 | 533 | 424.0 | 281.0 | 678 | 1700 | 2923 | 2718 | 2840 | 2575 | 1319 |
| MEAN | 31.0 | 20.7 | 17.2 | 13.7 | 10.0 | 21.9 | 56.7 | 94.3 | 90.6 | 91.6 | 83.1 | 44.0 |
| MAX | 38 | 28 | 32 | 27 | 31 | 72 | 98 | 111 | 138 | 128 | 136 | 86 |
| MIN | 26 | 16 | 13 | 4.3 | 3.9 | 11 | 19 | 69 | 60 | 73 | 36 | 28 |
| AC-FT | 1900 | 1230 | 1060 | 841 | 557 | 1340 | 3370 | 5800 | 5390 | 5630 | 5110 | 2620 |

CAL YR 1989 TOTAL 28566.3 MEAN 78.3 MAX 334 MIN 4.3 AC-FT 56660
WTR YR 1990 TOTAL 17571.0 MEAN 48.1 MAX 138 MIN 3.9 AC-FT 34850

e Estimated.

11348500 PIT RIVER NEAR CANBY, CA

LOCATION.--Lat 41°24'22", long 120°55'36", in NW 1/4 SW 1/4 sec.10, T.41 N., R.9 E., Modoc County, Hydrologic Unit 18020002, on right bank at lower end of Warm Spring Valley, 3.9 mi southwest of Canby.

DRAINAGE AREA.--1,431 mi², excluding Goose Lake basin.

PERIOD OF RECORD.--January 1904 to December 1905, May 1929 to current year (1929-31 incomplete).

CHEMICAL DATA: Water years 1951-79.

WATER TEMPERATURE: Water years 1965-79.

SEDIMENT DATA: Water years 1957-61, 1967-70.

REVISED RECORDS.--WSP 1445: 1904, 1935(M), 1936, 1937(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,266.0 ft above National Geodetic Vertical Datum of 1929.

January 1904 to December 1905, nonrecording gage and May 6, 1929, to Sept. 30, 1931, water-stage recorder, at site 100 ft upstream at different datum.

REMARKS.--Records good except for estimated daily discharges for the ice-affected periods, Dec. 13 to Jan. 5 and Jan. 18 to Feb. 24, which are poor. Low flow regulated by many small reservoirs, total capacity about 144,000 acre-ft. Diversions for irrigation of about 39,000 acres upstream from station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--60 years (water years 1905, 1932-90), 247 ft³/s, 179,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 13,000 ft³/s, Mar. 8, 1904, gage height, 15.0 ft, site and datum then in use; minimum discharge, 0.1 ft³/s, Apr. 29, Aug. 5, Sept. 18, 1934, Aug. 18-21, 1935.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Mar. 3 | 1700 | *878 | *4.54 | | | | |

Minimum daily, 0.54 ft³/s, July 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|-------|--------|-------|--------|--------|-------|-------|
| 1 | 61 | 84 | 98 | e52 | e70 | 408 | 102 | 52 | 295 | 5.4 | 25 | 28 |
| 2 | 52 | 86 | 105 | e53 | e67 | 464 | 101 | 54 | 264 | 5.6 | 24 | 29 |
| 3 | 69 | 65 | 90 | e53 | e64 | 799 | 99 | 78 | 232 | 5.9 | 19 | 36 |
| 4 | 48 | 72 | 85 | e50 | e60 | 690 | 87 | 72 | 222 | 9.1 | 16 | 42 |
| 5 | 53 | 81 | 97 | e63 | e62 | 495 | 84 | 40 | 200 | 12 | 14 | 34 |
| 6 | 53 | 71 | 125 | 74 | e66 | 394 | 89 | 30 | 147 | 23 | 12 | 39 |
| 7 | 47 | 74 | 130 | 82 | e51 | 305 | 90 | 20 | 93 | 27 | 7.7 | 38 |
| 8 | 40 | 82 | 112 | 125 | e66 | 220 | 77 | 4.2 | 75 | 21 | 4.8 | 36 |
| 9 | 33 | 72 | 100 | 172 | e62 | 181 | 88 | 5.7 | 81 | 14 | 7.1 | 36 |
| 10 | 30 | 61 | 92 | 184 | e54 | 160 | 85 | 6.7 | 75 | 12 | 7.3 | 29 |
| 11 | 25 | 62 | 82 | 152 | e49 | 165 | 63 | 8.7 | 63 | 14 | 10 | 21 |
| 12 | 24 | 66 | 69 | 129 | e46 | 178 | 50 | 6.7 | 62 | 16 | 17 | 19 |
| 13 | 24 | 68 | e65 | 127 | e43 | 185 | 43 | 5.3 | 56 | 11 | 14 | 15 |
| 14 | 24 | 67 | e60 | 118 | e40 | 185 | 32 | 5.6 | 52 | 7.7 | 12 | 13 |
| 15 | 25 | 67 | e59 | 116 | e35 | 210 | 14 | 4.7 | 43 | 4.7 | 10 | 11 |
| 16 | 25 | 69 | e58 | 115 | e44 | 291 | 6.3 | 3.8 | 32 | 1.8 | 9.2 | 10 |
| 17 | 25 | 78 | e58 | 110 | e40 | 345 | 6.6 | 2.5 | 22 | .78 | 8.0 | 13 |
| 18 | 25 | 83 | e57 | e86 | e35 | 247 | 4.2 | 2.9 | 20 | .67 | 7.7 | 12 |
| 19 | 34 | 84 | e58 | e54 | e30 | 199 | 4.8 | 3.5 | 18 | .54 | 5.5 | 12 |
| 20 | 68 | 76 | e59 | e53 | e26 | 177 | 4.6 | 5.3 | 15 | 2.9 | 4.2 | 12 |
| 21 | 113 | 72 | e60 | e52 | e23 | 161 | 7.5 | 10 | 15 | 18 | 4.8 | 12 |
| 22 | 143 | 79 | e75 | e50 | e21 | 141 | 13 | 13 | 22 | 9.9 | 16 | 12 |
| 23 | 164 | 69 | e70 | e50 | e30 | 136 | 28 | 23 | 20 | 5.1 | 24 | 16 |
| 24 | 148 | 82 | e68 | e67 | e40 | 135 | 54 | 28 | 18 | 4.8 | 29 | 11 |
| 25 | 121 | 148 | e64 | e79 | 93 | 128 | 63 | 29 | 17 | 4.2 | 26 | 12 |
| 26 | 113 | 144 | e63 | e74 | 173 | 128 | 68 | 30 | 12 | 4.7 | 26 | 13 |
| 27 | 122 | 123 | e63 | e69 | 315 | 140 | 44 | 28 | 11 | 4.2 | 24 | 12 |
| 28 | 142 | 102 | e74 | e64 | 382 | 157 | 36 | 38 | 12 | 4.6 | 21 | 15 |
| 29 | 112 | 91 | e57 | e52 | --- | 134 | 34 | 66 | 5.9 | 4.5 | 21 | 13 |
| 30 | 99 | 96 | e52 | e61 | --- | 125 | 36 | 97 | 6.6 | 7.4 | 21 | 8.3 |
| 31 | 90 | --- | e52 | e68 | --- | 109 | --- | 223 | --- | 12 | 27 | --- |
| TOTAL | 2152 | 2474 | 2357 | 2654 | 2087 | 7792 | 1514.0 | 996.6 | 2206.5 | 274.49 | 474.3 | 609.3 |
| MEAN | 69.4 | 82.5 | 76.0 | 85.6 | 74.5 | 251 | 50.5 | 32.1 | 73.5 | 8.85 | 15.3 | 20.3 |
| MAX | 164 | 148 | 130 | 184 | 382 | 799 | 102 | 223 | 295 | 27 | 29 | 42 |
| MIN | 24 | 61 | 52 | 50 | 21 | 109 | 4.2 | 2.5 | 5.9 | .54 | 4.2 | 8.3 |
| AC-FT | 4270 | 4910 | 4680 | 5260 | 4140 | 15460 | 3000 | 1980 | 4380 | 544 | 941 | 1210 |

CAL YR 1989 TOTAL 79053.6 MEAN 217 MAX 2940 MIN 1.5 AC-FT 156800

WTR YR 1990 TOTAL 25591.19 MEAN 70.1 MAX 799 MIN .54 AC-FT 50760

e Estimated.

11354200 PIT NO. 1 POWERPLANT NEAR FALL RIVER MILLS, CA

LOCATION.--Lat 40°59'28", long 121°29'49", in SE 1/4 NE 1/4 sec.10, T.37 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on right bank of Pit River 2.3 mi downstream from Pit River Falls and 3.2 mi southwest of Fall River Mills.

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1973-86 available in files of the U.S. Geological Survey. Fragmentary record for water years 1922-72 available in files of the Pacific Gas & Electric Co.

GAGE.--Discharge computed from powerplant output.

REMARKS.--No estimated daily discharges. Water is diverted from Fall River at Pit No. 1 forebay at NW 1/4 SW 1/4 sec.25, T.37 N., R.4 E., through a tunnel to powerplant and then into Pit River. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,160 ft³/s, Mar. 11, 1989; minimum daily, 431 ft³/s, Mar. 2, 1987.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 1030 | 1220 | 1230 | 1070 | 650 | 1190 | 1120 | 1060 | 1200 | 892 | 940 | 905 |
| 2 | 1030 | 1090 | 954 | 1120 | 792 | 1250 | 1200 | 1080 | 1190 | 1010 | 941 | 960 |
| 3 | 1080 | 1190 | 1110 | 1150 | 1180 | 1170 | 1100 | 1040 | 1190 | 1000 | 919 | 949 |
| 4 | 1120 | 1070 | 1160 | 993 | 1150 | 1300 | 1060 | 1010 | 1210 | 966 | 972 | 1010 |
| 5 | 1130 | 1110 | 1060 | 1200 | 1130 | 1280 | 1280 | 1000 | 1210 | 953 | 864 | 986 |
| 6 | 1100 | 1160 | 1160 | 1030 | 1130 | 1140 | 1110 | 939 | 1200 | 959 | 1010 | 999 |
| 7 | 1130 | 1070 | 1060 | 1100 | 1090 | 1210 | 1190 | 862 | 895 | 1070 | 777 | 1010 |
| 8 | 1090 | 1190 | 1090 | 1220 | 1120 | 1080 | 1100 | 1240 | 1310 | 947 | 1140 | 973 |
| 9 | 1120 | 1120 | 1140 | 1190 | 1120 | 1320 | 1170 | 1100 | 1070 | 996 | 933 | 943 |
| 10 | 1120 | 1110 | 1140 | 1140 | 1100 | 1140 | 1200 | 1070 | 1090 | 973 | 944 | 995 |
| 11 | 1130 | 1170 | 1120 | 1180 | 1060 | 1340 | 1160 | 1050 | 1090 | 976 | 907 | 963 |
| 12 | 1100 | 1080 | 1060 | 1180 | 1150 | 1230 | 1080 | 1140 | 1120 | 947 | 954 | 963 |
| 13 | 1130 | 1130 | 1130 | 1120 | 1160 | 1210 | 1150 | 1000 | 1080 | 972 | 980 | 1020 |
| 14 | 1120 | 1110 | 1100 | 1150 | 1090 | 1220 | 1110 | 1210 | 1020 | 954 | 970 | 977 |
| 15 | 1120 | 1170 | 1100 | 1220 | 1060 | 1250 | 1320 | 1260 | 987 | 990 | 961 | 1020 |
| 16 | 1080 | 1170 | 1060 | 1100 | 1150 | 1130 | 1460 | 1260 | 1090 | 957 | 958 | 1010 |
| 17 | 1110 | 1100 | 1200 | 1220 | 1160 | 1180 | 1150 | 1270 | 1020 | 986 | 979 | 1030 |
| 18 | 1130 | 1110 | 1030 | 1110 | 1120 | 1140 | 1130 | 1230 | 1010 | 974 | 982 | 957 |
| 19 | 1110 | 1150 | 1090 | 1110 | 1120 | 1170 | 1150 | 1100 | 1050 | 966 | 969 | 1040 |
| 20 | 1150 | 1170 | 1160 | 1120 | 1100 | 1170 | 1100 | 1160 | 999 | 947 | 1000 | 972 |
| 21 | 1080 | 1090 | 1070 | 1120 | 1130 | 1200 | 1080 | 1200 | 953 | 972 | 926 | 1030 |
| 22 | 1160 | 1070 | 1140 | 1130 | 1090 | 1140 | 1030 | 1150 | 1020 | 1030 | 1070 | 977 |
| 23 | 1230 | 1110 | 1080 | 1160 | 1150 | 1200 | 1160 | 1230 | 1000 | 906 | 996 | 987 |
| 24 | 1180 | 1040 | 1070 | 1030 | 1100 | 1160 | 1080 | 986 | 910 | 945 | 830 | 1030 |
| 25 | 1250 | 1220 | 1120 | 1170 | 1100 | 1120 | 1210 | 1310 | 1090 | 930 | 888 | 1050 |
| 26 | 1200 | 1170 | 1140 | 1130 | 1120 | 1220 | 1110 | 1090 | 990 | 970 | 913 | 1050 |
| 27 | 1170 | 1160 | 1110 | 1100 | 1190 | 1220 | 1140 | 1150 | 929 | 922 | 1240 | 1040 |
| 28 | 1170 | 1080 | 1080 | 1060 | 1100 | 1130 | 1140 | 1150 | 1040 | 940 | 969 | 1050 |
| 29 | 1210 | 1130 | 1070 | 1180 | --- | 1180 | 1110 | 1190 | 1010 | 983 | 929 | 1010 |
| 30 | 1090 | 1100 | 1160 | 1060 | --- | 1200 | 1120 | 1180 | 990 | 869 | 1000 | 1010 |
| 31 | 1120 | --- | 1100 | 1060 | --- | 1100 | --- | 1210 | --- | 1050 | 944 | --- |
| TOTAL | 34990 | 33860 | 34294 | 34923 | 30612 | 36990 | 34520 | 34927 | 31963 | 29952 | 29805 | 29916 |
| MEAN | 1129 | 1129 | 1106 | 1127 | 1093 | 1193 | 1151 | 1127 | 1065 | 966 | 961 | 997 |
| MAX | 1250 | 1220 | 1230 | 1220 | 1190 | 1340 | 1460 | 1310 | 1310 | 1070 | 1240 | 1050 |
| MIN | 1030 | 1040 | 954 | 993 | 650 | 1080 | 1030 | 862 | 895 | 869 | 777 | 905 |
| AC-FT | 69400 | 67160 | 68020 | 69270 | 60720 | 73370 | 68470 | 69280 | 63400 | 59410 | 59120 | 59340 |

CAL YR 1989 TOTAL 433727 MEAN 1188 MAX 2160 MIN 497 AC-FT 860300
WTR YR 1990 TOTAL 396752 MEAN 1087 MAX 1460 MIN 650 AC-FT 787000

SACRAMENTO RIVER BASIN

11355010 PIT RIVER BELOW PIT NO. 1 POWERPLANT, NEAR FALL RIVER MILLS, CA

LOCATION.--Lat 40°59'00", long 121°30'39", in NE 1/4 NW 1/4 sec.15, T.36 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on left bank 0.9 mi downstream from Pit No. 1 powerplant and 4 mi southwest of Fall River Mills.

DRAINAGE AREA.--3,761 mi², excluding Goose Lake basin.

PERIOD OF RECORD.--August 1975 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,840 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Low flow regulated by many small reservoirs (total usable reservoir capacity, 210,000 acre-ft) and Pit No. 1 powerplant. Many diversions upstream from station for irrigation. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--15 years, 1,923 ft³/s, 1,393,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s, Feb. 20, 1986, gage height, 17.03 ft; minimum daily, 683 ft³/s, Feb. 1, 1989.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1974 reached a stage of 14.8 ft, from floodmarks on right bank, discharge 22,600 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Mar. 5 | 2145 | *3,670 | *7.92 | | | | |

Minimum daily, 855 ft³/s, Feb. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| 1 | 1190 | 1800 | 1380 | 1310 | 855 | 2050 | 1450 | 1180 | 2300 | 1020 | 1080 | 1040 |
| 2 | 1290 | 1300 | 1340 | 1360 | 1030 | 2300 | 1550 | 1240 | 2360 | 1140 | 1070 | 1110 |
| 3 | 1300 | 1480 | 1390 | 1370 | 1460 | 2530 | 1360 | 1190 | 2320 | 1100 | 1060 | 1100 |
| 4 | 1280 | 1290 | 1450 | 1220 | 1430 | 2850 | 1300 | 1150 | 2210 | 1100 | 1130 | 1150 |
| 5 | 1290 | 1350 | 1330 | 1430 | 1390 | 3260 | 1530 | 1160 | 2230 | 1120 | 1000 | 1120 |
| 6 | 1310 | 1360 | 1440 | 1290 | 1460 | 2920 | 1430 | 1090 | 2050 | 1090 | 1150 | 1140 |
| 7 | 1300 | 1300 | 1350 | 1330 | 1370 | 2580 | 1510 | 943 | 1810 | 1220 | 875 | 1160 |
| 8 | 1280 | 1430 | 1400 | 1540 | 1360 | 2230 | 1350 | 1340 | 1880 | 1080 | 1270 | 1100 |
| 9 | 1270 | 1350 | 1450 | 1530 | 1420 | 2290 | 1410 | 1180 | 1510 | 1140 | 1090 | 1070 |
| 10 | 1260 | 1330 | 1430 | 1540 | 1400 | 1910 | 1400 | 1140 | 1440 | 1110 | 1080 | 1130 |
| 11 | 1330 | 1410 | 1410 | 1590 | 1360 | 2160 | 1350 | 1110 | 1380 | 1110 | 1040 | 1070 |
| 12 | 1260 | 1300 | 1290 | 1600 | 1470 | 2170 | 1260 | 1180 | 1380 | 1090 | 1080 | 1140 |
| 13 | 1260 | 1330 | 1380 | 1490 | 1510 | 2090 | 1320 | 1060 | 1360 | 1110 | 1120 | 1140 |
| 14 | 1280 | 1320 | 1340 | 1520 | 1360 | 2040 | 1300 | 1310 | 1220 | 1100 | 1110 | 1120 |
| 15 | 1280 | 1380 | 1340 | 1600 | 1350 | 2180 | 1530 | 1360 | 1150 | 1140 | 1100 | 1150 |
| 16 | 1230 | 1340 | 1300 | 1440 | 1430 | 2190 | 1650 | 1360 | 1260 | 1090 | 1100 | 1140 |
| 17 | 1240 | 1300 | 1440 | 1580 | 1430 | 2410 | 1280 | 1360 | 1190 | 1130 | 1120 | 1160 |
| 18 | 1280 | 1310 | 1240 | 1450 | 1360 | 2470 | 1290 | 1310 | 1180 | 1100 | 1110 | 1090 |
| 19 | 1260 | 1360 | 1320 | 1400 | 1330 | 2350 | 1290 | 1120 | 1220 | 1120 | 1100 | 1180 |
| 20 | 1290 | 1390 | 1380 | 1380 | 1320 | 2110 | 1230 | 1210 | 1150 | 1090 | 1150 | 1110 |
| 21 | 1220 | 1270 | 1320 | 1370 | 1400 | 1990 | 1240 | 1280 | 1090 | 1110 | 1060 | 1160 |
| 22 | 1310 | 1320 | 1360 | 1350 | 1350 | 1800 | 1190 | 1190 | 1170 | 1190 | 1210 | 1130 |
| 23 | 1430 | 1360 | 1270 | 1430 | 1460 | 1820 | 1330 | 1320 | 1140 | 1000 | 1150 | 1120 |
| 24 | 1420 | 1270 | 1330 | 1300 | 1440 | 1720 | 1280 | 1220 | 1050 | 1100 | 959 | 1160 |
| 25 | 1580 | 1480 | 1330 | 1450 | 1530 | 1630 | 1380 | 1320 | 1220 | 1060 | 977 | 1190 |
| 26 | 1510 | 1440 | 1320 | 1420 | 1650 | 1740 | 1320 | 1280 | 1140 | 1110 | 1040 | 1190 |
| 27 | 1480 | 1450 | 1350 | 1350 | 1840 | 1720 | 1280 | 1310 | 1040 | 1050 | 1390 | 1190 |
| 28 | 1400 | 1380 | 1330 | 1310 | 1890 | 1580 | 1310 | 1330 | 1190 | 1070 | 1120 | 1180 |
| 29 | 1330 | 1410 | 1250 | 1520 | --- | 1600 | 1250 | 1310 | 1140 | 1110 | 1070 | 1140 |
| 30 | 1270 | 1340 | 1400 | 1370 | --- | 1620 | 1270 | 1270 | 1110 | 987 | 1150 | 1150 |
| 31 | 1350 | --- | 1340 | 1350 | --- | 1520 | --- | 1800 | --- | 1190 | 1100 | --- |
| TOTAL | 40780 | 41150 | 42000 | 44190 | 39655 | 65830 | 40640 | 38623 | 43890 | 34177 | 34061 | 34030 |
| MEAN | 1315 | 1372 | 1355 | 1425 | 1416 | 2124 | 1355 | 1246 | 1463 | 1102 | 1099 | 1134 |
| MAX | 1580 | 1800 | 1450 | 1600 | 1890 | 3260 | 1650 | 1800 | 2360 | 1220 | 1390 | 1190 |
| MIN | 1190 | 1270 | 1240 | 1220 | 855 | 1520 | 1190 | 943 | 1040 | 987 | 875 | 1040 |
| AC-FT | 80890 | 81620 | 83310 | 87650 | 78660 | 130600 | 80610 | 76610 | 87060 | 67790 | 67560 | 67500 |

CAL YR 1989 TOTAL 636993 MEAN 1745 MAX 10500 MIN 683 AC-FT 1263000
WTR YR 1990 TOTAL 499026 MEAN 1367 MAX 3260 MIN 855 AC-FT 989800

11355500 HAT CREEK NEAR HAT CREEK, CA

LOCATION.--Lat 40°41'12", long 121°25'25", in NW 1/4 SE 1/4 sec.28, T.33 N., R.5 E., Shasta County, Hydrologic Unit 18020003, on right bank 0.15 mi downstream from Cave Campground, 0.9 mi northeast of Old Station, and 8.9 mi southeast of Hat Creek Ranger Station.

DRAINAGE AREA.--162 mi², hydrologic drainage boundary uncertain because of ground-water exchange.

PERIOD OF RECORD.--July 1926 to September 1929, April 1930 to current year.

REVISED RECORDS.--WSP 1395: 1938. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,300 ft above National Geodetic Vertical Datum of 1929, from topographic map. July 1926 to April 1928, at site 0.5 mi upstream at different datum. May 1928 to July 1965, at site 80 ft upstream at datum 2.76 ft higher.

REMARKS.--No estimated daily discharges. Records excellent. Diversions for irrigation of 260 acres upstream from station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--63 years (water years 1927-29, 1931-90), 142 ft³/s, 102,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,320 ft³/s, Dec. 11, 1937, gage height, 7.75 ft, in gage well, affected by drawdown, site and datum then in use, from rating curve extended above 610 ft³/s on basis of slope-area measurement of peak flow; minimum, 67 ft³/s, Sept. 7, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Oct. 23 | 1130 | *224 | *3.23 | | | | |

Minimum daily, 98 ft³/s, Sept. 11-13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 119 | 124 | 119 | 115 | 117 | 116 | 121 | 124 | 136 | 115 | 101 | 107 |
| 2 | 119 | 124 | 119 | 113 | 116 | 118 | 121 | 129 | 138 | 115 | 101 | 106 |
| 3 | 120 | 124 | 119 | 110 | 118 | 119 | 122 | 129 | 137 | 115 | 101 | 106 |
| 4 | 120 | 123 | 120 | 109 | 115 | 118 | 124 | 130 | 134 | 114 | 101 | 107 |
| 5 | 119 | 123 | 120 | 112 | 116 | 117 | 125 | 131 | 129 | 114 | 101 | 107 |
| 6 | 119 | 122 | 120 | 114 | 118 | 116 | 126 | 132 | 128 | 114 | 100 | 107 |
| 7 | 119 | 122 | 118 | 123 | 115 | 116 | 129 | 131 | 126 | 113 | 100 | 106 |
| 8 | 118 | 121 | 119 | 156 | 116 | 116 | 128 | 128 | 124 | 113 | 101 | 101 |
| 9 | 119 | 121 | 119 | 139 | 117 | 115 | 128 | 126 | 124 | 112 | 106 | 99 |
| 10 | 119 | 121 | 113 | 127 | 117 | 117 | 128 | 126 | 128 | 107 | 108 | 99 |
| 11 | 119 | 121 | 112 | 125 | 116 | 115 | 130 | 122 | 130 | 105 | 108 | 98 |
| 12 | 119 | 121 | 112 | 126 | 117 | 115 | 132 | 118 | 128 | 104 | 108 | 98 |
| 13 | 119 | 121 | 114 | 124 | 114 | 114 | 127 | 119 | 127 | 103 | 108 | 98 |
| 14 | 119 | 120 | 114 | 124 | 113 | 116 | 123 | 118 | 127 | 103 | 108 | 99 |
| 15 | 119 | 120 | 116 | 122 | 113 | 116 | 126 | 115 | 126 | 104 | 108 | 100 |
| 16 | 119 | 120 | 115 | 122 | 115 | 116 | 126 | 114 | 126 | 103 | 108 | 100 |
| 17 | 119 | 120 | 114 | 121 | 114 | 116 | 128 | 113 | 124 | 103 | 108 | 99 |
| 18 | 119 | 120 | 114 | 114 | 113 | 117 | 128 | 113 | 123 | 103 | 109 | 104 |
| 19 | 119 | 119 | 113 | 114 | 113 | 118 | 128 | 114 | 122 | 103 | 106 | 106 |
| 20 | 120 | 119 | 112 | 113 | 113 | 118 | 126 | 119 | 116 | 108 | 103 | 106 |
| 21 | 127 | 119 | 114 | 113 | 115 | 118 | 125 | 125 | 113 | 110 | 104 | 106 |
| 22 | 136 | 119 | 114 | 116 | 116 | 119 | 125 | 128 | 112 | 110 | 103 | 106 |
| 23 | 189 | 120 | 114 | 116 | 116 | 120 | 136 | 146 | 112 | 110 | 102 | 106 |
| 24 | 149 | 123 | 114 | 116 | 116 | 121 | 130 | 138 | 111 | 110 | 102 | 107 |
| 25 | 136 | 122 | 115 | 118 | 117 | 121 | 125 | 131 | 111 | 110 | 101 | 107 |
| 26 | 131 | 117 | 114 | 119 | 116 | 121 | 123 | 133 | 110 | 109 | 102 | 109 |
| 27 | 131 | 115 | 115 | 114 | 116 | 121 | 125 | 176 | 110 | 109 | 101 | 108 |
| 28 | 127 | 116 | 114 | 116 | 117 | 121 | 124 | 172 | 109 | 109 | 101 | 103 |
| 29 | 125 | 116 | 111 | 119 | --- | 120 | 122 | 149 | 108 | 109 | 104 | 100 |
| 30 | 125 | 119 | 111 | 119 | --- | 120 | 118 | 148 | 113 | 104 | 107 | 100 |
| 31 | 125 | --- | 114 | 116 | --- | 120 | --- | 143 | --- | 101 | 107 | --- |
| TOTAL | 3883 | 3612 | 3572 | 3705 | 3235 | 3651 | 3779 | 4040 | 3662 | 3362 | 3228 | 3105 |
| MEAN | 125 | 120 | 115 | 120 | 116 | 118 | 126 | 130 | 122 | 108 | 104 | 103 |
| MAX | 189 | 124 | 120 | 156 | 118 | 121 | 136 | 176 | 138 | 115 | 109 | 109 |
| MIN | 118 | 115 | 111 | 109 | 113 | 114 | 118 | 113 | 108 | 101 | 100 | 98 |
| AC-FT | 7700 | 7160 | 7090 | 7350 | 6420 | 7240 | 7500 | 8010 | 7260 | 6670 | 6400 | 6160 |

CAL YR 1989 TOTAL 47525 MEAN 130 MAX 280 MIN 109 AC-FT 94270
WTR YR 1990 TOTAL 42834 MEAN 117 MAX 189 MIN 98 AC-FT 84960

SACRAMENTO RIVER BASIN

11358020 LOST CREEK BELOW DIVERSION TO LOST CREEK POWERPLANT NO. 1, NEAR OLD STATION, CA

LOCATION.--Lat 40°45'35", long 121°24'46", in NW 1/4 SW 1/4 sec.34, T.34 N., R.5 E., Shasta County, Hydrologic Unit 18020003, on right bank 0.4 mi downstream from Lost Creek diversion dam, 2.5 mi downstream from Porcupine Reservoir, 6.0 mi north of Old Station, and 13.2 mi southeast of Cassel.

DRAINAGE AREA.--7.53 mi².

PERIOD OF RECORD.--October 1989 to September 1990 (operated as low-flow station only).

GAGE.--Water-stage recorder and sharp-crested weir. Elevation of gage is 3,900 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. This station records regulated bypass flow or natural flow only. During times of powerplant operation the minimum bypass flow requirement is 15 ft³/s; flow is computed to 57 ft³/s.

COOPERATION.--Records were collected by Highland Hydro Constructors, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|------|------|------|------|------|------|------|------|------|------|------|
| 1 | --- | 28 | 17 | 18 | 16 | 18 | 16 | 17 | 18 | 17 | 16 | 19 |
| 2 | --- | 35 | 17 | 18 | 16 | 22 | 17 | 17 | 18 | 17 | 16 | 19 |
| 3 | --- | 19 | 17 | 18 | 16 | 17 | 17 | 17 | 17 | 17 | 19 | 19 |
| 4 | --- | 17 | 17 | 18 | 17 | 16 | 17 | 18 | 17 | 17 | 21 | 19 |
| 5 | --- | 16 | 17 | 19 | 17 | 23 | 17 | 17 | 17 | 17 | 21 | 19 |
| 6 | --- | 17 | 16 | 19 | 17 | 27 | 17 | 17 | 16 | 17 | 25 | 19 |
| 7 | --- | 16 | 16 | 19 | 17 | 20 | 17 | 17 | 18 | 17 | 26 | 19 |
| 8 | --- | 17 | 17 | 19 | 17 | 21 | 17 | 17 | 17 | 17 | 22 | 19 |
| 9 | --- | 16 | 16 | 19 | 17 | 17 | 17 | 17 | 16 | 17 | 27 | 19 |
| 10 | 18 | 16 | 16 | 17 | 17 | 17 | 16 | 17 | 16 | 17 | 20 | 19 |
| 11 | 14 | 16 | 16 | 16 | 17 | 17 | 28 | 17 | 16 | 17 | 19 | 20 |
| 12 | 15 | 16 | 16 | 17 | 18 | 18 | 17 | 17 | 16 | 20 | 19 | 20 |
| 13 | 20 | 15 | 16 | 17 | 17 | 17 | 17 | 17 | 16 | 17 | 19 | 19 |
| 14 | 17 | 15 | 16 | 17 | 17 | 17 | 17 | 21 | 16 | 16 | 19 | 19 |
| 15 | 14 | 15 | 16 | 17 | 17 | 20 | 17 | 17 | 20 | 16 | 19 | 19 |
| 16 | 15 | 15 | 16 | 17 | 17 | 17 | 17 | 17 | 33 | 31 | 19 | 19 |
| 17 | 17 | 15 | 17 | 17 | 16 | 17 | 17 | 17 | 16 | 17 | 21 | 19 |
| 18 | 16 | 15 | 17 | 16 | 16 | 17 | 17 | 17 | 25 | 19 | 19 | 19 |
| 19 | 16 | 15 | 17 | 16 | 16 | 16 | 17 | 17 | 18 | 28 | 26 | 19 |
| 20 | 18 | 15 | 17 | 16 | 16 | 16 | 17 | 17 | 16 | 17 | 19 | 19 |
| 21 | 15 | 15 | 17 | 17 | 16 | 16 | 17 | 17 | 16 | 16 | 19 | 19 |
| 22 | 15 | 15 | 18 | 17 | 16 | 16 | 17 | 17 | 17 | 16 | 20 | 21 |
| 23 | 18 | 15 | 18 | 17 | 16 | 16 | 17 | 17 | 20 | 16 | 19 | 19 |
| 24 | 15 | 15 | 18 | 17 | 16 | 16 | 17 | 17 | 16 | 18 | 19 | 19 |
| 25 | 14 | 15 | 18 | 17 | 16 | 16 | 28 | 17 | 16 | 17 | 19 | 22 |
| 26 | 16 | 15 | 18 | 17 | 16 | 16 | 17 | 17 | 17 | 16 | 19 | 19 |
| 27 | 14 | 15 | 18 | 17 | 21 | 16 | 17 | 17 | 18 | 16 | 19 | 20 |
| 28 | 14 | 15 | 18 | 17 | 21 | 16 | 17 | 17 | 17 | 16 | 19 | 19 |
| 29 | 14 | 17 | 18 | 17 | --- | 16 | 17 | 17 | 19 | 16 | 19 | 19 |
| 30 | 14 | 17 | 18 | 16 | --- | 16 | 17 | 20 | 17 | 16 | 19 | 19 |
| 31 | 15 | --- | 18 | 16 | --- | 16 | --- | 18 | --- | 16 | 19 | --- |
| TOTAL | --- | 503 | 527 | 535 | 472 | 546 | 530 | 536 | 535 | 547 | 622 | 578 |
| MEAN | --- | 16.8 | 17.0 | 17.3 | 16.9 | 17.6 | 17.7 | 17.3 | 17.8 | 17.6 | 20.1 | 19.3 |
| MAX | --- | 35 | 18 | 19 | 21 | 27 | 28 | 21 | 33 | 31 | 27 | 22 |
| MIN | --- | 15 | 16 | 16 | 16 | 16 | 16 | 17 | 16 | 16 | 16 | 19 |
| AC-FT | --- | 998 | 1050 | 1060 | 936 | 1080 | 1050 | 1060 | 1060 | 1080 | 1230 | 1150 |

NOTE: Recorder and powerplant began operation Oct. 10.

11358700 HAT CREEK BELOW HAT NO. 1 DIVERSION DAM, NEAR BURNEY, CA

LOCATION.--Lat 40°55'08", long 121°33'02", in NW 1/4 SW 1/4 sec.5, T.36 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on right bank at Hat No. 1 diversion dam on Hat Creek, 6.5 mi northeast of Burney.

DRAINAGE AREA.--347 mi².

PERIOD OF RECORD.--Oct. 1 to Dec. 8, 1987 (fragmentary), Dec. 9, 1987 to current year (operated as a low-flow station only). Unpublished fragmentary records for water years 1980-87 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and Cipoletti weir. Elevation of gage is 3,180 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--This station records fishwater release only. The minimum release requirement is 2.0 ft³/s at all times. Flow is computed to 4.0 ft³/s. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-----|-------|-------|------|------|------|------|------|-------|-------|------|
| 1 | 3.3 | 3.3 | 3.5 | 3.3 | 3.3 | 3.2 | 3.4 | 3.1 | 3.4 | 3.3 | e3.5 | 3.3 |
| 2 | 3.3 | 3.4 | 3.4 | 3.3 | 3.3 | 3.2 | 3.3 | 3.1 | e3.3 | 3.3 | e3.3 | 3.2 |
| 3 | 3.3 | 3.4 | 3.4 | 3.4 | 3.3 | 3.2 | 3.4 | 3.1 | e3.2 | 3.3 | e3.3 | 3.2 |
| 4 | 3.3 | 3.3 | 3.4 | 3.3 | 3.3 | 3.2 | 3.4 | 3.1 | e3.2 | 3.3 | e3.3 | 3.2 |
| 5 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.2 | 3.4 | 3.2 | e3.4 | 3.4 | e3.3 | 3.2 |
| 6 | 3.3 | --- | 3.4 | 3.3 | 3.3 | 3.2 | 3.4 | 3.2 | e3.2 | 3.4 | e3.4 | 3.2 |
| 7 | 3.3 | --- | 3.4 | 3.4 | 3.3 | 3.2 | 3.3 | 3.2 | 3.4 | 3.4 | e3.4 | 3.2 |
| 8 | 3.3 | --- | 3.4 | 3.4 | 3.3 | 3.2 | 3.2 | 3.2 | 3.4 | 3.5 | 3.6 | 3.2 |
| 9 | 3.3 | --- | 3.4 | 3.4 | 3.3 | 3.2 | 3.2 | 3.1 | 3.5 | 3.5 | 3.8 | 3.2 |
| 10 | 3.3 | --- | 3.4 | 3.4 | 3.3 | 3.2 | 3.2 | 3.1 | 3.5 | 3.5 | 3.6 | 3.2 |
| 11 | 3.2 | --- | 3.4 | 3.4 | 3.3 | 3.2 | 3.2 | 3.1 | --- | 3.6 | 3.6 | 3.2 |
| 12 | 3.2 | --- | 3.3 | 3.4 | 3.3 | 3.2 | 3.2 | 3.1 | --- | 3.6 | 3.4 | 3.2 |
| 13 | 3.3 | --- | 3.3 | 3.4 | 3.3 | 3.2 | 3.2 | 3.1 | --- | 3.7 | 3.4 | 3.2 |
| 14 | 3.1 | --- | 3.3 | 3.4 | 3.3 | 3.2 | 3.2 | 3.2 | --- | 3.6 | 3.4 | 3.2 |
| 15 | 2.8 | --- | 3.3 | 3.4 | 3.3 | 3.2 | 3.2 | 3.2 | 3.1 | 3.5 | 3.4 | 3.2 |
| 16 | 2.8 | --- | 3.3 | 3.4 | 3.3 | 3.2 | 3.1 | 3.2 | 3.1 | 3.5 | 3.4 | 3.2 |
| 17 | 3.2 | --- | 3.3 | 3.4 | 3.3 | 3.2 | 3.0 | 3.2 | 3.2 | 3.4 | 3.4 | 3.2 |
| 18 | 3.4 | --- | 3.3 | 3.4 | 3.3 | 3.2 | 3.2 | 3.1 | 3.3 | 3.4 | 3.4 | 3.2 |
| 19 | 3.5 | --- | 3.4 | 3.4 | 3.2 | 3.2 | 3.2 | 3.2 | 3.3 | 3.5 | 3.5 | 3.3 |
| 20 | 3.4 | --- | 3.4 | 3.4 | 3.2 | 3.2 | 3.2 | 3.1 | 3.3 | 3.5 | 3.5 | 3.4 |
| 21 | 3.4 | --- | 3.4 | 3.4 | 3.2 | 3.2 | 3.2 | 3.1 | 3.3 | e3.4 | 3.5 | 3.4 |
| 22 | 3.4 | --- | 3.4 | 3.4 | 3.2 | 3.2 | 3.2 | 3.1 | 3.4 | e3.5 | 3.4 | 3.4 |
| 23 | 3.5 | --- | 3.4 | 3.6 | 3.2 | 3.2 | 3.2 | 3.2 | 3.3 | e3.4 | 3.4 | 3.4 |
| 24 | 3.5 | --- | 3.4 | 3.7 | 3.2 | 3.2 | 3.2 | 3.2 | 3.3 | e3.6 | 3.4 | 3.4 |
| 25 | 3.5 | --- | 3.4 | 3.5 | 3.2 | 3.2 | 3.2 | 3.1 | 3.3 | e3.3 | 3.4 | 3.3 |
| 26 | 3.5 | --- | 3.4 | 3.4 | 3.2 | 3.2 | 3.2 | 3.2 | 3.4 | e3.4 | 3.4 | 3.3 |
| 27 | 3.4 | --- | 3.4 | 3.4 | 3.2 | 3.2 | 3.1 | 3.1 | 3.4 | e3.4 | 3.4 | 3.3 |
| 28 | 3.3 | --- | 3.3 | 3.3 | 3.2 | 3.3 | 3.1 | 3.1 | 3.4 | e3.4 | 3.4 | 3.3 |
| 29 | 3.3 | --- | 3.3 | 3.3 | --- | 3.2 | 3.1 | 3.2 | 3.3 | e3.4 | 3.4 | 3.4 |
| 30 | 3.3 | --- | 3.3 | 3.2 | --- | 3.3 | 3.1 | 3.3 | 3.3 | e3.4 | 3.4 | 3.4 |
| 31 | 3.3 | --- | 3.3 | 3.3 | --- | 3.4 | --- | 3.4 | --- | e3.4 | 3.4 | --- |
| TOTAL | 102.3 | --- | 104.3 | 105.0 | 91.4 | 99.6 | 96.5 | 97.9 | --- | 106.8 | 106.4 | 98.0 |
| MEAN | 3.30 | --- | 3.36 | 3.39 | 3.26 | 3.21 | 3.22 | 3.16 | --- | 3.45 | 3.43 | 3.27 |
| MAX | 3.5 | --- | 3.5 | 3.7 | 3.3 | 3.4 | 3.4 | 3.4 | --- | 3.7 | 3.8 | 3.4 |
| MIN | 2.8 | --- | 3.3 | 3.2 | 3.2 | 3.2 | 3.0 | 3.1 | --- | 3.3 | 3.3 | 3.2 |
| AC-FT | 203 | --- | 207 | 208 | 181 | 198 | 191 | 194 | --- | 212 | 211 | 194 |

e Estimated.

NOTE: Discharges from ditch-tender log, June 2-6 and July 21 to Aug. 7. Canal was out of service Nov. 6-30 and all flow remained in the natural channel. Discharges above 4.0 ft³/s June 11-14.

SACRAMENTO RIVER BASIN

11358800 HAT CREEK NO. 1 POWERPLANT NEAR BURNEY, CA

LOCATION.--Lat 40°55'45", long 121°32'37", in SW 1/4 SW 1/4 sec.32, T.36 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on right bank of Hat Creek at the upper end of Baum Lake, 7.4 mi northeast of Burney.

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1981-86 available in files of the U.S. Geological Survey. Fragmentary records for water years 1921-80 in files of the Pacific Gas & Electric Co.

REMARKS.--No estimated daily discharges. Water is diverted from left bank of Hat Creek at NW 1/4 SW 1/4 sec.5, T.36 N., R.8 W., through a canal to powerplant and then into Hat Creek. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 453 ft³/s, Oct. 20, 1986; no flow several days most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|---------|-------|-------|-------|-------|-------|-------|---------|-------|-------|-------|
| 1 | 280 | 350 | 315 | 326 | 326 | 315 | 292 | 233 | 303 | 245 | 233 | 233 |
| 2 | 280 | 350 | 326 | 326 | 326 | 326 | 280 | 233 | 292 | 245 | 233 | 233 |
| 3 | 280 | 350 | 338 | 338 | 326 | 326 | 280 | 233 | 280 | 245 | 221 | 233 |
| 4 | 280 | 350 | 326 | 326 | 324 | 326 | 268 | 233 | 280 | 245 | 221 | 233 |
| 5 | 280 | 350 | 338 | 326 | 329 | 326 | 268 | 233 | 280 | 233 | 221 | 221 |
| 6 | 280 | 157 | 338 | 326 | 326 | 326 | 245 | 221 | 268 | 245 | 233 | 233 |
| 7 | 280 | .00 | 338 | 326 | 326 | 326 | 233 | 221 | 238 | 233 | 233 | 233 |
| 8 | 292 | .00 | 338 | 326 | 315 | 326 | 233 | 221 | 245 | 233 | 221 | 233 |
| 9 | 303 | .00 | 326 | 338 | 315 | 326 | 233 | 221 | 245 | 233 | 221 | 233 |
| 10 | 303 | .00 | 338 | 350 | 326 | 315 | 233 | 221 | 257 | 233 | 233 | 233 |
| 11 | 303 | .00 | 338 | 338 | 326 | 338 | 233 | 221 | 126 | 233 | 233 | 221 |
| 12 | 303 | .00 | 338 | 338 | 315 | 326 | 233 | 221 | .00 | 233 | 245 | 233 |
| 13 | 292 | .00 | 338 | 338 | 315 | 326 | 233 | 221 | .00 | 233 | 233 | 233 |
| 14 | 245 | .00 | 326 | 338 | 315 | 326 | 233 | 233 | 138 | 233 | 233 | 233 |
| 15 | 268 | .00 | 326 | 338 | 315 | 326 | 233 | 245 | 245 | 245 | 233 | 257 |
| 16 | 268 | .00 | 326 | 350 | 315 | 338 | 233 | 233 | 245 | 233 | 233 | 245 |
| 17 | 280 | .00 | 326 | 338 | 326 | 326 | 245 | 233 | 245 | 233 | 221 | 233 |
| 18 | 268 | .00 | 326 | 338 | 326 | 315 | 245 | 233 | 245 | 245 | 233 | 221 |
| 19 | 280 | .00 | 326 | 326 | 326 | 315 | 233 | 233 | 257 | 233 | 221 | 233 |
| 20 | 315 | .00 | 326 | 326 | 326 | 315 | 233 | 245 | 245 | 233 | 233 | 233 |
| 21 | 326 | .00 | 338 | 326 | 315 | 326 | 233 | 245 | 257 | 233 | 233 | 233 |
| 22 | 350 | .00 | 326 | 326 | 326 | 303 | 221 | 245 | 245 | 233 | 233 | 233 |
| 23 | 361 | .00 | 326 | 268 | 315 | 315 | 221 | 257 | 233 | 233 | 233 | 233 |
| 24 | 384 | .00 | 326 | 280 | 315 | 326 | 233 | 245 | 245 | 233 | 233 | 233 |
| 25 | 396 | .00 | 326 | 338 | 326 | 326 | 233 | 245 | 245 | 233 | 233 | 221 |
| 26 | 384 | .00 | 326 | 338 | 315 | 326 | 233 | 245 | 245 | 233 | 233 | 221 |
| 27 | 373 | .00 | 326 | 326 | 338 | 326 | 221 | 245 | 245 | 233 | 233 | 233 |
| 28 | 361 | .00 | 326 | 326 | 338 | 257 | 233 | 245 | 245 | 233 | 233 | 233 |
| 29 | 373 | .00 | 326 | 315 | --- | 326 | 233 | 245 | 245 | 233 | 233 | 233 |
| 30 | 350 | 268 | 326 | 315 | --- | 303 | 233 | 257 | 245 | 233 | 233 | 233 |
| 31 | 350 | --- | 326 | 326 | --- | 303 | --- | 268 | --- | 233 | 257 | --- |
| TOTAL | 9688 | 2175.00 | 10215 | 10160 | 9032 | 9926 | 7213 | 7330 | 6884.00 | 7307 | 7175 | 6966 |
| MEAN | 313 | 72.5 | 330 | 328 | 323 | 320 | 240 | 236 | 229 | 236 | 231 | 232 |
| MAX | 396 | 350 | 338 | 350 | 338 | 338 | 292 | 268 | 303 | 245 | 257 | 257 |
| MIN | 245 | .00 | 315 | 268 | 315 | 257 | 221 | 221 | .00 | 233 | 221 | 221 |
| AC-FT | 19220 | 4310 | 20260 | 20150 | 17910 | 19690 | 14310 | 14540 | 13650 | 14490 | 14230 | 13820 |
| a | 25410 | 26560 | 26780 | 26570 | 23680 | 25580 | 20390 | 21440 | 18340 | 20190 | 20120 | 19440 |

CAL YR 1989 TOTAL 106654.00 MEAN 292 MAX 441 MIN .00 AC-FT 211500

WTR YR 1990 TOTAL 94071.00 MEAN 258 MAX 396 MIN .00 AC-FT 186600

a Discharge, in acre-feet, for Hat Creek No. 2 powerplant (station 11359300), provided by Pacific Gas & Electric Co.

11359100 HAT NO. 2 POWER CANAL DIVERSION TO HAT CREEK NEAR BURNEY, CA

LOCATION.--Lat 40°57'01", long 121°32'39", in SE 1/4 NW 1/4 sec.29, T.36 N., R.4 E., Shasta County, Hydrologic Unit 18020003, on right bank of Hat No. 2 power canal 75 ft downstream from Hat No. 2 diversion dam on Hat Creek, 7.9 mi northeast of Burney.

PERIOD OF RECORD.--Oct. 1 to Dec. 9, 1987 (fragmentary), Dec. 10, 1987 to current year (operated as a low-flow station only). Unpublished fragmentary records for water years 1979-87 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and parshall flume. Elevation of gage is 2,980 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. This station records fishwater release only. The release requirement is 8.0 ft³/s at all times. Flow is computed to 12 ft³/s. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|------|-----|-------|-------|------|
| 1 | 10 | 10 | 9.8 | 10 | 9.8 | 10 | 10 | 21 | 19 | 10 | 9.6 | 10 |
| 2 | 10 | 10 | 10 | 10 | 9.8 | 10 | 10 | 21 | 17 | 10 | 10 | 11 |
| 3 | 10 | 10 | 9.9 | 10 | 9.9 | 10 | 10 | 21 | 18 | 10 | 10 | 11 |
| 4 | 10 | 10 | 9.6 | 10 | 9.9 | 10 | 9.9 | 21 | 19 | 10 | 10 | 10 |
| 5 | 11 | 11 | 11 | 10 | 9.8 | 10 | 9.2 | 21 | 18 | 10 | 10 | 10 |
| 6 | 10 | 11 | 11 | 10 | 9.8 | 10 | 9.3 | 21 | 18 | 10 | 10 | 10 |
| 7 | 11 | 9.9 | 11 | 10 | 9.7 | 10 | 9.3 | 21 | 16 | 9.9 | 9.9 | 10 |
| 8 | 10 | 9.4 | 11 | 11 | 9.6 | 10 | 9.2 | 21 | 18 | 10 | 9.7 | 10 |
| 9 | 10 | 10 | 11 | 11 | 9.7 | 10 | 9.3 | 21 | 19 | 10 | 11 | 11 |
| 10 | 11 | 10 | 11 | 10 | 9.8 | 10 | 9.3 | 21 | 18 | 9.9 | 10 | 11 |
| 11 | 10 | 9.4 | 11 | 11 | 9.8 | 10 | 9.2 | 21 | 18 | 9.8 | 10 | 11 |
| 12 | 10 | 9.3 | 11 | 11 | 9.8 | 10 | 9.1 | 21 | 19 | 9.7 | 10 | 10 |
| 13 | 10 | 9.1 | 11 | 11 | 9.7 | 10 | 9.3 | 21 | 19 | 9.7 | 10 | 11 |
| 14 | 9.9 | 11 | 11 | 11 | 9.7 | 10 | 9.0 | 21 | 19 | 9.6 | 10 | 11 |
| 15 | 9.8 | 12 | 11 | 10 | 9.7 | 10 | 18 | 21 | 18 | 10 | 10 | 11 |
| 16 | 10 | 11 | 11 | 10 | 9.8 | 9.8 | 18 | 22 | 18 | 10 | 10 | 11 |
| 17 | 9.8 | 11 | 11 | 10 | 9.8 | 9.8 | 14 | 21 | 18 | 9.9 | 10 | 11 |
| 18 | 10 | 10 | 11 | 10 | 9.7 | 9.7 | 10 | 19 | --- | 10 | 10 | 11 |
| 19 | 10 | 10 | 11 | 10 | 9.5 | 9.9 | 15 | 18 | --- | 10 | 10 | 11 |
| 20 | 10 | 10 | 11 | 10 | 9.8 | 10 | 19 | 18 | --- | 10 | 11 | 10 |
| 21 | 10 | 11 | 11 | 10 | 10 | 10 | 20 | 18 | 11 | 10 | 11 | 10 |
| 22 | 11 | 11 | 11 | 9.8 | 10 | 10 | 16 | 18 | 11 | 10 | 10 | 10 |
| 23 | 11 | 10 | 11 | 9.5 | 10 | 9.9 | 17 | 19 | 10 | 9.8 | 11 | 10 |
| 24 | 11 | 10 | 11 | 9.4 | 10 | 9.9 | 20 | 18 | 10 | 10 | 11 | 10 |
| 25 | 11 | 10 | 11 | 9.4 | 10 | 9.9 | 21 | 18 | 10 | 10 | 11 | 11 |
| 26 | 10 | 10 | 11 | 9.9 | 10 | 10 | 21 | 18 | 10 | 9.7 | 11 | 11 |
| 27 | 10 | 10 | 11 | 10 | 10 | 9.9 | 20 | 18 | 10 | 9.9 | 11 | 11 |
| 28 | 10 | 9.8 | 11 | 10 | 9.9 | 10 | 21 | 18 | 10 | 9.8 | 11 | 11 |
| 29 | 10 | 9.6 | 11 | 9.9 | --- | 10 | 21 | 18 | 10 | 9.7 | 10 | 11 |
| 30 | 10 | 9.6 | 11 | 10 | --- | 10 | 20 | 18 | 10 | 9.6 | 10 | 11 |
| 31 | 10 | --- | 10 | 10 | --- | 11 | --- | 20 | --- | 9.1 | 10 | --- |
| TOTAL | 316.5 | 305.1 | 335.3 | 313.9 | 275.0 | 309.8 | 423.1 | 614 | --- | 306.1 | 318.2 | 318 |
| MEAN | 10.2 | 10.2 | 10.8 | 10.1 | 9.82 | 9.99 | 14.1 | 19.8 | --- | 9.87 | 10.3 | 10.6 |
| MAX | 11 | 12 | 11 | 11 | 10 | 11 | 21 | 22 | --- | 10 | 11 | 11 |
| MIN | 9.8 | 9.1 | 9.6 | 9.4 | 9.5 | 9.7 | 9.0 | 18 | --- | 9.1 | 9.6 | 10 |
| AC-FT | 628 | 605 | 665 | 623 | 545 | 614 | 839 | 1220 | --- | 607 | 631 | 631 |

NOTE: By request of California Department of Fish and Game, the 8.0 ft³/s minimum fish release was augmented Apr. 15 to June 17. Canal was out of service June 18-20, and all flow remained in natural channel.

RESERVOIRS IN PIT AND McCLOUD RIVER BASINS, CA

11361400 LAKE BRITTON NEAR BURNEY.--Lat 41°01'20", long 121°40'32", in SW 1/4 SW 1/4 sec.19, T.37 N., R.3 E., Shasta County, Hydrologic Unit 18020003, Shasta National Forest, at control house on right bank 200 ft upstream from dam on Pit River, 1.1 mi downstream from Clark Creek, 1.3 mi northwest of Burney Falls, and 9 mi north of Burney. DRAINAGE AREA, 4,607 mi², excluding Goose Lake Basin. PERIOD OF RECORD, October 1965 to current year (month-end contents only). Fragmentary records for water years 1925-65 in files of the Pacific Gas & Electric Co. GAGE, remote telemark read once daily. Datum of gage is 19.53 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Monthend contents based on capacity table dated Dec. 1, 1976, provided by Pacific Gas & Electric Co.

REMARKS.--Reservoir is formed by gravity-type concrete dam. Storage began July 15, 1925. Usable capacity, 41,877 acre-ft between elevations 2,665.0 ft, invert of sluice gate, and 2,758.0 ft, top of flash boards. Dead storage, 30 acre-ft. Normal operating pool is from elevation 2,744.0 ft, capacity, 26,183 acre-ft, to 2,757.0 ft, capacity, 40,626 acre-ft. Figures given herein represent total contents. Lake is used for power generation and recreation. See schematic diagram of Pit and McCloud River basins. Records prior to water year 1977 reported usable contents only.

COOPERATION.--Record of contents collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum total contents, 47,922 acre-ft, Feb. 20, 1986, elevation, 2,762.50 ft; minimum total contents, 26,755 acre-ft, Oct. 9, 1976, elevation, 2,744.60 ft.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 40,563 acre-ft, July 22, elevation, 2,756.95 ft; minimum, 27,142 acre-ft, Nov. 24, elevation, 2,745.00 ft.

11363920 IRON CANYON RESERVOIR NEAR BIG BEND.--Lat 41°02'41", long 121°58'52", in SW 1/4 SE 1/4 sec.21, T.37 N., R.1 W., Shasta County, Hydrologic Unit 18020003, Shasta National Forest, in control house on left bank 500 ft upstream from Iron Canyon Dam on Iron Canyon Creek, 3.7 mi northwest of Big Bend. DRAINAGE AREA, 11.1 mi². PERIOD OF RECORD, December 1965 to current year (monthend contents only). GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Monthend contents based on capacity table dated May 17, 1965, provided by Pacific Gas & Electric Co.

REMARKS.--Reservoir is formed by a rockfill dam completed in 1965. Usable capacity is 24,197 acre-ft between elevations 2,525.00 ft, invert of sluice pipe, and 2,665.00 ft, crest of spillway. Dead storage, 44 acre-ft. Normal operating pool is from elevation 2,565.0 ft, capacity, 990 acre-ft, to 2,664.0 ft, capacity, 23,738 acre-ft. Water is diverted from Lake McCloud (station 11367740) through a tunnel to Iron Canyon Reservoir and then into the Pit River via James B. Black powerplant (station 11363910). Figures given herein represent total contents. Water is used for power generation and recreation. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Record of contents collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 23,539 acre-ft, May 16, 22, 1977, elevation, 2,663.60 ft; normal minimum since reservoir first filled, 2,860 acre-ft, May 23, 24, 29, June 2, 7, 9, 14, 23, 24, 1966, elevation, 2,590.00 ft. Contents reduced to 195 acre-ft, elevation, 2,540.00 ft, Feb. 10, 1971, when reservoir was drained for inspection.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 21,750 acre-ft, May 23, elevation, 2,659.90 ft; minimum, 3,454 acre-ft, Jan. 14, elevation, 2,595.10 ft.

11367740 LAKE McCLOUD NEAR McCLOUD.--Lat 41°08'06", long 122°04'26", in SE 1/4 SW 1/4 sec.22, T.38 N., R.2 W., Shasta County, Hydrologic Unit 18020004, Shasta National Forest, on McCloud Dam near spillway on McCloud River, 200 ft downstream from Panther Creek, and 8.8 mi southeast of McCloud. DRAINAGE AREA, 403 mi². PERIOD OF RECORD, October 1965 to current year (monthend contents only). GAGE, water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Monthend contents based on capacity table dated June 29, 1965, provided by Pacific Gas & Electric Co.

REMARKS.--Reservoir is formed by a rockfill dam completed in 1965. Usable capacity, 35,231 acre-ft between elevations 2,471.30 ft, invert of sluice pipe, and 2,680.00 ft, maximum operational water surface. Dead storage, 3 acre-ft. Normal operating pool is from elevation 2,635.00 ft, capacity, 16,425 acre-ft, to 2,680.00 ft, capacity, 35,234 acre-ft. Water is diverted from Lake McCloud (station 11367740) through a diversion tunnel to Iron Canyon Reservoir (station 11363920) and then into the Pit River via James B. Black powerplant (station 11363910). Figures given herein represent total contents. Water is used for power generation and recreation. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Record of contents collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 35,967 acre-ft, Jan. 15, 1974, elevation, 2,681.40 ft; minimum since reservoir first filled, 13,017 acre-ft, Oct. 14-22, 1981, elevation, 2,632.50 ft.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 34,306 acre-ft, May 31, elevation, 2,678.20 ft; minimum, 17,110 acre-ft, Feb. 22, elevation, 2,637.10 ft.

RESERVOIRS IN PIT AND McCLOUD RIVER BASINS, CA--Continued

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| Date | Elevation (feet) | Contents (acre- feet) | Change in contents (acre- feet) | Elevation (feet) | Contents (acre- feet) | Change in contents (acre- feet) | Elevation (feet) | Contents (acre- feet) | Change in contents (acre- feet) |
|-----------------------|---------------------|-----------------------------|--|--------------------------------|-----------------------------|--|-----------------------|-----------------------------|--|
| 11361400 LAKE BRITTON | | | | 11363920 IRON CANYON RESERVOIR | | | 11367740 LAKE McCLOUD | | |
| Sept. 30..... | 2,755.05 | 38,196 | -- | 2,633.20 | 11,529 | -- | 2,644.20 | 19,563 | -- |
| Oct. 31..... | 2,749.40 | 31,671 | -6,525 | 2,621.20 | 8,239 | -3,290 | 2,647.40 | 20,738 | +1,175 |
| Nov. 30..... | 2,748.35 | 30,546 | -1,125 | 2,627.50 | 9,885 | +1,646 | 2,638.70 | 17,645 | -3,093 |
| Dec. 31..... | 2,746.80 | 28,935 | -1,611 | 2,630.80 | 10,817 | +932 | 2,642.10 | 18,816 | +1,171 |
| CAL YR 1989.. | -- | -- | -2,954 | -- | -- | +458 | -- | -- | +1,373 |
| Jan. 31..... | 2,751.25 | 33,721 | +4,786 | 2,628.60 | 10,190 | -627 | 2,638.70 | 17,645 | -1,171 |
| Feb. 28..... | 2,753.80 | 36,685 | +2,964 | 2,624.20 | 9,001 | -1,189 | 2,639.50 | 17,916 | +271 |
| Mar. 31..... | 2,746.60 | 28,732 | -7,953 | 2,632.80 | 11,408 | +2,407 | 2,646.20 | 20,292 | +2,376 |
| Apr. 30..... | 2,752.50 | 35,154 | +6,422 | 2,655.10 | 19,567 | +8,159 | 2,664.40 | 27,715 | +7,423 |
| May 31..... | 2,753.70 | 36,566 | +1,412 | 2,614.20 | 6,628 | -12,939 | 2,678.20 | 34,306 | +6,591 |
| June 30..... | 2,754.15 | 37,104 | +538 | 2,658.50 | 21,097 | +14,469 | 2,673.60 | 32,008 | -2,298 |
| July 31..... | 2,755.50 | 38,748 | +1,644 | 2,648.70 | 16,899 | -4,198 | 2,665.40 | 28,164 | -3,844 |
| Aug. 31..... | 2,752.05 | 34,634 | -4,114 | 2,642.80 | 14,681 | -2,218 | 2,656.40 | 24,276 | -3,888 |
| Sept. 30..... | 2,754.60 | 37,648 | +3,014 | 2,635.60 | 12,271 | -2,410 | 2,647.80 | 20,888 | -3,388 |
| WTR YR 1990.. | -- | -- | -548 | -- | -- | +742 | -- | -- | +1,325 |

SACRAMENTO RIVER BASIN

11362500 PIT RIVER BELOW PIT NO. 4 DAM, CA

LOCATION.--Lat 40°58'25", Long 121°46'42", unsurveyed, T.36 N., R.2 E., Shasta County, Hydrologic Unit 18020003, Shasta National Forest, on right bank 0.6 mi downstream from Ruling Creek, 1.3 mi downstream from Pit No. 4 Dam, and 2.7 mi downstream from Pit No. 3 powerplant.

DRAINAGE AREA.--4,648 mi², excluding Goose Lake basin.

PERIOD OF RECORD.--May 1922 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

Published as "near Pecks Bridge" April to October 1922, and as "at Lindsay Flat" November 1922 to June 1927.

REVISED RECORDS.--WSP 843: 1935(M). WSP 1315-A: 1928(M). WDR CA-75-4: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,358 ft above National Geodetic Vertical Datum of 1929, from river-profile map. Prior to November 1922, water-stage recorder at site at Pecks Bridge 7.4 mi upstream at different datum. November 1922 to June 20, 1927, at site at Lindsay Flat 1.8 mi upstream at different datum. June 20, 1927, to September 5, 1990, at site 200 ft downstream at datum 0.15 ft lower.

REMARKS.--No estimated daily discharges. Low flow completely regulated by small reservoirs and powerplants, total usable reservoir capacity, 253,000 acre-ft. Many diversions upstream from station; diversion to Pit No. 4 powerplant began June 9, 1955. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--32 years (water years 1923-54), 2,511 ft³/s, 1,819,000 acre-ft/yr, prior to diversion; 36 years (water years 1955-90), 3,059 ft³/s, 2,216,000 acre-ft/yr, adjusted for diversion to Pit No. 4 powerplant; unadjusted for same period, 492 ft³/s, 356,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,700 ft³/s, Feb. 20, 1986, gage height, 18.70 ft; minimum daily, prior to diversion to Pit No. 4 powerplant in 1955, 234 ft³/s, Sept. 13, 1953. Minimum daily, since diversion to Pit No. 4 powerplant, 22 ft³/s, Dec. 2-4, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 253 ft³/s, Apr. 26, gage height, 3.71 ft; minimum daily, 157 ft³/s, Sept. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 169 | 170 | 166 | 171 | 169 | 171 | 170 | 171 | 173 | 168 | 168 | 169 |
| 2 | 171 | 198 | 168 | 169 | 172 | 170 | 169 | 171 | 171 | 168 | 168 | 168 |
| 3 | 168 | 174 | 168 | 169 | 172 | 170 | 168 | 169 | 168 | 170 | 170 | 168 |
| 4 | 169 | 170 | 168 | 167 | 171 | 170 | 168 | 168 | 168 | 170 | 167 | 168 |
| 5 | 170 | 171 | 168 | 169 | 171 | 169 | 169 | 169 | 168 | 170 | 167 | 166 |
| 6 | 171 | 170 | 168 | 171 | 169 | 168 | 169 | 169 | 170 | 169 | 168 | 161 |
| 7 | 167 | 170 | 168 | 171 | 170 | 171 | 172 | 167 | 168 | 168 | 169 | 159 |
| 8 | 168 | 170 | 168 | 170 | 168 | 173 | 173 | 167 | 170 | 167 | 168 | 161 |
| 9 | 171 | 170 | 168 | 168 | 171 | 172 | 172 | 170 | 169 | 169 | 169 | 163 |
| 10 | 169 | 170 | 168 | 169 | 172 | 172 | 171 | 169 | 169 | 168 | 169 | 163 |
| 11 | 169 | 171 | 167 | 171 | 173 | 169 | 170 | 169 | 169 | 167 | 169 | 162 |
| 12 | 171 | 172 | 168 | 171 | 172 | 168 | 170 | 168 | 168 | 167 | 168 | 160 |
| 13 | 172 | 170 | 168 | 169 | 170 | 168 | 171 | 168 | 170 | 168 | 169 | 160 |
| 14 | 172 | 171 | 170 | 168 | 170 | 168 | 169 | 168 | 169 | 169 | 169 | 160 |
| 15 | 171 | 170 | 169 | 168 | 169 | 167 | 168 | 168 | 172 | 170 | 168 | 160 |
| 16 | 170 | 169 | 172 | 171 | 170 | 166 | 172 | 172 | 169 | 169 | 168 | 159 |
| 17 | 168 | 168 | 169 | 168 | 171 | 168 | 172 | 170 | 171 | 168 | 168 | 157 |
| 18 | 168 | 169 | 168 | 171 | 171 | 170 | 172 | 168 | 169 | 171 | 168 | 163 |
| 19 | 166 | 168 | 169 | 170 | 173 | 168 | 173 | 168 | 166 | 169 | 169 | 164 |
| 20 | 166 | 170 | 168 | 171 | 171 | 168 | 170 | 169 | 166 | 172 | 171 | 164 |
| 21 | 170 | 168 | 170 | 168 | 171 | 169 | 169 | 170 | 167 | 172 | 170 | 164 |
| 22 | 171 | 169 | 170 | 169 | 170 | 170 | 171 | 170 | 170 | 169 | 168 | 168 |
| 23 | 174 | 169 | 168 | 171 | 170 | 167 | 170 | 172 | 170 | 168 | 168 | 168 |
| 24 | 174 | 170 | 170 | 170 | 172 | 167 | 169 | 170 | 169 | 170 | 169 | 167 |
| 25 | 170 | 170 | 170 | 170 | 169 | 168 | 171 | 170 | 169 | 170 | 172 | 162 |
| 26 | 168 | 168 | 171 | 169 | 170 | 171 | 183 | 169 | 171 | 168 | 171 | 162 |
| 27 | 170 | 167 | 171 | 170 | 168 | 172 | 178 | 168 | 169 | 170 | 169 | 169 |
| 28 | 167 | 166 | 170 | 170 | 168 | 169 | 170 | 170 | 170 | 168 | 169 | 171 |
| 29 | 166 | 167 | 171 | 172 | --- | 169 | 168 | 170 | 168 | 168 | 170 | 172 |
| 30 | 170 | 167 | 173 | 171 | --- | 171 | 168 | 171 | 167 | 171 | 169 | 174 |
| 31 | 170 | --- | 172 | 170 | --- | 170 | --- | 172 | --- | 170 | 169 | --- |
| TOTAL | 5256 | 5112 | 5242 | 5262 | 4773 | 5253 | 5125 | 5250 | 5073 | 5241 | 5234 | 4932 |
| MEAN | 170 | 170 | 169 | 170 | 170 | 169 | 171 | 169 | 169 | 169 | 169 | 164 |
| MAX | 174 | 198 | 173 | 172 | 173 | 173 | 183 | 172 | 173 | 172 | 172 | 174 |
| MIN | 166 | 166 | 166 | 167 | 168 | 166 | 168 | 167 | 166 | 167 | 167 | 157 |
| AC-FT | 10430 | 10140 | 10400 | 10440 | 9470 | 10420 | 10170 | 10410 | 10060 | 10400 | 10380 | 9780 |
| MEAN a | 2268 | 2244 | 2179 | 2195 | 2131 | 3164 | 1962 | 1872 | 2162 | 1689 | 1786 | 1762 |
| AC-FT a | 139400 | 133500 | 134000 | 134900 | 118400 | 194500 | 116800 | 115100 | 128700 | 103900 | 109800 | 104800 |
| b | 124200 | 116200 | 114900 | 116900 | 102800 | 173200 | 100600 | 98870 | 112100 | 89310 | 93550 | 90460 |
| c | 129000 | 123400 | 123600 | 124500 | 108900 | 184100 | 106600 | 104700 | 118600 | 93480 | 99450 | 95040 |

CAL YR 1989 TOTAL 141352 MEAN 387 MAX 9870 MIN 78 AC-FT 280400 MEAN a 4614 AC-FT a 3340000
WTR YR 1990 TOTAL 61753 MEAN 169 MAX 198 MIN 157 AC-FT 122500 MEAN a 2119 AC-FT a 1534000

a Adjusted for diversions to Pit No. 4 powerplant (station 11362600).

b Discharge, in acre-feet, for Pit No. 3 powerplant (station 11362300), provided by Pacific Gas & Electric Co.

c Diversion, in acre-feet, to Pit No. 4 powerplant, provided by Pacific Gas & Electric Co.

11363000 PIT RIVER AT BIG BEND, CA

LOCATION.--Lat 41°01'10", long 121°54'36", in NW 1/4 SW 1/4 sec.31, T.37 N., R.1 E., Shasta County, Hydrologic Unit 18020003, on left bank at Big Bend, 0.4 mi downstream from Nelson Creek, 1.5 mi upstream from Kosk Creek, and 3.1 mi downstream from Pit No. 5 Dam.

DRAINAGE AREA.--4,711 mi², excluding Goose Lake basin.

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Published as "at Henderson" 1910-23.

REVISED RECORDS.--WSP 1345: 1911, 1914(M), 1916(M), 1917, 1928, 1935-36(M). WDR CA-75-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,674.47 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1912, nonrecording gage; Dec. 28, 1912, to June 21, 1924, water-stage recorder at same site, at datum 7.69 ft higher. June 22, 1924, to Sept. 30, 1988 at site 200 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Low flow completely regulated by many reservoirs and powerplants, total usable reservoir capacity, about 253,000 acre-ft. Many diversions upstream from station; diversion to Pit No. 5 powerplant (station 11362700) began May 1, 1944. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--33 years (water years 1911-43) prior to diversion to Pit No. 5 powerplant, 2,931 ft³/s, 2,122,000 acre-ft/yr; 47 years (water years 1944-90), 561 ft³/s, 406,400 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,000 ft³/s, Jan. 25, 1970, gage height, 18.17 ft in gage well, 19.0 ft from floodmarks, site then in use, from rating curve extended above 17,000 ft³/s; maximum gage height, 18.70 ft, Feb. 20, 1986, site then in use; minimum daily, 692 ft³/s, July 9, 1925; since diversion to Pit No. 5 powerplant, minimum daily, 34 ft³/s, Mar. 29, 1955.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Mar. 3 | 1045 | *392 | *6.10 | | | | |

Minimum daily, 121 ft³/s, Aug. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------------|----------|-----------|---------|--------------|-------|------|------|------|------|------|------|
| 1 | 130 | 139 | 132 | 132 | 142 | 174 | 157 | 136 | 245 | 129 | 127 | 136 |
| 2 | 131 | 139 | 133 | 132 | 136 | 192 | 154 | 136 | 213 | 140 | 122 | 133 |
| 3 | 137 | 140 | 132 | 138 | 141 | 302 | 156 | 138 | 195 | 139 | 125 | 135 |
| 4 | 139 | 140 | 131 | 139 | 134 | 310 | 150 | 140 | 184 | 138 | 122 | 137 |
| 5 | 134 | 136 | 127 | 131 | 139 | 263 | 149 | 138 | 178 | 135 | 121 | 136 |
| 6 | 134 | 137 | 133 | 132 | 143 | 233 | 156 | 138 | 167 | 137 | 123 | 139 |
| 7 | 132 | 133 | 129 | 154 | 139 | 210 | 150 | 141 | 164 | 130 | 123 | 136 |
| 8 | 130 | 137 | 133 | 316 | 140 | 205 | 149 | 140 | 150 | 124 | 133 | 134 |
| 9 | 136 | 139 | 136 | 214 | 138 | 200 | 151 | 142 | 143 | 135 | 138 | 137 |
| 10 | 141 | 140 | 133 | 167 | 134 | 222 | 147 | 142 | 135 | 132 | 140 | 138 |
| 11 | 141 | 133 | 133 | 149 | 129 | 206 | 148 | 134 | 145 | 130 | 135 | 140 |
| 12 | 141 | 133 | 131 | 160 | 140 | 199 | 147 | 133 | 146 | 128 | 135 | 140 |
| 13 | 143 | 137 | 131 | 176 | 141 | 190 | 147 | 136 | 143 | 133 | 137 | 143 |
| 14 | 130 | 137 | 133 | 156 | 138 | 189 | 143 | 140 | 145 | 132 | 135 | 151 |
| 15 | 129 | 135 | 131 | 157 | 140 | 185 | 140 | 143 | 148 | 131 | 138 | 147 |
| 16 | 130 | 137 | 134 | 163 | 146 | 178 | 144 | 141 | 137 | 133 | 141 | 142 |
| 17 | 138 | 137 | 133 | 159 | 136 | 180 | 139 | 139 | 129 | 136 | 141 | 142 |
| 18 | 135 | 134 | 134 | 153 | 134 | 184 | 141 | 146 | 141 | 137 | 138 | 142 |
| 19 | 132 | 136 | 134 | 151 | 139 | 180 | 147 | 139 | 140 | 136 | 134 | 146 |
| 20 | 132 | 135 | 133 | 140 | 136 | 178 | 147 | 148 | 145 | 129 | 139 | 148 |
| 21 | 153 | 133 | 134 | 138 | 142 | 175 | 143 | 149 | 142 | 133 | 137 | 159 |
| 22 | 171 | 133 | 132 | 137 | 150 | 176 | 136 | 159 | 139 | 124 | 138 | 151 |
| 23 | 237 | 132 | 129 | 140 | 150 | 176 | 168 | 180 | 132 | 127 | 134 | 150 |
| 24 | 255 | 138 | 135 | 140 | 144 | 169 | 150 | 167 | 127 | 129 | 138 | 153 |
| 25 | 193 | 138 | 134 | 141 | 141 | 166 | 151 | 157 | 139 | 131 | 139 | 163 |
| 26 | 170 | 137 | 129 | 138 | 155 | 173 | 149 | 158 | 143 | 131 | 139 | 164 |
| 27 | 183 | 132 | 131 | 131 | 164 | 174 | 148 | 179 | 140 | 125 | 134 | 160 |
| 28 | 154 | 127 | 127 | 136 | 168 | 170 | 135 | 181 | 139 | 125 | 134 | 161 |
| 29 | 142 | 133 | 127 | 138 | --- | 161 | 132 | 195 | 144 | 123 | 135 | 158 |
| 30 | 142 | 133 | 132 | 147 | --- | 162 | 140 | 245 | 131 | 124 | 136 | 153 |
| 31 | 141 | --- | 132 | 148 | --- | 168 | --- | 264 | --- | 122 | 133 | --- |
| TOTAL | 4636 | 4070 | 4088 | 4753 | 3979 | 6050 | 4414 | 4824 | 4569 | 4058 | 4144 | 4374 |
| MEAN | 150 | 136 | 132 | 153 | 142 | 195 | 147 | 156 | 152 | 131 | 134 | 146 |
| MAX | 255 | 140 | 136 | 316 | 168 | 310 | 168 | 264 | 245 | 140 | 141 | 164 |
| MIN | 129 | 127 | 127 | 131 | 129 | 161 | 132 | 133 | 127 | 122 | 121 | 133 |
| AC-FT | 9200 | 8070 | 8110 | 9430 | 7890 | 12000 | 8760 | 9570 | 9060 | 8050 | 8220 | 8680 |
| CAL YR 1989 | TOTAL 159291 | MEAN 436 | MAX 11000 | MIN 84 | AC-FT 316000 | | | | | | | |
| WTR YR 1990 | TOTAL 53959 | MEAN 148 | MAX 316 | MIN 121 | AC-FT 107000 | | | | | | | |

SACRAMENTO RIVER BASIN

11363910 JAMES B. BLACK POWERPLANT NEAR BIG BEND, CA

LOCATION.--Lat 40°59'12", long 121°58'35", in SW 1/4 SE 1/4 sec.9, T.36 N., R.1 W., Shasta County, Hydrologic Unit 18020003, at powerplant on right bank of Pit River, 5.8 mi downstream from Big Bend.

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Discharge computed from powerplant output.

REMARKS.--No estimated daily discharges. Water is diverted from Lake McCloud (station 11367740) at SE 1/4 SW 1/4 sec.22, T.38 N., R.2 W., through McCloud-Iron Canyon diversion tunnel (station 11367720) to Iron Canyon Reservoir (station 11363920), then through the penstock for powerplant and into the Pit River. Records are combined flow of diversion from McCloud River at McCloud Dam plus Iron Canyon Creek. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--24 years (water years 1967-90), 935 ft³/s, 677,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,420 ft³/s, July 15, 1966; no flow several days most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|--------|--------|----------|--------|----------|--------|--------|--------|
| 1 | 384 | 703 | 586 | 559 | 436 | 528 | 631 | 270 | 1000 | 526 | 704 | 368 |
| 2 | 749 | 660 | 263 | 539 | 480 | 766 | 804 | 414 | 217 | 706 | 726 | 400 |
| 3 | 578 | 837 | 253 | 594 | 669 | 705 | 402 | 244 | .00 | 913 | 352 | 409 |
| 4 | 669 | 318 | 518 | 632 | 684 | 1200 | 272 | 487 | 120 | 324 | 786 | 1090 |
| 5 | 648 | 788 | 587 | 591 | 867 | 1390 | 170 | 461 | .00 | 611 | 669 | 641 |
| 6 | 568 | 741 | 575 | 522 | 1040 | 778 | 394 | 224 | 874 | 736 | 725 | 307 |
| 7 | 343 | 440 | 424 | 742 | 722 | 328 | 151 | 655 | 165 | 722 | 431 | 495 |
| 8 | 318 | 734 | 791 | 1020 | 627 | 257 | .00 | 580 | 420 | 598 | 698 | 485 |
| 9 | 823 | 500 | 515 | 1230 | 369 | 324 | 244 | 534 | 1200 | 1080 | 709 | 839 |
| 10 | 440 | 509 | 612 | 1080 | 320 | 1270 | 376 | 443 | 1200 | 1160 | 579 | 689 |
| 11 | 819 | 279 | 693 | 1560 | 759 | 1410 | 400 | 676 | 442 | 619 | 599 | 1010 |
| 12 | 670 | 419 | 693 | 1430 | 847 | 1300 | 730 | 333 | .00 | 809 | 397 | 1210 |
| 13 | 494 | 496 | 568 | 1630 | 746 | 641 | 700 | 533 | .00 | 698 | 655 | 215 |
| 14 | 289 | 655 | 469 | 1090 | 718 | 1200 | .00 | 627 | 424 | 755 | 645 | 771 |
| 15 | 645 | 795 | 122 | 927 | 587 | 787 | 354 | 509 | 879 | 436 | 632 | 444 |
| 16 | 640 | 601 | 235 | 807 | 620 | 740 | 598 | 796 | 824 | 721 | 599 | 559 |
| 17 | 751 | 488 | 163 | 408 | 560 | 1010 | 499 | 715 | 306 | 833 | 563 | 407 |
| 18 | 482 | 399 | 569 | 930 | 363 | 788 | 629 | 338 | 812 | 589 | 513 | 696 |
| 19 | 429 | 392 | 862 | 727 | 881 | 576 | 443 | 464 | 933 | 679 | 522 | 856 |
| 20 | 443 | 535 | 635 | 532 | 990 | 310 | 485 | 482 | 613 | 690 | 555 | 837 |
| 21 | 310 | 956 | 214 | 754 | 336 | 798 | 557 | 601 | 420 | 424 | 674 | 247 |
| 22 | 716 | 813 | 1090 | 383 | 357 | 701 | .00 | 662 | 943 | 612 | 766 | 788 |
| 23 | 1410 | 570 | 40 | 516 | 544 | 708 | 521 | 445 | 385 | 669 | 850 | 645 |
| 24 | 1870 | 440 | 563 | 397 | 444 | 835 | 339 | 1460 | 647 | 562 | 1140 | 449 |
| 25 | 515 | 710 | 424 | 661 | 313 | 429 | 482 | 1960 | 781 | 730 | 697 | 279 |
| 26 | 627 | 577 | 643 | 760 | 567 | 380 | 500 | 1770 | 655 | 818 | 498 | 509 |
| 27 | 1130 | 753 | 534 | 712 | 743 | 165 | 928 | 1630 | 631 | 506 | 562 | 516 |
| 28 | 782 | 703 | 462 | 351 | 1060 | 695 | 380 | 2060 | 575 | 516 | 816 | 591 |
| 29 | 1030 | 560 | 517 | 428 | --- | 221 | 299 | 1990 | 872 | 577 | 873 | 843 |
| 30 | 1000 | 397 | 587 | 324 | --- | 527 | 347 | 1960 | 762 | 1090 | 465 | 835 |
| 31 | 828 | --- | 569 | 431 | --- | 742 | --- | 1960 | --- | 1100 | 679 | --- |
| TOTAL | 21400 | 17768 | 15776 | 23267 | 17649 | 22509 | 12635.00 | 26283 | 17100.00 | 21809 | 20079 | 18430 |
| MEAN | 690 | 592 | 509 | 751 | 630 | 726 | 421 | 848 | 570 | 704 | 648 | 614 |
| MAX | 1870 | 956 | 1090 | 1630 | 1060 | 1410 | 928 | 2060 | 1200 | 1160 | 1140 | 1210 |
| MIN | 289 | 279 | 40 | 324 | 313 | 165 | .00 | 224 | .00 | 324 | 352 | 215 |
| AC-FT | 42450 | 35240 | 31290 | 46150 | 35010 | 44650 | 25060 | 52130 | 33920 | 43260 | 39830 | 36560 |
| a | 146500 | 139500 | 138500 | 142800 | 126200 | 206700 | 125100 | 125600 | 138000 | 113600 | 117400 | 113300 |

CAL YR 1989 TOTAL 267757.00 MEAN 734 MAX 1920 MIN .00 AC-FT 531100

WTR YR 1990 TOTAL 234705.00 MEAN 643 MAX 2060 MIN .00 AC-FT 465500

a Discharge, in acre-feet, for Pit No. 5 powerplant (station 11362700), provided by Pacific Gas and Electric Co.

11363930 IRON CANYON CREEK BELOW IRON CANYON DAM, NEAR BIG BEND, CA

LOCATION.--Lat 41°02'27", long 121°59'02", in NW 1/4 NW 1/4 sec.28, T.37 N., R.1 W., Shasta County, Hydrologic Unit 18020003, on left bank 0.2 mi downstream from Iron Canyon Dam and 4.2 mi west of Big Bend.

DRAINAGE AREA.--11.6 mi².

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder, 60° sharp-crested V-notch weir, and concrete control with flashboards in 2- x 10-ft opening. Datum of gage is 2,461.52 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--No estimated daily discharges. Flow is completely regulated by Iron Canyon Reservoir (station 11363920). There is interbasin diversion from Lake McCloud (station 11367740) to Iron Canyon Reservoir and then into a tunnel to James B. Black powerplant on the Pit River (station 11363910). This station records fishwater release. The minimum release requirement is 3.0 ft³/s at all times. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--24 years, 5.56 ft³/s, 4,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 650 ft³/s, Feb. 5, 1986, gage height unknown (flashboards removed from weir), from equation for a 4- x 4-ft slide gate. Flow was the result of full travel test of slide gate at Iron Canyon Dam; maximum gage height, 3.24 ft, Feb. 25, 1978 (flashboards in weir), was the result of failure of the James B. Black penstock; no flow, July 15-18, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 220 ft³/s, June 4, from equation for 4- x 4-ft sluice gate; gage height, 2.01 ft, from highwater mark (flashboards removed from weir); maximum gage height, 2.20 ft, Dec. 19, from highwater mark (flashboards removed from weir); minimum daily, 3.7 ft³/s, for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 4.2 | 3.9 | 4.2 | 4.6 | 5.2 | 5.2 | 5.2 | 5.7 | 4.4 | 4.1 | 3.7 | 3.7 |
| 2 | 4.2 | 3.9 | 4.2 | 4.6 | 5.2 | 5.2 | 5.2 | 5.7 | 4.4 | 4.2 | 3.7 | 3.7 |
| 3 | 4.2 | 3.9 | 4.3 | 4.6 | 5.2 | 5.6 | 5.2 | 5.7 | 4.6 | 4.1 | 3.7 | 3.8 |
| 4 | 4.2 | 4.0 | 4.3 | 4.6 | 5.2 | 5.2 | 5.2 | 5.7 | 4.9 | 4.1 | 3.7 | 3.7 |
| 5 | 4.2 | 4.0 | 4.2 | 4.6 | 5.2 | 5.2 | 5.2 | 5.7 | 4.7 | 4.2 | 3.7 | 3.7 |
| 6 | 4.2 | 4.1 | 4.2 | 4.6 | 5.2 | 5.2 | 5.2 | 5.7 | 4.2 | 4.2 | 3.7 | 3.7 |
| 7 | 4.2 | 4.1 | 4.2 | 4.7 | 5.2 | 5.2 | 5.2 | 5.7 | 3.7 | 4.2 | 3.7 | 3.7 |
| 8 | 4.2 | 4.1 | 4.2 | 5.3 | 5.2 | 5.2 | 5.4 | 5.7 | 3.7 | 4.2 | 3.7 | 3.7 |
| 9 | 4.2 | 4.1 | 4.2 | 4.7 | 5.2 | 5.2 | 5.7 | 5.7 | 3.7 | 4.1 | 3.7 | 3.7 |
| 10 | 4.2 | 4.1 | 4.2 | 4.6 | 5.2 | 5.2 | 5.7 | 5.7 | 3.7 | 4.0 | 3.7 | 3.7 |
| 11 | 4.2 | 4.2 | 4.1 | 4.3 | 5.2 | 5.2 | 5.7 | 5.7 | 3.7 | 3.9 | 3.7 | 3.7 |
| 12 | 4.1 | 4.2 | 4.2 | 4.1 | 5.2 | 5.2 | 5.7 | 5.7 | 3.7 | 3.9 | 3.7 | 3.7 |
| 13 | 4.1 | 4.2 | 4.1 | 4.1 | 5.2 | 5.2 | 5.7 | 5.7 | 3.8 | 3.8 | 3.7 | 3.8 |
| 14 | 4.1 | 4.3 | 4.2 | 3.7 | 5.2 | 5.2 | 5.7 | 5.7 | 3.9 | 3.8 | 3.7 | 3.7 |
| 15 | 4.2 | 4.2 | 4.2 | 3.7 | 5.2 | 4.9 | 5.7 | 5.7 | 4.0 | 3.8 | 3.7 | 3.7 |
| 16 | 4.2 | 4.2 | 4.3 | 4.3 | 5.2 | 4.9 | 5.7 | 5.7 | 4.0 | 3.8 | 3.7 | 3.7 |
| 17 | 4.1 | 4.2 | 4.4 | 4.6 | 5.2 | 4.8 | 5.7 | 5.7 | 4.0 | 3.8 | 3.8 | 3.8 |
| 18 | 4.1 | 4.2 | 4.4 | 4.7 | 5.2 | 4.9 | 5.4 | 5.7 | 4.0 | 3.8 | 3.7 | 3.7 |
| 19 | 4.1 | 4.2 | 5.2 | 4.7 | 5.2 | 4.9 | 5.2 | 6.2 | 4.0 | 3.8 | 3.7 | 3.7 |
| 20 | 4.2 | 4.2 | 4.6 | 4.7 | 5.2 | 5.1 | 5.6 | 6.3 | 4.0 | 3.8 | 3.7 | 3.7 |
| 21 | 4.7 | 4.2 | 4.6 | 4.7 | 5.2 | 5.2 | 5.7 | 6.3 | 4.0 | 3.8 | 3.7 | 3.7 |
| 22 | 4.7 | 4.2 | 4.6 | 4.7 | 5.2 | 5.2 | 5.7 | 6.3 | 4.1 | 3.9 | 3.7 | 3.7 |
| 23 | 4.8 | 4.1 | 4.6 | 4.7 | 5.2 | 5.2 | 5.7 | 6.5 | 4.1 | 3.9 | 3.7 | 3.7 |
| 24 | 4.6 | 4.2 | 4.6 | 4.7 | 5.2 | 5.2 | 5.7 | 6.3 | 4.1 | 3.8 | 3.7 | 3.7 |
| 25 | 4.2 | 4.2 | 4.6 | 5.2 | 5.2 | 5.2 | 5.7 | 5.1 | 4.1 | 3.8 | 3.8 | 3.7 |
| 26 | 4.2 | 4.2 | 4.6 | 5.2 | 5.2 | 5.2 | 5.7 | 4.1 | 4.1 | 3.8 | 3.7 | 3.7 |
| 27 | 4.2 | 4.2 | 4.6 | 5.2 | 5.2 | 5.3 | 5.7 | 4.4 | 4.1 | 3.8 | 3.8 | 3.7 |
| 28 | 4.1 | 4.1 | 4.6 | 5.2 | 5.2 | 5.2 | 5.7 | 4.0 | 4.1 | 3.8 | 3.7 | 3.7 |
| 29 | 4.0 | 4.1 | 4.6 | 5.2 | --- | 5.2 | 5.7 | 4.0 | 4.1 | 3.8 | 3.7 | 3.7 |
| 30 | 4.0 | 4.1 | 4.6 | 5.2 | --- | 5.2 | 5.7 | 4.8 | 4.1 | 3.8 | 3.7 | 3.7 |
| 31 | 3.9 | --- | 4.6 | 5.2 | --- | 5.2 | --- | 4.7 | --- | 3.7 | 3.7 | --- |
| TOTAL | 130.8 | 123.9 | 136.5 | 145.0 | 145.6 | 160.0 | 166.3 | 171.6 | 122.0 | 121.5 | 115.0 | 111.3 |
| MEAN | 4.22 | 4.13 | 4.40 | 4.68 | 5.20 | 5.16 | 5.54 | 5.54 | 4.07 | 3.92 | 3.71 | 3.71 |
| MAX | 4.8 | 4.3 | 5.2 | 5.3 | 5.2 | 5.6 | 5.7 | 6.5 | 4.9 | 4.2 | 3.8 | 3.8 |
| MIN | 3.9 | 3.9 | 4.1 | 3.7 | 5.2 | 4.8 | 5.2 | 4.0 | 3.7 | 3.7 | 3.7 | 3.7 |
| AC-FT | 259 | 246 | 271 | 288 | 289 | 317 | 330 | 340 | 242 | 241 | 228 | 221 |

CAL YR 1989 TOTAL 1743.9 MEAN 4.78 MAX 70 MIN 3.5 AC-FT 3460
WTR YR 1990 TOTAL 1649.5 MEAN 4.52 MAX 6.5 MIN 3.7 AC-FT 3270

11364200 ROARING CREEK BELOW DIVERSION TO ROARING CREEK POWERPLANT, NEAR MONTGOMERY CREEK, CA

LOCATION.--Lat 40°53'22", long 121°56'59", in NW 1/4 SW 1/4 sec.15, T.35 N., R.1 W., Shasta County, Hydrologic Unit 18020003, on left bank 1,500 ft downstream from Cove Road, 0.5 mi downstream from Little Roaring Creek, and 3.5 miles northwest of Montgomery Creek.

DRAINAGE AREA.--34.8 mi².

PERIOD OF RECORD.--October 1987 to September 1988, October 1989 to September 1990 (operated as low-flow station only).

GAGE.--Water-stage recorder and sharp-crested weir. Elevation of gage is 1,580 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1988, at site 750 ft upstream at different datum.

REMARKS.--No estimated daily discharges. This station records regulated bypass flow or natural flow only. During times of powerplant operation the minimum bypass flow requirement is 15 ft³/s except March to May when the minimum bypass flow requirement is 40 ft³/s; flow is computed to 48 ft³/s.

COOPERATION.--Records were collected by Mega Renewables Energy/Independent Hydro Developers, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-----|------|-----|-----|-----|------|------|------|------|
| 1 | 13 | 17 | 19 | 18 | 22 | 45 | 45 | 35 | 34 | 19 | 15 | 13 |
| 2 | 13 | 21 | 19 | 17 | 22 | --- | 45 | 34 | 22 | 22 | 14 | 13 |
| 3 | 13 | 19 | 18 | 16 | 24 | --- | 45 | 33 | 20 | 28 | 14 | 13 |
| 4 | 13 | 20 | 18 | 16 | 23 | --- | 43 | 32 | 19 | 28 | 14 | 12 |
| 5 | 13 | 24 | 17 | 16 | 21 | --- | 43 | 31 | 19 | 28 | 14 | 13 |
| 6 | 13 | 23 | 17 | 16 | 21 | --- | 43 | 30 | 19 | 27 | 13 | 12 |
| 7 | 13 | 22 | 17 | 34 | 20 | 43 | 43 | 29 | 19 | 27 | 13 | 12 |
| 8 | 13 | 22 | 17 | --- | 20 | 46 | 43 | 29 | 19 | 27 | 12 | 12 |
| 9 | 13 | 21 | 17 | --- | 20 | 43 | 45 | 28 | 19 | 25 | 12 | 12 |
| 10 | 13 | 20 | 17 | 27 | 20 | --- | 46 | 28 | 19 | 24 | 12 | 12 |
| 11 | 13 | 20 | 16 | 22 | 20 | 46 | 45 | 28 | 17 | 23 | 12 | 12 |
| 12 | 13 | 20 | 16 | 25 | 20 | 44 | 43 | 27 | 17 | 23 | 12 | 12 |
| 13 | 13 | 19 | 16 | 28 | 20 | 45 | 42 | 27 | 18 | 22 | 13 | 12 |
| 14 | 13 | 18 | 16 | 25 | 20 | 45 | 41 | 26 | 20 | 22 | 12 | 12 |
| 15 | 13 | 18 | 16 | 21 | 20 | 45 | 40 | 25 | 19 | 21 | 12 | 12 |
| 16 | 14 | 17 | 16 | 21 | 21 | 45 | 41 | 25 | 19 | 20 | 13 | 12 |
| 17 | 14 | 17 | 16 | 19 | 22 | 45 | 41 | 25 | 20 | 20 | 13 | 12 |
| 18 | 13 | 17 | 16 | 20 | 20 | 45 | 39 | 24 | 19 | 20 | 14 | 11 |
| 19 | 13 | 17 | 17 | 24 | 20 | 45 | 37 | 27 | 19 | 20 | 14 | 11 |
| 20 | 13 | 17 | 17 | 29 | 20 | 44 | 37 | 34 | 20 | 19 | 14 | 11 |
| 21 | 13 | 16 | 17 | 24 | 24 | 44 | 36 | 29 | 20 | 19 | 13 | 11 |
| 22 | 29 | 16 | 17 | 24 | 22 | 45 | 37 | 37 | 20 | 18 | 13 | 11 |
| 23 | 37 | 16 | 17 | 23 | 22 | 46 | --- | --- | 19 | 18 | 13 | 11 |
| 24 | 17 | 19 | 17 | 23 | 22 | --- | 45 | 44 | 19 | 17 | 12 | 12 |
| 25 | 18 | 25 | 16 | 23 | 22 | 47 | 47 | 37 | 19 | 16 | 13 | 12 |
| 26 | 18 | 25 | 16 | 23 | 22 | 47 | 44 | --- | 25 | 16 | 14 | 13 |
| 27 | 19 | 22 | 16 | 23 | 21 | 47 | 41 | --- | 20 | 16 | 14 | 12 |
| 28 | 17 | 20 | 16 | 23 | 26 | 46 | 39 | 43 | 19 | 16 | 14 | 12 |
| 29 | 17 | 19 | 16 | 23 | --- | 45 | 37 | 43 | 19 | 16 | 14 | 12 |
| 30 | 17 | 19 | 16 | 24 | --- | 45 | 37 | --- | 19 | 15 | 13 | 11 |
| 31 | 17 | --- | 16 | 23 | --- | 45 | --- | --- | --- | 15 | 13 | --- |
| TOTAL | 481 | 586 | 518 | --- | 597 | --- | --- | --- | 596 | 647 | 408 | 358 |
| MEAN | 15.5 | 19.5 | 16.7 | --- | 21.3 | --- | --- | --- | 19.9 | 20.9 | 13.2 | 11.9 |
| MAX | 37 | 25 | 19 | --- | 26 | --- | --- | --- | 34 | 28 | 15 | 13 |
| MIN | 13 | 16 | 16 | --- | 20 | --- | --- | --- | 17 | 15 | 12 | 11 |
| AC-FT | 954 | 1160 | 1030 | --- | 1180 | --- | --- | --- | 1180 | 1280 | 809 | 710 |

NOTE: No power generation Oct. 1-22, Nov. 6 to Jan. 6, Apr. 10-22, Apr. 25 to May 22, May 24-26, and July 3 to Sept. 30. Discharges were above 48 ft³/s Jan. 8, 9, Mar. 2-6, 10, 24, Apr. 23, and May 23, 26, 27, 30, 31.

11364300 HATCHET CREEK BELOW DIVERSION TO HATCHET CREEK POWERPLANT, NEAR MONTGOMERY CREEK, CA

LOCATION.--Lat 40°52'39", long 121°51'55", in SW 1/4 NE 1/4 sec.21, T.35 N., R.1 E., Shasta County, Hydrologic Unit 18020003, on left bank 1,400 ft downstream from Buffom Creek and 3.8 mi northeast of Montgomery Creek.

DRAINAGE AREA.--29.6 mi².

PERIOD OF RECORD.--October 1987 to September 1988, October 1989 to September 1990 (operated as low-flow station only).

GAGE.--Water-stage recorder. Elevation of gage is 3,460 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. This station records regulated bypass flow or natural flow only. During times of powerplant operation the minimum bypass flow requirement is 15 ft³/s; flow is computed to 42 ft³/s.

COOPERATION.--Records were collected by Mega Renewables Energy/Independent Hydro Developers, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|------|------|-----|------|-----|------|-----|-----|------|------|-------|
| 1 | 12 | 24 | 17 | 14 | 24 | 18 | 16 | 30 | --- | 24 | 11 | 10 |
| 2 | 11 | 22 | 16 | 13 | 22 | 22 | 17 | 28 | --- | 23 | 11 | 10 |
| 3 | 11 | 21 | 16 | 12 | 22 | --- | 17 | 28 | 23 | 22 | 11 | 10 |
| 4 | 11 | 20 | 16 | 13 | 22 | --- | 17 | 26 | 16 | 22 | 11 | 10 |
| 5 | 10 | 19 | 17 | 13 | 21 | 32 | 17 | 25 | 17 | 22 | 11 | 10 |
| 6 | 10 | 19 | 18 | 13 | 21 | 18 | 17 | 24 | 16 | 21 | 11 | 10 |
| 7 | 10 | 18 | 17 | 24 | 25 | 17 | 17 | 24 | 16 | 20 | 11 | 10 |
| 8 | 10 | 17 | 17 | --- | 24 | 17 | 17 | 23 | 16 | 19 | 10 | 9.3 |
| 9 | 11 | 17 | 17 | 29 | 23 | 16 | 17 | 22 | 16 | 19 | 11 | 9.3 |
| 10 | 11 | 17 | 16 | 19 | 24 | 20 | 27 | 22 | 16 | 18 | 11 | 9.3 |
| 11 | 11 | 16 | 15 | 18 | 24 | 16 | 16 | 22 | 16 | 18 | 11 | 9.3 |
| 12 | 10 | 16 | 15 | 19 | 24 | 17 | 17 | 22 | 17 | 17 | 11 | 9.3 |
| 13 | 10 | 16 | 15 | 18 | 24 | 18 | 17 | 21 | 17 | 17 | 11 | 9.3 |
| 14 | 10 | 16 | 15 | 16 | 25 | 18 | 17 | 21 | 17 | 17 | 10 | 9.3 |
| 15 | 11 | 15 | 15 | 16 | 26 | 17 | 17 | 20 | 17 | 17 | 10 | 9.3 |
| 16 | 11 | 15 | 15 | 16 | 24 | 17 | 17 | 19 | 17 | 16 | 10 | 9.3 |
| 17 | 10 | 15 | 14 | 17 | 24 | 17 | 17 | 19 | 16 | 16 | 10 | 9.3 |
| 18 | 10 | 15 | 14 | 18 | 25 | 18 | 17 | 19 | 16 | 16 | 13 | 9.3 |
| 19 | 10 | 14 | 13 | 19 | 23 | 21 | 18 | 22 | 27 | 15 | 12 | 9.3 |
| 20 | 10 | 14 | 13 | 30 | 22 | 25 | 29 | --- | 35 | 15 | 11 | 9.3 |
| 21 | 25 | 14 | 14 | 35 | 21 | 24 | 32 | 30 | 33 | 15 | 11 | 8.9 |
| 22 | 31 | 14 | 13 | 33 | 22 | 24 | 34 | 31 | 32 | 14 | 11 | 8.9 |
| 23 | --- | 14 | 13 | 32 | 24 | 25 | 24 | 29 | 31 | 13 | 11 | 9.3 |
| 24 | --- | 19 | 13 | 31 | 26 | 25 | 17 | 16 | 30 | 13 | 11 | 10 |
| 25 | 19 | 20 | 13 | 30 | 27 | 23 | 17 | 17 | 29 | 13 | 11 | 12 |
| 26 | 16 | 20 | 13 | 29 | 30 | 22 | 25 | 17 | 28 | 13 | 12 | 11 |
| 27 | 24 | 18 | 13 | 27 | 29 | 20 | 35 | 30 | 27 | 13 | 11 | 11 |
| 28 | 16 | 17 | 13 | 26 | 18 | 18 | 33 | 18 | 26 | 12 | 11 | 10 |
| 29 | 22 | 16 | 13 | 26 | --- | 17 | 32 | 19 | 26 | 12 | 11 | 10 |
| 30 | 32 | 17 | 13 | 30 | --- | 16 | 30 | --- | 24 | 11 | 11 | 10 |
| 31 | 30 | --- | 13 | 26 | --- | 16 | --- | --- | --- | 11 | 10 | --- |
| TOTAL | --- | 515 | 455 | --- | 666 | --- | 640 | --- | --- | 514 | 339 | 292.0 |
| MEAN | --- | 17.2 | 14.7 | --- | 23.8 | --- | 21.3 | --- | --- | 16.6 | 10.9 | 9.73 |
| MAX | --- | 24 | 18 | --- | 30 | --- | 35 | --- | --- | 24 | 13 | 12 |
| MIN | --- | 14 | 13 | --- | 18 | --- | 16 | --- | --- | 11 | 10 | 8.9 |
| AC-FT | --- | 1020 | 902 | --- | 1320 | --- | 1270 | --- | --- | 1020 | 672 | 579 |

NOTE: No power generation Oct. 1-23, Oct. 31 to Jan. 7, Jan. 21 to Feb. 26, Apr. 21, 22, Apr. 27 to May 21, and June 20 to Sept. 30. Discharges were above 42 ft³/s Oct. 23, 24, Jan. 8, Mar. 3, 4, May 20, and May 30 to June 2.

21.3⁹

SACRAMENTO RIVER BASIN

11365000 PIT RIVER NEAR MONTGOMERY CREEK, CA

LOCATION.--Lat 40°50'38", long 122°00'05", in NE 1/4 SW 1/4 sec.32, T.35 N., R.1 W., Shasta County, Hydrologic Unit 18020003, Shasta National Forest, on left bank 0.7 mi downstream from Pit No. 7 Dam and powerplant, 1.4 mi upstream from Potem Creek, and 4.1 mi west of town of Montgomery Creek.

DRAINAGE AREA.--4,952 mi², excluding Goose Lake basin.

PERIOD OF RECORD.--October 1944 to current year (monthly discharge only December 1964 to May 1965). Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1951, 1953, 1955-81.

WATER TEMPERATURE: Water years 1951, 1954-57, 1959.

REVISED RECORDS.--WSP 1931: Drainage area. WDR CA-86-4; 1983 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,000.00 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). October 1944 to Feb. 17, 1963, at site 0.7 mi upstream at different datum. Feb. 17, 1963, to May 21, 1965, at site 1.5 mi upstream at different datum. May 21, 1965, to June 20, 1981, at site 0.9 mi downstream at datum 1,036.00 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Low flow completely regulated by many reservoirs and powerplants, total usable reservoir capacity, 337,000 acre-ft. Many diversions above station for irrigation. Diversion from McCloud River to Iron Canyon Reservoir (station 11363920) began December 1965. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--21 years (water years 1945-65) prior to diversion from McCloud River, 3,759 ft³/s, 2,721,000 acre-ft/yr; 25 years (water years 1966-90), 4,996 ft³/s, 3,620,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft³/s, Jan. 24, 1970, gage height, 32.36 ft, site and datum then in use; maximum gage height, 74.65 ft (present datum), Feb. 19, 1986; minimum daily, 30 ft³/s, July 12, 27, 1975, result of construction work below Pit No. 7 powerplant.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,640 ft³/s, July 17, gage height, 63.25 ft; minimum daily, 361 ft³/s, Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 1350 | 4100 | 3000 | 2810 | 3490 | 4950 | 3770 | 2500 | 6270 | 665 | 3360 | 770 |
| 2 | 3200 | 3050 | 2550 | 3000 | 3370 | 7280 | 3660 | 2630 | 4160 | 3250 | 3500 | 1130 |
| 3 | 3550 | 4400 | 2690 | 2750 | 2320 | 7290 | 3030 | 2330 | 3690 | 3370 | 1770 | 2640 |
| 4 | 3720 | 2800 | 2690 | 2760 | 1840 | 7030 | 3230 | 2950 | 3610 | 2390 | 1960 | 3390 |
| 5 | 3530 | 1240 | 2900 | 2870 | 3090 | 7920 | 2210 | 1660 | 5780 | 3460 | 2130 | 3240 |
| 6 | 3370 | 3290 | 2600 | 3230 | 3680 | 3330 | 3780 | 815 | 6020 | 3540 | 2380 | 2410 |
| 7 | 2280 | 3960 | 2900 | 3640 | 3780 | 3550 | 2180 | 3330 | 2530 | 1350 | 2520 | 3950 |
| 8 | 1840 | 2870 | 3240 | 5940 | 3740 | 5010 | 2770 | 3110 | 3110 | 797 | 3050 | 1610 |
| 9 | 3070 | 4280 | 3840 | 4920 | 3250 | 2950 | 3270 | 3920 | 2640 | 3920 | 2970 | 1170 |
| 10 | 3480 | 3330 | 4090 | 4150 | 2040 | 6130 | 2860 | 1810 | 2820 | 3930 | 2610 | 3330 |
| 11 | 3780 | 1440 | 4170 | 5000 | 2820 | 6460 | 4070 | 2260 | 4220 | 2980 | 1880 | 2750 |
| 12 | 3530 | 1580 | 2670 | 5380 | 1980 | 6150 | 3160 | 2030 | 3360 | 4020 | 1030 | 3620 |
| 13 | 3430 | 3240 | 2740 | 5220 | 2770 | 4600 | 2900 | 1000 | 2330 | 2680 | 2690 | 1660 |
| 14 | 1330 | 4140 | 2760 | 2400 | 3320 | 5430 | 1260 | 3700 | 3260 | 1380 | 3440 | 2270 |
| 15 | 2260 | 3500 | 1730 | 3840 | 3360 | 5480 | 1760 | 3020 | 3750 | 890 | 2900 | 2560 |
| 16 | 3250 | 3870 | 933 | 4800 | 3420 | 7190 | 3140 | 3330 | 2560 | 3470 | 2270 | 2300 |
| 17 | 4440 | 3730 | 671 | 3060 | 3380 | 6090 | 3510 | 4200 | 2280 | 3880 | 2900 | 1990 |
| 18 | 2800 | 1700 | 3380 | 4390 | 3280 | 5250 | 3580 | 2960 | 2650 | 2890 | 1000 | 2600 |
| 19 | 3750 | 1360 | 4000 | 4960 | 3260 | 3850 | 2270 | 920 | 3070 | 3260 | 817 | 3280 |
| 20 | 2120 | 3090 | 3680 | 991 | 3320 | 3730 | 3870 | 1350 | 2860 | 2080 | 1550 | 3000 |
| 21 | 1680 | 4200 | 4170 | 1710 | 3320 | 4110 | 2480 | 3640 | 3940 | 882 | 2040 | 2740 |
| 22 | 2730 | 4390 | 3930 | 3560 | 3310 | 3160 | 1000 | 3510 | 3200 | 1970 | 2640 | 361 |
| 23 | 6150 | 3220 | 795 | 3340 | 2590 | 4460 | 3050 | 3960 | 953 | 2760 | 3290 | 2310 |
| 24 | 6030 | 2980 | 726 | 3850 | 1090 | 3020 | 2740 | 5760 | 2200 | 2960 | 3080 | 2730 |
| 25 | 3550 | 3380 | 2580 | 3760 | 2770 | 3660 | 4040 | 5170 | 3810 | 2830 | 1330 | 2170 |
| 26 | 3610 | 2920 | 3510 | 3950 | 2840 | 3270 | 3630 | 2350 | 3440 | 2940 | 847 | 3470 |
| 27 | 4480 | 3050 | 3690 | 6040 | 4650 | 3890 | 4660 | 3000 | 2650 | 2090 | 2780 | 3040 |
| 28 | 4230 | 2920 | 4060 | 2510 | 4100 | 2480 | 581 | 5660 | 2000 | 792 | 3010 | 1830 |
| 29 | 3190 | 2860 | 3830 | 3060 | --- | 3130 | 1160 | 5570 | 3860 | 1690 | 3440 | 3590 |
| 30 | 3450 | 2590 | 2800 | 3510 | --- | 3670 | 1440 | 6840 | 1880 | 2580 | 3260 | 773 |
| 31 | 3870 | --- | 3430 | 3560 | --- | 4350 | --- | 7670 | --- | 3350 | 2610 | --- |
| TOTAL | 103050 | 93480 | 90755 | 114961 | 86180 | 148870 | 85061 | 102955 | 98903 | 79046 | 75054 | 72684 |
| MEAN | 3324 | 3116 | 2928 | 3708 | 3078 | 4802 | 2835 | 3321 | 3297 | 2550 | 2421 | 2423 |
| MAX | 6150 | 4400 | 4170 | 6040 | 4650 | 7920 | 4660 | 7670 | 6270 | 4020 | 3500 | 3950 |
| MIN | 1330 | 1240 | 671 | 991 | 1090 | 2480 | 581 | 815 | 953 | 665 | 817 | 361 |
| AC-FT | 204400 | 185400 | 180000 | 228000 | 170900 | 295300 | 168700 | 204200 | 196200 | 156800 | 148900 | 144200 |
| a | 14837 | 15017 | 14888 | 15461 | 13128 | 14965 | 15095 | 15121 | 14304 | 15251 | 15277 | 12585 |
| b | 195800 | 178800 | 177100 | 210600 | 177700 | 260000 | 161900 | 197700 | 186600 | 162500 | 163300 | 142400 |
| c | 32895 | 33215 | 33215 | 22694 | 31014 | 33169 | 33307 | 32395 | 32940 | 33492 | 33032 | 32576 |

CAL YR 1989 TOTAL 1485785 MEAN 4071 MAX 21900 MIN 490 AC-FT 2947000
WTR YR 1990 TOTAL 1150999 MEAN 3153 MAX 7920 MIN 361 AC-FT 2283000

a Contents, in acre-feet, at end of month for Pit No. 6 Reservoir (station 11364100), provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, for Pit No. 6 powerplant (station 11364150), provided by Pacific Gas & Electric Co.

c Contents, in acre-feet, at end of month for Pit No. 7 Reservoir (station 11364700), provided by Pacific Gas & Electric Co.

11367500 McCLOUD RIVER NEAR McCLOUD, CA

LOCATION.--Lat 41°11'18", long 122°03'52", in NW 1/4 NE 1/4 sec.34, T.39 N., R.2 W., Siskiyou County, Hydrologic Unit 18020004, on right bank 0.4 mi downstream from Angel Creek and 6 mi southeast of McCloud.

DRAINAGE AREA.--358 mi².

PERIOD OF RECORD.--April 1931 to current year.

REVISED RECORDS.--WSP 843: 1936(M). WSP 1445: 1940(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,711.2 ft above National Geodetic Vertical Datum of 1929, from river-profile map.

REMARKS.--No estimated daily discharges. Two small diversions upstream from station for irrigation, and one 22-in pipeline for town of McCloud. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--59 years, 921 ft³/s, 667,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft³/s, Dec. 21, 1955, gage heights, 9.42 ft, in gage well, 10.7 ft from floodmarks, from rating curve extended above 8,800 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 524 ft³/s, Nov. 23, 24, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Oct. 23 | 1130 | *1,320 | *2.24 | | | | |

Minimum daily, 596 ft³/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 641 | 716 | 680 | 666 | 659 | 660 | 691 | 644 | 940 | 630 | 610 | 603 |
| 2 | 639 | 708 | 680 | 664 | 653 | 677 | 691 | 641 | 880 | 628 | 610 | 604 |
| 3 | 638 | 706 | 679 | 663 | 656 | 803 | 691 | 637 | 837 | 628 | 609 | 604 |
| 4 | 637 | 708 | 679 | 667 | 652 | 863 | 691 | 636 | 800 | 627 | 609 | 603 |
| 5 | 637 | 707 | 680 | 664 | 652 | 818 | 694 | 633 | 773 | 626 | 609 | 601 |
| 6 | 636 | 704 | 680 | 664 | 652 | 779 | 701 | 632 | 754 | 626 | 608 | 601 |
| 7 | 635 | 702 | 680 | 676 | 646 | 759 | 702 | 631 | 744 | 626 | 608 | 601 |
| 8 | 634 | 697 | 680 | 708 | 647 | 752 | 704 | 630 | 728 | 624 | 610 | 601 |
| 9 | 633 | 696 | 680 | 787 | 644 | 739 | 703 | 628 | 716 | 623 | 610 | 601 |
| 10 | 632 | 696 | 675 | 763 | 642 | 743 | 692 | 627 | 705 | 622 | 609 | 601 |
| 11 | 632 | 696 | 674 | 722 | 642 | 733 | 687 | 626 | 695 | 620 | 608 | 601 |
| 12 | 632 | 694 | 674 | 722 | 642 | 718 | 683 | 626 | 689 | 619 | 607 | 601 |
| 13 | 632 | 691 | 674 | 888 | 642 | 708 | 680 | 626 | 683 | 618 | 606 | 601 |
| 14 | 632 | 691 | 674 | 859 | 640 | 700 | 675 | 625 | 679 | 617 | 607 | 601 |
| 15 | 632 | 689 | 674 | 786 | 643 | 696 | 674 | 624 | 675 | 617 | 607 | 601 |
| 16 | 632 | 686 | 674 | 757 | 646 | 696 | 672 | 622 | 670 | 616 | 607 | 601 |
| 17 | 632 | 685 | 674 | 732 | 645 | 696 | 669 | 621 | 667 | 616 | 606 | 601 |
| 18 | 632 | 685 | 673 | 713 | 641 | 700 | 669 | 621 | 661 | 616 | 606 | 601 |
| 19 | 631 | 685 | 672 | 703 | 640 | 701 | 664 | 622 | 657 | 617 | 606 | 601 |
| 20 | 631 | 685 | 670 | 692 | 639 | 706 | 660 | 634 | 654 | 616 | 606 | 600 |
| 21 | 656 | 685 | 669 | 685 | 637 | 710 | 658 | 660 | 650 | 616 | 606 | 598 |
| 22 | 715 | 684 | 669 | 680 | 637 | 716 | 658 | 691 | 648 | 616 | 606 | 599 |
| 23 | 1120 | 682 | 669 | 674 | 642 | 723 | 675 | 879 | 645 | 615 | 605 | 601 |
| 24 | 974 | 684 | 668 | 671 | 642 | 724 | 709 | 792 | 641 | 615 | 604 | 600 |
| 25 | 835 | 689 | 667 | 668 | 644 | 723 | 679 | 734 | 639 | 614 | 605 | 604 |
| 26 | 767 | 687 | 666 | 664 | 648 | 719 | 667 | 718 | 637 | 613 | 606 | 603 |
| 27 | 756 | 684 | 666 | 663 | 653 | 713 | 660 | 886 | 637 | 613 | 606 | 601 |
| 28 | 745 | 680 | 664 | 658 | 655 | 708 | 656 | 977 | 636 | 612 | 603 | 600 |
| 29 | 729 | 680 | 664 | 659 | --- | 703 | 649 | 866 | 634 | 611 | 603 | 598 |
| 30 | 721 | 680 | 665 | 666 | --- | 699 | 647 | 891 | 632 | 611 | 605 | 596 |
| 31 | 717 | --- | 665 | 662 | --- | 695 | --- | 989 | --- | 610 | 603 | --- |
| TOTAL | 21415 | 20762 | 20858 | 21846 | 18081 | 22480 | 20351 | 21669 | 21006 | 19178 | 18810 | 18029 |
| MEAN | 691 | 692 | 673 | 705 | 646 | 725 | 678 | 699 | 700 | 619 | 607 | 601 |
| MAX | 1120 | 716 | 680 | 888 | 659 | 863 | 709 | 989 | 940 | 630 | 610 | 604 |
| MIN | 631 | 680 | 664 | 658 | 637 | 660 | 647 | 621 | 632 | 610 | 603 | 596 |
| AC-FT | 42480 | 41180 | 41370 | 43330 | 35860 | 44590 | 40370 | 42980 | 41670 | 38040 | 37310 | 35760 |

CAL YR 1989 TOTAL 275106 MEAN 754 MAX 2920 MIN 604 AC-FT 545700
WTR YR 1990 TOTAL 244485 MEAN 670 MAX 1120 MIN 596 AC-FT 484900

SACRAMENTO RIVER BASIN

11367720 McCLOUD-IRON CANYON DIVERSION TUNNEL NEAR McCLOUD, CA

LOCATION.--Lat 41°08'06", long 122°04'26", in SE 1/4 SW 1/4 sec.22, T.38 N., R.2 W., Shasta County, Hydrologic Unit 18020004, Shasta National Forest, on left bank of Lake McCloud, 8.8 mi southeast of McCloud.

PERIOD OF RECORD.--December 1965 to current year.

REVISED RECORDS.--WDR CA-75-4: 1973.

GAGE.--None. Water-stage recorders on Iron Canyon Reservoir and Lake McCloud (stations 11363920 and 11367740) used to compute record.

REMARKS.--No estimated daily discharges. Water is diverted from Lake McCloud (station 11367740) via tunnel to Iron Canyon Reservoir (station 11363920) and then via penstock into James B. Black powerplant (station 11363910) on the Pit River. Diversion began Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--24 years (water years 1967-90), 907 ft³/s, 657,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,890 ft³/s, several days during May and June 1967; no flow several days in 1965-68, 1971, 1978.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

11367760 McCLOUD RIVER BELOW McCLOUD DAM, NEAR McCLOUD, CA

LOCATION.--Lat 41°07'44", long 122°04'08", in SW 1/4 NE 1/4 sec.27, T.38 N., R.2 W., Shasta County, Hydrologic Unit 18020004, Shasta National Forest, on left bank 0.1 mi downstream from Lizard Creek, 0.6 mi downstream from McCloud Dam, and 9 mi southeast of McCloud.

DRAINAGE AREA.--404 mi².

PERIOD OF RECORD.--April 1966 to current year (operated as a low-flow station only).

GAGE.--Water-stage recorder. Datum of gage is 2,398.76 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Prior to Apr. 7, 1972, at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Low flow regulated by Lake McCloud (station 11367740) since November 1965. Most of McCloud River runoff is diverted from reservoir through tunnel to Iron Canyon Reservoir (station 11363920) in Pit River basin. This station records fishwater release. The minimum release requirement is 40 ft³/s at all times. Prior to water year 1974, flow was computed up to 400 ft³/s. During water years 1975-81, because of channel changes, flow was computed up to 200 ft³/s. Currently, because of maximum required release, flow is computed to 210 ft³/s. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| 1 | 199 | 179 | 200 | 155 | 133 | 113 | 131 | 142 | 64 | 131 | 144 | 164 |
| 2 | 199 | 183 | 200 | 154 | 133 | 106 | 132 | 139 | 62 | 131 | 144 | 164 |
| 3 | 201 | 185 | 200 | 154 | 132 | 57 | 134 | 139 | 60 | 131 | 144 | 164 |
| 4 | 201 | 188 | 200 | 156 | 131 | 52 | 135 | 140 | 59 | 132 | 144 | 164 |
| 5 | 201 | 191 | 201 | 153 | 131 | 51 | 135 | 140 | 58 | 133 | 144 | 164 |
| 6 | 201 | 190 | 202 | 152 | 131 | 51 | 135 | 140 | 59 | 133 | 144 | 164 |
| 7 | 202 | 191 | 206 | 149 | 134 | 50 | 137 | 140 | 67 | 134 | 144 | 164 |
| 8 | 202 | 191 | 206 | 96 | 134 | 58 | 137 | 142 | 78 | 134 | 144 | 164 |
| 9 | 202 | 192 | 206 | 49 | 135 | 75 | 138 | 143 | 82 | 135 | 144 | 164 |
| 10 | 202 | 195 | 207 | 75 | 135 | 72 | 140 | 143 | 87 | 135 | 144 | 164 |
| 11 | 202 | 194 | 208 | 99 | 135 | 77 | 141 | 143 | 93 | 137 | 144 | 164 |
| 12 | 202 | 196 | 208 | 101 | 135 | 84 | 143 | 143 | 99 | 137 | 144 | 164 |
| 13 | 204 | 198 | 207 | 54 | 135 | 94 | 143 | 143 | 102 | 138 | 144 | 163 |
| 14 | 205 | 196 | 207 | 53 | 136 | 99 | 144 | 142 | 106 | 145 | 144 | 163 |
| 15 | 205 | 198 | 209 | 51 | 136 | 104 | 145 | 142 | 109 | 142 | 143 | 165 |
| 16 | 205 | 198 | 170 | 63 | 135 | 108 | 145 | 143 | 109 | 139 | 143 | 165 |
| 17 | 204 | 198 | 166 | 83 | 135 | 110 | 145 | 144 | 112 | 139 | 143 | 165 |
| 18 | 205 | 199 | 165 | 99 | 136 | 111 | 145 | 144 | 114 | 139 | 143 | 164 |
| 19 | 206 | 199 | 162 | 105 | 140 | 111 | 146 | 144 | 117 | 139 | 143 | 164 |
| 20 | 206 | 199 | 162 | 111 | 139 | 111 | 147 | 132 | 123 | 139 | 143 | 164 |
| 21 | 187 | 199 | 162 | 116 | 140 | 111 | 148 | 134 | 123 | 142 | 143 | 165 |
| 22 | 147 | 199 | 162 | 120 | 140 | 112 | 150 | 115 | 122 | 141 | 143 | 165 |
| 23 | 75 | 199 | 162 | 126 | 137 | 113 | 150 | 56 | 123 | 141 | 143 | 165 |
| 24 | 67 | 199 | 162 | 126 | 135 | 116 | 149 | 68 | 124 | 141 | 143 | 165 |
| 25 | 88 | 199 | 162 | 126 | 126 | 118 | 148 | 88 | 125 | 142 | 143 | 164 |
| 26 | 127 | 198 | 162 | 129 | 120 | 119 | 148 | 91 | 126 | 142 | 143 | 164 |
| 27 | 140 | 198 | 162 | 130 | 111 | 121 | 148 | 72 | 128 | 142 | 142 | 164 |
| 28 | 152 | 198 | 162 | 132 | 111 | 125 | 149 | 72 | 128 | 144 | 142 | 164 |
| 29 | 161 | 200 | 162 | 133 | --- | 127 | 151 | 67 | 129 | 144 | 142 | 165 |
| 30 | 167 | 201 | 162 | 133 | --- | 128 | 151 | 67 | 131 | 145 | 142 | 166 |
| 31 | 172 | --- | 162 | 133 | --- | 130 | --- | 67 | --- | 144 | 147 | --- |
| TOTAL | 5537 | 5850 | 5674 | 3516 | 3711 | 3014 | 4290 | 3725 | 3019 | 4291 | 4447 | 4928 |
| MEAN | 179 | 195 | 183 | 113 | 133 | 97.2 | 143 | 120 | 101 | 138 | 143 | 164 |
| MAX | 206 | 201 | 209 | 156 | 140 | 130 | 151 | 144 | 131 | 145 | 147 | 166 |
| MIN | 67 | 179 | 162 | 49 | 111 | 50 | 131 | 56 | 58 | 131 | 142 | 163 |
| AC-FT | 10980 | 11600 | 11250 | 6970 | 7360 | 5980 | 8510 | 7390 | 5990 | 8510 | 8820 | 9770 |

WTR YR 1990 TOTAL 52002 MEAN 142 MAX 209 MIN 49 AC-FT 103100

11367800 McCloud River at Ah-Di-Na, near McCloud, CA

LOCATION.--Lat 41°06'39", long 122°05'42", in NE 1/4 SW 1/4 sec.33, T.38 N., R.2 W., Shasta County, Hydrologic Unit 18020004, Shasta National Forest, on right bank at Ah-Di-Na, 1.8 mi downstream from Squirrel Creek, 3.9 mi downstream from McCloud Dam, and 9.6 mi south of McCloud.

DRAINAGE AREA.--427 mi².

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,160 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Low flow completely regulated by Lake McCloud (station 11367740) 3.9 mi upstream since November 1965. Diversion to Iron Canyon Reservoir (station 11363920) through McCloud-Iron Canyon diversion tunnel (station 11367720) started Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins. This station records fishwater release. The minimum release requirements range from 160 to 210 ft³/s per schedule outlined in Federal Energy Regulatory Commission License 2106.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--26 years (water years 1965-90), 326 ft³/s, 236,200 acre-ft/yr, unadjusted. 25 years (water years 1966-90), 1,188 ft³/s, 860,700 acre-ft/yr, adjusted for diversion to Iron Canyon Reservoir and change in contents in Lake McCloud.

EXTREMES FOR PERIOD OF RECORD.--Prior to completion of McCloud Dam in 1965, maximum discharge, 9,660 ft³/s, Dec. 22, 1964, gage height, 9.43 ft, from rating curve extended above 2,500 ft³/s; minimum daily, 86 ft³/s, Oct. 1-26, 1964. Since completion of McCloud Dam, maximum discharge, 26,400 ft³/s, Jan. 16, 1974, gage height, 13.68 ft in gage well, 15.38 ft from floodmarks, from rating curve extended above 8,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 41 ft³/s, Dec. 18-20, 1971 (caused by valve malfunction at McCloud Dam).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 21, 1955, reached a stage of 12.5 ft, discharge, 17,800 ft³/s, from rating curve extended above 2,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Oct. 23 | 1015 | *680 | *2.60 | | | | |

Minimum daily, 167 ft³/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 218 | 221 | 223 | 173 | 173 | 186 | 180 | 173 | 330 | 170 | 169 | 190 |
| 2 | 217 | 223 | 223 | 171 | 171 | 200 | 180 | 167 | 278 | 169 | 169 | 190 |
| 3 | 220 | 221 | 223 | 172 | 174 | 339 | 180 | 167 | 238 | 168 | 168 | 190 |
| 4 | 220 | 224 | 223 | 175 | 173 | 309 | 180 | 168 | 208 | 168 | 168 | 190 |
| 5 | 219 | 225 | 223 | 171 | 172 | 258 | 182 | 168 | 187 | 168 | 168 | 189 |
| 6 | 218 | 223 | 224 | 171 | 171 | 217 | 180 | 168 | 173 | 168 | 167 | 189 |
| 7 | 220 | 223 | 228 | 179 | 173 | 189 | 180 | 167 | 169 | 168 | 168 | 189 |
| 8 | 220 | 223 | 228 | 212 | 171 | 182 | 180 | 167 | 171 | 167 | 168 | 189 |
| 9 | 220 | 222 | 228 | 188 | 171 | 183 | 180 | 170 | 167 | 168 | 168 | 189 |
| 10 | 220 | 223 | 227 | 175 | 171 | 190 | 180 | 170 | 167 | 167 | 168 | 189 |
| 11 | 220 | 223 | 228 | 171 | 171 | 183 | 180 | 169 | 167 | 168 | 167 | 188 |
| 12 | 219 | 223 | 228 | 185 | 173 | 181 | 181 | 169 | 168 | 168 | 168 | 188 |
| 13 | 220 | 224 | 228 | 309 | 172 | 183 | 180 | 168 | 168 | 169 | 167 | 187 |
| 14 | 223 | 222 | 228 | 270 | 172 | 183 | 180 | 168 | 169 | 175 | 168 | 187 |
| 15 | 223 | 223 | 228 | 197 | 173 | 181 | 181 | 167 | 169 | 172 | 168 | 190 |
| 16 | 222 | 223 | 192 | 175 | 174 | 182 | 182 | 167 | 167 | 168 | 168 | 190 |
| 17 | 221 | 223 | 185 | 173 | 174 | 182 | 183 | 169 | 167 | 168 | 169 | 190 |
| 18 | 221 | 223 | 184 | 175 | 172 | 183 | 181 | 168 | 168 | 168 | 172 | 189 |
| 19 | 223 | 223 | 181 | 173 | 174 | 183 | 180 | 172 | 168 | 168 | 170 | 189 |
| 20 | 223 | 223 | 180 | 172 | 174 | 181 | 181 | 180 | 173 | 168 | 169 | 188 |
| 21 | 253 | 223 | 180 | 172 | 173 | 181 | 181 | 174 | 172 | 170 | 169 | 189 |
| 22 | 279 | 223 | 180 | 172 | 175 | 182 | 184 | 199 | 169 | 168 | 168 | 188 |
| 23 | 447 | 223 | 180 | 176 | 175 | 181 | 191 | 225 | 168 | 168 | 168 | 189 |
| 24 | 271 | 225 | 180 | 173 | 178 | 182 | 185 | 176 | 168 | 168 | 167 | 190 |
| 25 | 230 | 228 | 180 | 171 | 176 | 181 | 181 | 170 | 168 | 168 | 167 | 190 |
| 26 | 223 | 225 | 180 | 172 | 179 | 180 | 180 | 177 | 168 | 168 | 170 | 190 |
| 27 | 222 | 223 | 180 | 171 | 176 | 180 | 180 | 412 | 169 | 168 | 168 | 189 |
| 28 | 220 | 223 | 180 | 171 | 181 | 181 | 180 | 497 | 168 | 170 | 168 | 188 |
| 29 | 219 | 222 | 180 | 172 | --- | 182 | 182 | 351 | 168 | 170 | 167 | 188 |
| 30 | 219 | 223 | 180 | 181 | --- | 180 | 181 | 335 | 170 | 170 | 167 | 189 |
| 31 | 219 | --- | 180 | 174 | --- | 181 | --- | 373 | --- | 170 | 170 | --- |
| TOTAL | 7209 | 6696 | 6292 | 5692 | 4862 | 6066 | 5436 | 6471 | 5460 | 5231 | 5216 | 5670 |
| MEAN | 233 | 223 | 203 | 184 | 174 | 196 | 181 | 209 | 182 | 169 | 168 | 189 |
| MAX | 447 | 228 | 228 | 309 | 181 | 339 | 191 | 497 | 330 | 175 | 172 | 190 |
| MIN | 217 | 221 | 180 | 171 | 171 | 180 | 180 | 167 | 167 | 167 | 167 | 187 |
| AC-FT | 14300 | 13280 | 12480 | 11290 | 9640 | 12030 | 10780 | 12840 | 10830 | 10380 | 10350 | 11250 |
| MEAN a | 805 | 695 | 657 | 824 | 699 | 890 | 751 | 894 | 830 | 661 | 634 | 620 |
| AC-FT a | 49520 | 41340 | 40401 | 50640 | 38820 | 54750 | 44680 | 55000 | 49400 | 40640 | 38970 | 36900 |

| | | | | | | | |
|-------------|-------------|----------|----------|---------|--------------|------------|--------------|
| CAL YR 1989 | TOTAL 90210 | MEAN 247 | MAX 3410 | MIN 171 | AC-FT 178900 | MEAN a 886 | AC-FT 641200 |
| WTR YR 1990 | TOTAL 70301 | MEAN 193 | MAX 497 | MIN 167 | AC-FT 139400 | MEAN a 747 | AC-FT 541100 |

a Adjusted for diversion to Iron Canyon Reservoir and change in contents in Lake McCloud.

11368000 McCloud River Above Shasta Lake, CA

LOCATION.--Lat 40°57'30", long 122°13'07", unsurveyed, T.36 N., R.3 W., Shasta County, Hydrologic Unit 18020004, on right bank just upstream from Shasta Lake, 0.2 mi downstream from Big Bollibokka Creek, and 11.3 mi east of Lamaine.

DRAINAGE AREA.--604 mi².

PERIOD OF RECORD.--October 1945 to current year. Prior to 1950, published as "above Shasta Reservoir."

REVISED RECORDS.--WSP 1445: 1953(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--No estimated daily discharges. Low flow completely regulated by Lake McCloud (station 11367740) 16.5 mi upstream since Nov. 3, 1965. Diversions to Iron Canyon Reservoir (station 11363920) began Dec. 1, 1965. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--20 years (water years 1946-65), 1,699 ft³/s, 1,230,000 acre-ft/yr prior to storage and interbasin diversion to Pit River; 25 years (water years 1966-90), 761 ft³/s, 551,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,500 ft³/s, Jan. 16, 1974, gage height, 28.26 ft, from rating curve extended above 15,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 109 ft³/s, Dec. 16-20, 1971. Minimum prior to regulation by Lake McCloud, 820 ft³/s, Jan. 3, 1950.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| May 27 | 2330 | *4,450 | *14.62 | | | | |
| Minimum daily, 218 ft ³ /s, Aug. 24. | | | | | | | |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 294 | 399 | 311 | 245 | 387 | 496 | 372 | 280 | 1690 | 321 | 237 | 236 |
| 2 | 286 | 392 | 311 | 240 | 370 | 552 | 365 | 267 | 1340 | 317 | 234 | 240 |
| 3 | 284 | 378 | 308 | 236 | 408 | 1190 | 358 | 268 | 1100 | 313 | 233 | 240 |
| 4 | 284 | 365 | 306 | 239 | 442 | 1260 | 359 | 263 | 933 | 307 | 231 | 237 |
| 5 | 285 | 356 | 306 | 236 | 433 | 1130 | 363 | 263 | 809 | 306 | 230 | 235 |
| 6 | 289 | 348 | 307 | 237 | 426 | 946 | 364 | 263 | 723 | 303 | 228 | 232 |
| 7 | 284 | 341 | 308 | 378 | 407 | 801 | 352 | 259 | 651 | 298 | 226 | 232 |
| 8 | 284 | 335 | 307 | 1310 | 398 | 739 | 351 | 258 | 601 | 292 | 226 | 228 |
| 9 | 284 | 330 | 307 | 1210 | 389 | 655 | 342 | 259 | 563 | 287 | 225 | 228 |
| 10 | 283 | 329 | 305 | 831 | 383 | 740 | 333 | 260 | 534 | 281 | 223 | 228 |
| 11 | 285 | 325 | 303 | 612 | 389 | 704 | 327 | 261 | 508 | 280 | 222 | 226 |
| 12 | 281 | 324 | 303 | 603 | 394 | 659 | 324 | 258 | 487 | 275 | 222 | 226 |
| 13 | 281 | 324 | 302 | 1980 | 392 | 610 | 319 | 260 | 497 | 273 | 222 | 225 |
| 14 | 284 | 317 | 302 | 1840 | 383 | 583 | 315 | 254 | 484 | 273 | 220 | 225 |
| 15 | 284 | 315 | 306 | 1140 | 379 | 550 | 315 | 248 | 445 | 276 | 222 | 227 |
| 16 | 284 | 315 | 280 | 847 | 398 | 522 | 312 | 247 | 430 | 264 | 222 | 228 |
| 17 | 283 | 313 | 259 | 683 | 388 | 501 | 320 | 247 | 419 | 265 | 223 | 228 |
| 18 | 282 | 311 | 257 | 589 | 364 | 486 | 314 | 247 | 410 | 264 | 226 | 228 |
| 19 | 284 | 311 | 253 | 531 | 354 | 470 | 310 | 262 | 397 | 261 | 234 | 225 |
| 20 | 284 | 311 | 251 | 487 | 354 | 453 | 306 | 376 | 394 | 260 | 228 | 225 |
| 21 | 484 | 307 | 251 | 457 | 353 | 442 | 304 | 379 | 385 | 257 | 228 | 224 |
| 22 | 815 | 306 | 252 | 436 | 379 | 436 | 309 | 852 | 375 | 253 | 224 | 225 |
| 23 | 2310 | 306 | 248 | 420 | 411 | 429 | 371 | 2010 | 367 | 250 | 220 | 226 |
| 24 | 1330 | 321 | 247 | 402 | 448 | 418 | 328 | 1060 | 358 | 249 | 218 | 237 |
| 25 | 825 | 346 | 249 | 390 | 489 | 411 | 310 | 760 | 351 | 247 | 219 | 234 |
| 26 | 616 | 335 | 247 | 381 | 506 | 403 | 301 | 723 | 343 | 246 | 245 | 239 |
| 27 | 604 | 324 | 247 | 368 | 506 | 399 | 297 | 2720 | 341 | 245 | 235 | 235 |
| 28 | 522 | 315 | 247 | 359 | 503 | 391 | 291 | 3540 | 336 | 244 | 228 | 232 |
| 29 | 471 | 311 | 246 | 354 | --- | 387 | 289 | 2100 | 331 | 243 | 226 | 228 |
| 30 | 438 | 311 | 243 | 426 | --- | 381 | 288 | 1930 | 328 | 241 | 229 | 228 |
| 31 | 416 | --- | 243 | 389 | --- | 378 | --- | 2050 | --- | 239 | 222 | --- |
| TOTAL | 14520 | 9921 | 8612 | 18856 | 11433 | 18522 | 9809 | 23424 | 16930 | 8430 | 7028 | 6907 |
| MEAN | 468 | 331 | 278 | 608 | 408 | 597 | 327 | 756 | 564 | 272 | 227 | 230 |
| MAX | 2310 | 399 | 311 | 1980 | 506 | 1260 | 372 | 3540 | 1690 | 321 | 245 | 240 |
| MIN | 281 | 306 | 243 | 236 | 353 | 378 | 288 | 247 | 328 | 239 | 218 | 224 |
| AC-FT | 28800 | 19680 | 17080 | 37400 | 22680 | 36740 | 19460 | 46460 | 33580 | 16720 | 13940 | 13700 |

CAL YR 1989 TOTAL 209272 MEAN 573 MAX 9840 MIN 243 AC-FT 415100
WTR YR 1990 TOTAL 154392 MEAN 423 MAX 3540 MIN 218 AC-FT 306200

SACRAMENTO RIVER BASIN

11370000 SHASTA LAKE NEAR REDDING, CA

LOCATION.--Lat 40°43'08", long 122°25'12", in SE 1/4 NW 1/4 sec.15, T.33 N., R.5 W., Shasta County, Hydrologic Unit 18020005, in Shasta Dam on Sacramento River near right bank, 2 mi downstream from Squaw Creek, and 9.5 mi north of Redding.

DRAINAGE AREA.--6,421 mi², excluding Goose Lake basin.

PERIOD OF RECORD.--November 1942 to current year. Prior to 1950, published as Shasta Reservoir near Redding.

CHEMICAL DATA: Water years 1978-80.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Prior to July 10, 1944, nonrecording gage at various sites near dam at same datum. Contents based on capacity table dated May 8, 1967 provided by U.S. Bureau of Reclamation.

REMARKS.--Lake is formed by concrete gravity-type dam completed in 1949; regulation began Dec. 30, 1943. Usable capacity, 4,436,400 acre-ft between elevations 737.75 ft, invert of lowest set of river outlets, and 1,067.0 ft, top of flashboard gates on drum-type spillway gates. Operating pool from elevation, 840.0 ft, capacity, 587,127 acre-ft to 1,067.0 ft, capacity, 4,552,090 acre-ft. Dead storage, 115,800 acre-ft. Installation of flashboard gates on top of drum gates completed Nov. 12, 1964. All water passes down the Sacramento River, most of which is through powerplant at dam. Figures given represent total contents at 2400 hours. Lake is used for flood control, power generation, irrigation, and recreation. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 4,550,300 acre-ft, May 19, 1967, elevation, 1,066.94 ft; minimum since first filling, 562,600 acre-ft, Sept. 13, 1977, elevation, 836.68 ft.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 2,709,100 acre-ft, Mar. 31, elevation, 994.43 ft; minimum, 1,625,328 acre-ft, Sept. 23, elevation, 933.99 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by U.S. Bureau of Reclamation, dated May 8, 1967)

| | | | | | | | | | | | |
|-----|---------|-----|-----------|-----|-----------|-----|-----------|-------|-----------|-------|-----------|
| 830 | 515,543 | 870 | 843,589 | 910 | 1,291,854 | 950 | 1,876,996 | 990 | 2,616,622 | 1,030 | 3,533,478 |
| 840 | 587,127 | 880 | 943,929 | 920 | 1,424,780 | 960 | 2,046,829 | 1,000 | 2,828,544 | 1,050 | 4,063,108 |
| 850 | 665,511 | 890 | 1,051,713 | 930 | 1,566,238 | 970 | 2,226,093 | 1,010 | 3,051,750 | 1,067 | 4,552,090 |
| 860 | 751,027 | 900 | 1,167,888 | 940 | 1,717,255 | 980 | 2,416,019 | 1,020 | 3,286,929 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 2098273 | 2287209 | 2098273 | 2055382 | 2321795 | 2437350 | 2707832 | 2472856 | 2499725 | 2340662 | 2052240 | 1683047 |
| 2 | 2103774 | 2287396 | 2093151 | 2057302 | 2325034 | 2454660 | 2706564 | 2461977 | 2514128 | 2331890 | 2044386 | 1673687 |
| 3 | 2110170 | 2286643 | 2088381 | 2057302 | 2329414 | 2480602 | 2703605 | 2448366 | 2524582 | 2322747 | 2030952 | 1666808 |
| 4 | 2116568 | 2281936 | 2084142 | 2056779 | 2331700 | 2503125 | 2701493 | 2437546 | 2532426 | 2313262 | 2018107 | 1661625 |
| 5 | 2121567 | 2273886 | 2080264 | 2056081 | 2336080 | 2524783 | 2698331 | 2422670 | 2545205 | 2305120 | 2006692 | 1658117 |
| 6 | 2125321 | 2268269 | 2074646 | 2055732 | 2341237 | 2534237 | 2696019 | 2407837 | 2554149 | 2299635 | 1994281 | 1653255 |
| 7 | 2127465 | 2264525 | 2069729 | 2066744 | 2346409 | 2543578 | 2689714 | 2392661 | 2555571 | 2289656 | 1981087 | 1652194 |
| 8 | 2128001 | 2258002 | 2066041 | 2095977 | 2351005 | 2556582 | 2684459 | 2379682 | 2554555 | 2279315 | 1970165 | 1648861 |
| 9 | 2130503 | 2253348 | 2064285 | 2114258 | 2355410 | 2562654 | 2680045 | 2367532 | 2551302 | 2275009 | 1957749 | 1642802 |
| 10 | 2133006 | 2247764 | 2063761 | 2124605 | 2355794 | 2577652 | 2674186 | 2352728 | 2547847 | 2270141 | 1947082 | 1640832 |
| 11 | 2136947 | 2239603 | 2062540 | 2134613 | 2358479 | 2591968 | 2668960 | 2337986 | 2544798 | 2263028 | 1932925 | 1639777 |
| 12 | 2140184 | 2229795 | 2058874 | 2148993 | 2359441 | 2605107 | 2662270 | 2322938 | 2538700 | 2255024 | 1917668 | 1637368 |
| 13 | 2143779 | 2224621 | 2056255 | 2185761 | 2361946 | 2614155 | 2653516 | 2306067 | 2530416 | 2243305 | 1905154 | 1634208 |
| 14 | 2144139 | 2218916 | 2054859 | 2209165 | 2365027 | 2624893 | 2642080 | 2293987 | 2524985 | 2228314 | 1895013 | 1633154 |
| 15 | 2145397 | 2213028 | 2052415 | 2225909 | 2370036 | 2635232 | 2630889 | 2281936 | 2517744 | 2213212 | 1883108 | 1633004 |
| 16 | 2148993 | 2208980 | 2047876 | 2239603 | 2375429 | 2650813 | 2623032 | 2271452 | 2511528 | 2206228 | 1868948 | 1632552 |
| 17 | 2155116 | 2205497 | 2042816 | 2245531 | 2380456 | 2661852 | 2616005 | 2262655 | 2500925 | 2199643 | 1856817 | 1630896 |
| 18 | 2158552 | 2196167 | 2042991 | 2253348 | 2383557 | 2670841 | 2609014 | 2253534 | 2488558 | 2192875 | 1840840 | 1631047 |
| 19 | 2164157 | 2185034 | 2044735 | 2259305 | 2386075 | 2678158 | 2598732 | 2237753 | 2480800 | 2185943 | 1823997 | 1629843 |
| 20 | 2164882 | 2175575 | 2045782 | 2259677 | 2388786 | 2682777 | 2591968 | 2225725 | 2169097 | 2176304 | 1811905 | 1628789 |
| 21 | 2169763 | 2170306 | 2047702 | 2261353 | 2392661 | 2688872 | 2581538 | 2220205 | 2461581 | 2161988 | 1801331 | 1628939 |
| 22 | 2179577 | 2163976 | 2050146 | 2265648 | 2397315 | 2693287 | 2568725 | 2232941 | 2452104 | 2149532 | 1787762 | 1626381 |
| 23 | 2214316 | 2154393 | 2047527 | 2269393 | 2401992 | 2698542 | 2560225 | 2251860 | 2438333 | 2137487 | 1776163 | 1625328 |
| 24 | 2234422 | 2147194 | 2043863 | 2278941 | 2403550 | 2700013 | 2550083 | 2260794 | 2426386 | 2126214 | 1765562 | 1626682 |
| 25 | 2242934 | 2140004 | 2042816 | 2283819 | 2407837 | 2702972 | 2541342 | 2265086 | 2416019 | 2117815 | 1752500 | 1627284 |
| 26 | 2250184 | 2132112 | 2044038 | 2288903 | 2413096 | 2703605 | 2533834 | 2266959 | 2407252 | 2112836 | 1737785 | 1629843 |
| 27 | 2260050 | 2122461 | 2046305 | 2299070 | 2421691 | 2705085 | 2526995 | 2317428 | 2395180 | 2103774 | 1727039 | 1631950 |
| 28 | 2267146 | 2114790 | 2049273 | 2301334 | 2428734 | 2704873 | 2512127 | 2376393 | 2382200 | 2091031 | 1718342 | 1632552 |
| 29 | 2271639 | 2106795 | 2051717 | 2304742 | --- | 2704873 | 2497525 | 2409201 | 2371769 | 2079914 | 1709328 | 1637971 |
| 30 | 2277068 | 2103242 | 2051717 | 2310801 | --- | 2707832 | 2484182 | 2445021 | 2357900 | 2069377 | 1701558 | 1637368 |
| 31 | 2282689 | --- | 2053637 | 2316671 | --- | 2709100 | --- | 2476623 | --- | 2060968 | 1692910 | --- |
| MAX | 2282689 | 2287396 | 2098273 | 2316671 | 2428734 | 2709100 | 2707832 | 2476623 | 2555571 | 2340662 | 2052240 | 1683047 |
| MIN | 2098273 | 2103242 | 2042816 | 2055382 | 2321795 | 2437350 | 2484182 | 2220205 | 2169097 | 2080968 | 1692910 | 1625328 |
| a | 973.04 | 963.21 | 960.39 | 974.84 | 980.65 | 994.43 | 983.46 | 983.08 | 977.00 | 960.81 | 938.43 | 934.79 |
| b | +186712 | -179447 | -49605 | +263034 | +112063 | +280366 | -224918 | -7559 | -118723 | -296932 | -368058 | -55542 |
| c | 4195 | 3480 | 2604 | 1516 | 1886 | 4516 | 7250 | 8789 | 11743 | 12917 | 9616 | 7057 |

CAL YR 1989 b +279531

WTR YR 1990 b -458609

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, provided by U.S. Bureau of Reclamation; not reviewed by U.S. Geological Survey.

*checked
this for
correction*

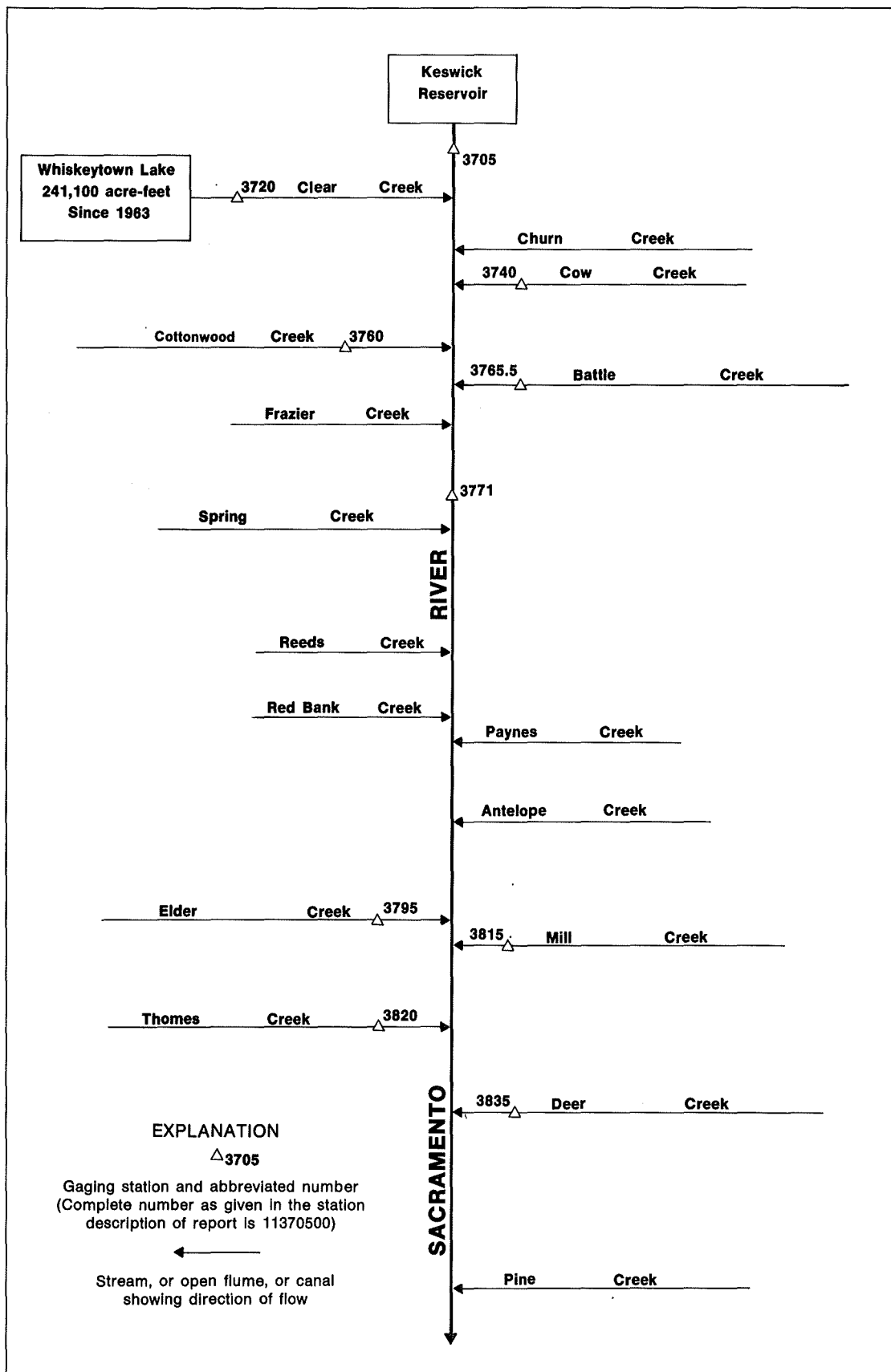


Figure 29. Diversions and storage in upper Sacramento River basin.

SACRAMENTO RIVER BASIN

11370500 SACRAMENTO RIVER AT KESWICK, CA
(National stream-quality accounting network station)

LOCATION.--Lat 40°36'04", long 122°26'36", in SW 1/4 NW 1/4 sec.28, T.32 N., R.5 W., Shasta County, Hydrologic Unit 18020101, on right bank 0.4 mi upstream from Middle Creek, 0.8 mi downstream from Keswick Dam, 1.6 mi downstream from Keswick, and 10 mi downstream from Shasta Dam.
DRAINAGE AREA.--6,468 mi², excluding Goose Lake basin.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 479.81 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1939, at site 1.5 mi upstream at datum 20.2 ft higher and Oct. 1, 1939, to Apr. 30, 1942, at site 1.5 mi upstream at datum 15.2 ft higher. Aug. 20, 1960, to July 3, 1973, auxiliary water-stage recorder at city of Redding pumping plant 2.1 mi downstream.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Shasta Lake (station 11370000) beginning Dec. 30, 1943. Minor regulation by Keswick Reservoir since 1950, total capacity, 23,800 acre-ft, operational capacity, 4,170 acre-ft, between normal operating elevations of 579.0 ft and 586.0 ft. No diversion between Shasta Dam and station at Keswick. Since December 1963, water is released from Whiskeytown Lake (station 11371700), through a tunnel to Spring Creek powerplant (station 11371600), and then into Keswick Reservoir. See schematic diagrams of Pit and McCloud River basins and upper Sacramento River basin.

AVERAGE DISCHARGE.--25 years (water years 1939-63), 8,376 ft³/s, 6,064,000 acre-ft/yr, adjusted for change in contents and evaporation from Shasta Lake prior to transbasin diversion to Keswick Reservoir; 27 years (water years 1964-90), 8,670 ft³/s, 6,281,000 acre-ft/yr, including adjustment for transbasin diversion; unadjusted flow for period of record, 9,297 ft³/s, 6,736,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 186,000 ft³/s, Feb. 23, 1940, gage height, 47.2 ft, site and datum then in use, from rating curve extended above 75,000 ft³/s on basis of peak discharge at Kennet plus 4,000 ft³/s estimated inflow; minimum observed, 2,730 ft³/s, Aug. 22, 1939. Since regulation by Shasta Dam in 1943, maximum discharge, 81,400 ft³/s, Apr. 1, 1974, gage height, 31.92 ft; maximum gage height, 32.22 ft, Jan. 24, 1970; minimum discharge, 154 ft³/s, May 15, 1948.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,000 ft³/s, Aug. 16, gage height, 14.70 ft; minimum daily, 2,850 ft³/s, Feb. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 4210 | 4340 | 6160 | 3340 | 3340 | 2880 | 6220 | 9200 | 4280 | 11000 | 11000 | 8840 |
| 2 | 4210 | 6030 | 6090 | 3310 | 3940 | 2910 | 5870 | 9400 | 4150 | 10700 | 11200 | 8830 |
| 3 | 4210 | 6520 | 6080 | 3330 | 3460 | 2920 | 5850 | 9790 | 4160 | 10700 | 11500 | 8960 |
| 4 | 4250 | 7190 | 6090 | 3860 | 3360 | 2910 | 5890 | 9850 | 4240 | 10800 | 11500 | 8810 |
| 5 | 4260 | 7170 | 6050 | 4360 | 3350 | 2910 | 5730 | 10100 | 4180 | 10700 | 11500 | 8800 |
| 6 | 4260 | 7210 | 6050 | 4380 | 3360 | 2900 | 6090 | 10300 | 5220 | 10500 | 11500 | 8510 |
| 7 | 4260 | 7160 | 6060 | 4430 | 3350 | 2910 | 6650 | 10300 | 5090 | 10500 | 11500 | 8070 |
| 8 | 4260 | 7100 | 6070 | 4430 | 3360 | 2910 | 7510 | 10400 | 5960 | 10500 | 11500 | 7910 |
| 9 | 4280 | 7610 | 5650 | 3600 | 3350 | 2940 | 7520 | 10500 | 6990 | 10500 | 11500 | 7930 |
| 10 | 5020 | 7600 | 5230 | 3350 | 3360 | 2900 | 7730 | 10500 | 7550 | 10600 | 11500 | 7890 |
| 11 | 5030 | 7610 | 5190 | 3310 | 3340 | 2890 | 8050 | 10400 | 8530 | 10500 | 11500 | 7460 |
| 12 | 5880 | 7600 | 5210 | 3340 | 3330 | 2900 | 8030 | 10300 | 9410 | 10500 | 11400 | 7420 |
| 13 | 5930 | 7660 | 4810 | 3610 | 3350 | 2900 | 8700 | 10500 | 9260 | 10900 | 11400 | 7140 |
| 14 | 5940 | 7750 | 4080 | 3510 | 3360 | 2930 | 8740 | 10300 | 9850 | 10900 | 11500 | 6630 |
| 15 | 5960 | 7680 | 3870 | 3360 | 3370 | 2910 | 8710 | 10400 | 10400 | 10900 | 11400 | 6530 |
| 16 | 5970 | 7110 | 3870 | 3320 | 3380 | 2950 | 8750 | 9500 | 10400 | 10900 | 11400 | 6520 |
| 17 | 5970 | 7110 | 3870 | 3320 | 3370 | 2890 | 8720 | 9190 | 10500 | 10900 | 11400 | 6540 |
| 18 | 5980 | 7580 | 3900 | 3320 | 3370 | 2880 | 8730 | 9590 | 10400 | 10900 | 11400 | 6260 |
| 19 | 5990 | 8130 | 3840 | 3290 | 3370 | 2900 | 8720 | 9490 | 10300 | 10900 | 11400 | 6300 |
| 20 | 5970 | 8140 | 3870 | 3290 | 3370 | 3360 | 8750 | 9260 | 10600 | 11000 | 11400 | 6020 |
| 21 | 6540 | 8160 | 3840 | 3290 | 3370 | 3370 | 9360 | 9190 | 10200 | 11000 | 11000 | 5960 |
| 22 | 6570 | 8580 | 3430 | 3310 | 3060 | 3360 | 9510 | 9510 | 10200 | 11000 | 10900 | 5820 |
| 23 | 6650 | 8600 | 3340 | 3310 | 2880 | 3860 | 9410 | 8840 | 10200 | 11000 | 10700 | 5800 |
| 24 | 5780 | 8620 | 3310 | 3290 | 2880 | 4830 | 9250 | 7930 | 10200 | 11000 | 10600 | 5820 |
| 25 | 4900 | 8560 | 3340 | 3310 | 2850 | 4820 | 9340 | 7860 | 10500 | 11000 | 10100 | 5830 |
| 26 | 4140 | 8600 | 3340 | 3320 | 2870 | 4820 | 9260 | 7850 | 10500 | 11000 | 10000 | 5820 |
| 27 | 3420 | 8550 | 3330 | 3310 | 2880 | 4810 | 9410 | 7790 | 10500 | 11000 | 10000 | 5720 |
| 28 | 3300 | 7730 | 3320 | 3310 | 2880 | 4820 | 9200 | 6010 | 10500 | 11000 | 9360 | 5360 |
| 29 | 3310 | 7160 | 3330 | 3310 | --- | 4820 | 9160 | 5760 | 10900 | 11000 | 9530 | 5070 |
| 30 | 3350 | 6230 | 3340 | 3310 | --- | 4800 | 9230 | 5000 | 11000 | 11000 | 8820 | 4990 |
| 31 | 3780 | --- | 3330 | 3330 | --- | 5470 | --- | 4980 | --- | 11000 | 8830 | --- |
| TOTAL | 153580 | 225090 | 139290 | 108460 | 91510 | 108380 | 244090 | 279990 | 256170 | 335800 | 338240 | 207560 |
| MEAN | 4954 | 7503 | 4493 | 3499 | 3268 | 3496 | 8136 | 9032 | 8539 | 10830 | 10910 | 6919 |
| MAX | 6650 | 8620 | 6160 | 4430 | 3940 | 5470 | 9510 | 10500 | 11000 | 11000 | 11500 | 8960 |
| MIN | 3300 | 4340 | 3310 | 3290 | 2850 | 2880 | 5730 | 4980 | 4150 | 10500 | 8820 | 4990 |
| AC-FT | 304600 | 446500 | 276300 | 215100 | 181500 | 215000 | 484200 | 555400 | 508100 | 666100 | 670900 | 411700 |
| MEAN a | 5422 | 4209 | 3725 | 7365 | 5236 | 7975 | 4471 | 8509 | 6180 | 3753 | 3431 | 3361 |
| AC-FTa | 333400 | 250400 | 229100 | 452800 | 290800 | 490400 | 266100 | 523200 | 367700 | 230800 | 211000 | 200000 |

CAL YR 1989 TOTAL 2699670 MEAN 7396 MAX 15100 MIN 2360 AC-FT 5355000 MEAN a 6780 AC-FT a 4909000
WTR YR 1990 TOTAL 2488160 MEAN 6817 MAX 11500 MIN 2850 AC-FT 4935000 MEAN a 5312 AC-FT a 3846000

a Adjusted for change in contents and evaporation from Shasta Lake and transbasin diversion to Keswick Reservoir. Adjustments provided by U.S. Bureau of Reclamation.

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951 to current year.

CHEMICAL DATA: Water years 1951 to current year. Published as "near Keswick" in 1951 and 1953, and as "at Keswick Dam, near Keswick" in 1968-69.

BIOLOGICAL DATA: Water years 1979-81.

SPECIFIC CONDUCTANCE: Water years 1978 to current year.

WATER TEMPERATURE: Water years 1978 to current year.

SEDIMENT DATA: Water years 1978 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to September 1983.

WATER TEMPERATURE: October 1980 to September 1983.

REMARKS.--Samples collected 2.4 mi downstream from gaging station.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | DIS- CHARGE, INST. CUBIC FEET PER SECOND | SPE- CIFIC CON- DUCT- ANCE (US/CM) | PH (STAND- ARD UNITS) | TEMPER- ATURE WATER (DEG C) | TUR- BID- ITY (NTU) | BARO- METRIC PRES- SURE (MM OF HG) | 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) | HARD- NESS TOTAL (MG/L AS CACO3) |
|-------|------|--|---|--------------------------------|--------------------------------------|------------------------------|--|-------------------------------------|--|--|--|---|
| NOV | | | | | | | | | | | | |
| 14... | 0830 | 7960 | 123 | 7.3 | 13.5 | 1.8 | 755 | 8.6 | 83 | K3 | K15 | 49 |
| JAN | | | | | | | | | | | | |
| 23... | 0940 | 3280 | 124 | 8.0 | 8.5 | 1.4 | 755 | 12.1 | 104 | K10 | K5 | 50 |
| MAR | | | | | | | | | | | | |
| 20... | 0830 | 3340 | 128 | 7.7 | 8.5 | 1.5 | 755 | 11.2 | 97 | K3 | <3 | 51 |
| MAY | | | | | | | | | | | | |
| 15... | 0930 | 10200 | 123 | 7.5 | 9.0 | 1.0 | 745 | 10.2 | 90 | K10 | <3 | 54 |
| JUL | | | | | | | | | | | | |
| 17... | 0830 | 11200 | 105 | 7.0 | 12.0 | 2.5 | 750 | 9.8 | 92 | K16 | K14 | 45 |
| SEP | | | | | | | | | | | | |
| 18... | 0935 | 6250 | 108 | 7.3 | 15.0 | 1.9 | 750 | 9.6 | 97 | K63 | K15 | 48 |

| DATE | 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) | BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 | CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 | 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) |
|-------|--|--|--|-------------------|---|---|---|--|---|---|---|
| NOV | | | | | | | | | | | |
| 14... | 11 | 5.2 | 6.4 | 22 | 0.4 | 1.3 | 73 | 0 | 60 | 6.0 | 2.1 |
| JAN | | | | | | | | | | | |
| 23... | 11 | 5.4 | 7.6 | 24 | 0.5 | 1.6 | 75 | 0 | 61 | 5.0 | 2.6 |
| MAR | | | | | | | | | | | |
| 20... | 11 | 5.6 | 7.5 | 23 | 0.5 | 2.3 | 71 | 0 | 58 | 9.4 | 2.2 |
| MAY | | | | | | | | | | | |
| 15... | 13 | 5.3 | 7.7 | 23 | 0.5 | 1.4 | 73 | 0 | 60 | 3.8 | 3.6 |
| JUL | | | | | | | | | | | |
| 17... | 8.7 | 5.7 | 5.2 | 20 | 0.3 | 0.90 | 69 | 0 | 56 | 4.1 | 1.4 |
| SEP | | | | | | | | | | | |
| 18... | 8.9 | 6.2 | 5.2 | 19 | 0.3 | 0.90 | 65 | 0 | 54 | 5.9 | 3.0 |

| 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) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA TOTAL (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) |
|-------|--|---|--|---|---|---|---|--|---|--|--|
| NOV | | | | | | | | | | | |
| 14... | 0.10 | 24 | 93 | 93 | 0.13 | <0.010 | 0.100 | <0.010 | <0.010 | 0.20 | 0.020 |
| JAN | | | | | | | | | | | |
| 23... | <0.10 | 26 | 100 | 96 | 0.14 | <0.010 | <0.100 | 0.010 | <0.010 | 0.20 | 0.010 |
| MAR | | | | | | | | | | | |
| 20... | <0.10 | 25 | 96 | 98 | 0.13 | <0.010 | <0.100 | <0.010 | <0.010 | 0.20 | 0.020 |
| MAY | | | | | | | | | | | |
| 15... | <0.10 | 26 | 78 | 97 | 0.11 | <0.010 | <0.100 | <0.010 | 0.030 | <0.20 | 0.030 |
| JUL | | | | | | | | | | | |
| 17... | <0.10 | 19 | 60 | 79 | 0.08 | <0.010 | <0.100 | <0.010 | <0.010 | <0.20 | 0.020 |
| SEP | | | | | | | | | | | |
| 18... | <0.10 | 18 | 63 | 80 | 0.09 | <0.010 | <0.100 | <0.010 | <0.010 | 0.20 | 0.030 |

SACRAMENTO RIVER BASIN

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | 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) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, DIS- SOLVED (UG/L AS BA) | BERYL- LIUM, DIS- SOLVED (UG/L AS BE) | 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) |
|--------------|---|---|---|--|--|--|--|---|--|--|--|
| NOV 14... | 0.020 | 0.020 | 30 | 1 | 13 | <0.5 | <1.0 | 1 | <3 | 5 | 22 |
| JAN 23... | 0.010 | 0.020 | 30 | 1 | 14 | <0.5 | <1.0 | 2 | <3 | 3 | 18 |
| MAR 20... | <0.010 | 0.020 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 15... | 0.010 | 0.020 | <10 | 2 | 15 | <0.5 | <1.0 | <1 | <3 | 2 | 12 |
| JUL 17... | <0.010 | <0.010 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 18... | <0.010 | <0.010 | 40 | <1 | 10 | <0.5 | <1.0 | <1 | <3 | 4 | 78 |

| DATE | LEAD, DIS- SOLVED (UG/L AS PB) | 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) | VANA- DIUM, DIS- SOLVED (UG/L AS V) | ZINC, DIS- SOLVED (UG/L AS ZN) |
|--------------|--|--|--|--|---|--|---|--|--|--|--|
| NOV 14... | <1 | <4 | 6 | <0.1 | <10 | 1 | <1 | <1.0 | 53 | <6 | 40 |
| JAN 23... | <1 | 4 | <1 | 0.1 | <10 | <1 | <1 | <1.0 | 57 | <6 | 11 |
| MAR 20... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| MAY 15... | 1 | <4 | 2 | <0.1 | <10 | <1 | <1 | <1.0 | 58 | <6 | 6 |
| JUL 17... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| SEP 18... | 1 | <4 | 6 | <0.1 | <10 | 1 | <1 | <1.0 | 41 | <6 | 34 |

CROSS SECTIONAL DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) | DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET) | SPE- CIFIC CON- DUCT- ANCE (US/CM) | PH (STAND- ARD UNITS) | TEMPER- ATURE WATER (DEG C) | BARO- METRIC PRES- SURE (MM OF HG) | OXYGEN, DIS- SOLVED (MG/L) | OXYGEN, (PER- CENT SATUR- ATION) | SEDI- MENT, SUS- PENDEd (MG/L) |
|--------|------|---|--|---|--------------------------------|--------------------------------------|--|-------------------------------------|--|--|
| JAN | | | | | | | | | | |
| 23...* | 0840 | 41.0 | 5.90 | 122 | 7.9 | 8.5 | 755 | 11.8 | 102 | 1 |
| 23...* | 0845 | 103 | 5.60 | 124 | 7.9 | 8.5 | 755 | 11.8 | 102 | 2 |
| 23...* | 0850 | 175 | 5.00 | 123 | 7.9 | 8.5 | 755 | 11.8 | 102 | 1 |
| 23...* | 0855 | 233 | 5.80 | 122 | 7.9 | 8.5 | 755 | 11.8 | 102 | 2 |
| 23...* | 0900 | 341 | 3.50 | 127 | 7.9 | 8.5 | 755 | 11.6 | 100 | 3 |
| SEP | | | | | | | | | | |
| 18...* | 0820 | 411 | 7.60 | 111 | 7.2 | 15.0 | 750 | 10.0 | 101 | 2 |
| 18...* | 0825 | 301 | 8.90 | 110 | 7.1 | 15.0 | 750 | 10.0 | 101 | 2 |
| 18...* | 0830 | 218 | 12.3 | 109 | 7.0 | 15.0 | 750 | 10.1 | 102 | 2 |
| 18...* | 0835 | 136 | 8.40 | 108 | 6.9 | 15.0 | 750 | 10.1 | 102 | 2 |
| 18...* | 0840 | 61.0 | 10.5 | 116 | 6.8 | 15.0 | 750 | 10.1 | 102 | 2 |

* Instantaneous discharge at the time of cross-sectional measurement: Jan. 23, 3,280 ft³/s;
Sept. 18, 6,250 ft³/s.

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | DIS- CHARGE, INST. CUBIC FEET PER SECOND | TEMPER- ATURE WATER (DEG C) | SEDI- MENT, SUS- PENDE (MG/L) | SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) |
|-------|------|--|--------------------------------------|---|---|
| NOV | | | | | |
| 14... | 0830 | 7960 | 13.5 | 1 | 21 |
| JAN | | | | | |
| 23... | 0915 | 3280 | 8.5 | 2 | 18 |
| MAR | | | | | |
| 20... | 0830 | 3340 | 8.5 | 3 | 27 |
| MAY | | | | | |
| 15... | 0930 | 10200 | 9.0 | 3 | 83 |
| JUL | | | | | |
| 17... | 0830 | 11200 | 12.0 | 6 | 181 |
| SEP | | | | | |
| 18... | 0935 | 6250 | 15.0 | 2 | 34 |

SACRAMENTO RIVER BASIN

11371000 CLEAR CREEK AT FRENCH GULCH, CA

LOCATION.--Lat 40°41'42", long 122°38'08", unsurveyed, Shasta County, Hydrologic Unit 18020112, on right bank 1,200 ft downstream from French Gulch, 0.3 mi south of town of French Gulch, and 15 mi northwest of Redding.

DRAINAGE AREA.--115 mi².

PERIOD OF RECORD.--July 1950 to current year.

SEDIMENT DATA: Water years 1966-67.

REVISED RECORDS.--WSP 1285: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,320.60 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1959, at datum 3.0 ft higher.

REMARKS.--No estimated daily discharges. Records good. No large diversion upstream from station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--40 years, 213 ft³/s, 154,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft³/s, Jan. 16, 1974, gage height, 14.99 ft, from rating curve extended above 5,200 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 1.5 ft³/s, July 19-22, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| May 28 | 0115 | *3,060 | *8.29 | | | | |

Minimum daily, 12 ft³/s, Sept. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|---------------|-----------|----------|---------|--------------|------|------|-------|------|------|------|------|
| 1 | 33 | 59 | 37 | 27 | 84 | 131 | 72 | 41 | 486 | 63 | 21 | 18 |
| 2 | 29 | 55 | 35 | 29 | 79 | 152 | 70 | 40 | 409 | 62 | 20 | 17 |
| 3 | 26 | 52 | 35 | 27 | 94 | 223 | 69 | 39 | 350 | 61 | 19 | 16 |
| 4 | 25 | 50 | 35 | 26 | 110 | 221 | 69 | 38 | 305 | 58 | 19 | 16 |
| 5 | 24 | 47 | 34 | 27 | 102 | 209 | 68 | 36 | 271 | 57 | 19 | 15 |
| 6 | 23 | 45 | 35 | 27 | 100 | 186 | 72 | 35 | 241 | 57 | 18 | 15 |
| 7 | 22 | 45 | 34 | 150 | 93 | 171 | 67 | 34 | 215 | 54 | 17 | 15 |
| 8 | 22 | 43 | 33 | 532 | 91 | 176 | 68 | 34 | 194 | 51 | 17 | 15 |
| 9 | 22 | 41 | 33 | 317 | 90 | 159 | 65 | 34 | 177 | 48 | 17 | 14 |
| 10 | 21 | 40 | 33 | 217 | 91 | 181 | 62 | 34 | 165 | 46 | 17 | 14 |
| 11 | 21 | 39 | 32 | 159 | 95 | 185 | 60 | 33 | 154 | 44 | 17 | 13 |
| 12 | 22 | 38 | 31 | 157 | 101 | 174 | 58 | 32 | 143 | 40 | 16 | 13 |
| 13 | 22 | 38 | 31 | 1000 | 101 | 159 | 57 | 32 | 136 | 37 | 16 | 13 |
| 14 | 21 | 36 | 30 | 925 | 95 | 151 | 56 | 32 | 129 | 36 | 16 | 13 |
| 15 | 21 | 36 | 30 | 469 | 93 | 139 | 54 | 31 | 122 | 35 | 16 | 14 |
| 16 | 22 | 37 | 29 | 327 | 99 | 129 | 54 | 30 | 116 | 34 | 18 | 14 |
| 17 | 21 | 38 | 29 | 249 | 92 | 122 | 55 | 29 | 111 | 37 | 19 | 14 |
| 18 | 21 | 37 | 29 | 197 | 85 | 116 | 55 | 29 | 106 | 38 | 19 | 14 |
| 19 | 21 | 36 | 29 | 166 | 82 | 113 | 53 | 32 | 99 | 37 | 19 | 13 |
| 20 | 21 | 36 | 29 | 144 | 82 | 108 | 53 | 62 | 94 | 36 | 19 | 13 |
| 21 | 42 | 36 | 29 | 126 | 82 | 104 | 51 | 47 | 90 | 32 | 21 | 12 |
| 22 | 104 | 35 | 28 | 114 | 88 | 101 | 51 | 396 | 86 | 30 | 19 | 12 |
| 23 | 750 | 36 | 28 | 106 | 97 | 98 | 59 | 669 | 84 | 28 | 17 | 13 |
| 24 | 278 | 39 | 28 | 99 | 110 | 94 | 51 | 291 | 81 | 27 | 16 | 14 |
| 25 | 171 | 47 | 28 | 93 | 126 | 90 | 48 | 198 | 78 | 27 | 16 | 15 |
| 26 | 120 | 51 | 27 | 89 | 136 | 87 | 46 | 200 | 75 | 27 | 22 | 23 |
| 27 | 118 | 43 | 26 | 84 | 137 | 84 | 45 | 1570 | 72 | 26 | 23 | 18 |
| 28 | 97 | 39 | 27 | 81 | 136 | 81 | 44 | 2040 | 71 | 24 | 21 | 16 |
| 29 | 83 | 38 | 26 | 79 | --- | 78 | 42 | 921 | 69 | 23 | 20 | 14 |
| 30 | 73 | 37 | 26 | 89 | --- | 76 | 41 | 665 | 66 | 22 | 19 | 13 |
| 31 | 66 | --- | 26 | 83 | --- | 74 | --- | 579 | --- | 22 | 19 | --- |
| TOTAL | 2362 | 1249 | 942 | 6215 | 2771 | 4172 | 1715 | 8283 | 4795 | 1219 | 572 | 439 |
| MEAN | 76.2 | 41.6 | 30.4 | 200 | 99.0 | 135 | 57.2 | 267 | 160 | 39.3 | 18.5 | 14.6 |
| MAX | 750 | 59 | 37 | 1000 | 137 | 223 | 72 | 2040 | 486 | 63 | 23 | 23 |
| MIN | 21 | 35 | 26 | 26 | 79 | 74 | 41 | 29 | 66 | 22 | 16 | 12 |
| AC-FT | 4690 | 2480 | 1870 | 12330 | 5500 | 8280 | 3400 | 16430 | 9510 | 2420 | 1130 | 871 |
| CAL YR 1989 | TOTAL 53630.6 | MEAN 147 | MAX 3620 | MIN 7.8 | AC-FT 106400 | | | | | | | |
| WTR YR 1990 | TOTAL 34734 | MEAN 95.2 | MAX 2040 | MIN 12 | AC-FT 68890 | | | | | | | |

91

LOCATION.--Lat 40°38'49", long 122°37'34", Shasta County, Hydrologic Unit 18010212, at powerplant 1.6 mi downstream from Mill Creek and 3.8 mi south of French Gulch.

GAGE.--Recorded powerplant output.

REMARKS.--No estimated daily discharges. Water is diverted from Trinity River at NW 1/4 SE 1/4 sec.8, T.33 N., R.8 W., through a tunnel to powerplant and then into Whiskeytown Lake (station 11371700). See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

AVERAGE DISCHARGE,--27 years, 1,467 ft³/s, 1,063,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,000 ft³/s, Oct. 18, 1987; no flow for many days most years.

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|----------|---------|---------|---------|-------|------|---------|----------|----------|--------|--------|--------|
| 1 | 3420 | .00 | 822 | .00 | .00 | 1 | 28 | .00 | .00 | 521 | 2300 | 2092 |
| 2 | 3424 | .00 | .00 | .00 | .00 | .00 | .00 | 462 | .00 | 2000 | 2418 | 2056 |
| 3 | 3434 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 1991 | 2024 | 1911 |
| 4 | 2843 | .00 | 78 | .00 | .00 | .00 | .00 | 726 | .00 | 1948 | 2550 | 1763 |
| 5 | 2366 | 454 | 50 | .00 | .00 | .00 | .00 | .00 | .00 | 1958 | 2610 | 3005 |
| 6 | 2350 | 655 | 4 | .00 | .00 | .00 | .00 | .00 | 504 | 3038 | 2460 | 3005 |
| 7 | 1931 | 353 | 19 | 19 | .00 | .00 | .00 | 795 | .00 | 2953 | 2012 | 3375 |
| 8 | 2015 | .00 | 4 | .00 | .00 | .00 | .00 | .00 | 506 | 2918 | 2175 | 3131 |
| 9 | 1884 | 472 | 13 | .00 | .00 | .00 | .00 | 1010 | .00 | 2918 | 1978 | 3025 |
| 10 | 2246 | 430 | 47 | .00 | .00 | .00 | .00 | .00 | .00 | 3039 | 2010 | 3025 |
| 11 | 2566 | 504 | 1 | .00 | .00 | .00 | .00 | 1010 | 553 | 3040 | 1977 | 3025 |
| 12 | 3309 | 534 | .00 | .00 | .00 | .00 | 408 | 1038 | 513 | 1513 | 2021 | 2017 |
| 13 | 3469 | 505 | 8 | .00 | .00 | .00 | 536 | .00 | 570 | 1520 | 1877 | 2989 |
| 14 | 3458 | 470 | 251 | .00 | .00 | .00 | 407 | 1042 | 918 | 1518 | 2009 | 3131 |
| 15 | 3457 | 509 | 178 | .00 | 11 | .00 | .00 | .00 | 1025 | 1592 | 2292 | 3071 |
| 16 | 3458 | 475 | .00 | .00 | .00 | .00 | 417 | .00 | 2115 | 3407 | 2233 | 3079 |
| 17 | 3435 | 498 | .00 | .00 | .00 | .00 | .00 | .00 | 509 | 3184 | 2079 | 2961 |
| 18 | 3446 | 466 | .00 | .00 | .00 | .00 | .00 | .00 | 532 | 3213 | 909 | 2946 |
| 19 | 3240 | .00 | .00 | .00 | .00 | .00 | 441 | 692 | 535 | 3247 | 882 | 1588 |
| 20 | 2699 | .00 | 7 | 271 | 51 | .00 | 67 | .00 | 533 | 3267 | 1092 | 1599 |
| 21 | 2111 | .00 | 560 | 274 | .00 | .00 | 406 | 729 | 529 | 1482 | 1072 | 3066 |
| 22 | 2167 | .00 | 2 | 330 | .00 | .00 | .00 | .00 | 499 | 1660 | 1112 | 3064 |
| 23 | 2067 | .00 | .00 | 327 | .00 | .00 | 406 | .00 | 462 | 1439 | 1209 | 2951 |
| 24 | .00 | 692 | .00 | 612 | .00 | .00 | 84 | .00 | 450 | 2055 | 1037 | 3069 |
| 25 | .00 | .00 | .00 | 498 | .00 | .00 | 427 | .00 | 534 | 3391 | 1295 | 3176 |
| 26 | .00 | .00 | 499 | 417 | .00 | .00 | .00 | .00 | 570 | 3274 | 1137 | 2896 |
| 27 | .00 | .00 | .00 | 414 | .00 | .00 | 396 | .00 | 489 | 3239 | 947 | 2950 |
| 28 | .00 | .00 | .00 | 381 | .00 | .00 | 12 | .00 | 508 | 3252 | 997 | 2959 |
| 29 | .00 | .00 | .00 | 380 | --- | .00 | .00 | .00 | 573 | 3229 | 1023 | 2954 |
| 30 | .00 | .00 | .00 | 383 | --- | .00 | 419 | 2108 | 509 | 2344 | 991 | 2855 |
| 31 | .00 | --- | .00 | .00 | --- | .00 | --- | 2042 | --- | 2296 | 978 | --- |
| TOTAL | 64795.00 | 7017.00 | 2543.00 | 4306.00 | 62.00 | 1.00 | 4454.00 | 11654.00 | 13936.00 | 76446 | 51706 | 82734 |
| MEAN | 2090 | 234 | 82.0 | 139 | 2.21 | .032 | 148 | 376 | 465 | 2466 | 1668 | 2758 |
| MAX | 3470 | 692 | 822 | 612 | 51 | 1.0 | 536 | 2110 | 2110 | 3410 | 2610 | 3370 |
| MIN | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 521 | 882 | 1590 |
| AC-FT | 128500 | 13920 | 5040 | 8540 | 123 | 2.0 | 8830 | 23120 | 27840 | 151600 | 102600 | 164100 |

| | | | | | | | | | | |
|-------------|-------|-----------|------|-----|-----|------|-----|-----|-------|--------|
| CAL YR 1989 | TOTAL | 335819.00 | MEAN | 920 | MAX | 3500 | MIN | .00 | AC-FT | 666100 |
| WTR YR 1990 | TOTAL | 319654.00 | MEAN | 876 | MAX | 3470 | MIN | .00 | AC-FT | 634000 |

SACRAMENTO RIVER BASIN

11371600 SPRING CREEK POWERPLANT AT KESWICK, CA

LOCATION.--Lat 40°37'41", long 122°27'59", in NE 1/4 SE 1/4 sec.18, T.32 N., R.5 W., Shasta County, Hydrologic Unit 18020112, at powerplant on Spring Creek, 0.4 mi northwest of Keswick, and 4.9 mi northwest of Redding.

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

GAGE.--Discharge computed from powerplant output.

REMARKS.--No estimated daily discharges. Water is released from Whiskeytown Lake (station 11371700) through a tunnel to powerplant and then into Keswick Reservoir. Spring Creek Reservoir releases into Keswick Reservoir at Spring Creek powerplant. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

AVERAGE DISCHARGE.--26 years (water years 1965-90), 1,819 ft³/s, 1,318,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,800 ft³/s, May 2, 1983; no flow for many days most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|----------|--------|----------|---------|---------|--------|----------|----------|--------|--------|--------|
| 1 | 3400 | 1025 | .00 | .00 | 421 | .00 | 2 | 2 | 523 | 599 | 2617 | 2004 |
| 2 | 3396 | 1171 | .00 | .00 | 394 | .00 | 1 | .00 | 528 | 2045 | 2477 | 1923 |
| 3 | 3393 | 1060 | .00 | .00 | 316 | 1093 | .00 | 2 | 514 | 2062 | 2327 | 2118 |
| 4 | 2967 | 607 | 47 | 1 | .00 | 536 | .00 | .00 | 443 | 2024 | 2478 | 2246 |
| 5 | 2621 | 623 | 53 | .00 | .00 | 4 | .00 | 1 | 324 | 2049 | 2468 | 3159 |
| 6 | 2479 | 313 | .00 | .00 | .00 | .00 | 4 | .00 | .00 | 2989 | 2477 | 2851 |
| 7 | 2241 | 471 | 5 | 1 | 414 | 796 | 1 | .00 | .00 | 2995 | 1992 | 2977 |
| 8 | 1891 | .00 | 3 | 1457 | 58 | 40 | .00 | .00 | .00 | 3059 | 2014 | 2966 |
| 9 | 1905 | 260 | 2 | 994 | 60 | 37 | .00 | .00 | .00 | 2941 | 2066 | 3000 |
| 10 | 2017 | 482 | 1 | 221 | 62 | 30 | .00 | .00 | .00 | 2878 | 2084 | 2990 |
| 11 | 2510 | 480 | 1 | 291 | 58 | .00 | .00 | .00 | 569 | 3083 | 2019 | 2988 |
| 12 | 3252 | 496 | 3 | 298 | 18 | .00 | .00 | .00 | 661 | 1503 | 2039 | 2012 |
| 13 | 3227 | 504 | 1 | 500 | 30 | 364 | 4 | .00 | .00 | 1743 | 2005 | 3007 |
| 14 | 4000 | 188 | .00 | 1480 | 36 | 14 | .00 | .00 | 1661 | 1252 | 2019 | 3017 |
| 15 | 3992 | 518 | .00 | 1485 | 405 | 24 | .00 | 86 | 1274 | 1518 | 1971 | 3008 |
| 16 | 3996 | 391 | 1 | 990 | .00 | 477 | 200 | .00 | 2521 | 3182 | 1997 | 2985 |
| 17 | 4014 | 521 | .00 | 300 | 3 | .00 | .00 | .00 | 491 | 3210 | 1967 | 2989 |
| 18 | 3934 | .00 | .00 | 285 | .00 | .00 | .00 | .00 | 57 | 3489 | 980 | 3025 |
| 19 | 3785 | 176 | .00 | 306 | .00 | 512 | .00 | .00 | 796 | 3268 | 977 | 1539 |
| 20 | 3517 | .00 | 4 | 355 | 10 | .00 | .00 | .00 | 509 | 3292 | 1069 | 1524 |
| 21 | 2975 | .00 | .00 | 295 | 1 | 34 | .00 | .00 | 487 | 2016 | 1245 | 2998 |
| 22 | 2979 | 69 | 1 | 299 | .00 | 254 | .00 | .00 | 642 | 1999 | 1024 | 2992 |
| 23 | 2975 | .00 | .00 | 294 | 18 | .00 | .00 | .00 | 723 | 1633 | 1003 | 2964 |
| 24 | 3007 | 86 | .00 | 482 | .00 | .00 | .00 | .00 | 570 | 1643 | 995 | 2930 |
| 25 | 1745 | .00 | .00 | 390 | .00 | .00 | .00 | 2 | 542 | 2906 | 987 | 3025 |
| 26 | 845 | .00 | 2 | 395 | 54 | 4 | .00 | 13 | 748 | 2691 | 994 | 2991 |
| 27 | 822 | .00 | .00 | 390 | .00 | 36 | 4 | 2254 | 502 | 3044 | 970 | 3012 |
| 28 | 835 | .00 | .00 | 528 | .00 | 16 | 13 | 4146 | 693 | 2883 | 997 | 3020 |
| 29 | 953 | .00 | .00 | 484 | --- | 27 | .00 | 4174 | 527 | 3224 | 986 | 3018 |
| 30 | 871 | 672 | .00 | 481 | --- | 494 | 3 | 4175 | 557 | 2533 | 943 | 2989 |
| 31 | 1191 | --- | .00 | 504 | --- | 7 | --- | 1961 | --- | 2534 | 964 | --- |
| TOTAL | 81735 | 10113.00 | 124.00 | 13506.00 | 2358.00 | 4799.00 | 232.00 | 16816.00 | 16862.00 | 76287 | 51151 | 82267 |
| MEAN | 2637 | 337 | 4.00 | 436 | 84.2 | 155 | 7.73 | 542 | 562 | 2461 | 1650 | 2742 |
| MAX | 4014 | 1171 | 53 | 1485 | 421 | 1093 | 200 | 4175 | 2521 | 3489 | 2617 | 3159 |
| MIN | 822 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 599 | 943 | 1524 |
| AC-FT | 162100 | 20060 | 246 | 26790 | 4680 | 9520 | 460 | 33350 | 33450 | 151300 | 101500 | 163200 |
| a | 488 | 1090 | 296 | 1110 | 1320 | 1660 | 581 | 359 | 4600 | 2090 | 202 | 288 |

CAL YR 1989 TOTAL 407632.00 MEAN 1117 MAX 4014 MIN .00 AC-FT 808500
WTR YR 1990 TOTAL 356250.00 MEAN 976 MAX 4175 MIN .00 AC-FT 706600

a Discharge, in acre-feet, from Spring Creek Reservoir, provided by U.S. Bureau of Reclamation.

11371700 WHISKEYTOWN LAKE NEAR IGO, CA

LOCATION.--Lat 40°37'03", long 122°31'31", unsurveyed, Shasta County, Hydrologic Unit 18010112, Whiskeytown-Shasta-Trinity National Recreation Area, at outlet works to Spring Creek powerplant on Clear Creek, 1.8 mi downstream from Whiskey Creek, and 7.8 mi northeast of Igo.

DRAINAGE AREA.--200 mi².

PERIOD OF RECORD.--May 1963 to current year. Prior to October 1964 published as Whiskeytown Reservoir near Igo. GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation). Contents based on capacity table dated April 1962 provided by U.S. Bureau of Reclamation.

REMARKS.--Lake is formed by earth and rockfill dam. Storage began in May 1963. Usable capacity, 241,088 acre-ft between elevations 972.0 ft, invert of sluice pipe, and 1,210.00 ft, crest of Glory Hole spillway. Dead storage 8 acre-ft. Normal operating pool is from elevation 1,197.0 ft, capacity, 201,288 acre-ft, to 1,210.0 ft, capacity, 241,096 acre-ft. Transbasin water enters the reservoir through Judge Francis Carr powerplant (station 11525430) and is released through Spring Creek tunnel to Spring Creek powerplant (station 11371600) and Keswick Reservoir. Figures given represent total contents at 2400 hours. Lake is used for power generation and recreation. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation, not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 258,600 acre-ft, Mar. 2, 1983, elevation, 1,215.34 ft; minimum since first filling, 159,000 acre-ft, Oct. 25, 1970, elevation, 1,181.48 ft.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 240,424 acre-ft, May 27, elevation, 1,209.79 ft; minimum, 203,975 acre-ft, Jan. 11, elevation, 1,197.92 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by U.S. Bureau of Reclamation in 1962)

| | | | | | | | |
|-------|-------|-------|-------|-------|--------|-------|---------|
| 1,015 | 714 | 1,040 | 3,055 | 1,080 | 15,076 | 1,140 | 73,960 |
| 1,020 | 994 | 1,050 | 4,898 | 1,100 | 27,542 | 1,180 | 155,276 |
| 1,030 | 1,797 | 1,060 | 7,418 | 1,120 | 46,701 | 1,220 | 274,389 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 236497 | 210484 | 205741 | 205152 | 205770 | 206360 | 205888 | 216622 | 233108 | 237768 | 237545 | 238471 |
| 2 | 236687 | 208224 | 205682 | 205034 | 205152 | 206919 | 206065 | 217443 | 233297 | 237673 | 237418 | 238599 |
| 3 | 236751 | 206153 | 205564 | 205004 | 204209 | 205387 | 206183 | 217352 | 233360 | 237577 | 237577 | 238055 |
| 4 | 236624 | 204887 | 205505 | 204946 | 205240 | 204975 | 206389 | 218841 | 233329 | 237450 | 237704 | 237514 |
| 5 | 236560 | 204386 | 205387 | 204916 | 205446 | 205446 | 206536 | 218750 | 233423 | 237323 | 237991 | 237418 |
| 6 | 236433 | 204887 | 205270 | 204887 | 205535 | 205829 | 206654 | 218658 | 235003 | 237450 | 237800 | 237386 |
| 7 | 235893 | 204563 | 205211 | 206212 | 204887 | 204710 | 206772 | 220155 | 235543 | 237514 | 237800 | 237768 |
| 8 | 236115 | 204474 | 205152 | 205358 | 204857 | 205034 | 206949 | 220033 | 237005 | 237323 | 238151 | 237704 |
| 9 | 236084 | 204769 | 205063 | 204092 | 204887 | 205270 | 207096 | 221870 | 237386 | 237260 | 237895 | 237831 |
| 10 | 236528 | 204621 | 205004 | 204180 | 204916 | 205770 | 207214 | 221840 | 237704 | 237641 | 237831 | 237831 |
| 11 | 236560 | 204563 | 204887 | 203975 | 204946 | 206124 | 207333 | 223750 | 237991 | 237545 | 237673 | 237831 |
| 12 | 236751 | 204504 | 204739 | 204151 | 205004 | 206477 | 208224 | 225758 | 237959 | 237641 | 237641 | 237355 |
| 13 | 237196 | 204563 | 204680 | 207392 | 205004 | 206124 | 209323 | 225696 | 239272 | 237164 | 237323 | 237196 |
| 14 | 236211 | 205004 | 205034 | 207363 | 205034 | 206477 | 210185 | 227592 | 238087 | 237736 | 237196 | 237418 |
| 15 | 235067 | 204916 | 205270 | 205800 | 204415 | 206684 | 210215 | 227343 | 237895 | 237768 | 237704 | 237545 |
| 16 | 233897 | 204946 | 205152 | 204769 | 204739 | 206036 | 210694 | 227188 | 237355 | 238343 | 238055 | 237673 |
| 17 | 232666 | 204798 | 205034 | 204857 | 204946 | 206271 | 210814 | 227094 | 237577 | 238471 | 238183 | 237577 |
| 18 | 231625 | 205653 | 204887 | 204769 | 205063 | 206507 | 210933 | 227001 | 238695 | 237991 | 237991 | 237355 |
| 19 | 230560 | 205211 | 204769 | 204592 | 205093 | 205800 | 211861 | 228525 | 238375 | 238087 | 237736 | 237355 |
| 20 | 229245 | 205093 | 204651 | 204769 | 205181 | 205977 | 212071 | 229214 | 238599 | 238183 | 237736 | 237450 |
| 21 | 228556 | 204946 | 205535 | 205063 | 205240 | 206094 | 212939 | 230748 | 238823 | 237101 | 237418 | 237577 |
| 22 | 228089 | 204710 | 205446 | 205446 | 205299 | 205859 | 213089 | 233108 | 238695 | 236401 | 237482 | 237736 |
| 23 | 230185 | 204651 | 205299 | 205711 | 205358 | 205977 | 214114 | 235130 | 238279 | 235956 | 237831 | 237673 |
| 24 | 225261 | 205800 | 205152 | 206183 | 205476 | 206124 | 214265 | 235797 | 238151 | 236624 | 237768 | 237959 |
| 25 | 222207 | 205977 | 205034 | 206625 | 205653 | 206271 | 215201 | 236306 | 238279 | 237450 | 238343 | 238311 |
| 26 | 220951 | 205977 | 205888 | 206860 | 205741 | 206389 | 215201 | 237132 | 237991 | 237959 | 238663 | 238119 |
| 27 | 219573 | 205859 | 205770 | 207096 | 205918 | 206448 | 215985 | 240424 | 238023 | 237895 | 238599 | 237991 |
| 28 | 218172 | 205770 | 205653 | 206978 | 206094 | 206536 | 215985 | 238279 | 237768 | 238663 | 238535 | 237895 |
| 29 | 216349 | 205653 | 205505 | 206949 | --- | 206536 | 215925 | 232509 | 237895 | 238727 | 238535 | 237673 |
| 30 | 214779 | 204209 | 205358 | 207067 | --- | 205682 | 216683 | 230623 | 237863 | 238503 | 238471 | 237228 |
| 31 | 212520 | --- | 205211 | 206360 | --- | 205741 | --- | 232698 | --- | 238087 | 238375 | --- |
| MAX | 237196 | 210484 | 205888 | 207392 | 206094 | 206919 | 216683 | 240424 | 239272 | 238727 | 238663 | 238599 |
| MIN | 212520 | 204209 | 204651 | 203975 | 204209 | 204710 | 205888 | 216622 | 233108 | 235956 | 237196 | 237196 |
| a | 1200.80 | 1198.00 | 1198.34 | 1198.73 | 1198.64 | 1198.52 | 1202.18 | 1207.36 | 1208.99 | 1209.06 | 1209.15 | 1208.79 |
| b | -23945 | -8311 | +1002 | +1149 | -266 | -353 | +10942 | +16015 | +5165 | +224 | +288 | -1147 |
| c | 419 | 215 | 120 | 79 | 122 | 382 | 714 | 894 | 1342 | 1560 | 1226 | 1021 |

CAL YR 1989 b -88

WTR YR 1990 b +763

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, provided by U.S. Bureau of Reclamation; not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

11372000 CLEAR CREEK NEAR IGO, CA

LOCATION.--Lat 40°30'48", long 122°31'23", unsurveyed, Shasta County, Hydrologic Unit 18020112, on left bank at old highway bridge on Redding-Igo Road 1.0 mi northeast of Igo, 7.0 mi downstream from Whiskeytown Dam, 8.3 mi southwest of Redding, and 10.4 mi upstream from mouth.

DRAINAGE AREA.--228 mi².

PERIOD OF RECORD.--October 1940 to current year.

CHEMICAL DATA: Water years 1958-79.

WATER TEMPERATURE: Water years 1965-79.

REVISED RECORDS.--WSP 1345: Drainage area. WSP 1395: 1941(M).

GAGE.--Water-stage recorder. Datum of gage is 672.99 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Low flow completely regulated by Whiskeytown Lake (station 11371700) since May 1963.

Transbasin diversion from Trinity River through Judge Francis Carr powerplant (station 11525430) to Whiskeytown Lake began in April 1963. Diversions from Whiskeytown Lake to Spring Creek powerplant (station 11371600) began in December 1963. See schematic diagrams of Pit and McCloud River basins and upper Sacramento River basin.

AVERAGE DISCHARGE.--22 years (water years 1941-62) prior to storage and diversions, 413 ft³/s, 299,200 acre-ft/yr; 28 years (water years 1963-90), 506 ft³/s, 366,600 acre-ft/yr, adjusted for change in contents, evaporation, and transbasin diversions to and from Whiskeytown Lake; unadjusted flow for same period, 171 ft³/s, 123,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s, Dec. 21, 1955, gage height, 13.75 ft; minimum daily, 8.6 ft³/s, Sept. 4, 6, 7, 1950. Since completion of Whiskeytown Dam in 1963, maximum discharge, 19,200 ft³/s, Mar. 3, 1983, gage height, 12.73 ft, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 30 ft³/s, Oct. 10, 11, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,420 ft³/s, May 27, gage height, 5.73 ft; minimum daily, 53 ft³/s, July 22, 23, Aug. 7, Sept. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---------|-------|------|------|-------|------|-------|------|-------|-------|------|------|------|
| 1 | 61 | 108 | 106 | 105 | e67 | 70 | 65 | 62 | 140 | 59 | 55 | 100 |
| 2 | 59 | 107 | 106 | 86 | e64 | 84 | 65 | 62 | 122 | 61 | 55 | 106 |
| 3 | 59 | 106 | 106 | 61 | e67 | 111 | 65 | 62 | 111 | 58 | 55 | 106 |
| 4 | 59 | 106 | 106 | 60 | e72 | 105 | 66 | 61 | 102 | 58 | 55 | 83 |
| 5 | 59 | 106 | 106 | 60 | e82 | 103 | 65 | 62 | 95 | 58 | 55 | 56 |
| 6 | 60 | 106 | 106 | 60 | e80 | 93 | 65 | 61 | 90 | 59 | 54 | 56 |
| 7 | 59 | 106 | 106 | 172 | e78 | 88 | 67 | 61 | 86 | 58 | 53 | 56 |
| 8 | 59 | 106 | 106 | 252 | 76 | 84 | 68 | 61 | 82 | 57 | 54 | 54 |
| 9 | 59 | 105 | 106 | 128 | 74 | 80 | 67 | 61 | 79 | 57 | 55 | 54 |
| 10 | 59 | 104 | 106 | 89 | 73 | 88 | 67 | 61 | 77 | 56 | 55 | 54 |
| 11 | 59 | 104 | 106 | 78 | 72 | 81 | 65 | 61 | 84 | 55 | 55 | 54 |
| 12 | 59 | 104 | 106 | 88 | 71 | 79 | 65 | 61 | 97 | 54 | 65 | 53 |
| 13 | 59 | 104 | 106 | e450 | 71 | 77 | 65 | 61 | 90 | 54 | 79 | 54 |
| 14 | 59 | 103 | 106 | e400 | 69 | 78 | 64 | 61 | 71 | 54 | 80 | 54 |
| 15 | 59 | 104 | 106 | e265 | 69 | 76 | 64 | 61 | 69 | 54 | 80 | 55 |
| 16 | 59 | 104 | 106 | e190 | 84 | 74 | 64 | 60 | 69 | 54 | 80 | 55 |
| 17 | 58 | 104 | 106 | e165 | 81 | 73 | 65 | 60 | 68 | 54 | 81 | 55 |
| 18 | 58 | 104 | 106 | e140 | 80 | 72 | 64 | 60 | 67 | 55 | 84 | 55 |
| 19 | 58 | 104 | 106 | e120 | 78 | 72 | 63 | 62 | 66 | 55 | 77 | 56 |
| 20 | 58 | 104 | 106 | e105 | 77 | 70 | 64 | e80 | 64 | 54 | 68 | 55 |
| 21 | 77 | 104 | 106 | e96 | 77 | 68 | 64 | e74 | 63 | 54 | 68 | 55 |
| 22 | 85 | 104 | 106 | e90 | 78 | 67 | 65 | e340 | 62 | 53 | 66 | 56 |
| 23 | 208 | 105 | 106 | e85 | 77 | 68 | 86 | e450 | 62 | 53 | 65 | 56 |
| 24 | 90 | 106 | 106 | e82 | 76 | 68 | 69 | e112 | 61 | 54 | 66 | 57 |
| 25 | 75 | 112 | 106 | e78 | 73 | 68 | 66 | 95 | 61 | 56 | 70 | 57 |
| 26 | 72 | 110 | 106 | e76 | 72 | 67 | 65 | 122 | 60 | 55 | 71 | 58 |
| 27 | 77 | 108 | 106 | e73 | 72 | 67 | 64 | 907 | 61 | 55 | 71 | 58 |
| 28 | 70 | 108 | 106 | e68 | 71 | 67 | 63 | 719 | 60 | 55 | 71 | 57 |
| 29 | 67 | 106 | 106 | e70 | --- | 66 | 63 | 255 | 60 | 55 | 83 | 57 |
| 30 | 65 | 106 | 105 | e71 | --- | 66 | 63 | 210 | 59 | 55 | 98 | 57 |
| 31 | 81 | --- | 104 | e68 | --- | 65 | --- | 171 | --- | 55 | 95 | --- |
| TOTAL | 2146 | 3168 | 3283 | 3931 | 2081 | 2395 | 1971 | 4696 | 2338 | 1724 | 2119 | 1839 |
| MEAN | 69.2 | 106 | 106 | 127 | 74.3 | 77.3 | 65.7 | 151 | 77.9 | 55.6 | 68.4 | 61.3 |
| MAX | 208 | 112 | 106 | 450 | 84 | 111 | 86 | 907 | 140 | 61 | 98 | 106 |
| MIN | 58 | 103 | 104 | 60 | 64 | 65 | 63 | 60 | 59 | 53 | 53 | 53 |
| AC-FT | 4260 | 6280 | 6510 | 7800 | 4130 | 4750 | 3910 | 9310 | 4640 | 3420 | 4200 | 3650 |
| MEAN a | 233 | 72.7 | 46.2 | 444 | 154 | 232 | 121 | 593 | 285 | 79.6 | 75.0 | 43.8 |
| AC-FT a | 14330 | 4320 | 2840 | 27280 | 8540 | 14300 | 7200 | 36450 | 16960 | 4890 | 4610 | 2600 |

CAL YR 1989 TOTAL 33805 MEAN 92.6 MAX 608 MIN 51 AC-FT 67050 MEAN a 300 AC-FT a 217400
WTR YR 1990 TOTAL 31691 MEAN 86.8 MAX 907 MIN 53 AC-FT 62860 MEAN a 199 AC-FT a 144300

e Estimated.

a Adjusted for change in contents and evaporation from Whiskeytown Lake, diversion from Trinity River through Judge Francis Carr powerplant, and diversion to Spring Creek powerplant. Adjustments provided by U.S. Bureau of Reclamation.

11372080 SOUTH COW CREEK CANAL DIVERSION TO SOUTH COW CREEK NEAR WHITMORE, CA

LOCATION.--Lat 40°35'35", long 121°58'53", in NE 1/4 NW 1/4 sec.33, T.32 N., R.1 W., Shasta County, Hydrologic Unit 18020118, on left bank 2.5 mi northeast of Cow Creek powerplant and 4.3 mi southwest of Whitmore.

PERIOD OF RECORD.--October 1986 to current year (operated as a low-flow station only). Unpublished records for water years 1984-86 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 1,560 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. This station records fishwater release only. The minimum release requirements are 2.0 ft³/s during dry years and 4.0 ft³/s during normal years.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-------|-------|-----|-----|-----|-------|-----|-----|-----|-------|-------|
| 1 | 6.6 | 6.1 | 5.1 | 5.1 | 5.8 | 5.2 | 5.0 | 4.0 | --- | 3.4 | 3.4 | 3.4 |
| 2 | 6.6 | 5.8 | 5.1 | 5.1 | 5.4 | 6.5 | 5.0 | 3.3 | --- | 3.3 | 3.4 | 3.4 |
| 3 | 6.6 | 5.8 | 5.1 | 5.1 | --- | 7.0 | 5.2 | 3.4 | --- | 3.3 | 3.4 | 3.4 |
| 4 | 6.4 | 5.7 | 5.1 | 5.1 | 7.1 | --- | 5.4 | 3.4 | --- | 3.4 | 3.4 | 3.4 |
| 5 | 6.4 | 5.8 | 5.1 | 5.1 | 6.2 | 8.2 | 5.4 | 3.4 | --- | 3.6 | 3.4 | 3.4 |
| 6 | 6.4 | 5.4 | 5.1 | 5.1 | 6.4 | 7.2 | 5.4 | 3.4 | --- | 3.6 | 3.4 | 3.4 |
| 7 | 6.4 | 5.0 | 5.1 | --- | 5.3 | 6.8 | 5.4 | 3.4 | --- | 3.7 | 3.5 | 3.4 |
| 8 | 6.4 | 5.0 | 5.1 | --- | 5.2 | 7.2 | 5.4 | 3.4 | --- | 3.8 | 3.5 | 3.4 |
| 9 | 6.4 | 5.0 | 5.1 | 7.6 | 5.2 | 6.6 | 5.4 | 3.4 | --- | 3.6 | 3.4 | 3.4 |
| 10 | 6.4 | 5.0 | 5.1 | 6.7 | 5.2 | --- | 5.4 | 3.4 | --- | 3.4 | 3.4 | 3.4 |
| 11 | 6.4 | 5.0 | 5.1 | 5.4 | 5.2 | 5.7 | 5.4 | 3.4 | --- | --- | 3.4 | 3.5 |
| 12 | 6.4 | 5.0 | 5.1 | --- | 5.2 | 5.5 | 5.4 | 3.4 | --- | --- | 3.4 | 3.4 |
| 13 | 6.4 | 5.0 | 5.1 | 8.7 | 5.2 | 5.3 | 5.4 | 3.4 | 3.8 | 3.4 | 3.4 | 3.4 |
| 14 | 6.4 | 5.0 | 5.1 | 7.9 | 5.2 | 5.3 | 5.4 | 3.4 | 3.8 | 3.4 | 3.4 | 3.4 |
| 15 | 6.3 | 5.0 | 5.1 | 6.8 | 5.2 | 5.1 | 5.4 | 3.4 | 3.8 | 3.4 | 3.4 | 3.4 |
| 16 | 6.4 | 5.1 | 5.1 | --- | 5.2 | 5.1 | 5.4 | 3.4 | 3.8 | --- | 3.4 | 3.4 |
| 17 | 6.4 | 5.1 | 5.1 | 5.9 | 5.2 | 5.0 | 5.4 | 3.3 | 3.8 | --- | 3.4 | 3.4 |
| 18 | 6.3 | 5.1 | 5.1 | 6.1 | 5.2 | 5.0 | 5.4 | 3.3 | --- | --- | 3.2 | 3.4 |
| 19 | 6.3 | 5.1 | 5.1 | 6.1 | 5.2 | 5.0 | 5.4 | 3.3 | 3.1 | --- | 3.4 | 3.4 |
| 20 | 6.3 | 5.1 | 5.1 | 5.6 | 5.2 | 5.0 | 5.4 | 3.3 | 3.4 | 3.3 | 3.4 | 3.4 |
| 21 | 6.9 | 5.1 | 5.1 | 5.5 | 5.2 | 5.0 | 5.4 | 3.3 | 3.4 | 2.7 | 3.4 | 3.4 |
| 22 | --- | 5.1 | 5.1 | 5.5 | 5.2 | 5.0 | 5.4 | 3.3 | 3.3 | 2.1 | 3.4 | 3.4 |
| 23 | --- | 5.1 | 5.1 | 5.4 | 5.2 | 5.1 | 5.6 | --- | 3.3 | 2.7 | 3.4 | 3.4 |
| 24 | --- | 5.1 | 5.1 | 5.2 | 5.2 | 5.1 | 5.5 | --- | 3.2 | 3.4 | 3.4 | 3.4 |
| 25 | --- | 5.9 | 5.1 | 5.2 | 5.2 | 5.1 | 5.4 | 3.4 | 3.3 | 3.4 | 3.4 | 3.4 |
| 26 | 6.4 | 5.7 | 5.1 | 5.2 | 5.2 | 5.1 | 5.4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 |
| 27 | 6.9 | 5.1 | 5.1 | 5.2 | 5.2 | 5.0 | 5.4 | --- | 3.3 | 3.4 | 3.4 | 3.4 |
| 28 | 6.4 | 5.1 | 5.1 | 5.2 | 5.2 | 5.0 | 5.4 | --- | 3.4 | 3.4 | 3.4 | 3.4 |
| 29 | 6.4 | 5.1 | 5.1 | 5.2 | --- | 5.1 | 5.4 | --- | 3.4 | 3.4 | 3.4 | 3.4 |
| 30 | 6.4 | 5.1 | 5.1 | 5.3 | --- | 4.9 | 5.4 | --- | 3.4 | 3.4 | 3.4 | 3.4 |
| 31 | 6.4 | --- | 5.1 | 5.2 | --- | 4.9 | --- | --- | --- | 3.4 | 3.4 | --- |
| TOTAL | --- | 157.5 | 158.1 | --- | --- | --- | 161.3 | --- | --- | --- | 105.4 | 102.1 |
| MEAN | --- | 5.25 | 5.10 | --- | --- | --- | 5.38 | --- | --- | --- | 3.40 | 3.40 |
| MAX | --- | 6.1 | 5.1 | --- | --- | --- | 5.6 | --- | --- | --- | 3.5 | 3.5 |
| MIN | --- | 5.0 | 5.1 | --- | --- | --- | 5.0 | --- | --- | --- | 3.2 | 3.4 |
| AC-FT | --- | 312 | 314 | --- | --- | --- | 320 | --- | --- | --- | 209 | 203 |

NOTE: Days with no discharge indicates discharge above 4.0 ft³/s. Canal was out of service July 16-19 and all flow remained in natural channel. The dry year release requirement was in effect May 1 to Sept. 30.

11372325 KILARC CANAL DIVERSION TO OLD COW CREEK NEAR WHITMORE, CA

LOCATION.--Lat 40°41'13", long 121°48'27", in SW 1/4 NE 1/4 sec.25, T.32 N., R.1 E., Shasta County, Hydrologic Unit 18020118, on right bank of Kilarc Canal 3.6 mi upstream of Kilarc powerplant and 6.9 mi northeast of Whitmore.

PERIOD OF RECORD.--October 1986 to current year (operated as a low-flow station only). Unpublished records for water years 1983-86 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and Cipoletti weir. Elevation of gage is 3,840 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. This station records fishwater release only. The minimum release requirement is 2.0 ft³/s during dry or normal years. Flow is computed to 5.0 ft³/s.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|-----|------|-------|-------|-------|-------|-----|-----|------|
| 1 | 3.3 | 3.2 | 3.1 | 3.4 | 3.2 | 3.1 | 4.2 | 3.1 | 4.1 | 2.9 | --- | 3.1 |
| 2 | 3.2 | 3.2 | 3.1 | 3.1 | 3.1 | 4.0 | 4.1 | 3.1 | 4.0 | 2.9 | --- | 3.1 |
| 3 | 3.2 | 3.2 | 3.1 | 3.1 | 3.1 | 4.3 | 4.1 | 3.0 | 3.9 | 2.7 | --- | 3.0 |
| 4 | 3.1 | 3.3 | 3.2 | 3.2 | 3.2 | 4.1 | 4.2 | 3.1 | 3.9 | 3.1 | --- | 3.0 |
| 5 | 3.1 | 3.2 | 3.4 | 3.2 | 3.1 | 3.8 | 4.2 | 3.1 | 3.9 | 3.1 | --- | 3.0 |
| 6 | 3.1 | 3.1 | 3.2 | 3.3 | 3.1 | 3.5 | 4.1 | 3.0 | 3.9 | 3.1 | --- | 3.0 |
| 7 | 3.1 | 3.1 | 3.1 | --- | 2.8 | 3.4 | 4.1 | 3.0 | 3.9 | 3.1 | --- | 3.0 |
| 8 | 3.1 | 3.1 | 3.3 | --- | 2.9 | 3.4 | 4.2 | 2.9 | 4.1 | 3.0 | --- | 3.0 |
| 9 | 3.1 | 3.1 | 3.4 | 4.5 | 3.0 | 3.3 | 4.1 | 2.9 | 4.3 | 3.0 | --- | 3.0 |
| 10 | 3.2 | 3.0 | 3.3 | 3.8 | 3.0 | 3.5 | 4.1 | 3.0 | 4.3 | 3.0 | 3.1 | 3.0 |
| 11 | 3.1 | 3.0 | 3.2 | 3.3 | 3.0 | 3.3 | 4.0 | 3.1 | 4.1 | 3.0 | 3.1 | 2.9 |
| 12 | 3.1 | 3.0 | 3.2 | 3.5 | 3.0 | 3.1 | 4.0 | 3.1 | 3.9 | 3.0 | 3.1 | 3.0 |
| 13 | 3.1 | 3.0 | 3.2 | 4.3 | 3.1 | 3.1 | 4.0 | 3.1 | 3.9 | 3.0 | 3.1 | 3.0 |
| 14 | 3.1 | 3.0 | 3.2 | 3.7 | 3.3 | 3.2 | 4.0 | 3.0 | 3.8 | 3.2 | 2.7 | 3.0 |
| 15 | 3.1 | 3.1 | 3.2 | 3.3 | 3.3 | 3.3 | 4.0 | 2.9 | 3.7 | 3.1 | 3.0 | 3.1 |
| 16 | 3.1 | 3.1 | 3.2 | --- | 3.3 | 3.3 | 3.9 | 2.9 | 3.7 | 3.1 | 3.0 | 3.1 |
| 17 | 3.1 | 3.1 | 3.1 | 3.1 | 3.3 | 3.5 | 3.5 | 3.0 | 3.6 | 3.0 | 3.1 | 3.1 |
| 18 | 3.1 | 3.0 | 3.2 | 2.9 | 3.2 | 3.9 | 3.2 | 3.1 | 3.4 | 3.0 | 3.2 | 3.1 |
| 19 | 3.2 | 3.0 | 3.2 | 3.4 | 3.1 | 4.1 | 3.2 | 3.6 | 3.3 | 3.0 | 3.1 | 3.0 |
| 20 | 3.1 | 3.0 | 3.2 | 3.3 | 3.1 | 4.2 | 3.2 | 4.5 | 3.1 | 3.0 | 3.1 | 3.0 |
| 21 | 3.5 | 3.0 | 3.2 | 3.3 | 3.2 | 3.9 | 3.1 | 3.8 | 3.0 | 3.0 | 3.1 | 3.0 |
| 22 | 3.5 | 3.1 | 3.2 | 3.2 | 3.2 | 4.0 | 3.3 | 4.1 | 3.2 | 3.0 | 3.0 | 3.0 |
| 23 | 3.9 | 3.2 | 3.3 | 3.1 | 3.1 | 4.3 | 3.8 | 4.6 | 3.2 | --- | 3.0 | 3.1 |
| 24 | 3.5 | 3.8 | 3.3 | 3.1 | 3.2 | 4.3 | 3.7 | 3.8 | 3.1 | --- | 3.0 | 3.2 |
| 25 | 3.3 | 2.9 | 3.3 | 3.0 | 3.3 | 4.3 | 3.5 | 3.3 | 3.0 | --- | 3.0 | 3.3 |
| 26 | 3.5 | 3.1 | 3.3 | 3.1 | 3.3 | 4.2 | 3.3 | 3.9 | 3.0 | --- | 3.0 | 3.3 |
| 27 | 4.3 | 3.1 | 3.2 | 3.0 | 3.3 | 4.1 | 3.2 | 4.4 | 3.0 | --- | 3.0 | 3.1 |
| 28 | 3.4 | 3.0 | 3.1 | 3.0 | 3.3 | 4.1 | 3.2 | 4.4 | 2.9 | --- | 3.0 | 3.0 |
| 29 | 2.9 | 3.1 | 3.3 | 3.0 | --- | 4.1 | 3.1 | 4.2 | 3.0 | --- | 3.0 | 3.0 |
| 30 | 3.0 | 3.2 | 3.3 | 3.2 | --- | 4.2 | 3.1 | 4.1 | 3.0 | --- | 3.0 | 3.0 |
| 31 | 3.1 | --- | 3.2 | 3.2 | --- | 4.2 | --- | 4.0 | --- | --- | 3.1 | --- |
| TOTAL | 100.5 | 93.3 | 99.8 | --- | 88.1 | 117.1 | 111.7 | 107.1 | 107.2 | --- | --- | 91.5 |
| MEAN | 3.24 | 3.11 | 3.22 | --- | 3.15 | 3.78 | 3.72 | 3.45 | 3.57 | --- | --- | 3.05 |
| MAX | 4.3 | 3.8 | 3.4 | --- | 3.3 | 4.3 | 4.2 | 4.6 | 4.3 | --- | --- | 3.3 |
| MIN | 2.9 | 2.9 | 3.1 | --- | 2.8 | 3.1 | 3.1 | 2.9 | 2.9 | --- | --- | 2.9 |
| AC-FT | 199 | 185 | 198 | --- | 175 | 232 | 222 | 212 | 213 | --- | --- | 181 |

NOTE: Canal was out of service July 23 to Aug. 9 and all flow remained in natural channel. Discharges were above 5.0 ft³/s Jan. 6, 7 and 16.

11374000 COW CREEK NEAR MILLVILLE, CA

LOCATION.--Lat 40°30'19", long 122°13'56", in NE 1/4 NW 1/4 sec.32, T.31 N., R.3 W., Shasta County, Hydrologic Unit 18020101, on right bank 2.9 mi upstream from mouth, 4.2 mi southwest of Millville, and 4.3 mi downstream from Little Cow Creek.

DRAINAGE AREA.--425 mi².

PERIOD OF RECORD.--October 1949 to current year.

CHEMICAL DATA: Water years 1959-66.

WATER TEMPERATURE: Water years 1966-71, 1973-76, 1978-79.

SEDIMENT DATA: Water year 1978.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 385.7 ft above National Geodetic Vertical Datum of 1929. Prior to June 11, 1987, at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Numerous small diversions upstream from station for irrigation. See schematic diagram of upper Sacramento River basin.

AVERAGE DISCHARGE.--41 years, 681 ft³/s, 493,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,700 ft³/s, Nov. 16, 1981, gage height, 24.22 ft, present datum; maximum gage height, 24.55 ft, Dec. 27, 1951, present datum; minimum daily, 0.02 ft³/s, July 29, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1937 or 1940 reached a stage of 26.8 ft from floodmarks, present datum; probable backwater effect from high flows on the Sacramento River.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,900 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Jan. 7 | 2345 | *19,000 | *16.11 | | | | |
| Minimum daily, 9.4 ft ³ /s, Aug. 12. | | | | | | | |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|-------|-------|-------|-------|-------|-------|------|-------|------|
| 1 | 100 | 152 | 128 | 109 | 882 | 266 | 281 | 133 | 1760 | 59 | 17 | 18 |
| 2 | 94 | 143 | 126 | 130 | 515 | 728 | 269 | 122 | 1080 | 54 | 17 | 19 |
| 3 | 88 | 139 | 125 | 116 | 624 | 1690 | 251 | 118 | 843 | 54 | 18 | 18 |
| 4 | 86 | 136 | 123 | 108 | 1390 | 1540 | 248 | 113 | 703 | 51 | 15 | 17 |
| 5 | 86 | 134 | 123 | 106 | 657 | 2370 | 261 | 97 | 579 | 49 | 14 | 17 |
| 6 | 86 | 131 | 123 | 106 | 710 | 1090 | 254 | 84 | 494 | 51 | 13 | 16 |
| 7 | 85 | 130 | 126 | 4780 | 528 | 794 | 246 | 79 | 443 | 49 | 12 | 19 |
| 8 | 83 | 129 | 118 | 9010 | 425 | 913 | 252 | 74 | 380 | 45 | 13 | 20 |
| 9 | 84 | 129 | 122 | 1880 | 372 | 709 | 276 | 72 | 334 | 41 | 14 | 21 |
| 10 | 81 | 128 | 118 | 851 | 347 | 2280 | 241 | 68 | 288 | 39 | 13 | 19 |
| 11 | 80 | 125 | 115 | 544 | 331 | 1350 | 226 | 64 | 257 | 38 | 12 | 22 |
| 12 | 80 | 123 | 115 | 2390 | 305 | 875 | 222 | 63 | 216 | 34 | 9.4 | 23 |
| 13 | 78 | 121 | 111 | 4320 | 266 | 692 | 210 | 63 | 197 | 34 | 11 | 21 |
| 14 | 80 | 122 | 112 | 2510 | 240 | 628 | 203 | 70 | 176 | 32 | 11 | 21 |
| 15 | 81 | 118 | 113 | 1060 | 222 | 578 | 186 | 70 | 154 | 28 | 11 | 22 |
| 16 | 78 | 118 | 113 | 2380 | 297 | 511 | 191 | 65 | 170 | 27 | 12 | 23 |
| 17 | 78 | 119 | 111 | 1120 | 364 | 471 | 189 | 63 | 167 | 33 | 13 | 23 |
| 18 | 78 | 117 | 108 | 689 | 412 | 441 | 185 | 56 | 149 | 33 | 29 | 22 |
| 19 | 74 | 117 | 106 | 525 | 464 | 423 | 169 | 60 | 130 | 30 | 26 | 25 |
| 20 | 78 | 117 | 106 | 433 | 400 | 409 | 170 | 82 | 115 | 30 | 20 | 21 |
| 21 | 86 | 113 | 106 | 368 | 371 | 398 | 161 | 120 | 110 | 28 | 19 | 21 |
| 22 | 134 | 113 | 106 | 325 | 501 | 384 | 164 | 129 | 107 | 25 | 19 | 21 |
| 23 | 1090 | 114 | 106 | 293 | 442 | 390 | 216 | 668 | 94 | 24 | 19 | 17 |
| 24 | 2340 | 127 | 106 | 266 | 381 | 380 | 366 | 344 | 85 | 26 | 16 | 24 |
| 25 | 1550 | 197 | 106 | 245 | 343 | 370 | 227 | 211 | 80 | 22 | 12 | 27 |
| 26 | 401 | 438 | 105 | 230 | 319 | 358 | 188 | 207 | 76 | 23 | 18 | 29 |
| 27 | 376 | 197 | 102 | 213 | 293 | 349 | 176 | 1260 | 70 | 23 | 19 | 31 |
| 28 | 309 | 153 | 104 | 200 | 279 | 340 | 164 | 1560 | 69 | 19 | 20 | 31 |
| 29 | 212 | 138 | 104 | 194 | --- | 319 | 150 | 1630 | 67 | 18 | 21 | 27 |
| 30 | 179 | 130 | 105 | 223 | --- | 306 | 144 | 4920 | 63 | 18 | 23 | 25 |
| 31 | 163 | --- | 104 | 244 | --- | 296 | --- | 4510 | --- | 19 | 22 | --- |
| TOTAL | 8498 | 4268 | 3496 | 35968 | 12680 | 22648 | 6486 | 17175 | 9456 | 1056 | 508.4 | 660 |
| MEAN | 274 | 142 | 113 | 1160 | 453 | 731 | 216 | 554 | 315 | 34.1 | 16.4 | 22.0 |
| MAX | 2340 | 438 | 128 | 9010 | 1390 | 2370 | 366 | 4920 | 1760 | 59 | 29 | 31 |
| MIN | 74 | 113 | 102 | 106 | 222 | 266 | 144 | 56 | 63 | 18 | 9.4 | 16 |
| AC-FT | 16860 | 8470 | 6930 | 71340 | 25150 | 44920 | 12860 | 34070 | 18760 | 2090 | 1010 | 1310 |

CAL YR 1989 TOTAL 204111 MEAN 559 MAX 9680 MIN 19 AC-FT 404900
WTR YR 1990 TOTAL 122899.4 MEAN 337 MAX 9010 MIN 9.4 AC-FT 243800

SACRAMENTO RIVER BASIN

11376000 COTTONWOOD CREEK NEAR COTTONWOOD, CA

LOCATION.--Lat 40°23'14", long 122°14'15", in NE 1/4 NE 1/4 sec.7, T.29 N., R.3 W., Shasta County, Hydrologic Unit 18020102, on left bank 2.2 mi east of Cottonwood and 2.5 mi upstream from mouth.

DRAINAGE AREA.--927 mi².

PERIOD OF RECORD.--October 1940 to current year.

CHEMICAL DATA: Water years 1982-85.

WATER TEMPERATURE: Water years 1963-67, 1977-85.

SEDIMENT DATA: Water years 1957-67, 1977-85.

REVISED RECORDS.--WSP 1345: 1943, 1944(M), 1946-47, 1949(M), 1951-52. WSP 1931: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 363.80 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to July 26, 1963, on right bank at datum 3.59 ft higher. July 26, 1963, to Sept. 13, 1972, at site 250 ft downstream on right bank at present datum. Sept. 21, 1967, to Jan. 14, 1968, supplementary gage at a site 1,450 ft downstream on right bank at datum 2.35 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Small diversions for irrigation upstream from station. At times during irrigation season, Cottonwood Creek receives water from the Sacramento River by way of Anderson-Cottonwood Irrigation District Canal. See schematic diagram of upper Sacramento River basin.

AVERAGE DISCHARGE.--50 years, 857 ft³/s, 620,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,000 ft³/s, Mar. 1, 1983, gage height, 21.59 ft from rating curve extended above 34,000 ft³/s on basis of runoff comparisons with upstream stations then in use; minimum, 15 ft³/s several days during September 1945.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Jan. 13 | 2400 | *4,050 | *9.48 | | | | |
| Minimum daily, 52 ft ³ /s, Aug. 12, Sept. 19. | | | | | | | |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|-------|-------|-------|------|-------|-------|------|------|------|
| 1 | 294 | 194 | 120 | 82 | 265 | 411 | 203 | 125 | 1250 | 127 | 87 | 115 |
| 2 | 195 | 173 | 117 | 82 | 291 | 448 | 197 | 119 | 1010 | 139 | 82 | 95 |
| 3 | 142 | 161 | 114 | 82 | 293 | 840 | 191 | 112 | 841 | 154 | 83 | 81 |
| 4 | 131 | 149 | 114 | 82 | 407 | 852 | 183 | 107 | 739 | 130 | 78 | 65 |
| 5 | 123 | 139 | 114 | 82 | 359 | 846 | 178 | 101 | 629 | 136 | 75 | 65 |
| 6 | 102 | 134 | 114 | 82 | 318 | 662 | 174 | 104 | 566 | 137 | 66 | 69 |
| 7 | 110 | 128 | 111 | 116 | 300 | 571 | 174 | 95 | 541 | 132 | 60 | 67 |
| 8 | 122 | 127 | 109 | 2510 | 270 | 520 | 177 | 90 | 472 | 136 | 63 | 70 |
| 9 | 114 | 122 | 106 | 1530 | 255 | 471 | 189 | 99 | 380 | 118 | 80 | 85 |
| 10 | 105 | 120 | 99 | 824 | 243 | 477 | 215 | 113 | 358 | 98 | 58 | 71 |
| 11 | 145 | 117 | 95 | 602 | 238 | 487 | 186 | 121 | 346 | 100 | 60 | 78 |
| 12 | 136 | 114 | 93 | 513 | 238 | 429 | 174 | 114 | 302 | 89 | 52 | 76 |
| 13 | 110 | 111 | 93 | 1770 | 238 | 396 | 167 | 107 | 276 | 91 | 57 | 69 |
| 14 | 110 | 110 | 93 | 2730 | 238 | 381 | 154 | 96 | 262 | 109 | 58 | 68 |
| 15 | 113 | 107 | 93 | 1190 | 226 | 381 | 153 | 85 | 250 | 115 | 53 | 79 |
| 16 | 103 | 104 | 93 | 883 | 250 | 369 | 149 | 78 | 229 | 103 | 59 | 93 |
| 17 | 112 | 101 | 93 | 705 | 354 | 363 | 149 | 83 | 212 | 101 | 70 | 78 |
| 18 | 105 | 98 | 91 | 580 | 341 | 363 | 149 | 84 | 210 | 115 | 70 | 61 |
| 19 | 96 | 96 | 90 | 503 | 298 | 363 | 149 | 78 | 212 | 149 | 96 | 52 |
| 20 | 103 | 95 | 88 | 448 | 275 | 357 | 149 | 90 | 199 | 129 | 85 | 53 |
| 21 | 135 | 93 | 87 | 386 | 266 | 345 | 153 | 146 | 186 | 106 | 82 | 62 |
| 22 | 138 | 93 | 87 | 343 | 256 | 338 | 150 | 194 | 181 | 94 | 64 | 70 |
| 23 | 293 | 93 | 87 | 318 | 256 | 328 | 171 | 536 | 175 | 95 | 64 | 79 |
| 24 | 1080 | 99 | 87 | 293 | 292 | 315 | 212 | 431 | 166 | 84 | 64 | 61 |
| 25 | 653 | 133 | 87 | 271 | 348 | 302 | 161 | 293 | 151 | 87 | 68 | 121 |
| 26 | 474 | 170 | 87 | 254 | 393 | 287 | 146 | 257 | 150 | 80 | 67 | 185 |
| 27 | 381 | 170 | 87 | 237 | 408 | 272 | 147 | 679 | 138 | 82 | 67 | 121 |
| 28 | 356 | 157 | 85 | 225 | 413 | 254 | 144 | 3020 | 131 | 84 | 86 | 97 |
| 29 | 320 | 138 | 85 | 218 | --- | 235 | 146 | 1630 | 134 | 74 | 90 | 89 |
| 30 | 270 | 128 | 85 | 210 | --- | 224 | 145 | 1250 | 126 | 76 | 94 | 79 |
| 31 | 223 | --- | 83 | 211 | --- | 212 | --- | 1350 | --- | 93 | 108 | --- |
| TOTAL | 6894 | 3774 | 2987 | 18362 | 8329 | 13099 | 5035 | 11787 | 10822 | 3363 | 2246 | 2454 |
| MEAN | 222 | 126 | 96.4 | 592 | 297 | 423 | 168 | 380 | 361 | 108 | 72.5 | 81.8 |
| MAX | 1080 | 194 | 120 | 2730 | 413 | 852 | 215 | 3020 | 1250 | 154 | 108 | 185 |
| MIN | 96 | 93 | 83 | 82 | 226 | 212 | 144 | 78 | 126 | 74 | 52 | 52 |
| AC-FT | 13670 | 7490 | 5920 | 36420 | 16520 | 25980 | 9990 | 23380 | 21470 | 6670 | 4450 | 4870 |

CAL YR 1989 TOTAL 165456 MEAN 453 MAX 6840 MIN 33 AC-FT 328200
WTR YR 1990 TOTAL 89152 MEAN 244 MAX 3020 MIN 52 AC-FT 176800

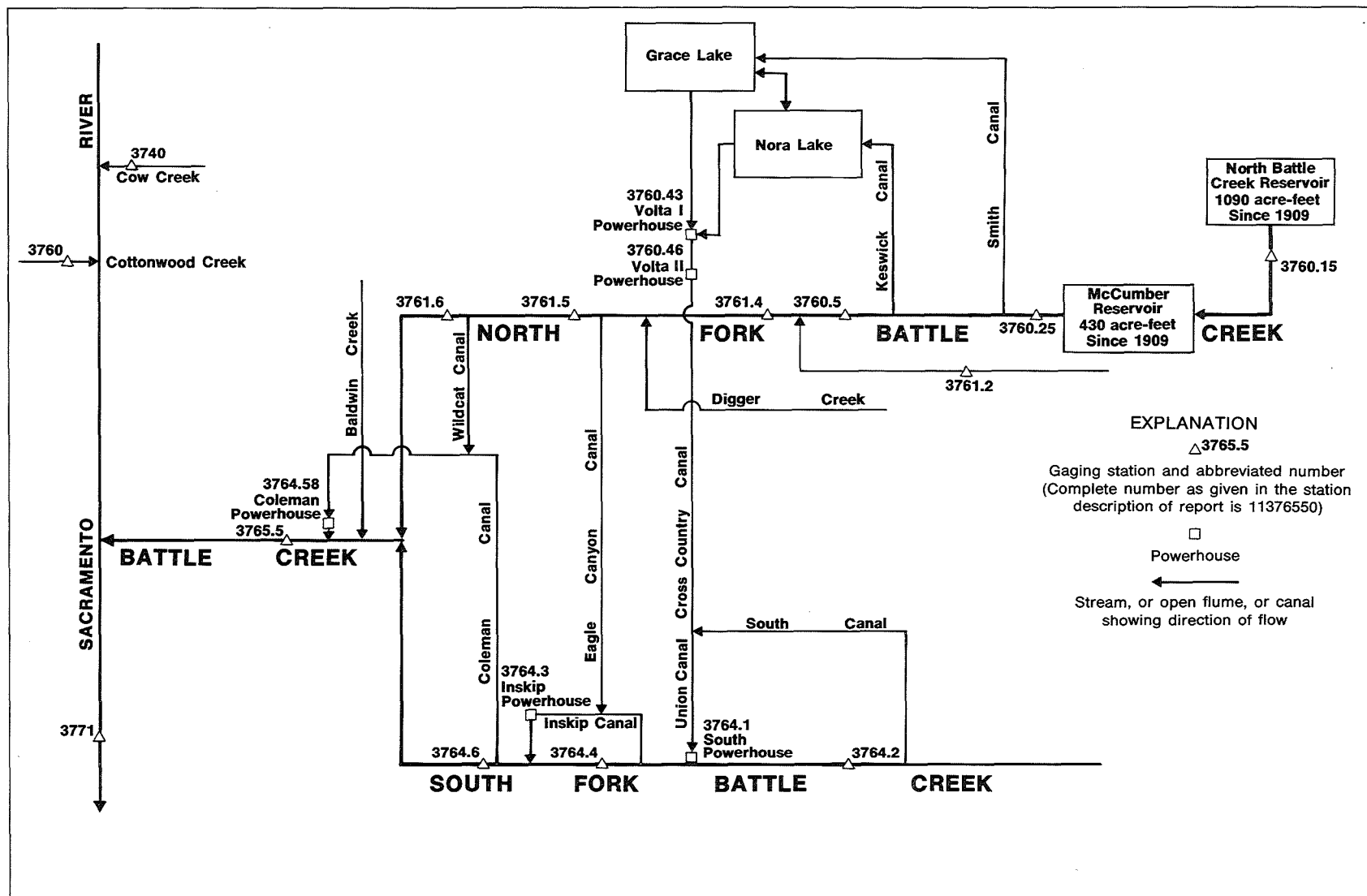


Figure 30. Diversions and storage in Battle Creek basin.

11376015 NORTH FORK BATTLE CREEK BELOW NORTH BATTLE CREEK DAM, NEAR MANZANITA LAKE, CA

LOCATION.--Lat 40°36'10", long 121°39'17", in SE 1/4 SE 1/4 sec.20, T.32 N., R.3 E., Shasta County, Hydrologic Unit 18020118, Lassen National Forest, on left bank 300 ft downstream from North Battle Creek Dam and 6.7 mi northwest of Manzanita Lake.

DRAINAGE AREA.--6.40 mi².

PERIOD OF RECORD.--October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978-87 available in files of the U.S. Geological Survey. Fragmentary records for water years 1920-77 in files of the Pacific Gas & Electric Co.

GAGE.--Water-stage recorder and V-notch weir. Elevation of gage is 5,560 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. This station records fishwater release only. The minimum release requirement is 0.30 ft³/s Oct. 1-31 and Apr. 1 to Sept. 30. No license requirement Nov. 1 to Mar. 31, records not computed. Each fall, North Battle Creek Reservoir is drafted and flows may exceed the rated limits of the weirs; flow is computed to 32 ft³/s. See schematic diagram of Battle Creek basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-----|-----|-----|-----|-----|-------|-------|-------|-------|-------|--------|
| 1 | 20 | --- | --- | --- | --- | --- | .92 | .76 | 11 | .95 | .92 | .89 |
| 2 | 13 | --- | --- | --- | --- | --- | .89 | .77 | 12 | .95 | .86 | .88 |
| 3 | 3.2 | --- | --- | --- | --- | --- | .88 | .73 | 9.0 | .92 | .85 | .94 |
| 4 | 1.4 | --- | --- | --- | --- | --- | .90 | .67 | 2.9 | .92 | .85 | 1.0 |
| 5 | 1.3 | --- | --- | --- | --- | --- | .93 | .61 | 5.4 | .92 | .85 | 1.1 |
| 6 | 1.2 | --- | --- | --- | --- | --- | .94 | .59 | 6.1 | .92 | .88 | .93 |
| 7 | 1.1 | --- | --- | --- | --- | --- | .69 | .55 | 5.4 | .92 | .85 | .92 |
| 8 | 1.1 | --- | --- | --- | --- | --- | .44 | .54 | 4.5 | .91 | .85 | .92 |
| 9 | .88 | --- | --- | --- | --- | --- | .56 | .54 | 3.8 | .92 | .82 | .96 |
| 10 | .74 | --- | --- | --- | --- | --- | .57 | .86 | 3.3 | .89 | .87 | 1.0 |
| 11 | .74 | --- | --- | --- | --- | --- | .57 | 1.1 | 2.8 | .85 | .88 | 16 |
| 12 | .74 | --- | --- | --- | --- | --- | .54 | 1.2 | 2.6 | 2.8 | .80 | 22 |
| 13 | .74 | --- | --- | --- | --- | --- | .50 | 1.2 | 2.4 | 5.6 | .75 | 26 |
| 14 | .74 | --- | --- | --- | --- | --- | .44 | 1.2 | 1.7 | 5.8 | .75 | 27 |
| 15 | .66 | --- | --- | --- | --- | --- | .39 | .84 | 1.8 | 5.6 | .76 | 26 |
| 16 | .64 | --- | --- | --- | --- | --- | .38 | .59 | 2.0 | 5.6 | .74 | 27 |
| 17 | .64 | --- | --- | --- | --- | --- | .38 | .58 | 1.8 | 3.2 | .72 | 29 |
| 18 | .64 | --- | --- | --- | --- | --- | .54 | .58 | 1.5 | 1.1 | .76 | 30 |
| 19 | .67 | --- | --- | --- | --- | --- | .73 | .59 | 1.4 | .92 | .79 | 29 |
| 20 | .70 | --- | --- | --- | --- | --- | .69 | .59 | 1.2 | .92 | .77 | 28 |
| 21 | .67 | --- | --- | --- | --- | --- | .67 | .54 | 1.0 | .90 | 1.1 | 11 |
| 22 | .74 | --- | --- | --- | --- | --- | .70 | .61 | .91 | .88 | 1.3 | .82 |
| 23 | .75 | --- | --- | --- | --- | --- | .78 | .71 | .85 | .88 | 1.3 | .73 |
| 24 | .74 | --- | --- | --- | --- | --- | .69 | .68 | .81 | .88 | 1.3 | .71 |
| 25 | .74 | --- | --- | --- | --- | --- | .62 | .67 | .78 | .88 | 1.3 | .82 |
| 26 | .74 | --- | --- | --- | --- | --- | .64 | .69 | .78 | .85 | 1.3 | .79 |
| 27 | .75 | --- | --- | --- | --- | --- | .59 | .74 | .79 | .85 | 1.2 | .73 |
| 28 | .74 | --- | --- | --- | --- | --- | .59 | .69 | .76 | .85 | 1.0 | .73 |
| 29 | .74 | --- | --- | --- | --- | --- | .57 | .87 | .84 | 3.0 | .97 | .71 |
| 30 | 9.2 | --- | --- | --- | --- | --- | .62 | 1.3 | .98 | 2.8 | .95 | .68 |
| 31 | 20 | --- | --- | --- | --- | --- | --- | 7.1 | --- | 1.1 | .94 | --- |
| TOTAL | 86.64 | --- | --- | --- | --- | --- | 19.35 | 29.69 | 91.10 | 55.48 | 28.98 | 287.26 |
| MEAN | 2.79 | --- | --- | --- | --- | --- | .64 | .96 | 3.04 | 1.79 | .93 | 9.58 |
| MAX | 20 | --- | --- | --- | --- | --- | .94 | 7.1 | 12 | 5.8 | 1.3 | 30 |
| MIN | .64 | --- | --- | --- | --- | --- | .38 | .54 | .76 | .85 | .72 | .68 |
| AC-FT | 172 | --- | --- | --- | --- | --- | 38 | 59 | 181 | 110 | 57 | 570 |

11376025 NORTH FORK BATTLE CREEK BELOW MCCUMBER DAM, NEAR MANZANITA LAKE, CA

LOCATION.--Lat 40°32'15", long 121°43'53", in SW 1/4 SE 1/4 sec.15, T.31 N., R.2 E., Shasta County, Hydrologic Unit 18020118, on right bank 300 ft downstream from McCumber Dam, 3.0 mi northwest of Viola, and 9.0 mi west of Manzanita Lake.

DRAINAGE AREA.--27.6 mi².

PERIOD OF RECORD.--October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978-87 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch weir. Elevation of gage is 4,080 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. This station records fishwater release only. The release requirement is 0.30 ft³/s at all times; flow is computed to 211 ft³/s. See schematic diagram of Battle Creek basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|------|------|-------|--------|-------|-------|--------|
| 1 | 2.8 | 20 | 6.7 | 4.5 | 4.5 | 1.4 | 1.4 | 1.1 | 19 | .53 | 1.1 | 1.1 |
| 2 | 2.8 | 20 | 5.2 | 4.3 | 4.5 | 1.6 | 1.4 | 1.1 | 17 | .53 | 1.1 | .93 |
| 3 | 2.8 | 19 | 3.7 | 4.1 | 6.3 | 1.4 | 1.4 | 1.0 | 15 | .44 | 1.0 | .93 |
| 4 | 2.6 | 19 | 3.7 | 4.3 | 7.7 | 1.4 | 1.4 | .93 | 7.2 | .36 | .98 | .93 |
| 5 | 2.2 | 9.8 | 3.7 | 4.5 | 7.4 | 1.4 | 1.4 | .93 | 5.7 | .34 | .93 | .93 |
| 6 | 2.2 | 5.4 | 3.7 | 4.5 | 7.2 | 1.4 | 1.4 | .93 | 5.9 | .86 | .93 | .82 |
| 7 | 2.1 | 5.4 | 3.7 | 4.7 | 5.6 | 1.4 | 1.4 | .97 | 5.2 | 1.4 | .93 | .77 |
| 8 | 2.0 | 5.1 | 3.4 | 13 | 4.5 | 1.4 | 1.5 | .98 | 4.1 | 1.6 | .99 | .77 |
| 9 | 1.9 | 4.9 | 3.4 | 18 | 4.5 | 1.4 | 1.6 | .93 | 3.2 | 1.3 | .93 | .97 |
| 10 | 2.0 | 4.9 | 3.3 | 18 | 4.5 | 1.2 | 1.4 | .93 | 2.7 | 1.1 | .50 | .98 |
| 11 | 2.6 | 4.2 | 3.1 | 18 | 5.6 | 1.1 | 1.4 | .93 | 2.1 | 1.2 | .63 | 11 |
| 12 | 2.9 | 3.4 | 3.3 | 17 | 6.7 | 1.1 | 1.4 | .91 | 2.1 | 1.4 | .45 | 20 |
| 13 | 2.5 | 3.4 | 3.4 | 17 | 6.7 | 1.1 | 1.4 | .93 | 1.8 | 1.4 | .70 | 27 |
| 14 | 2.3 | 3.4 | 3.4 | 15 | 4.4 | 1.1 | 1.4 | .69 | 1.1 | 1.4 | .85 | 28 |
| 15 | 2.2 | 3.4 | 3.2 | 13 | 3.1 | 1.1 | 1.4 | .53 | 1.2 | 1.4 | .63 | 27 |
| 16 | 2.2 | 5.8 | 3.1 | 13 | 3.1 | 1.1 | 1.4 | .88 | 1.0 | 1.3 | .34 | 29 |
| 17 | 2.2 | 7.7 | 3.1 | 7.5 | 3.1 | 1.1 | 1.2 | 1.1 | .95 | 1.3 | .34 | 23 |
| 18 | 2.2 | 7.7 | 3.1 | 3.7 | 3.1 | 1.1 | 1.1 | 1.0 | .95 | 1.4 | .43 | 18 |
| 19 | 2.2 | 7.7 | 3.1 | 3.7 | 3.1 | 1.1 | 1.1 | .84 | .94 | 1.4 | .71 | 8.7 |
| 20 | 1.8 | 4.9 | 4.3 | 4.3 | 3.2 | 1.1 | 1.1 | .80 | .93 | 1.4 | .86 | 1.1 |
| 21 | 4.7 | 2.9 | 5.9 | 5.7 | 3.1 | 1.1 | 1.1 | .55 | .93 | 1.4 | .37 | 1.5 |
| 22 | 6.4 | 5.7 | 6.7 | 6.6 | 3.1 | 1.1 | 1.1 | .84 | .93 | 1.4 | .63 | 1.1 |
| 23 | 3.6 | 6.7 | 6.7 | 6.7 | 3.1 | 1.1 | 1.1 | 1.0 | .80 | 1.4 | .87 | .98 |
| 24 | 4.6 | 6.7 | 6.7 | 6.7 | 3.1 | 1.1 | 1.1 | .95 | .77 | 1.4 | 1.0 | .94 |
| 25 | 14 | 6.7 | 6.7 | 6.7 | 3.1 | 1.1 | 1.1 | .93 | .77 | 1.3 | .73 | 1.7 |
| 26 | 20 | 6.7 | 6.7 | 6.7 | 2.8 | 1.1 | 1.1 | .91 | .71 | 1.3 | .67 | 2.2 |
| 27 | 19 | 6.7 | 6.7 | 6.3 | 1.8 | 1.1 | 1.1 | .96 | .61 | 1.1 | .51 | 1.7 |
| 28 | 18 | 6.7 | 5.2 | 6.3 | 1.4 | 1.3 | 1.1 | 1.0 | .53 | 1.1 | .85 | 1.6 |
| 29 | 16 | 6.7 | 4.1 | 5.4 | --- | 1.4 | 1.1 | 1.4 | .53 | .88 | 1.3 | 1.8 |
| 30 | 17 | 6.7 | 4.3 | 4.7 | --- | 1.4 | 1.2 | 13 | .53 | 1.1 | 1.4 | 1.4 |
| 31 | 20 | --- | 4.5 | 4.5 | --- | 1.4 | --- | 25 | --- | 1.1 | 1.2 | --- |
| TOTAL | 189.8 | 227.3 | 137.8 | 258.4 | 120.3 | 38.2 | 38.3 | 64.95 | 105.18 | 35.54 | 24.86 | 216.85 |
| MEAN | 6.12 | 7.58 | 4.45 | 8.34 | 4.30 | 1.23 | 1.28 | 2.10 | 3.51 | 1.15 | .80 | 7.23 |
| MAX | 20 | 20 | 6.7 | 18 | 7.7 | 1.6 | 1.6 | 25 | 19 | 1.6 | 1.4 | 29 |
| MIN | 1.8 | 2.9 | 3.1 | 3.7 | 1.4 | 1.1 | 1.1 | .53 | .53 | .34 | .34 | .77 |
| AC-FT | 376 | 451 | 273 | 513 | 239 | 76 | 76 | 129 | 209 | 70 | 49 | 430 |
| a | 130 | 107 | 96 | 99 | 171 | 387 | 372 | 428 | 364 | 260 | 186 | 166 |

WTR YR 1990 TOTAL 1457.48 MEAN 3.99 MAX 29 MIN .34 AC-FT 2890

a Contents, in acre-feet, at end of month for McCumber Reservoir, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

POWERPLANTS IN BATTLE CREEK BASIN

- 11376043 VOLTA NO. 1 POWERPLANT NEAR MANTON, CA, in NW 1/4 NE 1/4 sec.16, T.30 N., R.1 E., Shasta County, Hydrologic Unit 18020118, 1.7 mi north of Manton. Powerplant consists of one unit with a total of 8,550 KW normal operating capacity. See schematic diagram of Battle Creek basin.
- 11376046 VOLTA NO. 2 POWERPLANT NEAR MANTON, CA, in NE 1/4 SW 1/4 sec.16, T.30 N., R.1 E., Shasta County, Hydrologic Unit 18020118, 1.2 mi northeast of Manton. Powerplant consists of one unit with a total of 956 KW normal operating capacity. See schematic diagram of Battle Creek basin.
- 11376410 SOUTH POWERPLANT NEAR MANTON, CA, in NE 1/4 SE 1/4 sec.5, T.29 N., R.1 E., Tehama County, Hydrologic Unit 18020118, 2.7 mi south of Manton. Powerplant consists of one unit with a total of 6,750 KW normal operating capacity. See schematic diagram of Battle Creek basin.
- 11376430 INSKIP POWERPLANT NEAR MANTON, CA, in NE 1/4 NW 1/4 sec.3, T.29 N., R.1 W., Tehama County, Hydrologic Unit 18020118, 5.5 mi southwest of Manton. Powerplant consists of one unit with a total of 7,650 KW normal operating capacity. See schematic diagram of Battle Creek basin.
- 11376458 COLEMAN POWERPLANT NEAR COTTONWOOD, CA, in SW 1/4 SW 1/4 sec.32, T.30 N., R.2 W., Shasta County, Hydrologic Unit 18020006, 8.5 mi east of Cottonwood. Powerplant consists of one unit with a total of 12,150 KW normal operating capacity. See schematic diagram of Battle Creek basin.

MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| Date | Volta No. 1 | Volta No. 2 | South | Inskip | Coleman |
|------------|-------------|-------------|--------|--------|---------|
| Oct. | 3,800 | 3,900 | 7,140 | 6,210 | 14,900 |
| Nov. | 3,680 | 3,870 | 9,070 | 11,990 | 14,170 |
| Dec. | 3,300 | 3,410 | 8,810 | 11,580 | 14,090 |
| Jan. | 3,970 | 4,270 | 10,660 | 14,030 | 18,240 |
| Feb. | 3,220 | 3,470 | 9,120 | 12,580 | 16,530 |
| Mar. | 4,930 | 5,440 | 12,700 | 16,040 | 21,360 |
| Apr. | 4,660 | 5,070 | 12,000 | 14,620 | 18,690 |
| May | 4,390 | 4,720 | 10,460 | 13,580 | 17,050 |
| June | 4,430 | 4,760 | 10,800 | 13,840 | 15,920 |
| July | 3,380 | 3,510 | 8,120 | 10,580 | 13,500 |
| Aug. | 2,060 | 2,090 | 6,610 | 9,380 | 10,090 |
| Sept. | 2,780 | 2,850 | 6,670 | 6,950 | 8,490 |

NOTE.--Records were provided by Pacific Gas & Electric Co., in connection with a Federal Energy Regulatory Commission project. Unpublished records for water years 1979-86 available in files of U.S. Geological Survey. Fragmentary records prior to water year 1979 available in files of Pacific Gas & Electric Co.

11376050 NORTH FORK BATTLE CREEK BELOW DIVERSION TO KESWICK DITCH, NEAR MANTON, CA

LOCATION.--Lat 40°30'00", long 121°48'29", in NW 1/4 NE 1/4 sec.36, T.31 N., R.1 E., Shasta County, Hydrologic Unit 18020118, on right bank 4.2 mi east of Shingletown and 5.5 mi northeast of Manton.

PERIOD OF RECORD.--October 1986 to current year (operated as a low-flow station only). Unpublished records for water years 1978-86 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 3,600 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--This station records fishwater release only. The minimum release requirement is 3.0 ft³/s at all times; flow is computed to 4.3 ft³/s. See schematic diagram of Battle Creek basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|
| 1 | 3.3 | 3.3 | 3.7 | 3.5 | 3.7 | 3.8 | 3.5 | 3.4 | 3.9 | 3.7 | --- | 3.6 |
| 2 | 3.3 | 3.4 | 3.6 | 3.5 | 3.6 | 4.0 | 3.5 | 3.5 | 3.8 | --- | --- | 3.6 |
| 3 | 3.3 | 3.4 | 3.6 | 3.5 | 3.6 | 4.0 | 3.5 | 3.6 | 3.8 | 3.6 | --- | 3.6 |
| 4 | 3.3 | 3.5 | 3.6 | 3.4 | 3.7 | 4.0 | 3.5 | 3.6 | 3.7 | 3.6 | --- | 3.6 |
| 5 | 3.3 | 3.5 | 3.6 | 3.4 | 3.7 | 4.0 | 3.6 | 3.6 | 3.7 | 3.6 | --- | 3.6 |
| 6 | 3.3 | 3.6 | 3.6 | 3.4 | 3.7 | 4.0 | 3.6 | 3.8 | 3.7 | 3.6 | --- | 3.6 |
| 7 | 3.3 | 3.6 | 3.5 | 3.8 | 3.6 | 4.0 | 3.6 | 3.7 | 3.7 | 3.6 | --- | 3.6 |
| 8 | 3.3 | 3.6 | 3.5 | 3.7 | 3.6 | 3.9 | 3.6 | 3.5 | 3.6 | 3.6 | --- | 3.6 |
| 9 | 3.3 | 3.6 | 3.5 | 3.4 | 3.6 | 3.9 | 3.6 | 3.6 | 3.6 | --- | --- | 3.6 |
| 10 | 3.3 | 3.6 | 3.5 | 3.3 | 3.6 | 3.8 | 3.5 | 3.7 | 3.6 | --- | --- | --- |
| 11 | 3.3 | 3.6 | 3.5 | 3.3 | 3.6 | 3.7 | 3.5 | 3.7 | 3.6 | --- | --- | --- |
| 12 | 3.3 | 3.6 | 3.5 | 3.3 | 3.7 | 3.7 | 3.5 | 3.7 | 3.6 | --- | --- | --- |
| 13 | 3.3 | 3.6 | 3.5 | 3.5 | 3.7 | 3.7 | 3.5 | 3.7 | 3.6 | --- | --- | --- |
| 14 | 3.3 | 3.5 | 3.5 | 3.4 | 3.6 | 3.7 | 3.5 | 3.7 | 3.6 | --- | --- | --- |
| 15 | 3.3 | 3.5 | 3.5 | 3.3 | 3.6 | 3.7 | 3.5 | 3.7 | 3.6 | --- | --- | --- |
| 16 | 3.3 | 3.6 | 3.5 | 3.3 | 3.6 | 3.7 | 3.5 | 3.6 | 3.6 | --- | --- | --- |
| 17 | 3.4 | 3.7 | 3.5 | 3.1 | 3.6 | 3.8 | 3.5 | 3.7 | e3.6 | --- | --- | --- |
| 18 | 3.4 | 3.7 | 3.5 | 3.5 | 3.5 | 3.8 | 3.5 | 3.6 | e3.6 | --- | --- | --- |
| 19 | 3.4 | 3.7 | 3.5 | 3.8 | 3.5 | 3.8 | 3.5 | 3.7 | 3.8 | --- | --- | --- |
| 20 | 3.3 | 3.7 | 3.5 | 3.7 | 3.5 | 3.8 | 3.5 | 3.7 | 3.7 | --- | --- | --- |
| 21 | 3.4 | 3.5 | 3.5 | 3.6 | 3.5 | 3.8 | 3.5 | 3.7 | 3.6 | --- | --- | 3.6 |
| 22 | 3.7 | 3.6 | 3.6 | 3.7 | 3.5 | 3.9 | 3.5 | 3.7 | 3.6 | --- | --- | 3.5 |
| 23 | 3.8 | 3.7 | 3.6 | 3.7 | 3.5 | 3.9 | 3.6 | 3.8 | 3.6 | --- | --- | 3.5 |
| 24 | 3.5 | 3.8 | 3.6 | 3.7 | 3.6 | 3.9 | 3.5 | 3.7 | 3.6 | --- | 3.7 | 3.5 |
| 25 | 3.6 | 3.9 | 3.6 | 3.7 | 3.6 | 3.9 | 3.5 | 3.6 | 3.6 | --- | 3.6 | 3.6 |
| 26 | 3.6 | 3.8 | 3.6 | 3.7 | 3.6 | 3.9 | 3.5 | 3.7 | 3.6 | --- | 3.6 | 3.6 |
| 27 | 3.6 | 3.7 | 3.6 | 3.7 | 3.7 | 3.9 | 3.5 | 3.8 | 3.6 | --- | 3.6 | 3.6 |
| 28 | 3.4 | 3.7 | 3.5 | 3.7 | 3.7 | 3.7 | 3.4 | 3.8 | 3.6 | --- | 3.6 | 3.6 |
| 29 | 3.3 | 3.7 | 3.5 | 3.6 | --- | 3.6 | 3.4 | 3.7 | 3.7 | --- | 3.6 | 3.6 |
| 30 | 3.3 | 3.7 | 3.5 | 3.7 | --- | 3.6 | 3.4 | 3.9 | 3.7 | --- | 3.7 | 3.6 |
| 31 | 3.3 | --- | 3.5 | 3.7 | --- | 3.5 | --- | 4.2 | --- | --- | 3.6 | --- |
| TOTAL | 104.8 | 108.4 | 109.8 | 109.6 | 101.0 | 118.4 | 105.3 | 114.4 | 109.6 | --- | --- | --- |
| MEAN | 3.38 | 3.61 | 3.54 | 3.54 | 3.61 | 3.82 | 3.51 | 3.69 | 3.65 | --- | --- | --- |
| MAX | 3.8 | 3.9 | 3.7 | 3.8 | 3.7 | 4.0 | 3.6 | 4.2 | 3.9 | --- | --- | --- |
| MIN | 3.3 | 3.3 | 3.5 | 3.1 | 3.5 | 3.5 | 3.4 | 3.4 | 3.6 | --- | --- | --- |
| AC-FT | 208 | 215 | 218 | 217 | 200 | 235 | 209 | 227 | 217 | --- | --- | --- |

e Estimated.

NOTE: Canal was out of service July 9 to Aug. 23 and Sept. 10-20 and all flow remained in the natural channel. Discharges were above 4.3 ft³/s for many days during the year.

SACRAMENTO RIVER BASIN

11376120 BAILEY CREEK BELOW DIVERSION TO PONDEROSA-BAILEY CREEK POWERPLANT, NEAR MANTON, CA

LOCATION.--Lat 40°27'59", long 121°59'20", in NE 1/4 SE 1/4 sec.11, T.30 N., R.1 E., Shasta County, Hydrologic Unit 18020118, on right bank 250 ft downstream from Spring Creek, 0.4 mi upstream from Ponderosa Way, 3.3 mi northeast of Manton, and 3.9 mi southeast of Shingletown.

DRAINAGE AREA.--29.6 mi².

PERIOD OF RECORD.--January to September 1990 (operated as low-flow station only).

GAGE.--Water-stage recorder and V-notch weir. Elevation of gage is 2,650 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--This station records regulated bypass flow or natural flow only. During times of powerplant operation the minimum bypass flow requirement is 17 ft³/s. See schematic diagram of Battle Creek basin.

COOPERATION.--Records were collected by Highland Hydro Constructors, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|------|------|-----|-----|-----|------|------|------|
| 1 | --- | --- | --- | --- | 20 | 24 | 19 | 19 | 21 | e24 | e21 | e17 |
| 2 | --- | --- | --- | --- | 22 | 22 | 19 | 19 | 19 | e24 | e21 | e17 |
| 3 | --- | --- | --- | --- | 23 | 20 | 19 | 19 | 20 | e24 | e20 | e17 |
| 4 | --- | --- | --- | --- | 23 | 20 | 19 | 21 | 18 | e24 | e20 | e17 |
| 5 | --- | --- | --- | --- | 23 | 23 | 19 | 23 | 18 | e24 | e20 | e17 |
| 6 | --- | --- | --- | --- | 23 | 28 | 18 | 26 | 17 | e23 | e20 | e17 |
| 7 | --- | --- | --- | --- | 21 | 26 | 18 | 28 | 19 | e23 | e20 | 17 |
| 8 | --- | --- | --- | --- | 23 | 27 | 19 | 26 | 21 | e23 | e20 | 17 |
| 9 | --- | --- | --- | --- | 23 | 26 | 19 | 24 | --- | e23 | e20 | 17 |
| 10 | --- | --- | --- | --- | 23 | 23 | 18 | 24 | 17 | e23 | e19 | 17 |
| 11 | --- | --- | --- | --- | 23 | 19 | 18 | 24 | 17 | e23 | e19 | 17 |
| 12 | --- | --- | --- | --- | 23 | 24 | 18 | 23 | 19 | e23 | e19 | 17 |
| 13 | --- | --- | --- | 26 | 22 | 23 | 18 | 22 | 16 | e23 | e19 | 17 |
| 14 | --- | --- | --- | 25 | 20 | 23 | 18 | 21 | 16 | e22 | e19 | 17 |
| 15 | --- | --- | --- | 23 | 22 | 23 | 18 | 20 | 19 | e22 | e19 | 17 |
| 16 | --- | --- | --- | 23 | 22 | 22 | 19 | 20 | --- | e22 | e19 | 17 |
| 17 | --- | --- | --- | 26 | 22 | 22 | 19 | 19 | 29 | e22 | e19 | 17 |
| 18 | --- | --- | --- | 25 | 21 | 23 | 18 | 19 | 28 | e22 | e19 | 17 |
| 19 | --- | --- | --- | 24 | 23 | 22 | 19 | 20 | 26 | e22 | e18 | 17 |
| 20 | --- | --- | --- | 23 | 23 | 22 | 19 | 24 | e25 | e22 | e18 | 17 |
| 21 | --- | --- | --- | 24 | 23 | 22 | 19 | 22 | e25 | e22 | e18 | 17 |
| 22 | --- | --- | --- | e24 | 24 | 21 | 20 | 21 | e25 | e22 | e18 | 17 |
| 23 | --- | --- | --- | e23 | 25 | 21 | --- | 21 | e25 | e22 | e18 | 17 |
| 24 | --- | --- | --- | e23 | 25 | 21 | 28 | 21 | e25 | e21 | e18 | 17 |
| 25 | --- | --- | --- | e23 | 25 | 21 | 24 | 23 | e25 | e21 | e18 | 17 |
| 26 | --- | --- | --- | e22 | 23 | 20 | 23 | 25 | e25 | e21 | e18 | 17 |
| 27 | --- | --- | --- | e22 | 26 | 20 | 23 | --- | e24 | e21 | e18 | 17 |
| 28 | --- | --- | --- | 22 | 26 | 20 | 24 | 30 | e24 | e21 | e17 | 17 |
| 29 | --- | --- | --- | 22 | --- | 19 | 22 | 21 | e24 | e21 | e17 | 17 |
| 30 | --- | --- | --- | 21 | --- | 19 | 21 | 25 | e24 | e21 | e17 | 17 |
| 31 | --- | --- | --- | 20 | --- | 19 | --- | 29 | --- | e21 | e17 | --- |
| TOTAL | --- | --- | --- | --- | 642 | 685 | --- | --- | --- | 692 | 583 | 510 |
| MEAN | --- | --- | --- | --- | 22.9 | 22.1 | --- | --- | --- | 22.3 | 18.8 | 17.0 |
| MAX | --- | --- | --- | --- | 26 | 28 | --- | --- | --- | 24 | 21 | 17 |
| MIN | --- | --- | --- | --- | 20 | 19 | --- | --- | --- | 21 | 17 | 17 |
| AC-FT | --- | --- | --- | --- | 1270 | 1360 | --- | --- | --- | 1370 | 1160 | 1010 |

e Estimated.

NOTE: Recorder began operation Jan. 13. No power generation Jan. 13 to Feb. 25, Feb. 27 to Mar. 1, Mar. 6-9, Mar. 12 to May 22, May 25, 26, and June 16 to Sept. 30. Discharge was above 29 ft³/s, on Apr. 23, May 27, June 9, 16.

11376140 NORTH FORK BATTLE CREEK BELOW DIVERSION TO CROSS COUNTRY CANAL, NEAR MANTON, CA

LOCATION.--Lat 40°27'16", long 121°51'35", in SW 1/4 NW 1/4 sec.15, T.30 N., R.1 E., Shasta County, Hydrologic Unit 18020118, on left bank at diversion dam 800 ft upstream from Volta No. 2 Powerplant and 1.4 mi northeast of Manton.

DRAINAGE AREA.--133 mi².

PERIOD OF RECORD.--October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978-87 available in files of the U.S. Geological Survey. Fragmentary records for water year 1977 in files of Pacific Gas & Electric Co.

GAGE.--Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 2,240 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--This station records fishwater release only. The minimum release requirement is 3.0 ft³/s at all times; flow is computed to 6.0 ft³/s. See schematic diagram of Battle Creek basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | e3.9 | 3.9 | 3.9 | 4.0 | --- | 4.5 | --- | 4.1 | --- | 4.1 | 4.2 | 4.0 |
| 2 | e3.9 | 3.8 | 3.9 | 4.0 | 3.8 | --- | --- | 4.1 | --- | 4.1 | 4.3 | 4.0 |
| 3 | e3.9 | 3.8 | 3.9 | 4.0 | 3.9 | --- | --- | 4.1 | --- | 4.1 | 4.3 | 4.0 |
| 4 | 3.9 | 3.8 | 3.9 | 4.0 | 3.8 | --- | --- | 4.1 | --- | 4.0 | 4.2 | 4.2 |
| 5 | 3.9 | 3.8 | 3.9 | 4.1 | 3.8 | --- | --- | 4.1 | --- | 4.1 | 4.2 | 4.2 |
| 6 | 3.9 | 3.8 | 3.9 | 4.3 | 3.9 | --- | --- | 4.2 | --- | 4.1 | 4.3 | 4.2 |
| 7 | 3.9 | 3.8 | 3.9 | --- | 3.8 | --- | --- | --- | --- | 4.0 | 4.2 | 4.2 |
| 8 | 3.9 | --- | 3.9 | --- | 3.8 | --- | --- | --- | --- | 4.0 | 4.2 | 4.3 |
| 9 | 3.9 | 3.8 | 3.9 | --- | 3.7 | --- | --- | --- | --- | 4.0 | 4.1 | 4.3 |
| 10 | 4.0 | 3.8 | 3.9 | 4.1 | 3.7 | --- | --- | 4.3 | --- | 4.0 | 4.2 | 4.3 |
| 11 | 4.0 | 3.8 | 3.9 | 3.7 | 3.7 | --- | --- | 4.3 | --- | 4.0 | 4.2 | 4.3 |
| 12 | 4.1 | 3.9 | 3.9 | --- | 3.7 | --- | --- | 4.2 | --- | 4.0 | --- | 4.3 |
| 13 | 4.1 | 3.8 | 3.9 | --- | 3.8 | 5.5 | --- | 4.3 | --- | --- | 4.2 | 4.3 |
| 14 | 4.1 | 3.8 | 3.9 | --- | 3.7 | 5.5 | --- | 4.2 | 5.5 | 3.9 | --- | 4.3 |
| 15 | 4.1 | 3.8 | 3.9 | 4.2 | 3.7 | 5.3 | --- | 4.2 | 4.9 | 3.9 | 4.2 | 4.4 |
| 16 | 4.1 | 3.8 | 3.9 | 4.6 | 3.8 | 5.0 | --- | 4.2 | --- | 3.9 | --- | 4.3 |
| 17 | 4.1 | 3.8 | 3.9 | 4.7 | 3.7 | 5.0 | --- | 4.2 | 4.8 | 3.9 | --- | 4.4 |
| 18 | 4.1 | 3.8 | 3.9 | 4.2 | 3.7 | 5.0 | 4.2 | 4.3 | --- | 4.0 | --- | 4.3 |
| 19 | 4.1 | 3.8 | 3.9 | 3.9 | 3.7 | --- | 4.2 | 4.3 | 4.0 | 4.0 | --- | 4.3 |
| 20 | 4.1 | 3.8 | 3.9 | 3.7 | 3.7 | --- | 4.2 | 4.3 | --- | 4.0 | --- | 4.2 |
| 21 | 4.1 | 3.8 | 3.9 | 3.7 | 3.7 | --- | 4.2 | 4.2 | --- | 4.1 | --- | 4.3 |
| 22 | 4.1 | 3.8 | 3.9 | 3.7 | 3.8 | --- | 4.2 | 4.3 | --- | 4.2 | --- | 4.3 |
| 23 | --- | 3.8 | 3.9 | 3.7 | 4.0 | --- | --- | --- | --- | 4.2 | --- | 4.3 |
| 24 | --- | 3.9 | 3.9 | 3.7 | 3.9 | --- | --- | --- | --- | 4.2 | 4.3 | 4.3 |
| 25 | --- | 4.2 | 3.8 | 3.7 | 4.3 | --- | 4.1 | 4.2 | --- | 4.2 | 4.3 | 4.3 |
| 26 | --- | --- | 3.8 | --- | 4.6 | --- | 4.1 | 4.4 | 4.6 | 4.3 | 4.3 | --- |
| 27 | --- | 4.0 | 3.9 | 3.7 | 4.8 | --- | 4.1 | --- | 4.3 | 4.2 | 4.3 | --- |
| 28 | 3.7 | 4.0 | 3.9 | 3.7 | 5.2 | --- | 4.1 | --- | 4.1 | 4.2 | 4.2 | 4.2 |
| 29 | --- | 4.0 | 3.9 | 3.7 | --- | --- | 4.1 | --- | 4.1 | 4.1 | 4.1 | 4.3 |
| 30 | 3.7 | 3.9 | 3.9 | 3.7 | --- | --- | 4.1 | --- | 4.1 | 4.2 | 4.1 | 4.3 |
| 31 | 3.8 | --- | 4.0 | 3.8 | --- | --- | --- | --- | --- | 4.2 | 4.1 | --- |
| TOTAL | --- | --- | 120.8 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MEAN | --- | --- | 3.90 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MAX | --- | --- | 4.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MIN | --- | --- | 3.8 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AC-FT | --- | --- | 240 | --- | --- | --- | --- | --- | --- | --- | --- | --- |

e Estimated.

NOTE: Discharges were above 6.0 ft³/s for many days during the year.

11376150 NORTH FORK BATTLE CREEK BELOW DIVERSION TO EAGLE CANYON CANAL, NEAR MANTON, CA

LOCATION.--Lat 40°25'26", long 121°55'09", in NW 1/4 SE 1/4 sec.25, T.30 N., R.1 W., Tehama County, Hydrologic Unit 18020118, on left bank at diversion dam to Eagle Canyon Canal and 2.8 mi southwest of Manton.

DRAINAGE AREA.--186 mi².

PERIOD OF RECORD.--October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978-87 available in files of the U.S. Geological Survey. Fragmentary records for water year 1977 available in files of Pacific Gas & Electric Co.

GAGE.--Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 1,400 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. This station records fishwater release only. The minimum release requirement is 3.0 ft³/s at all times; flow is computed to 5.0 ft³/s. See schematic diagram of Battle Creek basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-------|-------|-----|-------|-----|-------|-----|-----|-------|-------|-----|
| 1 | 3.7 | 4.2 | 4.2 | 4.1 | 4.2 | 4.0 | 4.2 | 4.2 | --- | 4.1 | 4.1 | 4.1 |
| 2 | --- | 4.2 | 4.2 | 4.1 | 4.1 | --- | 4.2 | 4.3 | --- | 4.1 | 4.1 | 4.1 |
| 3 | --- | 4.2 | 4.1 | 4.1 | 4.1 | --- | 4.2 | 4.2 | --- | 4.1 | 4.1 | 4.0 |
| 4 | --- | 4.2 | 4.1 | 4.1 | 4.1 | --- | 4.2 | 4.3 | --- | 4.1 | 4.1 | 4.0 |
| 5 | --- | 4.2 | 4.1 | 4.1 | 4.1 | --- | 4.2 | 4.2 | 4.5 | 4.1 | 4.1 | 4.1 |
| 6 | --- | 4.2 | 4.1 | 4.1 | 4.1 | 4.3 | 4.2 | 4.2 | 4.5 | 4.1 | 4.1 | 4.1 |
| 7 | 4.2 | 4.2 | 4.1 | --- | 4.1 | 4.2 | 4.2 | 4.2 | 4.5 | 4.1 | 4.1 | 4.1 |
| 8 | 4.2 | 4.2 | 4.1 | --- | 4.1 | --- | 4.2 | 4.2 | 4.3 | 4.1 | 4.1 | 4.1 |
| 9 | 4.2 | 4.2 | 4.1 | --- | 4.1 | 4.2 | 4.2 | 4.2 | 4.2 | 4.1 | 4.1 | 4.1 |
| 10 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1 | 4.7 | 4.2 | 4.2 | 4.1 | 4.1 | 4.1 | 4.1 |
| 11 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1 | 4.2 | 4.2 | 4.2 | 4.1 | 4.1 | 4.1 | 4.1 |
| 12 | 4.1 | 4.2 | 4.1 | 4.2 | 4.1 | 4.2 | 4.2 | 4.2 | 4.1 | 4.1 | 4.1 | 4.1 |
| 13 | 4.1 | 4.2 | 4.2 | --- | 4.1 | 4.2 | 4.2 | 4.2 | 4.1 | 4.1 | 4.1 | 4.1 |
| 14 | 4.1 | 4.2 | 4.1 | --- | 4.1 | 4.2 | 4.2 | 4.2 | 4.1 | 4.1 | 4.0 | 4.0 |
| 15 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1 | 4.2 | 4.2 | 4.1 | 4.1 | 4.1 | 4.1 | 4.0 |
| 16 | 4.1 | 4.2 | 4.1 | 4.9 | 4.1 | 4.2 | 4.2 | 4.0 | 4.1 | 4.1 | 4.1 | 4.1 |
| 17 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1 | 4.2 | 4.2 | 4.1 | 4.1 | 4.1 | 4.0 | 4.1 |
| 18 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1 | 4.2 | 4.2 | 4.0 | 4.1 | 4.1 | 4.1 | 4.1 |
| 19 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1 | 4.2 | 4.2 | 4.0 | 4.1 | 4.1 | 4.0 | 4.1 |
| 20 | 4.1 | 4.2 | 4.1 | 4.1 | 4.1 | 4.2 | 4.2 | 4.0 | 4.2 | 4.1 | 4.0 | 4.1 |
| 21 | 4.1 | 4.2 | 4.1 | 4.1 | 4.6 | 4.2 | 4.2 | 4.0 | 4.1 | 4.1 | 4.0 | 4.1 |
| 22 | 4.1 | 4.2 | 4.1 | 4.1 | 4.8 | 4.2 | 4.2 | 4.0 | 4.1 | 4.1 | 4.1 | 4.1 |
| 23 | --- | 4.2 | 4.1 | 4.1 | 4.5 | 4.2 | 4.8 | --- | 4.1 | 4.1 | 4.1 | 4.1 |
| 24 | --- | 4.2 | 4.1 | 4.1 | 4.5 | 4.2 | 4.1 | 4.0 | 4.1 | 4.1 | 4.0 | --- |
| 25 | --- | 4.5 | 4.1 | 4.1 | 4.5 | 4.2 | 4.2 | 4.0 | 4.1 | 4.1 | 4.0 | --- |
| 26 | --- | 4.7 | 4.1 | 4.1 | 4.5 | 4.2 | 4.2 | 4.0 | 4.1 | 4.1 | 4.1 | --- |
| 27 | --- | 4.2 | 4.1 | 4.1 | 4.1 | 4.2 | 4.2 | --- | 4.1 | 4.1 | 4.0 | --- |
| 28 | 4.0 | 4.2 | 4.1 | 4.1 | 4.4 | 4.2 | 4.2 | --- | 4.1 | 4.1 | 4.1 | --- |
| 29 | 4.1 | 4.2 | 4.1 | 4.1 | --- | 4.2 | 4.2 | --- | 4.1 | 4.1 | 4.1 | --- |
| 30 | 4.1 | 4.1 | 4.1 | 4.1 | --- | 4.2 | 4.2 | --- | 4.1 | 4.1 | 4.1 | 4.1 |
| 31 | 4.2 | --- | 4.1 | 4.1 | --- | 4.2 | --- | --- | --- | 4.1 | 4.0 | --- |
| TOTAL | --- | 126.7 | 127.4 | --- | 118.0 | --- | 126.5 | --- | --- | 127.1 | 126.2 | --- |
| MEAN | --- | 4.22 | 4.11 | --- | 4.21 | --- | 4.22 | --- | --- | 4.10 | 4.07 | --- |
| MAX | --- | 4.7 | 4.2 | --- | 4.8 | --- | 4.8 | --- | --- | 4.1 | 4.1 | --- |
| MIN | --- | 4.1 | 4.1 | --- | 4.1 | --- | 4.1 | --- | --- | 4.1 | 4.0 | --- |
| AC-FT | --- | 251 | 253 | --- | 234 | --- | 251 | --- | --- | 252 | 250 | --- |

NOTE: Canal was out of service Oct. 2-6 and Sept. 24-29 and all flow remained in the natural channel. Discharges were above 5.0 ft³/s for many days during the year.

11376160 NORTH FORK BATTLE CREEK BELOW DIVERSION TO WILDCAT CANAL, NEAR MANTON, CA

LOCATION.--Lat 40°25'14", long 121°57'36", in SE 1/4 SW 1/4 sec.27, T.30 N., R.1 W., Tehama County, Hydrologic Unit 18020118, on left bank at diversion dam to Wildcat Canal and 4.9 mi west of Manton.

DRAINAGE AREA.--189 mi².

PERIOD OF RECORD.--October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978-87 available in files of the U.S. Geological Survey. Fragmentary records for water year 1977 available in files of Pacific Gas & Electric Co.

GAGE.--Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 1,080 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--This station records fishwater release only. The minimum release requirement is 3.0 ft³/s at all times; flow is computed to 25 ft³/s. See schematic diagram of Battle Creek basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|-----|-------|-------|-------|-----|-----|-------|-------|-------|
| 1 | e7.0 | e11 | 6.6 | 7.1 | 3.7 | e4.9 | 4.5 | 4.8 | --- | 4.2 | 4.2 | 7.4 |
| 2 | e7.0 | e9.7 | 6.6 | 6.9 | 3.6 | e5.6 | 4.5 | 4.8 | 25 | 4.2 | 4.1 | 7.4 |
| 3 | --- | 7.0 | 6.6 | 6.8 | 4.1 | e8.5 | 4.1 | 4.8 | 14 | 4.2 | 4.1 | 7.4 |
| 4 | --- | 6.6 | 6.6 | 6.8 | 3.5 | e11 | 4.7 | 4.8 | 7.1 | 4.2 | 4.2 | 6.5 |
| 5 | --- | 6.6 | 6.6 | 7.0 | 3.6 | e14 | 5.0 | 4.8 | 4.2 | 4.3 | 4.2 | e7.0 |
| 6 | e8.5 | 6.6 | 6.6 | 7.1 | 3.7 | e5.5 | 4.7 | 4.8 | 4.2 | 4.2 | 4.1 | e7.0 |
| 7 | e4.6 | 6.6 | 6.6 | --- | 3.9 | e4.9 | 4.6 | 4.8 | 4.2 | 4.2 | 4.1 | e7.0 |
| 8 | e5.5 | 6.6 | 6.6 | --- | 3.8 | e7.9 | 4.5 | 4.8 | 4.2 | 4.2 | 4.1 | e7.0 |
| 9 | e7.1 | 6.6 | 6.6 | 10 | 3.8 | 6.7 | 4.4 | 4.9 | 4.2 | 4.3 | 4.2 | e7.0 |
| 10 | e7.5 | 6.6 | 6.6 | 7.8 | 3.8 | 6.6 | 4.4 | 4.9 | 4.2 | 4.2 | 4.1 | e7.0 |
| 11 | e7.5 | 6.6 | 6.6 | 7.5 | 3.8 | 6.1 | 4.4 | 4.9 | 4.2 | 4.3 | 4.2 | e7.0 |
| 12 | e7.5 | 6.6 | 6.6 | 9.8 | 4.0 | 5.9 | 4.4 | 4.9 | 4.2 | 4.2 | 4.1 | e7.0 |
| 13 | e7.3 | 6.6 | 6.9 | --- | 3.8 | 5.1 | 4.4 | 4.9 | 4.2 | 4.2 | 4.1 | e7.0 |
| 14 | e7.3 | 6.6 | 6.7 | 16 | 3.7 | 4.5 | 4.4 | 4.9 | 4.2 | 4.2 | 4.1 | e7.0 |
| 15 | e7.3 | 6.6 | 6.6 | 8.5 | 3.8 | 4.5 | 4.5 | 4.8 | 4.2 | 4.2 | 4.2 | e7.0 |
| 16 | e7.3 | 6.6 | 6.6 | 25 | 4.0 | 4.2 | 4.7 | 4.8 | 4.2 | 4.2 | 4.1 | e7.0 |
| 17 | e7.3 | 6.6 | 6.6 | 9.3 | 4.2 | 4.0 | 4.8 | 4.6 | 4.2 | 4.2 | 4.2 | e5.5 |
| 18 | e7.3 | 6.6 | 6.6 | 7.5 | 4.2 | 4.0 | 5.2 | 4.3 | 4.3 | 4.2 | 4.1 | 4.4 |
| 19 | e7.3 | 6.6 | 6.6 | 7.9 | 4.1 | 4.0 | 4.7 | 4.3 | 4.2 | 4.2 | 4.2 | 4.3 |
| 20 | e7.3 | 6.6 | 6.6 | 6.6 | 4.2 | 4.1 | 4.6 | 4.3 | 4.2 | 4.3 | 4.2 | 4.3 |
| 21 | e4.4 | 6.6 | 6.2 | 7.8 | 4.4 | 4.7 | 4.5 | 4.4 | 4.3 | 4.3 | 4.1 | 4.3 |
| 22 | e2.3 | 6.6 | 6.0 | 6.5 | 4.9 | 4.6 | 4.6 | 4.4 | 4.2 | 4.3 | 4.2 | 4.2 |
| 23 | --- | 6.6 | 6.0 | 8.1 | 5.1 | 4.4 | 5.4 | 5.3 | 4.2 | 4.3 | 4.1 | 4.2 |
| 24 | --- | 6.6 | 6.3 | 8.1 | 5.4 | 4.4 | 5.4 | 4.3 | 4.2 | 4.2 | 4.1 | 15 |
| 25 | --- | 8.4 | 6.6 | 8.1 | 5.2 | 4.5 | 4.8 | 4.3 | 4.2 | 4.2 | 4.1 | 23 |
| 26 | --- | 11 | 6.6 | 5.4 | 5.3 | 4.7 | 4.8 | 4.3 | 4.3 | 4.2 | 5.4 | 25 |
| 27 | --- | 7.0 | 6.6 | 3.6 | 4.8 | 4.6 | 4.9 | 10 | 4.2 | 4.1 | 7.2 | 23 |
| 28 | e7.3 | 6.6 | 6.6 | 3.6 | e5.0 | 4.4 | 5.0 | --- | 4.2 | 4.1 | 7.2 | 19 |
| 29 | e8.0 | 6.6 | 6.6 | 3.4 | --- | 4.4 | 4.8 | --- | 4.2 | 4.2 | 7.2 | 7.6 |
| 30 | e7.3 | 6.6 | 6.7 | 3.5 | --- | 4.4 | 4.8 | --- | 4.2 | 4.2 | 7.3 | 4.2 |
| 31 | e9.6 | --- | 6.7 | 3.7 | --- | 4.5 | --- | --- | --- | 4.2 | 7.4 | --- |
| TOTAL | --- | 212.5 | 203.3 | --- | 117.4 | 171.6 | 140.5 | --- | --- | 130.7 | 145.2 | 260.7 |
| MEAN | --- | 7.08 | 6.56 | --- | 4.19 | 5.54 | 4.68 | --- | --- | 4.22 | 4.68 | 8.69 |
| MAX | --- | 11 | 6.9 | --- | 5.4 | 14 | 5.4 | --- | --- | 4.3 | 7.4 | 25 |
| MIN | --- | 6.6 | 6.0 | --- | 3.5 | 4.0 | 4.1 | --- | --- | 4.1 | 4.1 | 4.2 |
| AC-FT | --- | 421 | 403 | --- | 233 | 340 | 279 | --- | --- | 259 | 288 | 517 |

e Estimated.

NOTE: Discharges were above 25 ft³/s for several days during the year.

SACRAMENTO RIVER BASIN

11376420 SOUTH FORK BATTLE CREEK BELOW DIVERSION TO SOUTH BATTLE CREEK CANAL, NEAR MANTON, CA

LOCATION.--Lat 40°22'08", long 121°47'48", in SW 1/4 NW 1/4 sec.18, T.29 N., R.2 E., Tehama County, Hydrologic Unit 18020118, on right bank at diversion dam to South Battle Creek Canal and 5.9 mi southeast of Manton.

DRAINAGE AREA.--66.7 mi².

PERIOD OF RECORD.--October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978-87 available in files of the U.S. Geological Survey. Fragmentary records for water years 1976-77 in files of Pacific Gas & Electric Co.

GAGE.--Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 2,040 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--This station records fishwater release only. The minimum release requirement is 5.0 ft³/s at all times; flow is computed to 8.9 ft³/s. See schematic diagram of Battle Creek basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-------|-----|-------|-----|-----|-----|-----|-------|-------|-------|
| 1 | 6.2 | 6.7 | 6.2 | 6.5 | 6.4 | 6.2 | --- | 7.5 | --- | 6.5 | 6.6 | 6.3 |
| 2 | 6.4 | 6.7 | 6.2 | 6.5 | 6.3 | 7.8 | --- | 8.3 | --- | 6.6 | 6.6 | 6.3 |
| 3 | 6.3 | 6.7 | 6.2 | 6.5 | 6.4 | --- | --- | 7.8 | --- | 6.5 | 6.6 | 6.4 |
| 4 | 6.3 | 6.7 | 6.2 | 6.5 | 6.3 | --- | --- | 6.8 | --- | 6.5 | 6.6 | 6.3 |
| 5 | 6.2 | 6.8 | 6.4 | 6.4 | 6.3 | --- | --- | 6.8 | 6.6 | 6.6 | e7.0 | 6.3 |
| 6 | 6.2 | 6.8 | 6.5 | 6.5 | 6.3 | --- | --- | 6.9 | 6.6 | 6.6 | e6.8 | 6.4 |
| 7 | 6.2 | 6.7 | 6.4 | --- | 6.3 | --- | --- | 7.0 | 6.6 | 6.5 | e6.6 | 6.6 |
| 8 | 6.2 | 6.5 | 6.6 | --- | 6.3 | --- | --- | 7.0 | 6.5 | 6.5 | e6.8 | 6.6 |
| 9 | 6.2 | 6.4 | 6.5 | --- | 6.2 | --- | --- | 6.8 | 6.5 | 6.5 | 6.6 | 6.6 |
| 10 | 6.2 | 6.5 | 6.5 | 6.8 | 6.2 | --- | 8.5 | 6.5 | 6.6 | 6.4 | 6.5 | 6.6 |
| 11 | 6.2 | 6.5 | 6.5 | 6.5 | 6.3 | 7.5 | 7.4 | 6.2 | 6.6 | 6.5 | 6.5 | 6.4 |
| 12 | 6.2 | 6.5 | 6.5 | --- | 6.4 | 6.5 | 8.1 | 6.2 | 6.7 | 6.6 | 6.7 | 6.2 |
| 13 | 6.2 | 6.5 | 6.4 | --- | 6.5 | 6.4 | 7.7 | 6.3 | 6.7 | 6.5 | 6.7 | 6.3 |
| 14 | 6.2 | 6.1 | 6.3 | --- | 6.6 | 6.4 | 8.2 | 6.6 | 6.7 | 6.5 | 6.7 | 6.4 |
| 15 | 6.3 | 5.7 | 6.4 | --- | 6.6 | 6.3 | 8.4 | 6.4 | 6.7 | 6.5 | 6.7 | 6.4 |
| 16 | 6.3 | 5.7 | 6.3 | 7.4 | 6.6 | 6.2 | 6.9 | 6.4 | 6.6 | 6.5 | 6.8 | 6.3 |
| 17 | 6.2 | 5.7 | 6.4 | 6.6 | 6.6 | 7.7 | 6.4 | 6.4 | 6.6 | 6.6 | 6.8 | 6.2 |
| 18 | 6.2 | 5.6 | 6.4 | 6.6 | 6.5 | --- | 6.3 | 6.5 | 6.6 | 6.6 | 6.8 | 6.3 |
| 19 | 6.2 | 5.6 | 6.5 | 6.6 | 6.4 | --- | 6.3 | 6.6 | 6.5 | 6.5 | 7.5 | 6.3 |
| 20 | 6.3 | 5.6 | 6.5 | 6.6 | 6.4 | --- | 6.3 | --- | 6.4 | 6.5 | 7.6 | 6.3 |
| 21 | --- | 5.9 | 6.4 | 6.6 | 6.3 | --- | 6.2 | 6.5 | 6.4 | 6.5 | 7.2 | 6.2 |
| 22 | --- | 6.1 | 6.4 | 6.5 | 6.2 | --- | 6.4 | 6.5 | 6.5 | 6.5 | 7.0 | 6.3 |
| 23 | --- | 6.2 | 6.3 | 6.5 | 6.2 | --- | --- | --- | 6.5 | 6.6 | 6.7 | 6.4 |
| 24 | --- | 6.2 | 6.3 | 6.5 | 6.2 | --- | --- | 6.6 | 6.5 | 6.5 | 6.5 | 6.3 |
| 25 | --- | 7.6 | 6.2 | 6.5 | 6.2 | --- | 6.3 | 6.3 | 6.5 | 6.5 | 6.5 | 6.3 |
| 26 | --- | --- | 6.3 | 6.4 | 6.2 | --- | 6.3 | 6.8 | 6.5 | 6.5 | 6.5 | 6.2 |
| 27 | --- | 6.2 | 6.4 | 6.3 | 6.2 | --- | 6.2 | --- | 6.5 | 6.4 | 6.4 | 6.2 |
| 28 | 6.9 | 6.2 | 6.4 | 6.3 | 6.2 | --- | 6.3 | --- | 6.5 | 6.4 | 6.4 | 6.2 |
| 29 | 6.8 | 6.2 | 6.5 | 6.2 | --- | --- | 6.4 | --- | 6.5 | 6.4 | 6.4 | 6.3 |
| 30 | 6.7 | 6.2 | 6.4 | 6.3 | --- | --- | 6.3 | --- | 6.5 | 6.4 | 6.4 | 6.3 |
| 31 | 6.7 | --- | 6.4 | 6.3 | --- | --- | --- | --- | --- | 6.5 | 6.3 | --- |
| TOTAL | --- | --- | 197.9 | --- | 177.6 | --- | --- | --- | --- | 201.7 | 207.8 | 190.2 |
| MEAN | --- | --- | 6.38 | --- | 6.34 | --- | --- | --- | --- | 6.51 | 6.70 | 6.34 |
| MAX | --- | --- | 6.6 | --- | 6.6 | --- | --- | --- | --- | 6.6 | 7.6 | 6.6 |
| MIN | --- | --- | 6.2 | --- | 6.2 | --- | --- | --- | --- | 6.4 | 6.3 | 6.2 |
| AC-FT | --- | --- | 393 | --- | 352 | --- | --- | --- | --- | 400 | 412 | 377 |

e Estimated.

NOTE: Discharges from ditch-tenders log Aug. 5-8. Canal was out of service Oct. 21-27 and all flow remained in the natural channel. Discharges were above 8.9 ft³/s for many days during the year.

11376440 SOUTH FORK BATTLE CREEK BELOW DIVERSION TO INSKIP CANAL, NEAR MANTON, CA

LOCATION.--Lat 40°23'43", long 121°52'57"; in NW 1/4 SE 1/4 sec.5, T.29 N., R.1 E., Tehama County, Hydrologic Unit 18020118, on left bank at diversion dam to Inskip Canal and 2.8 mi south of Manton.

DRAINAGE AREA.--88.3 mi².

PERIOD OF RECORD.--October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978-87 available in files of the U.S. Geological Survey. Fragmentary records for water year 1977 available in files of Pacific Gas & Electric Co.

GAGE.--Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 1,440 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. This station records fishwater release only. The minimum release requirement is 5.0 ft³/s at all times; flow is computed to 10 ft³/s.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-------|-------|-----|
| 1 | 6.6 | 6.1 | 7.5 | 6.4 | 6.4 | 8.8 | --- | 7.5 | --- | 6.7 | 6.8 | 6.7 |
| 2 | --- | 6.1 | 7.5 | 6.4 | 6.4 | --- | --- | 8.1 | --- | 6.7 | 6.7 | 6.7 |
| 3 | --- | 6.1 | 7.5 | 6.4 | --- | --- | --- | 8.0 | --- | 6.8 | 6.7 | 6.7 |
| 4 | --- | 6.1 | 7.1 | 6.4 | --- | --- | --- | 7.3 | --- | 6.7 | 6.7 | 6.9 |
| 5 | --- | 6.2 | 6.9 | 6.4 | 6.7 | --- | --- | 6.7 | --- | 6.8 | 6.7 | 6.8 |
| 6 | --- | 6.5 | 7.0 | 6.4 | 9.0 | --- | --- | 6.8 | --- | 6.8 | 6.7 | 6.8 |
| 7 | --- | 6.4 | 6.9 | --- | 6.5 | --- | --- | 6.8 | --- | 6.8 | 6.7 | 6.8 |
| 8 | --- | 6.9 | 7.0 | --- | 6.4 | --- | --- | 6.8 | 9.6 | 6.7 | 6.7 | 6.8 |
| 9 | --- | 6.6 | 6.9 | --- | 6.5 | --- | --- | 6.8 | 8.3 | 6.8 | 6.8 | 6.8 |
| 10 | --- | 6.3 | 7.1 | --- | 6.4 | --- | --- | 6.8 | 7.5 | 6.8 | 6.8 | 6.8 |
| 11 | --- | 6.8 | 7.2 | --- | 6.4 | --- | --- | 6.8 | 6.8 | 6.7 | 6.7 | 6.9 |
| 12 | --- | 6.9 | 7.0 | --- | 6.4 | --- | --- | 6.8 | 6.8 | 6.7 | 6.8 | 6.8 |
| 13 | --- | 6.9 | 6.9 | --- | 6.4 | --- | --- | 6.8 | 6.7 | 6.7 | 6.7 | 6.8 |
| 14 | --- | 5.5 | 6.8 | --- | 6.4 | --- | --- | 6.8 | 6.7 | 6.7 | 6.8 | 6.8 |
| 15 | --- | --- | 6.7 | --- | 6.5 | --- | --- | 6.6 | 6.7 | 6.7 | 6.8 | 6.8 |
| 16 | --- | 7.1 | 6.4 | --- | 6.4 | --- | --- | 6.8 | 8.1 | 6.7 | 6.7 | 6.8 |
| 17 | --- | 7.3 | 6.4 | --- | 6.4 | --- | --- | 6.7 | 6.7 | 6.7 | 6.7 | 6.8 |
| 18 | --- | 7.3 | 6.4 | --- | 6.4 | --- | --- | 6.7 | 6.7 | 6.7 | 6.8 | 6.8 |
| 19 | --- | 7.3 | 6.4 | --- | 6.3 | --- | 9.0 | 6.7 | 6.7 | 6.8 | 6.7 | 6.8 |
| 20 | 7.4 | 7.4 | 6.4 | 8.2 | 6.4 | --- | 8.0 | --- | 6.7 | 6.7 | 6.7 | 6.8 |
| 21 | --- | 7.3 | 6.4 | 8.0 | 6.4 | --- | 8.0 | 7.0 | 6.7 | 6.7 | 6.8 | 6.6 |
| 22 | --- | 7.4 | 6.4 | 7.0 | 6.4 | --- | 8.0 | 6.7 | 6.8 | 6.8 | 6.7 | 6.7 |
| 23 | --- | 7.5 | 6.4 | 6.4 | 6.4 | --- | --- | --- | 6.7 | 6.8 | 6.8 | 6.8 |
| 24 | --- | --- | 6.4 | 6.4 | 6.4 | --- | --- | --- | 6.7 | 6.7 | 6.7 | --- |
| 25 | 8.6 | --- | 6.4 | 6.4 | 6.4 | --- | --- | 6.8 | 6.7 | 6.7 | 6.7 | --- |
| 26 | 6.0 | --- | 6.4 | 6.4 | 6.4 | --- | --- | 9.6 | 6.8 | 6.7 | 6.7 | --- |
| 27 | --- | --- | 6.3 | 6.4 | 6.4 | --- | 8.5 | --- | 6.8 | 6.7 | 6.7 | --- |
| 28 | 6.6 | 7.7 | 6.3 | 6.4 | 7.0 | --- | 8.0 | --- | 6.8 | 6.7 | 6.8 | --- |
| 29 | 6.1 | 7.6 | 6.3 | 6.4 | --- | --- | 6.6 | --- | 6.8 | 6.7 | 6.7 | --- |
| 30 | 5.9 | 7.5 | 6.3 | 6.4 | --- | --- | 6.6 | --- | 6.7 | 6.7 | 6.7 | --- |
| 31 | 6.5 | --- | 6.3 | 6.4 | --- | --- | --- | --- | --- | 6.8 | 6.8 | --- |
| TOTAL | --- | --- | 207.9 | --- | --- | --- | --- | --- | --- | 208.7 | 208.8 | --- |
| MEAN | --- | --- | 6.71 | --- | --- | --- | --- | --- | --- | 6.73 | 6.74 | --- |
| MAX | --- | --- | 7.5 | --- | --- | --- | --- | --- | --- | 6.8 | 6.8 | --- |
| MIN | --- | --- | 6.3 | --- | --- | --- | --- | --- | --- | 6.7 | 6.7 | --- |
| AC-FT | --- | --- | 412 | --- | --- | --- | --- | --- | --- | 414 | 414 | --- |

NOTE: Canal was out of service Oct. 2-19 and Sept. 24-30, and all flow remained in the natural channel. Discharges were above 10 ft³/s for many days during the year.

SACRAMENTO RIVER BASIN

11376460 SOUTH FORK BATTLE CREEK BELOW DIVERSION TO COLEMAN DITCH, NEAR MANTON, CA

LOCATION.--Lat 40°24'10", long 121°58'02", in NW 1/4 NW 1/4 sec.3, T.29 N., R.1 W., Tehama County, Hydrologic Unit 18020118, on right bank 7.5 mi southwest of Shingletown and 5.7 mi southwest of Manton.

DRAINAGE AREA.--102 mi².

PERIOD OF RECORD.--October 1987 to current year (operated as a low-flow station only). Unpublished records for water years 1978-86 available in files of the U.S. Geological Survey. Fragmentary records for water year 1977 available in files of Pacific Gas & Electric Co.

GAGE.--Water-stage recorder and metal Alaskan fishladder. Elevation of gage is 980 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--This station records fishwater release only. The minimum release requirement is 5.0 ft³/s at all times; flow is computed to 9.5 ft³/s. See schematic diagram of Battle Creek basin.

COOPERATION.--Records were collected by the Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|------|------|------|-------|-----|-------|-----|-----|-------|-----|------|
| 1 | 7.5 | e23 | e16 | e14 | 7.6 | 6.3 | 7.0 | 7.5 | --- | 8.2 | 7.7 | --- |
| 2 | 7.6 | e23 | e16 | e14 | 7.6 | 6.8 | 7.1 | 7.4 | --- | 7.7 | 7.5 | --- |
| 3 | 7.8 | e19 | e16 | e14 | 8.7 | 9.1 | 7.1 | 7.4 | --- | 7.5 | 7.5 | --- |
| 4 | 7.9 | e17 | e15 | e14 | 9.4 | --- | 7.1 | 7.3 | 8.3 | 7.6 | 7.5 | --- |
| 5 | 7.9 | e19 | e15 | e14 | 7.4 | --- | 7.2 | 7.3 | 7.8 | 7.5 | 7.4 | --- |
| 6 | 7.9 | e20 | e16 | e14 | 8.0 | --- | 7.3 | 7.4 | 7.8 | 7.5 | 7.3 | --- |
| 7 | 8.0 | e19 | e13 | e13 | 7.4 | 9.1 | 7.3 | 7.4 | 7.8 | 7.5 | 7.3 | 8.6 |
| 8 | 8.1 | e19 | e14 | e13 | 7.2 | --- | 7.4 | 7.4 | 7.7 | 7.4 | 7.3 | 7.3 |
| 9 | 8.0 | e19 | e15 | e13 | 7.1 | 9.3 | 7.2 | 7.3 | 7.7 | 7.6 | 7.3 | 7.2 |
| 10 | 8.2 | e19 | e15 | e13 | 7.0 | --- | 7.2 | 7.4 | 7.7 | 7.4 | 7.4 | 7.1 |
| 11 | 7.7 | e19 | e16 | e13 | 7.0 | 9.1 | 7.2 | 7.3 | 7.6 | 7.2 | 7.5 | 7.1 |
| 12 | 7.5 | e19 | e14 | e13 | 7.2 | 7.3 | 7.3 | 7.4 | 7.8 | 7.3 | 7.4 | e7.2 |
| 13 | 7.6 | e19 | e19 | --- | 7.3 | 7.1 | 7.2 | 7.5 | 7.8 | 7.2 | 7.4 | 7.2 |
| 14 | 7.6 | e19 | e15 | --- | 7.4 | 7.0 | 7.1 | 7.4 | 7.9 | 7.3 | 7.5 | 7.8 |
| 15 | 7.7 | e19 | e14 | --- | 7.2 | 6.9 | 7.3 | 7.5 | 8.2 | 7.4 | 7.6 | 6.7 |
| 16 | 7.7 | e19 | e13 | e13 | 7.1 | 6.8 | 7.5 | 7.5 | 8.1 | 7.4 | 7.7 | 6.7 |
| 17 | 7.9 | e16 | e15 | e13 | 7.0 | 6.8 | 7.5 | 7.4 | 7.9 | 7.5 | 7.5 | 6.7 |
| 18 | 8.0 | e16 | e14 | e13 | 7.0 | 6.8 | 7.3 | 7.5 | 8.1 | 7.4 | 7.6 | 6.5 |
| 19 | 7.9 | e16 | e14 | e9.9 | 6.8 | 7.0 | 7.5 | 7.6 | 8.1 | 7.5 | 7.6 | 6.4 |
| 20 | 7.8 | e16 | e14 | 8.2 | 6.8 | 7.8 | 7.3 | 7.6 | 8.0 | 7.4 | 7.6 | 6.4 |
| 21 | 7.9 | e20 | e14 | 8.2 | 6.7 | 7.5 | 7.3 | 7.5 | 7.8 | 7.3 | 7.4 | 6.4 |
| 22 | 8.2 | e20 | e13 | 8.1 | 6.6 | 7.9 | 7.4 | 7.4 | 8.0 | 7.5 | 7.3 | 6.4 |
| 23 | --- | e19 | e14 | 7.9 | 7.3 | 8.9 | 8.6 | --- | 8.1 | 7.6 | 7.2 | 6.4 |
| 24 | e15 | e19 | e15 | 8.0 | 8.0 | 8.9 | 8.6 | 8.0 | 8.1 | 7.7 | 7.5 | 5.8 |
| 25 | e22 | e19 | e14 | 7.8 | 8.1 | 8.3 | 7.3 | 8.0 | 8.1 | 7.7 | 7.5 | 6.4 |
| 26 | e23 | e27 | e15 | 8.0 | 8.2 | 7.7 | 7.3 | 8.2 | 8.1 | 7.8 | --- | 6.5 |
| 27 | e23 | e19 | e15 | 7.9 | 7.3 | 6.9 | 7.4 | --- | 8.2 | 7.7 | --- | 6.4 |
| 28 | e25 | e19 | e15 | 7.7 | 6.3 | 7.0 | 7.2 | --- | 8.2 | 7.7 | --- | 6.3 |
| 29 | e25 | e17 | e14 | 7.7 | --- | 7.1 | 7.6 | --- | 8.1 | 7.7 | --- | 6.3 |
| 30 | e24 | e17 | e15 | 7.7 | --- | 7.0 | 7.4 | --- | 8.1 | 7.7 | --- | 6.3 |
| 31 | e23 | --- | e14 | 7.9 | --- | 7.0 | --- | --- | --- | 7.6 | --- | --- |
| TOTAL | --- | 571 | 457 | --- | 206.7 | --- | 221.2 | --- | --- | 233.5 | --- | --- |
| MEAN | --- | 19.0 | 14.7 | --- | 7.38 | --- | 7.37 | --- | --- | 7.53 | --- | --- |
| MAX | --- | 27 | 19 | --- | 9.4 | --- | 8.6 | --- | --- | 8.2 | --- | --- |
| MIN | --- | 16 | 13 | --- | 6.3 | --- | 7.0 | --- | --- | 7.2 | --- | --- |
| AC-FT | --- | 1130 | 906 | --- | 410 | --- | 439 | --- | --- | 463 | --- | --- |

e Estimated.

NOTE: By request of California Department of Fish and Game, the 5.0 ft³/s minimum fish release was augmented for salmon management Oct. 24 to Jan. 19. Discharges from ditch-tender log Oct. 25-30, Nov. 1 to Jan. 1, and Jan. 6, 11. Discharges were above 9.5 ft³/s for many days during the year.

11376550 BATTLE CREEK BELOW COLEMAN FISH HATCHERY, NEAR COTTONWOOD, CA

LOCATION.--Lat 40°23'54", long 122°08'43", in SW 1/4 NE 1/4 sec.1, T.29 N., R.3 W., Shasta County, Hydrologic Unit 18020101, U.S. Fish and Wildlife Service land, on right bank 3.7 mi downstream from Spring Branch, 5.7 mi upstream from mouth, and 7.0 mi east of Cottonwood.

DRAINAGE AREA.--357 mi².

PERIOD OF RECORD.--October 1961 to current year. October 1940 to September 1961 at site 0.6 mi upstream published as "near Cottonwood"; low-flow records not equivalent owing to Coleman Fish Hatchery diversion, maximum flows considered equivalent.

CHEMICAL DATA: Water years 1962-66.

WATER TEMPERATURE: Water years 1966-79.

SEDIMENT DATA: Water years 1962-70.

GAGE.--Water-stage recorder. Elevation of gage is 415 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Some regulation at low flows by five small powerplants, several small reservoirs, and Coleman Fish Hatchery. Coleman Fish Hatchery diverts from 50 to 90 ft³/s and pumps ground water for temperature control which is returned above the station. At times, 10 ft³/s diverted upstream from station for irrigation. See schematic diagrams of Battle Creek and upper Sacramento River basins.

AVERAGE DISCHARGE.--29 years, 510 ft³/s, 369,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,300 ft³/s, Jan. 24, 1970, gage height, 14.75 ft, from rating curve extended above 4,200 ft³/s on basis of slope-area measurement of peak flow; minimum, 52 ft³/s, Aug. 8, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 15.8 ft, Dec. 11, 1937, from floodmarks, site and datum then in use, discharge, 35,000 ft³/s by slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Jan. 7 | 2200 | *2,750 | *4.76 | | | | |

Minimum daily, 152 ft³/s, Sept. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 243 | 309 | 295 | 262 | 387 | 326 | 356 | 280 | 665 | 238 | 206 | 195 |
| 2 | 224 | 304 | 287 | 269 | 335 | 371 | 354 | 277 | 501 | 242 | 206 | 199 |
| 3 | 246 | 307 | 284 | 249 | 365 | 446 | 353 | 274 | 450 | 239 | 206 | 199 |
| 4 | 246 | 302 | 282 | 251 | 584 | 520 | 341 | 269 | 412 | 227 | 205 | 190 |
| 5 | 245 | 300 | 283 | 251 | 384 | 829 | 320 | 265 | 381 | 223 | 206 | 185 |
| 6 | 246 | 292 | 283 | 252 | 429 | 501 | 329 | 263 | 355 | 222 | 203 | 182 |
| 7 | 242 | 285 | 283 | 959 | 371 | 444 | 337 | 264 | 325 | 220 | 205 | 152 |
| 8 | 239 | 283 | 277 | 1020 | 341 | 515 | 342 | 263 | 330 | 217 | 203 | 179 |
| 9 | 237 | 283 | 279 | 532 | 330 | 472 | 343 | 258 | 326 | 215 | 204 | 190 |
| 10 | 242 | 277 | 276 | 409 | 320 | 489 | 327 | 254 | 313 | 215 | 192 | 178 |
| 11 | 246 | 277 | 271 | 358 | 313 | 485 | 325 | 254 | 302 | 222 | 191 | 178 |
| 12 | 245 | 274 | 271 | 522 | 312 | 419 | 322 | 254 | 292 | 218 | 192 | 197 |
| 13 | 246 | 273 | 270 | 1100 | 305 | 387 | 320 | 252 | 284 | 216 | 191 | 202 |
| 14 | 245 | 275 | 269 | 892 | 293 | 377 | 318 | 248 | 292 | 214 | 192 | 212 |
| 15 | 246 | 271 | 266 | 519 | 291 | 375 | 319 | 241 | 284 | 214 | 186 | 216 |
| 16 | 245 | 272 | 268 | 1100 | 307 | 369 | 320 | 238 | 300 | 214 | 210 | 213 |
| 17 | 242 | 273 | 266 | 609 | 331 | 369 | 316 | 236 | 291 | 216 | 201 | 214 |
| 18 | 243 | 277 | 266 | 459 | 353 | 383 | 314 | 236 | 279 | 212 | 196 | 206 |
| 19 | 247 | 272 | 263 | 396 | 321 | 393 | 309 | 243 | 272 | 212 | 203 | 205 |
| 20 | 243 | 272 | 266 | 363 | 310 | 403 | 306 | 264 | 267 | 208 | 205 | 191 |
| 21 | 257 | 262 | 263 | 344 | 307 | 406 | 303 | 296 | 268 | 206 | 200 | 183 |
| 22 | 343 | 264 | 265 | 336 | 319 | 408 | 303 | 287 | 273 | 204 | 190 | 188 |
| 23 | 919 | 270 | 265 | 324 | 318 | 416 | 340 | 386 | 273 | 202 | 179 | 189 |
| 24 | 823 | 293 | 265 | 319 | 317 | 426 | 396 | 358 | 268 | 204 | 187 | 181 |
| 25 | 832 | 340 | 266 | 308 | 317 | 418 | 336 | 297 | 263 | 208 | 197 | 200 |
| 26 | 417 | 475 | 265 | 305 | 317 | 411 | 316 | 292 | 253 | 209 | 198 | 209 |
| 27 | 421 | 348 | 269 | 292 | 320 | 395 | 308 | 446 | 252 | 209 | 203 | 217 |
| 28 | 383 | 315 | 265 | 274 | 321 | 384 | 304 | 641 | 248 | 212 | 205 | 193 |
| 29 | 339 | 300 | 257 | 276 | --- | 367 | 297 | 476 | 249 | 209 | 198 | 192 |
| 30 | 319 | 298 | 258 | 282 | --- | 353 | 286 | 518 | 241 | 208 | 198 | 188 |
| 31 | 318 | --- | 255 | 288 | --- | 352 | --- | 884 | --- | 207 | 196 | --- |
| TOTAL | 10229 | 8843 | 8398 | 14120 | 9518 | 13209 | 9760 | 10014 | 9509 | 6682 | 6154 | 5823 |
| MEAN | 330 | 295 | 271 | 455 | 340 | 426 | 325 | 323 | 317 | 216 | 199 | 194 |
| MAX | 919 | 475 | 295 | 1100 | 584 | 829 | 396 | 884 | 665 | 242 | 210 | 217 |
| MIN | 224 | 262 | 255 | 249 | 291 | 326 | 286 | 236 | 241 | 202 | 179 | 152 |
| AC-FT | 20290 | 17540 | 16660 | 28010 | 18880 | 26200 | 19360 | 19860 | 18860 | 13250 | 12210 | 11550 |

CAL YR 1989 TOTAL 166588 MEAN 456 MAX 4620 MIN 187 AC-FT 330400
WTR YR 1990 TOTAL 112259 MEAN 308 MAX 1100 MIN 152 AC-FT 222700

SACRAMENTO RIVER BASIN

11377100 SACRAMENTO RIVER ABOVE BEND BRIDGE, NEAR RED BLUFF, CA

LOCATION.--Lat 40°17'19", long 122°11'08", in NW 1/4 NE 1/4 sec.15, T.28 N., R.3 W., Tehama County, Hydrologic Unit 18020103, on left bank 2.7 mi upstream from Bend Bridge, and 8.1 mi northeast of Red Bluff.

DRAINAGE AREA.--8,900 mi², excluding Goose Lake basin.

PERIOD OF RECORD.--1879-88 annual observed maximums only, published in WSP 1315-A. January 1892 to current year. Monthly discharges only for some periods and yearly estimates for some incomplete years, published in WSP 1315-A. Published as "at Red Bluff" 1894-96, as "at Jellys Ferry" 1895-1902, and as "near Red Bluff" 1903-68.

CHEMICAL DATA: Water years 1955-80.

SPECIFIC CONDUCTANCE: Water years 1955-63.

WATER TEMPERATURE: Water years 1955-80.

SEDIMENT DATA: Water years 1958-70, 1977-83.

REVISED RECORDS.--WSP 861: 1904, 1907, 1909, 1914-15, 1927-28. WSP 1315-A: 1916(M), 1918(M), 1941(M). WSP 1931: Drainage area. WDR CA-69-2: 1965.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 285.77 ft above National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to September 1968.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Shasta Lake (station 11370000), 52 mi upstream, since Dec. 30, 1943. Diversions, in addition to those on tributaries, for irrigation of about 22,000 acres between stations at Keswick and above Bend Bridge. Transbasin diversion from Trinity River to Whiskeytown Lake (station 11371700) via Judge Francis Carr powerplant (station 11525430) started in April 1963. See schematic diagram of upper Sacramento, Pit, and McCloud River basins.

AVERAGE DISCHARGE.--71 years (water years 1892-1962), prior to transbasin diversion from Trinity River, 11,400 ft³/s, 8,259,000 acre-ft/yr; 28 years (water years 1963-90), 13,110 ft³/s, 9,498,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 291,000 ft³/s, Feb. 28, 1940, gage height, 38.9 ft, site and datum then in use, from rating curve extended above 170,000 ft³/s on basis of velocity-area studies; minimum (water years 1892-1990), 2,000 ft³/s, Mar. 29, 1944. Since regulation by Shasta Dam in 1943, maximum discharge, 157,000 ft³/s, Jan. 24, 1970, gage height, 36.60 ft; minimum, 2,000 ft³/s, Mar. 29, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 35,200 ft³/s, Jan. 8, gage height, 14.45 ft; minimum daily, 4,040 ft³/s, Jan. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 4880 | 4790 | 6470 | 4060 | 5320 | 4130 | 7020 | 9340 | 9970 | 10800 | 10700 | 8650 |
| 2 | 4740 | 5920 | 6460 | 4100 | 5100 | 4320 | 6610 | 9280 | 7860 | 10600 | 10700 | 8600 |
| 3 | 4710 | 6520 | 6400 | 4040 | 5160 | 6960 | 6560 | 9560 | 7140 | 10600 | 11200 | 8720 |
| 4 | 4670 | 7420 | 6400 | 4200 | 6830 | 6180 | 6510 | 9820 | 6730 | 10500 | 11200 | 8580 |
| 5 | 4710 | 7420 | 6400 | 4560 | 5260 | 9010 | 6380 | 9980 | 6470 | 10600 | 11200 | 8490 |
| 6 | 4610 | 7410 | 6390 | 4760 | 5220 | 5870 | 6670 | 10200 | 6470 | 10400 | 11100 | 8450 |
| 7 | 4590 | 7400 | 6380 | 8690 | 4960 | 4990 | 6740 | 10300 | 6610 | 10400 | 11100 | 7830 |
| 8 | 4600 | 7350 | 6370 | 25700 | 4710 | 5040 | 7910 | 10300 | 6670 | 10300 | 11200 | 7590 |
| 9 | 4580 | 7560 | 6170 | 10300 | 4620 | 4840 | 8030 | 10400 | 7260 | 10300 | 11400 | 7650 |
| 10 | 4830 | 7790 | 5770 | 6180 | 4540 | 6630 | 7890 | 10500 | 7810 | 10200 | 11100 | 7610 |
| 11 | 5070 | 7760 | 5560 | 5230 | 4510 | 6700 | 8250 | 10400 | 8400 | 10300 | 11100 | 7340 |
| 12 | 5440 | 7750 | 5550 | 6210 | 4450 | 5660 | 8460 | 10100 | 9540 | 10200 | 11100 | 7150 |
| 13 | 5810 | 7770 | 5380 | 17000 | 4420 | 5330 | 8830 | 10300 | 9500 | 10400 | 10900 | 7020 |
| 14 | 5810 | 7880 | 4980 | 15400 | 4390 | 5170 | 9140 | 10300 | 9800 | 10600 | 11100 | 6700 |
| 15 | 5850 | 7900 | 4540 | 7590 | 4330 | 5120 | 9090 | 10200 | 10400 | 10600 | 11100 | 6490 |
| 16 | 5860 | 7520 | 4510 | 10400 | 4510 | 4990 | 9120 | 9920 | 10600 | 10600 | 11100 | 6460 |
| 17 | 5860 | 7250 | 4510 | 7070 | 4820 | 4880 | 9120 | 8990 | 10600 | 10700 | 11100 | 6450 |
| 18 | 5840 | 7540 | 4530 | 5670 | 4830 | 4770 | 8830 | 9230 | 10600 | 10700 | 11200 | 6350 |
| 19 | 5830 | 8040 | 4510 | 5180 | 4760 | 4670 | 8800 | 9380 | 10500 | 10800 | 11200 | 6220 |
| 20 | 5850 | 8290 | 4500 | 4910 | 4630 | 4780 | 8830 | 9320 | 10600 | 10800 | 11100 | 6160 |
| 21 | 6200 | 8300 | 4490 | 4740 | 4550 | 4920 | 9180 | 9380 | 10300 | 10700 | 10900 | 5950 |
| 22 | 6920 | 8540 | 4380 | 4630 | 4560 | 4860 | 9590 | 9820 | 10200 | 10700 | 10700 | 5820 |
| 23 | 8690 | 8750 | 4140 | 4560 | 4290 | 5020 | 9770 | 11600 | 10200 | 10600 | 10400 | 5770 |
| 24 | 11800 | 8810 | 4130 | 4470 | 4210 | 5580 | 9920 | 9580 | 10200 | 10700 | 10300 | 5790 |
| 25 | 10000 | 9000 | 4120 | 4410 | 4160 | 5920 | 9600 | 8750 | 10300 | 10600 | 9970 | 5870 |
| 26 | 6030 | 9540 | 4110 | 4390 | 4170 | 5890 | 9500 | 8700 | 10400 | 10600 | 9810 | 6130 |
| 27 | 5110 | 9080 | 4090 | 4350 | 4160 | 5860 | 9420 | 10700 | 10400 | 10600 | 9790 | 6100 |
| 28 | 4730 | 8460 | 4090 | 4320 | 4140 | 5800 | 9370 | 14200 | 10400 | 10700 | 9420 | 5750 |
| 29 | 4450 | 7680 | 4090 | 4300 | --- | 5760 | 9180 | 11100 | 10600 | 10700 | 9260 | 5550 |
| 30 | 4410 | 6970 | 4080 | 4340 | --- | 5730 | 9270 | 11500 | 10800 | 10700 | 8960 | 5320 |
| 31 | 4540 | --- | 4060 | 4380 | --- | 5720 | --- | 16300 | --- | 10700 | 8650 | --- |
| TOTAL | 177020 | 232410 | 157560 | 210140 | 131610 | 171100 | 253590 | 319450 | 277330 | 327700 | 330060 | 206560 |
| MEAN | 5710 | 7747 | 5083 | 6779 | 4700 | 5519 | 8453 | 10300 | 9244 | 10570 | 10650 | 6885 |

11379500 ELDER CREEK NEAR PASKENTA, CA

LOCATION.--Lat 40°01'29", long 122°30'31", in SE 1/4 NW 1/4 sec.14, T.25 N., R.6 W., Tehama County, Hydrologic Unit 18020103, on left bank 2.5 mi downstream from South Fork Elder Creek, 8.2 mi northwest of Flournoy, and 10 mi north of Paskenta.
DRAINAGE AREA.--92.4 mi².

PERIOD OF RECORD.--October 1948 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1959-66.

WATER TEMPERATURE: Water year 1963.

SEDIMENT DATA: Water years 1963-70.

REVISED RECORDS.--WSP 1515: 1956. WDR CA-70-2: 1967(P). WDR CA-75-4: 1966-67(P), 1969-71(P), 1973(P).
WDR CA-78-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 718.1 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 13, 1965, water-stage recorder at site 300 ft downstream at datum 5.13 ft lower.

REMARKS.--No estimated daily discharges. Records good except those below 1.0 ft³/s, which are poor. No regulation or large diversion upstream from station. See schematic diagram of upper Sacramento River basin.

AVERAGE DISCHARGE.--42 years, 99.5 ft³/s, 72,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,700 ft³/s, Feb. 28, 1983, gage height, 12.10 ft, present site and datum, from rating curve extended above 5,200 ft³/s on basis of slope-area measurements at gage height 11.34 ft and of peak flow; maximum gage height, 13.90 ft, Feb. 24, 1958, site and datum then in use; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s (revised) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| May 27 | 1800 | *2,020 | *6.28 | | | | |

No flow Aug. 7-18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|--------|------|------|-------|--------|-------|-------|------|-------|
| 1 | 14 | 12 | 8.8 | 7.0 | 21 | 39 | 21 | 7.6 | 72 | 4.2 | .14 | .32 |
| 2 | 10 | 12 | 9.0 | 7.1 | 18 | 55 | 20 | 7.2 | 59 | 3.9 | .10 | .27 |
| 3 | 8.3 | 11 | 9.2 | 6.9 | 35 | 90 | 20 | 6.7 | 48 | 3.7 | .05 | .14 |
| 4 | 7.3 | 10 | 9.2 | 6.9 | 41 | 77 | 19 | 6.3 | 40 | 3.5 | .03 | .17 |
| 5 | 6.8 | 10 | 9.2 | 7.1 | 27 | 63 | 19 | 5.7 | 34 | 4.0 | .02 | .16 |
| 6 | 6.4 | 10 | 9.1 | 7.0 | 27 | 50 | 21 | 5.6 | 29 | 4.2 | .01 | .18 |
| 7 | 6.1 | 9.8 | 8.8 | 86 | 22 | 45 | 22 | 5.1 | 26 | 3.7 | .00 | .17 |
| 8 | 5.7 | 9.5 | 8.8 | 195 | 22 | 41 | 21 | 4.8 | 22 | 3.0 | .00 | .12 |
| 9 | 5.5 | 9.2 | 8.5 | 69 | 21 | 37 | 20 | 4.9 | 20 | 2.8 | .00 | .08 |
| 10 | 5.5 | 9.2 | 8.2 | 40 | 20 | 37 | 19 | 4.9 | 18 | 2.2 | .00 | .05 |
| 11 | 5.3 | 9.1 | 7.9 | 29 | 19 | 35 | 18 | 5.0 | 17 | 1.9 | .00 | .07 |
| 12 | 5.3 | 8.8 | 7.7 | 90 | 20 | 32 | 16 | 4.9 | 15 | 1.5 | .00 | .06 |
| 13 | 5.3 | 8.8 | 7.8 | 337 | 19 | 30 | 15 | 5.1 | 13 | 1.2 | .00 | .04 |
| 14 | 5.3 | 8.5 | 7.7 | 182 | 16 | 28 | 14 | 4.7 | 13 | .94 | .00 | .07 |
| 15 | 5.2 | 8.1 | 7.7 | 85 | 16 | 28 | 14 | 4.2 | 12 | .85 | .00 | .13 |
| 16 | 5.2 | 8.1 | 7.7 | 62 | 41 | 27 | 14 | 4.0 | 12 | .91 | .00 | .25 |
| 17 | 4.9 | 8.1 | 7.7 | 50 | 42 | 27 | 15 | 3.7 | 12 | .86 | .00 | .26 |
| 18 | 4.8 | 8.1 | 7.7 | 40 | 36 | 27 | 15 | 3.8 | 10 | .88 | .00 | .24 |
| 19 | 4.9 | 8.1 | 7.7 | 34 | 28 | 28 | 14 | 4.4 | 9.1 | 1.1 | .52 | .22 |
| 20 | 5.1 | 8.1 | 7.4 | 31 | 25 | 28 | 14 | 8.3 | 8.1 | 1.6 | .38 | .16 |
| 21 | 11 | 8.1 | 7.4 | 28 | 23 | 28 | 13 | 8.8 | 7.4 | .78 | .32 | .09 |
| 22 | 18 | 8.0 | 7.4 | 26 | 26 | 29 | 13 | 13 | 6.9 | .51 | .40 | .07 |
| 23 | 301 | 7.9 | 7.4 | 24 | 28 | 29 | 13 | 35 | 6.9 | .50 | .35 | .10 |
| 24 | 73 | 8.9 | 7.4 | 22 | 33 | 28 | 12 | 18 | 6.5 | .47 | .20 | .22 |
| 25 | 39 | 12 | 7.2 | 21 | 37 | 27 | 11 | 13 | 6.4 | .39 | .31 | .53 |
| 26 | 27 | 17 | 7.0 | 20 | 36 | 26 | 9.8 | 13 | 5.9 | .42 | .64 | 1.9 |
| 27 | 25 | 12 | 7.0 | 19 | 37 | 26 | 9.0 | 569 | 5.6 | .43 | .90 | 2.2 |
| 28 | 22 | 9.9 | 7.0 | 18 | 37 | 24 | 8.5 | 260 | 5.3 | .28 | .83 | 1.1 |
| 29 | 17 | 9.3 | 6.9 | 18 | --- | 23 | 8.0 | 109 | 5.0 | .21 | .65 | .76 |
| 30 | 15 | 9.1 | 6.7 | 19 | --- | 22 | 7.8 | 81 | 4.5 | .22 | .46 | .57 |
| 31 | 14 | --- | 6.7 | 19 | --- | 21 | --- | 92 | --- | .18 | .34 | --- |
| TOTAL | 688.9 | 288.7 | 243.9 | 1606.0 | 773 | 1107 | 456.1 | 1318.7 | 549.6 | 51.33 | 6.65 | 10.70 |
| MEAN | 22.2 | 9.62 | 7.87 | 51.8 | 27.6 | 35.7 | 15.2 | 42.5 | 18.3 | 1.66 | .21 | .36 |
| MAX | 301 | 17 | 9.2 | 337 | 42 | 90 | 22 | 569 | 72 | 4.2 | .90 | 2.2 |
| MIN | 4.8 | 7.9 | 6.7 | 6.9 | 16 | 21 | 7.8 | 3.7 | 4.5 | .18 | .00 | .04 |
| AC-FT | 1370 | 573 | 484 | 3190 | 1530 | 2200 | 905 | 2620 | 1090 | 102 | 13 | 21 |

CAL YR 1989 TOTAL 14686.40 MEAN 40.2 MAX 754 MIN .16 AC-FT 29130
WTR YR 1990 TOTAL 7100.58 MEAN 19.5 MAX 569 MIN .00 AC-FT 14080

11381500 MILL CREEK NEAR LOS MOLINOS, CA

LOCATION.--Lat 40°03'17", long 122°01'23", in NE 1/4 NW 1/4 sec.6, T.25 N., R.1 W., Tehama County, Hydrologic Unit 18020103, on right bank 4.5 mi northeast of Los Molinos and 5.5 mi upstream from mouth.

DRAINAGE AREA.--131 mi².

PERIOD OF RECORD.--September 1909 to August 1913 (fragmentary), October 1928 to current year.

REVISED RECORDS.--WSP 1315-A: 1929(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 385 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to September 1913, nonrecording gage at site 0.3 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. No storage or large diversion upstream from station. See schematic diagram of upper Sacramento River basin.

AVERAGE DISCHARGE.--62 years (water years 1929-90), 302 ft³/s, 218,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1929-90): Maximum discharge, 36,400 ft³/s, Dec. 11, 1937, gage height, 23.4 ft, from floodmarks, from rating curve extended above 14,000 ft³/s on basis of step-backwater computation and slope-area measurement of peak flow; minimum, 49 ft³/s, Dec. 13, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Oct. 23 | 1245 | *2,960 | *7.55 | | | | |

Minimum daily, 88 ft³/s, Aug. 5-7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------------|----------|----------|--------|--------------|-------|-------|-------|-------|------|------|------|
| 1 | 104 | 130 | 129 | 112 | 169 | 207 | 215 | 167 | 492 | 123 | 91 | 96 |
| 2 | 107 | 128 | 126 | 118 | 156 | 235 | 216 | 165 | 397 | 121 | 91 | 96 |
| 3 | 105 | 126 | 124 | 110 | 210 | 352 | 213 | 166 | 358 | 120 | 91 | 95 |
| 4 | 103 | 126 | 123 | 109 | 360 | 393 | 224 | 166 | 331 | 118 | 90 | 94 |
| 5 | 103 | 127 | 126 | 109 | 212 | 472 | 231 | 166 | 297 | 117 | 88 | 94 |
| 6 | 103 | 124 | 130 | 109 | 320 | 333 | 229 | 167 | 270 | 116 | 88 | 94 |
| 7 | 103 | 121 | 127 | 165 | 232 | 285 | 232 | 166 | 260 | 114 | 88 | 94 |
| 8 | 102 | 119 | 123 | 613 | 192 | 298 | 229 | 159 | 239 | 112 | 89 | 93 |
| 9 | 101 | 118 | 122 | 412 | 175 | 269 | 219 | 153 | 226 | 112 | 92 | 93 |
| 10 | 101 | 118 | 120 | 260 | 169 | 312 | 213 | 153 | 214 | 110 | 91 | 93 |
| 11 | 101 | 119 | 117 | 208 | 167 | 311 | 215 | 150 | 203 | 110 | 91 | 92 |
| 12 | 101 | 118 | 116 | 319 | 163 | 262 | 216 | 147 | 191 | 109 | 91 | 91 |
| 13 | 101 | 117 | 115 | 1020 | 155 | 232 | 217 | 144 | 183 | 108 | 91 | 92 |
| 14 | 101 | 116 | 114 | 671 | 146 | 219 | 224 | 140 | 178 | 108 | 91 | 93 |
| 15 | 101 | 114 | 115 | 382 | 139 | 210 | 232 | 137 | 171 | 110 | 91 | 93 |
| 16 | 101 | 114 | 114 | 521 | 154 | 202 | 226 | 134 | 192 | 113 | 90 | 93 |
| 17 | 101 | 114 | 114 | 361 | 178 | 197 | 217 | 132 | 171 | 110 | 90 | 93 |
| 18 | 101 | 114 | 114 | 254 | 158 | 208 | 210 | 130 | 162 | 108 | 91 | 93 |
| 19 | 101 | 113 | 113 | 211 | 156 | 219 | 209 | 132 | 158 | 107 | 101 | 92 |
| 20 | 101 | 112 | 112 | 187 | 162 | 229 | 197 | 175 | 154 | 106 | 104 | 92 |
| 21 | 118 | 112 | 112 | 172 | 168 | 238 | 190 | 172 | 152 | 106 | 100 | 91 |
| 22 | 223 | 112 | 112 | 163 | 192 | 248 | 186 | 164 | 149 | 105 | 97 | 91 |
| 23 | 1140 | 112 | 112 | 155 | 185 | 259 | 254 | 249 | 146 | 104 | 96 | 93 |
| 24 | 377 | 131 | 110 | 150 | 180 | 274 | 259 | 209 | 142 | 103 | 98 | 103 |
| 25 | 405 | 170 | 110 | 144 | 182 | 273 | 209 | 175 | 139 | 103 | 97 | 161 |
| 26 | 202 | 331 | 110 | 142 | 185 | 267 | 199 | 183 | 136 | 103 | 98 | 109 |
| 27 | 199 | 177 | 110 | 138 | 194 | 249 | 191 | 594 | 132 | 101 | 98 | 104 |
| 28 | 180 | 149 | 110 | 134 | 202 | 242 | 194 | 741 | 131 | 101 | 98 | 91 |
| 29 | 150 | 138 | 110 | 133 | --- | 225 | 185 | 428 | 129 | 100 | 97 | 89 |
| 30 | 138 | 132 | 110 | 150 | --- | 215 | 174 | 441 | 126 | 99 | 97 | 89 |
| 31 | 134 | --- | 109 | 146 | --- | 214 | --- | 623 | --- | 96 | 96 | --- |
| TOTAL | 5308 | 3952 | 3609 | 7878 | 5261 | 8149 | 6425 | 7028 | 6229 | 3373 | 2902 | 2887 |
| MEAN | 171 | 132 | 116 | 254 | 188 | 263 | 214 | 227 | 208 | 109 | 93.6 | 96.2 |
| MAX | 1140 | 331 | 130 | 1020 | 360 | 472 | 259 | 741 | 492 | 123 | 104 | 161 |
| MIN | 101 | 112 | 109 | 109 | 139 | 197 | 174 | 130 | 126 | 96 | 88 | 89 |
| AC-FT | 10530 | 7840 | 7160 | 15630 | 10440 | 16160 | 12740 | 13940 | 12360 | 6690 | 5760 | 5730 |
| CAL YR 1989 | TOTAL 95577 | MEAN 262 | MAX 4220 | MIN 96 | AC-FT 189600 | | | | | | | |
| WTR YR 1990 | TOTAL 63001 | MEAN 173 | MAX 1140 | MIN 88 | AC-FT 125000 | | | | | | | |

11382000 THOMES CREEK AT PASKENTA, CA

LOCATION.--Lat 39°53'16", long 122°31'41", in SE 1/4 SW 1/4 sec.34, T.24 N., R.6 W., Tehama County, Hydrologic Unit 18020103, on left bank 1.0 mi downstream from highway bridge and 1.2 mi downstream from Digger Creek at Paskenta.

DRAINAGE AREA.--203 mi².

PERIOD OF RECORD.--October 1920 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to 1943, published as Thomas Creek at Paskenta.

CHEMICAL DATA: Water years 1959-81.

WATER TEMPERATURE: Water years 1962-79, 1981-83.

SEDIMENT DATA: Water years 1963-73, 1981-83.

REVISED RECORDS.--WSP 1345: 1923, 1924-28(M), 1938, 1940(M). WDR CA-78-4: Drainage area. WDR CA-79-4:1965(M). WDR CA-81-4:1980(M). WDR CA-86-4.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 720 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 20, 1942, nonrecording gage and water-stage recorder at several sites about 1.5 mi upstream at different datums; June 21, 1942, to Sept. 30, 1959, water-stage recorder at site 1.4 mi upstream at datum 732.85 ft and Oct. 1, 1959, to Oct. 9, 1974, at datum 731.10 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records poor. No storage or large diversions upstream from station. See schematic diagram of upper Sacramento River basin.

AVERAGE DISCHARGE.--70 years, 292 ft³/s, 211,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,800 ft³/s, Dec. 22, 1964, gage height, 12.7 ft, from floodmarks, present site and datum, from rating curve extended above 6,000 ft³/s on basis of slope-area measurements at gage height 10.10 ft and of peak flow; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s (revised) and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Jan. 8 | 0615 | *3,850 | *6.79 | | | | |

Minimum daily, 0.51 ft³/s, Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|-------|------|-------|------|-------|------|-------|------|-------|
| 1 | 29 | 49 | 32 | 16 | 78 | 411 | 137 | 47 | 542 | 29 | 4.2 | 3.5 |
| 2 | 20 | 43 | 46 | 16 | 72 | 488 | 130 | 44 | 490 | 27 | 2.9 | 3.4 |
| 3 | 15 | 39 | 52 | 16 | 84 | 779 | 120 | 42 | 447 | 26 | 3.5 | 2.7 |
| 4 | 11 | 37 | 52 | 15 | 88 | 568 | 122 | 40 | 399 | 25 | 4.1 | 2.6 |
| 5 | 10 | 35 | 60 | 15 | 73 | 429 | 130 | 38 | 324 | 24 | 3.7 | 2.1 |
| 6 | 9.3 | 34 | 79 | 16 | 81 | 344 | 141 | 36 | 261 | 23 | 2.7 | 1.8 |
| 7 | 9.0 | 30 | 60 | 517 | 70 | 305 | 136 | 34 | 224 | 23 | 1.7 | 1.8 |
| 8 | 8.4 | 28 | 48 | 2170 | 70 | 277 | 125 | 32 | 188 | 23 | 1.8 | 1.6 |
| 9 | 7.5 | 27 | 41 | 656 | 69 | 247 | 117 | 30 | 171 | 21 | 1.7 | 1.5 |
| 10 | 7.1 | 25 | 38 | 359 | 80 | 257 | 108 | 29 | 150 | 20 | 2.1 | 1.3 |
| 11 | 6.6 | 24 | 33 | 250 | 105 | 248 | 102 | 28 | 135 | 17 | 1.5 | 1.1 |
| 12 | 6.3 | 24 | 30 | 283 | 118 | 212 | 100 | 27 | 120 | 16 | 1.3 | 1.0 |
| 13 | 6.5 | 23 | 29 | 720 | 113 | 192 | 97 | 27 | 111 | 14 | 1.4 | .97 |
| 14 | 6.2 | 22 | 28 | 507 | 88 | 182 | 93 | 25 | 104 | 14 | 1.2 | .97 |
| 15 | 6.0 | 21 | 26 | 338 | 85 | 199 | 93 | 24 | 96 | 13 | 1.2 | .99 |
| 16 | 6.2 | 20 | 26 | 281 | 102 | 206 | 92 | 22 | 92 | 12 | 1.3 | 1.0 |
| 17 | 6.2 | 19 | 24 | 238 | 102 | 206 | 89 | 22 | 88 | 12 | 1.2 | 1.1 |
| 18 | 6.0 | 19 | 23 | 190 | 79 | 226 | 84 | 20 | 78 | 11 | 1.2 | 1.0 |
| 19 | 5.8 | 19 | 22 | 161 | 74 | 226 | 80 | 20 | 70 | 10 | 1.5 | .93 |
| 20 | 5.4 | 18 | 22 | 139 | 78 | 240 | 76 | 33 | 63 | 13 | 1.1 | .83 |
| 21 | 7.6 | 18 | 21 | 121 | 75 | 245 | 73 | 54 | 58 | 11 | 1.5 | .55 |
| 22 | 25 | 17 | 21 | 111 | 102 | 246 | 69 | 171 | 53 | 9.4 | 2.2 | .51 |
| 23 | 667 | 17 | 20 | 104 | 165 | 235 | 79 | 446 | 48 | 7.5 | 3.3 | .55 |
| 24 | 289 | 20 | 19 | 94 | 260 | 219 | 89 | 183 | 46 | 7.1 | 3.0 | 1.1 |
| 25 | 176 | 50 | 19 | 88 | 337 | 217 | 70 | 112 | 43 | 6.9 | 3.1 | 3.1 |
| 26 | 102 | 93 | 19 | 85 | 367 | 201 | 65 | 97 | 40 | 6.4 | 4.0 | 2.7 |
| 27 | 156 | 58 | 18 | 78 | 398 | 187 | 60 | 1300 | 36 | 6.1 | 4.6 | 3.7 |
| 28 | 135 | 40 | 17 | 70 | 395 | 175 | 57 | 969 | 35 | 6.4 | 4.2 | 2.9 |
| 29 | 88 | 35 | 17 | 67 | --- | 158 | 55 | 475 | 33 | 6.2 | 3.7 | 2.2 |
| 30 | 67 | 32 | 16 | 83 | --- | 150 | 51 | 420 | 31 | 6.1 | 3.6 | 2.5 |
| 31 | 55 | --- | 16 | 83 | --- | 143 | --- | 740 | --- | 5.0 | 3.3 | --- |
| TOTAL | 1955.1 | 936 | 974 | 7887 | 3808 | 8438 | 2840 | 5587 | 4576 | 451.1 | 77.8 | 52.00 |
| MEAN | 63.1 | 31.2 | 31.4 | 254 | 136 | 272 | 94.7 | 180 | 153 | 14.6 | 2.51 | 1.73 |
| MAX | 667 | 93 | 79 | 2170 | 398 | 779 | 141 | 1300 | 542 | 29 | 4.6 | 3.7 |
| MIN | 5.4 | 17 | 16 | 15 | 69 | 143 | 51 | 20 | 31 | 5.0 | 1.1 | .51 |
| AC-FT | 3880 | 1860 | 1930 | 15640 | 7550 | 16740 | 5630 | 11080 | 9080 | 895 | 154 | 103 |

CAL YR 1989 TOTAL 72859.6 MEAN 200 MAX 3410 MIN 1.2 AC-FT 144500
WTR YR 1990 TOTAL 37582.00 MEAN 103 MAX 2170 MIN .51 AC-FT 74540

11383500 DEER CREEK NEAR VINA, CA

LOCATION.--Lat 40°00'51", long 121°56'50", in NW 1/4 NE 1/4 sec.23, T.25 N., R.1 W., Tehama County, Hydrologic Unit 18020103, on left bank 0.5 mi upstream from irrigation diversion dam and 7.9 mi northeast of Vina.

DRAINAGE AREA.--208 mi².

PERIOD OF RECORD.--October 1911 to December 1915, March 1920 to December 1937, January 1939 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1315-A: 1940-42(M). WSP 1931: Drainage area. WDR CA-82-4: Datum.

GAGE.--Water-stage recorder. Datum of gage is 479.2 ft above National Geodetic Vertical Datum of 1929, from river-profile survey. Prior to Oct. 9, 1928, nonrecording gage at site 0.8 mi downstream at different datum. Oct. 9, 1928, to Jan. 19, 1939, water-stage recorder at present site at datum 2.64 ft higher.

REMARKS.--No estimated daily discharges. Records fair. No storage or large diversions upstream from station. See schematic diagram of upper Sacramento River basin.

AVERAGE DISCHARGE.--72 years (water years 1912-15, 1921-37, 1940-90), 317 ft³/s, 229,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft³/s, Dec. 10, 1937, gage height, 19.2 ft, present datum, from floodmarks, from rating curve extended above 9,200 ft³/s on basis of velocity-area studies; minimum, 43 ft³/s, Dec. 13, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Oct. 23 | 1230 | *3,470 | *7.85 | | | | |

Minimum daily, 67 ft³/s, several days during August.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|------|------|------|------|------|
| 1 | 96 | 122 | 129 | 102 | 173 | 255 | 191 | 115 | 320 | 82 | 68 | 74 |
| 2 | 96 | 118 | 126 | 111 | 160 | 266 | 189 | 112 | 262 | 80 | 68 | 73 |
| 3 | 96 | 115 | 123 | 102 | 177 | 347 | 178 | 109 | 219 | 80 | 68 | 73 |
| 4 | 94 | 113 | 121 | 99 | 285 | 379 | 180 | 106 | 191 | 81 | 67 | 73 |
| 5 | 92 | 113 | 121 | 100 | 219 | 388 | 185 | 103 | 172 | 80 | 67 | 73 |
| 6 | 92 | 111 | 125 | 100 | 227 | 341 | 189 | 101 | 158 | 80 | 67 | 73 |
| 7 | 92 | 110 | 123 | 132 | 210 | 316 | 184 | 99 | 150 | 80 | 67 | 73 |
| 8 | 90 | 109 | 118 | 486 | 195 | 321 | 180 | 98 | 139 | 79 | 67 | 73 |
| 9 | 90 | 108 | 116 | 347 | 187 | 305 | 177 | 97 | 131 | 78 | 68 | 73 |
| 10 | 90 | 107 | 115 | 225 | 186 | 364 | 166 | 97 | 125 | 77 | 68 | 72 |
| 11 | 90 | 106 | 112 | 186 | 190 | 351 | 161 | 97 | 121 | 75 | 68 | 71 |
| 12 | 90 | 106 | 109 | 282 | 186 | 300 | 156 | 95 | 117 | 74 | 68 | 71 |
| 13 | 90 | 106 | 109 | 1010 | 180 | 262 | 151 | 95 | 114 | 75 | 67 | 71 |
| 14 | 90 | 105 | 108 | 719 | 167 | 245 | 149 | 94 | 115 | 75 | 67 | 72 |
| 15 | 90 | 104 | 108 | 420 | 166 | 232 | 145 | 92 | 113 | 76 | 68 | 71 |
| 16 | 90 | 103 | 108 | 442 | 178 | 225 | 143 | 91 | 119 | 76 | 68 | 72 |
| 17 | 90 | 103 | 108 | 360 | 195 | 216 | 142 | 90 | 118 | 75 | 68 | 73 |
| 18 | 90 | 103 | 106 | 287 | 180 | 229 | 141 | 89 | 108 | 74 | 69 | 73 |
| 19 | 90 | 103 | 105 | 247 | 174 | 240 | 136 | 90 | 103 | 73 | 84 | 74 |
| 20 | 90 | 102 | 104 | 221 | 180 | 253 | 132 | 109 | 100 | 73 | 85 | 73 |
| 21 | 110 | 102 | 104 | 203 | 191 | 266 | 133 | 133 | 96 | 72 | 79 | 72 |
| 22 | 207 | 102 | 104 | 192 | 248 | 268 | 133 | 118 | 94 | 71 | 76 | 71 |
| 23 | 1190 | 102 | 103 | 182 | 250 | 273 | 154 | 154 | 91 | 70 | 74 | 73 |
| 24 | 392 | 121 | 102 | 173 | 253 | 278 | 200 | 171 | 90 | 70 | 73 | 81 |
| 25 | 317 | 181 | 103 | 166 | 255 | 276 | 154 | 129 | 88 | 72 | 73 | 78 |
| 26 | 210 | 314 | 103 | 163 | 255 | 268 | 138 | 122 | 87 | 72 | 73 | 82 |
| 27 | 178 | 201 | 103 | 158 | 255 | 253 | 130 | 227 | 86 | 71 | 75 | 88 |
| 28 | 183 | 161 | 103 | 152 | 258 | 238 | 125 | 358 | 86 | 71 | 74 | 79 |
| 29 | 147 | 144 | 101 | 150 | --- | 224 | 121 | 218 | 85 | 70 | 73 | 75 |
| 30 | 133 | 134 | 100 | 160 | --- | 211 | 118 | 201 | 84 | 70 | 73 | 74 |
| 31 | 127 | --- | 99 | 162 | --- | 202 | --- | 375 | --- | 69 | 74 | --- |
| TOTAL | 5022 | 3729 | 3419 | 7839 | 5780 | 8592 | 4681 | 4185 | 3882 | 2321 | 2204 | 2224 |
| MEAN | 162 | 124 | 110 | 253 | 206 | 277 | 156 | 135 | 129 | 74.9 | 71.1 | 74.1 |
| MAX | 1190 | 314 | 129 | 1010 | 285 | 388 | 200 | 375 | 320 | 82 | 85 | 88 |
| MIN | 90 | 102 | 99 | 99 | 160 | 202 | 118 | 89 | 84 | 69 | 67 | 71 |
| AC-FT | 9960 | 7400 | 6780 | 15550 | 11460 | 17040 | 9280 | 8300 | 7700 | 4600 | 4370 | 4410 |

CAL YR 1989 TOTAL 89622 MEAN 246 MAX 5670 MIN 76 AC-FT 177800
WTR YR 1990 TOTAL 53878 MEAN 148 MAX 1190 MIN 67 AC-FT 106900

RESERVOIRS IN STONY CREEK BASIN, CA

11385100 EAST PARK RESERVOIR NEAR STONYFORD.--Lat 39°21'24", long 122°30'53", in SW 1/4 NE 1/4 sec.3, T.17 N., R.6 W., Colusa County, Hydrologic Unit 18020115, near south side of spillway section on East Park Dam on Little Stony Creek, 1.9 mi southeast of Stonyford. DRAINAGE AREA, 98.2 mi². PERIOD OF RECORD, October 1969 to current year. GAGE, nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by a concrete arch-type dam. Storage began in 1910. Capacity, 48,210 acre-ft, between elevations 1,131.68 ft, invert of sluice pipe, and 1,198.18 ft, crest of spillway. Capacity increased to 50,889 acre-ft with the addition of flashboards to an elevation of 1,199.68 ft. Dead storage, 279 acre-ft. Records of contents provided by U.S. Bureau of Reclamation. See schematic diagram of lower Sacramento River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 53,500 acre-ft, Mar. 30, 1974, elevation, 1,201.10 ft; minimum, 280 acre-ft, Aug. 8 to Oct. 31, 1972, Apr. 30 to Nov. 1, 1977, elevation, 1,131.68 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 48,570 acre-ft, Feb. 17, elevation, 1,198.38 ft; minimum, 29,020 acre-ft, Sept. 30, elevation, 1,186.28 ft.

11386100 STONY GORGE RESERVOIR NEAR ELK CREEK.--Lat 39°35'09", long 122°31'54", in NE 1/4 SE 1/4 sec.16, T.20 N., R.6 W., Glenn County, Hydrologic Unit 18020115, on south end of Stony Gorge Dam on Stony Creek, 1.3 mi southeast of Elk Creek. DRAINAGE AREA, 301 mi². PERIOD OF RECORD, October 1969 to current year. GAGE, nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by slab and buttress-type dam. Storage began in 1928. Capacity, 50,380 acre-ft between elevations 728.0 ft, top of low intake, and 841.0 ft, crest of spillway. No dead storage. Records of contents provided by U.S. Bureau of Reclamation. See schematic diagram of lower Sacramento River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 54,630 acre-ft, Mar. 26, 1971, elevation, 844.20 ft; minimum, 3,810 acre-ft, Nov. 6, 1971, elevation, 779.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 50,190 acre-ft, Mar. 18, elevation, 840.85 ft; minimum, 8,320 acre-ft, Aug. 24, elevation, 791.99 ft.

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) | Elevation (feet) | Contents (acre-feet) | Change in contents (acre-feet) |
|------------------------------|---------------------|-------------------------|--------------------------------------|--------------------------------|-------------------------|--------------------------------------|
| 11385100 EAST PARK RESERVOIR | | | | 11386100 STONY GORGE RESERVOIR | | |
| Sept. 30..... | 1,194.68 | 42,290 | -2,010 | 824.00 | 30,940 | +1,320 |
| Oct. 31..... | 1,193.62 | 40,590 | -1,700 | 827.10 | 34,100 | +3,160 |
| Nov. 30..... | 1,193.60 | 40,560 | -30 | 828.39 | 35,460 | +1,360 |
| Dec. 31..... | 1,194.06 | 41,290 | +730 | 828.50 | 35,580 | +120 |
| CAL YR 1989 | -- | -- | +16,650 | -- | -- | +10,310 |
| Jan. 31..... | 1,197.54 | 47,100 | +5,810 | 829.19 | 36,320 | +740 |
| Feb. 28..... | 1,198.28 | 48,390 | +1,290 | 834.72 | 42,590 | +6,270 |
| Mar. 31..... | 1,198.26 | 48,360 | -30 | 840.78 | 50,100 | +7,510 |
| Apr. 30..... | 1,194.40 | 41,840 | -6,520 | 838.35 | 47,010 | -3,090 |
| May 31..... | 1,189.90 | 34,930 | -6,910 | 836.65 | 44,910 | -2,100 |
| June 30..... | 1,192.00 | 38,060 | +3,130 | 830.56 | 37,820 | -7,090 |
| July 31..... | 1,191.22 | 36,880 | -1,180 | 812.65 | 20,900 | -16,920 |
| Aug. 31..... | 1,188.02 | 32,270 | -4,610 | 794.38 | 9,410 | -11,490 |
| Sept. 30..... | 1,186.28 | 29,020 | -3,250 | 798.46 | 11,500 | +2,090 |
| WTR YR 1990 | -- | -- | -13,270 | -- | -- | -19,440 |

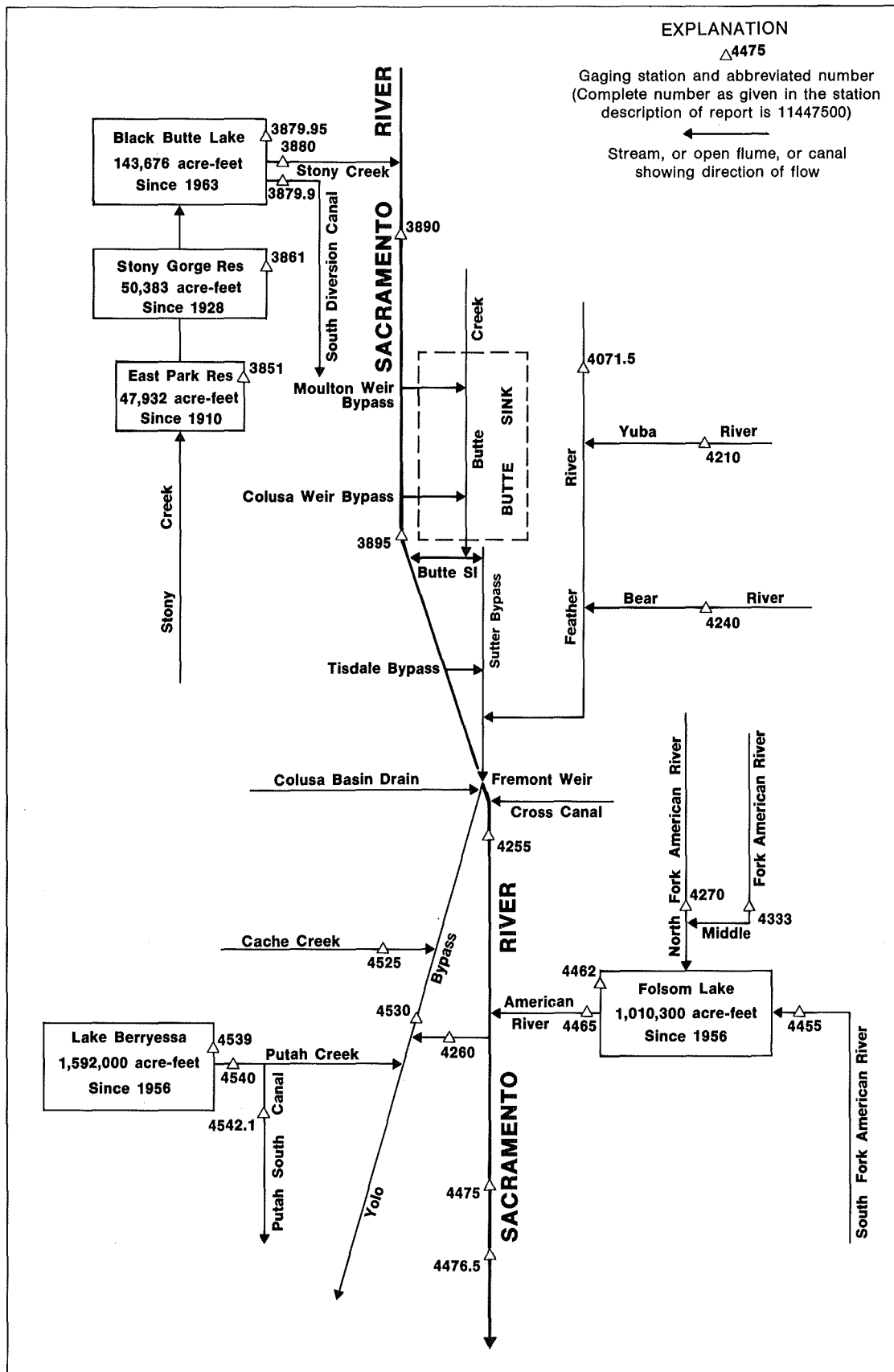


Figure 31. Diversions and storage in lower Sacramento River basin.

11387995 BLACK BUTTE LAKE NEAR ORLAND, CA

LOCATION.--Lat 39°48'50", long 122°20'12", in SE 1/4 SW 1/4 sec.29, T.23 N., R.4 W., Tehama County, Hydrologic Unit 18020115, in control tower in right abutment of main dam on Stony Creek, 8 mi northwest of Orland.

DRAINAGE AREA.--738 mi².

PERIOD OF RECORD.--October 1963 to September 1990 (discontinued). Prior to October 1971, published as Black Butte Reservoir near Orland.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Contents based on capacity table dated September 1978 provided by U.S. Army Corps of Engineers.

REMARKS.--Lake is formed by seven earthfill dams. Storage began Oct. 28, 1963. Usable capacity, 143,676 acre-ft, between elevations 375.0 ft, invert of control tower, and 473.5 ft, spillway crest. Normal operating pool is from elevation 414.6 ft, capacity, 6,640 acre-ft, to 473.5 ft, capacity, 143,676 acre-ft. South Diversion Canal (station 11387990) diverts at right end of dam. Lake is used for irrigation, flood control, and recreation. Water is released down Stony Creek (station 11388000) for irrigation. Figures given represent total contents at 2400 hours. See schematic diagram of lower Sacramento River basin.

COOPERATION.--Records were provided by U.S. Army Corps of Engineers, not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 168,198 acre-ft, Feb. 18, 1986, elevation, 478.76 ft; minimum since first filling, 1,006 acre-ft, Nov. 6, 1977, elevation, 397.20 ft.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 55,957 acre-ft, June 4, elevation, 448.35 ft; minimum, 26,474 acre-ft, Sept. 30, elevation, 433.91 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by U.S. Army Corps of Engineers in 1977)

| | | | | | | | |
|-----|-----|-----|-------|-----|--------|-----|---------|
| 375 | 0 | 394 | 597 | 409 | 3,948 | 440 | 37,172 |
| 382 | 20 | 397 | 950 | 412 | 5,260 | 450 | 60,258 |
| 385 | 74 | 400 | 1,432 | 415 | 6,874 | 460 | 90,634 |
| 388 | 178 | 403 | 2,070 | 420 | 10,340 | 470 | 128,571 |
| 391 | 346 | 406 | 2,897 | 430 | 20,845 | 480 | 174,303 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 45849 | 33335 | 30162 | 29301 | 38540 | 42049 | 48734 | 49461 | 54793 | 51417 | 46548 | 41101 |
| 2 | 45446 | 33372 | 30128 | 29151 | 38600 | 42454 | 48594 | 49461 | 55272 | 51320 | 46345 | 40684 |
| 3 | 45023 | 33426 | 30094 | 29001 | 38741 | 43055 | 48524 | 49484 | 55626 | 51080 | 46164 | 40208 |
| 4 | 44603 | 33499 | 30060 | 28819 | 38882 | 43661 | 48594 | 49508 | 55957 | 50791 | 46074 | 39592 |
| 5 | 44207 | 33554 | 30026 | 28687 | 39003 | 44097 | 48734 | 49461 | 55931 | 50504 | 46006 | 38943 |
| 6 | 43792 | 33609 | 29992 | 28539 | 39084 | 44427 | 48944 | 49343 | 55728 | 50242 | 45939 | 38340 |
| 7 | 43314 | 33628 | 29958 | 28572 | 39185 | 44735 | 49132 | 49225 | 55373 | 49957 | 45782 | 37723 |
| 8 | 42839 | 33554 | 29924 | 29958 | 39246 | 45001 | 49343 | 49155 | 54919 | 49697 | 45647 | 37172 |
| 9 | 42304 | 33171 | 29873 | 30470 | 39327 | 45245 | 49555 | 49061 | 54392 | 49602 | 45513 | 36665 |
| 10 | 41689 | 32773 | 29788 | 30676 | 39429 | 45468 | 49720 | 48967 | 53893 | 49508 | 45335 | 36163 |
| 11 | 41038 | 32540 | 29738 | 30866 | 39531 | 45759 | 49815 | 48804 | 53150 | 49367 | 45245 | 35684 |
| 12 | 40373 | 32361 | 29687 | 30371 | 39613 | 45984 | 49791 | 48594 | 52879 | 49272 | 45134 | 35172 |
| 13 | 39735 | 32129 | 29653 | 33299 | 39654 | 46187 | 49697 | 48408 | 52830 | 49179 | 45001 | 34664 |
| 14 | 39206 | 31810 | 29637 | 34871 | 39715 | 46367 | 49531 | 48315 | 52879 | 49108 | 44824 | 34180 |
| 15 | 38741 | 31581 | 29653 | 35894 | 39674 | 46571 | 49367 | 48292 | 52928 | 48991 | 44669 | 33664 |
| 16 | 38280 | 31336 | 29620 | 36182 | 39776 | 46844 | 49225 | 48292 | 53026 | 48804 | 44647 | 33135 |
| 17 | 37822 | 31109 | 29603 | 35627 | 39899 | 47094 | 49179 | 48361 | 53150 | 48617 | 44669 | 32558 |
| 18 | 37329 | 30935 | 29603 | 35342 | 39920 | 47392 | 49179 | 48454 | 53224 | 48454 | 45001 | 31969 |
| 19 | 36879 | 30745 | 29637 | 35589 | 39961 | 47967 | 49296 | 48571 | 53199 | 48245 | 45134 | 31353 |
| 20 | 36530 | 30590 | 29670 | 36240 | 40002 | 48524 | 49461 | 48640 | 53125 | 48037 | 45179 | 30797 |
| 21 | 36240 | 30452 | 29704 | 36860 | 40084 | 49061 | 49626 | 48780 | 52879 | 47852 | 45156 | 30247 |
| 22 | 36009 | 30350 | 29738 | 37447 | 40228 | 49673 | 49815 | 48991 | 52609 | 47714 | 45001 | 29788 |
| 23 | 35952 | 30281 | 29788 | 37842 | 40394 | 50242 | 50005 | 49484 | 52340 | 47622 | 44868 | 29318 |
| 24 | 35589 | 30230 | 29839 | 37902 | 40622 | 50744 | 50100 | 49933 | 52072 | 47576 | 44647 | 28918 |
| 25 | 35153 | 30247 | 29856 | 38001 | 40892 | 51104 | 50147 | 50361 | 51804 | 47553 | 44163 | 28556 |
| 26 | 34608 | 30264 | 29907 | 38080 | 41185 | 51248 | 50123 | 50791 | 51538 | 47461 | 43726 | 28180 |
| 27 | 34051 | 30264 | 29941 | 38160 | 41478 | 51152 | 50052 | 51707 | 51417 | 47346 | 43336 | 27791 |
| 28 | 33481 | 30264 | 29839 | 38220 | 41795 | 50696 | 49910 | 52682 | 51320 | 47254 | 42861 | 27390 |
| 29 | 33117 | 30230 | 29704 | 38300 | --- | 50100 | 49673 | 53051 | 51296 | 47117 | 42326 | 26945 |
| 30 | 33190 | 30196 | 29569 | 38340 | --- | 49508 | 49579 | 53372 | 51393 | 46935 | 41901 | 26474 |
| 31 | 33262 | --- | 29418 | 38460 | --- | 48991 | --- | 54117 | --- | 46753 | 41500 | --- |
| MAX | 45849 | 33628 | 30162 | 38460 | 41795 | 51248 | 50147 | 54117 | 55957 | 51417 | 46548 | 41101 |
| MIN | 33117 | 30196 | 29418 | 28539 | 38540 | 42049 | 48524 | 48292 | 51296 | 46753 | 41500 | 26474 |
| a | 437.93 | 436.19 | 435.73 | 440.65 | 442.27 | 445.50 | 445.75 | 447.62 | 446.51 | 444.53 | 442.13 | 433.91 |
| b | -12970 | -3066 | -778 | +9042 | +3335 | +7196 | +588 | +4538 | -2724 | -4640 | -5253 | -15026 |
| c | 824 | 518 | 344 | 255 | 330 | 708 | 1107 | 1392 | 1940 | 2251 | 1799 | 1382 |

CAL YR 1989 b -3,301

WTR YR 1990 b -19,758

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, provided by U.S. Army Corps of Engineers; not reviewed by U.S. Geological Survey.

11388000 STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, CA

LOCATION.--Lat 39°49'07", long 122°19'26", in NW 1/4 SW 1/4 sec.28, T.23 N., R.4 W., Tehama County, Hydrologic Unit 18020103, on left bank 200 ft downstream from road bridge, 0.6 mi downstream from Black Butte Dam, 8.1 mi northwest of Orland.
DRAINAGE AREA.--738 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1955 to September 1990 (discontinued). Prior to October 1962, published as Stony Creek at Black Butte damsite, near Orland.
REVISED RECORDS.--WDR CA-77-4: Drainage area.
GAGE.--Water-stage recorder and grouted rock control. Datum of gage is 366.18 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Dec. 12, 1960, water-stage recorder at site 0.6 mi upstream at different datum. Dec. 12, 1960, to Nov. 30, 1963, nonrecording gage at bridge 200 ft upstream at datum 4.04 ft higher.
REMARKS.--No estimated daily discharges. Records fair. Many diversions upstream from station for irrigation. Flow completely regulated by Black Butte Lake (station 11387995), East Park Reservoir (station 11385100), and Stony Gorge Reservoir (station 11386100). Prior to October 1956, figures of daily discharge included water diverted to South Diversion Canal, which diverts 0.6 mi upstream from station. Prior to October 1987 records were provided by U.S. Army Corps of Engineers. See schematic diagram of lower Sacramento River basin.
AVERAGE DISCHARGE.--35 years, 635 ft³/s, 460,100 acre-ft/yr, adjusted for diversions to South Diversion Canal since 1956, Wackerman Ranch since 1979, and for change in contents and evaporation from Black Butte Lake since 1964; unadjusted for same period, 521 ft³/s, 377,500 acre-ft.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,300 ft³/s, Feb. 24, 1958, gage height, 11.82 ft, site and datum then in use, from rating curve extended above 7,500 ft³/s on basis of slope-area measurement of peak flow; no flow for many days in 1956, 1957, 1962. Since completion of Black Butte Dam in 1964, maximum discharge, 23,300 ft³/s, Feb. 18, 1986, gage height, 11.40 ft; no flow at times in most years.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 777 ft³/s, Jan. 17, gage height, 4.98 ft; no flow Nov. 2-7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|---------|---------|-------|--------|-------|-------|------|--------|--------|------|------|------|
| 1 | 200 | .03 | 52 | 12 | 34 | 8.5 | 141 | 100 | 7.5 | 75 | 111 | 69 |
| 2 | 200 | .00 | 52 | 12 | 33 | 9.8 | 126 | 71 | 7.6 | 111 | 113 | 81 |
| 3 | 200 | .00 | 52 | 16 | 33 | 12 | 103 | 61 | 7.5 | 135 | 113 | 96 |
| 4 | 200 | .00 | 52 | 18 | 33 | 14 | 91 | 58 | 11 | 137 | 102 | 114 |
| 5 | 200 | .00 | 51 | 10 | 33 | 14 | 65 | 69 | 82 | 137 | 101 | 113 |
| 6 | 199 | .00 | 52 | 9.6 | 33 | 14 | 66 | 78 | 112 | 134 | 101 | 102 |
| 7 | 199 | .00 | 52 | 14 | 33 | 14 | 78 | 86 | 107 | 128 | 111 | 110 |
| 8 | 199 | 48 | 52 | 13 | 33 | 13 | 66 | 93 | 118 | 112 | 119 | 111 |
| 9 | 208 | 190 | 52 | 13 | 33 | 12 | 56 | 108 | 128 | 92 | 124 | 102 |
| 10 | 213 | 199 | 52 | 13 | 33 | 13 | 59 | 124 | 131 | 90 | 127 | 88 |
| 11 | 218 | 134 | 51 | 11 | 33 | 13 | 69 | 128 | 131 | 103 | 120 | 98 |
| 12 | 220 | 98 | 51 | 8.8 | 33 | 13 | 71 | 126 | 126 | 112 | 118 | 103 |
| 13 | 208 | 105 | 46 | 9.0 | 33 | 13 | 96 | 119 | 93 | 111 | 107 | 99 |
| 14 | 177 | 107 | 35 | 10 | 30 | 13 | 113 | 107 | 84 | 116 | 102 | 91 |
| 15 | 167 | 85 | 35 | 10 | 30 | 12 | 126 | 88 | 87 | 125 | 102 | 91 |
| 16 | 160 | 70 | 35 | 330 | 30 | 12 | 123 | 74 | 85 | 134 | 98 | 91 |
| 17 | 164 | 57 | 35 | 767 | 30 | 10 | 117 | 68 | 71 | 129 | 99 | 101 |
| 18 | 175 | 54 | 29 | 613 | 30 | 10 | 93 | 64 | 102 | 121 | 94 | 119 |
| 19 | 183 | 54 | 11 | 310 | 29 | 10 | 66 | 60 | 119 | 121 | 96 | 120 |
| 20 | 165 | 49 | 10 | 106 | 32 | 11 | 58 | 52 | 127 | 108 | 96 | 109 |
| 21 | 152 | 61 | 8.9 | 105 | 26 | 11 | 58 | 52 | 142 | 100 | 110 | 99 |
| 22 | 152 | 62 | 6.7 | 105 | 9.6 | 11 | 63 | 49 | 139 | 103 | 121 | 100 |
| 23 | 193 | 57 | 6.6 | 105 | 8.8 | 12 | 61 | 26 | 129 | 106 | 114 | 94 |
| 24 | 292 | 57 | 7.2 | 75 | 8.3 | 11 | 64 | 11 | 115 | 110 | 105 | 86 |
| 25 | 298 | 58 | 7.3 | 43 | 8.4 | 47 | 74 | 9.2 | 117 | 109 | 99 | 63 |
| 26 | 299 | 57 | 7.3 | 38 | 8.3 | 63 | 86 | 37 | 115 | 113 | 85 | 57 |
| 27 | 299 | 55 | 7.3 | 36 | 8.3 | 84 | 94 | 27 | 114 | 122 | 74 | 56 |
| 28 | 299 | 52 | 6.8 | 35 | 8.4 | 104 | 101 | 13 | 113 | 116 | 79 | 55 |
| 29 | 220 | 52 | 9.7 | 35 | --- | 120 | 112 | 12 | 96 | 122 | 83 | 68 |
| 30 | 1.7 | 52 | 12 | 35 | --- | 134 | 117 | 10 | 81 | 116 | 85 | 82 |
| 31 | .27 | --- | 11 | 35 | --- | 141 | --- | 8.4 | --- | 110 | 75 | --- |
| TOTAL | 6060.97 | 1813.03 | 947.8 | 2952.4 | 727.1 | 979.3 | 2613 | 1988.6 | 2897.6 | 3558 | 3184 | 2768 |
| MEAN | 196 | 60.4 | 30.6 | 95.2 | 26.0 | 31.6 | 87.1 | 64.1 | 96.6 | 115 | 103 | 92.3 |
| MAX | 299 | 199 | 52 | 767 | 34 | 141 | 141 | 128 | 142 | 137 | 127 | 120 |
| MIN | .27 | .00 | 6.6 | 8.8 | 8.3 | 8.5 | 56 | 8.4 | 7.5 | 75 | 74 | 55 |
| AC-FT | 12020 | 3600 | 1880 | 5860 | 1440 | 1940 | 5180 | 3940 | 5750 | 7060 | 6320 | 5490 |

CAL YR 1989 TOTAL 40360.89 MEAN 111 MAX 604 MIN .00 AC-FT 80060 MEAN a 209 AC-FT a 151200
WTR YR 1990 TOTAL 30489.80 MEAN 83.5 MAX 767 MIN .00 AC-FT 60480 MEAN a 159 AC-FT a 114800

a Adjusted for diversions to South Diversion Canal near Orland, Wackerman Ranch, and for change in contents and evaporation from Black Butte Lake. Adjustments provided by U.S. Army Corps of Engineers.

11388000 STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

CHEMICAL DATA: Water years 1958-79. Published as "at damsite" 1959-64.

WATER TEMPERATURE: Water years 1969 to current year.

SEDIMENT DATA: Water years 1958-59, 1961-62.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1969 to current year.

INSTRUMENTATION.--Water-temperature recorder since June 1969.

REMARKS.--Interruptions in record were due to lost tape Jan. 4 to May 3 and equipment malfunctions Jan. 1-3, June 1. No flow Nov. 1-8. Water temperature can be affected by releases from Black Butte Dam.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 31.5 °C, Aug. 15, 1977; minimum recorded, 0.5 °C, Feb. 6, 1989.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 28.5 °C, Aug. 9, 10; minimum recorded, 6.5 °C, Dec. 27-30.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|---------|------|----------|------|----------|------|---------|-----|----------|-----|-------|-----|
| | OCTOBER | | NOVEMBER | | DECEMBER | | JANUARY | | FEBRUARY | | MARCH | |
| 1 | 21.5 | 20.0 | --- | --- | 11.5 | 10.0 | --- | --- | --- | --- | --- | --- |
| 2 | 21.0 | 19.0 | --- | --- | 11.5 | 10.0 | --- | --- | --- | --- | --- | --- |
| 3 | 21.0 | 20.0 | --- | --- | 11.5 | 10.0 | --- | --- | --- | --- | --- | --- |
| 4 | 21.0 | 19.5 | --- | --- | 11.5 | 10.0 | --- | --- | --- | --- | --- | --- |
| 5 | 21.0 | 19.5 | --- | --- | 12.0 | 10.5 | --- | --- | --- | --- | --- | --- |
| 6 | 20.5 | 19.0 | --- | --- | 11.5 | 10.0 | --- | --- | --- | --- | --- | --- |
| 7 | 20.5 | 19.0 | --- | --- | 11.5 | 10.0 | --- | --- | --- | --- | --- | --- |
| 8 | 20.5 | 18.5 | --- | --- | 10.5 | 9.5 | --- | --- | --- | --- | --- | --- |
| 9 | 20.5 | 19.0 | 14.5 | 12.5 | 11.5 | 10.0 | --- | --- | --- | --- | --- | --- |
| 10 | 20.5 | 19.0 | 14.5 | 13.0 | 10.0 | 8.5 | --- | --- | --- | --- | --- | --- |
| 11 | 20.5 | 19.0 | 14.5 | 12.5 | 9.5 | 8.0 | --- | --- | --- | --- | --- | --- |
| 12 | 20.5 | 19.0 | 14.5 | 12.5 | 10.0 | 8.5 | --- | --- | --- | --- | --- | --- |
| 13 | 20.5 | 19.0 | 14.5 | 13.0 | 10.0 | 8.0 | --- | --- | --- | --- | --- | --- |
| 14 | 20.5 | 19.0 | 13.5 | 12.5 | 10.0 | 8.0 | --- | --- | --- | --- | --- | --- |
| 15 | 20.5 | 19.0 | 14.0 | 12.5 | 9.5 | 8.0 | --- | --- | --- | --- | --- | --- |
| 16 | 20.5 | 19.0 | 14.0 | 12.0 | 10.0 | 8.0 | --- | --- | --- | --- | --- | --- |
| 17 | 20.0 | 19.0 | 14.0 | 12.0 | 9.0 | 8.0 | --- | --- | --- | --- | --- | --- |
| 18 | 20.0 | 19.0 | 14.0 | 12.0 | 9.0 | 7.5 | --- | --- | --- | --- | --- | --- |
| 19 | 20.0 | 18.0 | 13.5 | 12.0 | 8.5 | 7.0 | --- | --- | --- | --- | --- | --- |
| 20 | 19.5 | 19.0 | 13.5 | 12.0 | 9.0 | 7.0 | --- | --- | --- | --- | --- | --- |
| 21 | 19.0 | 18.0 | 13.5 | 12.0 | 8.0 | 7.0 | --- | --- | --- | --- | --- | --- |
| 22 | 18.5 | 17.5 | 13.0 | 12.0 | 8.5 | 7.5 | --- | --- | --- | --- | --- | --- |
| 23 | 19.0 | 17.0 | 13.0 | 12.0 | 9.0 | 7.0 | --- | --- | --- | --- | --- | --- |
| 24 | 18.0 | 16.0 | 13.0 | 12.0 | 8.5 | 7.0 | --- | --- | --- | --- | --- | --- |
| 25 | 17.5 | 16.0 | 12.5 | 12.0 | 8.5 | 7.5 | --- | --- | --- | --- | --- | --- |
| 26 | 16.5 | 16.0 | 13.0 | 11.5 | 8.5 | 7.0 | --- | --- | --- | --- | --- | --- |
| 27 | 17.0 | 16.0 | 12.5 | 10.5 | 8.5 | 6.5 | --- | --- | --- | --- | --- | --- |
| 28 | 16.0 | 14.5 | 12.0 | 10.5 | 7.5 | 6.5 | --- | --- | --- | --- | --- | --- |
| 29 | 16.0 | 14.0 | 11.5 | 10.0 | 7.5 | 6.5 | --- | --- | --- | --- | --- | --- |
| 30 | 14.0 | 13.0 | 11.5 | 10.0 | 9.0 | 6.5 | --- | --- | --- | --- | --- | --- |
| 31 | 14.5 | 12.0 | --- | --- | 8.0 | 7.0 | --- | --- | --- | --- | --- | --- |
| MONTH | 21.5 | 12.0 | --- | --- | 12.0 | 6.5 | --- | --- | --- | --- | --- | --- |

11388000 STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|-------|-----|------|------|------|------|------|------|--------|------|-----------|------|
| | APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
| 1 | --- | --- | --- | --- | --- | --- | 24.0 | 20.0 | 26.0 | 23.5 | 24.5 | 22.0 |
| 2 | --- | --- | --- | --- | 22.0 | 18.0 | 22.5 | 20.0 | 26.5 | 23.5 | 25.0 | 22.0 |
| 3 | --- | --- | --- | --- | 23.5 | 19.0 | 22.5 | 20.0 | 26.5 | 23.5 | 25.0 | 22.0 |
| 4 | --- | --- | 20.5 | 17.0 | 24.0 | 18.5 | 22.5 | 20.0 | 26.5 | 23.5 | 24.5 | 22.0 |
| 5 | --- | --- | 20.0 | 17.5 | 20.0 | 17.5 | 22.5 | 20.5 | 26.5 | 23.5 | 25.0 | 22.5 |
| 6 | --- | --- | 20.0 | 17.5 | 20.0 | 17.0 | 23.5 | 20.5 | 26.0 | 23.5 | 25.0 | 22.5 |
| 7 | --- | --- | 18.5 | 15.5 | 19.5 | 16.5 | 23.5 | 20.5 | 27.0 | 24.0 | 25.0 | 22.5 |
| 8 | --- | --- | 19.5 | 16.0 | 19.5 | 16.5 | 24.0 | 21.0 | 26.5 | 24.0 | 25.0 | 22.5 |
| 9 | --- | --- | 20.0 | 17.0 | 19.0 | 17.0 | 24.5 | 21.5 | 28.5 | 24.0 | 25.0 | 22.5 |
| 10 | --- | --- | 19.5 | 17.5 | 19.5 | 17.0 | 24.5 | 21.0 | 28.5 | 24.0 | 24.5 | 22.0 |
| 11 | --- | --- | 20.0 | 17.5 | 19.5 | 16.5 | 24.5 | 21.0 | 26.0 | 24.0 | 25.0 | 22.0 |
| 12 | --- | --- | 20.0 | 17.0 | 19.5 | 16.5 | 24.0 | 22.0 | 27.0 | 24.0 | 25.0 | 22.5 |
| 13 | --- | --- | 20.0 | 17.5 | 19.5 | 16.5 | 25.0 | 22.0 | 27.0 | 24.5 | 25.0 | 22.5 |
| 14 | --- | --- | 20.0 | 17.5 | 20.0 | 17.0 | 25.5 | 22.0 | 28.0 | 24.5 | 25.0 | 22.0 |
| 15 | --- | --- | 20.0 | 17.0 | 20.5 | 17.5 | 25.0 | 22.5 | 28.0 | 24.5 | 24.5 | 22.0 |
| 16 | --- | --- | 20.5 | 17.0 | 20.5 | 17.5 | 25.0 | 22.0 | 27.0 | 24.5 | 24.0 | 22.0 |
| 17 | --- | --- | 21.0 | 17.5 | 21.0 | 17.0 | 25.5 | 22.0 | 28.0 | 24.5 | 24.0 | 22.0 |
| 18 | --- | --- | 20.0 | 17.5 | 20.5 | 17.5 | 26.0 | 22.5 | 27.0 | 24.5 | 24.0 | 22.0 |
| 19 | --- | --- | 18.0 | 17.0 | 20.5 | 17.5 | 25.5 | 23.0 | 26.5 | 24.5 | 24.0 | 22.5 |
| 20 | --- | --- | 19.5 | 16.5 | 21.0 | 18.0 | 26.0 | 23.0 | 27.0 | 24.0 | 24.0 | 21.5 |
| 21 | --- | --- | 20.0 | 17.0 | 21.0 | 18.0 | 26.5 | 23.0 | 26.5 | 24.0 | 24.5 | 21.0 |
| 22 | --- | --- | 17.5 | 17.0 | 21.5 | 18.0 | 25.5 | 23.0 | 26.5 | 24.0 | 23.5 | 21.5 |
| 23 | --- | --- | 20.5 | 17.0 | 22.0 | 18.0 | 25.5 | 23.0 | 27.0 | 24.0 | 24.0 | 21.5 |
| 24 | --- | --- | 20.0 | 16.5 | 22.0 | 18.5 | 25.0 | 23.0 | 26.0 | 23.5 | 23.5 | 21.5 |
| 25 | --- | --- | 22.0 | 17.5 | 22.0 | 19.0 | 25.5 | 22.5 | 25.0 | 23.5 | 23.0 | 20.5 |
| 26 | --- | --- | 19.0 | 17.5 | 22.0 | 19.0 | 25.5 | 23.0 | 24.0 | 23.0 | 23.5 | 21.0 |
| 27 | --- | --- | 17.5 | 16.5 | 22.5 | 19.0 | 25.5 | 23.0 | 25.0 | 22.5 | 23.0 | 20.5 |
| 28 | --- | --- | 20.5 | 16.5 | 22.5 | 19.0 | 26.0 | 23.0 | 24.5 | 22.0 | 23.5 | 20.5 |
| 29 | --- | --- | 19.0 | 17.0 | 23.5 | 19.5 | 26.0 | 23.5 | 24.5 | 22.5 | 23.0 | 20.5 |
| 30 | --- | --- | 19.0 | 16.5 | 23.5 | 20.0 | 26.0 | 23.5 | 25.0 | 22.0 | 23.0 | 20.5 |
| 31 | --- | --- | 19.5 | 16.0 | --- | --- | 26.5 | 23.0 | 25.0 | 22.0 | --- | --- |
| MONTH | --- | --- | --- | --- | --- | --- | 26.5 | 20.0 | 28.5 | 22.0 | 25.0 | 20.5 |

SACRAMENTO RIVER BASIN

11389000 SACRAMENTO RIVER AT BUTTE CITY, CA

LOCATION.--Lat 39°27'28", long 121°59'35", in SE 1/4 NE 1/4 sec.32, T.19 N., R.1 W., Glenn County, Hydrologic Unit 18020104, on left bank 100 ft upstream from highway bridge, 0.5 mi south of Butte City, and at mile 115.8 upstream from Sacramento.

DRAINAGE AREA.--12,080 mi².

PERIOD OF RECORD.--April 1921 to current year (prior to October 1938, low-water periods only). Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1955-66

WATER TEMPERATURE: Water years 1955-58, 1960-67, 1969-81.

SEDIMENT DATA: Water years 1978-80.

REVISED RECORDS.--WDR CA-86-4: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.92 ft below National Geodetic Vertical Datum of 1929. Prior to December 1930, at site 0.5 mi upstream at same datum.

REMARKS.--Records good. Natural flow affected by storage reservoirs, power developments, diversions for irrigation, return flow from irrigated areas, and bypassing for flood control. When discharge exceeds about 90,000 ft³/s, overbank flow into Butte basin occurs upstream from left (east) bank levee. The combined overbank flow and tributary runoff then flows south on the east bank floodplain into the Butte Sink and Sutter Bypass. Records tabulated below do not include overbank flow into the Butte basin. See schematic diagram showing diversions and storage in the lower Sacramento River Basin.

AVERAGE DISCHARGE.--52 years (water years 1939-90), 13,260 ft³/s, 9,607,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1941-90), 170,000 ft³/s, Feb. 7, 1942, gage height, 96.87 ft, from rating curve extended above 101,000 ft³/s; minimum recorded, 1,050 ft³/s, July 15, 25, 26, 1931, gage height, 67.49 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28,800 ft³/s, Jan. 15, gage height, 77.95 ft; minimum daily, 4,380 ft³/s, Dec. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 5130 | 4870 | 8040 | 4580 | 5560 | 5350 | e5840 | 6130 | 16200 | 7280 | 7230 | 6650 |
| 2 | 5190 | 5000 | 8110 | 4600 | 6510 | 5380 | e4900 | 6180 | 11100 | 7310 | 7260 | 6650 |
| 3 | 5130 | 5910 | 7710 | 4630 | 6460 | 6140 | e5520 | 5980 | 8520 | 7310 | 7250 | 6650 |
| 4 | 5120 | 6540 | e7250 | 4580 | 7130 | 8870 | e5650 | 6040 | 7410 | 7240 | 7620 | 6760 |
| 5 | 5040 | 7230 | e7370 | 4660 | 8840 | 9580 | 5760 | 6090 | 6480 | 7240 | 7710 | 6620 |
| 6 | 5060 | 7340 | e7090 | 5090 | 7350 | 11600 | 5680 | 6130 | 5620 | 7300 | 7800 | 6560 |
| 7 | 4880 | 7370 | e7020 | 5560 | 7450 | 8650 | 5830 | 6580 | 5170 | 7150 | 7720 | 6590 |
| 8 | 4810 | 7380 | e7050 | 11000 | 6820 | 7510 | 5950 | 6890 | 4970 | 7090 | 7660 | 6180 |
| 9 | 4870 | 7400 | e6980 | 24100 | 6300 | 7370 | 6890 | 7110 | 4550 | 7030 | 7770 | 6090 |
| 10 | 4900 | 7710 | e6870 | e13100 | 5980 | 7080 | 7160 | 7130 | 4690 | 7010 | 7900 | 6320 |
| 11 | 5060 | 7930 | e6520 | e8930 | 5800 | 8550 | 7140 | 7420 | 5050 | 6890 | 7650 | 6190 |
| 12 | 5340 | 7910 | e6210 | 7540 | 5670 | 8660 | 7360 | 7520 | 5460 | 6900 | 7620 | 6010 |
| 13 | 5590 | 7880 | e6100 | e12500 | 5540 | 7120 | 7520 | 7410 | 6300 | 6750 | 7720 | 5810 |
| 14 | 6000 | 7850 | e6040 | e23000 | 5310 | 6400 | 7710 | 7730 | 6300 | 6920 | 7590 | 5700 |
| 15 | 6110 | 8020 | e5790 | e26000 | 5190 | 6060 | 7880 | 7800 | 6580 | 7050 | 7820 | 5510 |
| 16 | 6120 | 8030 | e5480 | e14000 | 5310 | 5910 | 7700 | 7750 | 7070 | 7100 | 7840 | 5340 |
| 17 | 6060 | 7720 | e5170 | e13000 | 5670 | 5700 | 7630 | 7530 | 7330 | 7250 | 7880 | 5260 |
| 18 | 5930 | 7460 | e5070 | 11200 | 6690 | 5570 | 7520 | 6840 | 7490 | 7310 | 7960 | 5370 |
| 19 | 5840 | 7650 | e4990 | 8950 | 6500 | 5460 | 7020 | 6980 | 7510 | 7320 | 8330 | 5310 |
| 20 | 5830 | 8040 | e4960 | 7810 | 6080 | 5430 | 6680 | 7260 | 7300 | 7340 | 8330 | 5230 |
| 21 | 5890 | 8270 | e4880 | 7010 | 5800 | 5400 | 6490 | 7510 | 7270 | 7250 | 8330 | 5040 |
| 22 | 6340 | 8290 | e4840 | 6540 | 5680 | 5540 | 6690 | 7660 | 7010 | 7200 | 8090 | 4850 |
| 23 | 7620 | 8400 | e4800 | 6200 | 5850 | 5360 | 7040 | 8320 | 6850 | 7270 | 8000 | 4750 |
| 24 | 14900 | 8630 | e4590 | 5980 | 5590 | 5370 | 7250 | 10200 | 6850 | 7180 | 7780 | 4710 |
| 25 | 15700 | 8910 | e4470 | 5750 | 5460 | 5840 | 7340 | 8660 | 6800 | 7160 | 7640 | 4700 |
| 26 | 12200 | 9860 | e4430 | 5610 | 5450 | 6310 | 6990 | 7950 | 6930 | 7120 | 7580 | 4920 |
| 27 | 7890 | 10900 | e4410 | 5490 | 5410 | 6010 | 6790 | 8030 | 6960 | 7060 | 7490 | 5190 |
| 28 | 6590 | 10100 | e4380 | 5370 | 5390 | e5630 | 6560 | 12500 | 6890 | 7090 | 7410 | 5170 |
| 29 | 5850 | 9460 | 4480 | 5290 | --- | e5400 | 6270 | 15300 | 6980 | 7090 | 7190 | 4860 |
| 30 | 5280 | 8660 | 4460 | 5410 | --- | e5230 | 6030 | 11900 | 7170 | 7180 | 7000 | 4640 |
| 31 | 4980 | --- | 4470 | 5400 | --- | e5150 | --- | 14100 | --- | 7190 | 6900 | --- |
| TOTAL | 201250 | 236720 | 180030 | 278880 | 170790 | 203630 | 200790 | 250630 | 210810 | 221580 | 238070 | 169630 |
| MEAN | 6492 | 7891 | 5807 | 8996 | 6100 | 6569 | 6693 | 8085 | 7027 | 7148 | 7680 | 5654 |
| MAX | 15700 | 10900 | 8110 | 26000 | 8840 | 11600 | 7880 | 15300 | 16200 | 7340 | 8330 | 6760 |
| MIN | 4810 | 4870 | 4380 | 4580 | 5190 | 5150 | 4900 | 5980 | 4550 | 6750 | 6900 | 4640 |
| AC-FT | 399200 | 469500 | 357100 | 553200 | 338800 | 403900 | 398300 | 497100 | 418100 | 439500 | 472200 | 336500 |

CAL YR 1989 TOTAL 3145280 MEAN 8617 MAX 46800 MIN 4380 AC-FT 6239000
WTR YR 1990 TOTAL 2562810 MEAN 7021 MAX 26000 MIN 4380 AC-FT 5083000

e Estimated.

11389500 SACRAMENTO RIVER AT COLUSA, CA

LOCATION.--Lat 39°12'51", long 121°59'57", at north end of Jimeno Grant, Colusa County, Hydrologic Unit 18020104, on right bank 60 ft downstream from highway bridge at Colusa and at mile 89.4 upstream from Sacramento.

DRAINAGE AREA.--12,090 mi².

PERIOD OF RECORD.--April 1921 to current year (prior to October 1940, low-water periods only).

CHEMICAL DATA: Water years 1959-66.

WATER TEMPERATURES: Water years 1977-80.

SEDIMENT DATA: Water years 1973-80.

REVISED RECORDS.--WSP 1345: 1952. WDR CA-77-4: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.95 ft below National Geodetic Vertical Datum of 1929. Prior to December 1930, water-stage recorder in center fender pier 50 ft upstream from bridge at same datum.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power development, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas. When discharge exceeds about 30,000 ft³/s, flow begins over Colusa weir, 2.5 mi upstream on left bank, into Butte Sink and Sutter Bypass. Records tabulated below do not include flow over Colusa weir. See schematic diagram for lower Sacramento River basin.

AVERAGE DISCHARGE.--50 years (water years 1941-90), 11,480 ft³/s, 8,317,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1941-90), 51,800 ft³/s, Mar. 4, 1983, gage height, 68.50 ft; maximum gage height, 69.20 ft, Feb. 18, 1942; minimum recorded, 820 ft³/s, July 25, 26, 1931, gage height, 34.79 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,700 ft³/s, Jan. 15, gage height, 56.46 ft; minimum daily, 4,500 ft³/s, Dec. 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 5100 | 4900 | 8290 | 4590 | 5540 | 5520 | 5610 | 5900 | 15600 | 7140 | 7010 | 6710 |
| 2 | 5210 | 4980 | 8100 | 4770 | 6150 | 5580 | 6070 | 5900 | 12200 | 7160 | 7040 | 6700 |
| 3 | 5140 | 5480 | 7930 | 4800 | 6540 | 6020 | 5420 | 5770 | 9590 | 7190 | 7040 | 6710 |
| 4 | 5050 | 6550 | 7770 | 4620 | 6670 | 8250 | 5850 | 5840 | 8180 | 7140 | 7240 | 6770 |
| 5 | 4970 | 7150 | 7730 | 4580 | 8510 | 9140 | 5930 | 5900 | 7160 | 7110 | 7430 | 6660 |
| 6 | 4970 | 7440 | 7620 | 4900 | 7760 | 11200 | 5980 | 5860 | 6170 | 7160 | 7520 | 6620 |
| 7 | 4870 | 7450 | 7550 | 5390 | 7420 | 9730 | 5930 | 6220 | 5340 | 7110 | 7480 | 6640 |
| 8 | 4850 | 7510 | 7590 | 6480 | 7270 | 8370 | 6030 | 6570 | 5290 | 7010 | 7450 | 6440 |
| 9 | 4990 | 7540 | 7520 | 18600 | 6820 | 7840 | 6800 | 6730 | 4770 | 6980 | 7430 | 6230 |
| 10 | 5020 | 7730 | 7410 | 16000 | 6240 | 7870 | 7290 | 6820 | 4740 | 6880 | 7670 | 6330 |
| 11 | 5020 | 8030 | 7050 | 10400 | 6020 | 7830 | 7320 | 7020 | 5000 | 6730 | 7540 | 6390 |
| 12 | 5130 | 8050 | 6690 | 8410 | 5900 | 9490 | 7490 | 7260 | 5280 | 6730 | 7400 | 6300 |
| 13 | 5160 | 7990 | 6570 | 8780 | 5730 | 8050 | 7590 | 7180 | 5970 | 6540 | 7460 | 6050 |
| 14 | 5560 | 7960 | 6500 | 19400 | 5470 | 7220 | 7750 | 7340 | 6200 | 6560 | 7380 | 5930 |
| 15 | 5670 | 8090 | 6180 | 23000 | 5250 | 6710 | 8020 | 7600 | 6250 | 6780 | 7450 | 5820 |
| 16 | 5810 | 8130 | 5660 | 14900 | 5280 | 6480 | 7900 | 7510 | 6730 | 6800 | 7540 | 5570 |
| 17 | 5840 | 7990 | 5400 | 14000 | 5420 | 6280 | 7750 | 7530 | 7130 | 6880 | 7610 | 5500 |
| 18 | 5830 | 7680 | 5290 | 13100 | 6250 | 6110 | 7690 | 6880 | 7260 | 6920 | 7680 | 5550 |
| 19 | 5830 | 7720 | 5210 | 10300 | 6730 | 5920 | 7350 | 6820 | 7340 | 6990 | 7890 | 5610 |
| 20 | 5850 | 8030 | 5180 | 8900 | 6280 | 5840 | 6910 | 7200 | 7230 | 7050 | 8000 | 5450 |
| 21 | 5960 | 8320 | 5090 | 8010 | 6020 | 5760 | 6610 | 7330 | 7080 | 7040 | 8040 | 5380 |
| 22 | 6150 | 8360 | 5040 | 7380 | 5830 | 5900 | 6480 | 7470 | 7020 | 6980 | 8000 | 5140 |
| 23 | 6990 | 8450 | 5010 | 6920 | 6030 | 5800 | 6900 | e7870 | 6720 | 6950 | 7840 | 5020 |
| 24 | e13600 | 8660 | 4760 | 6600 | 5890 | 5630 | 7120 | e9160 | 6680 | 6970 | 7770 | 4950 |
| 25 | e14100 | 8840 | 4630 | 6280 | 5680 | 5940 | 7270 | e9390 | 6630 | 6920 | 7550 | 4960 |
| 26 | e12500 | 9420 | 4590 | 6050 | 5620 | 6510 | 7050 | e8220 | 6670 | 6910 | 7530 | 5030 |
| 27 | 9290 | 10200 | 4570 | 5860 | 5570 | 6330 | 6830 | e8110 | 6790 | 6860 | 7430 | 5300 |
| 28 | 7260 | 9940 | 4540 | 5700 | 5560 | 6080 | 6530 | e9500 | 6750 | 6860 | 7400 | 5420 |
| 29 | 6280 | 9500 | 4530 | 5550 | --- | 5900 | 6270 | e13700 | 6740 | 6880 | 7270 | 5220 |
| 30 | 5580 | 8840 | 4510 | 5460 | --- | 5770 | 5950 | e12400 | 6920 | 6970 | 6940 | 4950 |
| 31 | 5070 | --- | 4500 | 5440 | --- | 5640 | --- | 11500 | --- | 6990 | 7030 | --- |
| TOTAL | 198650 | 236930 | 189010 | 275170 | 173250 | 214710 | 203690 | 238500 | 211430 | 215190 | 232060 | 175350 |
| MEAN | 6408 | 7898 | 6097 | 8876 | 6187 | 6926 | 6790 | 7694 | 7048 | 6942 | 7486 | 5845 |
| MAX | 14100 | 10200 | 8290 | 23000 | 8510 | 11200 | 8020 | 13700 | 15600 | 7190 | 8040 | 6770 |
| MIN | 4850 | 4900 | 4500 | 4580 | 5250 | 5520 | 5420 | 5770 | 4740 | 6540 | 6940 | 4950 |
| AC-FT | 394000 | 470000 | 374900 | 545800 | 343600 | 425900 | 404000 | 473100 | 419400 | 426800 | 460300 | 347800 |

CAL YR 1989 TOTAL 3044480 MEAN 8341 MAX 36800 MIN 4500 AC-FT 6039000

WTR YR 1990 TOTAL 2563940 MEAN 7024 MAX 23000 MIN 4500 AC-FT 5086000

e Estimated.

SACRAMENTO RIVER BASIN

11389720 BUTTE CREEK BELOW DIVERSION DAM, NEAR STIRLING CITY, CA

LOCATION.--Lat 39°58'53", long 121°35'15", unsurveyed, T.25 N., R.3 E., Butte County, Hydrologic Unit 18020120, on left bank 400 ft downstream from diversion dam, 0.1 mi upstream from Haw Creek, and 6.2 mi northwest of Stirling City.

DRAINAGE AREA.--61.3 mi².

PERIOD OF RECORD.--January to February 1986, June 1986 to current year (low-flow records only).

GAGE.--Water-stage recorder. Elevation of gage is 2,840 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No records computed above 40 ft³/s. Flow regulated by diversion dam 400 ft upstream. Most of the water is diverted at diversion dam to Butte Creek Canal and then to De Sabla powerplant (station 11389750).

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|------|-----|-----|-----|-----|-----|-----|-------|-------|-----|
| 1 | 19 | 17 | 18 | 18 | 18 | --- | --- | 13 | --- | 9.1 | 8.5 | 8.2 |
| 2 | --- | 17 | 18 | 18 | 18 | --- | --- | 9.7 | --- | 9.1 | 8.4 | 8.2 |
| 3 | --- | 17 | 18 | 18 | 18 | --- | --- | 10 | --- | 9.1 | 8.4 | 8.1 |
| 4 | --- | 17 | 17 | 18 | 18 | --- | --- | 10 | --- | 9.1 | 8.4 | 8.1 |
| 5 | --- | 17 | 17 | 18 | 18 | --- | --- | 9.9 | --- | 9.1 | 8.4 | 8.1 |
| 6 | --- | 17 | 17 | 18 | 18 | --- | --- | 9.8 | --- | 9.1 | 8.4 | 8.1 |
| 7 | --- | 17 | 17 | --- | 18 | --- | --- | 9.8 | --- | 9.1 | 8.4 | 8.2 |
| 8 | --- | 21 | 17 | --- | 17 | --- | --- | 9.7 | 34 | 9.1 | 8.4 | 8.2 |
| 9 | --- | 17 | 17 | --- | 17 | --- | --- | 9.6 | 29 | 9.1 | 8.4 | 8.2 |
| 10 | --- | 17 | 17 | 25 | 18 | --- | --- | 10 | 25 | 9.1 | 8.4 | 8.2 |
| 11 | --- | 18 | 17 | 19 | 18 | --- | --- | 10 | 20 | 9.1 | 8.4 | 8.2 |
| 12 | --- | 18 | 17 | --- | 18 | --- | --- | 10 | 16 | 9.1 | 8.4 | 8.2 |
| 13 | --- | 17 | 17 | --- | 18 | --- | --- | 10 | 16 | 9.0 | 8.4 | 8.2 |
| 14 | --- | 17 | 17 | --- | 18 | 37 | --- | 10 | 15 | 9.0 | 8.4 | 8.2 |
| 15 | --- | 17 | 17 | --- | 18 | 36 | --- | 10 | 14 | 9.0 | 8.4 | 8.2 |
| 16 | --- | 17 | 17 | --- | e25 | --- | 40 | 10 | 13 | 9.1 | 8.4 | 8.2 |
| 17 | --- | 17 | 17 | --- | e28 | --- | 36 | 10 | 10 | 9.1 | 8.4 | 8.2 |
| 18 | --- | 17 | 17 | 36 | e28 | --- | 34 | 10 | 9.7 | 9.1 | 8.2 | 8.2 |
| 19 | 30 | 17 | 17 | 25 | e28 | --- | 28 | 10 | 9.5 | 9.1 | 8.3 | 8.2 |
| 20 | 19 | 17 | 17 | 20 | e28 | --- | 24 | 30 | 9.3 | 9.1 | 8.3 | 8.2 |
| 21 | --- | 17 | 17 | 18 | 28 | --- | 25 | 15 | 9.3 | 9.1 | 8.2 | 8.2 |
| 22 | 27 | 17 | 17 | 18 | 31 | --- | 25 | 10 | 8.5 | 9.1 | 8.2 | 8.2 |
| 23 | --- | 17 | 17 | 18 | 35 | --- | --- | --- | 9.3 | 9.1 | 8.2 | 8.2 |
| 24 | --- | --- | 17 | 18 | 36 | --- | --- | 31 | 9.3 | 9.1 | 8.2 | --- |
| 25 | --- | --- | 17 | 18 | --- | --- | 28 | 12 | 9.2 | 8.9 | 8.2 | --- |
| 26 | 26 | --- | 17 | 18 | --- | --- | 25 | 12 | 9.2 | 8.7 | 8.2 | --- |
| 27 | 26 | 23 | 17 | 18 | --- | --- | 23 | --- | 9.1 | 8.7 | 8.2 | --- |
| 28 | 22 | 19 | 17 | 18 | --- | --- | 23 | --- | 9.2 | 8.7 | 8.2 | --- |
| 29 | 22 | 18 | 17 | 18 | --- | --- | 22 | --- | 9.1 | 8.5 | 8.2 | --- |
| 30 | 21 | 18 | 17 | 20 | --- | --- | 20 | --- | 9.1 | 8.5 | 8.2 | --- |
| 31 | 19 | --- | 18 | 18 | --- | --- | --- | --- | --- | 8.5 | 8.2 | --- |
| TOTAL | --- | --- | 531 | --- | --- | --- | --- | --- | --- | 278.6 | 257.9 | --- |
| MEAN | --- | --- | 17.1 | --- | --- | --- | --- | --- | --- | 8.99 | 8.32 | --- |
| MAX | --- | --- | 18 | --- | --- | --- | --- | --- | --- | 9.1 | 8.5 | --- |
| MIN | --- | --- | 17 | --- | --- | --- | --- | --- | --- | 8.5 | 8.2 | --- |
| AC-FT | --- | --- | 1050 | --- | --- | --- | --- | --- | --- | 553 | 512 | --- |

e Estimated.

11389780 BUTTE CREEK BELOW CENTERVILLE DIVERSION DAM, NEAR PARADISE, CA

LOCATION.--Lat 39°52'01", long 121°37'58", in SW 1/4 NW 1/4 sec.10, T.23 N., R.3 E., Butte County, Hydrologic Unit 18020120, on left bank 400 ft downstream from Centerville diversion dam, 0.2 mi downstream from De Sabla powerplant, and 6.8 mi north of Paradise.

DRAINAGE AREA.--101 mi².

PERIOD OF RECORD.--November 1985 to February 1986, June 1986 to current year (low-flow records only).

GAGE.--Water-stage recorder. Elevation of gage is 1,130 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No records computed above 50 ft³/s. Flow regulated by several reservoirs and diversions upstream. Most of the water is diverted at Centerville diversion dam to the Centerville powerplant (station 11389775).

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|-------|-------|------|------|------|------|------|
| 1 | 41 | --- | 33 | 44 | 47 | --- | --- | 32 | --- | 14 | 13 | 13 |
| 2 | 41 | --- | 33 | 45 | 44 | --- | --- | 21 | --- | 14 | 12 | 13 |
| 3 | 40 | --- | 33 | 45 | --- | --- | --- | 19 | --- | 13 | 12 | 13 |
| 4 | 40 | --- | 33 | 44 | --- | --- | --- | 15 | --- | 14 | 13 | 14 |
| 5 | 40 | --- | 33 | 44 | 44 | --- | --- | 14 | --- | 16 | 14 | 14 |
| 6 | 40 | --- | 33 | 44 | 44 | --- | --- | 14 | --- | 14 | 16 | 13 |
| 7 | 40 | --- | 33 | --- | 43 | --- | --- | 17 | --- | 13 | 15 | 12 |
| 8 | 40 | --- | 33 | --- | 48 | --- | --- | 16 | --- | 14 | 11 | 12 |
| 9 | 40 | --- | 33 | --- | 48 | --- | --- | 15 | --- | 14 | 11 | 13 |
| 10 | 40 | --- | 33 | --- | 46 | --- | --- | 15 | --- | 13 | 12 | 13 |
| 11 | 40 | 41 | 33 | 43 | 46 | --- | --- | 15 | --- | 15 | 12 | 13 |
| 12 | 40 | 29 | 33 | --- | 46 | --- | --- | 15 | --- | 14 | 11 | 13 |
| 13 | 40 | 31 | 34 | --- | 46 | --- | --- | 17 | --- | 14 | 12 | 13 |
| 14 | 42 | 34 | 39 | --- | 45 | --- | --- | 15 | --- | 15 | 12 | 13 |
| 15 | 41 | 34 | 43 | --- | 46 | --- | --- | 17 | --- | 14 | 12 | 13 |
| 16 | 40 | 36 | 43 | --- | e46 | --- | --- | 15 | 48 | 14 | 11 | 13 |
| 17 | 42 | 36 | 42 | --- | e46 | --- | --- | 14 | 36 | 15 | 11 | 13 |
| 18 | 46 | 36 | 43 | --- | e46 | --- | --- | 14 | 22 | 14 | 11 | 13 |
| 19 | 46 | 36 | 43 | --- | 46 | --- | --- | 15 | 16 | 15 | 12 | 13 |
| 20 | 45 | 36 | 43 | --- | 49 | --- | --- | --- | 16 | 14 | 11 | 12 |
| 21 | --- | 35 | 43 | 47 | 47 | --- | --- | --- | 16 | 15 | 11 | 13 |
| 22 | --- | 36 | 43 | 43 | 50 | --- | --- | 30 | 18 | 14 | 13 | 13 |
| 23 | --- | 39 | 43 | 43 | --- | --- | --- | --- | 16 | 14 | 15 | 13 |
| 24 | --- | 42 | 43 | 42 | --- | --- | --- | --- | 16 | 15 | 15 | 13 |
| 25 | --- | --- | 43 | 45 | --- | --- | --- | --- | 16 | 16 | 14 | 13 |
| 26 | --- | --- | 43 | 45 | --- | --- | --- | --- | 16 | 15 | 13 | 13 |
| 27 | --- | 43 | 43 | 43 | --- | --- | --- | --- | 16 | 14 | 13 | 13 |
| 28 | --- | 35 | 43 | 43 | --- | --- | 48 | --- | 15 | 14 | 13 | 13 |
| 29 | --- | 34 | 43 | 43 | --- | --- | 43 | --- | 15 | 14 | 13 | 13 |
| 30 | --- | 33 | 43 | --- | --- | --- | 41 | --- | 14 | 14 | 13 | 13 |
| 31 | --- | --- | 43 | 49 | --- | --- | --- | --- | --- | 13 | 13 | --- |
| TOTAL | --- | --- | 1199 | --- | --- | --- | --- | --- | --- | 441 | 390 | 389 |
| MEAN | --- | --- | 38.7 | --- | --- | --- | --- | --- | --- | 14.2 | 12.6 | 13.0 |
| MAX | --- | --- | 43 | --- | --- | --- | --- | --- | --- | 16 | 16 | 14 |
| MIN | --- | --- | 33 | --- | --- | --- | --- | --- | --- | 13 | 11 | 12 |
| AC-FT | --- | --- | 2380 | --- | --- | --- | --- | --- | --- | 875 | 774 | 772 |
| a | 2430 | 4740 | 3850 | 8500 | 7680 | 11000 | 10490 | 8730 | 7260 | 8670 | 6030 | 2710 |

CAL YR 1989 AC-FT a 78880

WTR YR 1990 AC-FT a 82050

e Estimated.

a Diversion, in acre-feet, to Centerville powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

11389800 TOADTOWN CANAL ABOVE BUTTE CANAL, NEAR STIRLING CITY, CA

LOCATION.--Lat 39°53'09", long 121°36'35", in NE 1/4 NW 1/4 sec.2, T.23 N., R.3 E., Butte County, Hydrologic Unit 18020120, on right bank 600 ft upstream from Butte Canal and 4.6 mi west of Stirling City.

PERIOD OF RECORD.--October 1986 to current year. Monthly discharges for water years 1931-86 are published as a line item to Butte Creek near Chico (station 11390000).

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 2,790 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Canal diverts from right bank of West Branch Feather River, in sec.16, T.24 N., R.4 E. at Hendricks diversion dam to Hendricks canal, flows through tunnel down Long Ravine to Toadtown canal, and discharges into Butte canal. Butte canal flows to De Sabla powerplant (station 11389750) on Butte Creek.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 121 ft³/s, Jan. 16, 1989, no flow at times in each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|------|------|-------|-------|------|--------|------|------|--------|
| 1 | 16 | 40 | 35 | 27 | 59 | 92 | 108 | 76 | 115 | 65 | 61 | 42 |
| 2 | 11 | 39 | 34 | 25 | 52 | 98 | 108 | 77 | 114 | 64 | 60 | 39 |
| 3 | 8.4 | 37 | 33 | 22 | 55 | 110 | 108 | 75 | 114 | 62 | 57 | 18 |
| 4 | 8.5 | 36 | 32 | 22 | 54 | 108 | 109 | 72 | 114 | 65 | 56 | 5.8 |
| 5 | 8.2 | 35 | 33 | 23 | 52 | 107 | 109 | 70 | 113 | 83 | 55 | .00 |
| 6 | 5.7 | 34 | 35 | 23 | 53 | 110 | 110 | 68 | 113 | 83 | 52 | .00 |
| 7 | 5.5 | 33 | 33 | 54 | 47 | 110 | 110 | 66 | 113 | 81 | 51 | .00 |
| 8 | 5.5 | 31 | 35 | 105 | 49 | 111 | 110 | 64 | 113 | 80 | 50 | .00 |
| 9 | 5.5 | 32 | 32 | 107 | 47 | 111 | 110 | 63 | 114 | 78 | 50 | .00 |
| 10 | 5.6 | 52 | 31 | 89 | 49 | 110 | 110 | 61 | 114 | 77 | 48 | .00 |
| 11 | 5.5 | 53 | 30 | 66 | 51 | 109 | 110 | 61 | 114 | 76 | 43 | .00 |
| 12 | 5.5 | 54 | 44 | 76 | 51 | 104 | 110 | 59 | 113 | 83 | 42 | .00 |
| 13 | 5.6 | 61 | 45 | 103 | 49 | 95 | 110 | 57 | 108 | 82 | 42 | .00 |
| 14 | 36 | 60 | 44 | 106 | 45 | 92 | 110 | 56 | 107 | 83 | 41 | .00 |
| 15 | 46 | 60 | 44 | 106 | 48 | 92 | 110 | 55 | 102 | 83 | 41 | .00 |
| 16 | 45 | 59 | 44 | 108 | 42 | 94 | 110 | 53 | 98 | 80 | 41 | .00 |
| 17 | 45 | 58 | 43 | 102 | 57 | 100 | 107 | 52 | 91 | 79 | 41 | .00 |
| 18 | 45 | 58 | 42 | 91 | 84 | 111 | 105 | 51 | 49 | 78 | 42 | .00 |
| 19 | 45 | 57 | 42 | 82 | 42 | 113 | 107 | 52 | 2.5 | 78 | 45 | .00 |
| 20 | 45 | 57 | 41 | 75 | 43 | 112 | 101 | 100 | 41 | 77 | 44 | .00 |
| 21 | 75 | 56 | 41 | 71 | 47 | 110 | 100 | 102 | 73 | 75 | 43 | 3.2 |
| 22 | 84 | 56 | 40 | 68 | 51 | 111 | 104 | 87 | 70 | 74 | 44 | 12 |
| 23 | 102 | 55 | 33 | 64 | 53 | 111 | 110 | 108 | 68 | 71 | 47 | 13 |
| 24 | 98 | 73 | 26 | 62 | 57 | 111 | 106 | 109 | 65 | 66 | 46 | 20 |
| 25 | 79 | 82 | 25 | 60 | 63 | 111 | 103 | 96 | 62 | 65 | 46 | 16 |
| 26 | 66 | 88 | 25 | 58 | 69 | 110 | 98 | 105 | 71 | 65 | 46 | 15 |
| 27 | 73 | 56 | 25 | 55 | 81 | 111 | 92 | 112 | 72 | 64 | 46 | 12 |
| 28 | 67 | 43 | 24 | 54 | 89 | 110 | 90 | 111 | 70 | 63 | 45 | 12 |
| 29 | 52 | 39 | 23 | 53 | --- | 110 | 82 | 114 | 69 | 63 | 44 | 11 |
| 30 | 46 | 37 | 24 | 72 | --- | 107 | 76 | 116 | 67 | 62 | 44 | 9.7 |
| 31 | 43 | --- | 24 | 59 | --- | 107 | --- | 115 | --- | 62 | 43 | --- |
| TOTAL | 1188.5 | 1531 | 1062 | 2088 | 1539 | 3298 | 3133 | 2463 | 2649.5 | 2267 | 1456 | 228.70 |
| MEAN | 38.3 | 51.0 | 34.3 | 67.4 | 55.0 | 106 | 104 | 79.5 | 88.3 | 73.1 | 47.0 | 7.62 |
| MAX | 102 | 88 | 45 | 108 | 89 | 113 | 110 | 116 | 115 | 83 | 61 | 42 |
| MIN | 5.5 | 31 | 23 | 22 | 42 | 92 | 76 | 51 | 2.5 | 62 | 41 | .00 |
| AC-FT | 2360 | 3040 | 2110 | 4140 | 3050 | 6540 | 6210 | 4890 | 5260 | 4500 | 2890 | 454 |
| a | 3850 | 5830 | 4580 | 8210 | 5580 | 11170 | 10650 | 9050 | 9290 | 7490 | 5360 | 1810 |

CAL YR 1989 TOTAL 22560.53 MEAN 61.8 MAX 121 MIN .00 AC-FT 44750 AC-FT a 77770
WTR YR 1990 TOTAL 22903.70 MEAN 62.7 MAX 116 MIN .00 AC-FT 45430 AC-FT a 82860

a Discharge, in acre-feet, at De Sabla powerplant, provided by Pacific Gas & Electric Co.

11390000 BUTTE CREEK NEAR CHICO, CA

LOCATION.--Lat 39°43'34", long 121°42'28", in NW 1/4 NW 1/4 sec.36, T.22 N., R.2 E., Butte County, Hydrologic Unit 18020105, on right bank 0.7 mi downstream from Little Butte Creek and 7.5 mi east of Chico.

DRAINAGE AREA.--147 mi².

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

CHEMICAL DATA: Water years 1953-79.

WATER TEMPERATURE: Water years 1962-79.

REVISED RECORDS.--WSP 1445: 1953(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 13, 1944, water-stage recorder at site 0.4 mi upstream at different datum. Aug. 13, 1944, to June 5, 1986, at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow slightly regulated by storage in Magalia Reservoir, usable capacity, 2,640 acre-ft, and since 1957 by Paradise Reservoir, usable capacity, 11,500 acre-ft. Diversions upstream from station for irrigation and domestic use of about 7,000 acre-ft annually. Butte Creek receives water above station from West Branch Feather River by way of Toadtown Canal (11389800).

AVERAGE DISCHARGE (unadjusted).--60 years, 406 ft³/s, 294,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft³/s, Feb. 17, 1986, gage height, 17.52 ft, present datum, from rating curve extended above 6,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 10 ft³/s, Nov. 29, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*) from rating curve extended above 5,100 ft³/s on basis of step-backwater survey of channel:

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Oct. 23 | 1515 | *1,310 | *3.95 | | | | |

Minimum daily, 56 ft³/s, Sept. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1 | 97 | 150 | 148 | 120 | 249 | 390 | 317 | 201 | 522 | 151 | 119 | 96 |
| 2 | 93 | 141 | 142 | 138 | 213 | 404 | 314 | 197 | 454 | 150 | 117 | 96 |
| 3 | 88 | 135 | 138 | 116 | 212 | 628 | 310 | 192 | 400 | 147 | 115 | 81 |
| 4 | 87 | 133 | 135 | 114 | 321 | 596 | 313 | 187 | 362 | 142 | 111 | 72 |
| 5 | 84 | 131 | 133 | 113 | 256 | 556 | 308 | 178 | 337 | 163 | 110 | 63 |
| 6 | 80 | 129 | 135 | 113 | 278 | 494 | 308 | 173 | 320 | 162 | 109 | 63 |
| 7 | 80 | 127 | 132 | 213 | 235 | 448 | 304 | 168 | 305 | 162 | 106 | 62 |
| 8 | 78 | 122 | 132 | 612 | 223 | 429 | 304 | 166 | 280 | 158 | 104 | 61 |
| 9 | 78 | 125 | 129 | 434 | 206 | 411 | 301 | 161 | 274 | 156 | 105 | 61 |
| 10 | 78 | 140 | 127 | 319 | 198 | 466 | 293 | 157 | 272 | 153 | 104 | 61 |
| 11 | 78 | 149 | 122 | 238 | 195 | 496 | 291 | 155 | 265 | 149 | 97 | 60 |
| 12 | 77 | 143 | 135 | 367 | 200 | 436 | 291 | 153 | 257 | 153 | 96 | 60 |
| 13 | 75 | 150 | 140 | 1100 | 198 | 386 | 287 | 149 | 250 | 155 | 95 | 62 |
| 14 | 95 | 153 | 137 | 942 | 181 | 359 | 287 | 145 | 249 | 154 | 95 | 58 |
| 15 | 127 | 150 | 136 | 566 | 179 | 345 | 283 | 147 | 241 | 160 | 95 | 61 |
| 16 | 125 | 149 | 139 | 477 | 226 | 340 | 281 | 137 | 232 | 152 | 94 | 61 |
| 17 | 124 | 149 | 137 | 426 | 277 | 344 | 277 | 139 | 219 | 148 | 95 | 61 |
| 18 | 123 | 146 | 134 | 352 | 244 | 359 | 267 | 134 | 193 | 146 | 96 | 61 |
| 19 | 125 | 145 | 135 | 305 | 224 | 362 | 262 | 134 | 120 | 144 | 103 | 61 |
| 20 | 121 | 146 | 134 | 270 | 202 | 368 | 259 | 243 | 132 | 145 | 108 | 58 |
| 21 | 188 | 144 | 132 | 247 | 205 | 369 | 247 | 256 | 179 | 139 | 103 | 56 |
| 22 | 312 | 143 | 132 | 228 | 261 | 362 | 255 | 211 | 175 | 138 | 99 | 68 |
| 23 | 679 | 140 | 129 | 215 | 283 | 363 | 285 | 309 | 166 | 134 | 102 | 69 |
| 24 | 541 | 170 | 117 | 205 | 310 | 364 | 301 | 300 | 165 | 129 | 101 | 80 |
| 25 | 350 | 272 | 116 | 195 | 340 | 365 | 272 | 246 | 159 | 129 | 100 | 78 |
| 26 | 245 | 463 | 108 | 192 | 356 | 358 | 248 | 231 | 160 | 122 | 102 | 79 |
| 27 | 221 | 245 | 113 | 183 | 377 | 350 | 236 | 507 | 164 | 125 | 102 | 83 |
| 28 | 219 | 188 | 113 | 177 | 400 | 348 | 230 | 786 | 164 | 123 | 100 | 78 |
| 29 | 183 | 168 | 111 | 174 | --- | 338 | 217 | 471 | 161 | 122 | 99 | 74 |
| 30 | 168 | 156 | 111 | 235 | --- | 329 | 206 | 425 | 156 | 122 | 99 | 72 |
| 31 | 157 | --- | 112 | 222 | --- | 320 | --- | 692 | --- | 119 | 98 | --- |
| TOTAL | 5176 | 4902 | 3994 | 9608 | 7049 | 12483 | 8354 | 7750 | 7333 | 4452 | 3179 | 2056 |
| MEAN | 167 | 163 | 129 | 310 | 252 | 403 | 278 | 250 | 244 | 144 | 103 | 68.5 |
| MAX | 679 | 463 | 148 | 1100 | 400 | 628 | 317 | 786 | 522 | 163 | 119 | 96 |
| MIN | 75 | 122 | 108 | 113 | 179 | 320 | 206 | 134 | 120 | 119 | 94 | 56 |
| AC-FT | 10270 | 9720 | 7920 | 19060 | 13980 | 24760 | 16570 | 15370 | 14550 | 8830 | 6310 | 4080 |

CAL YR 1989 TOTAL 107271 MEAN 294 MAX 5050 MIN 53 AC-FT 212800
WTR YR 1990 TOTAL 76336 MEAN 209 MAX 1100 MIN 56 AC-FT 151400

SACRAMENTO RIVER BASIN

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CA

LOCATION.--Lat 39°00'36", long 121°49'25", in NW 1/4 NE 1/4 sec.2, T.13 N., R.1 E., Colusa County, Hydrologic Unit 18020104, on right bank 1,200 ft downstream from Wilkins Slough, 5.8 mi southeast of Grimes, and at mile 62.9 upstream from Sacramento.

DRAINAGE AREA, --12,926 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1931 to current year (prior to October 1938, low-water periods only). Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1965, published as "below Wilkins Slough."

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3.00 ft below National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by storage reservoirs, power development, bypassing for flood control, diversions for irrigation, and return flow from irrigated areas. When discharge exceeds about 23,000 ft³/s, flow begins over Tisdale weir, 1.0 mi upstream on left bank, into Sutter Bypass. Records tabulated below do not include flow over Tisdale weir. See schematic diagram for lower Sacramento River basin.

AVERAGE DISCHARGE.--52 years (water years 1939-90), 10,150 ft³/s, 7,354,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1939-90), 32,700 ft³/s, Feb. 20, 1986, gage height, 52.50 ft; maximum gage height, 52.75 ft, Mar. 1, 1940; minimum recorded, 100 ft³/s, Aug. 1, 1931, gage height, 14.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 22,400 ft³/s, Jan. 15, gage height, 44.47 ft; minimum daily, 3,600 ft³/s, June 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|---------------|--------|-----------|-----------|----------|--------|---------------|--------|--------|--------|--------|--------|
| 1 | 5580 | 4790 | 8520 | 4530 | 5680 | 5700 | 4800 | 4790 | 14500 | 5570 | 5470 | 6280 |
| 2 | 5620 | 4700 | 7950 | 4740 | 5910 | 5730 | 4940 | 4580 | 13800 | 5640 | 5510 | 6230 |
| 3 | 5570 | 4840 | 7860 | 4940 | 6610 | 5960 | 4800 | 4470 | 10800 | 5620 | 5560 | 6280 |
| 4 | 5470 | 5890 | 7590 | 4800 | 6640 | 7050 | 4610 | 4290 | 8510 | 5630 | 5570 | 6300 |
| 5 | 5360 | 6510 | 7460 | 4680 | 7690 | 8950 | 4810 | 4390 | 6950 | 5640 | 5900 | 6290 |
| 6 | 5270 | 7060 | 7370 | 4850 | 8320 | 10500 | 4880 | 4380 | 5910 | 5640 | 6050 | 6160 |
| 7 | 5220 | 7170 | 7320 | 5280 | 7520 | 10700 | 4920 | 4660 | 4760 | 5600 | 6030 | 6170 |
| 8 | 5100 | 7210 | 7330 | 5850 | 7550 | 9030 | 5110 | 5150 | 4400 | 5470 | 6000 | 6270 |
| 9 | 5060 | 7240 | 7320 | 14000 | 7000 | 8010 | 5530 | 5180 | 4030 | 5440 | 5900 | 6080 |
| 10 | 5060 | 7350 | 7290 | 17700 | 6530 | 7870 | 6320 | 5250 | 3620 | 5350 | 6070 | 6030 |
| 11 | 4990 | 7670 | 7040 | 12800 | 6240 | 7560 | 6520 | 5390 | 3600 | 5280 | 6150 | 6140 |
| 12 | 5260 | 7810 | 6680 | 9680 | 6060 | 9090 | 6640 | 5690 | 3790 | 5200 | 5980 | 6060 |
| 13 | 5430 | 7770 | 6450 | 8590 | 5900 | 8660 | 6780 | 5780 | 4190 | 5120 | 6000 | 5920 |
| 14 | 5820 | 7750 | 6370 | 15000 | 5660 | 7560 | 6910 | 5890 | 4760 | 4970 | 5980 | 5590 |
| 15 | 6040 | 7790 | 6180 | 21700 | 5340 | 6880 | 7100 | 6210 | 4770 | 5170 | 5930 | 5640 |
| 16 | 6150 | 7890 | 5800 | 17700 | 5390 | 6460 | 7170 | 6310 | 5090 | 5310 | 6120 | 5480 |
| 17 | 6190 | 7850 | 5420 | 14300 | 5530 | 6290 | 7050 | 6360 | 5530 | 5320 | 6220 | 5350 |
| 18 | 6140 | 7550 | 5230 | 14700 | 6110 | 6120 | 6990 | 6080 | 5690 | 5380 | 6420 | 5320 |
| 19 | 6040 | 7400 | 5020 | 12100 | 6900 | 5800 | 6790 | 5810 | 5770 | 5380 | 6550 | 5440 |
| 20 | 5940 | 7620 | 4970 | 10300 | 6720 | 5570 | 6350 | 6130 | 5720 | 5430 | 6770 | 5310 |
| 21 | 5940 | 8000 | 4920 | 9050 | 6400 | 5430 | 5980 | 6400 | 5570 | 5500 | 6850 | 5100 |
| 22 | 6100 | 8160 | 4860 | 8190 | 6180 | 5310 | 5680 | 6500 | 5600 | 5460 | 6880 | 4940 |
| 23 | 6750 | 8240 | 4830 | 7580 | 6170 | 5320 | 5930 | 6820 | 5350 | 5390 | 6860 | 4780 |
| 24 | 9170 | 8460 | 4720 | 7110 | 6220 | 5190 | 6140 | 7930 | 5270 | 5440 | 6850 | 4740 |
| 25 | 13100 | 8720 | 4520 | 6750 | 6000 | 5260 | 6140 | 9100 | 5240 | 5320 | 6740 | 4760 |
| 26 | 14400 | 9280 | 4480 | 6480 | 5860 | 5690 | 6110 | 8180 | 5120 | 5330 | 6660 | 4790 |
| 27 | 11300 | 10100 | 4500 | 6260 | 5730 | 5860 | 5920 | 7930 | 5260 | 5320 | 6710 | 5000 |
| 28 | 8290 | 10300 | 4450 | 6060 | 5730 | 5440 | 5640 | 8720 | 5320 | 5360 | 6730 | 5240 |
| 29 | 6740 | 9870 | 4470 | 5860 | --- | 5170 | 5310 | 12800 | 5280 | 5380 | 6620 | 5150 |
| 30 | 5890 | 9220 | 4480 | 5680 | --- | 4990 | 5020 | 13600 | 5370 | 5410 | 6380 | 4850 |
| 31 | 5250 | --- | 4500 | 5610 | --- | 4890 | --- | 12000 | --- | 5480 | 6400 | --- |
| TOTAL | 204240 | 230210 | 185900 | 282870 | 177590 | 208040 | 176890 | 206770 | 179570 | 167550 | 193860 | 167690 |
| MEAN | 6588 | 7674 | 5997 | 9125 | 6342 | 6711 | 5896 | 6670 | 5986 | 5405 | 6254 | 5590 |
| MAX | 14400 | 10300 | 8520 | 21700 | 8320 | 10700 | 7170 | 13600 | 14500 | 5640 | 6880 | 6300 |
| MIN | 4990 | 4700 | 4450 | 4530 | 5340 | 4890 | 4610 | 4290 | 3600 | 4970 | 5470 | 4740 |
| AC-FT | 405100 | 456600 | 368700 | 561100 | 352200 | 412600 | 350900 | 410100 | 356200 | 332300 | 384500 | 332600 |
| CAL YR 1989 | TOTAL 2965740 | | MEAN 8125 | MAX 27100 | MIN 4070 | | AC-FT 5883000 | | | | | |
| WTR YR 1990 | TOTAL 2381180 | | MEAN 6524 | MAX 21700 | MIN 3600 | | AC-FT 4723000 | | | | | |

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1967 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1966 to current year.

INSTRUMENTATION.--Temperature recorder since October 1966.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum record, 25.5 °C, Sept. 6-8, 1977; minimum recorded, 4.0 °C, Dec. 26, 1968.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 23.5 °C, June 8, 9, July 14; minimum recorded, 6.0 °C, Feb. 17, 18.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

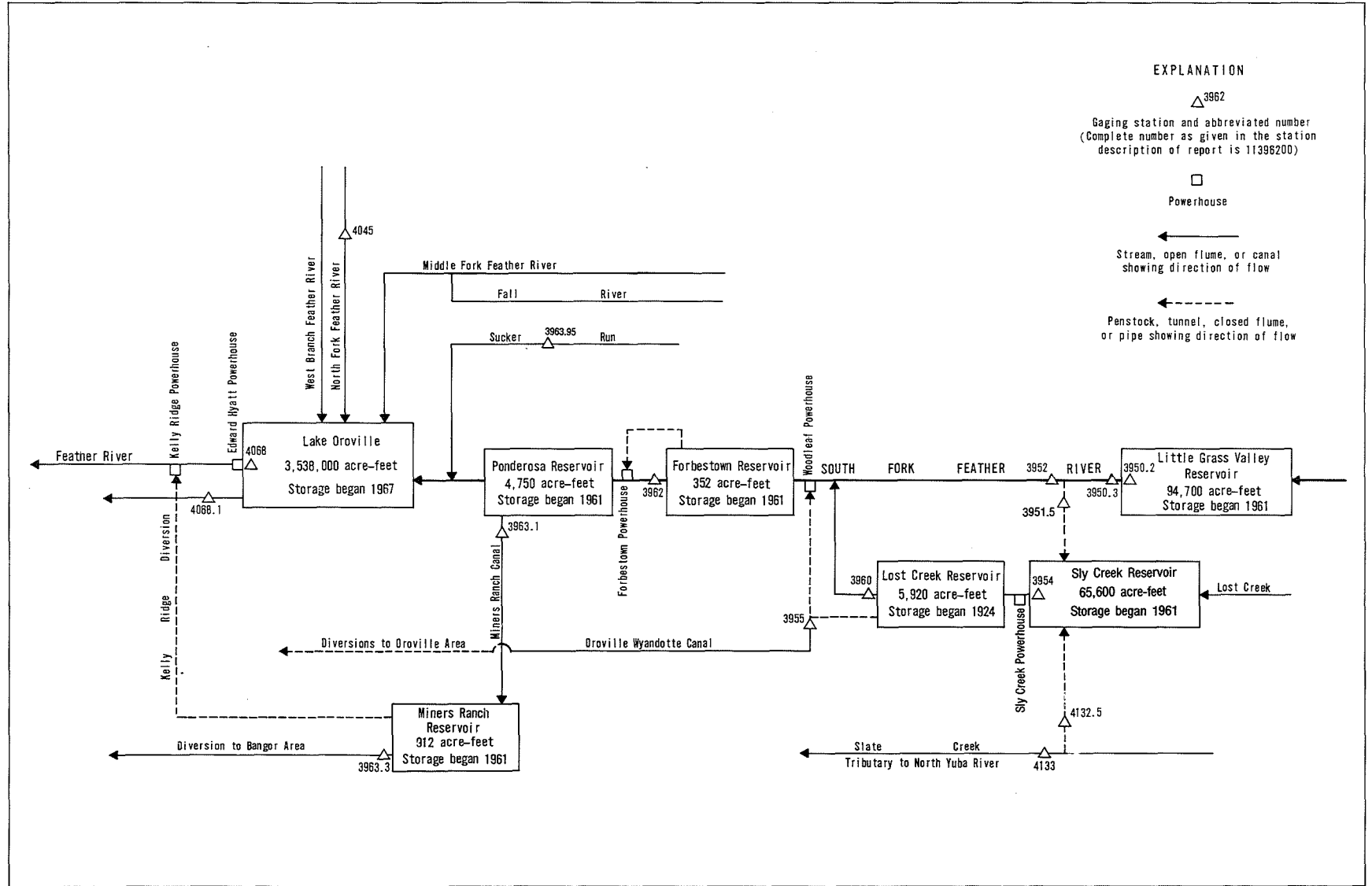
| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-------|------|
| | OCTOBER | | NOVEMBER | | DECEMBER | | JANUARY | | FEBRUARY | | MARCH | |
| 1 | 19.0 | 18.5 | 13.5 | 12.5 | 11.0 | 11.0 | 9.0 | 9.0 | 9.0 | 8.5 | 13.0 | 13.0 |
| 2 | 19.0 | 18.5 | 13.5 | 13.0 | 11.0 | 11.0 | 9.0 | 9.0 | 9.5 | 8.5 | 12.5 | 12.5 |
| 3 | 18.5 | 18.0 | 13.5 | 13.0 | 11.5 | 11.0 | 9.0 | 8.5 | 9.0 | 8.5 | 12.5 | 12.5 |
| 4 | 18.0 | 17.5 | 14.0 | 13.5 | 12.0 | 11.0 | 8.5 | 8.5 | 8.5 | 8.0 | 12.5 | 12.5 |
| 5 | 18.0 | 17.0 | 14.0 | 13.5 | 12.0 | 11.5 | 8.5 | 8.0 | 8.0 | 8.0 | 12.5 | 12.0 |
| 6 | 17.5 | 17.0 | 14.0 | 13.5 | 12.0 | 11.5 | 8.0 | 8.0 | 8.5 | 8.0 | 12.5 | 12.0 |
| 7 | 18.0 | 17.0 | 14.0 | 13.5 | 12.0 | 11.5 | 8.5 | 8.0 | 8.5 | 8.0 | 12.0 | 11.5 |
| 8 | 18.0 | 17.5 | 13.5 | 13.0 | 12.0 | 11.5 | 10.0 | 8.5 | 8.5 | 8.0 | 12.0 | 11.5 |
| 9 | 18.5 | 17.5 | 13.5 | 13.0 | 11.5 | 11.5 | 11.0 | 10.0 | 9.0 | 8.0 | 12.5 | 12.0 |
| 10 | 18.5 | 18.0 | 13.5 | 13.0 | 11.5 | 10.5 | 10.5 | 10.5 | 10.0 | 8.5 | 12.5 | 12.0 |
| 11 | 18.5 | 18.0 | 14.0 | 13.5 | 10.5 | 10.0 | 11.0 | 10.5 | 10.5 | 9.5 | 12.5 | 12.0 |
| 12 | 18.5 | 18.0 | 14.0 | 13.5 | 10.0 | 9.5 | 11.0 | 11.0 | 10.5 | 10.0 | 12.0 | 11.5 |
| 13 | 18.5 | 18.0 | 14.0 | 14.0 | 10.0 | 9.5 | 11.0 | 11.0 | 10.5 | 10.0 | 12.0 | 11.0 |
| 14 | 18.5 | 18.0 | 14.0 | 13.5 | 9.5 | 9.0 | 11.0 | 11.0 | 9.5 | 8.0 | 11.5 | 11.0 |
| 15 | 18.0 | 17.5 | 13.5 | 13.0 | 9.5 | 9.0 | 11.0 | 10.5 | 8.0 | 7.0 | 12.0 | 11.0 |
| 16 | 17.5 | 17.0 | 13.0 | 12.5 | 9.5 | 9.0 | 10.5 | 10.0 | 7.0 | 6.5 | 12.5 | 11.5 |
| 17 | 17.5 | 17.0 | 13.5 | 13.0 | 9.5 | 9.0 | 10.0 | 9.5 | 6.5 | 6.0 | 13.0 | 12.5 |
| 18 | 17.5 | 17.0 | 13.5 | 13.0 | 9.5 | 9.5 | 9.5 | 9.0 | 6.5 | 6.0 | 14.5 | 13.0 |
| 19 | 17.5 | 17.0 | 13.5 | 13.5 | 9.5 | 9.5 | 9.0 | 8.5 | 7.5 | 6.5 | 15.0 | 14.0 |
| 20 | 17.0 | 16.5 | 14.0 | 13.5 | 9.5 | 9.0 | 8.5 | 8.5 | 7.5 | 7.0 | 16.0 | 14.5 |
| 21 | 16.5 | 16.0 | 13.5 | 13.5 | 9.0 | 9.0 | 8.5 | 8.5 | 8.0 | 7.5 | 16.5 | 15.5 |
| 22 | 16.0 | 15.5 | 13.5 | 13.0 | 9.0 | 8.5 | 9.0 | 8.5 | 9.5 | 8.0 | 17.0 | 16.0 |
| 23 | 15.5 | 15.0 | 13.0 | 13.0 | 9.0 | 8.5 | 9.0 | 8.5 | 10.5 | 9.5 | 17.5 | 16.5 |
| 24 | 15.0 | 14.0 | 13.0 | 13.0 | 9.0 | 8.5 | 9.0 | 8.5 | 11.0 | 10.5 | 17.5 | 16.5 |
| 25 | 14.5 | 14.0 | 13.0 | 13.0 | 9.0 | 8.5 | 9.0 | 8.5 | 12.0 | 11.0 | 17.0 | 16.5 |
| 26 | 14.0 | 13.0 | 13.0 | 12.5 | 9.0 | 8.5 | 9.0 | 8.5 | 13.0 | 12.0 | 17.0 | 16.0 |
| 27 | 13.5 | 13.0 | 12.5 | 12.0 | 9.0 | 8.5 | 9.0 | 8.5 | 13.0 | 13.0 | 17.0 | 16.0 |
| 28 | 13.5 | 13.0 | 12.0 | 11.0 | 9.0 | 8.5 | 9.0 | 8.5 | 13.0 | 13.0 | 16.5 | 15.5 |
| 29 | 13.0 | 12.5 | 11.0 | 10.5 | 9.0 | 8.5 | 9.5 | 8.5 | --- | --- | 16.5 | 15.5 |
| 30 | 13.0 | 12.5 | 11.0 | 10.5 | 9.0 | 8.5 | 9.5 | 9.0 | --- | --- | 16.5 | 15.0 |
| 31 | 13.0 | 12.5 | --- | --- | 9.0 | 8.5 | 9.5 | 9.0 | --- | --- | 16.5 | 15.5 |
| MONTH | 19.0 | 12.5 | 14.0 | 10.5 | 12.0 | 8.5 | 11.0 | 8.0 | 13.0 | 6.0 | 17.5 | 11.0 |

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|-------|------|------|------|------|------|------|------|--------|------|-----------|------|
| | APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
| 1 | 16.5 | 15.5 | 16.5 | 15.5 | 16.0 | 15.5 | 21.0 | 20.5 | 22.5 | 22.0 | 21.0 | 20.5 |
| 2 | 17.0 | 16.0 | 17.0 | 16.0 | 17.0 | 15.5 | 21.0 | 20.5 | 22.5 | 22.0 | 21.5 | 21.0 |
| 3 | 17.5 | 16.0 | 18.0 | 16.5 | 18.5 | 16.5 | 21.0 | 20.5 | 22.5 | 22.0 | 21.5 | 21.0 |
| 4 | 18.0 | 16.5 | 18.5 | 17.5 | 20.0 | 18.5 | 20.5 | 20.0 | 22.5 | 22.0 | 21.5 | 21.0 |
| 5 | 18.0 | 17.0 | 19.5 | 18.0 | 21.5 | 19.5 | 20.0 | 19.5 | 22.5 | 22.0 | 21.5 | 20.5 |
| 6 | 18.0 | 17.0 | 19.0 | 18.5 | 22.0 | 21.0 | 20.5 | 19.5 | 22.5 | 22.0 | 21.0 | 20.5 |
| 7 | 17.0 | 16.5 | 19.0 | 18.5 | 23.0 | 21.5 | 21.5 | 20.5 | 22.5 | 22.0 | 21.0 | 20.5 |
| 8 | 16.5 | 15.5 | 18.5 | 17.5 | 23.5 | 21.5 | 21.5 | 20.5 | 22.5 | 22.0 | 21.0 | 20.5 |
| 9 | 16.5 | 15.5 | 17.5 | 17.0 | 23.5 | 22.0 | 21.5 | 21.0 | 22.5 | 22.0 | 21.0 | 20.5 |
| 10 | 16.5 | 15.5 | 17.0 | 17.0 | 23.0 | 21.5 | 22.0 | 21.0 | 22.5 | 22.0 | 21.0 | 20.5 |
| 11 | 16.5 | 15.5 | 17.0 | 16.5 | 23.0 | 21.0 | 22.5 | 22.0 | 22.5 | 21.5 | 21.0 | 20.0 |
| 12 | 16.5 | 16.0 | 17.5 | 17.0 | 23.0 | 21.5 | 23.0 | 22.0 | 22.0 | 21.0 | 21.0 | 20.5 |
| 13 | 17.0 | 16.5 | 18.0 | 17.0 | 22.0 | 20.5 | 23.0 | 22.5 | 21.5 | 21.0 | 21.0 | 20.5 |
| 14 | 18.0 | 17.0 | 18.0 | 17.5 | 20.5 | 20.0 | 23.5 | 22.5 | 21.5 | 21.0 | 20.5 | 20.0 |
| 15 | 17.5 | 17.5 | 18.0 | 17.5 | 20.5 | 19.0 | 23.0 | 23.0 | 21.0 | 20.0 | 20.5 | 19.5 |
| 16 | 17.5 | 16.5 | 18.0 | 17.5 | 20.0 | 19.0 | 23.0 | 22.5 | 20.5 | 20.0 | 20.5 | 18.5 |
| 17 | 16.5 | 16.0 | 18.0 | 17.5 | 20.0 | 19.5 | 22.5 | 22.0 | 20.5 | 20.0 | 20.5 | 20.0 |
| 18 | 16.5 | 16.0 | 17.5 | 17.0 | 20.0 | 19.5 | 22.5 | 22.0 | 20.5 | 20.0 | 20.5 | 20.0 |
| 19 | 16.5 | 16.0 | 17.0 | 16.5 | 20.5 | 19.5 | 22.5 | 21.5 | 20.5 | 20.0 | 20.5 | 20.0 |
| 20 | 16.5 | 16.0 | 16.5 | 15.5 | 21.0 | 20.0 | 23.0 | 22.0 | 20.5 | 20.0 | 20.5 | 20.0 |
| 21 | 17.0 | 16.0 | 17.0 | 15.5 | 21.5 | 21.0 | 23.0 | 22.5 | 20.5 | 20.0 | 20.5 | 20.0 |
| 22 | 16.5 | 16.0 | 17.5 | 17.0 | 21.5 | 21.0 | 23.0 | 22.0 | 21.0 | 20.0 | 21.0 | 20.0 |
| 23 | 16.5 | 16.0 | 17.5 | 17.0 | 21.0 | 20.5 | 22.5 | 22.0 | 21.5 | 20.5 | 20.5 | 20.0 |
| 24 | 16.5 | 16.0 | 17.0 | 16.5 | 21.0 | 20.5 | 22.5 | 21.5 | 21.5 | 20.5 | 21.0 | 20.5 |
| 25 | 16.5 | 16.0 | 17.5 | 16.5 | 21.0 | 20.5 | 22.0 | 21.5 | 21.0 | 20.0 | 21.0 | 20.0 |
| 26 | 17.0 | 15.5 | 17.5 | 17.0 | 21.0 | 20.5 | 21.5 | 21.0 | 20.0 | 19.0 | 20.5 | 20.0 |
| 27 | 17.5 | 16.5 | 17.0 | 16.0 | 21.0 | 20.5 | 21.5 | 21.0 | 19.5 | 19.0 | 20.5 | 20.0 |
| 28 | 18.0 | 17.0 | 16.5 | 16.0 | 21.0 | 20.5 | 22.0 | 21.5 | 20.0 | 19.5 | 20.5 | 20.0 |
| 29 | 17.5 | 16.5 | 16.0 | 15.5 | 21.0 | 20.5 | 22.0 | 21.5 | 20.0 | 19.5 | 21.0 | 20.0 |
| 30 | 16.5 | 15.5 | 16.5 | 15.0 | 21.5 | 20.5 | 22.0 | 21.5 | 20.5 | 19.5 | 21.0 | 20.0 |
| 31 | --- | --- | 16.5 | 15.5 | --- | --- | 22.0 | 21.5 | 20.5 | 20.0 | --- | --- |
| MONTH | 18.0 | 15.5 | 19.5 | 15.0 | 23.5 | 15.5 | 23.5 | 19.5 | 22.5 | 19.0 | 21.5 | 18.5 |

Figure 32. Diversions and storage in South Fork Feather River basin.



SACRAMENTO RIVER BASIN

11395020 LITTLE GRASS VALLEY RESERVOIR NEAR LA PORTE, CA

LOCATION.--Lat 39°43'25", long 121°01'10", in SE 1/4 NW 1/4 sec.31, T.22 N., R.9 E., Plumas County, Hydrologic Unit 18020123, Plumas National Forest, on right bank 300 ft upstream from dam on South Fork Feather River, 3.3 mi northwest of La Porte.

DRAINAGE AREA.--25.8 mi².

PERIOD OF RECORD.--October 1961 to current year. Monthend elevation and contents only, October 1961 to October 1962.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District). Prior to Nov. 1, 1962, in valve chamber in dam at same datum.

REMARKS.--Reservoir is formed by rockfill dam. Storage began in October 1961. Total capacity, 94,700 acre-ft between elevations 4,876 ft, invert of release valve, and 5,047 ft, top of spillway gates, all of which is available for release. Water is released down South Fork Feather River for power development and irrigation. See schematic diagram of South Fork Feather River basin. Records represent total contents at 2400 hours.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 96,100 acre-ft, Apr. 29, 1965, elevation, 5,047.9 ft; minimum since reservoir first filled, 30,300 acre-ft, many days during 1977, elevation, 4,994.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 83,800 acre-ft, June 19-23, elevation, 5,040.2 ft; minimum, 50,300 acre-ft, Jan. 5, 6, elevation, 5,015.1 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1963)

| | | | |
|-------|--------|-------|--------|
| 4,990 | 26,300 | 5,030 | 68,900 |
| 5,000 | 34,600 | 5,040 | 83,500 |
| 5,010 | 44,400 | 5,048 | 96,300 |
| 5,020 | 55,900 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 2400 HOURS

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 62900 | 57300 | 51600 | 50400 | 54400 | 56100 | 63400 | 74100 | 81000 | 82200 | 73600 | e64300 |
| 2 | 62800 | 57200 | 51500 | 50400 | 54500 | 56300 | 63700 | 74300 | 81400 | 81900 | 73300 | e64100 |
| 3 | 62500 | 56900 | 51300 | 50400 | 54600 | 56700 | 64100 | 74400 | 81900 | 81700 | 73000 | e63700 |
| 4 | 62300 | 56700 | 51100 | 50400 | 54700 | 56900 | 64500 | 74600 | 82300 | 81400 | 72700 | e63400 |
| 5 | 62000 | 56500 | 50800 | 50300 | 54700 | 57200 | 64900 | 74600 | 82500 | 81100 | 72400 | 63200 |
| 6 | 61700 | 56300 | 50600 | 50300 | 54800 | 57300 | 65200 | 74700 | 82600 | 80900 | 72100 | 62800 |
| 7 | 61500 | 56000 | 50500 | 50600 | 54800 | 57400 | 65600 | 74700 | 82900 | 80600 | 71800 | 62500 |
| 8 | 61200 | 55800 | 50400 | 51000 | 54800 | 57700 | 66000 | 74900 | 83000 | 80300 | 71500 | 62300 |
| 9 | 61000 | 55500 | 50400 | 51100 | 54800 | 57800 | 66500 | 75000 | 83200 | 80100 | 71200 | 62000 |
| 10 | 60700 | 55400 | 50400 | 51200 | 55000 | 58200 | 66800 | 75000 | 83200 | 79800 | 70900 | 61700 |
| 11 | 60400 | 55200 | 50500 | 51300 | 55000 | 58400 | 67200 | 75000 | 83300 | 79500 | 70500 | 61300 |
| 12 | 60200 | 55000 | 50500 | 52000 | 55000 | 58600 | 67600 | 75000 | 83300 | 79200 | 70200 | 61100 |
| 13 | 59900 | 54700 | 50500 | 52400 | 55000 | 58700 | 68000 | 75000 | 83500 | 79000 | 69900 | 60800 |
| 14 | 59700 | 54500 | 50500 | 52700 | 55100 | 58700 | 68400 | 75200 | 83500 | 78800 | 69600 | 60600 |
| 15 | 59400 | 54300 | 50500 | 52900 | 55100 | 58900 | 68600 | 75200 | 83500 | 78500 | 69200 | 60200 |
| 16 | 59100 | 54000 | 50500 | 53100 | 55400 | 59000 | 68900 | 75200 | 83500 | 78200 | 68900 | 59900 |
| 17 | 58900 | 53800 | 50400 | 53200 | 55700 | 59100 | 69500 | 75200 | 83500 | 78100 | 68600 | 59700 |
| 18 | 58600 | 53700 | 50400 | 53400 | 55700 | 59300 | 69800 | 75200 | 83600 | 77800 | 68400 | 59400 |
| 19 | 58400 | 53500 | 50400 | 53400 | 55700 | 59400 | 70100 | 75200 | 83800 | 77500 | 68100 | 59100 |
| 20 | 58100 | 53200 | 50400 | 53500 | 55800 | 59700 | 70300 | 75700 | 83800 | 77200 | 67800 | 58700 |
| 21 | 58200 | 53000 | 50400 | 53600 | 55800 | 59900 | 70800 | 75700 | 83800 | 76900 | 67600 | 58500 |
| 22 | 58000 | 52800 | 50400 | 53700 | 55800 | 60200 | 71200 | 75900 | 83800 | 76600 | 67300 | 58100 |
| 23 | 58600 | 52600 | 50400 | 53700 | 55900 | 60400 | 71800 | 76200 | 83800 | 76200 | 66900 | 57700 |
| 24 | 58700 | 52400 | 50400 | 53800 | 55900 | 60700 | 72200 | 76500 | 83600 | 75900 | 66700 | 57400 |
| 25 | 58700 | 52800 | 50400 | 53800 | 55900 | 61100 | 72700 | 76800 | 83600 | 75600 | 66300 | 57200 |
| 26 | 58500 | 52700 | 50400 | 53800 | 55900 | 61500 | 73000 | 77100 | 83500 | 75300 | 66000 | 56900 |
| 27 | 58500 | 52400 | 50400 | 53900 | 56000 | 61700 | 73300 | 77800 | 83200 | 75000 | 65800 | 56700 |
| 28 | 58100 | 52200 | 50400 | 53900 | 56100 | 62100 | 73600 | 78200 | 83000 | 74700 | 65500 | 56300 |
| 29 | 58000 | 52100 | 50400 | 54000 | --- | 62400 | 73700 | 78700 | 82800 | 74400 | 65200 | 56000 |
| 30 | 57800 | 51900 | 50400 | 54300 | --- | 62800 | 74000 | 79500 | 82500 | 74100 | 65000 | 55800 |
| 31 | 57600 | --- | 50400 | 54400 | --- | 63000 | --- | 80300 | --- | 73900 | 64700 | --- |
| MAX | 62900 | 57300 | 51600 | 54400 | 56100 | 63000 | 74000 | 80300 | 83800 | 82200 | 73600 | 64300 |
| MIN | 57600 | 51900 | 50400 | 50300 | 54400 | 56100 | 63400 | 74100 | 81000 | 73900 | 64700 | 55800 |
| a | 5021.3 | 5016.5 | 5015.2 | 5018.7 | 5020.2 | 5025.5 | 5033.5 | 5037.8 | 5039.3 | 5033.4 | 5026.8 | 5019.9 |
| b | -5600 | -5700 | -1500 | +4000 | +1700 | +6900 | +11000 | +6300 | +2200 | -8600 | -9200 | -8900 |

CAL YR 1989 b -6900
WTR YR 1990 b -7400

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11395030 SOUTH FORK FEATHER RIVER BELOW LITTLE GRASS VALLEY DAM, CA

LOCATION.--Lat 39°43'26", long 121°01'16", in SW 1/4 NW 1/4 sec.31, T.22 N., R.9 E., Plumas County, Hydrologic Unit 18020123, Plumas National Forest, on left bank 0.1 mi downstream from Little Grass Valley Dam and 3.5 mi northwest of La Porte.

DRAINAGE AREA.--25.9 mi².

PERIOD OF RECORD.--October 1927 to September 1933 (published as "near La Porte"), October 1960 to current year.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,809.0 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1960, at site 0.4 mi upstream at different datum. Oct. 1, 1960, to Oct. 30, 1962, at present site and datum. Nov. 1, 1962, to May 31, 1966, at site on outlet works at base of Little Grass Valley Dam 0.1 mi upstream at datum 4,850.00 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Flow regulated by Little Grass Valley Reservoir (station 11395020) beginning in October 1961. No diversion upstream from station. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE (adjusted for change in contents in Little Grass Valley Reservoir).--36 years, 98.4 ft³/s, 71,290 acre-ft/yr.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,780 ft³/s, Feb. 18, 1986, gage height, 14.78 ft; minimum, 0.2 ft³/s, Oct. 28-31, Nov. 2, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 137 ft³/s, June 26, gage height, 8.46 ft; minimum daily, 9.2 ft³/s, Feb. 10, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|------|------|------|------|------|------|
| 1 | 117 | 116 | 113 | 11 | 11 | 9.5 | 11 | 12 | 15 | 136 | 133 | 132 |
| 2 | 117 | 116 | 113 | 11 | 10 | 9.7 | 12 | 12 | 14 | 136 | 133 | 132 |
| 3 | 117 | 115 | 113 | 11 | 10 | 11 | 12 | 12 | 14 | 135 | 133 | 132 |
| 4 | 117 | 115 | 113 | 11 | 10 | 10 | 13 | 12 | 14 | 135 | 133 | 132 |
| 5 | 117 | 115 | 113 | 11 | 9.7 | 10 | 13 | 12 | 13 | 135 | 133 | 132 |
| 6 | 117 | 115 | 113 | 11 | 9.7 | 10 | 13 | 12 | 13 | 135 | 133 | 131 |
| 7 | 117 | 115 | 113 | 11 | 9.7 | 10 | 13 | 12 | 13 | 135 | 133 | 131 |
| 8 | 117 | 115 | 54 | 15 | 9.6 | 10 | 13 | 12 | 13 | 135 | 133 | 131 |
| 9 | 117 | 115 | 12 | 13 | 9.5 | 9.9 | 13 | 12 | 13 | 135 | 133 | 131 |
| 10 | 117 | 114 | 12 | 12 | 9.2 | 9.9 | 13 | 12 | 13 | 135 | 133 | 131 |
| 11 | 116 | 114 | 12 | 12 | 9.5 | 9.9 | 13 | 12 | 13 | 135 | 132 | 131 |
| 12 | 116 | 114 | 12 | 14 | 9.7 | 9.7 | 13 | 12 | 13 | 135 | 132 | 130 |
| 13 | 116 | 114 | 12 | 14 | 9.7 | 9.6 | 13 | 12 | 13 | 135 | 132 | 130 |
| 14 | 116 | 114 | 12 | 12 | 9.9 | 9.7 | 13 | 12 | 13 | 135 | 132 | 130 |
| 15 | 116 | 114 | 12 | 12 | 9.9 | 10 | 13 | 12 | 13 | 135 | 132 | 130 |
| 16 | 116 | 114 | 12 | 12 | 10 | 10 | 13 | 12 | 13 | 135 | 132 | 130 |
| 17 | 116 | 114 | 12 | 12 | 9.9 | 10 | 13 | 12 | 13 | 135 | 132 | 130 |
| 18 | 116 | 114 | 12 | 11 | 9.7 | 11 | 13 | 12 | 13 | 135 | 132 | 130 |
| 19 | 116 | 114 | 12 | 11 | 9.7 | 11 | 13 | 12 | 13 | 135 | 132 | 130 |
| 20 | 116 | 114 | 12 | 11 | 9.5 | 11 | 13 | 14 | 13 | 135 | 132 | 130 |
| 21 | 116 | 113 | 12 | 11 | 9.4 | 11 | 13 | 13 | 13 | 134 | 132 | 130 |
| 22 | 116 | 113 | 12 | 11 | 9.5 | 11 | 13 | 13 | 13 | 134 | 132 | 130 |
| 23 | 121 | 113 | 11 | 11 | 9.5 | 11 | 16 | 14 | 13 | 134 | 132 | 130 |
| 24 | 118 | 114 | 11 | 11 | 9.5 | 12 | 14 | 14 | 13 | 134 | 132 | 130 |
| 25 | 116 | 115 | 11 | 11 | 9.2 | 12 | 13 | 13 | 13 | 134 | 132 | 130 |
| 26 | 116 | 114 | 11 | 11 | 9.3 | 12 | 13 | 13 | 89 | 134 | 132 | 130 |
| 27 | 116 | 114 | 11 | 11 | 9.5 | 12 | 13 | 18 | 136 | 134 | 132 | 130 |
| 28 | 116 | 113 | 11 | 11 | 9.3 | 12 | 13 | 17 | 136 | 133 | 132 | 130 |
| 29 | 116 | 113 | 11 | 11 | --- | 11 | 12 | 15 | 136 | 133 | 132 | 130 |
| 30 | 116 | 113 | 11 | 11 | --- | 11 | 12 | 17 | 136 | 133 | 132 | 130 |
| 31 | 116 | --- | 11 | 11 | --- | 11 | --- | 17 | --- | 133 | 132 | --- |
| TOTAL | 3613 | 3426 | 1112 | 359 | 271.1 | 327.9 | 388 | 406 | 963 | 4172 | 4102 | 3916 |
| MEAN | 117 | 114 | 35.9 | 11.6 | 9.68 | 10.6 | 12.9 | 13.1 | 32.1 | 135 | 132 | 131 |
| MAX | 121 | 116 | 113 | 15 | 11 | 12 | 16 | 18 | 136 | 136 | 133 | 132 |
| MIN | 116 | 113 | 11 | 11 | 9.2 | 9.5 | 11 | 12 | 13 | 133 | 132 | 130 |
| AC-FT | 7170 | 6800 | 2210 | 712 | 538 | 650 | 770 | 805 | 1910 | 8280 | 8140 | 7770 |

CAL YR 1989 TOTAL 38887.9 MEAN 107 MAX 601 MIN 7.5 AC-FT 77130 MEAN a 97.0 AC-FT a 70230
WTR YR 1990 TOTAL 23056.0 MEAN 63.2 MAX 136 MIN 9.2 AC-FT 45730 MEAN a 52.9 AC-FT a 38330

a Adjusted for change in contents in Little Grass Valley Reservoir.

SACRAMENTO RIVER BASIN

11395150 SOUTH FORK TUNNEL NEAR STRAWBERRY VALLEY, CA

LOCATION.--Lat 39°38'55", long 120°07'00", in NW 1/4 SW 1/4 sec.29, T.21 N., R.8 E., Plumas County, Hydrologic Unit 18020123, Plumas National Forest, 3.2 mi upstream from Rock Creek, and 5.8 mi north of Strawberry Valley.

PERIOD OF RECORD.--October 1973 to current year. Records of daily discharge for November 1961 to September 1973 are in files of the U.S. Geological Survey. Monthly diversion used to adjust South Fork Feather River below diversion dam near Strawberry Valley (station 11395200) since October 1961.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Tunnel diverts water from South Fork Feather River to Sly Creek Reservoir (station 11395400) for power development.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--17 years, 129 ft³/s, 93,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 570 ft³/s, Mar. 13, May 25-29, June 3, 1983; no flow many days in 1980-82.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 106 | 122 | 126 | 14 | 28 | 56 | 73 | 27 | 158 | 143 | 133 | 132 |
| 2 | 116 | 122 | 124 | 14 | 25 | 72 | 72 | 25 | 121 | 144 | 134 | 132 |
| 3 | 109 | 121 | 123 | 13 | 26 | 164 | 72 | 24 | 96 | 143 | 134 | 132 |
| 4 | 109 | 120 | 122 | 13 | 26 | 132 | 75 | 23 | 80 | 143 | 134 | 131 |
| 5 | 109 | 118 | 122 | 13 | 23 | 102 | 74 | 21 | 68 | 142 | 133 | 132 |
| 6 | 108 | 118 | 122 | 13 | 24 | 88 | 74 | 20 | 61 | 143 | 140 | 131 |
| 7 | 108 | 117 | 121 | 28 | 22 | 80 | 71 | 20 | 55 | 143 | 137 | 131 |
| 8 | 107 | 116 | 88 | 119 | 21 | 77 | 66 | 19 | 49 | 141 | 136 | 130 |
| 9 | 107 | 115 | 20 | 64 | 21 | 71 | 61 | 18 | 45 | 140 | 136 | 130 |
| 10 | 107 | 115 | 19 | 46 | 22 | 70 | 59 | 18 | 41 | 140 | 135 | 130 |
| 11 | 107 | 114 | 19 | 39 | 23 | 65 | 56 | 18 | 38 | 140 | 135 | 130 |
| 12 | 106 | 114 | 18 | 90 | 24 | 60 | 52 | 17 | 35 | 140 | 135 | 130 |
| 13 | 106 | 114 | 18 | 203 | 24 | 55 | 51 | 17 | 33 | 139 | 135 | 129 |
| 14 | 105 | 113 | 17 | 117 | 22 | 51 | 49 | 16 | 32 | 140 | 134 | 129 |
| 15 | 105 | 114 | 17 | 80 | 23 | 51 | 47 | 16 | 31 | 138 | 134 | 129 |
| 16 | 105 | 113 | 17 | 71 | 21 | 52 | 44 | 15 | 29 | 137 | 134 | 129 |
| 17 | 105 | 113 | 16 | 58 | 24 | 56 | 42 | 17 | 28 | 136 | 134 | 129 |
| 18 | 105 | 113 | 16 | 52 | 24 | 63 | 39 | 18 | 26 | 136 | 134 | 129 |
| 19 | 104 | 112 | 16 | 46 | 23 | 72 | 37 | 19 | 25 | 137 | 136 | 129 |
| 20 | 104 | 112 | 16 | 42 | 22 | 80 | 35 | 59 | 24 | 141 | 135 | 129 |
| 21 | 136 | 112 | 15 | 39 | 21 | 87 | 34 | 44 | 23 | 137 | 134 | 128 |
| 22 | 122 | 112 | 15 | 36 | 22 | 95 | 33 | 32 | 23 | 136 | 134 | 128 |
| 23 | 232 | 112 | 14 | 35 | 23 | 100 | 72 | 57 | 22 | 136 | 134 | 130 |
| 24 | 191 | 125 | 14 | 33 | 26 | 104 | 64 | 54 | 21 | 135 | 133 | 129 |
| 25 | 160 | 179 | 14 | 32 | 29 | 108 | 49 | 46 | 21 | 135 | 133 | 128 |
| 26 | 146 | 174 | 14 | 31 | 36 | 103 | 43 | 47 | 66 | 135 | 133 | 128 |
| 27 | 145 | 141 | 14 | 29 | 45 | 96 | 40 | 145 | 143 | 134 | 133 | 128 |
| 28 | 136 | 134 | 14 | 28 | 51 | 90 | 37 | 212 | 143 | 134 | 133 | 127 |
| 29 | 128 | 130 | 14 | 27 | --- | 82 | 34 | 133 | 146 | 134 | 133 | 127 |
| 30 | 124 | 128 | 13 | 33 | --- | 78 | 30 | 150 | 143 | 134 | 133 | 127 |
| 31 | 125 | --- | 13 | 28 | --- | 74 | --- | 202 | --- | 133 | 132 | --- |
| TOTAL | 3783 | 3663 | 1311 | 1486 | 721 | 2534 | 1585 | 1549 | 1826 | 4289 | 4163 | 3883 |
| MEAN | 122 | 122 | 42.3 | 47.9 | 25.7 | 81.7 | 52.8 | 50.0 | 60.9 | 138 | 134 | 129 |
| MAX | 232 | 179 | 126 | 203 | 51 | 164 | 75 | 212 | 158 | 144 | 140 | 132 |
| MIN | 104 | 112 | 13 | 13 | 21 | 51 | 30 | 15 | 21 | 133 | 132 | 127 |
| AC-FT | 7500 | 7270 | 2600 | 2950 | 1430 | 5030 | 3140 | 3070 | 3620 | 8510 | 8260 | 7700 |

CAL YR 1989 TOTAL 51176 MEAN 140 MAX 569 MIN 13 AC-FT 101500
WTR YR 1990 TOTAL 30793 MEAN 84.4 MAX 232 MIN 13 AC-FT 61080

11395200 SOUTH FORK FEATHER RIVER BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CA

LOCATION.--Lat 39°38'51", Long 121°07'04", in NE 1/4 SE 1/4 sec.30, T.21 N., R.8 E., Plumas County, Hydrologic Unit 18020123, Plumas National Forest, on left bank 0.1 mi downstream from diversion dam, 3.1 mi upstream from Rock Creek, and 5.8 mi north of Strawberry Valley.

DRAINAGE AREA.--37.7 mi².

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WDR CA-80-4: 1976(M).

GAGE.--Water-stage recorder and since May 8, 1987, sharp crested rectangular weir. Datum of gage is 3,535.02 ft above National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District).

REMARKS.--No estimated daily discharges. Flow regulated by Little Grass Valley Reservoir (station 11395020). South Fork diversion tunnel, maximum capacity, about 600 ft³/s 500 ft upstream, diverts to Sly Creek Reservoir (station 11395400); diversion began in November 1961. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE (adjusted for diversion to South Fork tunnel).--30 years, 153 ft³/s, 110,800 acre-ft/yr.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,870 ft³/s, Feb. 17, 1986, gage height, 14.92 ft, from rating curve extended above 40 ft³/s on basis of computation of peak flow over diversion dam from floodmark; minimum daily, 0.3 ft³/s, Dec. 25, 1962, to Jan. 2, 1963, Mar. 1-3, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 250 ft³/s, Oct. 25, gage height, 6.91 ft; minimum daily, 5.5 ft³/s, May 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 11 | 7.8 | 6.0 | 5.6 | 5.6 | 6.0 | 6.0 | 10 | 5.8 | 6.0 | 6.0 | 5.8 |
| 2 | 11 | 5.8 | 6.0 | 5.6 | 5.6 | 6.1 | 6.0 | 10 | 5.8 | 6.0 | 6.0 | 5.8 |
| 3 | 11 | 5.8 | 6.0 | 5.6 | 5.7 | 6.2 | 6.0 | 10 | 5.8 | 6.0 | 6.0 | 5.8 |
| 4 | 11 | 5.8 | 6.0 | 5.6 | 5.7 | 6.2 | 6.0 | 10 | 5.8 | 6.0 | 6.0 | 5.8 |
| 5 | 11 | 5.8 | 6.0 | 5.6 | 5.6 | 6.2 | 6.0 | 10 | 5.8 | 6.0 | 6.0 | 5.8 |
| 6 | 11 | 5.8 | 6.0 | 5.6 | 5.6 | 6.0 | 6.0 | 10 | 5.8 | 6.0 | 6.0 | 5.8 |
| 7 | 11 | 5.8 | 6.0 | 5.9 | 5.7 | 6.0 | 6.0 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 8 | 11 | 5.8 | 5.9 | 6.0 | 5.8 | 6.0 | 6.0 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 9 | 11 | 5.8 | 5.6 | 5.8 | 5.8 | 6.0 | 6.0 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 10 | 11 | 5.8 | 5.6 | 5.8 | 5.8 | 6.0 | 6.0 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 11 | 11 | 5.8 | 5.6 | 5.7 | 5.8 | 6.0 | 6.0 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 12 | 11 | 5.8 | 5.6 | 5.9 | 5.8 | 6.0 | 6.0 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 13 | 11 | 5.8 | 5.6 | 6.1 | 5.8 | 6.0 | 6.0 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 14 | 11 | 5.8 | 5.6 | 6.0 | 5.8 | 6.0 | 5.9 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 15 | 11 | 5.8 | 5.6 | 5.9 | 5.8 | 6.0 | 5.9 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 16 | 11 | 5.8 | 5.6 | 5.9 | 5.8 | 6.0 | 5.8 | 10 | 5.8 | 6.0 | 5.8 | 5.8 |
| 17 | 11 | 5.8 | 5.6 | 5.8 | 5.8 | 6.0 | 5.8 | 7.4 | 5.8 | 6.0 | 5.8 | 5.8 |
| 18 | 11 | 5.9 | 5.6 | 5.8 | 5.8 | 6.0 | 5.9 | 5.5 | 5.8 | 6.0 | 5.8 | 5.8 |
| 19 | 11 | 5.9 | 5.6 | 5.7 | 5.8 | 6.0 | 5.8 | 5.5 | 5.8 | 6.0 | 5.8 | 5.8 |
| 20 | 11 | 5.9 | 5.6 | 5.7 | 5.8 | 6.0 | 5.8 | 5.7 | 5.8 | 6.0 | 5.8 | 5.8 |
| 21 | 11 | 5.9 | 5.6 | 5.7 | 5.8 | 6.0 | 5.8 | 5.6 | 5.8 | 6.0 | 5.8 | 5.8 |
| 22 | 11 | 5.8 | 5.6 | 5.6 | 6.0 | 6.0 | 5.9 | 5.6 | 5.8 | 6.0 | 5.8 | 5.8 |
| 23 | 11 | 5.9 | 5.6 | 5.6 | 6.0 | 6.0 | 6.1 | 5.7 | 5.8 | 6.0 | 5.8 | 5.8 |
| 24 | 11 | 6.0 | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 5.6 | 5.8 | 6.0 | 5.8 | 5.8 |
| 25 | 13 | 6.2 | 5.6 | 5.6 | 6.0 | 6.0 | 6.0 | 5.6 | 5.8 | 6.0 | 5.8 | 5.8 |
| 26 | 11 | 6.0 | 5.6 | 5.6 | 6.1 | 6.0 | 6.0 | 5.6 | 5.7 | 6.0 | 5.8 | 5.8 |
| 27 | 11 | 6.0 | 5.6 | 5.6 | 6.1 | 6.0 | 5.9 | 5.9 | 5.9 | 6.0 | 5.8 | 5.8 |
| 28 | 11 | 6.0 | 5.6 | 5.6 | 6.0 | 6.0 | 5.9 | 5.8 | 6.0 | 6.0 | 5.8 | 5.8 |
| 29 | 11 | 6.0 | 5.6 | 5.6 | --- | 6.0 | 5.8 | 5.8 | 6.0 | 6.0 | 5.8 | 5.8 |
| 30 | 11 | 6.0 | 5.6 | 5.7 | --- | 6.0 | 8.5 | 5.9 | 6.0 | 6.0 | 5.8 | 5.8 |
| 31 | 11 | --- | 5.6 | 5.6 | --- | 6.0 | --- | 5.8 | --- | 6.0 | 5.8 | --- |
| TOTAL | 343 | 178.1 | 176.7 | 177.4 | 162.9 | 186.7 | 180.8 | 247.0 | 174.6 | 186.0 | 181.0 | 174.0 |
| MEAN | 11.1 | 5.94 | 5.70 | 5.72 | 5.82 | 6.02 | 6.03 | 7.97 | 5.82 | 6.00 | 5.84 | 5.80 |
| MAX | 13 | 7.8 | 6.0 | 6.1 | 6.1 | 6.2 | 8.5 | 10 | 6.0 | 6.0 | 6.0 | 5.8 |
| MIN | 11 | 5.8 | 5.6 | 5.6 | 5.6 | 6.0 | 5.8 | 5.5 | 5.7 | 6.0 | 5.8 | 5.8 |
| AC-FT | 680 | 353 | 350 | 352 | 323 | 370 | 359 | 490 | 346 | 369 | 359 | 345 |
| MEAN a | 133 | 128 | 48.0 | 53.7 | 31.5 | 87.8 | 58.8 | 57.9 | 66.7 | 144 | 140 | 135 |
| AC-FT a | 8180 | 7620 | 2950 | 3300 | 1750 | 5400 | 3500 | 3560 | 3970 | 8880 | 8620 | 8040 |

CAL YR 1989 TOTAL 5163.2 MEAN 14.1 MAX 680 MIN 5.3 AC-FT 10240 MEAN a 154 AC-FT a 111700
WTR YR 1990 TOTAL 2368.2 MEAN 6.49 MAX 13 MIN 5.5 AC-FT 4700 MEAN a 90.9 AC-FT a 65780

a Adjusted for diversion to South Fork tunnel.

11395400 SLY CREEK RESERVOIR NEAR STRAWBERRY VALLEY, CA

LOCATION.--Lat 39°35'01", long 121°06'59", in NE 1/4 NE 1/4 sec.19, T.20 N., R.8 E., Butte County, Hydrologic Unit 18020123, Plumas National Forest, on right bank 100 ft upstream from dam on Lost Creek, 1.4 mi northwest of Strawberry Valley.

DRAINAGE AREA.--24.0 mi².

PERIOD OF RECORD.--November 1961 to current year (fragmentary prior to Mar. 14, 1962).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District). Prior to Sept. 30, 1966, water-stage recorder in valve chamber inside dam at same datum. Oct. 1, 1966, to December 1974, nonrecording gage read once daily.

REMARKS.--Reservoir is formed by earthfill dam. Storage began in November 1961. Total capacity, 65,600 acre-ft between elevations 3,285 ft, invert of outlet, and 3,531 ft, top of spillway gate, all of which is available for release. Water is diverted into reservoir from South Fork Feather River through South Fork diversion tunnel and from North Yuba River basin through Slate Creek tunnel (station 11413250). See schematic diagram of South Fork Feather River basin.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 65,600 acre-ft, June 22, 1978, elevation, 3,530.9 ft; minimum observed under normal operating conditions since reservoir first filled, 860 acre-ft, Feb. 11, 1976, elevation, 3,320.0 ft. Reservoir completely drained for powerplant construction, Sept. 12 to Oct. 17, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 64,800 acre-ft, June 11, elevation, 3,529.6 ft; minimum, 17,700 acre-ft, Jan 5, 6, elevation, 3,423.6 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. in 1946)

| | | | | | |
|-------|-------|-------|--------|-------|--------|
| 3,310 | 450 | 3,360 | 4,300 | 3,450 | 26,300 |
| 3,315 | 655 | 3,380 | 7,360 | 3,480 | 38,500 |
| 3,320 | 860 | 3,400 | 11,500 | 3,510 | 53,400 |
| 3,340 | 2,150 | 3,420 | 16,600 | 3,531 | 65,600 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 2400 HOURS

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 34800 | 29800 | 32300 | 19500 | 24500 | 23400 | 43800 | 54600 | 62700 | 61300 | 47700 | 35100 |
| 2 | 34900 | 28800 | 32300 | 19100 | 24200 | 24100 | 44500 | 54900 | 63900 | 61300 | 46900 | 34200 |
| 3 | 35200 | 28000 | 32500 | 18600 | 24100 | 25800 | 45100 | 54800 | 64300 | 60900 | 45900 | 33800 |
| 4 | 35400 | 27200 | 32100 | 18200 | 24000 | 27200 | 45900 | 54500 | 64700 | 61200 | 44900 | 33300 |
| 5 | 35700 | 27100 | 31400 | 17700 | 24200 | 27700 | 46600 | 54100 | 64600 | 61200 | 44300 | 32400 |
| 6 | 35900 | 26600 | 30700 | 17700 | 24500 | 28400 | 47600 | 54300 | 63900 | 60700 | 43300 | 31400 |
| 7 | 36000 | 26600 | 29800 | 18100 | 24400 | 28900 | 48300 | 54200 | 64000 | 61000 | 42400 | 30800 |
| 8 | 35800 | 26900 | 29300 | 19500 | 24100 | 29700 | 49000 | 53700 | 64400 | 60800 | 41600 | 30800 |
| 9 | 35400 | 27200 | 29200 | 20000 | 24000 | 30400 | 49600 | 53600 | 64400 | 60400 | 40700 | 31000 |
| 10 | 35000 | 27500 | 28900 | 20400 | 23600 | 30700 | 49400 | 53100 | 64700 | 60100 | 39800 | 31300 |
| 11 | 34700 | 27800 | 28300 | 20800 | 23500 | 31300 | 49600 | 53300 | 64300 | 59300 | 38800 | 31600 |
| 12 | 34300 | 28100 | 27600 | 21700 | e23600 | 31700 | 50300 | 53200 | 64200 | 58300 | 37900 | 31800 |
| 13 | 33900 | 28400 | 26600 | 23600 | 23200 | 31900 | 50400 | 52900 | 64200 | 57500 | 37000 | 32100 |
| 14 | 33700 | 28700 | 25400 | 24700 | 22900 | 32000 | 50800 | 52400 | 64000 | 56600 | 36800 | 32300 |
| 15 | 33100 | 28900 | 24700 | 25000 | 22900 | 32200 | 50900 | 52000 | 64200 | 55800 | 37100 | 32600 |
| 16 | 33200 | 29200 | 24800 | 25000 | 23100 | 32600 | 51100 | 52000 | 63900 | 55900 | 37200 | 32900 |
| 17 | 33500 | 29500 | 24100 | 25500 | e23100 | 33100 | 51700 | 52100 | 63800 | 55600 | 36500 | 32600 |
| 18 | 33700 | 29700 | 23800 | 25400 | e23100 | 33500 | 52200 | 52200 | 63700 | 55200 | 36100 | 32600 |
| 19 | 34000 | 30000 | 23800 | 25500 | e22900 | 34200 | 52700 | 52400 | 63400 | 54900 | 36400 | 32400 |
| 20 | 33600 | 30300 | 23200 | 25400 | 22400 | 34900 | 52500 | 53000 | 63200 | 54700 | 36200 | 32100 |
| 21 | 33400 | 30600 | 23100 | 25300 | 22600 | 35400 | 52400 | 53400 | 63100 | 54600 | 36000 | 32400 |
| 22 | 33700 | 30400 | 22700 | 25300 | 22400 | 36200 | 52800 | 53800 | 62700 | 54700 | 35300 | 32100 |
| 23 | 34400 | 30200 | 22400 | 25100 | 22400 | 37100 | 53900 | 54500 | 62700 | 54400 | 34600 | 32300 |
| 24 | 34600 | 30500 | 22000 | 25000 | 22300 | 37900 | 54400 | 55200 | 62300 | 54200 | 34800 | 31900 |
| 25 | 34800 | 31200 | 21800 | 24800 | 22500 | 38800 | 54200 | 55700 | 62100 | 53500 | 34600 | 31500 |
| 26 | 33900 | 32100 | 21600 | 24800 | 22600 | 39800 | 54400 | 56200 | 61700 | 52800 | 34500 | 31300 |
| 27 | 33200 | 32100 | 20900 | 25000 | 22800 | 40600 | 54400 | 57600 | e61300 | 52000 | 34800 | 31200 |
| 28 | 32300 | 32200 | 20800 | 24900 | 22900 | 41500 | 54900 | 59400 | e61600 | 51200 | 35100 | 30700 |
| 29 | 32200 | 32300 | 20400 | 24500 | --- | 42500 | 55300 | 60700 | 61200 | 50200 | 35400 | 30400 |
| 30 | 31400 | 32700 | 20300 | 24400 | --- | 42800 | 55000 | 61600 | 61500 | 49400 | 35700 | 30600 |
| 31 | 30500 | --- | 19800 | 24700 | --- | 43200 | --- | 62300 | --- | 48400 | 35700 | --- |
| MAX | 36000 | 32700 | 32500 | 25500 | 24500 | 43200 | 55300 | 62300 | 64700 | 61300 | 47700 | 35100 |
| MIN | 30500 | 26600 | 19800 | 17700 | 22300 | 23400 | 43800 | 52000 | 61200 | 48400 | 34500 | 30400 |
| a | 3461.1 | 3466.5 | 3430.8 | 3445.4 | 3440.4 | 3490.1 | 3512.8 | 3525.4 | 3524.1 | 3500.4 | 3473.6 | 3461.3 |
| b | -4900 | +2200 | -12900 | +4900 | -1800 | +20300 | +11800 | +7300 | -800 | -13100 | -12700 | -5100 |

CAL YR 1989 b -5200
WTR YR 1990 b -4800

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11395500 OROVILLE-WYANDOTTE CANAL NEAR CLIPPER MILLS, CA

LOCATION.--Lat 39°33'15", long 121°11'31", in NW 1/4 NE 1/4 sec.33, T.20 N., R.7 E., Butte County, Hydrologic Unit 18020123, in concrete valve house at head of canal and 2.5 mi north of Clipper Mills.

PERIOD OF RECORD.--October 1927 to September 1941 (published as Forbestown ditch), October 1953 to current year. Monthly discharge only for October 1953 to September 1961, published with records for Lost Creek near Clipper Mills.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 3,166.0 ft above National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District). Prior to Sept. 30, 1941, nonrecording gages and Oct. 1, 1941, to Nov. 16, 1962, water-stage recorder at sites at different datums 4 mi upstream in abandoned part of canal, 0.3 mi downstream from Lost Creek Dam.

REMARKS.--No estimated daily discharges. Water is discharged to canal through valve in Woodleaf penstock. Prior to Nov. 16, 1962, canal diverted from Lost Creek Dam. Water is used for irrigation and domestic supply. Demand for water reduced when a large lumber mill closed at Woodleaf in 1962. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--23 years (water years 1928-41, 1954-62, prior to closure of lumber mill), 21.0 ft³/s, 15,200 acre-ft/yr; 28 years (water years 1963-90), 8.50 ft³/s, 6,160 acre-ft/yr.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 43 ft³/s, Aug. 9 to Sept. 9, 1937, Aug. 13-15, 1977; no flow at times in many years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|-------|-------|------|------|-------|-------|-------|------|------|------|
| 1 | 8.6 | 20 | 1.4 | .00 | .58 | .60 | 3.5 | 4.2 | 4.1 | 21 | 24 | 24 |
| 2 | .00 | 17 | 1.4 | .00 | .27 | .56 | 3.5 | 6.7 | 4.1 | 20 | 23 | 24 |
| 3 | .00 | 12 | 1.4 | 7.1 | .00 | .26 | 3.2 | 9.3 | 4.0 | 21 | 23 | 24 |
| 4 | .00 | 12 | 1.4 | 12 | .00 | .00 | 2.9 | 11 | 4.0 | 21 | 23 | 24 |
| 5 | .00 | 12 | 1.4 | 5.5 | .00 | .00 | 2.5 | 10 | 4.0 | 21 | 23 | 24 |
| 6 | .00 | 12 | .64 | .00 | .00 | .00 | 2.5 | 11 | 7.1 | 21 | 23 | 24 |
| 7 | .00 | 12 | .00 | .00 | .00 | .00 | 2.6 | 11 | 9.7 | 20 | 23 | 24 |
| 8 | .00 | 11 | .00 | .00 | .00 | .00 | 2.6 | 16 | 9.7 | 20 | 23 | 24 |
| 9 | .00 | 11 | .00 | .00 | .00 | .00 | 2.6 | 19 | 9.7 | 21 | 23 | 24 |
| 10 | .00 | 11 | .00 | .00 | .00 | .00 | 2.5 | 21 | 9.8 | 20 | 23 | 24 |
| 11 | .00 | 11 | 7.3 | .00 | .00 | .00 | 2.5 | 21 | 9.7 | 22 | 23 | 24 |
| 12 | .00 | 11 | 11 | .00 | .00 | .00 | 2.5 | 21 | 9.8 | 24 | 24 | 24 |
| 13 | .00 | 14 | 3.3 | .00 | .00 | .00 | 2.5 | 21 | 9.8 | 24 | 24 | 24 |
| 14 | .00 | 16 | .00 | .00 | .00 | .00 | 2.5 | 21 | 11 | 24 | 24 | 24 |
| 15 | .00 | 16 | .00 | .00 | .40 | .00 | 2.5 | 21 | 12 | 24 | 24 | 24 |
| 16 | .00 | 16 | .00 | .00 | .59 | .00 | 2.6 | 21 | 12 | 24 | 24 | 24 |
| 17 | .00 | 14 | .00 | .20 | .61 | .00 | 2.6 | 21 | 12 | 24 | 24 | 24 |
| 18 | .00 | 14 | .00 | .61 | .56 | .00 | 2.6 | 20 | 12 | 24 | 24 | 24 |
| 19 | .00 | 14 | .00 | .34 | .52 | .60 | 2.5 | 21 | 13 | 24 | 24 | 24 |
| 20 | .00 | 14 | .00 | .00 | .54 | 1.1 | 2.6 | 21 | 15 | 24 | 24 | 24 |
| 21 | .84 | 14 | .00 | .00 | .58 | 1.0 | 1.0 | 18 | 16 | 24 | 24 | 24 |
| 22 | 2.0 | 9.3 | .00 | .00 | .58 | .69 | .00 | 14 | 16 | 24 | 24 | 24 |
| 23 | 2.0 | 2.0 | .00 | .00 | .57 | .00 | .00 | 13 | 16 | 24 | 24 | 24 |
| 24 | 5.1 | 1.8 | .00 | .00 | .58 | .00 | .00 | 12 | 16 | 24 | 24 | 24 |
| 25 | 9.3 | 1.5 | .00 | .00 | .56 | .00 | .00 | 12 | 16 | 24 | 24 | 23 |
| 26 | 17 | 1.5 | .00 | .00 | .57 | .00 | .00 | 12 | 18 | 24 | 24 | 23 |
| 27 | 17 | 1.4 | .00 | .00 | .56 | .00 | .86 | 12 | 18 | 24 | 24 | 21 |
| 28 | 10 | 1.4 | .00 | .00 | .57 | .00 | 2.6 | 12 | 20 | 24 | 24 | 19 |
| 29 | 9.4 | 1.4 | .00 | .00 | --- | .84 | 2.6 | 6.7 | 21 | 24 | 24 | 19 |
| 30 | 15 | 1.5 | .00 | .00 | --- | 1.5 | 2.6 | 4.1 | 21 | 24 | 24 | 11 |
| 31 | 20 | --- | .00 | .32 | --- | 2.8 | --- | 4.1 | --- | 24 | 24 | --- |
| TOTAL | 116.24 | 305.8 | 29.24 | 26.07 | 8.64 | 9.95 | 63.46 | 448.1 | 360.5 | 708 | 734 | 692 |
| MEAN | 3.75 | 10.2 | .94 | .84 | .31 | .32 | 2.12 | 14.5 | 12.0 | 22.8 | 23.7 | 23.1 |
| MAX | 20 | 20 | 11 | 12 | .61 | 2.8 | 3.5 | 21 | 21 | 24 | 24 | 24 |
| MIN | .00 | 1.4 | .00 | .00 | .00 | .00 | .00 | 4.1 | 4.0 | 20 | 23 | 11 |
| AC-FT | 231 | 607 | 58 | 52 | 17 | 20 | 126 | 889 | 715 | 1400 | 1460 | 1370 |

CAL YR 1989 TOTAL 3151.58 MEAN 8.63 MAX 24 MIN .00 AC-FT 6250
WTR YR 1990 TOTAL 3502.00 MEAN 9.59 MAX 24 MIN .00 AC-FT 6950

11396000 LOST CREEK NEAR CLIPPER MILLS, CA

LOCATION.--Lat 39°34'25", long 121°08'26", in SE 1/4 SW 1/4 sec.24, T.20 N., R.7 E., Butte County, Hydrologic Unit 18020123, Plumas National Forest, on left bank 0.3 mi downstream from Lost Creek Reservoir and 2.8 mi north of Clipper Mills.

DRAINAGE AREA.--30.0 mi².

PERIOD OF RECORD.--October 1927 to September 1941, October 1948 to current year. Records for Woodleaf powerplant from February 1963 to September 1966 in files of the U.S. Geological Survey.

REVISED RECORDS.--WSP 1395: 1954. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Sharp crested weir for low-water control since June 20, 1987. Elevation of gage is 3,170 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 20, 1987, at site 100 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Flow regulated by Sly Creek Reservoir (station 11395400) 1.5 mi upstream and Lost Creek Reservoir 0.3 mi upstream, usable capacity, 5,920 acre-ft with flashboards. Water is diverted into Sly Creek Reservoir through South Fork diversion tunnel from South Fork Feather River and through Slate Creek tunnel (station 11413250) from North Yuba River basin. Woodleaf tunnel diverts from Lost Creek Reservoir to Woodleaf powerplant. Oroville-Wyandotte Canal (station 11395500) diverts from Woodleaf penstock for irrigation and domestic use. Records represent seepage, release, and spill from Lost Creek Reservoir to Lost Creek. See schematic diagram of South Fork Feather River basin.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--27 years (water years 1928-41, 1949-61, prior to regulation by Sly Creek Reservoir), 73.0 ft³/s, 52,850 acre-ft/yr; 29 years (water years 1962-90), 23.9 ft³/s, 17,320 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s, Dec. 22, 1955, gage height, 6.90 ft, at site then in use; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23 ft³/s, Apr. 11, gage height, 5.28 ft; minimum daily, 3.2 ft³/s, Oct. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 5.4 | 3.4 | 3.4 | 3.4 | 3.6 | 3.8 | 5.5 | 5.7 | 6.2 | 5.6 | 5.7 | 5.6 |
| 2 | 4.0 | 3.4 | 3.4 | 3.4 | 3.5 | 4.0 | 5.5 | 5.8 | 6.2 | 5.6 | 5.6 | 5.6 |
| 3 | 3.2 | 3.4 | 3.4 | 3.4 | 3.6 | 4.5 | 5.4 | 5.6 | 6.3 | 5.6 | 5.6 | 5.7 |
| 4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.7 | 4.3 | 5.4 | 5.4 | 6.4 | 5.7 | 5.6 | 5.8 |
| 5 | 3.4 | 3.4 | 3.4 | 3.4 | 3.6 | 4.1 | 5.4 | 5.6 | 5.9 | 5.6 | 5.7 | 5.5 |
| 6 | 3.4 | 3.4 | 3.4 | 3.4 | 3.5 | 4.0 | 5.4 | 5.6 | 5.8 | 5.6 | 5.6 | 5.2 |
| 7 | 3.4 | 3.4 | 3.4 | 3.8 | 3.5 | 4.0 | 5.4 | 5.5 | 6.1 | 5.6 | 5.6 | 5.4 |
| 8 | 3.4 | 3.4 | 3.4 | 3.9 | 3.5 | 3.9 | 5.4 | 5.4 | 6.0 | 5.6 | 5.6 | 5.4 |
| 9 | 3.4 | 3.4 | 3.4 | 3.5 | 3.5 | 3.9 | 5.4 | 5.6 | 5.9 | 5.6 | 5.5 | 5.4 |
| 10 | 3.4 | 3.4 | 3.4 | 3.5 | 3.5 | 4.0 | 6.8 | 5.6 | 5.8 | 5.7 | 5.5 | 5.4 |
| 11 | 3.4 | 3.4 | 3.4 | 3.5 | 3.5 | 4.0 | 22 | 5.6 | 5.9 | 5.7 | 5.6 | 5.4 |
| 12 | 3.4 | 3.4 | 3.4 | 4.3 | 3.5 | 3.9 | 14 | 5.5 | 6.0 | 5.9 | 5.6 | 5.4 |
| 13 | 3.6 | 3.4 | 3.4 | 4.8 | 3.5 | 3.8 | 5.6 | 5.4 | 5.8 | 5.8 | 5.6 | 5.4 |
| 14 | 3.8 | 3.4 | 3.4 | 4.1 | 3.5 | 3.7 | 5.8 | 5.4 | 5.8 | 5.8 | 5.6 | 5.3 |
| 15 | 4.1 | 3.4 | 3.4 | 3.8 | 3.4 | 3.7 | 8.5 | 5.5 | 5.8 | 5.8 | 5.5 | 5.2 |
| 16 | 4.7 | 3.4 | 3.4 | 3.6 | 3.6 | 3.7 | 7.9 | 5.6 | 5.8 | 5.7 | 5.4 | 5.2 |
| 17 | 4.6 | 3.4 | 3.4 | 3.5 | 3.5 | 3.7 | 5.6 | 5.6 | 5.9 | 5.6 | 5.4 | 5.2 |
| 18 | 4.4 | 3.4 | 3.4 | 3.5 | 3.6 | 3.7 | 5.6 | 5.6 | 5.7 | 5.8 | 5.4 | 5.4 |
| 19 | 3.6 | 3.4 | 3.4 | 3.4 | 3.5 | 3.7 | 5.6 | 5.6 | 5.6 | 5.6 | 5.4 | 5.4 |
| 20 | 3.4 | 3.4 | 3.4 | 3.4 | 3.6 | 3.7 | 5.6 | 5.8 | 5.6 | 5.6 | 5.4 | 5.4 |
| 21 | 3.7 | 3.4 | 3.4 | 3.4 | 3.5 | 3.7 | 5.6 | 5.6 | 5.6 | 5.8 | 5.4 | 5.3 |
| 22 | 3.6 | 3.4 | 3.4 | 3.4 | 3.5 | 3.7 | 5.8 | 5.6 | 5.6 | 5.8 | 5.5 | 5.3 |
| 23 | 4.2 | 3.4 | 3.4 | 3.4 | 3.5 | 3.7 | 5.8 | 5.7 | 5.7 | 5.6 | 5.7 | 5.3 |
| 24 | 3.8 | 3.5 | 3.4 | 3.4 | 3.5 | 3.7 | 5.6 | 5.6 | 5.6 | 5.6 | 5.7 | 5.4 |
| 25 | 3.6 | 4.2 | 3.4 | 3.5 | 3.5 | 3.7 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 5.4 |
| 26 | 3.5 | 3.9 | 3.4 | 3.4 | 3.5 | 3.7 | 5.6 | 5.6 | 5.6 | 5.8 | 5.6 | 5.4 |
| 27 | 3.5 | 3.5 | 3.4 | 3.5 | 3.6 | 3.7 | 5.9 | 6.2 | 5.6 | 5.6 | 5.5 | 5.3 |
| 28 | 3.6 | 3.5 | 3.4 | 3.4 | 3.7 | 3.5 | 6.0 | 6.0 | 5.8 | 5.6 | 5.3 | 5.2 |
| 29 | 3.5 | 3.4 | 3.4 | 3.4 | --- | 3.5 | 5.8 | 5.8 | 5.6 | 5.6 | 5.5 | 5.2 |
| 30 | 3.4 | 3.4 | 3.4 | 3.9 | --- | 4.1 | 5.6 | 5.9 | 5.7 | 5.6 | 5.5 | 5.2 |
| 31 | 3.4 | --- | 3.4 | 3.7 | --- | 5.5 | --- | 6.3 | --- | 5.8 | 5.4 | --- |
| TOTAL | 115.2 | 103.6 | 105.4 | 111.4 | 99.0 | 120.6 | 199.1 | 175.3 | 174.9 | 175.9 | 171.6 | 161.3 |
| MEAN | 3.72 | 3.45 | 3.40 | 3.59 | 3.54 | 3.89 | 6.64 | 5.65 | 5.83 | 5.67 | 5.54 | 5.38 |
| MAX | 5.4 | 4.2 | 3.4 | 4.8 | 3.7 | 5.5 | 22 | 6.3 | 6.4 | 5.9 | 5.7 | 5.8 |
| MIN | 3.2 | 3.4 | 3.4 | 3.4 | 3.4 | 3.5 | 5.4 | 5.4 | 5.6 | 5.6 | 5.3 | 5.2 |
| AC-FT | 228 | 205 | 209 | 221 | 196 | 239 | 395 | 348 | 347 | 349 | 340 | 320 |
| a | 16860 | 9790 | 19180 | 10530 | 9160 | 8500 | 9780 | 8190 | 15850 | 22530 | 23910 | 10830 |

CAL YR 1989 TOTAL 11279.2 MEAN 30.9 MAX 503 MIN 3.2 AC-FT 22370
WTR YR 1990 TOTAL 1713.3 MEAN 4.69 MAX 22 MIN 3.2 AC-FT 3400

a Diversion, in acre-feet, through Woodleaf powerplant, provided by Oroville-Wyandotte Irrigation District.

11396200 SOUTH FORK FEATHER RIVER BELOW FORBESTOWN DAM, CA

LOCATION.--Lat 39°33'05", long 121°12'30", in SE 1/4 NE 1/4 sec.32, T.20 N., R.7 E., Butte County, Hydrologic Unit 18020123, Plumas National Forest, on right bank 500 ft downstream from Forbestown Dam, 0.4 mi upstream from Oroleve Creek, and 4.0 mi northeast of Forbestown.

DRAINAGE AREA.--87.5 mi².

PERIOD OF RECORD.--July 1962 to current year. Records for Forbestown powerplant from February 1963 to September 1966 in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 1,690 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Little Grass Valley Reservoir (station 11395020), Sly Creek Reservoir (station 11395400), and smaller reservoirs. Water from North Yuba River basin is imported through Slate Creek tunnel (station 11413250) to Sly Creek Reservoir. Oroville-Wyandotte Canal (station 11395500) diverts upstream from station. Tunnel 600 ft upstream from station diverts most flow through Forbestown powerplant except fishwater releases and uncontrolled spill over Forbestown Dam. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--28 years, 64.5 ft³/s, 46,730 acre-ft/yr.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,400 ft³/s, Feb. 17, 1986, gage height, 16.07 ft, from rating curve extended above 5,400 ft³/s on basis of flow-over-dam measurement of peak flow; minimum daily, 0.6 ft³/s, Apr. 4, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 39 ft³/s, Nov. 13, gage height, 5.31 ft; minimum daily, 5.4 ft³/s, several days during February, March and April.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 10 | 8.7 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 11 | 5.6 | 5.7 | 5.8 | 5.7 |
| 2 | 11 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 11 | 5.5 | 5.7 | 5.8 | 5.7 |
| 3 | 11 | 5.5 | 5.5 | 5.5 | 5.6 | 5.5 | 5.5 | 11 | 5.6 | 5.7 | 5.8 | 5.8 |
| 4 | 11 | 5.5 | 5.5 | 5.5 | 5.6 | 5.5 | 5.5 | 11 | 5.7 | 5.7 | 5.8 | 5.8 |
| 5 | 10 | 5.5 | 5.6 | 5.6 | 5.5 | 5.5 | 5.5 | 11 | 5.7 | 5.7 | 5.8 | 5.7 |
| 6 | 11 | 5.5 | 5.5 | 5.7 | 5.5 | 5.5 | 5.5 | 11 | 5.7 | 5.7 | 5.8 | 5.8 |
| 7 | 11 | 5.5 | 5.6 | 5.6 | 5.4 | 5.5 | 5.5 | 11 | 5.6 | 5.7 | 5.7 | 5.8 |
| 8 | 10 | 5.5 | 5.6 | 5.8 | 5.5 | 5.5 | 5.5 | 11 | 5.6 | 5.7 | 5.8 | 5.8 |
| 9 | 10 | 5.6 | 5.7 | 5.5 | 5.5 | 5.5 | 5.5 | 11 | 5.6 | 5.7 | 5.9 | 5.8 |
| 10 | 10 | 5.7 | 5.6 | 5.5 | 5.5 | 5.6 | 5.5 | 11 | 5.7 | 5.7 | 5.8 | 5.8 |
| 11 | 11 | 20 | 5.5 | 5.5 | 5.5 | 5.6 | 5.5 | 11 | 5.7 | 5.7 | 5.8 | 5.8 |
| 12 | 11 | 24 | 5.6 | 5.8 | 5.5 | 5.5 | 5.5 | 11 | 5.7 | 5.7 | 5.8 | 5.8 |
| 13 | 11 | 25 | 5.5 | 5.7 | 5.5 | 5.5 | 5.5 | 11 | 5.7 | 5.7 | 5.8 | 5.7 |
| 14 | 10 | 24 | 5.6 | 5.8 | 5.4 | 5.5 | 5.5 | 11 | 5.7 | 5.7 | 5.9 | 5.9 |
| 15 | 10 | 24 | 5.6 | 5.7 | 5.4 | 5.5 | 5.5 | 11 | 5.7 | 5.7 | 5.8 | 5.8 |
| 16 | 11 | 23 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 11 | 5.7 | 5.7 | 5.7 | 5.8 |
| 17 | 11 | 23 | 5.5 | 5.6 | 5.4 | 5.5 | 5.5 | 7.4 | 5.7 | 5.7 | 5.8 | 5.8 |
| 18 | 11 | 23 | 5.5 | 5.6 | 5.4 | 5.5 | 5.5 | 5.5 | 5.7 | 5.7 | 5.7 | 5.7 |
| 19 | 11 | 23 | 5.6 | 5.7 | 5.5 | 5.5 | 5.5 | 5.6 | 5.7 | 5.7 | 5.7 | 5.7 |
| 20 | 11 | 11 | 5.5 | 5.7 | 5.6 | 5.5 | 5.5 | 5.8 | 5.7 | 5.7 | 5.8 | 5.7 |
| 21 | 11 | 5.7 | 5.7 | 5.6 | 5.5 | 5.5 | 5.4 | 5.7 | 5.6 | 5.7 | 5.8 | 5.7 |
| 22 | 10 | 5.5 | 5.7 | 5.5 | 5.5 | 5.5 | 5.5 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| 23 | 11 | 5.7 | 5.6 | 5.5 | 5.5 | 5.5 | 5.6 | 5.7 | 5.5 | 5.7 | 5.7 | 5.8 |
| 24 | 11 | 5.5 | 5.5 | 5.5 | 5.6 | 5.5 | 5.5 | 5.6 | 5.6 | 5.7 | 5.8 | 5.7 |
| 25 | 11 | 5.8 | 5.6 | 5.5 | 5.6 | 5.5 | 5.5 | 5.5 | 5.7 | 5.7 | 5.7 | 5.7 |
| 26 | 11 | 5.6 | 5.5 | 5.5 | 5.7 | 5.5 | 5.5 | 5.5 | 5.8 | 5.7 | 5.7 | 5.8 |
| 27 | 10 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.5 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| 28 | 11 | 5.5 | 5.5 | 5.5 | 5.6 | 5.5 | 5.5 | 5.6 | 5.7 | 5.7 | 5.7 | 5.7 |
| 29 | 11 | 5.5 | 5.5 | 5.5 | --- | 5.5 | 5.5 | 5.5 | 5.7 | 5.7 | 5.7 | 5.9 |
| 30 | 11 | 5.5 | 5.5 | 5.6 | --- | 5.5 | 7.8 | 5.5 | 5.7 | 5.7 | 5.8 | 5.8 |
| 31 | 11 | --- | 5.6 | 5.5 | --- | 5.4 | --- | 5.7 | --- | 5.7 | 5.8 | --- |
| TOTAL | 332 | 334.3 | 172.2 | 173.0 | 154.3 | 170.6 | 167.3 | 262.0 | 170.0 | 176.7 | 178.9 | 172.9 |
| MEAN | 10.7 | 11.1 | 5.55 | 5.58 | 5.51 | 5.50 | 5.58 | 8.45 | 5.67 | 5.70 | 5.77 | 5.76 |
| MAX | 11 | 25 | 5.7 | 5.8 | 5.7 | 5.6 | 7.8 | 11 | 5.8 | 5.7 | 5.9 | 5.9 |
| MIN | 10 | 5.5 | 5.5 | 5.5 | 5.4 | 5.4 | 5.4 | 5.5 | 5.5 | 5.7 | 5.7 | 5.7 |
| AC-FT | 659 | 663 | 342 | 343 | 306 | 338 | 332 | 520 | 337 | 350 | 355 | 343 |
| a | 17550 | 10420 | 19040 | 11960 | 10080 | 10540 | 10540 | 8800 | 17490 | 22460 | 24050 | 10190 |

CAL YR 1989 TOTAL 21132.4 MEAN 57.9 MAX 2040 MIN 5.5 AC-FT 41920
WTR YR 1990 TOTAL 2464.2 MEAN 6.75 MAX 25 MIN 5.4 AC-FT 4890

a Diversion, in acre-feet, to Forbestown powerplant, provided by Oroville-Wyandotte Irrigation District.

SACRAMENTO RIVER BASIN

11396310 MINERS RANCH CANAL BELOW PONDEROSA DAM, NEAR FORBESTOWN, CA

LOCATION.--Lat 39°33'00", long 121°18'20", in SE 1/4 NW 1/4 sec.33, T.20 N., R.6 E., Butte County, Hydrologic Unit 18020123, on right bank 800 ft downstream from Ponderosa Dam and 3 mi northwest of Forbestown.

PERIOD OF RECORD.--October 1962 to current year.

REVISED RECORDS.--WDR CA-88-4: diversion only.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 975 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Canal diverts from South Fork Feather River at Ponderosa Dam. Water is used for power development and irrigation. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--28 years, 206 ft³/s, 149,200 acre-ft/yr.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 314 ft³/s, May 13, 1984; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|---------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1 | 275 | 251 | 261 | 259 | 242 | 253 | 256 | 272 | 250 | 270 | 276 | 211 |
| 2 | 203 | 261 | 264 | 257 | 245 | 250 | 254 | 272 | 261 | 271 | 277 | 278 |
| 3 | 51 | 265 | 241 | 259 | 247 | 250 | 246 | 273 | 261 | 273 | 277 | 284 |
| 4 | .00 | 265 | 259 | 258 | 249 | 243 | 192 | 274 | 237 | 274 | 277 | 284 |
| 5 | .00 | 239 | 246 | 219 | 248 | 251 | 151 | 273 | 274 | 200 | 276 | 285 |
| 6 | .00 | 258 | 255 | 44 | 248 | 252 | 151 | 270 | 272 | 277 | 276 | 285 |
| 7 | 162 | 156 | 255 | 191 | 247 | 252 | 152 | 268 | 258 | 279 | 276 | 284 |
| 8 | 259 | 50 | 255 | 233 | 223 | 252 | 151 | 269 | 257 | 279 | 279 | 285 |
| 9 | 256 | 50 | 254 | 250 | 244 | 250 | 151 | 269 | 258 | 268 | 250 | 282 |
| 10 | 263 | 69 | 252 | 247 | 247 | 251 | 233 | 269 | 262 | 273 | 279 | 82 |
| 11 | 268 | 88 | 253 | 245 | 255 | 250 | 274 | 268 | 263 | 275 | 280 | 15 |
| 12 | 277 | 87 | 258 | 247 | 248 | 250 | 266 | 267 | 277 | 278 | 279 | 5.3 |
| 13 | 283 | 87 | 259 | 251 | 257 | 251 | 255 | 267 | 279 | 277 | 280 | .00 |
| 14 | 283 | 87 | 257 | 250 | 258 | 247 | 255 | 268 | 274 | 277 | 280 | .00 |
| 15 | 283 | 87 | 254 | 253 | 258 | 243 | 257 | 271 | 270 | 278 | 277 | e.00 |
| 16 | 155 | 72 | 252 | 256 | 251 | 243 | 204 | 167 | 268 | 276 | 275 | e.00 |
| 17 | 281 | 36 | 252 | 255 | 219 | 242 | 147 | 40 | 268 | 274 | 273 | e191 |
| 18 | 277 | 36 | 252 | 254 | 173 | 241 | 145 | 41 | 269 | 275 | 278 | e38 |
| 19 | 275 | 36 | 249 | 255 | 250 | 240 | 144 | 26 | 269 | 277 | 277 | 157 |
| 20 | 267 | 114 | 244 | 254 | 253 | 244 | 223 | 27 | 231 | 275 | 271 | 239 |
| 21 | 255 | 46 | 253 | 252 | 250 | 247 | 274 | 28 | 277 | 273 | 267 | 276 |
| 22 | 244 | 50 | 259 | 249 | 199 | 249 | 263 | 28 | 281 | 273 | 266 | 277 |
| 23 | 244 | 256 | 258 | 247 | 253 | 250 | 258 | 159 | 281 | 274 | 282 | 97 |
| 24 | 246 | 259 | 258 | 249 | 253 | 250 | 258 | 13 | 281 | 275 | 283 | 275 |
| 25 | 232 | 255 | 258 | 250 | 254 | 249 | 260 | 25 | 282 | 276 | 281 | 284 |
| 26 | 282 | 262 | 221 | 250 | 253 | 250 | 261 | 26 | 278 | 278 | 276 | 284 |
| 27 | 276 | 258 | 256 | 248 | 253 | 255 | 265 | 43 | 274 | 278 | 258 | 279 |
| 28 | 267 | 263 | 259 | 249 | 253 | 256 | 264 | 225 | 272 | 275 | 281 | 259 |
| 29 | 260 | 266 | 258 | 248 | --- | 256 | 256 | 274 | 270 | 272 | 283 | 142 |
| 30 | 253 | 122 | 258 | 253 | --- | 256 | 263 | 269 | 271 | 273 | 282 | 75 |
| 31 | 251 | --- | 259 | 249 | --- | 257 | --- | 262 | --- | 274 | 264 | --- |
| TOTAL | 6928.00 | 4631 | 7869 | 7481 | 6830 | 7730 | 6729 | 5703 | 8025 | 8447 | 8536 | 5453.30 |
| MEAN | 223 | 154 | 254 | 241 | 244 | 249 | 224 | 184 | 267 | 272 | 275 | 182 |
| MAX | 283 | 266 | 264 | 259 | 258 | 257 | 274 | 274 | 282 | 279 | 283 | 285 |
| MIN | .00 | 36 | 221 | 44 | 173 | 240 | 144 | 13 | 231 | 200 | 250 | .00 |
| AC-FT | 13740 | 9190 | 15610 | 14840 | 13550 | 15330 | 13350 | 11310 | 15920 | 16750 | 16930 | 10820 |
| a | 12450 | 8140 | 14670 | 14090 | 13330 | 14910 | 12160 | 9650 | 14440 | 14770 | 14910 | 9050 |

CAL YR 1989 TOTAL 87775.60 MEAN 240 MAX 283 MIN .00 AC-FT 174100

WTR YR 1990 TOTAL 84362.30 MEAN 231 MAX 285 MIN .00 AC-FT 167300

e Estimated.

a Discharge, in acre-ft, through Kelly Ridge powerplant, provided by Oroville-Wyandotte Irrigation District.

11396330 BANGOR CANAL BELOW MINERS RANCH RESERVOIR, NEAR OROVILLE, CA

LOCATION.--Lat 39°30'15", long 121°27'16", in NE 1/4 SW 1/4 sec.18, T.19 N., R.5 E., Butte County, Hydrologic Unit 18020124, on left bank 400 ft downstream from outlet at Miners Ranch Dam and 5 mi east of Oroville.

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

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 815 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Miners Ranch Reservoir, capacity, 912 acre-ft. Canal completed in November 1962. Water is used for irrigation. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--27 years, 14.0 ft³/s, 10,140 acre-ft/yr.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 65 ft³/s, Aug. 17-20, 1963; no flow for several days in 1965, 1969.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|-------|------|-------|-------|------|------|------|------|------|
| 1 | 19 | 9.9 | 8.1 | 8.1 | 3.0 | 2.8 | 7.5 | 15 | 12 | 16 | 19 | 19 |
| 2 | 18 | 8.0 | 8.3 | 8.1 | 3.0 | 2.8 | 8.0 | 15 | 12 | 16 | 19 | 19 |
| 3 | 16 | 8.2 | 8.3 | 8.1 | 3.0 | 2.8 | 8.6 | 15 | 12 | 17 | 19 | 19 |
| 4 | 16 | 8.4 | 8.1 | 8.2 | 3.0 | 2.9 | 8.9 | 16 | 12 | 18 | 19 | 19 |
| 5 | 15 | 8.4 | 8.3 | 8.4 | 3.0 | 3.1 | 8.7 | 17 | 12 | 18 | 19 | 19 |
| 6 | 15 | 8.4 | 8.1 | 8.4 | 3.0 | 3.0 | 8.7 | 17 | 12 | 18 | 19 | 19 |
| 7 | 14 | 8.4 | 8.1 | 8.4 | 2.9 | 3.0 | 9.0 | 17 | 12 | 18 | 19 | 20 |
| 8 | 14 | 8.4 | 8.1 | 8.2 | 2.8 | 2.8 | 9.0 | 17 | 12 | 18 | 21 | 19 |
| 9 | 14 | 8.4 | 8.1 | 8.0 | 2.8 | 2.8 | 9.0 | 17 | 12 | 18 | 21 | 19 |
| 10 | 14 | 8.2 | 8.1 | 7.9 | 2.8 | 3.0 | 9.1 | 17 | 14 | 18 | 21 | 19 |
| 11 | 14 | 8.4 | 8.1 | 7.8 | 2.8 | 3.0 | 9.0 | 17 | 16 | 18 | 22 | 19 |
| 12 | 15 | 8.4 | 8.1 | 8.1 | 2.8 | 3.0 | 9.3 | 17 | 16 | 18 | 21 | 19 |
| 13 | 15 | 8.4 | 8.1 | 8.1 | 2.8 | 3.0 | 9.3 | 17 | 16 | 18 | 21 | 19 |
| 14 | 15 | 8.2 | 8.1 | 7.0 | 2.8 | 3.2 | 9.0 | 17 | 16 | 18 | 21 | 19 |
| 15 | 16 | 8.3 | 8.3 | 6.1 | 2.8 | 3.3 | 9.0 | 17 | 16 | 18 | 21 | 19 |
| 16 | 16 | 8.1 | 8.2 | 6.1 | 3.0 | 3.3 | 9.0 | 17 | 16 | 18 | 21 | 19 |
| 17 | 16 | 8.0 | 8.1 | 4.9 | 3.0 | 3.4 | 9.0 | 17 | 16 | 18 | 21 | 20 |
| 18 | 16 | 8.2 | 8.1 | 3.7 | 2.8 | 3.5 | 10 | 17 | 16 | 18 | 21 | 20 |
| 19 | 16 | 8.4 | 8.1 | 3.7 | 2.8 | 3.5 | 12 | 17 | 16 | 17 | 21 | 19 |
| 20 | 16 | 8.1 | 8.1 | 3.0 | 2.8 | 3.5 | 12 | 17 | 16 | 17 | 21 | 19 |
| 21 | 16 | 8.2 | 8.1 | 3.0 | 2.9 | 3.5 | 12 | 17 | 17 | 18 | 21 | 19 |
| 22 | 16 | 8.2 | 8.1 | 3.0 | 2.9 | 3.5 | 14 | 17 | 17 | 17 | 21 | 19 |
| 23 | 16 | 8.0 | 8.1 | 3.0 | 2.8 | 3.5 | 15 | 17 | 17 | 18 | 21 | 19 |
| 24 | 16 | 7.8 | 8.1 | 3.0 | 2.8 | 3.5 | 15 | 17 | 17 | 19 | 21 | 19 |
| 25 | 15 | 8.1 | 8.1 | 3.0 | 2.9 | 3.2 | 15 | 17 | 17 | 19 | 21 | 18 |
| 26 | 15 | 8.0 | 8.1 | 3.0 | 2.8 | 2.7 | 15 | 17 | 16 | 19 | 21 | 17 |
| 27 | 14 | 7.8 | 8.1 | 3.0 | 2.8 | 3.7 | 15 | 17 | 16 | 19 | 20 | 17 |
| 28 | 12 | 8.1 | 8.1 | 3.0 | 2.8 | 5.1 | 15 | 17 | 17 | 19 | 19 | 17 |
| 29 | 12 | 8.1 | 8.1 | 3.0 | --- | 6.1 | 15 | 15 | 16 | 19 | 19 | 17 |
| 30 | 12 | 8.1 | 8.1 | 3.0 | --- | 7.5 | 15 | 12 | 16 | 19 | 19 | 17 |
| 31 | 14 | --- | 8.1 | 3.0 | --- | 7.5 | --- | 12 | --- | 19 | 19 | --- |
| TOTAL | 468 | 247.6 | 252.0 | 173.3 | 80.4 | 111.5 | 330.1 | 508 | 448 | 558 | 629 | 562 |
| MEAN | 15.1 | 8.25 | 8.13 | 5.59 | 2.87 | 3.60 | 11.0 | 16.4 | 14.9 | 18.0 | 20.3 | 18.7 |
| MAX | 19 | 9.9 | 8.3 | 8.4 | 3.0 | 7.5 | 15 | 17 | 17 | 19 | 22 | 20 |
| MIN | 12 | 7.8 | 8.1 | 3.0 | 2.8 | 2.7 | 7.5 | 12 | 12 | 16 | 19 | 17 |
| AC-FT | 928 | 491 | 500 | 344 | 159 | 221 | 655 | 1010 | 889 | 1110 | 1250 | 1110 |

CAL YR 1989 TOTAL 4451.8 MEAN 12.2 MAX 23 MIN 1.1 AC-FT 8830
WTR YR 1990 TOTAL 4367.9 MEAN 12.0 MAX 22 MIN 2.7 AC-FT 8660

11396395 SUCKER RUN AT KANAKA DIVERSION, NEAR FEATHER FALLS, CA

LOCATION.--Lat 39°33'44", long 121°16'46", in SE 1/4 NE 1/4 sec.27, T.20 N., R.6 E., Butte County, Hydrologic Unit 18020123, on left bank at Kanaka diversion measuring weir, 2.5 mi upstream from confluence with South Fork Feather River, and 2.5 mi southwest of Feather Falls.

DRAINAGE AREA.--15.5².

PERIOD OF RECORD.--March 1989 to current year.

GAGE.--Water-stage recorder and 120 degree V-notch weir. Elevation of gage is 1,660 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--See schematic diagram of South Fork Feather River basin. See following page for records of combined discharge of river and powerplant.

COOPERATION.--Records provided by STS Consultants Ltd., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 183 ft³/s, Mar. 25, 1989, gage height, 2.77 ft; minimum daily, 2.0 ft³/s, Sept. 11, 12, 1990.
Combined flow: Maximum discharge, 217 ft³/s, Mar. 25, 1989; minimum daily, 2.0 ft³/s, Sept. 11, 12, 1990.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 101 ft³/s, Jan. 13, gage height, 2.45 ft; minimum daily, 2.0 ft³/s, Sept. 11, 12.
Combined flow: Maximum discharge, 134 ft³/s, Jan. 13; minimum daily, 2.0 ft³/s, Sept. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES
(NOT PREVIOUSLY PUBLISHED)

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|-----|------|-------|-------|-------|-------|-------|
| 1 | --- | --- | --- | --- | --- | --- | 16 | 10 | 9.9 | 6.3 | 3.6 | 2.8 |
| 2 | --- | --- | --- | --- | --- | --- | 19 | 8.1 | 9.8 | 5.5 | 3.5 | 2.7 |
| 3 | --- | --- | --- | --- | --- | --- | 18 | 8.3 | 9.8 | 5.5 | 3.4 | 2.7 |
| 4 | --- | --- | --- | --- | --- | --- | 15 | 8.3 | 11 | 5.4 | 3.3 | 2.8 |
| 5 | --- | --- | --- | --- | --- | --- | 14 | 8.3 | 11 | 5.4 | 3.3 | 2.9 |
| 6 | --- | --- | --- | --- | --- | --- | 14 | 8.3 | 10 | 5.2 | 3.3 | 2.8 |
| 7 | --- | --- | --- | --- | --- | --- | 14 | 8.3 | 10 | 5.0 | 3.2 | 2.6 |
| 8 | --- | --- | --- | --- | --- | --- | 14 | 8.3 | 10 | 4.9 | 3.8 | 2.6 |
| 9 | --- | --- | --- | --- | --- | --- | 14 | 8.3 | 9.8 | 4.9 | 3.7 | 2.6 |
| 10 | --- | --- | --- | --- | --- | --- | 14 | 8.3 | 9.4 | 4.9 | 3.5 | 2.6 |
| 11 | --- | --- | --- | --- | --- | --- | 14 | 8.3 | 9.1 | 5.0 | 3.3 | 2.7 |
| 12 | --- | --- | --- | --- | --- | --- | 14 | 8.3 | 8.7 | 4.8 | 3.2 | 2.6 |
| 13 | --- | --- | --- | --- | --- | --- | 14 | 8.4 | 8.6 | 4.8 | 3.2 | 2.6 |
| 14 | --- | --- | --- | --- | --- | --- | 14 | 8.3 | 8.4 | 4.6 | 3.1 | 2.6 |
| 15 | --- | --- | --- | --- | --- | --- | 14 | 8.5 | 8.5 | 4.6 | 3.0 | 2.5 |
| 16 | --- | --- | --- | --- | --- | --- | 13 | 8.5 | 8.6 | 4.7 | 3.0 | 4.5 |
| 17 | --- | --- | --- | --- | --- | 15 | 14 | 8.3 | 8.3 | 4.8 | 3.1 | 7.1 |
| 18 | --- | --- | --- | --- | --- | 43 | 14 | 8.2 | 8.0 | 4.6 | 3.1 | 11 |
| 19 | --- | --- | --- | --- | --- | 45 | 14 | 8.1 | 7.5 | 4.5 | 3.1 | 5.0 |
| 20 | --- | --- | --- | --- | --- | 21 | 13 | 8.2 | 7.4 | 4.4 | 3.2 | 4.7 |
| 21 | --- | --- | --- | --- | --- | 16 | 14 | 8.2 | 7.1 | 4.4 | 3.2 | 4.4 |
| 22 | --- | --- | --- | --- | --- | 15 | 13 | 8.2 | 6.8 | 4.1 | 3.2 | 4.3 |
| 23 | --- | --- | --- | --- | --- | 14 | 14 | 8.9 | 6.5 | 4.0 | 3.2 | 4.3 |
| 24 | --- | --- | --- | --- | --- | 51 | 15 | 8.3 | 6.4 | 4.0 | 3.2 | 4.3 |
| 25 | --- | --- | --- | --- | --- | 110 | 14 | 8.3 | 6.4 | 3.9 | 3.2 | 4.3 |
| 26 | --- | --- | --- | --- | --- | 44 | 14 | 8.3 | 6.6 | 3.8 | 3.2 | 4.4 |
| 27 | --- | --- | --- | --- | --- | 28 | 14 | 8.4 | 6.3 | 3.7 | 3.2 | 4.3 |
| 28 | --- | --- | --- | --- | --- | 21 | 13 | 8.3 | 6.2 | 3.6 | 3.1 | 4.1 |
| 29 | --- | --- | --- | --- | --- | 13 | 14 | 8.2 | 6.5 | 3.5 | 3.0 | 5.4 |
| 30 | --- | --- | --- | --- | --- | 14 | 14 | 8.2 | 6.6 | 3.5 | 3.0 | 4.8 |
| 31 | --- | --- | --- | --- | --- | 23 | --- | 8.9 | --- | 3.5 | 3.1 | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | 429 | 259.8 | 249.2 | 141.8 | 100.5 | 117.0 |
| MEAN | --- | --- | --- | --- | --- | --- | 14.3 | 8.38 | 8.31 | 4.57 | 3.24 | 3.90 |
| MAX | --- | --- | --- | --- | --- | --- | 19 | 10 | 11 | 6.3 | 3.8 | 11 |
| MIN | --- | --- | --- | --- | --- | --- | 13 | 8.1 | 6.2 | 3.5 | 3.0 | 2.5 |
| AC-FT | --- | --- | --- | --- | --- | --- | 851 | 515 | 494 | 281 | 199 | 232 |

11396397 SUCKER RUN AT KANAKA DIVERSION, NEAR FEATHER FALLS, CA--Continued
 COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SUCKER RUN AND KANAKA HYDROELECTRIC
 PROJECT POWERPLANT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
 MEAN VALUES
 (NOT PREVIOUSLY PUBLISHED)

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|-----|------|------|-------|-------|-------|-------|
| 1 | --- | --- | --- | --- | --- | --- | 43 | 16 | 10 | 6.3 | 3.6 | 2.8 |
| 2 | --- | --- | --- | --- | --- | --- | 47 | 16 | 9.8 | 5.5 | 3.5 | 2.7 |
| 3 | --- | --- | --- | --- | --- | --- | 46 | 16 | 9.8 | 5.5 | 3.4 | 2.7 |
| 4 | --- | --- | --- | --- | --- | --- | 37 | 15 | 11 | 5.4 | 3.3 | 2.8 |
| 5 | --- | --- | --- | --- | --- | --- | 34 | 15 | 11 | 5.4 | 3.3 | 2.9 |
| 6 | --- | --- | --- | --- | --- | --- | 31 | 15 | 10 | 5.2 | 3.3 | 2.8 |
| 7 | --- | --- | --- | --- | --- | --- | 30 | 15 | 10 | 5.0 | 3.2 | 2.6 |
| 8 | --- | --- | --- | --- | --- | --- | 28 | 14 | 10 | 4.9 | 3.8 | 2.6 |
| 9 | --- | --- | --- | --- | --- | --- | 27 | 14 | 9.8 | 4.9 | 3.7 | 2.6 |
| 10 | --- | --- | --- | --- | --- | --- | 26 | 14 | 9.4 | 4.9 | 3.5 | 2.6 |
| 11 | --- | --- | --- | --- | --- | --- | 26 | 14 | 9.1 | 5.0 | 3.3 | 2.7 |
| 12 | --- | --- | --- | --- | --- | --- | 24 | 14 | 8.7 | 4.8 | 3.2 | 2.6 |
| 13 | --- | --- | --- | --- | --- | --- | 23 | 14 | 8.6 | 4.8 | 3.2 | 2.6 |
| 14 | --- | --- | --- | --- | --- | --- | 22 | 13 | 8.4 | 4.6 | 3.1 | 2.6 |
| 15 | --- | --- | --- | --- | --- | --- | 22 | 13 | 8.5 | 4.6 | 3.0 | 2.5 |
| 16 | --- | --- | --- | --- | --- | --- | 20 | 12 | 8.6 | 4.7 | 3.0 | 4.5 |
| 17 | --- | --- | --- | --- | --- | 44 | 20 | 12 | 8.3 | 4.8 | 3.1 | 7.1 |
| 18 | --- | --- | --- | --- | --- | 74 | 20 | 11 | 8.0 | 4.6 | 3.1 | 11 |
| 19 | --- | --- | --- | --- | --- | 78 | 19 | 11 | 7.5 | 4.5 | 3.1 | 5.0 |
| 20 | --- | --- | --- | --- | --- | 53 | 18 | 11 | 7.4 | 4.4 | 3.2 | 4.7 |
| 21 | --- | --- | --- | --- | --- | 45 | 21 | 10 | 7.1 | 4.4 | 3.2 | 4.4 |
| 22 | --- | --- | --- | --- | --- | 39 | 19 | 11 | 6.8 | 4.1 | 3.2 | 4.3 |
| 23 | --- | --- | --- | --- | --- | 35 | 22 | 14 | 6.5 | 4.0 | 3.2 | 4.3 |
| 24 | --- | --- | --- | --- | --- | 81 | 23 | 12 | 6.4 | 4.0 | 3.2 | 4.3 |
| 25 | --- | --- | --- | --- | --- | 144 | 23 | 11 | 6.4 | 3.9 | 3.2 | 4.3 |
| 26 | --- | --- | --- | --- | --- | 78 | 22 | 11 | 6.6 | 3.8 | 3.2 | 4.4 |
| 27 | --- | --- | --- | --- | --- | 62 | 20 | 11 | 6.3 | 3.7 | 3.2 | 4.3 |
| 28 | --- | --- | --- | --- | --- | 55 | 17 | 11 | 6.2 | 3.6 | 3.1 | 4.1 |
| 29 | --- | --- | --- | --- | --- | 42 | 17 | 11 | 6.5 | 3.5 | 3.0 | 5.4 |
| 30 | --- | --- | --- | --- | --- | 40 | 17 | 10 | 6.6 | 3.5 | 3.0 | 4.8 |
| 31 | --- | --- | --- | --- | --- | 53 | --- | 10 | --- | 3.5 | 3.1 | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | 764 | 397 | 249.3 | 141.8 | 100.5 | 117.0 |
| MEAN | --- | --- | --- | --- | --- | --- | 25.5 | 12.8 | 8.31 | 4.57 | 3.24 | 3.90 |
| MAX | --- | --- | --- | --- | --- | --- | 47 | 16 | 11 | 6.3 | 3.8 | 11 |
| MIN | --- | --- | --- | --- | --- | --- | 17 | 10 | 6.2 | 3.5 | 3.0 | 2.5 |
| AC-FT | --- | --- | --- | --- | --- | --- | 1520 | 787 | 494 | 281 | 199 | 232 |

SACRAMENTO RIVER BASIN

11396395 SUCKER RUN AT KANAKA DIVERSION, NEAR FEATHER FALLS, CA--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|------|------|
| 1 | 4.3 | 6.1 | 7.1 | 5.5 | 14 | 15 | 13 | 8.2 | 8.3 | 5.1 | 3.0 | 2.6 |
| 2 | 6.4 | 5.9 | 7.1 | 5.9 | 13 | 17 | 13 | 8.2 | 8.1 | 5.0 | 3.0 | 2.5 |
| 3 | 5.4 | 5.7 | 7.1 | 5.5 | 14 | 21 | 13 | 7.8 | 8.6 | 5.0 | 2.9 | 2.4 |
| 4 | 4.6 | 5.6 | 6.8 | 5.4 | 13 | 15 | 12 | 7.6 | 11 | 5.0 | 2.8 | 2.4 |
| 5 | 4.3 | 5.5 | 6.8 | 5.4 | 15 | 15 | 12 | 7.5 | 11 | 4.9 | 2.7 | 2.3 |
| 6 | 4.2 | 5.5 | 6.8 | 5.4 | 14 | 14 | 12 | 7.5 | 11 | 5.2 | 2.7 | 2.3 |
| 7 | 4.0 | 5.4 | 6.6 | 9.9 | 14 | 14 | 12 | 7.3 | 11 | 5.1 | 2.6 | 2.3 |
| 8 | 3.9 | 5.4 | 6.6 | 21 | 14 | 14 | 12 | 7.1 | 10 | 4.8 | 2.6 | 2.3 |
| 9 | 3.9 | 5.4 | 6.6 | 12 | 13 | 14 | 12 | 7.1 | 9.3 | 4.8 | 2.5 | 2.3 |
| 10 | 3.7 | 5.2 | 6.4 | 5.0 | 13 | 14 | 11 | 7.2 | 9.3 | 4.7 | 2.3 | 2.1 |
| 11 | 3.7 | 5.2 | 6.3 | 5.0 | 14 | 13 | 11 | 7.3 | 9.0 | 4.4 | 2.2 | 2.0 |
| 12 | 3.7 | 5.2 | 6.0 | 23 | 14 | 13 | 10 | 7.4 | 8.8 | 4.2 | 2.3 | 2.0 |
| 13 | 3.7 | 5.2 | 5.9 | 51 | 13 | 13 | 10 | 7.1 | 8.8 | 4.1 | 2.3 | 2.1 |
| 14 | 3.8 | 5.1 | 5.7 | 36 | 12 | 20 | 10 | 6.8 | 9.0 | 4.0 | 2.2 | 2.3 |
| 15 | 3.9 | 5.0 | 5.6 | 8.8 | 12 | 22 | 9.9 | 6.6 | 8.7 | 4.0 | 2.3 | 2.4 |
| 16 | 3.9 | 5.0 | 5.5 | 6.6 | 10 | 21 | 9.8 | 6.4 | 8.3 | 3.9 | 2.3 | 2.5 |
| 17 | 3.9 | 4.9 | 5.5 | 6.2 | e13 | 22 | 9.8 | 6.4 | 7.9 | 3.8 | 2.4 | 2.4 |
| 18 | 3.9 | 4.8 | 5.4 | 5.6 | e14 | 22 | 9.6 | e6.4 | 7.6 | 3.8 | 2.7 | 2.4 |
| 19 | 3.9 | 4.8 | 5.3 | 5.9 | e15 | 20 | 9.3 | e6.9 | 7.3 | 3.8 | 3.4 | 2.5 |
| 20 | 3.9 | 4.7 | 5.2 | 5.9 | e16 | 19 | 9.4 | e10 | 6.8 | 3.8 | 3.3 | 2.3 |
| 21 | 13 | 4.7 | 5.2 | 5.9 | e17 | 18 | 9.4 | e9.8 | 6.6 | 3.6 | 3.1 | 2.3 |
| 22 | 9.6 | 4.7 | 5.2 | 5.8 | e19 | 17 | 9.9 | 9.2 | 7.0 | 3.5 | 3.0 | 2.3 |
| 23 | e34 | e5.7 | 5.2 | 5.8 | e19 | 17 | 18 | 9.2 | 6.8 | 3.4 | 2.7 | 2.5 |
| 24 | 23 | e7.4 | 5.2 | 5.6 | 21 | 16 | 13 | 11 | 6.8 | 3.4 | 2.6 | 2.8 |
| 25 | 16 | e24 | 5.2 | 5.7 | 28 | 16 | 10 | 9.5 | 6.7 | 3.4 | 2.7 | 2.9 |
| 26 | e9.2 | e33 | 5.2 | 5.9 | 31 | 15 | 9.5 | 9.6 | 6.3 | 3.3 | 2.9 | 3.1 |
| 27 | e7.9 | 11 | 5.1 | 5.9 | 32 | 15 | 9.2 | 15 | 5.7 | 3.2 | 2.9 | 2.7 |
| 28 | e7.3 | 8.8 | 5.1 | 5.7 | 28 | 14 | 9.0 | 18 | 5.6 | 3.2 | 2.8 | 2.6 |
| 29 | e6.8 | 7.7 | 5.1 | 5.7 | --- | 14 | 8.6 | 8.0 | 5.5 | 3.2 | 2.7 | 2.3 |
| 30 | e6.6 | 7.1 | 5.1 | 6.8 | --- | 15 | 8.4 | 8.6 | 5.5 | 3.1 | 2.7 | 2.2 |
| 31 | e6.4 | --- | 5.1 | 6.2 | --- | 13 | --- | 8.9 | --- | 3.1 | 2.7 | --- |
| TOTAL | 222.8 | 219.7 | 181.0 | 300.0 | 465 | 508 | 325.8 | 263.6 | 242.3 | 125.8 | 83.3 | 72.1 |
| MEAN | 7.19 | 7.32 | 5.84 | 9.68 | 16.6 | 16.4 | 10.9 | 8.50 | 8.08 | 4.06 | 2.69 | 2.40 |
| MAX | 34 | 33 | 7.1 | 51 | 32 | 22 | 18 | 18 | 11 | 5.2 | 3.4 | 3.1 |
| MIN | 3.7 | 4.7 | 5.1 | 5.0 | 10 | 13 | 8.4 | 6.4 | 5.5 | 3.1 | 2.2 | 2.0 |
| AC-FT | 442 | 436 | 359 | 595 | 922 | 1010 | 646 | 523 | 481 | 250 | 165 | 143 |

WTR YR 1990 TOTAL 3009.4 MEAN 8.24 MAX 51 MIN 2.0 AC-FT 5970

e Estimated.

11396397 SUCKER RUN AT KANAKA DIVERSION, NEAR FEATHER FALLS, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SUCKER RUN AND KANAKA HYDROELECTRIC
PROJECT POWERPLANT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|------|------|
| 1 | 4.3 | 6.1 | 7.1 | 5.5 | 14 | 28 | 13 | 8.2 | 20 | 5.1 | 3.0 | 2.6 |
| 2 | 6.4 | 5.9 | 7.1 | 5.9 | 13 | 33 | 13 | 8.2 | 16 | 5.0 | 3.0 | 2.5 |
| 3 | 5.4 | 5.7 | 7.1 | 5.5 | 15 | 48 | 13 | 7.8 | 14 | 5.0 | 2.9 | 2.4 |
| 4 | 4.6 | 5.6 | 6.8 | 5.4 | 19 | 37 | 12 | 7.6 | 11 | 5.0 | 2.8 | 2.4 |
| 5 | 4.3 | 5.5 | 6.8 | 5.4 | 16 | 35 | 12 | 7.5 | 11 | 4.9 | 2.7 | 2.3 |
| 6 | 4.2 | 5.5 | 6.8 | 5.4 | 17 | 29 | 12 | 7.5 | 11 | 5.2 | 2.7 | 2.3 |
| 7 | 4.0 | 5.4 | 6.6 | 20 | 15 | 26 | 12 | 7.3 | 11 | 5.1 | 2.6 | 2.3 |
| 8 | 3.9 | 5.4 | 6.6 | 39 | 14 | 24 | 12 | 7.1 | 10 | 4.8 | 2.6 | 2.3 |
| 9 | 3.9 | 5.4 | 6.6 | 15 | 13 | 24 | 12 | 7.1 | 9.3 | 4.8 | 2.5 | 2.3 |
| 10 | 3.7 | 5.2 | 6.4 | 9.7 | 13 | 31 | 11 | 7.2 | 9.3 | 4.7 | 2.3 | 2.1 |
| 11 | 3.7 | 5.2 | 6.3 | 7.8 | 14 | 27 | 11 | 7.3 | 9.0 | 4.4 | 2.2 | 2.0 |
| 12 | 3.7 | 5.2 | 6.0 | 31 | 14 | 24 | 10 | 7.4 | 8.8 | 4.2 | 2.3 | 2.0 |
| 13 | 3.7 | 5.2 | 5.9 | 84 | 13 | 21 | 10 | 7.1 | 8.8 | 4.1 | 2.3 | 2.1 |
| 14 | 3.8 | 5.1 | 5.7 | 58 | 12 | 22 | 10 | 6.8 | 9.0 | 4.0 | 2.2 | 2.3 |
| 15 | 3.9 | 5.0 | 5.6 | 33 | 12 | 22 | 9.9 | 6.6 | 8.7 | 4.0 | 2.3 | 2.4 |
| 16 | 3.9 | 5.0 | 5.5 | 23 | 10 | 21 | 9.8 | 6.4 | 8.3 | 3.9 | 2.3 | 2.5 |
| 17 | 3.9 | 4.9 | 5.5 | 19 | e13 | 22 | 9.8 | 6.4 | 7.9 | 3.8 | 2.4 | 2.4 |
| 18 | 3.9 | 4.8 | 5.4 | 17 | e14 | 22 | 9.6 | e6.4 | 7.6 | 3.8 | 2.7 | 2.4 |
| 19 | 3.9 | 4.8 | 5.3 | 15 | e15 | 20 | 9.3 | e6.9 | 7.3 | 3.8 | 3.4 | 2.5 |
| 20 | 3.9 | 4.7 | 5.2 | 13 | e16 | 19 | 9.4 | e21 | 6.8 | 3.8 | 3.3 | 2.3 |
| 21 | 13 | 4.7 | 5.2 | 13 | e17 | 18 | 9.4 | e12 | 6.6 | 3.6 | 3.1 | 2.3 |
| 22 | 9.6 | 4.7 | 5.2 | 12 | e19 | 17 | 9.9 | 9.2 | 7.0 | 3.5 | 3.0 | 2.3 |
| 23 | e34 | e5.7 | 5.2 | 11 | e19 | 17 | 18 | 12 | 6.8 | 3.4 | 2.7 | 2.5 |
| 24 | 23 | e7.4 | 5.2 | 11 | 21 | 16 | 13 | 14 | 6.8 | 3.4 | 2.6 | 2.8 |
| 25 | 16 | e24 | 5.2 | 9.7 | 28 | 16 | 10 | 9.5 | 6.7 | 3.4 | 2.7 | 2.9 |
| 26 | e9.2 | e33 | 5.2 | 9.1 | 31 | 15 | 9.5 | 9.6 | 6.3 | 3.3 | 2.9 | 3.1 |
| 27 | e7.9 | 11 | 5.1 | 8.9 | 32 | 15 | 9.2 | 31 | 5.7 | 3.2 | 2.9 | 2.7 |
| 28 | e7.3 | 8.8 | 5.1 | 8.7 | 30 | 14 | 9.0 | 42 | 5.6 | 3.2 | 2.8 | 2.6 |
| 29 | e6.8 | 7.7 | 5.1 | 8.7 | --- | 14 | 8.6 | 18 | 5.5 | 3.2 | 2.7 | 2.3 |
| 30 | e6.6 | 7.1 | 5.1 | 18 | --- | 15 | 8.4 | 22 | 5.5 | 3.1 | 2.7 | 2.2 |
| 31 | e6.4 | --- | 5.1 | 15 | --- | 13 | --- | 31 | --- | 3.1 | 2.7 | --- |
| TOTAL | 222.8 | 219.7 | 181.0 | 542.7 | 479 | 705 | 325.8 | 368.1 | 267.3 | 125.8 | 83.3 | 72.1 |
| MEAN | 7.19 | 7.32 | 5.84 | 17.5 | 17.1 | 22.7 | 10.9 | 11.9 | 8.91 | 4.06 | 2.69 | 2.40 |
| MAX | 34 | 33 | 7.1 | 84 | 32 | 48 | 18 | 42 | 20 | 5.2 | 3.4 | 3.1 |
| MIN | 3.7 | 4.7 | 5.1 | 5.4 | 10 | 13 | 8.4 | 6.4 | 5.5 | 3.1 | 2.2 | 2.0 |
| AC-FT | 442 | 436 | 359 | 1080 | 950 | 1400 | 646 | 730 | 530 | 250 | 165 | 143 |

WTR YR 1990 TOTAL 3592.6 MEAN 9.84 MAX 84 MIN 2.0 AC-FT 7130

e Estimated.

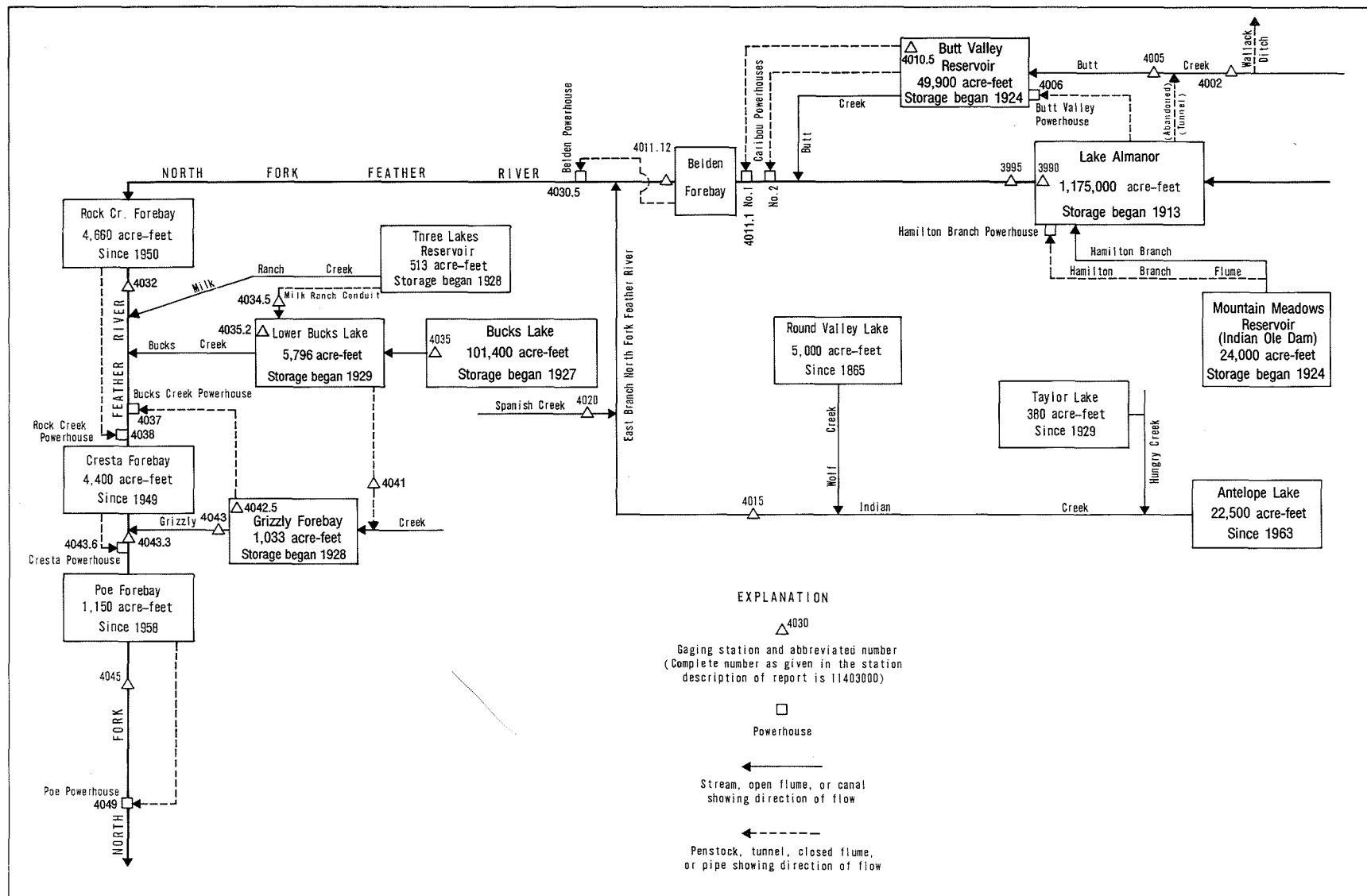


Figure 33. Diversions and storage in North Fork Feather River basin.

11399000 LAKE ALMANOR AT PRATTVILLE, CA

LOCATION.--Lat 40°12'46", long 121°09'43", in SW 1/4 NE 1/4 sec.11, T.27 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Lassen National Forest, at intake tower to Butt Valley tunnel at Prattville, 4.7 mi northwest of Lake Almanor Dam, and 5.6 mi northwest of Canyon Dam.

DRAINAGE AREA.--491 mi².

PERIOD OF RECORD.--July 1913 to current year. Monthly contents only for some periods, published in WSP 1315-A. Published as "near Prattville" 1937-60. Prior to October 1964, records published as usable contents.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is 10.23 ft below National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Prior to June 1, 1965, nonrecording gage at site 4.7 mi southeast at same datum.

REMARKS.--Lake is formed by earthfill dam; storage began in July 1913; dam raised to gage height 4,455 ft in 1917 and 4,515 ft in 1927. Usable capacity, 1,174,887 acre-ft between gage heights 4,422 ft, invert of outlet, and 4,495.5 ft, maximum storage limit. Dead storage, 8,948 acre-ft. Water is diverted by tunnel and penstock to Butt Valley powerplant (station 11400600) and then is used for power development in the North Fork Feather River. Figures given herein, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 1,142,960 acre-ft, June 8, 1982, gage height, 4,494.00 ft; minimum, 5,230 acre-ft, Feb. 5, 1918, gage height, 4,416.1 ft.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 886,662 acre-ft, July 8, gage height, 4,484.12 ft; minimum, 684,271 acre-ft, Dec. 27, gage height, 4,475.52 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on surveys by Pacific Gas & Electric Co. in 1924 and 1926)

| | | | | | |
|-------|--------|-------|---------|---------|-----------|
| 4,422 | 8,948 | 4,434 | 49,510 | 4,460 | 376,686 |
| 4,424 | 10,067 | 4,437 | 74,189 | 4,470 | 565,519 |
| 4,426 | 11,260 | 4,440 | 101,869 | 4,480 | 787,304 |
| 4,428 | 13,480 | 4,445 | 156,414 | 4,490 | 1,036,269 |
| 4,430 | 21,200 | 4,450 | 220,848 | 4,495.5 | 1,183,835 |
| 4,432 | 34,173 | 4,455 | 294,531 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------------|------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 799853 | 779299 | 732813 | 688083 | 727996 | 754751 | 797480 | 835731 | 869964 | 884444 | 857036 | 812229 |
| 2 | 800090 | 777416 | 730518 | 688757 | 728684 | 756145 | 798666 | 836454 | 871187 | 884690 | 855092 | 811274 |
| 3 | 800090 | 775064 | 727767 | 688981 | 731665 | 757307 | 799853 | 837418 | 872411 | 884937 | 853148 | 811274 |
| 4 | 800802 | 773192 | 726622 | 689880 | 732354 | 758936 | 801040 | 838142 | 873391 | 884937 | 851449 | 809605 |
| 5 | 801752 | 771319 | 724334 | 691003 | 733272 | 760100 | 803178 | 838142 | 874371 | 885183 | 851692 | 808176 |
| 6 | 802228 | 768979 | 722049 | 691658 | 733732 | 761032 | 805319 | 838625 | 874862 | 885429 | 850236 | 806509 |
| 7 | 803178 | 766873 | 719766 | 694604 | 734651 | 762197 | 806271 | 839590 | 875597 | 885922 | 847813 | 804843 |
| 8 | 803185 | 765000 | 717714 | 696632 | 735571 | 763363 | 807461 | 840073 | 875107 | 886662 | 845633 | 804367 |
| 9 | 800565 | 763365 | 716119 | 698211 | 736491 | 765231 | 809129 | 841039 | 875842 | 885183 | 843214 | 804129 |
| 10 | 798667 | 761498 | 712934 | 699565 | 736951 | 767100 | 809844 | 841522 | 876578 | 883459 | 841281 | 802941 |
| 11 | 796536 | 759401 | 711570 | 700469 | 737411 | 768736 | 811036 | 842006 | 876824 | 881245 | 839590 | 801515 |
| 12 | 794169 | 757540 | 708846 | 704766 | 738332 | 769672 | 812229 | 842489 | 877806 | 878788 | 839590 | 799378 |
| 13 | 791328 | 755448 | 707031 | 708619 | 739945 | 770843 | 814138 | 843456 | 878297 | 876578 | 837901 | 797480 |
| 14 | 789198 | 753822 | 704087 | 710207 | 739945 | 772483 | 815094 | 844181 | 879034 | 874126 | 835972 | 795346 |
| 15 | 787069 | 751039 | 702051 | 710889 | 740406 | 773655 | 816289 | 844665 | 879771 | 873146 | 835008 | 793688 |
| 16 | 784479 | 749417 | 699791 | 712934 | 743866 | 774593 | 817484 | 845391 | 880754 | 870208 | 832840 | 792032 |
| 17 | 782831 | 747102 | 696406 | 714981 | 743866 | 776002 | 818680 | 846117 | 881000 | 868252 | 830915 | 789667 |
| 18 | 780476 | 745252 | 694153 | 714981 | 745252 | 777176 | 820116 | 846359 | 882475 | 868007 | 828992 | 788249 |
| 19 | 778122 | 742943 | 692128 | 716119 | 746177 | 779056 | 821553 | 846602 | 881737 | 867030 | 829713 | 787304 |
| 20 | 776945 | 740636 | 690329 | 717486 | 746177 | 780468 | 823231 | 848539 | 880754 | 865565 | 828511 | 782587 |
| 21 | 779064 | 738793 | 687634 | 718398 | 749880 | 782116 | 823950 | 849024 | 880508 | 865320 | 826830 | 782587 |
| 22 | 781174 | 736721 | 686288 | 719310 | 751039 | 784001 | 824910 | 852420 | 880016 | 865809 | 825150 | 780938 |
| 23 | 785891 | 735111 | 684943 | 719994 | 752198 | 785416 | 827791 | 853391 | 881000 | 865565 | 823711 | 778821 |
| 24 | 788014 | 733272 | 684719 | 720679 | 753126 | 787304 | 829473 | 855335 | 881245 | 865809 | 822512 | 776941 |
| 25 | 789198 | 735571 | 685392 | 721821 | 754054 | 788485 | 830675 | 856307 | 881491 | 866053 | 818680 | 775532 |
| 26 | 789908 | 736721 | 684719 | 722049 | 754983 | 790139 | 831878 | 857523 | 882229 | 864588 | 818920 | 774124 |
| 27 | 788014 | 736491 | 684271 | 722734 | 752662 | 791795 | 833563 | 859470 | 882475 | 863125 | 818441 | 772483 |
| 28 | 785891 | 736951 | 684719 | 723191 | 753358 | 792741 | 835008 | 861662 | 882967 | 861662 | 817006 | 770140 |
| 29 | 785891 | 736491 | 685392 | 723649 | --- | 793688 | 835008 | 862881 | 883459 | 862393 | 815094 | 767567 |
| 30 | 783537 | 733962 | 686288 | 726393 | --- | 794399 | 835490 | 865320 | 883952 | 860687 | 814377 | 764997 |
| 31 | 782124 | --- | 686513 | 727080 | --- | 795583 | --- | 868496 | --- | 858253 | 813422 | --- |
| MAX | 803185 | 779299 | 732813 | 727080 | 754983 | 795583 | 835490 | 868496 | 883952 | 866662 | 857036 | 812229 |
| MIN | 776945 | 733272 | 684271 | 688083 | 727996 | 754751 | 797480 | 835731 | 869964 | 858253 | 813422 | 764997 |
| a | 4479.78 | 4477.71 | 4475.62 | 4477.41 | 4478.55 | 4480.35 | 4482.02 | 4483.38 | 4484.01 | 4482.96 | 4481.10 | 4479.05 |
| b | -17016 | -48162 | -47449 | +40567 | +26278 | +42225 | +39907 | +33006 | +15456 | -25999 | -44831 | -48425 |
| CAL YR 1989 | MAX 951652 | MIN 657155 | b +29579 | | | | | | | | | |
| WTR YR 1990 | MAX 886662 | MIN 684271 | b -34143 | | | | | | | | | |

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

11399500 NORTH FORK FEATHER RIVER NEAR PRATTVILLE, CA

LOCATION.--Lat 40°10'06", long 121°05'31", in NE 1/4 SW 1/4 sec.28, T.27 N., R.8 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 0.4 mi downstream from Almanor Dam, 4.5 mi southeast of Prattville, and 9 mi upstream from Butt Creek.

DRAINAGE AREA.--493 mi².

PERIOD OF RECORD.--June 1905 to current year. Published as "below Prattville" prior to 1911. No record for January, February, or March 1911. Estimated mean discharge for water year 1911 published in WSP 1315-A.

REVISED RECORDS.--WSP 1245: 1951 (yearly summaries). WSP 1285: 1952 (yearly summaries). WDR CA-88-4: 1987 (monthly and yearly totals for Butt Valley powerplant).

GAGE.--Water-stage recorder and broad-crested weir. Datum of gage is 4,390.09 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1936, nonrecording gages or water-stage recorders at several sites within 0.5 mi of present site at various datums.

REMARKS.--No estimated daily discharges. Flow regulated since 1913 by Lake Almanor (station 11399000) 0.5 mi upstream and since 1924 by Mountain Meadows Reservoir, capacity, 24,000 acre-ft, 12 mi upstream on Hamilton Branch. Water diverted from Lake Almanor to Butt Valley Reservoir (station 11401050) through old Almanor-Butt Creek tunnel from May 1921 to December 1958, for use at Caribou powerplant. Old tunnel closed Dec. 30, 1958, and diversion began to Butt Valley powerplant (station 11400600) at upstream end of Butt Valley Reservoir. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (adjusted for change in contents in Lake Almanor, diversion to Butt Valley powerplant, and leakage from Almanor-Butt Creek tunnel at Outlet (station 11400200)).--85 years, 901 ft³/s, 652,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft³/s, Mar. 19, 1907, before construction of dam, gage height, 16.2 ft, at former site, from rating curve extended above 3,700 ft³/s; no flow at times during 1914, 1919, 1923.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 46 ft³/s, Oct. 12-17, gage height, 2.65 ft; minimum daily, 35 ft³/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|-------|
| 1 | 37 | 39 | 38 | 37 | 38 | 38 | 35 | 35 | 36 | 36 | 36 | 38 |
| 2 | 36 | 39 | 38 | 37 | 38 | 38 | 35 | 36 | 35 | 36 | 36 | 38 |
| 3 | 36 | 39 | 38 | 37 | 38 | 38 | 35 | 36 | 35 | 36 | 36 | 38 |
| 4 | 36 | 38 | 38 | 37 | 38 | 38 | 36 | 36 | 36 | 36 | 36 | 38 |
| 5 | 36 | 39 | 38 | 37 | 38 | 38 | 36 | 36 | 35 | 36 | 36 | 38 |
| 6 | 36 | 39 | 38 | 37 | 38 | 38 | 36 | 35 | 35 | 36 | 36 | 38 |
| 7 | 36 | 38 | 38 | 37 | 38 | 38 | 36 | 35 | 36 | 36 | 37 | 38 |
| 8 | 36 | 38 | 38 | 37 | 38 | 38 | 36 | 35 | 36 | 36 | 39 | 38 |
| 9 | 36 | 38 | 38 | 37 | 38 | 38 | 36 | 35 | 36 | 36 | 39 | 38 |
| 10 | 36 | 38 | 38 | 37 | 38 | 39 | 36 | 35 | 36 | 36 | 39 | 38 |
| 11 | 36 | 38 | 38 | 37 | 38 | 39 | 36 | 35 | 36 | 36 | 39 | 38 |
| 12 | 41 | 38 | 38 | 37 | 38 | 39 | 36 | 35 | 36 | 36 | 39 | 38 |
| 13 | 46 | 38 | 38 | 38 | 38 | 39 | 36 | 35 | 36 | 36 | 39 | 38 |
| 14 | 46 | 38 | 38 | 38 | 38 | 39 | 36 | 35 | 36 | 36 | 39 | 38 |
| 15 | 46 | 38 | 38 | 38 | 38 | 39 | 36 | 35 | 36 | 36 | 39 | 38 |
| 16 | 46 | 38 | 38 | 38 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 38 |
| 17 | 42 | 38 | 38 | 38 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 38 |
| 18 | 38 | 38 | 38 | 38 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 38 |
| 19 | 39 | 38 | 38 | 38 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 38 |
| 20 | 39 | 38 | 38 | 38 | 38 | 39 | 36 | 36 | 36 | 36 | 38 | 38 |
| 21 | 39 | 38 | 38 | 38 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 38 |
| 22 | 39 | 38 | 37 | 38 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 38 |
| 23 | 39 | 38 | 37 | 37 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 38 |
| 24 | 39 | 38 | 37 | 37 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 38 |
| 25 | 39 | 38 | 37 | 37 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 37 |
| 26 | 39 | 38 | 37 | 37 | 38 | 39 | 36 | 35 | 36 | 36 | 38 | 38 |
| 27 | 39 | 38 | 37 | 37 | 38 | 37 | 36 | 36 | 36 | 36 | 38 | 37 |
| 28 | 39 | 38 | 37 | 37 | 38 | 35 | 36 | 36 | 36 | 36 | 38 | 37 |
| 29 | 39 | 38 | 37 | 37 | --- | 35 | 36 | 35 | 36 | 36 | 38 | 37 |
| 30 | 39 | 38 | 37 | 38 | --- | 35 | 36 | 36 | 36 | 36 | 38 | 37 |
| 31 | 39 | --- | 37 | 38 | --- | 35 | --- | 36 | --- | 36 | 38 | --- |
| TOTAL | 1209 | 1145 | 1168 | 1159 | 1064 | 1182 | 1077 | 1094 | 1076 | 1116 | 1173 | 1135 |
| MEAN | 39.0 | 38.2 | 37.7 | 37.4 | 38.0 | 38.1 | 35.9 | 35.3 | 35.9 | 36.0 | 37.8 | 37.8 |
| MAX | 46 | 39 | 38 | 38 | 38 | 39 | 36 | 36 | 36 | 36 | 39 | 38 |
| MIN | 36 | 38 | 37 | 37 | 38 | 35 | 35 | 35 | 35 | 36 | 36 | 37 |
| AC-FT | 2400 | 2270 | 2320 | 2300 | 2110 | 2340 | 2140 | 2170 | 2130 | 2210 | 2330 | 2250 |
| a | 49610 | 81700 | 74000 | 0 | 2960 | 0 | 0 | 1260 | 7960 | 41210 | 60820 | 66020 |

CAL YR 1989 TOTAL 13851 MEAN 37.9 MAX 46 MIN 35 AC-FT 27470 a 464900

WTR YR 1990 TOTAL 13598 MEAN 37.3 MAX 46 MIN 35 AC-FT 26970 a 385500

a Diversion, in acre-feet, to Butt Valley powerplant, provided by Pacific Gas & Electric Co.

11400500 BUTT CREEK BELOW ALMANOR-BUTT CREEK TUNNEL, NEAR PRATTVILLE, CA

LOCATION.--Lat 40°11'14", long 121°11'13", in NE 1/4 NW 1/4 sec.22, T.27 N., R.7 E., Plumas County, Hydrologic Unit 18020121, on right bank 500 ft downstream from outlet of old Almanor-Butt Creek tunnel, and 2.2 mi southwest of Prattville.

DRAINAGE AREA.--69.3 mi².

PERIOD OF RECORD.--October 1936 to September 1959, October 1964 to current year. Published as "below tunnel No. 1" 1938-40. Records for water years 1937-38 published in WSP 1515. Records prior to 1964 not equivalent owing to inflow from Almanor-Butt Creek tunnel.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,300 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 5, 1937, at site 200 ft downstream at datum 4 ft lower.

REMARKS.--No estimated daily discharges. No regulation upstream from station. Howell-Bunger valve in conduit from Lake Almanor (station 11399000) to Butt Valley powerplant (station 11400600) is opened for short periods several times a year, causing sharp peaks. Wallack ditch upstream from station diverts about 3 ft³/s during each irrigation season into Yellow Creek basin. Some inflow 500 ft upstream that is the leakage from the abandoned Almanor-Butt Creek tunnel at Outlet (station 11400200) is included in the table below. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (adjusted for inflow from Almanor-Butt Creek tunnel at Outlet since 1965).--54 years (records for Butt Creek above Almanor-Butt Creek tunnel, near Prattville were used for water years 1937-64), 82.9 ft³/s, 60,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,870 ft³/s, Feb. 17, 1986, gage height, 5.90 ft, from rating curve extended above 1,400 ft³/s; minimum daily, 26 ft³/s, several days during May and June 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 288 ft³/s, Jan. 8, gage height, 1.63 ft; minimum daily, 33 ft³/s, on several days in August and September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 39 | 47 | 45 | 47 | 50 | 55 | 93 | 64 | 97 | 42 | 34 | 35 |
| 2 | 40 | 46 | 44 | 45 | 47 | 58 | 92 | 63 | 89 | 42 | 34 | 34 |
| 3 | 42 | 46 | 44 | 41 | 50 | 75 | 90 | 61 | 78 | 41 | 34 | 34 |
| 4 | 43 | 46 | 44 | 43 | 47 | 72 | 94 | 60 | 71 | 40 | 34 | 34 |
| 5 | 43 | 46 | 45 | 44 | 49 | 66 | 98 | 58 | 67 | 40 | 34 | 34 |
| 6 | 43 | 46 | 47 | 46 | 50 | 65 | 97 | 54 | 66 | 40 | 34 | 34 |
| 7 | 43 | 45 | 45 | 59 | 45 | 67 | 96 | 53 | 66 | 39 | 34 | 34 |
| 8 | 43 | 44 | 46 | 213 | 51 | 68 | 95 | 52 | 58 | 39 | 34 | 34 |
| 9 | 43 | 44 | 46 | 95 | 50 | 69 | 90 | 52 | 56 | 38 | 34 | 34 |
| 10 | 43 | 44 | 46 | 69 | 49 | 71 | 88 | 52 | 56 | 38 | 34 | 34 |
| 11 | 43 | 44 | 43 | 61 | 48 | 64 | 87 | 52 | 55 | 38 | 34 | 34 |
| 12 | 42 | 44 | 43 | 80 | 47 | 60 | 85 | 52 | 53 | 36 | 34 | 34 |
| 13 | 42 | 43 | 45 | 86 | 45 | 59 | 85 | 52 | 53 | 36 | 34 | 34 |
| 14 | 42 | 43 | 46 | 69 | 40 | 60 | 85 | 52 | 53 | 36 | 34 | 34 |
| 15 | 42 | 43 | 47 | 61 | 45 | 61 | 85 | 51 | 51 | 36 | 34 | 34 |
| 16 | 42 | 43 | 47 | 61 | 55 | 65 | 84 | 50 | 52 | 36 | 33 | 34 |
| 17 | 42 | 43 | 47 | 57 | 46 | 69 | 81 | 50 | 52 | 36 | 33 | 34 |
| 18 | 42 | 43 | 47 | 53 | 46 | 83 | 79 | 49 | 52 | 36 | 33 | 34 |
| 19 | 42 | 43 | 49 | 50 | 46 | 94 | 78 | 49 | 51 | 36 | 35 | 33 |
| 20 | 40 | 43 | 49 | 51 | 47 | 101 | 75 | 71 | 50 | 36 | 35 | 33 |
| 21 | 46 | 41 | 53 | 52 | 47 | 106 | 79 | 66 | 49 | 36 | 37 | 33 |
| 22 | 61 | 41 | 50 | 55 | 47 | 112 | 77 | 59 | 46 | 36 | 36 | 33 |
| 23 | 138 | 40 | 52 | 55 | 47 | 118 | 105 | 83 | 45 | 36 | 36 | 33 |
| 24 | 89 | 48 | 53 | 54 | 48 | 120 | 100 | 73 | 44 | 36 | 36 | 33 |
| 25 | 73 | 56 | 55 | 54 | 48 | 123 | 82 | 63 | 44 | 35 | 36 | 33 |
| 26 | 58 | 66 | 53 | 54 | 49 | 115 | 76 | 60 | 44 | 35 | 36 | 33 |
| 27 | 59 | 52 | 55 | 48 | 51 | 111 | 73 | 76 | 43 | 35 | 36 | 35 |
| 28 | 58 | 46 | 55 | 49 | 53 | 105 | 71 | 84 | 42 | 35 | 35 | 35 |
| 29 | 51 | 45 | 52 | 50 | --- | 98 | 68 | 69 | 42 | 35 | 35 | 35 |
| 30 | 49 | 46 | 46 | 50 | --- | 94 | 66 | 79 | 42 | 35 | 35 | 35 |
| 31 | 48 | --- | 46 | 49 | --- | 93 | --- | 125 | --- | 34 | 35 | --- |
| TOTAL | 1571 | 1367 | 1485 | 1901 | 1343 | 2577 | 2554 | 1934 | 1667 | 1149 | 1072 | 1017 |
| MEAN | 50.7 | 45.6 | 47.9 | 61.3 | 48.0 | 83.1 | 85.1 | 62.4 | 55.6 | 37.1 | 34.6 | 33.9 |
| MAX | 138 | 66 | 55 | 213 | 55 | 123 | 105 | 125 | 97 | 42 | 37 | 35 |
| MIN | 39 | 40 | 43 | 41 | 40 | 55 | 66 | 49 | 42 | 34 | 33 | 33 |
| AC-FT | 3120 | 2710 | 2950 | 3770 | 2660 | 5110 | 5070 | 3840 | 3310 | 2280 | 2130 | 2020 |
| a | 436 | 414 | 428 | 429 | 389 | 452 | 437 | 451 | 440 | 453 | 455 | 435 |

CAL YR 1989 TOTAL 28067 MEAN 76.9 MAX 1000 MIN 34 AC-FT 55670 a 5270
WTR YR 1990 TOTAL 19637 MEAN 53.8 MAX 213 MIN 33 AC-FT 38950 a 5220

a Inflow, in acre-feet, from Almanor-Butt Creek tunnel at Outlet, provided by Pacific Gas & Electric Co.

11401050 BUTT VALLEY RESERVOIR NEAR CARIBOU, CA

LOCATION.--Lat 40°06'59", long 121°08'42", in SE 1/4 SW 1/4 sec.12, T.26 N., R.7 E., Plumas County, Hydrologic Unit 18020121, on center intake tower in Butt Valley Reservoir, 2.5 mi north of Caribou, and 5.4 mi southwest of Canyon Dam.

DRAINAGE AREA.--83.5 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1983-85 available in files of the U.S. Geological Survey.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Great Western Power Co.).

REMARKS.--Lake is formed by earthfill dam. Storage began in 1924. Usable capacity, 49,930 acre-ft between elevations 4,075.9 ft, invert of outlet tunnel, and 4,132.1 ft, crest of spillway. Water is diverted by tunnel and penstock to Caribou powerplants (station 11401110). Figures given, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 52,667 acre-ft, Feb. 18, 19, 1986, elevation, 4,133.80 ft; minimum, 25,590 acre-ft, Oct. 18, 1987, elevation, 4,115.65 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 47,699 acre-ft, Oct. 3, 4, elevation, 4,130.70 ft; minimum, 34,316 acre-ft, July 13, elevation, 4,121.90 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on surveys by Great Western Power Co. in 1923 and 1924)

| | | | |
|-------|--------|-------|--------|
| 4,100 | 8,024 | 4,130 | 46,591 |
| 4,110 | 18,395 | 4,137 | 57,891 |
| 4,120 | 31,592 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 47541 | 40475 | 40097 | 41162 | 40857 | 38815 | 39720 | 40399 | 38143 | 35701 | 35627 | 36067 |
| 2 | 47541 | 40704 | 40324 | 41162 | 40781 | 38815 | 39871 | 40248 | 38143 | 35409 | 35774 | 36215 |
| 3 | 47699 | 40399 | 40628 | 41315 | 41010 | 39116 | 40097 | 40324 | 38068 | 35190 | 35701 | 36658 |
| 4 | 47699 | 40399 | 41010 | 41391 | 41162 | 39342 | 40248 | 39946 | 37844 | 35044 | 36141 | 35847 |
| 5 | 47620 | 40248 | 41315 | 41239 | 40857 | 39644 | 40467 | 40324 | 37844 | 34752 | 35555 | 35993 |
| 6 | 47462 | 40248 | 41696 | 41391 | 40857 | 39946 | 40628 | 40248 | 37620 | 34679 | 35336 | 35993 |
| 7 | 47620 | 40399 | 41849 | 41696 | 40097 | 40097 | 40781 | 40022 | 37769 | 34533 | 35409 | 36141 |
| 8 | 45963 | 40173 | 42618 | 42156 | 40248 | 39720 | 41010 | 39871 | 38143 | 34388 | 35774 | 36362 |
| 9 | 45669 | 40248 | 42002 | 42156 | 40324 | 39946 | 41162 | 39720 | 37844 | 34679 | 35700 | 35847 |
| 10 | 45335 | 40097 | 42002 | 42079 | 40628 | 39493 | 41391 | 39418 | 37695 | 35190 | 35482 | 35409 |
| 11 | 45257 | 40248 | 42387 | 41239 | 40781 | 39720 | 41620 | 39342 | 37695 | 35263 | 36141 | 35263 |
| 12 | 45257 | 40857 | 42310 | 39871 | 40399 | 38815 | 41849 | 39267 | 37545 | 34971 | 36067 | 35482 |
| 13 | 44943 | 40022 | 43003 | 40248 | 39871 | 38516 | 42079 | 39191 | 37322 | 34316 | 36289 | 35701 |
| 14 | 44943 | 40097 | 42772 | 40399 | 39871 | 38741 | 42310 | 39116 | 37175 | 34460 | 36436 | 35919 |
| 15 | 45099 | 40022 | 42849 | 40399 | 39946 | 38890 | 42464 | 39040 | 36953 | 35482 | 36658 | 36288 |
| 16 | 45256 | 39871 | 42464 | 40022 | 39342 | 38965 | 42541 | 38890 | 36805 | 36658 | 37027 | 36510 |
| 17 | 45492 | 40022 | 42541 | 40173 | 39116 | 39040 | 42695 | 38815 | 36658 | 36732 | 36289 | 36805 |
| 18 | 45414 | 40248 | 42541 | 40248 | 39040 | 39267 | 42849 | 38666 | 36436 | 35847 | 36362 | 36953 |
| 19 | 44710 | 40857 | 42310 | 40173 | 39116 | 39342 | 42926 | 38516 | 36658 | 36141 | 36141 | 36731 |
| 20 | 44087 | 40552 | 42541 | 40173 | 38741 | 39267 | 43080 | 38815 | 36215 | 36067 | 36141 | 35993 |
| 21 | 41544 | 40248 | 42387 | 40399 | 38591 | 38965 | 43234 | 38741 | 36805 | 35847 | 36141 | 36805 |
| 22 | 41162 | 40097 | 42002 | 40552 | 38591 | 38516 | 43388 | 38591 | 37027 | 35627 | 35993 | 36879 |
| 23 | 41620 | 40097 | 41544 | 40552 | 38666 | 38367 | 43621 | 38666 | 36805 | 35482 | 36289 | 37027 |
| 24 | 42002 | 41239 | 41391 | 40628 | 38591 | 38666 | 42772 | 38441 | 36584 | 35190 | 36510 | 36510 |
| 25 | 42233 | 42002 | 41162 | 40857 | 38741 | 38815 | 41315 | 38143 | 36510 | 34971 | 36658 | 36879 |
| 26 | 40704 | 41772 | 40552 | 40993 | 38741 | 38591 | 41162 | 37994 | 36436 | 35481 | 36067 | 36510 |
| 27 | 40933 | 41086 | 40552 | 40993 | 38591 | 38741 | 41010 | 38217 | 36141 | 35700 | 36067 | 36362 |
| 28 | 41544 | 40248 | 40993 | 41010 | 38666 | 38965 | 40857 | 38068 | 36067 | 35846 | 36141 | 35773 |
| 29 | 40022 | 39493 | 41086 | 41010 | --- | 39191 | 40781 | 37769 | 35919 | 35627 | 36141 | 35919 |
| 30 | 39871 | 40475 | 41086 | 40552 | --- | 39342 | 40476 | 37844 | 35701 | 35627 | 35993 | 36436 |
| 31 | 40022 | --- | 41238 | 40628 | --- | 39569 | --- | 37919 | --- | 35555 | 36067 | --- |
| MAX | 47699 | 42002 | 43003 | 42156 | 41162 | 40097 | 43621 | 40399 | 38143 | 36732 | 37027 | 37027 |
| MIN | 39871 | 39493 | 40097 | 39871 | 38591 | 38367 | 39720 | 37769 | 35701 | 34316 | 35336 | 35263 |
| a | 4125.75 | 4126.05 | 4126.55 | 4126.15 | 4124.85 | 4125.45 | 4126.05 | 4124.35 | 4122.85 | 4122.75 | 4123.10 | 4123.35 |
| b | -7360 | +453 | +763 | -610 | -1962 | +903 | +907 | -2557 | -2218 | -146 | +512 | +369 |
| c | 57260 | 78140 | 70840 | 7430 | 8600 | 5810 | 3920 | 7710 | 12420 | 39220 | 55750 | 60900 |

CAL YR 1989 MAX 48493 MIN 35919 b +1141 c 517600

WTR YR 1990 MAX 47699 MIN 34316 b -10946 c 408000

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Discharge, in acre-feet, through Caribou powerplants, provided by Pacific Gas & Electric Co.

11401112 NORTH FORK FEATHER RIVER BELOW BELDEN DAM, CA

LOCATION.--Lat 40°04'17", long 121°09'49", in NE 1/4 NW 1/4 sec.35, T.26 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 0.4 mi downstream from Belden Dam, 0.5 mi upstream from Deadwood Canyon, and 6.4 mi northeast of Belden.

DRAINAGE AREA.--612 mi².

PERIOD OF RECORD.--October 1969 to current year. July 1959 to September 1969 in files of Pacific Gas & Electric Co.

REVISED RECORDS.--WDR CA-78-4: 1977 (monthly and yearly summaries).

GAGE.--Water-stage recorder. Datum of gage is 2,811.00 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--No estimated daily discharges. Flow regulated by Butt Valley Reservoir (station 11401050), Lake Almanor (station 11399000), Belden Reservoir, and Mountain Meadows Reservoir, combined capacity, 1,267,000 acre-ft. Diversion to Belden powerplant (station 11403050) began on Aug. 27, 1969. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (adjusted for diversion to Belden powerplant).--21 years, 1,099 ft³/s, 796,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,230 ft³/s, Sept. 30, 1987, gage height, 8.96 ft; minimum daily, 2.3 ft³/s, Oct. 25, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 182 ft³/s, Aug. 19, gage height, 3.74 ft; minimum daily, 60 ft³/s, on several days in February.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|-------|
| 1 | 64 | 64 | 65 | 62 | 61 | 62 | 63 | 151 | 152 | 149 | 153 | 150 |
| 2 | 64 | 64 | 64 | 62 | 61 | 62 | 62 | 150 | 152 | 150 | 153 | 150 |
| 3 | 64 | 64 | 64 | 62 | 61 | 63 | 63 | 150 | 151 | 151 | 152 | 146 |
| 4 | 64 | 64 | 64 | 62 | 62 | 63 | 62 | 151 | 152 | 151 | 152 | 97 |
| 5 | 65 | 64 | 64 | 63 | 61 | 63 | 63 | 151 | 152 | 151 | 152 | 68 |
| 6 | 64 | 64 | 64 | 62 | 60 | 62 | 62 | 151 | 152 | 151 | 153 | 62 |
| 7 | 64 | 64 | 65 | 62 | 61 | 62 | 62 | 150 | 151 | 151 | 153 | 62 |
| 8 | 64 | 64 | 64 | 61 | 61 | 62 | 63 | 150 | 151 | 150 | 153 | 61 |
| 9 | 64 | 64 | 65 | 61 | 61 | 63 | 63 | 150 | 153 | 150 | 151 | 61 |
| 10 | 64 | 64 | 65 | 62 | 61 | 62 | 64 | 150 | 152 | 150 | 148 | 62 |
| 11 | 64 | 64 | 64 | 61 | 60 | 61 | 63 | 151 | 150 | 150 | 148 | 62 |
| 12 | 64 | 64 | 64 | 61 | 60 | 62 | 63 | 152 | 150 | 152 | 149 | 62 |
| 13 | 64 | 65 | 64 | 61 | 60 | 62 | 63 | 151 | 150 | 153 | 148 | 61 |
| 14 | 64 | 64 | 64 | 61 | 61 | 62 | 66 | 151 | 150 | 152 | 148 | 62 |
| 15 | 64 | 64 | 65 | 61 | 60 | 62 | 73 | 151 | 150 | 152 | 148 | 62 |
| 16 | 64 | 65 | 64 | 62 | 61 | 62 | 82 | 151 | 150 | 152 | 148 | 62 |
| 17 | 64 | 64 | 64 | 61 | 61 | 62 | 69 | 151 | 150 | 152 | 149 | 61 |
| 18 | 64 | 64 | 65 | 61 | 60 | 63 | 72 | 151 | 151 | 152 | 148 | 65 |
| 19 | 64 | 64 | 66 | 61 | 60 | 62 | 72 | 150 | 150 | 152 | 149 | 62 |
| 20 | 64 | 64 | 64 | 61 | 60 | 62 | 71 | 151 | 151 | 153 | 149 | 62 |
| 21 | 65 | 63 | 63 | 61 | 60 | 62 | 73 | 151 | 152 | 152 | 148 | 61 |
| 22 | 64 | 64 | 62 | 61 | 60 | 62 | 64 | 151 | 150 | 152 | 149 | 61 |
| 23 | 64 | 64 | 63 | 61 | 61 | 62 | 63 | 151 | 150 | 152 | 150 | 61 |
| 24 | 64 | 64 | 62 | 61 | 61 | 62 | 63 | 151 | 152 | 152 | 150 | 62 |
| 25 | 64 | 65 | 62 | 61 | 61 | 62 | 63 | 152 | 150 | 153 | 150 | 62 |
| 26 | 64 | 64 | 62 | 61 | 60 | 63 | 118 | 152 | 150 | 152 | 149 | 61 |
| 27 | 64 | 64 | 62 | 61 | 60 | 63 | 151 | 153 | 151 | 153 | 148 | 61 |
| 28 | 64 | 64 | 62 | 61 | 61 | 62 | 150 | 153 | 150 | 152 | 148 | 62 |
| 29 | 64 | 64 | 62 | 61 | --- | 62 | 151 | 153 | 150 | 152 | 150 | 61 |
| 30 | 64 | 64 | 62 | 61 | --- | 62 | 151 | 153 | 150 | 152 | 149 | 62 |
| 31 | 65 | --- | 62 | 61 | --- | 63 | --- | 152 | --- | 152 | 150 | --- |
| TOTAL | 1987 | 1922 | 1972 | 1901 | 1697 | 1929 | 2368 | 4686 | 4525 | 4698 | 4645 | 2154 |
| MEAN | 64.1 | 64.1 | 63.6 | 61.3 | 60.6 | 62.2 | 78.9 | 151 | 151 | 152 | 150 | 71.8 |
| MAX | 65 | 65 | 66 | 63 | 62 | 63 | 151 | 153 | 153 | 153 | 153 | 150 |
| MIN | 64 | 63 | 62 | 61 | 60 | 61 | 62 | 150 | 150 | 149 | 148 | 61 |
| AC-FT | 3940 | 3810 | 3910 | 3770 | 3370 | 3830 | 4700 | 9290 | 8980 | 9320 | 9210 | 4270 |
| a | 59110 | 80090 | 73380 | 14990 | 10790 | 10000 | 2780 | 661 | 5260 | 34110 | 52930 | 62870 |

CAL YR 1989 TOTAL 33965 MEAN 93.1 MAX 356 MIN 61 AC-FT 67370 a 534100
WTR YR 1990 TOTAL 34484 MEAN 94.5 MAX 153 MIN 60 AC-FT 68400 a 407000

a Diversion, in acre-feet, to Belden powerplant, provided by Pacific Gas & Electric Co.

11401500 INDIAN CREEK NEAR CRESCENT MILLS, CA

LOCATION.--Lat 40°04'41", long 120°55'37", in SW 1/4 SW 1/4 sec.25, T.26 N., R.9 E., Plumas County, Hydrologic Unit 18020122, on left bank 0.7 mi upstream from Dixie Creek, and 1.5 mi southwest of Crescent Mills.
DRAINAGE AREA.--739 mi².

PERIOD OF RECORD.--January 1906 to December 1909, September 1911 to March 1918, October 1930 to current year.

CHEMICAL DATA: Water years 1951-66, 1972.

SUSPENDED SEDIMENT: Water years 1956-66.

WATER TEMPERATURE: Water years 1963-79.

REVISED RECORDS.--WSP 1445: 1906-9. WSP 1931: 1956, 1958(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,500 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to March 1918, nonrecording gage at site 800 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Natural flow affected by storage in Round Valley Reservoir since 1865, capacity 5,000 acre-ft, Taylor Lake since 1929, capacity, 380 acre-ft, and Antelope Lake since November 1963, capacity, 22,500 acre-ft. Diversions upstream from station for irrigation of about 11,800 acres of which 9,700 acres are in Indian and Genesee Valleys. See schematic diagram of North Fork Feather River basin.

AVERAGE DISCHARGE.--69 years (water years 1907-9, 1912-17, 1931-90), 544 ft³/s, 394,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,200 ft³/s, Feb. 18, 1986, gage height, 20.80 ft, from rating curve extended above 20,400 ft³/s; minimum daily, 0.90 ft³/s, July 28, 29, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Mar. 20 | 0715 | *1,420 | *5.74 | | | | |
| Minimum daily, 7.4 ft ³ /s, Sept. 3. | | | | | | | |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|------|-------|-------|------|------|------|-------|-------|
| 1 | 38 | 105 | 130 | 95 | 158 | 430 | 525 | 174 | 597 | 26 | 18 | 10 |
| 2 | 38 | 100 | 125 | 93 | 144 | 464 | 521 | 156 | 477 | 27 | 17 | 8.8 |
| 3 | 48 | 99 | 121 | 80 | 142 | 786 | 501 | 140 | 378 | 28 | 17 | 7.4 |
| 4 | 44 | 97 | 118 | 76 | 168 | 978 | 480 | 135 | 303 | 25 | 14 | 12 |
| 5 | 44 | 96 | 118 | 91 | 151 | 850 | 491 | 127 | 256 | 22 | 15 | 15 |
| 6 | 45 | 95 | 122 | 83 | 163 | 702 | 534 | 118 | 223 | 26 | 13 | 12 |
| 7 | 45 | 93 | 122 | 103 | 131 | 643 | 522 | 113 | 194 | 24 | 18 | 15 |
| 8 | 44 | 92 | 118 | 171 | 129 | 688 | 502 | 102 | 142 | 21 | 19 | 18 |
| 9 | 49 | 91 | 116 | 374 | 147 | 726 | 464 | 95 | 132 | 20 | 11 | 18 |
| 10 | 49 | 90 | 115 | 209 | 148 | 747 | 410 | 88 | 103 | 20 | 12 | 15 |
| 11 | 46 | 89 | 104 | 161 | 160 | 664 | 390 | 85 | 99 | 18 | 9.9 | 12 |
| 12 | 45 | 89 | 102 | 173 | 165 | 565 | 363 | 73 | 91 | 17 | 8.5 | 13 |
| 13 | 46 | 88 | 105 | 499 | 160 | 474 | 344 | 68 | 87 | 12 | 12 | 13 |
| 14 | 47 | 87 | 103 | 572 | 129 | 450 | 350 | 59 | 88 | 13 | 16 | 12 |
| 15 | 48 | 87 | 102 | 431 | 123 | 413 | 344 | 56 | 81 | 13 | 13 | 11 |
| 16 | 49 | 87 | 101 | 353 | 84 | 437 | 331 | 56 | 77 | 12 | 13 | 12 |
| 17 | 49 | 86 | 94 | 301 | 113 | 515 | 326 | 50 | 74 | 19 | 15 | 12 |
| 18 | 50 | 86 | 93 | 241 | 161 | 747 | 312 | 43 | 72 | 22 | 15 | 18 |
| 19 | 49 | 85 | 94 | 195 | 149 | 980 | 299 | 47 | 66 | 19 | 13 | 15 |
| 20 | 50 | 85 | 92 | 167 | 139 | 1160 | 280 | 77 | 59 | 28 | 16 | 12 |
| 21 | 70 | 84 | 98 | 161 | 140 | 1130 | 262 | 94 | 57 | 28 | 19 | 9.3 |
| 22 | 107 | 85 | 91 | 161 | 143 | 1120 | 265 | 89 | 50 | 26 | 17 | 11 |
| 23 | 279 | 85 | 90 | 157 | 149 | 1070 | 319 | 122 | 45 | 22 | 14 | 12 |
| 24 | 476 | 99 | 94 | 151 | 164 | 1050 | 389 | 166 | 41 | 21 | 14 | 11 |
| 25 | 302 | 172 | 93 | 150 | 190 | 971 | 324 | 149 | 47 | 20 | 15 | 24 |
| 26 | 197 | 381 | 90 | 155 | 222 | 900 | 269 | 131 | 45 | 16 | 17 | 27 |
| 27 | 155 | 218 | 91 | 135 | 285 | 785 | 235 | 140 | 40 | 15 | 19 | 32 |
| 28 | 139 | 161 | 92 | 127 | 361 | 714 | 219 | 174 | 37 | 13 | 21 | 30 |
| 29 | 125 | 143 | 89 | 143 | --- | 633 | 203 | 170 | 34 | 11 | 15 | 29 |
| 30 | 115 | 137 | 84 | 195 | --- | 572 | 188 | 180 | 30 | 18 | 12 | 27 |
| 31 | 109 | --- | 87 | 174 | --- | 540 | --- | 545 | --- | 17 | 9.1 | --- |
| TOTAL | 2997 | 3392 | 3194 | 6177 | 4518 | 22904 | 10962 | 3822 | 4025 | 619 | 457.5 | 473.5 |
| MEAN | 96.7 | 113 | 103 | 199 | 161 | 739 | 365 | 123 | 134 | 20.0 | 14.8 | 15.8 |
| MAX | 476 | 381 | 130 | 572 | 361 | 1160 | 534 | 545 | 597 | 28 | 21 | 32 |
| MIN | 38 | 84 | 84 | 76 | 84 | 413 | 188 | 43 | 30 | 11 | 8.5 | 7.4 |
| AC-FT | 5940 | 6730 | 6340 | 12250 | 8960 | 45430 | 21740 | 7580 | 7980 | 1230 | 907 | 939 |

CAL YR 1989 TOTAL 138327 MEAN 379 MAX 7100 MIN 21 AC-FT 274400
WTR YR 1990 TOTAL 63541.0 MEAN 174 MAX 1160 MIN 7.4 AC-FT 126000

11402000 SPANISH CREEK ABOVE BLACKHAWK CREEK, AT KEDDIE, CA

LOCATION.--Lat 40°00'11", long 120°57'12", in SE 1/4 NE 1/4 sec.27, T.25 N., R.9 E., Plumas County, Hydrologic Unit 18020122, on right bank 200 ft upstream from Blackhawk Creek and 0.9 mi southeast of Keddle.

DRAINAGE AREA.--184 mi².

PERIOD OF RECORD.--October 1933 to current year. Prior to October 1953 published as "at Keddle." Records for October 1911 to September 1933 at site 1.2 mi downstream not equivalent owing to inflow.

REVISED RECORDS.--WSP 1041: 1938(M).

GAGE.--Water-stage recorder. Datum of gage is 3,129.86 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Low flow regulated by five small reservoirs having a combined capacity of 800 acre-ft. Approximately 4,600 acres irrigated upstream from station (from information provided by U.S. Forest Service). City of Quincy diverts about 450 acre-ft annually for municipal supply. See schematic diagram of North Fork Feather River basin.

AVERAGE DISCHARGE.--57 years, 268 ft³/s, 194,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft³/s, Feb. 17, 1986, gage height, 14.88 ft, from rating curve extended above 5,200 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 3.0 ft³/s, Sept. 4, 5, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Jan. 13 | 0100 | *1,490 | *4.99 | | | | |

Minimum daily, 11 ft³/s, Aug. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|------|-------|-------|------|------|------|------|------|
| 1 | 34 | 64 | 85 | 53 | 120 | 258 | 274 | 120 | 396 | 35 | 20 | 20 |
| 2 | 33 | 61 | 79 | 54 | 109 | 242 | 274 | 107 | 306 | 36 | 20 | 13 |
| 3 | 34 | 58 | 75 | 49 | 109 | 499 | 270 | 104 | 249 | 32 | 20 | 18 |
| 4 | 34 | 57 | 73 | 48 | 133 | 497 | 287 | 97 | 204 | 33 | 15 | 20 |
| 5 | 33 | 56 | 72 | 49 | 118 | 382 | 299 | 92 | 172 | 34 | 17 | 15 |
| 6 | 33 | 56 | 75 | 53 | 117 | 325 | 304 | 89 | 153 | 38 | 18 | 18 |
| 7 | 32 | 55 | 74 | 64 | 101 | 304 | 298 | 84 | 143 | 29 | 20 | 19 |
| 8 | 32 | 53 | 72 | 182 | 102 | 319 | 283 | 86 | 127 | 31 | 14 | 14 |
| 9 | 32 | 51 | 71 | 173 | 103 | 315 | 253 | 70 | 113 | 31 | 13 | 16 |
| 10 | 32 | 50 | 68 | 126 | 106 | 336 | 236 | 68 | 101 | 31 | 12 | 21 |
| 11 | 32 | 50 | 66 | 105 | 109 | 318 | 236 | 72 | 96 | 32 | 12 | 18 |
| 12 | 32 | 49 | 63 | 179 | 111 | 275 | 230 | 67 | 89 | 31 | 18 | 20 |
| 13 | 32 | 48 | 62 | 1090 | 107 | 237 | 226 | 69 | 83 | 31 | 20 | 17 |
| 14 | 31 | 48 | 61 | 523 | 92 | 223 | 231 | 63 | 86 | 26 | 16 | 19 |
| 15 | 32 | 47 | 60 | 324 | 89 | 216 | 222 | 67 | 86 | 30 | 16 | 19 |
| 16 | 31 | 47 | 60 | 264 | 83 | 235 | 213 | 66 | 76 | 31 | 11 | 20 |
| 17 | 32 | 47 | 58 | 217 | 89 | 254 | 200 | 65 | 70 | 24 | 14 | 22 |
| 18 | 32 | 46 | 57 | 178 | 115 | 329 | 186 | 61 | 68 | 21 | 12 | 21 |
| 19 | 32 | 46 | 56 | 158 | 108 | 382 | 180 | 62 | 64 | 20 | 13 | 19 |
| 20 | 33 | 46 | 55 | 142 | 98 | 422 | 175 | 118 | 60 | 26 | 17 | 15 |
| 21 | 43 | 45 | 57 | 131 | 97 | 419 | 171 | 132 | 56 | 27 | 28 | 17 |
| 22 | 88 | 45 | 54 | 125 | 99 | 439 | 173 | 108 | 48 | 19 | 21 | 15 |
| 23 | 344 | 45 | 54 | 118 | 108 | 444 | 214 | 150 | 40 | 18 | 21 | 15 |
| 24 | 309 | 53 | 54 | 112 | 119 | 448 | 243 | 176 | 41 | 22 | 15 | 21 |
| 25 | 236 | 153 | 54 | 108 | 138 | 438 | 184 | 134 | 40 | 22 | 17 | 26 |
| 26 | 142 | 388 | 53 | 107 | 163 | 418 | 167 | 123 | 40 | 21 | 20 | 35 |
| 27 | 109 | 162 | 54 | 100 | 209 | 371 | 155 | 173 | 36 | 21 | 27 | 39 |
| 28 | 101 | 121 | 53 | 96 | 245 | 347 | 150 | 260 | 44 | 18 | 23 | 33 |
| 29 | 84 | 102 | 52 | 96 | --- | 307 | 144 | 200 | 39 | 22 | 21 | 25 |
| 30 | 73 | 91 | 50 | 140 | --- | 285 | 134 | 190 | 35 | 22 | 21 | 26 |
| 31 | 68 | --- | 52 | 129 | --- | 273 | --- | 523 | --- | 16 | 20 | --- |
| TOTAL | 2245 | 2240 | 1929 | 5293 | 3297 | 10557 | 6612 | 3796 | 3161 | 830 | 552 | 616 |
| MEAN | 72.4 | 74.7 | 62.2 | 171 | 118 | 341 | 220 | 122 | 105 | 26.8 | 17.8 | 20.5 |
| MAX | 344 | 388 | 85 | 1090 | 245 | 499 | 304 | 523 | 396 | 38 | 28 | 39 |
| MIN | 31 | 45 | 50 | 48 | 83 | 216 | 134 | 61 | 35 | 16 | 11 | 13 |
| AC-FT | 4450 | 4440 | 3830 | 10500 | 6540 | 20940 | 13110 | 7530 | 6270 | 1650 | 1090 | 1220 |

CAL YR 1989 TOTAL 76313 MEAN 209 MAX 5530 MIN 12 AC-FT 151400
WTR YR 1990 TOTAL 41128 MEAN 113 MAX 1090 MIN 11 AC-FT 81580

SACRAMENTO RIVER BASIN

11403200 NORTH FORK FEATHER RIVER BELOW ROCK CREEK DIVERSION DAM, CA

LOCATION.--Lat 39°58'49", long 121°16'33", in SW 1/4 NW 1/4 sec.35, T.25 N., R.6 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 0.7 mi downstream from Rock Creek diversion dam and 5.0 mi northeast of Storrie.

DRAINAGE AREA.--1,773 mi².

PERIOD OF RECORD.--October 1985 to February 1986, October 1986 to current year. Unpublished records for water years 1982-85 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 2,120 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Low and medium flow regulated by Rock Creek Forebay 0.7 mi upstream. Most of the flow is diverted to Rock Creek powerplant (station 11403800). Diversion to Rock Creek powerplant began Feb. 28, 1950. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,400 ft³/s, Feb. 19, 1986, gage height, unknown, on basis of slope-area measurement of peak flow; minimum daily, 50 ft³/s, Feb. 7, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 335 ft³/s, May 31, gage height, 4.33 ft; minimum daily, 53 ft³/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 108 | 67 | 53 | 53 | 53 | 53 | 53 | 108 | 140 | 107 | 107 | 106 |
| 2 | 107 | 58 | 53 | 53 | 53 | 53 | 53 | 103 | 107 | 107 | 106 | 106 |
| 3 | 114 | 59 | 53 | 53 | 54 | 53 | 53 | 109 | 107 | 107 | 107 | 107 |
| 4 | 114 | 59 | 53 | 53 | 58 | 54 | 53 | 109 | 107 | 107 | 106 | 106 |
| 5 | 114 | 59 | 53 | 53 | 61 | 53 | 53 | 109 | 107 | 107 | 106 | 106 |
| 6 | 114 | 58 | 53 | 53 | 62 | 53 | 53 | 109 | 107 | 106 | 107 | 107 |
| 7 | 114 | 58 | 53 | 53 | 61 | 53 | 53 | 108 | 107 | 106 | 106 | 106 |
| 8 | 114 | 58 | 53 | 53 | 60 | 53 | 53 | 108 | 107 | 107 | 106 | 106 |
| 9 | 114 | 58 | 53 | 53 | 60 | 53 | 53 | 108 | 107 | 107 | 107 | 106 |
| 10 | 130 | 58 | 53 | 53 | 60 | 53 | 53 | 117 | 107 | 106 | 106 | 106 |
| 11 | 113 | 57 | 53 | 53 | 60 | 53 | 53 | 113 | 107 | 106 | 106 | 107 |
| 12 | 107 | 58 | 54 | 54 | 60 | 53 | 53 | 113 | 107 | 106 | 106 | 106 |
| 13 | 107 | 58 | 54 | 53 | 58 | 53 | 54 | 113 | 107 | 106 | 106 | 106 |
| 14 | 106 | 59 | 54 | 53 | 55 | 53 | 55 | 112 | 107 | 106 | 106 | 106 |
| 15 | 106 | 57 | 53 | 53 | 53 | 53 | 55 | 107 | 106 | 106 | 106 | 107 |
| 16 | 106 | 57 | 53 | 53 | 53 | 53 | 55 | 107 | 106 | 107 | 106 | 107 |
| 17 | 107 | 58 | 55 | 53 | 53 | 53 | 55 | 107 | 107 | 106 | 106 | 107 |
| 18 | 106 | 58 | 58 | 53 | 53 | 53 | 55 | 107 | 107 | 106 | 106 | 106 |
| 19 | 106 | 58 | 54 | 53 | 53 | 53 | 55 | 106 | 106 | 107 | 106 | 106 |
| 20 | 106 | 58 | 54 | 53 | 53 | 53 | 55 | 107 | 107 | 106 | 106 | 106 |
| 21 | 106 | 57 | 54 | 53 | 53 | 53 | 55 | 106 | 106 | 106 | 106 | 106 |
| 22 | 106 | 60 | 76 | 53 | 53 | 53 | 55 | 106 | 107 | 107 | 106 | 106 |
| 23 | 107 | 61 | 54 | 53 | 53 | 53 | 55 | 107 | 107 | 106 | 106 | 106 |
| 24 | 107 | 57 | 54 | 53 | 53 | 53 | 55 | 106 | 107 | 106 | 106 | 106 |
| 25 | 106 | 54 | 53 | 53 | 53 | 53 | 55 | 107 | 107 | 106 | 106 | 106 |
| 26 | 106 | 53 | 53 | 53 | 53 | 53 | 55 | 107 | 107 | 106 | 106 | 106 |
| 27 | 106 | 53 | 53 | 53 | 53 | 53 | 55 | 106 | 107 | 106 | 106 | 106 |
| 28 | 107 | 53 | 53 | 53 | 53 | 53 | 55 | 106 | 107 | 106 | 106 | 106 |
| 29 | 107 | 54 | 53 | 53 | --- | 53 | 55 | 107 | 107 | 106 | 106 | 106 |
| 30 | 107 | 53 | 53 | 53 | --- | 53 | 56 | 107 | 107 | 106 | 106 | 106 |
| 31 | 107 | --- | 53 | 53 | --- | 53 | --- | 150 | --- | 106 | 106 | --- |
| TOTAL | 3385 | 1725 | 1681 | 1644 | 1557 | 1644 | 1626 | 3395 | 3239 | 3296 | 3290 | 3186 |
| MEAN | 109 | 57.5 | 54.2 | 53.0 | 55.6 | 53.0 | 54.2 | 110 | 108 | 106 | 106 | 106 |
| MAX | 130 | 67 | 76 | 54 | 62 | 54 | 56 | 150 | 140 | 107 | 107 | 107 |
| MIN | 106 | 53 | 53 | 53 | 53 | 53 | 53 | 103 | 106 | 106 | 106 | 106 |
| AC-FT | 6710 | 3420 | 3330 | 3260 | 3090 | 3260 | 3230 | 6730 | 6420 | 6540 | 6530 | 6320 |
| a | 78910 | 101200 | 91320 | 50540 | 39530 | 97910 | 63960 | 43280 | 43880 | 49620 | 64920 | 70670 |

CAL YR 1989 TOTAL 100219 MEAN 275 MAX 12700 MIN 50 AC-FT 198800 a 1049000
WTR YR 1990 TOTAL 29668 MEAN 81.3 MAX 150 MIN 53 AC-FT 58850 a 795700

a Diversion, in acre-feet, to Rock Creek powerplant, provided by Pacific Gas & Electric Co.

11403450 MILK RANCH CONDUIT AT OUTLET, NEAR BUCKS LODGE, CA

LOCATION.--Lat 39°54'09", long 121°13'36", in SW 1/4 SW 1/4 sec.29, T.24 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on left bank 150 ft upstream from right abutment of Lower Bucks Lake Dam, 200 ft upstream from outlet, and 3.4 mi northwest of Bucks Lodge.

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1981-84 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder in 3-ft steel pipe. Datum of gage is 5,054.20 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated discharges. Conduit diverts from channel below Three Lakes Reservoir, capacity, 513 acre-ft, and from 12 additional diversions along the conduit. Water is used for power at Bucks Creek powerplant (station 11403700). See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 68 ft³/s, several days in April 1989; minimum daily, 0.26 ft³/s, Sept. 23, 24, 1987.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|-------|
| 1 | 1.7 | 9.4 | 7.1 | 4.5 | 6.2 | 9.7 | 18 | 23 | 48 | 7.2 | 4.2 | 12 |
| 2 | 1.7 | 9.2 | 7.1 | 4.5 | 5.9 | 10 | 18 | 23 | 51 | 7.0 | 4.1 | 12 |
| 3 | 1.7 | 9.4 | 7.1 | 4.5 | 5.9 | 13 | 20 | 24 | 46 | 6.8 | 4.0 | 12 |
| 4 | 1.6 | 9.9 | 7.5 | 4.3 | 6.0 | 10 | 23 | 23 | 37 | 6.4 | 3.9 | 12 |
| 5 | 1.4 | 9.8 | 8.9 | 4.1 | 5.5 | 9.1 | 24 | 22 | 33 | 6.5 | 3.9 | 12 |
| 6 | 1.4 | 9.2 | 9.0 | 3.4 | 5.5 | 9.1 | 25 | 21 | 31 | 6.5 | 3.8 | 12 |
| 7 | 1.3 | 8.9 | 7.8 | 6.3 | 5.4 | 9.1 | 26 | 20 | 26 | 6.2 | 3.7 | 12 |
| 8 | 1.3 | 8.6 | 7.4 | 22 | 5.4 | 9.0 | 23 | 16 | 17 | 6.1 | 3.6 | 11 |
| 9 | 1.2 | 8.5 | 7.5 | 13 | 5.5 | 8.9 | 22 | 14 | 16 | 5.9 | 3.6 | 11 |
| 10 | 1.2 | 8.9 | 7.1 | 8.5 | 5.6 | 8.9 | 24 | 13 | 15 | 5.8 | 3.6 | 11 |
| 11 | 1.2 | 8.8 | 6.7 | 7.4 | 5.9 | 8.4 | 24 | 13 | 15 | 5.6 | 3.5 | 11 |
| 12 | 1.2 | 8.5 | 6.6 | 11 | 6.0 | 7.8 | 25 | 12 | 14 | 5.5 | 3.6 | 10 |
| 13 | 1.2 | 8.2 | 6.4 | 13 | 5.5 | 7.4 | 29 | 12 | 13 | 5.4 | 3.5 | 10 |
| 14 | 1.2 | 7.8 | 6.4 | 9.3 | 5.2 | 7.3 | 30 | 13 | 13 | 5.4 | 3.5 | 9.6 |
| 15 | 1.2 | 7.4 | 6.3 | 8.3 | 5.2 | 7.6 | 28 | 12 | 12 | 6.2 | 3.5 | 9.0 |
| 16 | 1.2 | 7.3 | 6.4 | 8.0 | 5.4 | 8.1 | 25 | 12 | 13 | 5.6 | 3.5 | 8.1 |
| 17 | 1.2 | 7.1 | 6.5 | 7.4 | 5.2 | 9.6 | 23 | 11 | 13 | 5.4 | 3.6 | 7.1 |
| 18 | 1.1 | 6.8 | 6.4 | 7.0 | 4.9 | 11 | 45 | 11 | 12 | 5.4 | 3.6 | 5.8 |
| 19 | 1.1 | 6.6 | 6.2 | 6.7 | 4.7 | 13 | 50 | 11 | 11 | 5.2 | 3.7 | 2.8 |
| 20 | 1.1 | 6.6 | 6.1 | 6.5 | 4.7 | 14 | 21 | 20 | 11 | 5.2 | 3.6 | 1.6 |
| 21 | 9.6 | 6.4 | 5.9 | 6.4 | 4.9 | 14 | 22 | 22 | 10 | 5.1 | 3.5 | 1.2 |
| 22 | 11 | 6.3 | 5.8 | 6.5 | 5.4 | 15 | 23 | 17 | 9.9 | 4.9 | 3.5 | 1.1 |
| 23 | 30 | 6.3 | 5.4 | 6.4 | 5.9 | 17 | 48 | 31 | 9.6 | 4.9 | 3.4 | 1.1 |
| 24 | 13 | 10 | 5.2 | 6.4 | 6.5 | 18 | 26 | 20 | 9.3 | 4.9 | 3.4 | 1.2 |
| 25 | 11 | 9.5 | 5.1 | 6.3 | 6.7 | 19 | 23 | 18 | 9.0 | 4.8 | 3.4 | 1.2 |
| 26 | 11 | 9.1 | 5.0 | 6.4 | 7.5 | 18 | 27 | 20 | 8.6 | 4.7 | 3.4 | 1.5 |
| 27 | 13 | 7.9 | 4.9 | 6.7 | 9.0 | 18 | 32 | 55 | 8.3 | 4.6 | 3.5 | 1.6 |
| 28 | 12 | 7.6 | 4.7 | 6.5 | 9.7 | 17 | 31 | 44 | 8.2 | 4.6 | 3.4 | 1.3 |
| 29 | 10 | 7.4 | 4.4 | 6.3 | --- | 16 | 26 | 31 | 8.0 | 4.5 | 3.4 | 1.2 |
| 30 | 9.6 | 7.2 | 4.4 | 6.6 | --- | 16 | 24 | 48 | 7.6 | 4.4 | 7.6 | 1.1 |
| 31 | 9.5 | --- | 4.3 | 6.3 | --- | 17 | --- | 54 | --- | 4.3 | 12 | --- |
| TOTAL | 165.9 | 244.6 | 195.6 | 230.5 | 165.2 | 376.0 | 805 | 686 | 535.5 | 171.0 | 124.5 | 204.5 |
| MEAN | 5.35 | 8.15 | 6.31 | 7.44 | 5.90 | 12.1 | 26.8 | 22.1 | 17.8 | 5.52 | 4.02 | 6.82 |
| MAX | 30 | 10 | 9.0 | 22 | 9.7 | 19 | 50 | 55 | 51 | 7.2 | 12 | 12 |
| MIN | 1.1 | 6.3 | 4.3 | 3.4 | 4.7 | 7.3 | 18 | 11 | 7.6 | 4.3 | 3.4 | 1.1 |
| AC-FT | 329 | 485 | 388 | 457 | 328 | 746 | 1600 | 1360 | 1060 | 339 | 247 | 406 |

CAL YR 1989 TOTAL 5768.06 MEAN 15.8 MAX 68 MIN .71 AC-FT 11440
WTR YR 1990 TOTAL 3904.3 MEAN 10.7 MAX 55 MIN 1.1 AC-FT 7740

SACRAMENTO RIVER BASIN

11403500 BUCKS LAKE NEAR BUCKS LODGE, CA

LOCATION.--Lat 39°53'45", long 121°12'08", in SE 1/4 NW 1/4 sec.33, T.24 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, in outlet structure 100 ft upstream from dam on Bucks Creek, 2.0 mi northwest of Bucks Lodge, and 15 mi west of Quincy.

DRAINAGE AREA.--28.6 mi².

PERIOD OF RECORD.--1927-28 (year-end contents only, published in WSP 1315-A), October 1928 to current year.

Prior to October 1954, published as Bucks Creek Reservoir near Bucks Ranch.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Feather River Power Co.).

REMARKS.--Reservoir is formed by concrete-faced, rockfill dam, completed in 1927; storage began in May 1927. Capacity, 101,400 acre-ft between elevations 5,064.75 ft, sill of outlet gate, and 5,154.85 ft, spillway crest. Storage of 274 acre-ft is not available for release. Released water flows down Bucks Creek to Lower Bucks Lake (station 11403520), where most of the water is diverted to Bucks Creek tunnel (station 11404100) that discharges into Grizzly Creek. Figures given, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 106,720 acre-ft, June 8-10, 1982, elevation, 5,157.6 ft; minimum, 12,330 acre-ft, Feb. 27, 1929, elevation, 5,090.7 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 80,889 acre-ft, July 14, 15, elevation, 5,143.0 ft; minimum, 52,984 acre-ft, Jan. 20, elevation, 5,125.3 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Feather River Power Co. in 1927)

| | | | |
|-------|--------|-------|---------|
| 5,090 | 11,742 | 5,130 | 59,997 |
| 5,095 | 16,183 | 5,140 | 75,894 |
| 5,100 | 21,180 | 5,150 | 92,950 |
| 5,110 | 32,519 | 5,160 | 111,220 |
| 5,120 | 45,472 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 77217 | 75401 | 69392 | 55930 | 54302 | 56842 | 62304 | 69232 | 77052 | 80218 | 77881 | 68434 |
| 2 | 77217 | 75237 | 68913 | 55483 | 54302 | 56973 | 62458 | 69232 | 77217 | 80386 | 77548 | 67955 |
| 3 | 77217 | 75073 | 68594 | 55040 | 54745 | 57274 | 62613 | 69392 | 77548 | 80554 | 77383 | 67795 |
| 4 | 77217 | 74745 | 68114 | 54893 | 54745 | 57425 | 62768 | 69553 | 77715 | 80554 | 77383 | 67320 |
| 5 | 77548 | 74580 | 67637 | 54745 | 54893 | 57575 | 63077 | 69714 | 77881 | 80554 | 77052 | 67161 |
| 6 | 77548 | 74416 | 67320 | 54450 | 54893 | 57726 | 63389 | 69875 | 78048 | 80554 | 76721 | 66686 |
| 7 | 77548 | 74252 | 66844 | 54155 | 54893 | 58328 | 63857 | 70036 | 78361 | 80554 | 76556 | 66210 |
| 8 | 77548 | 73763 | 66527 | 54155 | 54893 | 58328 | 64169 | 70197 | 78547 | 80721 | 76225 | 65895 |
| 9 | 77548 | 73763 | 66053 | 54450 | 55040 | 58478 | 64481 | 70357 | 78547 | 80721 | 76225 | 65895 |
| 10 | 77548 | 73437 | 65581 | 54450 | 55040 | 58630 | 64637 | 70518 | 78714 | 80721 | 75730 | 65895 |
| 11 | 77383 | 72947 | 65109 | 53861 | 55188 | 58934 | 64794 | 70840 | 78880 | 80721 | 75566 | 65895 |
| 12 | 77217 | 72784 | 64637 | 54007 | 55188 | 58934 | 65109 | 71001 | 78880 | 80721 | 75237 | 65738 |
| 13 | 77548 | 72621 | 64325 | 54450 | 55335 | 59086 | 65424 | 71001 | 79047 | 80554 | 75073 | 65895 |
| 14 | 77383 | 72297 | 63857 | 54745 | 55335 | 59389 | 65581 | 71325 | 79213 | 80889 | 74745 | 65895 |
| 15 | 77217 | 71973 | 63389 | 54450 | 55335 | 59389 | 66053 | 71325 | 79213 | 80889 | 74416 | 65895 |
| 16 | 77383 | 72135 | 62922 | 54155 | 56079 | 59389 | 66369 | 71487 | 79381 | 80721 | 74089 | 65895 |
| 17 | 77052 | 72297 | 62613 | 53714 | 56228 | 59541 | 66210 | 71487 | 79548 | 80721 | 73926 | 65895 |
| 18 | 76556 | 72297 | 62149 | 53422 | 56228 | 59693 | 66053 | 71487 | 79548 | 80554 | 73600 | 65581 |
| 19 | 75894 | 72297 | 61530 | 53130 | 56377 | 59845 | 65738 | 71487 | 79548 | 80051 | 73437 | 65581 |
| 20 | 75401 | 72459 | 61070 | 52984 | 56079 | 59845 | 65895 | 71649 | 79716 | 80051 | 73273 | 65738 |
| 21 | 75401 | 72459 | 60457 | 53130 | 56228 | 59997 | 66369 | 72135 | 79716 | 79833 | 72947 | 65738 |
| 22 | 75237 | 71973 | 60304 | 53130 | 56675 | 60150 | 66686 | 72297 | 79883 | 79833 | 72621 | 65738 |
| 23 | 75894 | 71487 | 59693 | 53276 | 56675 | 60304 | 67487 | 72947 | 79883 | 79716 | 72135 | 65738 |
| 24 | 76390 | 71325 | 59238 | 53276 | 56675 | 60457 | 67795 | 73110 | 79883 | 79716 | 71649 | 65738 |
| 25 | 76556 | 71487 | 58934 | 53276 | 56675 | 60764 | 67955 | 73273 | 80051 | 79716 | 71001 | 65738 |
| 26 | 76721 | 71325 | 58428 | 53276 | 56675 | 60917 | 68274 | 73600 | 80051 | 79381 | 70518 | 65738 |
| 27 | 76556 | 70840 | 57876 | 53568 | 56675 | 61223 | 68594 | 74416 | 80051 | 79213 | 70197 | 65738 |
| 28 | 76225 | 70518 | 57425 | 53568 | 56824 | 61377 | 68594 | 74909 | 80218 | 79047 | 69553 | 65738 |
| 29 | 75894 | 70036 | 57124 | 53714 | --- | 61685 | 69232 | 74909 | 80218 | 78714 | 69392 | 65738 |
| 30 | 75730 | 69714 | 56675 | 53861 | --- | 61839 | 69073 | 75237 | 80218 | 78381 | 69232 | 65738 |
| 31 | 75566 | --- | 56228 | 54007 | --- | 61994 | --- | 76059 | --- | 78214 | 68753 | --- |
| MAX | 77548 | 75401 | 69392 | 55930 | 56824 | 61994 | 69232 | 76059 | 80218 | 80889 | 77881 | 68434 |
| MIN | 75237 | 69714 | 56228 | 52984 | 54302 | 56842 | 62304 | 69232 | 77052 | 78214 | 68753 | 65581 |
| a | 5139.8 | 5136.2 | 5127.5 | 5126.0 | 5127.9 | 5131.3 | 5135.8 | 5140.1 | 5142.6 | 5141.4 | 5135.6 | 5133.7 |
| b | -1651 | -5852 | -13486 | -2221 | +2817 | +5170 | +7079 | +6986 | +4159 | -2004 | -9461 | -3015 |

CAL YR 1989 MAX 102843 MIN 43696 b +12532
WTR YR 1990 MAX 80889 MIN 52984 b -11479

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11403520 LOWER BUCKS LAKE NEAR BUCKS LODGE, CA

LOCATION.--Lat 39°53'59", long 121°13'32", in NE 1/4 NW 1/4 sec.32, T.24 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, in outlet tower for Bucks Creek tunnel 900 ft upstream from Buck diversion dam, 1.3 mi downstream from Bucks Lake Dam, and 3.2 mi northwest of Bucks Lodge.

DRAINAGE AREA.--31.3 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1981-85 available in files of the U.S. Geological Survey.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Lake is formed by concrete dam. Storage began in October 1929. Usable capacity, 5,796 acre-ft between elevations 4,952 ft, point of lowest drawdown, and 5,021.95 ft, crest of spillway. Water is received from Bucks Lake (station 11403500) and from Milk Ranch Conduit (station 11403450). Most of the water is diverted through Bucks Creek tunnel (station 11404100) and discharges into Grizzly Creek for power development downstream. Figures given, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,091 acre-ft, Mar. 8, 1986, elevation, 5,023.8 ft; minimum, 648 acre-ft, Oct. 28, 1986, elevation, 4,970.4 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 5,871 acre-ft, May 30, elevation, 5,022.2 ft; minimum, 2,218 acre-ft, Dec. 24, 26, Jan. 5, 6, elevation, 4,990.5 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Feather River Power Co. in 1928)

| | | | |
|-------|-------|-------|-------|
| 4,970 | 624 | 5,010 | 4,307 |
| 4,980 | 1,314 | 5,020 | 5,573 |
| 4,990 | 2,171 | 5,030 | 6,981 |
| 5,000 | 3,175 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 5218 | 5089 | 2438 | 2246 | 2478 | 2468 | 3048 | 5600 | 5533 | 5179 | 4810 | 4948 |
| 2 | 5218 | 5140 | 2351 | 2237 | 2478 | 2497 | 3080 | 5627 | 5153 | 5205 | 4835 | 4936 |
| 3 | 5218 | 5166 | 2312 | 2228 | 2497 | 2527 | 3111 | 5681 | 5179 | 5218 | 4948 | 4999 |
| 4 | 5218 | 5192 | 2665 | 2228 | 2507 | 2556 | 3175 | 5721 | 4923 | 5218 | 4910 | 4936 |
| 5 | 5192 | 5218 | 2256 | 2218 | 2517 | 2566 | 3250 | 5762 | 4923 | 5231 | 4923 | 5025 |
| 6 | 5192 | 5153 | 2246 | 2218 | 2527 | 2586 | 3304 | 5775 | 4936 | 5231 | 4936 | 4936 |
| 7 | 5153 | 5127 | 2237 | 2228 | 2527 | 2636 | 3381 | 5654 | 4974 | 5244 | 4936 | 4948 |
| 8 | 5153 | 5101 | 2265 | 2497 | 2517 | 2646 | 3424 | 5493 | 5012 | 5257 | 4948 | 5037 |
| 9 | 5153 | 4986 | 2332 | 2517 | 2527 | 2656 | 3468 | 5322 | 5037 | 5257 | 4961 | 4974 |
| 10 | 4961 | 5063 | 2390 | 2409 | 2537 | 2686 | 3535 | 5309 | 5076 | 5192 | 4961 | 4974 |
| 11 | 4961 | 5076 | 2400 | 2448 | 2537 | 2707 | 3579 | 5335 | 5114 | 4999 | 4961 | 5012 |
| 12 | 5050 | 5025 | 2400 | 2458 | 2546 | 2727 | 3636 | 5375 | 5127 | 4822 | 4961 | 5012 |
| 13 | 5063 | 4986 | 2390 | 2497 | 2566 | 2646 | 3703 | 5375 | 5153 | 4648 | 4948 | 5025 |
| 14 | 5050 | 5037 | 2390 | 2400 | 2566 | 2586 | 3771 | 5401 | 5179 | 4648 | 4948 | 5050 |
| 15 | 5050 | 4986 | 2380 | 2371 | 2586 | 2517 | 3851 | 5414 | 5205 | 4660 | 4945 | 5063 |
| 16 | 3568 | 4735 | 2390 | 2390 | 2448 | 2458 | 4130 | 5440 | 5218 | 4747 | 4910 | 5063 |
| 17 | 3787 | 4476 | 2390 | 2390 | 2468 | 2468 | 4673 | 5440 | 5244 | 4986 | 4760 | 5063 |
| 18 | 3931 | 4118 | 2390 | 2400 | 2468 | 2487 | 5192 | 5467 | 5257 | 5101 | 4537 | 5050 |
| 19 | 4130 | 3568 | 2371 | 2409 | 2487 | 2517 | 5735 | 5587 | 5296 | 5153 | 4343 | 5050 |
| 20 | 4307 | 2985 | 2351 | 2487 | 2468 | 2537 | 5802 | 5802 | 5309 | 5153 | 4379 | 5050 |
| 21 | 4501 | 2390 | 2323 | 2497 | 2478 | 2566 | 5775 | 5802 | 5218 | 4974 | 4379 | 5050 |
| 22 | 4673 | 2303 | 2313 | 2507 | 2487 | 2606 | 5748 | 5762 | 5205 | 4936 | 4488 | 5050 |
| 23 | 5153 | 2284 | 2237 | 2517 | 2497 | 2656 | 5802 | 5741 | 5244 | 5012 | 4611 | 5050 |
| 24 | 5270 | 2487 | 2218 | 2527 | 2497 | 2697 | 5681 | 5708 | 5257 | 5012 | 4710 | 5050 |
| 25 | 5296 | 2497 | 2228 | 2537 | 2507 | 2737 | 5507 | 5694 | 5270 | 4910 | 4822 | 5050 |
| 26 | 5140 | 2380 | 2218 | 2546 | 2520 | 2788 | 5480 | 5694 | 5231 | 4898 | 4923 | 5050 |
| 27 | 5166 | 2332 | 2237 | 2556 | 2537 | 2829 | 5467 | 5654 | 5166 | 4885 | 4898 | 5050 |
| 28 | 5218 | 2284 | 2256 | 2566 | 2468 | 2870 | 5520 | 5627 | 5153 | 4872 | 4923 | 5050 |
| 29 | 5218 | 2246 | 2265 | 2566 | --- | 2891 | 5560 | 5816 | 5153 | 4860 | 4961 | 5050 |
| 30 | 5179 | 2448 | 2275 | 2537 | --- | 2912 | 5547 | 5871 | 5166 | 4847 | 4910 | 5050 |
| 31 | 5140 | --- | 2256 | 2438 | --- | 3006 | --- | 5789 | --- | 4822 | 5025 | --- |
| MAX | 5296 | 5218 | 2665 | 2566 | 2586 | 3006 | 5802 | 5871 | 5533 | 5257 | 5025 | 5063 |
| MIN | 3568 | 2246 | 2218 | 2218 | 2448 | 2458 | 3048 | 5309 | 4923 | 4648 | 4343 | 4936 |
| a | 5016.7 | 4992.9 | 4990.9 | 4992.8 | 4993.1 | 4998.4 | 5019.8 | 5021.6 | 5016.9 | 5014.2 | 5015.8 | 5016.0 |
| b | -78 | -2692 | -192 | +182 | +30 | +538 | +2541 | +242 | -623 | -344 | +203 | +25 |

CAL YR 1989 MAX 5735 MIN 2209 b -1335

WTR YR 1990 MAX 5871 MIN 2218 b -168

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11404100 BUCKS CREEK TUNNEL OUTLET NEAR STORRIE, CA

LOCATION.--Lat 39°53'03", long 121°13'42", in NW 1/4 NW 1/4 sec.5, T.23 N., R.7 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on right bank near outlet of Bucks Creek tunnel 0.3 mi upstream from Grizzly Creek, 1.1 mi south of Lower Bucks Lake, and 5.5 mi southeast of Storrie.

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1977-85 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 4,900 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Tunnel diverts from Lower Bucks Lake (station 11403520). Water is used for power at Bucks Creek powerplant (station 11403700). See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--5 years, 91.1 ft³/s, 66,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 472 ft³/s, Mar. 9, 10, 1986; minimum daily, 0.27 ft³/s, Aug. 18, 1988.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|---------|-------|-------|---------|--------|--------|--------|--------|--------|---------|------|---------|
| 1 | .64 | 119 | 190 | 206 | .64 | .65 | .64 | .82 | 175 | .82 | 124 | 175 |
| 2 | .68 | 119 | 254 | 206 | .64 | .64 | .64 | .82 | 232 | .82 | 95 | 175 |
| 3 | 1.2 | 119 | 251 | 206 | .64 | .64 | .64 | .82 | 32 | .82 | 34 | 175 |
| 4 | 3.5 | 119 | 233 | 213 | .64 | .64 | .64 | .82 | 150 | .82 | 107 | 174 |
| 5 | 3.7 | 119 | 223 | 213 | .64 | .64 | .64 | .82 | 23 | .82 | 106 | 174 |
| 6 | 3.9 | 119 | 241 | 213 | .64 | .64 | .64 | 20 | 20 | .82 | 106 | 174 |
| 7 | 6.0 | 137 | 214 | 213 | .64 | .64 | .64 | 68 | 15 | .82 | 106 | 174 |
| 8 | .85 | 153 | 201 | 68 | .64 | .64 | .64 | 87 | 1.0 | .82 | 106 | 175 |
| 9 | 2.0 | 153 | 196 | .64 | .64 | .64 | .64 | 86 | 1.0 | .82 | 106 | 84 |
| 10 | 119 | 152 | 199 | 121 | .64 | .64 | .64 | 30 | 1.0 | 45 | 109 | .82 |
| 11 | 139 | 152 | 213 | 206 | .64 | .64 | .64 | .82 | 1.0 | 83 | 113 | .82 |
| 12 | 146 | 152 | 214 | 207 | .64 | 4.6 | .64 | .82 | 1.0 | 81 | 114 | .82 |
| 13 | 98 | 152 | 212 | 23 | .64 | 33 | .64 | .82 | 1.0 | 70 | 116 | .82 |
| 14 | 118 | 152 | 211 | 47 | .64 | 29 | .64 | .82 | 1.0 | .82 | 116 | .82 |
| 15 | 139 | 152 | 210 | 213 | .64 | 28 | .64 | .82 | 1.0 | .82 | 116 | .82 |
| 16 | 135 | 137 | 208 | 209 | 83 | 27 | .64 | .74 | 1.0 | .82 | 140 | .82 |
| 17 | 138 | 123 | 209 | 209 | 1.1 | 6.1 | .64 | .72 | .93 | .82 | 187 | .82 |
| 18 | 141 | 167 | 208 | 210 | .64 | .64 | .64 | .72 | .93 | 54 | 215 | .82 |
| 19 | 144 | 304 | 210 | 210 | .64 | .64 | .70 | .72 | .93 | 83 | 210 | .82 |
| 20 | 155 | 293 | 218 | 8.2 | .64 | .64 | 25 | 30 | 2.2 | 83 | 85 | .82 |
| 21 | 172 | 277 | 215 | .64 | .64 | .64 | 30 | 17 | 47 | 82 | 107 | .82 |
| 22 | 174 | 256 | 214 | .64 | .64 | .64 | 36 | 39 | .82 | 81 | 107 | .82 |
| 23 | 32 | 228 | 244 | .64 | .64 | .64 | 29 | 51 | .82 | 32 | 172 | .82 |
| 24 | .82 | 141 | 212 | .64 | .64 | .64 | 96 | 23 | .82 | .82 | 174 | 5.3 |
| 25 | .82 | 196 | 204 | .64 | .64 | .64 | 106 | 22 | .82 | 69 | 175 | .82 |
| 26 | 86 | 150 | 209 | .64 | .64 | .64 | 29 | 15 | 24 | 126 | 175 | .82 |
| 27 | 157 | 253 | 208 | .64 | .64 | .64 | 29 | 98 | 29 | 125 | 170 | .82 |
| 28 | 157 | 251 | 209 | .64 | 43 | .64 | 3.0 | 48 | 6.4 | 125 | 174 | .82 |
| 29 | 157 | 248 | 210 | .64 | --- | .64 | 15 | 13 | .82 | 125 | 174 | .82 |
| 30 | 152 | 137 | 211 | 19 | --- | .64 | 17 | 45 | .82 | 124 | 174 | .82 |
| 31 | 137 | --- | 217 | 43 | --- | .64 | --- | 98 | --- | 124 | 175 | --- |
| TOTAL | 2720.11 | 5230 | 6668 | 3269.60 | 143.10 | 143.71 | 427.22 | 801.10 | 772.31 | 1523.48 | 4188 | 1501.70 |
| MEAN | 87.7 | 174 | 215 | 105 | 5.11 | 4.64 | 14.2 | 25.8 | 25.7 | 49.1 | 135 | 50.1 |
| MAX | 174 | 304 | 254 | 213 | 83 | 33 | 106 | 98 | 232 | 126 | 215 | 175 |
| MIN | .64 | 119 | 190 | .64 | .64 | .64 | .64 | .72 | .82 | .82 | 34 | .82 |
| AC-FT | 5400 | 10370 | 13230 | 6490 | 284 | 285 | 847 | 1590 | 1530 | 3020 | 8310 | 2980 |

CAL YR 1989 TOTAL 33904.35 MEAN 92.9 MAX 304 MIN .41 AC-FT 67250
WTR YR 1990 TOTAL 27388.33 MEAN 75.0 MAX 304 MIN .64 AC-FT 54320

11404250 GRIZZLY FOREBAY NEAR STORRIE, CA

LOCATION.--Lat 39°53'32", long 121°17'25", in SW 1/4 NE 1/4 sec.34, T.24 N., R.6 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, in outlet tower for Bucks Creek powerplant 100 ft upstream from Grizzly Diversion Dam, 2.4 mi southeast of Storrie, and 6.2 mi west of Bucks Lodge.

DRAINAGE AREA.--14.4 mi².

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1981-86 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Lake is formed by concrete dam. Storage began in July 1928. Usable capacity, 1,033 acre-ft between elevations 4,271 ft, bottom of diversion tunnel, and 4,316.0 ft, crest of spillway. Water is received from Bucks Creek via Bucks Creek tunnel (station 11404100) which enters Grizzly Creek upstream. Most of the water is diverted through tunnel to Bucks Creek powerplant (station 11403700) for power development downstream on North Fork Feather River. Figures given, including extremes, represent total contents at 2400 hours. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,190 acre-ft, Nov. 22, 1988, Mar. 9, 1989, elevation, 4,318.0 ft; minimum, 651 acre-ft, May 29, 1989, elevation, 4,302.1 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,112 acre-ft, Aug. 21, elevation, 4,316.0 ft; minimum, 697 acre-ft, Jan. 31, elevation, 4,303.7 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Feather River Power Co. in 1928)

| | | | |
|-------|-----|-------|-------|
| 4,290 | 350 | 4,305 | 736 |
| 4,295 | 464 | 4,310 | 898 |
| 4,300 | 592 | 4,320 | 1,268 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 974 | 999 | 939 | 925 | 706 | 802 | 871 | 799 | 974 | 904 | 1042 | 1009 |
| 2 | 981 | 988 | 935 | 939 | 745 | 703 | 901 | 752 | 991 | 894 | 1038 | 999 |
| 3 | 991 | 984 | 974 | 921 | 789 | 764 | 935 | 770 | 834 | 891 | 908 | 988 |
| 4 | 999 | 981 | 935 | 942 | 831 | 730 | 864 | 733 | 925 | 867 | 928 | 977 |
| 5 | 1009 | 946 | 928 | 932 | 821 | 709 | 915 | 709 | 837 | 898 | 988 | 967 |
| 6 | 1024 | 928 | 939 | 1020 | 792 | 724 | 818 | 818 | 847 | 928 | 1002 | 953 |
| 7 | 1035 | 874 | 981 | 901 | 831 | 715 | 891 | 904 | 871 | 956 | 1046 | 942 |
| 8 | 1042 | 898 | 925 | 1035 | 867 | 718 | 815 | 1002 | 871 | 981 | 939 | 963 |
| 9 | 1009 | 921 | 908 | 981 | 844 | 709 | 841 | 995 | 847 | 1006 | 977 | 805 |
| 10 | 956 | 946 | 877 | 770 | 884 | 730 | 932 | 956 | 831 | 953 | 1006 | 742 |
| 11 | 932 | 967 | 881 | 783 | 808 | 739 | 881 | 901 | 841 | 963 | 1024 | 752 |
| 12 | 915 | 988 | 921 | 925 | 844 | 730 | 874 | 949 | 915 | 953 | 1064 | 761 |
| 13 | 918 | 1009 | 861 | 928 | 901 | 724 | 821 | 887 | 898 | 921 | 1060 | 770 |
| 14 | 884 | 1027 | 977 | 805 | 901 | 727 | 867 | 956 | 904 | 939 | 1006 | 780 |
| 15 | 864 | 1046 | 946 | 815 | 918 | 799 | 887 | 999 | 953 | 960 | 953 | 786 |
| 16 | 831 | 1042 | 894 | 821 | 851 | 773 | 818 | 928 | 1013 | 981 | 918 | 795 |
| 17 | 808 | 1009 | 956 | 953 | 821 | 867 | 828 | 935 | 974 | 1002 | 935 | 802 |
| 18 | 786 | 918 | 960 | 953 | 864 | 887 | 854 | 960 | 956 | 963 | 1027 | 811 |
| 19 | 770 | 867 | 991 | 898 | 901 | 799 | 871 | 999 | 1002 | 970 | 1101 | 818 |
| 20 | 767 | 908 | 988 | 949 | 854 | 780 | 837 | 881 | 837 | 901 | 1097 | 824 |
| 21 | 898 | 949 | 925 | 1002 | 891 | 908 | 857 | 786 | 831 | 921 | 1112 | 834 |
| 22 | 1009 | 946 | 956 | 1053 | 921 | 1013 | 841 | 805 | 841 | 967 | 1079 | 841 |
| 23 | 1105 | 956 | 970 | 1013 | 805 | 815 | 891 | 901 | 884 | 1009 | 1075 | 847 |
| 24 | 1002 | 928 | 939 | 1006 | 844 | 824 | 932 | 783 | 891 | 995 | 1071 | 857 |
| 25 | 828 | 844 | 915 | 988 | 884 | 844 | 857 | 802 | 821 | 963 | 1071 | 867 |
| 26 | 761 | 752 | 946 | 898 | 925 | 901 | 821 | 712 | 805 | 1031 | 1075 | 881 |
| 27 | 851 | 915 | 953 | 942 | 799 | 887 | 837 | 942 | 811 | 974 | 1060 | 891 |
| 28 | 915 | 953 | 946 | 984 | 802 | 918 | 808 | 773 | 802 | 921 | 1053 | 898 |
| 29 | 967 | 991 | 911 | 908 | --- | 799 | 821 | 783 | 834 | 960 | 1038 | 904 |
| 30 | 999 | 942 | 918 | 703 | --- | 815 | 805 | 1035 | 871 | 956 | 1031 | 911 |
| 31 | 1013 | --- | 911 | 697 | --- | 818 | --- | 1027 | --- | 935 | 1020 | --- |
| MAX | 1105 | 1046 | 991 | 1053 | 925 | 1013 | 935 | 1035 | 1013 | 1031 | 1112 | 1009 |
| MIN | 761 | 752 | 861 | 697 | 706 | 703 | 805 | 709 | 802 | 867 | 908 | 742 |
| a | 4313.3 | 4311.3 | 4310.4 | 4303.7 | 4307.1 | 4307.6 | 4307.2 | 4313.7 | 4309.2 | 4311.1 | 4313.5 | 4310.4 |
| b | +46 | -71 | -31 | -214 | +105 | +16 | -13 | +222 | -156 | +64 | +85 | -109 |

CAL YR 1989 MAX 1190 MIN 651 b +93

WTR YR 1990 MAX 1112 MIN 697 b -56

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11404300 GRIZZLY CREEK BELOW DIVERSION DAM, NEAR STORRIE, CA

LOCATION.--Lat 39°53'29", long 121°17'35", in SW 1/4 NE 1/4 sec.34, T.24 N., R.6 E., Plumas County, Hydrologic Unit 18020121, Plumas National Forest, on right bank 0.2 mi downstream from diversion dam, and 2.4 mi southeast of Storrie.

DRAINAGE AREA.--14.4 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1976-85 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and concrete control with V-notch sharp-crested weir, since Oct. 8, 1987. Elevation of gage is 4,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 8, 1987, at datum 1.79 ft higher.

REMARKS.--No estimated daily discharges. Flow regulated by diversion dam 0.2 mi upstream. There is considerable inflow upstream from the diversion dam from Bucks Creek tunnel outlet (station 11404100). Most of the flow is diverted to Bucks Creek powerplant (station 11403700) on North Fork Feather River. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (unadjusted).--5 years, 14.4 ft³/s, 10,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,870 ft³/s, Feb. 17, 1986, gage height, 9.54 ft, datum then in use, from rating curve extended above 260 ft³/s on basis of computation of spill over dam of peak flow; minimum daily, 1.9 ft³/s, June 14, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 428 ft³/s, Oct. 23, gage height, 2.77 ft; minimum daily, 2.0 ft³/s, Sept. 10-22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|------|------|-------|------|
| 1 | 4.6 | 3.5 | 2.3 | 2.2 | 2.2 | 2.3 | 2.4 | 2.2 | 2.6 | 2.1 | 2.2 | 2.2 |
| 2 | 4.6 | 2.3 | 2.3 | 2.2 | 2.2 | 2.3 | 2.4 | 2.2 | 2.5 | 2.1 | 2.2 | 2.1 |
| 3 | 4.6 | 2.2 | 2.3 | 2.2 | 2.2 | 2.4 | 2.4 | 2.1 | 2.5 | 2.1 | 2.2 | 2.1 |
| 4 | 4.5 | 2.2 | 2.3 | 2.2 | 2.2 | 2.4 | 2.4 | 2.1 | 2.4 | 2.1 | 2.1 | 2.1 |
| 5 | 4.5 | 2.2 | 2.3 | 2.2 | 2.2 | 2.4 | 2.4 | 2.1 | 2.4 | 2.1 | 2.2 | 2.1 |
| 6 | 4.5 | 2.2 | 2.3 | 2.2 | 2.2 | 2.4 | 2.4 | 2.1 | 2.3 | 2.1 | 2.2 | 2.1 |
| 7 | 4.5 | 2.2 | 2.3 | 2.3 | 2.2 | 2.4 | 2.3 | 2.2 | 2.3 | 2.1 | 2.2 | 2.1 |
| 8 | 4.5 | 2.2 | 2.2 | 2.3 | 2.2 | 2.4 | 2.3 | 2.2 | 2.3 | 2.2 | 2.2 | 2.1 |
| 9 | 4.5 | 2.2 | 2.2 | 2.3 | 2.2 | 2.4 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 | 2.1 |
| 10 | 4.5 | 2.2 | 2.2 | 2.2 | 2.2 | 2.4 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 | 2.0 |
| 11 | 4.4 | 2.2 | 2.2 | 2.1 | 2.2 | 2.4 | 2.3 | 2.2 | 2.3 | 2.2 | 2.2 | 2.0 |
| 12 | 4.4 | 2.2 | 2.2 | 2.4 | 2.2 | 2.4 | 2.3 | 2.2 | 2.3 | 2.2 | 2.2 | 2.0 |
| 13 | 4.4 | 2.2 | 2.2 | 2.7 | 2.2 | 2.3 | 2.3 | 2.2 | 2.2 | 2.2 | 2.2 | 2.0 |
| 14 | 4.4 | 2.2 | 2.2 | 2.5 | 2.3 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 | 2.2 | 2.0 |
| 15 | 4.4 | 2.2 | 2.2 | 2.4 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 | 2.0 |
| 16 | 4.4 | 2.2 | 2.2 | 2.4 | 2.4 | 2.4 | 2.2 | 2.3 | 2.3 | 2.2 | 2.1 | 2.0 |
| 17 | 4.4 | 2.2 | 2.2 | 2.4 | 2.3 | 2.4 | 2.2 | 2.3 | 2.3 | 2.2 | 2.1 | 2.0 |
| 18 | 4.3 | 2.2 | 2.2 | 2.4 | 2.3 | 2.4 | 2.3 | 2.3 | 2.3 | 2.2 | 2.1 | 2.0 |
| 19 | 4.3 | 2.2 | 2.2 | 2.4 | 2.3 | 2.4 | 2.3 | 2.3 | 2.3 | 2.2 | 2.2 | 2.0 |
| 20 | 4.3 | 2.2 | 2.2 | 2.3 | 2.3 | 2.3 | 2.2 | 2.4 | 2.2 | 2.2 | 7.7 | 2.0 |
| 21 | 4.6 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 | 2.2 | 2.2 | 2.2 | 2.1 | 19 | 2.0 |
| 22 | 4.6 | 2.2 | 2.2 | 2.3 | 2.3 | 2.5 | 2.3 | 2.2 | 2.1 | 2.2 | 13 | 2.0 |
| 23 | 118 | 2.2 | 2.2 | 2.3 | 2.3 | 2.5 | 2.3 | 2.3 | 2.1 | 2.2 | 2.2 | 2.1 |
| 24 | 5.0 | 2.3 | 2.2 | 2.3 | 2.3 | 2.5 | 2.3 | 2.3 | 2.2 | 2.2 | 2.2 | 2.1 |
| 25 | 4.7 | 2.4 | 2.2 | 2.3 | 2.3 | 2.5 | 2.3 | 2.2 | 2.2 | 2.2 | 2.2 | 2.1 |
| 26 | 4.4 | 2.2 | 2.2 | 2.3 | 2.3 | 2.5 | 2.2 | 2.2 | 2.1 | 2.2 | 2.2 | 2.1 |
| 27 | 4.5 | 2.2 | 2.2 | 2.3 | 2.3 | 2.5 | 2.2 | 2.5 | 2.1 | 2.2 | 2.2 | 2.1 |
| 28 | 4.4 | 2.3 | 2.2 | 2.3 | 2.3 | 2.5 | 2.2 | 2.4 | 2.1 | 2.2 | 2.2 | 2.1 |
| 29 | 4.5 | 2.3 | 2.2 | 2.3 | --- | 2.4 | 2.2 | 2.3 | 2.1 | 2.1 | 2.2 | 2.1 |
| 30 | 4.5 | 2.3 | 2.2 | 2.3 | --- | 2.4 | 2.2 | 2.5 | 2.1 | 2.2 | 2.2 | 2.1 |
| 31 | 4.5 | --- | 2.2 | 2.1 | --- | 2.4 | --- | 2.7 | --- | 2.2 | 2.2 | --- |
| TOTAL | 252.7 | 68.0 | 68.9 | 71.4 | 63.2 | 74.5 | 68.7 | 70.4 | 67.9 | 67.3 | 100.9 | 61.8 |
| MEAN | 8.15 | 2.27 | 2.22 | 2.30 | 2.26 | 2.40 | 2.29 | 2.27 | 2.26 | 2.17 | 3.25 | 2.06 |
| MAX | 118 | 3.5 | 2.3 | 2.7 | 2.4 | 2.5 | 2.4 | 2.7 | 2.6 | 2.2 | 19 | 2.2 |
| MIN | 4.3 | 2.2 | 2.2 | 2.1 | 2.2 | 2.3 | 2.2 | 2.1 | 2.1 | 2.1 | 2.1 | 2.0 |
| AC-FT | 501 | 135 | 137 | 142 | 125 | 148 | 136 | 140 | 135 | 133 | 200 | 123 |
| a | 6410 | 11210 | 13720 | 9500 | 1500 | 4190 | 6540 | 5980 | 4760 | 3950 | 8380 | 3130 |

CAL YR 1989 TOTAL 3803.4 MEAN 10.4 MAX 723 MIN 2.1 AC-FT 7540 a 99740
WTR YR 1990 TOTAL 1035.7 MEAN 2.84 MAX 118 MIN 2.0 AC-FT 2050 a 79280

a Diversion, in acre-feet, to Bucks Creek powerplant, provided by Pacific Gas & Electric Co.

11404330 NORTH FORK FEATHER RIVER BELOW GRIZZLY CREEK, CA

LOCATION.--Lat 39°51'09", long 121°23'29", in NE 1/4 NW 1/4 sec.14, T.23 N., R.5 E., Butte County, Hydrologic Unit 18020121, Lassen National Forest, on left bank 0.7 mi upstream from Bear Ranch Creek, 1.6 mi downstream from Grizzly Creek, and 2.1 mi downstream from Cresta Dam.

DRAINAGE AREA.--1,914 mi².

PERIOD OF RECORD.--October 1985 to February 1986, October 1986 to current year. Unpublished records for water years 1982-85 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Elevation of gage is 1,480 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by numerous reservoirs upstream, combined capacity, 1,386,000 acre-ft. Most of the flow bypasses this station through Cresta powerplant (station 11404360). Diversion through Cresta powerplant began in 1949. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 86,000 ft³/s, Feb. 19, 1986, gage height, unknown, on the basis of flood routing the peak discharge between North Fork Feather River below Rock Creek diversion dam and North Fork Feather River at Pulga (stations 11403200, 11404500); minimum daily, 48 ft³/s, Oct. 1, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,850 ft³/s, Oct. 23, gage height, 9.12 ft; minimum daily, 50 ft³/s, Dec. 14-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| 1 | 61 | 61 | 54 | 65 | 78 | 124 | 106 | 69 | 234 | 65 | 59 | 59 |
| 2 | 62 | 62 | 54 | 64 | 71 | 160 | 104 | 68 | 194 | 64 | 59 | 59 |
| 3 | 61 | 63 | 54 | 62 | 82 | 227 | 104 | 66 | 171 | 62 | 59 | 59 |
| 4 | 61 | 62 | 54 | 62 | 84 | 193 | 111 | 64 | 156 | 62 | 59 | 59 |
| 5 | 62 | 62 | 54 | 63 | 74 | 172 | 113 | 62 | 143 | 62 | 59 | 60 |
| 6 | 61 | 62 | 54 | 62 | 81 | 158 | 112 | 61 | 133 | 62 | 59 | 59 |
| 7 | 62 | 63 | 54 | 98 | 72 | 149 | 110 | 59 | 128 | 61 | 59 | 59 |
| 8 | 61 | 63 | 54 | 202 | 71 | 145 | 109 | 62 | 120 | 60 | 59 | 59 |
| 9 | 62 | 62 | 54 | 107 | 70 | 132 | 105 | 64 | 115 | 59 | 60 | 59 |
| 10 | 62 | 62 | 54 | 86 | 72 | 145 | 103 | 63 | 109 | 59 | 59 | 59 |
| 11 | 62 | 63 | 53 | 81 | 73 | 135 | 102 | 63 | 105 | 59 | 59 | 59 |
| 12 | 63 | 63 | 54 | 205 | 74 | 126 | 100 | 63 | 100 | 59 | 59 | 59 |
| 13 | 66 | 63 | 52 | 400 | 70 | 115 | 99 | 61 | 99 | 59 | 59 | 59 |
| 14 | 63 | 62 | 50 | 237 | 67 | 111 | 97 | 61 | 96 | 59 | 59 | 59 |
| 15 | 63 | 63 | 50 | 166 | 67 | 110 | 95 | 60 | 103 | 59 | 59 | 59 |
| 16 | 63 | 62 | 50 | 159 | 71 | 110 | 92 | 60 | 96 | 59 | 59 | 59 |
| 17 | 62 | 62 | 71 | 134 | 75 | 112 | 89 | 58 | 90 | 59 | 59 | 57 |
| 18 | 62 | 62 | 78 | 123 | 70 | 114 | 88 | 58 | 88 | 59 | 59 | 57 |
| 19 | 62 | 63 | 65 | 113 | 68 | 117 | 85 | 59 | 85 | 59 | 60 | 60 |
| 20 | 62 | 63 | 64 | 106 | 67 | 119 | 83 | 150 | 82 | 59 | 61 | 60 |
| 21 | 131 | 61 | 64 | 100 | 73 | 120 | 82 | 96 | 80 | 60 | 71 | 59 |
| 22 | 90 | 62 | 65 | 97 | 79 | 123 | 81 | 78 | 77 | 59 | 64 | 59 |
| 23 | 860 | 77 | 64 | 94 | 80 | 126 | 118 | 126 | 75 | 59 | 69 | 59 |
| 24 | 185 | 88 | 64 | 91 | 85 | 127 | 97 | 98 | 74 | 59 | 59 | 60 |
| 25 | 116 | 197 | 65 | 89 | 95 | 128 | 85 | 84 | 72 | 59 | 60 | 59 |
| 26 | 76 | 168 | 64 | 81 | 105 | 126 | 81 | 89 | 70 | 59 | 60 | 60 |
| 27 | 85 | 108 | 63 | 72 | 115 | 124 | 78 | 322 | 69 | 59 | 60 | 58 |
| 28 | 67 | 59 | 63 | 70 | 118 | 122 | 75 | 277 | 69 | 59 | 59 | 60 |
| 29 | 59 | 56 | 64 | 69 | --- | 117 | 72 | 172 | 68 | 59 | 59 | 59 |
| 30 | 85 | 53 | 63 | 95 | --- | 111 | 70 | 286 | 66 | 59 | 59 | 59 |
| 31 | 83 | --- | 63 | 77 | --- | 106 | --- | 343 | --- | 59 | 59 | --- |
| TOTAL | 3080 | 2177 | 1829 | 3530 | 2207 | 4104 | 2846 | 3302 | 3167 | 1856 | 1863 | 1771 |
| MEAN | 99.4 | 72.6 | 59.0 | 114 | 78.8 | 132 | 94.9 | 107 | 106 | 59.9 | 60.1 | 59.0 |
| MAX | 860 | 197 | 78 | 400 | 118 | 227 | 118 | 343 | 234 | 65 | 71 | 60 |
| MIN | 59 | 53 | 50 | 62 | 67 | 106 | 70 | 58 | 66 | 59 | 59 | 57 |
| AC-FT | 6110 | 4320 | 3630 | 7000 | 4380 | 8140 | 5650 | 6550 | 6280 | 3680 | 3700 | 3510 |
| a | 100900 | 122800 | 115700 | 80220 | 53910 | 124800 | 92550 | 72010 | 65500 | 63840 | 81770 | 86310 |

CAL YR 1989 TOTAL 163033 MEAN 447 MAX 24100 MIN 50 AC-FT 323400 a 1361000
WTR YR 1990 TOTAL 31732 MEAN 86.9 MAX 860 MIN 50 AC-FT 62940 a 1060000

a Diversion, in acre-feet, to Cresta powerplant, provided by Pacific Gas & Electric Co.

11404500 NORTH FORK FEATHER RIVER AT PULGA, CA

LOCATION.--Lat 39°47'40", long 121°27'02", in SE 1/4 NE 1/4 sec.6, T.22 N., R.5 E., Butte County, Hydrologic Unit 18020121, Plumas National Forest, on left bank between railroad and highway bridges, 0.6 mi downstream from Flea Valley Creek and Pulga, and 1.6 mi downstream from Poe Dam.

DRAINAGE AREA.--1,953 mi².

PERIOD OF RECORD.--October 1910 to current year. Monthly discharge only for some periods and yearly estimates for water years 1911 and 1938, published in WSP 1315-A. Prior to October 1960, published as "at Big Bar."

CHEMICAL DATA: Water years 1963-66, 1972, 1977.

WATER TEMPERATURE: Water years 1963-83.

REVISED RECORDS.--WSP 931: 1938(M), 1940. WSP 1515: 1935. WDR CA-77-4: 1976 (yearly summaries).

GAGE.--Water-stage recorder. Datum of gage is 1,305.62 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1937, at site 1.1 mi upstream at different datum. Oct. 1, 1937, to Sept. 30, 1958, at present site at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Flow regulated by Lake Almanor, Bucks Lake, Butt Valley Reservoir (stations 11399000, 11403500, 11401050), Mountain Meadows Reservoir, and five forebays, combined capacity, 1,386,000 acre-ft. Diversion through Poe powerplant (station 11404900) began on May 29, 1958. See schematic diagram of North Fork Feather River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (adjusted for diversion to Poe powerplant).--80 years, 2,962 ft³/s, 2,146,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,900 ft³/s, Feb. 19, 1986, gage height, 39.86 ft, from rating curve extended above 32,000 ft³/s on basis of slope area measurement of peak discharge; minimum daily, 5.4 ft³/s, Sept. 18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,810 ft³/s, Oct. 23, gage height, 13.07 ft; minimum daily, 51 ft³/s, May 5, 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|-------|-------|--------|-------|-------|-------|-------|-------|-------|
| 1 | 471 | 55 | 57 | 59 | 55 | 65 | 55 | 54 | 93 | 58 | 58 | 59 |
| 2 | 401 | 55 | 57 | 58 | 54 | 74 | 55 | 53 | 82 | 58 | 59 | 59 |
| 3 | 209 | 55 | 55 | 57 | 57 | 99 | 55 | 52 | 74 | 58 | 58 | 58 |
| 4 | 317 | 56 | 56 | 59 | 56 | 89 | 55 | 54 | 68 | 58 | 59 | 58 |
| 5 | 363 | 56 | 55 | 57 | 54 | 84 | 55 | 51 | 65 | 58 | 59 | 58 |
| 6 | 125 | 55 | 56 | 58 | 55 | 77 | 55 | 51 | 62 | 58 | 59 | 59 |
| 7 | 210 | 56 | 56 | 66 | 55 | 74 | 54 | 56 | 61 | 58 | 59 | 58 |
| 8 | 114 | 56 | 55 | 473 | 54 | 69 | 55 | 55 | 59 | 58 | 59 | 59 |
| 9 | 58 | 55 | 55 | 60 | 54 | 65 | 55 | 54 | 59 | 58 | 59 | 59 |
| 10 | 61 | 57 | 57 | 58 | 54 | 80 | 54 | 56 | 58 | 63 | 59 | 59 |
| 11 | 58 | 54 | 55 | 57 | 55 | 73 | 55 | 54 | 58 | 57 | 59 | 59 |
| 12 | 58 | 55 | 55 | 79 | 54 | 68 | 55 | 55 | 62 | 60 | 58 | 60 |
| 13 | 58 | 57 | 58 | 139 | 54 | 67 | 55 | 55 | 59 | 60 | 58 | 61 |
| 14 | 59 | 58 | 55 | 104 | 54 | 64 | 55 | 55 | 57 | 59 | 59 | 58 |
| 15 | 59 | 57 | 56 | 75 | 55 | 63 | 55 | 55 | 58 | 59 | 59 | 58 |
| 16 | 57 | 56 | 57 | 70 | 56 | 60 | 54 | 54 | 58 | 59 | 59 | 58 |
| 17 | 57 | 58 | 55 | 60 | 55 | 61 | 55 | 58 | 58 | 58 | 57 | 61 |
| 18 | 58 | 56 | 54 | 58 | 55 | 60 | 54 | 55 | 58 | 59 | 59 | 66 |
| 19 | 56 | 56 | 61 | 55 | 54 | 61 | 55 | 55 | 58 | 57 | 58 | 58 |
| 20 | 57 | 56 | 67 | 53 | 55 | 60 | 55 | 83 | 59 | 59 | 58 | 60 |
| 21 | 66 | 58 | 65 | 55 | 55 | 59 | 55 | 54 | 59 | 59 | 59 | 59 |
| 22 | 56 | 66 | 58 | 54 | 55 | 58 | 55 | 55 | 59 | 59 | 58 | 58 |
| 23 | 1270 | 77 | 60 | 56 | 55 | 59 | 60 | 58 | 58 | 58 | 58 | 60 |
| 24 | 336 | 78 | 60 | 54 | 56 | 58 | 54 | 53 | 58 | 58 | 58 | 59 |
| 25 | 59 | 103 | 58 | 55 | 58 | 57 | 53 | 55 | 59 | 58 | 59 | 59 |
| 26 | 54 | 101 | 59 | 54 | 62 | 57 | 56 | 59 | 58 | 58 | 59 | 60 |
| 27 | 55 | 81 | 58 | 55 | 65 | 56 | 54 | 119 | 58 | 59 | 57 | 58 |
| 28 | 56 | 55 | 57 | 65 | 67 | 55 | 55 | 118 | 58 | 58 | 59 | 58 |
| 29 | 58 | 55 | 57 | 75 | --- | 55 | 54 | 78 | 59 | 58 | 58 | 60 |
| 30 | 57 | 55 | 58 | 59 | --- | 55 | 56 | 106 | 59 | 59 | 58 | 58 |
| 31 | 56 | --- | 58 | 55 | --- | 54 | --- | 129 | --- | 58 | 59 | --- |
| TOTAL | 5029 | 1848 | 1780 | 2392 | 1568 | 2036 | 1648 | 1999 | 1851 | 1814 | 1814 | 1774 |
| MEAN | 162 | 61.6 | 57.4 | 77.2 | 56.0 | 65.7 | 54.9 | 64.5 | 61.7 | 58.5 | 58.5 | 59.1 |
| MAX | 1270 | 103 | 67 | 473 | 67 | 99 | 60 | 129 | 93 | 63 | 59 | 66 |
| MIN | 54 | 54 | 54 | 53 | 54 | 54 | 53 | 51 | 57 | 57 | 57 | 58 |
| AC-FT | 9980 | 3670 | 3530 | 4740 | 3110 | 4040 | 3270 | 3970 | 3670 | 3600 | 3600 | 3520 |
| a | 100100 | 127100 | 118000 | 87190 | 59190 | 136600 | 97970 | 77750 | 72030 | 66120 | 82760 | 82710 |

CAL YR 1989 TOTAL 156154 MEAN 428 MAX 20900 MIN 53 AC-FT 309700 a 1394000
WTR YR 1990 TOTAL 25553 MEAN 70.0 MAX 1270 MIN 51 AC-FT 50680 a 1108000

a Diversion, in acre-feet, to Poe powerplant, provided by Pacific Gas & Electric Co.

11405120 PHILBROOK CREEK BELOW PHILBROOK DAM, NEAR BUTTE MEADOWS, CA

LOCATION.--Lat 40°01'48", long 121°28'36", unsurveyed, T.25 N., R.4 E., Butte County, Hydrologic Unit 18020121, Lassen National Forest, on right bank 500 ft downstream from outlet structure on Philbrook Dam, and 5.4 mi southeast of Butte Meadows.

DRAINAGE AREA.--5.05 mi².

PERIOD OF RECORD.--July 1989 to current year (no winter records). Unpublished records for water years 1986-89 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder, Parshall flume, and V-notch sharp-crested weir. Elevation of gage is 5,490 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1985 to July 1989, nonrecording gage at same site and datum. In June 1989, V-notch sharp-crested weir installed in flume to be used at low flows.

REMARKS.--Records not computed for winter months. Flow completely regulated by Philbrook Reservoir, usable capacity, 5,370 acre-ft, 500 ft upstream. Spillwater from Philbrook Reservoir bypasses this station.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-----|-----|-----|-----|-----|-------|-------|------|-------|------|-------|
| 1 | 3.1 | --- | --- | --- | --- | --- | 3.8 | 3.9 | 2.9 | 2.8 | 39 | 31 |
| 2 | 3.1 | --- | --- | --- | --- | --- | 3.9 | 3.9 | 2.9 | 2.8 | 39 | 14 |
| 3 | 3.1 | --- | --- | --- | --- | --- | 3.9 | 3.5 | 2.8 | 2.8 | 38 | 3.0 |
| 4 | 3.0 | --- | --- | --- | --- | --- | 3.8 | 3.3 | 2.8 | 19 | 38 | 3.0 |
| 5 | 3.0 | --- | --- | --- | --- | --- | 3.8 | 3.4 | 2.8 | 27 | 38 | 3.0 |
| 6 | 3.0 | --- | --- | --- | --- | --- | 3.8 | 3.4 | 2.8 | 27 | 38 | 3.0 |
| 7 | 3.0 | --- | --- | --- | --- | --- | 3.8 | 3.4 | 2.8 | 27 | 38 | 3.0 |
| 8 | 3.0 | --- | --- | --- | --- | --- | 3.8 | 3.4 | 2.8 | 27 | 37 | 3.0 |
| 9 | 3.0 | --- | --- | --- | --- | --- | 3.8 | 3.4 | 2.8 | 27 | 37 | 3.0 |
| 10 | 3.0 | --- | --- | --- | --- | --- | 3.9 | 3.4 | 2.8 | 27 | 37 | 3.0 |
| 11 | 3.0 | --- | --- | --- | --- | --- | 3.9 | 3.4 | 2.8 | 33 | 37 | 3.0 |
| 12 | 3.0 | --- | --- | --- | --- | --- | 3.9 | 3.3 | 2.8 | 38 | 36 | 3.0 |
| 13 | 11 | --- | --- | --- | --- | --- | 3.9 | 3.3 | 2.8 | 38 | 36 | 3.0 |
| 14 | 35 | --- | --- | --- | --- | --- | 3.9 | 3.4 | 2.8 | 38 | 36 | 3.0 |
| 15 | 35 | --- | --- | --- | --- | 3.5 | 3.9 | 3.3 | 2.8 | 38 | 36 | 3.0 |
| 16 | 34 | --- | --- | --- | --- | 3.6 | 3.9 | 3.3 | 2.8 | 37 | 35 | 3.0 |
| 17 | 34 | --- | --- | --- | --- | 3.6 | 3.9 | 3.4 | 2.8 | 37 | 35 | 3.0 |
| 18 | 33 | --- | --- | --- | --- | 3.6 | 3.9 | 3.4 | 2.8 | 36 | 36 | 3.0 |
| 19 | 33 | --- | --- | --- | --- | 3.6 | 3.9 | 3.3 | 2.8 | 38 | 37 | 3.0 |
| 20 | 33 | --- | --- | --- | --- | 3.6 | 3.9 | 3.5 | 2.8 | 39 | 36 | 3.0 |
| 21 | e17 | --- | --- | --- | --- | 3.7 | 3.9 | 3.4 | 2.8 | 38 | 36 | 3.0 |
| 22 | e4.1 | --- | --- | --- | --- | 3.7 | 3.9 | 3.4 | 2.8 | 39 | 36 | 3.0 |
| 23 | e5.0 | --- | --- | --- | --- | 3.7 | 3.9 | 3.4 | 2.8 | 41 | 35 | 3.0 |
| 24 | e4.5 | --- | --- | --- | --- | 3.7 | 3.9 | 3.3 | 2.8 | 40 | 35 | 3.0 |
| 25 | e4.5 | --- | --- | --- | --- | 3.7 | 3.9 | 3.2 | 2.8 | 40 | 34 | 3.0 |
| 26 | e4.1 | --- | --- | --- | --- | 3.8 | 3.9 | 3.3 | 2.8 | 40 | 34 | 3.0 |
| 27 | 3.9 | --- | --- | --- | --- | 3.8 | 3.9 | 3.5 | 2.8 | 40 | 34 | 3.0 |
| 28 | 3.9 | --- | --- | --- | --- | 3.8 | 3.9 | 3.4 | 2.8 | 40 | 33 | 3.0 |
| 29 | 3.9 | --- | --- | --- | --- | 3.8 | 3.9 | 3.3 | 2.8 | 39 | 33 | 3.0 |
| 30 | 3.9 | --- | --- | --- | --- | 3.8 | 3.9 | 3.5 | 2.8 | 39 | 32 | 3.0 |
| 31 | 3.9 | --- | --- | --- | --- | 3.8 | --- | 3.2 | --- | 39 | 32 | --- |
| TOTAL | 343.0 | --- | --- | --- | --- | --- | 116.3 | 105.5 | 84.2 | 996.4 | 1113 | 129.0 |
| MEAN | 11.1 | --- | --- | --- | --- | --- | 3.88 | 3.40 | 2.81 | 32.1 | 35.9 | 4.30 |
| MAX | 35 | --- | --- | --- | --- | --- | 3.9 | 3.9 | 2.9 | 41 | 39 | 31 |
| MIN | 3.0 | --- | --- | --- | --- | --- | 3.8 | 3.2 | 2.8 | 2.8 | 32 | 3.0 |
| AC-FT | 680 | --- | --- | --- | --- | --- | 231 | 209 | 167 | 1980 | 2210 | 256 |

e Estimated.

11405200 WEST BRANCH FEATHER RIVER BELOW HENDRICKS DIVERSION DAM, NEAR STIRLING CITY, CA

LOCATION.--Lat 39°56'03", long 121°31'03", in NW 1/4 SE 1/4 sec.16, T.24 N., R.4 E., Butte County, Hydrologic Unit 18020121, on right bank 200 ft upstream from road bridge, 1,800 ft downstream from Hendricks diversion dam, and 1.9 mi north of Stirling City.

DRAINAGE AREA.--46.1 mi².

PERIOD OF RECORD.--August 1986 to current year (low-flow records only).

GAGE.--Water-stage recorder. Elevation of gage is 3,210 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No records computed above 50 ft³/s. Most of the water is diverted at Hendricks diversion dam to the Hendricks Canal and Toadtown Canal (station 11389800) and then to De Sabla powerplant (station 11389750) on Butte Creek.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|------|------|-----|------|-----|-----|-----|-----|-------|-------|------|
| 1 | 17 | 17 | 17 | 17 | 17 | 19 | 44 | 14 | --- | 8.4 | 8.7 | 17 |
| 2 | 17 | 17 | 17 | 17 | 18 | 39 | 41 | 11 | --- | 8.1 | 8.7 | 16 |
| 3 | 17 | 17 | 17 | 17 | 18 | --- | 42 | 10 | --- | 8.6 | 8.7 | 15 |
| 4 | 20 | 17 | 17 | 17 | 18 | --- | --- | 9.6 | --- | 9.2 | 8.7 | 24 |
| 5 | 22 | 17 | 17 | 17 | 18 | 46 | 50 | 9.6 | --- | 9.0 | 8.7 | 32 |
| 6 | 22 | 17 | 17 | 17 | 18 | 35 | 48 | 11 | --- | 8.7 | 9.0 | 20 |
| 7 | 22 | 16 | 17 | 23 | 17 | 28 | 44 | 12 | --- | 8.7 | 9.0 | 23 |
| 8 | 22 | 17 | 17 | --- | 17 | 24 | 41 | 10 | 37 | 8.7 | 9.0 | 27 |
| 9 | 22 | 17 | 17 | 46 | 17 | 18 | 30 | 9.6 | 28 | 8.7 | 9.0 | 27 |
| 10 | 22 | 17 | 17 | 16 | 18 | 26 | 28 | 9.6 | 20 | 8.6 | 11 | 27 |
| 11 | 22 | 17 | 17 | 20 | 18 | 18 | 28 | 9.6 | 14 | 8.8 | 17 | 27 |
| 12 | 22 | 17 | 17 | --- | 18 | 17 | 25 | 9.7 | 11 | 8.8 | 17 | 27 |
| 13 | 21 | 17 | 17 | --- | 18 | 17 | 26 | 9.9 | 9.2 | 8.5 | 17 | 27 |
| 14 | 17 | 17 | 17 | --- | 17 | 17 | 28 | 9.7 | 8.4 | 9.0 | 17 | 27 |
| 15 | 16 | 17 | 17 | 50 | 17 | 17 | 24 | 9.6 | 8.3 | 9.1 | 17 | 27 |
| 16 | 17 | 17 | 17 | 27 | e17 | 17 | 20 | 9.6 | 7.7 | 9.2 | 17 | 27 |
| 17 | 17 | 17 | 17 | 20 | e17 | 18 | 17 | 9.6 | 7.9 | 9.1 | 17 | 27 |
| 18 | 17 | 17 | 17 | 19 | e17 | 20 | 17 | 9.6 | --- | 8.9 | 17 | 27 |
| 19 | 17 | 17 | 17 | 18 | e17 | 27 | 18 | 9.2 | --- | 8.6 | 17 | 27 |
| 20 | 17 | 17 | 17 | 18 | e16 | 37 | 17 | 34 | 10 | 9.1 | 17 | 19 |
| 21 | 44 | 17 | 17 | 18 | e16 | 42 | 17 | 11 | 8.7 | 9.2 | 17 | 15 |
| 22 | 22 | 17 | 17 | 18 | e16 | 49 | 18 | 9.6 | 8.9 | 8.9 | 17 | 15 |
| 23 | --- | 17 | 17 | 17 | e16 | --- | --- | --- | 8.7 | 8.7 | 17 | 15 |
| 24 | --- | 19 | 16 | 17 | 16 | --- | 29 | 15 | 8.7 | 8.7 | 17 | 15 |
| 25 | 26 | 43 | 16 | 17 | 16 | --- | 19 | 9.2 | 10 | 9.0 | 17 | 15 |
| 26 | 17 | 25 | 16 | 17 | 18 | --- | 19 | 10 | 10 | 9.0 | 17 | 15 |
| 27 | 19 | 16 | 16 | 17 | 19 | --- | 19 | --- | 8.6 | 9.0 | 17 | 15 |
| 28 | 18 | 17 | 16 | 17 | 19 | --- | 19 | --- | 8.5 | 9.0 | 17 | 15 |
| 29 | 17 | 17 | 16 | 17 | --- | 48 | 18 | --- | 8.1 | 9.0 | 17 | 15 |
| 30 | 17 | 17 | 16 | 18 | --- | 43 | 18 | --- | 8.4 | 8.9 | 17 | 15 |
| 31 | 17 | --- | 16 | 17 | --- | 43 | --- | --- | --- | 8.7 | 17 | --- |
| TOTAL | --- | 544 | 519 | --- | 484 | --- | --- | --- | --- | 273.9 | 447.5 | 640 |
| MEAN | --- | 18.1 | 16.7 | --- | 17.3 | --- | --- | --- | --- | 8.84 | 14.4 | 21.3 |
| MAX | --- | 43 | 17 | --- | 19 | --- | --- | --- | --- | 9.2 | 17 | 32 |
| MIN | --- | 16 | 16 | --- | 16 | --- | --- | --- | --- | 8.1 | 8.7 | 15 |
| AC-FT | --- | 1080 | 1030 | --- | 960 | --- | --- | --- | --- | 543 | 888 | 1270 |

e Estimated.

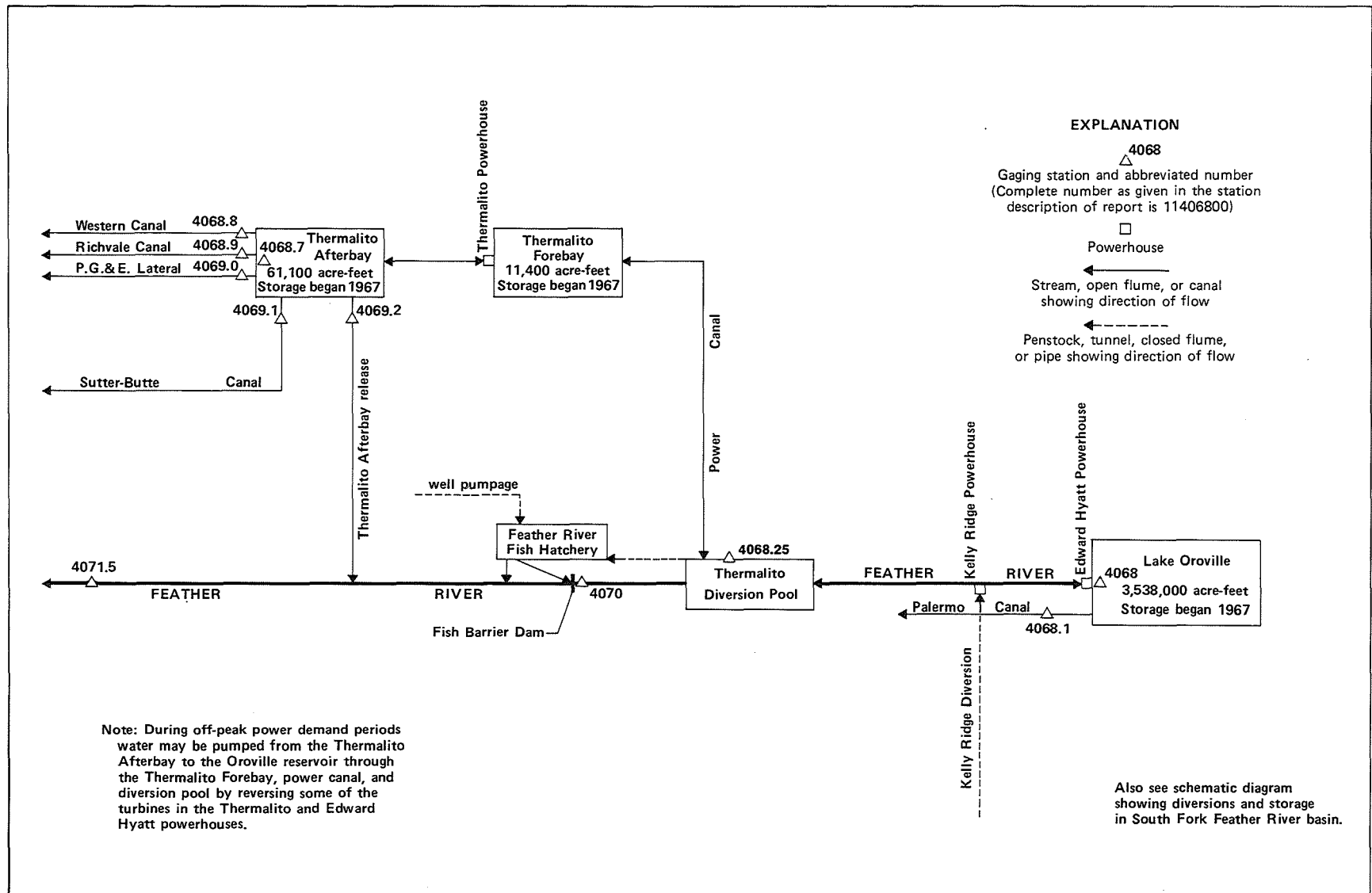


Figure 34. Diversions and storage from Feather River at Lake Oroville.

11406800 LAKE OROVILLE NEAR OROVILLE, CA

LOCATION.--Lat 39°32'06", long 121°28'25", in NE 1/4 SW 1/4 sec.1, T.19 N., R.4 E., Butte County, Hydrologic Unit 18020123, near intake structure at left end of Oroville Dam on Feather River, 1.0 mi downstream from North Fork Feather River, and 4.2 mi east of Oroville.

DRAINAGE AREA.--3,607 mi².

PERIOD OF RECORD.--November 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.47 ft above National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). Contents based on capacity table in use since Sept. 21, 1967.

REMARKS.--Reservoir is formed by an earthfill dam with concrete chute-type sidehill spillway completed May 13, 1968; storage began Nov. 14, 1967. Usable capacity, 2,685,385 acre-ft between elevations 640.0 ft, minimum power pool, and 900.0 ft, normal maximum pool. Dead storage, 852,192 acre-ft. Total capacity at normal maximum pool, 3,537,577 acre-ft; temporary detention storage occurred at times during construction; maximum was 155,200 acre-ft, Dec. 23, 1964. Water is released to Edward Hyatt powerplant through penstock in left abutment of dam and to Palermo Canal (station 11406810) through concrete tunnel also in left abutment of dam. Three of the total of six turbines in the Edward Hyatt powerplant are reversible and during periods of low power demand water is pumped at times from the river back into Lake Oroville. Records, including extremes, represent total contents at 2400 hours. See schematic diagram showing diversions and storage from Feather River at Lake Oroville. Maximum inflow of 266,000 ft³/s during a 2-hour period Feb. 17, 1986.

COOPERATION.--Records were collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 3,536,000 acre-ft, June 4, 1973, gage height, 899.88 ft; minimum since initial storage began, 882,395 acre-ft, Sept. 7, 1977, gage height, 645.11 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,160,316 acre-ft, Oct. 1, gage height, 797.20 ft; minimum, 1,154,527 acre-ft, Sept. 25, gage height, 686.50 ft.

| Capacity table (gage height, in feet, and contents, in acre-feet) | | | | | | | |
|---|-----------|-----|-----------|-----|-----------|-----|-----------|
| (Based on table provided by California Department of Water Resources, dated Sept. 21, 1967) | | | | | | | |
| 640 | 852,192 | 710 | 1,332,547 | 780 | 1,974,240 | 850 | 2,808,349 |
| 650 | 911,975 | 720 | 1,413,685 | 790 | 2,080,969 | 860 | 2,944,741 |
| 660 | 974,560 | 730 | 1,498,175 | 800 | 2,191,742 | 870 | 3,085,747 |
| 670 | 1,040,003 | 740 | 1,586,086 | 810 | 2,306,597 | 880 | 3,231,454 |
| 680 | 1,108,406 | 750 | 1,677,554 | 820 | 2,425,571 | 890 | 3,382,038 |
| 690 | 1,179,915 | 760 | 1,772,690 | 830 | 2,548,850 | 900 | 3,537,577 |
| 700 | 1,254,634 | 770 | 1,871,511 | 840 | 2,676,446 | | |

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 2400 HOURS

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 2160316 | 2143723 | 2118507 | 1883430 | 1892148 | 1935149 | 2096999 | 1837676 | 1736387 | 1690837 | 1439683 | 1188783 |
| 2 | 2155853 | 2141614 | 2118397 | 1864367 | 1888089 | 1939694 | 2086086 | 1827553 | 1749326 | 1681475 | 1430482 | 1188710 |
| 3 | 2148058 | 2140615 | 2123909 | 1846243 | 1889408 | 1955872 | 2076949 | 1814709 | 1759051 | 1673919 | 1418662 | 1188049 |
| 4 | 2141725 | 2143945 | 2116306 | 1827850 | 1901201 | 1979377 | 2069466 | 1804187 | 1763976 | 1674664 | 1414682 | 1187167 |
| 5 | 2135737 | 2149392 | 2112676 | 1810082 | 1900692 | 1989994 | 2057576 | 1803206 | 1763107 | 1663881 | 1412199 | 1182329 |
| 6 | 2129099 | 2146167 | 2104992 | 1806150 | 1899368 | 1994421 | 2046809 | 1805856 | 1768815 | 1653424 | 1399744 | 1180133 |
| 7 | 2128436 | 2142613 | 2094376 | 1811853 | 1900183 | 1997799 | 2035975 | 1796348 | 1789590 | 1653424 | 1385649 | 1177066 |
| 8 | 2132306 | 2139284 | 2086630 | 1813231 | 1896823 | 1999595 | 2042299 | 1784442 | 1766975 | 1651393 | 1372869 | 1174295 |
| 9 | 2126006 | 2139284 | 2085759 | 1813724 | 1894586 | 1998961 | 2029239 | 1772013 | 1771819 | 1638514 | 1358236 | 1177139 |
| 10 | 2122034 | 2138175 | 2090228 | 1815005 | 1897230 | 2010714 | 2015600 | 1761368 | 1776860 | 1629723 | 1343950 | 1172693 |
| 11 | 2118507 | 2145056 | 2079666 | 1816484 | 1911411 | 2027636 | 1998010 | 1748653 | 1772690 | 1618599 | 1330163 | 1169203 |
| 12 | 2112676 | 2149281 | 2069249 | 1823693 | 1912639 | 2031589 | 1980322 | 1746829 | 1769977 | 1609431 | 1315054 | 1167757 |
| 13 | 2106088 | 2147057 | 2055419 | 1845744 | 1910082 | 2033514 | 1964415 | 1751441 | 1768621 | 1599487 | 1305935 | 1163911 |
| 14 | 2111797 | 2142613 | 2044338 | 1868993 | 1903750 | 2034156 | 1969010 | 1739161 | 1766685 | 1597954 | 1291636 | 1160512 |
| 15 | 2114435 | 2139284 | 2033835 | 1874942 | 1898655 | 2036082 | 1972043 | 1723706 | 1758955 | 1602556 | 1278602 | 1162391 |
| 16 | 2111577 | 2137067 | 2037046 | 1882317 | 1896823 | 2035975 | 1956496 | 1706932 | 1759920 | 1591563 | 1265350 | 1164490 |
| 17 | 2110588 | 2135737 | 2040154 | 1882215 | 1898961 | 2044553 | 1941245 | 1688118 | 1763107 | 1580803 | 1251662 | 1165287 |
| 18 | 2109380 | 2136735 | 2030948 | 1877364 | 1915712 | 2061138 | 1927315 | 1671219 | 1753654 | 1571964 | 1244737 | 1162464 |
| 19 | 2108283 | 2141614 | 2019216 | 1874438 | 1913356 | 2064163 | 1914175 | 1672894 | 1758869 | 1561119 | 1237084 | 1160295 |
| 20 | 2107295 | 2137289 | 2002662 | 1879385 | 1912025 | 2067625 | 1900285 | 1679700 | 1738299 | 1552358 | 1231047 | 1156760 |
| 21 | 2106308 | 2131642 | 1989573 | 1887380 | 1913458 | 2072392 | 1886265 | 1671126 | 1730467 | 1544334 | 1227509 | 1155391 |
| 22 | 2107405 | 2130425 | 1976756 | 1887785 | 1916531 | 2078144 | 1892046 | 1666479 | 1723040 | 1537481 | 1220756 | 1157409 |
| 23 | 2117186 | 2136291 | 1968488 | 1880901 | 1920429 | 2075864 | 1882519 | 1664623 | 1728561 | 1524971 | 1213955 | 1160512 |
| 24 | 2126006 | 2134298 | 1970578 | 1878071 | 1923922 | 2087066 | 1874741 | 1663603 | 1733521 | 1511143 | 1209485 | 1156760 |
| 25 | 2130646 | 2139173 | 1971206 | 1878071 | 1939384 | 2098968 | 1866478 | 1659248 | 1722850 | 1499209 | 1207775 | 1154527 |
| 26 | 2128215 | 2148057 | 1960140 | 1877768 | 1937214 | 2101924 | 1856741 | 1663695 | 1712321 | 1487171 | 1207180 | 1155319 |
| 27 | 2126116 | 2145056 | 1942901 | 1881912 | 1936181 | 2101376 | 1843550 | 1689899 | 1703912 | 1475285 | 1201988 | 1157481 |
| 28 | 2133855 | 2142835 | 1922688 | 1891234 | 1935355 | 2102471 | 1837875 | 1715352 | 1697319 | 1470770 | 1196885 | 1157481 |
| 29 | 2141836 | 2136402 | 1904260 | 1892351 | --- | 2099953 | 1842554 | 1715921 | 1692714 | 1468983 | 1195483 | 1159573 |
| 30 | 2144612 | 2125012 | 1892859 | 1895806 | --- | 2087502 | 1841358 | 1712416 | 1692620 | 1458128 | 1191062 | 1163259 |
| 31 | 2145723 | --- | 1888799 | 1895501 | --- | 2091865 | --- | 1727608 | --- | 1446234 | 1187388 | --- |
| MAX | 2160316 | 2149392 | 2123909 | 1895806 | 1939384 | 2102471 | 2096999 | 1837676 | 1776860 | 1690837 | 1439683 | 1188783 |
| MIN | 2106088 | 2125012 | 1888799 | 1806150 | 1888089 | 1935149 | 1837875 | 1659248 | 1692620 | 1446234 | 1187388 | 1154527 |
| a | 795.89 | 794.02 | 771.71 | 772.37 | 776.26 | 791.10 | 766.99 | 755.31 | 751.61 | 723.90 | 691.02 | 687.71 |
| b | -4560 | -20711 | -236213 | +6702 | +39854 | +156510 | -250507 | -113750 | -34988 | -246386 | -258846 | -24129 |
| c | 2726 | 1654 | 832 | 652 | 1023 | 2000 | 2900 | 3361 | 4662 | 5562 | 4580 | 3577 |

CAL YR 1989 b +228533

WTR YR 1990 b -987024

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, provided by California Department of Water Resources; not reviewed by U.S. Geological Survey.

11406810 PALERMO CANAL NEAR OROVILLE, CA

LOCATION.--Lat 39°31'59", long 121°28'54", in SW 1/4 SW 1/4 sec.1, T.19 N., R.4 E., Butte County, Hydrologic Unit 18020106, on right bank 50 ft downstream from Oroville Dam and 4.4 mi east of Oroville.

PERIOD OF RECORD.--April 1965 to current year. Daily discharge records of diversion from Kelly Ridge penstock for period April 1965 to October 1968 when Kelly Ridge penstock supplied the entire flow of Palermo Canal are in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 547.67 ft above National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). April 1965 to October 1968, water-stage recorder and Parshall flume at site of diversion from Kelly Ridge penstock, 0.4 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Canal diverts from left end of Oroville Dam. Water is used for irrigation near Oroville. During period of construction of Oroville Dam, water was released from Kelly Ridge penstock to meet irrigation requirements. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records were provided by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--25 years, 11.2 ft³/s, 8,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 28 ft³/s, several days during July to September 1967; no flow at times in some years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|--------|------|-------|------|------|------|
| 1 | 10 | 5.5 | 5.5 | 3.3 | 3.2 | .99 | 3.9 | 13 | 9.9 | 15 | 16 | 19 |
| 2 | 10 | 5.5 | 5.5 | 3.3 | 3.2 | 1.0 | 3.4 | 13 | 10 | 15 | 16 | 19 |
| 3 | 10 | 5.6 | 5.5 | 3.3 | 3.2 | 1.0 | .99 | 13 | 10 | 15 | 16 | 19 |
| 4 | 11 | 5.6 | 5.5 | 3.3 | 3.2 | 1.0 | 1.0 | 13 | 10 | 15 | 16 | 19 |
| 5 | 11 | 5.6 | 5.5 | 3.3 | 3.3 | 1.0 | 1.0 | 13 | 10 | 16 | 16 | 20 |
| 6 | 11 | 5.7 | 5.6 | 3.3 | 3.3 | 1.0 | 1.0 | 13 | 10 | 17 | 17 | 20 |
| 7 | 11 | 5.7 | 5.5 | 3.3 | 3.3 | 1.0 | 1.0 | 13 | 11 | 17 | 17 | 20 |
| 8 | 7.2 | 5.7 | 5.6 | 3.3 | 3.3 | 1.0 | 1.0 | 15 | 11 | 16 | 17 | 20 |
| 9 | 5.7 | 5.7 | 5.5 | 3.3 | 3.3 | 1.0 | 8.2 | 15 | 10 | 16 | 17 | 19 |
| 10 | 5.5 | 5.7 | 5.3 | 3.3 | 3.3 | 1.0 | 11 | 15 | 9.9 | 16 | 17 | 19 |
| 11 | 5.5 | 5.6 | 5.3 | 3.3 | 3.3 | 1.0 | 11 | 15 | 9.9 | 16 | 17 | 19 |
| 12 | 5.6 | 5.5 | 5.3 | 3.3 | 3.3 | 1.1 | 15 | 15 | 12 | 16 | 17 | 19 |
| 13 | 5.6 | 5.5 | 5.3 | 3.4 | 3.3 | 1.1 | 17 | 14 | 15 | 16 | 18 | 19 |
| 14 | 5.7 | 5.5 | 5.3 | 3.4 | 2.1 | 1.1 | 17 | 14 | 17 | 16 | 19 | 19 |
| 15 | 5.3 | 5.5 | 5.3 | 3.5 | .89 | 1.1 | 17 | 14 | 17 | 17 | 19 | 20 |
| 16 | 5.5 | 5.5 | 5.3 | 3.5 | .90 | 1.1 | 17 | 14 | 17 | 17 | 19 | 20 |
| 17 | 5.5 | 5.5 | 5.3 | 3.5 | .90 | 1.1 | 17 | 14 | 17 | 17 | 19 | 20 |
| 18 | 8.6 | 5.5 | 5.4 | 3.5 | .90 | 1.1 | 17 | 14 | 17 | 17 | 19 | 20 |
| 19 | 11 | 5.4 | 5.5 | 3.5 | .77 | 1.1 | .15 | 14 | 17 | 17 | 19 | 20 |
| 20 | 11 | 5.4 | 4.7 | 3.4 | .74 | 1.1 | 15 | 14 | 16 | 17 | 19 | 20 |
| 21 | 11 | 5.3 | 4.2 | 3.3 | .89 | 1.1 | 15 | 15 | 16 | 17 | 18 | 20 |
| 22 | 7.1 | 5.4 | 4.2 | 3.3 | .99 | 1.1 | 15 | 15 | 15 | 17 | 18 | 20 |
| 23 | 5.7 | 5.4 | 4.2 | 3.3 | 1.0 | 1.1 | 14 | 15 | 16 | 17 | 18 | 20 |
| 24 | 5.5 | 5.4 | 4.2 | 3.3 | .99 | 1.1 | 13 | 15 | 16 | 17 | 19 | 20 |
| 25 | 5.5 | 5.4 | 4.2 | 3.3 | 1.0 | 1.1 | 13 | 15 | 16 | 17 | 19 | 20 |
| 26 | 5.6 | 5.4 | 4.2 | 3.3 | 1.0 | 1.1 | 13 | 15 | 16 | 17 | 19 | 20 |
| 27 | 5.6 | 5.5 | 3.8 | 3.3 | 1.0 | 1.1 | 13 | 15 | 15 | 17 | 19 | 20 |
| 28 | 5.7 | 5.5 | 3.3 | 3.3 | 1.0 | 1.4 | 13 | 14 | 15 | 17 | 19 | 20 |
| 29 | 5.4 | 5.5 | 3.3 | 3.3 | --- | 2.8 | 13 | 11 | 15 | 16 | 19 | 20 |
| 30 | 5.5 | 5.5 | 3.3 | 3.3 | --- | 3.9 | 13 | 10 | 15 | 17 | 19 | 20 |
| 31 | 5.5 | --- | 3.3 | 3.3 | --- | 3.9 | --- | 10 | --- | 17 | 19 | --- |
| TOTAL | 229.8 | 165.5 | 149.9 | 103.6 | 57.57 | 40.59 | 325.49 | 428 | 411.7 | 510 | 556 | 590 |
| MEAN | 7.41 | 5.52 | 4.84 | 3.34 | 2.06 | 1.31 | 10.8 | 13.8 | 13.7 | 16.5 | 17.9 | 19.7 |
| MAX | 11 | 5.7 | 5.6 | 3.5 | 3.3 | 3.9 | 17 | 15 | 17 | 17 | 19 | 20 |
| MIN | 5.3 | 5.3 | 3.3 | 3.3 | .74 | .99 | .99 | 10 | 9.9 | 15 | 16 | 19 |
| AC-FT | 456 | 328 | 297 | 205 | 114 | 81 | 646 | 849 | 817 | 1010 | 1100 | 1170 |

CAL YR 1989 TOTAL 3805.4 MEAN 10.4 MAX 20 MIN 3.1 AC-FT 7550
WTR YR 1990 TOTAL 3568.15 MEAN 9.78 MAX 20 MIN .74 AC-FT 7080

SACRAMENTO RIVER BASIN

11406870 THERMALITO AFTERBAY NEAR OROVILLE, CA

LOCATION.--Lat 39°27'30", long 121°38'17", in NE 1/4 SE 1/4 sec.33, T.19 N., R.3 E., Butte County, Hydrologic Unit 18020106, at dam 195 ft northeast of centerline of outlet structure and 5.7 mi southwest of Oroville.

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 100.47 ft above National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). Auxiliary water-stage recorder 90 ft southwest of centerline of Western Canal outlet, and 7.2 mi west of Oroville.

REMARKS.--Reservoir is formed by an earthfill dam completed in 1967. Diversion from the reservoir began Oct. 12, 1967. Usable capacity, 61,144 acre-ft between gage heights 120.0 and 139.0 ft, extreme operating levels. Normal operating range is 123 to 136.5 ft. Water is released to four canals (stations 11406880, 11406890, 11406900, and 11406910) and to the Feather River (station 11406920) from the reservoir. Total maximum release to the four canals is approximately 4,000 ft³/s. Water is pumped, at times, from Thermalito Afterbay back into Thermalito Forebay during off-peak periods to be re-released through Thermalito powerplant for power generation during peak demand periods. Records, including extremes, represent total contents at 2400 hours. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records were collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 57,300 acre-ft, May 24, 1969, gage height, 136.56 ft; minimum since initial operation began, 5,590 acre-ft, Mar. 1, 1968, gage height, 119.09 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 50,862 acre-ft, July 13, gage height, 135.03 ft; minimum, 14,690 acre-ft, Oct. 25, gage height, 123.80 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by California Department of Water Resources, dated Oct. 10, 1968)

| | | | | | |
|-----|--------|-----|--------|-----|--------|
| 119 | 5,465 | 128 | 25,832 | 130 | 32,150 |
| 120 | 7,054 | 124 | 15,157 | 134 | 46,719 |
| 122 | 10,792 | 126 | 20,171 | 139 | 68,198 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 2400 HOURS

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 32285 | 18856 | 45463 | 24529 | 37926 | 39011 | 18908 | 18315 | 42994 | 27165 | 38829 | 32218 |
| 2 | 33156 | 21141 | 41671 | 30154 | 41222 | 40183 | 23003 | 24616 | 38938 | 30090 | 40887 | 29705 |
| 3 | 36256 | 22805 | 32518 | 37425 | 40887 | 34896 | 26615 | 33223 | 36608 | 31227 | 42804 | 27319 |
| 4 | 37998 | 20199 | 35069 | 42614 | 29577 | 20870 | 27319 | 38178 | 36256 | 24529 | 34004 | 28846 |
| 5 | 39925 | 15890 | 35277 | 49275 | 31985 | 20439 | 29801 | 34004 | 41671 | 28909 | 21689 | 30835 |
| 6 | 39925 | 18213 | 36185 | 41297 | 35940 | 23202 | 32451 | 23918 | 38829 | 33765 | 20012 | 32920 |
| 7 | 33765 | 23116 | 40183 | 30090 | 37568 | 25771 | 34243 | 27751 | 39412 | 28312 | 22608 | 34896 |
| 8 | 27257 | 25205 | 40553 | 30705 | 40627 | 29801 | 20199 | 30478 | 44143 | 25294 | 22411 | 36010 |
| 9 | 30025 | 25921 | 32853 | 32752 | 44220 | 36010 | 23259 | 33867 | 37175 | 30998 | 26191 | 32853 |
| 10 | 30380 | 26403 | 20573 | 33765 | 41934 | 34004 | 27042 | 35521 | 29929 | 34896 | 28031 | 34724 |
| 11 | 28751 | 20627 | 22021 | 34483 | 27473 | 24734 | 35069 | 37675 | 32052 | 40109 | 27288 | 36679 |
| 12 | 30835 | 16058 | 25146 | 35277 | 27596 | 26676 | 42614 | 30090 | 33223 | 45932 | 28406 | 37675 |
| 13 | 29417 | 16010 | 32218 | 33156 | 30770 | 30607 | 48993 | 17257 | 31064 | 50862 | 25087 | 39778 |
| 14 | 20386 | 19826 | 36679 | 25087 | 36856 | 33528 | 35069 | 17959 | 29865 | 45932 | 26889 | 41297 |
| 15 | 16642 | 22077 | 40887 | 25621 | 42994 | 35870 | 21882 | 22664 | 33765 | 35069 | 28531 | 39156 |
| 16 | 16861 | 23401 | 31919 | 26737 | 48791 | 39852 | 25981 | 30380 | 29417 | 35695 | 29290 | 36750 |
| 17 | 16227 | 24121 | 20573 | 30705 | 49518 | 36502 | 30933 | 39083 | 22216 | 36185 | 32385 | 35208 |
| 18 | 15842 | 21689 | 23458 | 39011 | 34517 | 25146 | 33765 | 48230 | 27104 | 36502 | 31754 | 36502 |
| 19 | 15890 | 17381 | 27689 | 44413 | 36432 | 28625 | 35695 | 40294 | 31919 | 35765 | 28531 | 39595 |
| 20 | 16130 | 20386 | 38575 | 41746 | 40961 | 31820 | 38684 | 32920 | 37247 | 35069 | 27288 | 42614 |
| 21 | 15747 | 25353 | 43337 | 33392 | 40961 | 33460 | 38829 | 37425 | 41484 | 31064 | 27380 | 45463 |
| 22 | 15580 | 25711 | 48791 | 35139 | 39412 | 36750 | 21882 | 39668 | 44220 | 25831 | 28312 | 42918 |
| 23 | 15509 | 21387 | 50005 | 42010 | 38178 | 42274 | 23202 | 41671 | 33460 | 26252 | 31391 | 40368 |
| 24 | 15179 | 22805 | 38322 | 45736 | 35069 | 37496 | 21250 | 44917 | 22861 | 27473 | 31688 | 40961 |
| 25 | 14690 | 21387 | 27473 | 47037 | 22411 | 31523 | 19456 | 48791 | 29194 | 30316 | 30154 | 44220 |
| 26 | 18188 | 18010 | 28249 | 46562 | 27689 | 33528 | 20439 | 45580 | 35521 | 33765 | 26252 | 44491 |
| 27 | 24324 | 21442 | 35277 | 42880 | 30770 | 33697 | 29353 | 31523 | 38178 | 38430 | 30025 | 43874 |
| 28 | 21497 | 24121 | 41222 | 32285 | 34004 | 31754 | 30380 | 20119 | 39925 | 36361 | 31457 | 44028 |
| 29 | 17909 | 30478 | 44956 | 32853 | --- | 31919 | 21634 | 24939 | 38430 | 30090 | 33088 | 43261 |
| 30 | 16227 | 41148 | 41671 | 33223 | --- | 36256 | 19273 | 36608 | 31820 | 33867 | 34175 | 41148 |
| 31 | 15628 | --- | 32052 | 35382 | --- | 31754 | --- | 38938 | --- | 39412 | 35765 | --- |
| MAX | 39925 | 41148 | 50005 | 49275 | 49518 | 42274 | 48993 | 48791 | 44220 | 50862 | 42804 | 45463 |
| MIN | 14690 | 15890 | 20573 | 24529 | 22411 | 20439 | 18908 | 17257 | 22216 | 24529 | 20012 | 27319 |
| a | 124.20 | 132.55 | 129.97 | 130.95 | 130.55 | 128.88 | 125.66 | 131.95 | 129.90 | 132.08 | 131.06 | 132.55 |
| b | -30226 | +25520 | -9096 | +3330 | -1378 | -2250 | -12481 | +19665 | -7118 | +7592 | -3647 | +5383 |
| c | 711 | 470 | 257 | 413 | 428 | 775 | 1257 | 1582 | 2045 | 2299 | 1892 | 1857 |

CAL YR 1989 b -7104

WTR YR 1990 b -4706

a Gage-height, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, provided by California Department of Water Resources; not reviewed by U.S. Geological Survey.

11406880 WESTERN CANAL AT INTAKE, NEAR OROVILLE, CA

LOCATION.--Lat 39°30'19", long 121°41'06", in SW 1/4 NW 1/4 sec.18, T.19 N., R.3 E., Butte County, Hydrologic Unit 18020105, on left bank 500 ft downstream from Thermalito Afterbay Dam and 7.3 mi west of Oroville.

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 100.47 ft above National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

REMARKS.--No estimated daily discharges. Water is diverted from Thermalito Afterbay and is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--22 years, 317 ft³/s, 229,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,200 ft³/s, May 12, 1981, May 6, 7, 1984, May 6-8, 1990; no flow at times each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|------|--------|------|------|---------|-------|-------|-------|-------|------|
| 1 | 20 | 105 | 107 | 165 | .00 | .00 | .00 | 1000 | 58 | 957 | 849 | 345 |
| 2 | 16 | 118 | 16 | 175 | .00 | .00 | .00 | 999 | 70 | 942 | 843 | 345 |
| 3 | 17 | 137 | 17 | 119 | .00 | .00 | .00 | 1030 | 101 | 933 | 843 | 345 |
| 4 | 50 | 149 | 50 | 67 | .00 | .00 | 12 | 1110 | 147 | 930 | 834 | 345 |
| 5 | 95 | 149 | 95 | 18 | .00 | .00 | 29 | 1180 | 253 | 914 | 823 | 330 |
| 6 | 137 | 150 | 137 | .00 | .00 | .00 | 30 | 1200 | 401 | 909 | 813 | 294 |
| 7 | 132 | 167 | 132 | .00 | .00 | .00 | 31 | 1200 | 512 | 905 | 808 | 269 |
| 8 | 124 | 191 | 124 | .00 | .00 | .00 | 27 | 1200 | 638 | 907 | 808 | 254 |
| 9 | 128 | 200 | 128 | .00 | .00 | .00 | 24 | 1190 | 714 | 904 | 808 | 242 |
| 10 | 127 | 201 | 127 | .00 | .00 | .00 | 33 | 1170 | 745 | 882 | 815 | 243 |
| 11 | 127 | 200 | 127 | .00 | .00 | .00 | 40 | 1150 | 773 | 889 | 835 | 215 |
| 12 | 128 | 200 | 128 | .00 | .00 | .00 | 36 | 1140 | 826 | 896 | 816 | 181 |
| 13 | 128 | 200 | 128 | .00 | .00 | .00 | 31 | 1080 | 861 | 923 | 809 | 159 |
| 14 | 126 | 190 | 126 | .00 | .00 | .00 | 31 | 1020 | 892 | 933 | 804 | 134 |
| 15 | 128 | 180 | 128 | .00 | .00 | .00 | 17 | 1020 | 936 | 934 | 794 | 124 |
| 16 | 127 | 197 | 127 | .00 | .00 | .00 | 22 | 966 | 956 | 934 | 775 | 108 |
| 17 | 128 | 210 | 128 | .00 | .00 | .00 | 29 | 943 | 925 | 934 | 747 | 86 |
| 18 | 127 | 209 | 127 | .00 | .00 | .00 | 41 | 908 | 915 | 927 | 726 | 72 |
| 19 | 127 | 209 | 127 | .00 | .00 | .00 | 55 | 834 | 914 | 925 | 717 | 73 |
| 20 | 127 | 210 | 127 | .00 | .00 | .00 | 111 | 726 | 915 | 910 | 694 | 61 |
| 21 | 127 | 201 | 127 | .00 | .00 | .00 | 253 | 608 | 930 | 900 | 659 | 44 |
| 22 | 127 | 190 | 127 | .00 | .00 | .00 | 349 | 494 | 939 | 901 | 618 | 49 |
| 23 | 95 | 189 | 95 | .00 | .00 | .00 | 457 | 429 | 925 | 895 | 568 | 49 |
| 24 | 60 | 191 | 60 | .00 | .00 | .00 | 509 | 388 | 927 | 888 | 515 | 37 |
| 25 | 61 | 190 | 61 | .00 | .00 | .00 | 527 | 377 | 939 | 876 | 462 | 26 |
| 26 | 62 | 190 | 62 | .00 | .00 | .00 | 620 | 350 | 909 | 869 | 441 | 20 |
| 27 | 46 | 191 | 46 | .00 | .00 | .00 | 778 | 260 | 896 | 869 | 442 | 16 |
| 28 | 35 | 192 | 35 | .00 | .00 | .00 | 899 | 138 | 940 | 869 | 419 | 10 |
| 29 | 40 | 198 | 40 | .00 | --- | .00 | 983 | 53 | 957 | 856 | 397 | 10 |
| 30 | 76 | 212 | 76 | .00 | --- | .00 | 1000 | 45 | 957 | 848 | 385 | 10 |
| 31 | 104 | --- | 104 | .00 | --- | .00 | --- | 45 | --- | 849 | 354 | --- |
| TOTAL | 2952 | 5516 | 3039 | 544.00 | 0.00 | 0.00 | 6974.00 | 24253 | 21871 | 28008 | 21221 | 4496 |
| MEAN | 95.2 | 184 | 98.0 | 17.5 | .000 | .000 | 232 | 782 | 729 | 903 | 685 | 150 |
| MAX | 137 | 212 | 137 | 175 | .00 | .00 | 1000 | 1200 | 957 | 957 | 849 | 345 |
| MIN | 16 | 105 | 16 | .00 | .00 | .00 | .00 | 45 | 58 | 848 | 354 | 10 |
| AC-FT | 5860 | 10940 | 6030 | 1080 | .00 | .00 | 13830 | 48110 | 43380 | 55550 | 42090 | 8920 |

CAL YR 1989 TOTAL 116211.00 MEAN 318 MAX 1090 MIN .00 AC-FT 230500
WTR YR 1990 TOTAL 118874.00 MEAN 326 MAX 1200 MIN .00 AC-FT 235800

11406900 PACIFIC GAS & ELECTRIC CO. LATERAL AT INTAKE, NEAR OROVILLE, CA

LOCATION.--Lat 39°29'22", long 121°41'12", in SE 1/4 NW 1/4 sec.19, T.19 N., R.3 E., Butte County, Hydrologic Unit 18020106, on right bank 82 ft downstream from axis of Thermalito Afterbay Dam and 7.2 mi west of Oroville.

PERIOD OF RECORD.--April 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 113.47 ft above National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources).

REMARKS.--No estimated daily discharges. Flow regulated at outlet works from Thermalito Afterbay; water is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--22 years, 4.88 ft³/s, 3,540 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 46 ft³/s, Apr. 24, 1977, May 16, 1978; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|---------|--------|------|------|------|--------|-------|-------|------|-------|-------|
| 1 | .00 | .00 | .00 | 1.1 | .00 | .00 | .00 | 33 | 3.1 | 15 | 14 | 1.3 |
| 2 | .00 | .00 | .00 | 1.1 | .00 | .00 | .00 | 27 | 3.1 | 15 | 14 | 1.3 |
| 3 | .00 | .00 | .00 | 1.2 | .00 | .00 | .00 | 26 | 3.1 | 15 | 14 | 1.3 |
| 4 | .00 | .00 | .00 | .49 | .00 | .00 | .00 | 27 | 4.4 | 15 | 14 | 1.3 |
| 5 | .00 | .00 | 7.2 | .00 | .00 | .00 | .00 | 25 | 6.9 | 16 | 14 | 1.3 |
| 6 | .00 | .00 | 13 | .00 | .00 | .00 | .00 | 24 | 12 | 16 | 14 | 1.4 |
| 7 | .00 | .00 | 14 | .00 | .00 | .00 | .00 | 24 | 17 | 16 | 14 | 1.4 |
| 8 | .00 | .00 | 13 | .00 | .00 | .00 | .00 | 16 | 20 | 16 | 14 | 1.2 |
| 9 | .00 | .00 | 13 | .00 | .00 | .00 | .00 | 8.1 | 22 | 16 | 14 | 1.1 |
| 10 | .00 | .00 | 13 | .00 | .00 | .00 | .00 | 6.1 | 22 | 16 | 14 | 1.1 |
| 11 | .00 | .00 | 6.3 | .00 | .00 | .00 | .00 | 6.1 | 18 | 16 | 13 | 1.8 |
| 12 | .00 | .00 | 2.1 | .00 | .00 | .00 | .00 | 3.5 | 16 | 16 | 13 | 2.2 |
| 13 | .00 | .00 | 2.1 | .00 | .00 | .00 | .00 | 1.3 | 17 | 16 | 13 | 2.2 |
| 14 | .00 | .00 | 1.8 | .00 | .00 | .00 | .00 | 1.3 | 16 | 16 | 12 | 1.6 |
| 15 | .00 | .00 | 2.0 | .00 | .00 | .00 | .00 | 1.8 | 15 | 16 | 11 | 1.0 |
| 16 | .00 | .00 | 1.9 | .00 | .00 | .00 | .00 | 2.2 | 15 | 16 | 11 | 1.0 |
| 17 | .00 | .00 | 1.8 | .00 | .00 | .00 | .00 | 3.0 | 15 | 16 | 11 | .55 |
| 18 | .00 | .00 | 1.5 | .00 | .00 | .00 | .00 | 4.4 | 15 | 16 | 11 | .00 |
| 19 | .00 | .00 | .98 | .00 | .00 | .00 | .00 | 3.5 | 15 | 16 | 10 | .00 |
| 20 | .00 | .00 | .90 | .00 | .00 | .00 | 5.8 | 3.1 | 15 | 16 | 8.0 | .00 |
| 21 | .00 | .00 | .94 | .00 | .00 | .00 | 10 | 3.3 | 15 | 16 | 5.2 | .00 |
| 22 | .00 | .00 | 1.0 | .00 | .00 | .00 | 11 | 4.2 | 15 | 16 | 5.3 | .00 |
| 23 | .00 | .00 | .95 | .00 | .00 | .00 | 12 | 5.3 | 15 | 16 | 4.4 | .00 |
| 24 | .00 | .00 | .85 | .00 | .00 | .00 | 9.1 | 3.4 | 14 | 16 | 2.7 | .00 |
| 25 | .00 | .00 | .79 | .00 | .00 | .00 | 3.5 | 2.2 | 14 | 16 | 1.9 | .00 |
| 26 | .00 | .00 | .82 | .00 | .00 | .00 | 14 | 2.0 | 15 | 16 | 1.2 | .00 |
| 27 | .00 | .00 | .91 | .00 | .00 | .00 | 28 | 2.2 | 15 | 16 | 1.3 | .00 |
| 28 | .00 | .00 | .98 | .00 | .00 | .00 | 30 | 2.2 | 15 | 15 | 1.3 | .00 |
| 29 | .00 | .00 | 1.2 | .00 | --- | .00 | 30 | 2.1 | 16 | 14 | 1.3 | .00 |
| 30 | .00 | .00 | 1.1 | .00 | --- | .00 | 35 | 2.9 | 16 | 14 | 1.4 | .00 |
| 31 | .00 | --- | 1.0 | .00 | --- | .00 | --- | 3.1 | --- | 14 | 1.4 | --- |
| TOTAL | 0.00 | 0.00 | 105.12 | 3.89 | 0.00 | 0.00 | 188.40 | 279.3 | 420.6 | 485 | 280.4 | 23.05 |
| MEAN | .000 | .000 | 3.39 | .13 | .000 | .000 | 6.28 | 9.01 | 14.0 | 15.6 | 9.05 | .77 |
| MAX | .00 | .00 | 14 | 1.2 | .00 | .00 | 35 | 33 | 22 | 16 | 14 | 2.2 |
| MIN | .00 | .00 | .00 | .00 | .00 | .00 | .00 | 1.3 | 3.1 | 14 | 1.2 | .00 |
| AC-FT | .00 | .00 | 209 | 7.7 | .00 | .00 | 374 | 554 | 834 | 962 | 556 | 46 |
| CAL YR 1989 | TOTAL | 1870.52 | MEAN | 5.12 | MAX | 36 | MIN | .00 | AC-FT | 3710 | | |
| WTR YR 1990 | TOTAL | 1785.76 | MEAN | 4.89 | MAX | 35 | MIN | .00 | AC-FT | 3540 | | |

LOCATION.--Lat 39°27'01", long 121°39'27", in NW corner of Boga Fernandez Grant, T.18 N., R.3 E., Butte County, Hydrologic Unit 18020105, on left bank 675 ft downstream from Thermalito Afterbay Dam and 6.8 mi southwest of Oroville.

PERIOD OF RECORD.--November 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 109.97 ft above National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). Prior to May 1, 1970, at datum 109.50 ft lower.

REMARKS.--No estimated daily discharges. Water is diverted from Thermalito Afterbay and is used for irrigation. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--22 years, 652 ft³/s, 472,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,110 ft³/s, Apr. 22-24, 1968; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|---|-------|-------|--------|------|--------|-------|-------|-------|-------|-------|-------|
| 1 | 297 | 242 | 234 | 208 | .00 | .00 | 204 | 1550 | 624 | 1590 | 1610 | 955 |
| 2 | 301 | 259 | 234 | 208 | .00 | .00 | 267 | 1540 | 634 | 1590 | 1610 | 925 |
| 3 | 307 | 259 | 232 | 209 | .00 | .00 | 447 | 1620 | 676 | 1600 | 1620 | 947 |
| 4 | 296 | 241 | 236 | 126 | .00 | .00 | 536 | 1690 | 706 | 1610 | 1620 | 913 |
| 5 | 291 | 227 | 234 | 43 | .00 | .00 | 621 | 1680 | 858 | 1640 | 1610 | 852 |
| 6 | 290 | 223 | 234 | 44 | .00 | .00 | 640 | 1690 | 1080 | 1640 | 1580 | 862 |
| 7 | 285 | 227 | 236 | 41 | .00 | .00 | 706 | 1740 | 1170 | 1610 | 1570 | 855 |
| 8 | 285 | 237 | 230 | 13 | .00 | .00 | 710 | 1730 | 1220 | 1590 | 1590 | 819 |
| 9 | 295 | 240 | 226 | .00 | .00 | .00 | 715 | 1700 | 1250 | 1600 | 1590 | 797 |
| 10 | 320 | 241 | 225 | .00 | .00 | .00 | 663 | 1700 | 1300 | 1570 | 1580 | 756 |
| 11 | 346 | 238 | 229 | .00 | .00 | .00 | 678 | 1670 | 1380 | 1590 | 1560 | 724 |
| 12 | 373 | 237 | 229 | .00 | .00 | .00 | 761 | 1650 | 1410 | 1630 | 1530 | 699 |
| 13 | 375 | 240 | 230 | .00 | .00 | .00 | 790 | 1630 | 1500 | 1630 | 1550 | 689 |
| 14 | 372 | 239 | 213 | .00 | .00 | .00 | 801 | 1600 | 1520 | 1620 | 1490 | 701 |
| 15 | 375 | 235 | 207 | .00 | .00 | .00 | 802 | 1590 | 1540 | 1600 | 1470 | 671 |
| 16 | 364 | 234 | 204 | .00 | .00 | .00 | 823 | 1540 | 1580 | 1620 | 1420 | 608 |
| 17 | 363 | 234 | 205 | .00 | .00 | .00 | 841 | 1500 | 1590 | 1620 | 1430 | 576 |
| 18 | 385 | 233 | 215 | .00 | .00 | .00 | 915 | 1480 | 1590 | 1620 | 1420 | 530 |
| 19 | 379 | 230 | 218 | .00 | .00 | .00 | 952 | 1480 | 1580 | 1640 | 1420 | 530 |
| 20 | 379 | 233 | 220 | .00 | .00 | .00 | 1010 | 1380 | 1590 | 1650 | 1370 | 486 |
| 21 | 378 | 234 | 220 | .00 | .00 | .00 | 1090 | 1310 | 1610 | 1650 | 1300 | 511 |
| 22 | 368 | 234 | 218 | .00 | .00 | .00 | 1160 | 1260 | 1610 | 1640 | 1270 | 533 |
| 23 | 382 | 230 | 220 | .00 | .00 | .00 | 1240 | 1170 | 1610 | 1650 | 1250 | 538 |
| 24 | 281 | 234 | 216 | .00 | .00 | .00 | 1230 | 1040 | 1610 | 1650 | 1230 | 504 |
| 25 | 261 | 236 | 216 | .00 | .00 | .00 | 1350 | 988 | 1620 | 1650 | 1200 | 472 |
| 26 | 245 | 233 | 219 | .00 | .00 | .00 | 1410 | 976 | 1620 | 1630 | 1190 | 466 |
| 27 | 221 | 237 | 226 | .00 | .00 | .00 | 1490 | 928 | 1630 | 1630 | 1130 | 429 |
| 28 | 198 | 237 | 229 | .00 | .00 | .00 | 1550 | 792 | 1630 | 1630 | 1080 | 423 |
| 29 | 183 | 235 | 229 | .00 | --- | 149 | 1560 | 683 | 1620 | 1620 | 1070 | 398 |
| 30 | 187 | 236 | 228 | .00 | --- | 204 | 1550 | 640 | 1600 | 1630 | 1070 | 396 |
| 31 | 242 | --- | 218 | .00 | --- | 202 | --- | 624 | --- | 1620 | 1020 | --- |
| TOTAL | 9624 | 7095 | 6930 | 892.00 | 0.00 | 555.00 | 27512 | 42571 | 40958 | 50260 | 43450 | 19565 |
| MEAN | 310 | 236 | 224 | 28.8 | .000 | 17.9 | 917 | 1373 | 1365 | 1621 | 1402 | 652 |
| MAX | 385 | 259 | 236 | 209 | .00 | 204 | 1560 | 1740 | 1630 | 1650 | 1620 | 955 |
| MIN | 183 | 223 | 204 | .00 | .00 | .00 | 204 | 624 | 624 | 1570 | 1020 | 396 |
| AC-FT | 19090 | 14070 | 13750 | 1770 | .00 | 1100 | 54570 | 84440 | 81240 | 99690 | 86180 | 38810 |
| CAL YR 1989 | TOTAL 243037.00 MEAN 666 MAX 1790 MIN .00 AC-FT 482100 | | | | | | | | | | | |
| WTR YR 1990 | TOTAL 2430412.00 MEAN 683 MAX 1740 MIN .00 AC-FT 494700 | | | | | | | | | | | |

11406920 THERMALITO AFTERBAY RELEASE TO FEATHER RIVER NEAR OROVILLE, CA

LOCATION.--Lat 39°27'23", long 121°38'10", in NW 1/4 SE 1/4 sec.33, T.19 N., R.3 E., Butte County, Hydrologic Unit 18020106, on left bank of outlet channel 955 ft downstream from centerline of Thermalito Afterbay Dam and 5.7 mi southwest of Oroville.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 113.47 ft above National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). Prior to May 1, 1970, at datum 13.00 ft lower.

REMARKS.--No estimated daily discharges. Flow regulated by gates of Thermalito Afterbay outlet 955 ft upstream. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--22 years, 3,945 ft³/s, 2,858,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,600 ft³/s, Jan. 28, 1970, gage height, 23.30 ft, datum then in use; no flow for many days during 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,020 ft³/s, Dec. 28, gage height, 5.61 ft; minimum daily, 270 ft³/s, June 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|-------|--------|--------|-------|-------|--------|--------|-------|
| 1 | 1850 | 1840 | 2830 | 6590 | 1910 | 1110 | 5750 | 1100 | 280 | 795 | 2150 | 387 |
| 2 | 1880 | 1840 | 3840 | 6370 | 1910 | 1110 | 5830 | 905 | 277 | 689 | 2610 | 358 |
| 3 | 1880 | 1840 | 3830 | 6100 | 1710 | 1110 | 5830 | 704 | 273 | 290 | 3570 | 336 |
| 4 | 1870 | 1820 | 3860 | 5900 | 1500 | 1100 | 6240 | 878 | 270 | 290 | 4430 | 393 |
| 5 | 1890 | 1820 | 3850 | 5900 | 1320 | 1110 | 6810 | 1180 | 274 | 290 | 5270 | 410 |
| 6 | 2770 | 1840 | 4410 | 5850 | 1120 | 1110 | 6810 | 1180 | 274 | 280 | 5310 | 411 |
| 7 | 2840 | 1840 | 5420 | 5830 | 1110 | 1110 | 6820 | 1730 | 289 | 599 | 4830 | 407 |
| 8 | 2830 | 1840 | 5420 | 4340 | 1120 | 1110 | 6750 | 2380 | 312 | 1400 | 4830 | 413 |
| 9 | 2860 | 1830 | 5390 | 2650 | 1110 | 1100 | 6810 | 2350 | 313 | 1400 | 4780 | 345 |
| 10 | 3290 | 1830 | 5390 | 1530 | 1110 | 1090 | 6800 | 2550 | 306 | 1410 | 4850 | 402 |
| 11 | 3870 | 1810 | 5430 | 1360 | 1100 | 1100 | 6820 | 2880 | 314 | 1350 | 4840 | 415 |
| 12 | 3870 | 1810 | 5180 | 1080 | 1110 | 1110 | 6820 | 2870 | 315 | 1840 | 4840 | 414 |
| 13 | 3860 | 1830 | 4950 | 1070 | 1120 | 1110 | 6790 | 2860 | 313 | 2280 | 4800 | 411 |
| 14 | 3230 | 1840 | 4950 | 1070 | 1110 | 1100 | 6740 | 2880 | 317 | 2330 | 4360 | 411 |
| 15 | 2160 | 1850 | 4940 | 1070 | 1120 | 1110 | 6740 | 2880 | 313 | 2780 | 3850 | 412 |
| 16 | 2170 | 1840 | 4890 | 1080 | 1120 | 1100 | 6830 | 2880 | 312 | 2880 | 3870 | 391 |
| 17 | 2170 | 1830 | 4880 | 1080 | 1130 | 1100 | 6830 | 2450 | 311 | 3200 | 3860 | 409 |
| 18 | 2160 | 1830 | 4940 | 1080 | 1110 | 1100 | 6810 | 1690 | 317 | 3330 | 3370 | 413 |
| 19 | 2180 | 1820 | 4940 | 1080 | 1110 | 1120 | 6810 | 1480 | 311 | 3340 | 2900 | 414 |
| 20 | 2170 | 1830 | 4950 | 1090 | 1110 | 2110 | 6800 | 1380 | 313 | 3340 | 1970 | 618 |
| 21 | 2170 | 1840 | 4960 | 1110 | 1120 | 2100 | 6800 | 1280 | 304 | 3350 | 1660 | 638 |
| 22 | 2170 | 1840 | 4950 | 1110 | 1110 | 2130 | 6750 | 1090 | 317 | 3340 | 1520 | 624 |
| 23 | 2190 | 1830 | 4870 | 1120 | 1110 | 2880 | 6810 | 900 | 316 | 3360 | 1290 | 651 |
| 24 | 2020 | 1840 | 5390 | 1110 | 1100 | 2850 | 6770 | 696 | 320 | 2750 | 1090 | 629 |
| 25 | 1610 | 1830 | 5380 | 1130 | 1100 | 2840 | 6790 | 503 | 325 | 2210 | 888 | 617 |
| 26 | 1410 | 1830 | 5660 | 1110 | 1100 | 2880 | 5060 | 341 | 317 | 2180 | 697 | 611 |
| 27 | 1230 | 1840 | 6170 | 1120 | 1100 | 4220 | 2400 | 272 | 314 | 2000 | 521 | 659 |
| 28 | 1080 | 1840 | 6930 | 1110 | 1110 | 4360 | 1690 | 272 | 316 | 1920 | 375 | 656 |
| 29 | 1080 | 1850 | 6910 | 1110 | --- | 4360 | 1480 | 280 | 794 | 1900 | 403 | 652 |
| 30 | 1450 | 1850 | 6890 | 1110 | --- | 4840 | 1290 | 279 | 790 | 1930 | 404 | 635 |
| 31 | 1840 | --- | 6860 | 1120 | --- | 5670 | --- | 276 | --- | 1920 | 411 | --- |
| TOTAL | 70050 | 55020 | 159260 | 74380 | 33910 | 62250 | 178280 | 45396 | 10117 | 60973 | 90549 | 14542 |
| MEAN | 2260 | 1834 | 5137 | 2399 | 1211 | 2008 | 5943 | 1464 | 337 | 1967 | 2921 | 485 |
| MAX | 3870 | 1850 | 6930 | 6590 | 1910 | 5670 | 6830 | 2880 | 794 | 3360 | 5310 | 659 |
| MIN | 1080 | 1810 | 2830 | 1070 | 1100 | 1090 | 1290 | 272 | 270 | 280 | 375 | 336 |
| AC-FT | 138900 | 109100 | 315900 | 147500 | 67260 | 123500 | 353600 | 90040 | 20070 | 120900 | 179600 | 28840 |

CAL YR 1989 TOTAL 895558 MEAN 2454 MAX 7370 MIN 77 AC-FT 1776000
WTR YR 1990 TOTAL 854727 MEAN 2342 MAX 6930 MIN 270 AC-FT 1695000

11406920 THERMALITO AFTERBAY RELEASE TO FEATHER RIVER NEAR OROVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 1968 to current year.

INSTRUMENTATION.--Temperature recorder since May 1968.

REMARKS.--Temperature is listed only when water is released from Thermalito Afterbay. Because of the complete regulation of the Feather River below Oroville Dam, the temperature of the water released from Thermalito Afterbay affects the temperature of the Feather River downstream from the Oroville project.

COOPERATION.--Records provided by California Department of Water Resources and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 28.5 °C, June 23, 1977; minimum recorded, 1.5 °C, Dec. 13, 1972.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 28.0 °C, July 10; minimum recorded, 5.0 °C, Feb. 18, 19.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-------|------|
| | OCTOBER | | NOVEMBER | | DECEMBER | | JANUARY | | FEBRUARY | | MARCH | |
| 1 | 18.0 | 16.0 | 13.0 | 11.5 | 10.0 | 9.5 | 8.5 | 8.0 | 8.0 | 8.0 | 11.0 | 10.5 |
| 2 | 19.0 | 16.5 | 13.0 | 12.0 | 10.0 | 10.0 | 8.5 | 8.0 | 8.0 | 8.0 | 11.0 | 11.0 |
| 3 | 18.0 | 16.5 | 13.5 | 12.0 | 10.0 | 10.0 | 8.0 | 8.0 | 8.0 | 8.0 | 11.5 | 11.0 |
| 4 | 18.0 | 16.5 | 13.5 | 13.0 | 10.5 | 10.0 | 8.0 | 8.0 | 8.0 | 8.0 | 12.0 | 11.5 |
| 5 | 18.0 | 17.0 | 13.5 | 13.0 | 10.5 | 10.5 | 8.0 | 8.0 | 8.0 | 8.0 | 13.5 | 11.5 |
| 6 | 18.0 | 17.0 | 13.5 | 13.0 | 10.5 | 10.5 | 8.0 | 8.0 | 8.5 | 8.0 | 13.0 | 11.5 |
| 7 | 17.0 | 16.0 | 13.0 | 12.0 | 10.5 | 10.5 | 8.5 | 8.0 | 8.5 | 8.0 | 13.0 | 12.0 |
| 8 | 17.0 | 16.5 | 13.0 | 12.0 | 10.5 | 10.0 | 9.5 | 8.5 | 8.0 | 8.0 | 13.5 | 13.0 |
| 9 | 18.0 | 16.5 | 13.0 | 12.0 | 10.0 | 9.5 | 10.0 | 9.5 | 9.0 | 8.0 | 14.0 | 12.0 |
| 10 | 17.0 | 15.0 | 13.0 | 12.0 | 10.0 | 9.0 | 10.0 | 10.0 | 8.5 | 8.0 | 13.0 | 12.0 |
| 11 | 15.5 | 14.5 | 13.0 | 12.0 | 9.0 | 8.0 | 10.0 | 10.0 | 9.5 | 8.5 | 13.5 | 12.0 |
| 12 | 15.0 | 14.0 | 13.5 | 13.0 | 9.0 | 8.5 | 10.0 | 10.0 | 9.5 | 9.0 | 13.0 | 12.0 |
| 13 | 14.0 | 13.5 | 13.5 | 12.0 | 9.0 | 8.5 | 10.0 | 10.0 | 9.0 | 7.0 | 13.0 | 12.0 |
| 14 | 14.5 | 13.5 | 13.0 | 12.0 | 9.0 | 8.5 | 10.0 | 10.0 | 7.0 | 6.5 | 12.0 | 12.0 |
| 15 | 15.0 | 14.0 | 12.0 | 11.5 | 9.0 | 8.5 | 10.0 | 10.0 | 7.0 | 6.0 | 13.0 | 11.5 |
| 16 | 15.0 | 14.0 | 12.0 | 11.5 | 9.0 | 8.5 | 10.0 | 9.0 | 6.0 | 5.5 | 13.5 | 12.0 |
| 17 | 15.5 | 14.5 | 15.0 | 12.0 | 9.0 | 8.5 | 9.5 | 8.5 | 5.5 | 5.5 | 14.0 | 13.0 |
| 18 | 15.5 | 14.5 | 12.0 | 11.5 | 9.0 | 8.5 | 9.0 | 9.0 | 5.5 | 5.0 | 14.5 | 13.0 |
| 19 | 15.0 | 14.0 | 13.0 | 12.0 | 9.0 | 8.5 | 9.0 | 8.0 | 6.0 | 5.0 | 14.0 | 13.5 |
| 20 | 14.5 | 14.0 | 13.0 | 11.5 | 8.5 | 8.5 | 8.0 | 8.0 | 6.0 | 6.0 | 16.0 | 14.0 |
| 21 | 14.0 | 13.5 | 12.0 | 12.0 | 8.5 | 8.5 | 8.0 | 8.0 | 6.5 | 6.0 | 16.5 | 15.0 |
| 22 | 14.0 | 13.5 | 12.0 | 12.0 | 8.5 | 8.5 | 8.0 | 8.0 | 8.5 | 6.0 | 16.0 | 15.0 |
| 23 | 14.0 | 13.5 | 12.0 | 11.5 | 8.5 | 8.5 | 8.0 | 8.0 | 8.5 | 7.0 | 16.0 | 15.0 |
| 24 | 13.5 | 13.0 | 11.5 | 11.5 | 8.5 | 8.0 | 8.0 | 8.0 | 9.0 | 8.0 | 16.0 | 14.5 |
| 25 | 13.5 | 12.0 | 11.5 | 11.5 | 8.0 | 8.0 | 8.0 | 8.0 | 10.0 | 8.0 | 14.5 | 14.5 |
| 26 | 13.0 | 12.0 | 11.5 | 11.0 | 8.0 | 7.0 | 8.0 | 8.0 | 10.5 | 8.5 | 15.5 | 14.0 |
| 27 | 13.0 | 13.0 | 11.0 | 10.0 | 8.0 | 7.0 | 8.0 | 7.0 | 11.0 | 10.0 | 15.0 | 14.5 |
| 28 | 13.0 | 11.5 | 10.0 | 10.0 | 8.5 | 8.0 | 8.0 | 7.0 | 12.0 | 10.5 | 15.0 | 14.5 |
| 29 | 11.5 | 10.5 | 10.0 | 9.5 | 8.0 | 7.0 | 8.0 | 7.0 | --- | --- | 14.5 | 13.5 |
| 30 | 11.5 | 11.0 | 10.0 | 10.0 | 8.0 | 8.0 | 8.0 | 8.0 | --- | --- | 13.5 | 13.0 |
| 31 | 12.0 | 11.0 | --- | --- | 8.0 | 8.0 | 8.0 | 8.0 | --- | --- | 13.0 | 12.0 |
| MONTH | 19.0 | 10.5 | 15.0 | 9.5 | 10.5 | 7.0 | 10.0 | 7.0 | 12.0 | 5.0 | 16.5 | 10.5 |

11406920 THERMALITO AFTERBAY RELEASE TO FEATHER RIVER NEAR OROVILLE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|-------|------|------|------|------|------|------|------|--------|------|-----------|------|
| | APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
| 1 | 13.5 | 11.5 | 17.0 | 15.5 | 19.5 | 18.0 | 24.5 | 21.5 | 25.5 | 23.5 | 23.5 | 21.0 |
| 2 | 13.5 | 12.0 | 18.5 | 16.0 | 19.5 | 18.5 | 25.0 | 23.0 | 25.0 | 23.5 | 24.0 | 22.0 |
| 3 | 13.0 | 12.0 | 19.5 | 18.0 | 19.0 | 18.5 | 25.0 | 24.0 | 24.5 | 23.5 | 23.5 | 22.0 |
| 4 | 13.0 | 12.0 | 19.5 | 18.0 | 21.0 | 19.0 | 24.5 | 23.5 | 25.5 | 23.5 | 25.5 | 23.0 |
| 5 | 13.0 | 12.0 | 18.0 | 17.0 | 20.5 | 19.5 | 24.5 | 23.5 | 26.0 | 23.5 | 25.0 | 23.5 |
| 6 | 13.5 | 12.0 | 19.5 | 16.5 | 22.0 | 19.5 | 26.0 | 24.0 | 25.5 | 24.0 | 24.5 | 23.5 |
| 7 | 12.0 | 11.5 | 21.0 | 19.0 | 24.5 | 21.0 | 24.5 | 23.0 | 24.5 | 23.0 | 24.5 | 23.5 |
| 8 | 13.0 | 11.5 | 19.0 | 18.5 | 25.5 | 23.5 | 26.5 | 23.0 | 24.0 | 22.0 | 24.5 | 23.5 |
| 9 | 13.5 | 12.0 | 18.5 | 18.0 | 25.0 | 24.0 | 27.0 | 24.0 | 24.0 | 23.0 | 24.0 | 23.5 |
| 10 | 13.0 | 12.0 | 18.0 | 16.0 | 25.5 | 24.5 | 28.0 | 24.0 | 23.5 | 22.0 | 24.0 | 23.0 |
| 11 | 13.0 | 12.0 | 17.0 | 15.5 | 27.0 | 24.5 | 25.5 | 23.5 | 22.0 | 21.0 | 23.5 | 23.0 |
| 12 | 13.5 | 12.0 | 16.0 | 15.5 | 26.5 | 24.0 | 23.0 | 22.0 | 22.0 | 21.0 | 23.5 | 23.0 |
| 13 | 14.0 | 13.0 | 20.0 | 16.0 | 26.0 | 25.0 | 22.0 | 21.0 | 22.0 | 20.5 | 23.0 | 21.5 |
| 14 | 15.0 | 13.0 | 19.0 | 16.5 | 25.0 | 24.0 | 22.0 | 21.0 | 21.5 | 20.5 | 22.0 | 21.0 |
| 15 | 16.0 | 13.5 | 18.5 | 16.5 | 25.0 | 24.0 | 22.0 | 20.0 | 21.5 | 20.0 | 22.0 | 21.0 |
| 16 | 15.5 | 14.5 | 17.0 | 16.0 | 24.5 | 23.5 | 23.5 | 21.0 | 21.5 | 20.0 | 22.0 | 21.5 |
| 17 | 14.5 | 13.5 | 16.5 | 15.0 | 25.5 | 23.5 | 25.0 | 22.0 | 21.0 | 20.0 | 22.0 | 21.5 |
| 18 | 14.5 | 13.5 | 15.5 | 15.0 | 26.0 | 23.5 | 25.0 | 23.0 | 21.0 | 20.0 | 22.0 | 21.5 |
| 19 | 14.0 | 13.5 | 15.0 | 15.0 | 26.5 | 24.0 | 25.0 | 23.0 | 23.5 | 20.5 | 24.5 | 22.0 |
| 20 | 14.5 | 13.5 | 15.5 | 15.0 | 25.5 | 24.0 | 24.5 | 22.0 | 23.0 | 21.0 | 24.5 | 23.5 |
| 21 | 15.0 | 13.5 | 15.5 | 15.5 | 24.0 | 21.0 | 25.0 | 22.0 | 24.5 | 21.5 | 24.0 | 23.0 |
| 22 | 15.5 | 14.0 | 16.5 | 15.5 | 21.0 | 20.0 | 25.5 | 22.0 | 25.0 | 23.0 | 23.5 | 23.0 |
| 23 | 15.5 | 14.5 | 16.5 | 16.0 | 22.0 | 20.5 | 24.5 | 23.0 | 23.5 | 22.0 | 23.5 | 22.0 |
| 24 | 15.5 | 14.5 | 18.5 | 16.5 | 22.0 | 21.0 | 24.0 | 23.0 | 22.0 | 21.5 | 23.0 | 22.0 |
| 25 | 14.5 | 13.5 | 18.0 | 17.0 | 24.5 | 21.5 | 24.0 | 23.0 | 21.5 | 21.0 | 23.0 | 22.0 |
| 26 | 15.5 | 13.5 | 18.0 | 17.0 | 24.0 | 23.0 | 24.5 | 23.0 | 21.0 | 20.5 | 23.0 | 22.0 |
| 27 | 17.0 | 14.5 | 18.0 | 16.5 | 24.5 | 23.0 | 24.5 | 23.0 | 22.0 | 21.0 | 23.0 | 22.0 |
| 28 | 16.5 | 15.5 | 19.0 | 17.0 | 24.0 | 22.0 | 24.5 | 23.0 | 24.0 | 22.0 | 24.5 | 22.0 |
| 29 | 16.0 | 14.5 | 19.5 | 18.0 | 22.0 | 22.0 | 25.5 | 23.0 | 23.0 | 22.0 | 25.0 | 23.0 |
| 30 | 16.0 | 15.0 | 19.5 | 18.5 | 23.5 | 21.5 | 26.0 | 24.0 | 24.5 | 22.0 | 24.5 | 23.5 |
| 31 | --- | --- | 18.5 | 18.0 | --- | --- | 26.0 | 23.5 | 24.0 | 22.0 | --- | --- |
| MONTH | 17.0 | 11.5 | 21.0 | 15.0 | 27.0 | 18.0 | 28.0 | 20.0 | 26.0 | 20.0 | 25.5 | 21.0 |

SACRAMENTO RIVER BASIN

11407000 FEATHER RIVER AT OROVILLE, CA

LOCATION.--Lat 39°31'18", long 121°32'48", in Boga Fernandez Grant, T.19 N., R.4 E., Butte County, Hydrologic Unit 18020106, on right bank 300 ft upstream from fish barrier dam on Feather River, 0.4 mi downstream from Thermalito diversion dam, 0.8 mi northeast of Oroville Post Office, and 4.8 mi downstream from Oroville Dam.

DRAINAGE AREA.--3,624 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1901 to current year. Monthly discharge only for some periods, published in

WSP 1315-A. October 1934 to September 1961 published as "near Oroville."

REVISED RECORDS.--WSP 843: 1907(M), 1909(M), 1914-15(M), 1919(M), 1927-28(M). WSP 881: 1913-28 (yearly summaries). WSP 1515: 1906-8. WSP 1931: Drainage area. WDR CA-74-2: 1968-70, adjusted monthly discharge.

GAGE.--Water-stage recorder. Datum of gage is 148.97 ft above National Geodetic Vertical Datum of 1929 (levels by California Department of Water Resources). See WSP 1931 for history of changes prior to Oct. 1, 1964.

REMARKS.--No estimated daily discharges. Flow completely regulated by Lake Oroville (station 11406800) beginning Apr. 14, 1967, and Thermalito diversion pool (station 11406825), capacity 13,500 acre-ft. Diversions upstream from station for power and irrigation. Feather River Fish Hatchery diverts up to 120 ft³/s at Thermalito diversion dam 0.4 mi upstream from gage. Daily figures shown are combined figures of river flow and diversion to fish hatchery. See schematic diagram showing diversions and storage from Feather River at Lake Oroville.

COOPERATION.--Records were collected by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--66 years (water years 1902-67) prior to storage and diversions, 5,836 ft³/s, 4,225,000 acre-ft/yr; 23 years (water years 1968-90), 6,110 ft³/s, 4,427,000 acre-ft/yr, adjusted for diversions, storage, and unreviewed evaporation from Lake Oroville, Thermalito diversion pool, Thermalito Forebay, and Thermalito Afterbay; unadjusted flow for same period was 1,025 ft³/s, 742,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge observed, 230,000 ft³/s Mar. 19, 1907, elevation, 167.5 ft above National Geodetic Vertical Datum of 1929 site and datum then in use; maximum stage, 23.22 ft, Feb. 18, 1986, present site and datum; minimum daily, 89 ft³/s, Sept. 19, 1972.

Combined flow (since completion of Oroville Dam): Maximum discharge, 134,000 ft³/s, Feb. 18, 1986; minimum daily, 222 ft³/s, Sept. 19, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of February 1881 reached a stage of 25 ft from floodmarks, site and datum in use from Dec. 16, 1912, to Sept. 30, 1934.

EXTREMES FOR CURRENT YEAR.--River only: Maximum daily discharge, 698 ft³/s, July 3; minimum daily, 521 ft³/s, Sept. 28.

Combined flow: Maximum daily discharge, 789 ft³/s, July 3; minimum daily, 607 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 614 | 627 | 630 | 632 | 647 | 632 | 647 | 654 | 627 | 637 | 634 | 618 |
| 2 | 614 | 631 | 632 | 627 | 642 | 637 | 641 | 643 | 626 | 639 | 637 | 611 |
| 3 | 616 | 626 | 632 | 632 | 643 | 641 | 644 | 628 | 626 | 789 | 638 | 610 |
| 4 | 617 | 623 | 631 | 662 | 640 | 641 | 659 | 632 | 618 | 627 | 628 | 610 |
| 5 | 617 | 625 | 635 | 658 | 645 | 638 | 651 | 633 | 621 | 628 | 626 | 612 |
| 6 | 618 | 624 | 637 | 655 | 646 | 642 | 645 | 635 | 628 | 628 | 633 | 610 |
| 7 | 618 | 627 | 634 | 652 | 639 | 642 | 648 | 642 | 628 | 631 | 624 | 612 |
| 8 | 614 | 648 | 637 | 636 | 644 | 642 | 657 | 633 | 627 | 626 | 627 | 614 |
| 9 | 609 | 627 | 642 | 636 | 645 | 638 | 643 | 663 | 628 | 629 | 634 | 620 |
| 10 | 610 | 627 | 637 | 640 | 645 | 642 | 639 | 628 | 618 | 624 | 625 | 612 |
| 11 | 614 | 629 | 638 | 635 | 647 | 643 | 643 | 628 | 620 | 629 | 626 | 618 |
| 12 | 631 | 638 | 629 | 642 | 646 | 638 | 642 | 629 | 624 | 616 | 628 | 613 |
| 13 | 627 | 637 | 639 | 644 | 645 | 638 | 639 | 630 | 625 | 616 | 618 | 612 |
| 14 | 618 | 626 | 643 | 647 | 642 | 638 | 663 | 625 | 626 | 617 | 624 | 611 |
| 15 | 625 | 667 | 642 | 642 | 643 | 638 | 652 | 631 | 627 | 616 | 633 | 613 |
| 16 | 625 | 678 | 642 | 645 | 646 | 636 | 624 | 623 | 627 | 617 | 636 | 615 |
| 17 | 625 | 663 | 638 | 638 | 651 | 640 | 631 | 631 | 624 | 618 | 625 | 615 |
| 18 | 627 | 621 | 632 | 639 | 655 | 646 | 628 | 628 | 623 | 619 | 622 | 612 |
| 19 | 627 | 625 | 632 | 642 | 645 | 642 | 629 | 650 | 622 | 623 | 622 | 611 |
| 20 | 629 | 627 | 634 | 643 | 644 | 637 | 627 | 625 | 624 | 623 | 622 | 610 |
| 21 | 629 | 627 | 639 | 638 | 648 | 632 | 635 | 623 | 627 | 620 | 622 | 612 |
| 22 | 630 | 629 | 637 | 639 | 642 | 634 | 677 | 628 | 627 | 620 | 621 | 614 |
| 23 | 630 | 628 | 642 | 639 | 644 | 634 | 681 | 633 | 627 | 633 | 622 | 615 |
| 24 | 631 | 632 | 639 | 660 | 646 | 633 | 660 | 627 | 627 | 640 | 621 | 608 |
| 25 | 630 | 630 | 638 | 639 | 635 | 643 | 664 | 624 | 627 | 641 | 621 | 620 |
| 26 | 625 | 628 | 632 | 640 | 639 | 643 | 666 | 628 | 630 | 636 | 621 | 621 |
| 27 | 623 | 626 | 630 | 634 | 639 | 642 | 651 | 632 | 647 | 640 | 618 | 619 |
| 28 | 625 | 625 | 635 | 636 | 631 | 641 | 633 | 626 | 644 | 632 | 614 | 607 |
| 29 | 630 | 624 | 633 | 642 | --- | 640 | 658 | 620 | 630 | 634 | 619 | 610 |
| 30 | 633 | 624 | 636 | 646 | --- | 634 | 624 | 629 | 630 | 634 | 618 | 610 |
| 31 | 627 | --- | 641 | 652 | --- | 649 | --- | 628 | --- | 640 | 617 | --- |
| TOTAL | 19308 | 18969 | 19718 | 19912 | 18024 | 19816 | 19401 | 19589 | 18805 | 19622 | 19376 | 18395 |
| MEAN | 623 | 632 | 636 | 642 | 644 | 639 | 647 | 632 | 627 | 633 | 625 | 613 |
| MAX | 633 | 678 | 643 | 662 | 655 | 649 | 681 | 663 | 647 | 789 | 638 | 621 |
| MIN | 609 | 621 | 629 | 627 | 631 | 632 | 624 | 620 | 618 | 616 | 614 | 607 |
| AC-FT | 38300 | 37630 | 39110 | 39500 | 35750 | 39310 | 38480 | 38850 | 37300 | 38920 | 38430 | 36490 |
| MEAN a | 2880 | 3076 | 2170 | 3281 | 2601 | 5215 | 3524 | 3085 | 2811 | 1764 | 1795 | 1777 |
| AC-FT a | 177100 | 183000 | 133400 | 201700 | 144400 | 320700 | 209700 | 189700 | 167300 | 108500 | 110400 | 105700 |

CAL YR 1989 TOTAL 241135 MEAN 661 MAX 2540 MIN 602 AC-FT 478300 MEAN a 4643 AC-FT a 3361000
WTR YR 1990 TOTAL 230935 MEAN 633 MAX 789 MIN 607 AC-FT 458100 MEAN a 2834 AC-FT a 2052000

a Adjusted for diversions in and out of, change in contents, and unreviewed evaporation from Lake Oroville, Thermalito diversion pool, Thermalito Forebay, and Thermalito Afterbay.

11407000 FEATHER RIVER AT OROVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1906-7, 1951 to current year.

CHEMICAL DATA: Water years 1906-7, 1951-77.

SPECIFIC CONDUCTANCE: Water years 1972-78.

WATER TEMPERATURE: Water years 1954 to current year.

SEDIMENT DATA: Water years 1957-79.

PERIOD OF DAILY RECORD.--

CHEMICAL DATA: January to December 1906.

SPECIFIC CONDUCTANCE: March 1972 to September 1978.

WATER TEMPERATURE: October 1953 to September 1954, November 1956 to current year.

SEDIMENT DATA: November 1956 to September 1979.

REVISED RECORDS.--WDR CA-74-2: 1966, sediment.

INSTRUMENTATION.--Water-temperature recorder October 1953 to September 1954, and since November 1956.

REMARKS.--Extremes affected by construction of Oroville Dam in 1967, and are given for two separate periods--water years 1954, 1957-67, and 1969 to current year.

COOPERATION.--Records provided by California Department of Water Resources and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: (water years 1954, 1957-67) Maximum, 27.0 °C, Sept. 10, 12, 1959; minimum, 1.5 °C, Dec. 27, 1959, Jan. 23-25, 1962.

WATER TEMPERATURE: (water years 1969-90) Maximum recorded, 20.0 °C, several days in 1977; minimum recorded, 6.5 °C, many days in 1971-73, 1974-75, 1979, and Feb. 19, 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 18.5 °C, July 22, Aug. 6-8; minimum recorded, 6.5 °C, Feb. 19.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|---------|------|----------|------|----------|------|---------|-----|----------|-----|-------|-----|
| | OCTOBER | | NOVEMBER | | DECEMBER | | JANUARY | | FEBRUARY | | MARCH | |
| 1 | 11.5 | 10.5 | 11.0 | 10.5 | 11.0 | 10.5 | 9.5 | 9.0 | 8.0 | 8.0 | 8.0 | 8.0 |
| 2 | 12.0 | 11.0 | 11.0 | 10.5 | 10.5 | 10.5 | 9.0 | 9.0 | 8.5 | 8.0 | 8.0 | 8.0 |
| 3 | 11.0 | 9.5 | 11.0 | 10.5 | 10.5 | 10.5 | 9.5 | 9.0 | 8.5 | 8.0 | 8.0 | 8.0 |
| 4 | 10.0 | 9.5 | 11.0 | 10.5 | 10.5 | 10.5 | 9.5 | 9.0 | 8.5 | 8.0 | 10.0 | 8.0 |
| 5 | 10.0 | 9.5 | 11.0 | 10.5 | 10.5 | 10.0 | 9.0 | 9.0 | 8.5 | 8.0 | 10.0 | 9.5 |
| 6 | 9.5 | 9.5 | 11.0 | 10.5 | 10.0 | 9.5 | 9.0 | 9.0 | 8.5 | 8.5 | 10.0 | 9.0 |
| 7 | 10.0 | 9.5 | 11.0 | 10.5 | 10.0 | 10.0 | 9.0 | 8.5 | 8.5 | 8.0 | 9.0 | 8.5 |
| 8 | 10.5 | 9.5 | 11.0 | 10.5 | 10.0 | 9.5 | 9.0 | 8.5 | 8.5 | 8.0 | 8.5 | 8.0 |
| 9 | 10.5 | 10.0 | 11.0 | 10.5 | 10.0 | 10.0 | 9.0 | 9.0 | 8.5 | 8.0 | 8.0 | 8.0 |
| 10 | 10.5 | 10.0 | 11.0 | 10.5 | 10.0 | 9.5 | 9.0 | 9.0 | 8.5 | 8.0 | 8.0 | 8.0 |
| 11 | 10.0 | 10.0 | 10.5 | 10.5 | 10.0 | 9.5 | 9.0 | 9.0 | 8.5 | 8.5 | 9.0 | 8.0 |
| 12 | 10.0 | 10.0 | 11.0 | 10.5 | 10.0 | 10.0 | 9.0 | 9.0 | 9.0 | 8.5 | 9.5 | 9.0 |
| 13 | 10.5 | 10.0 | 11.0 | 10.5 | 10.0 | 9.5 | 9.0 | 9.0 | 9.0 | 8.5 | 9.0 | 8.0 |
| 14 | 10.0 | 10.0 | 11.0 | 11.0 | 10.0 | 9.5 | 9.5 | 9.0 | 8.5 | 8.0 | 8.5 | 8.0 |
| 15 | 11.0 | 10.0 | 11.0 | 11.0 | 10.0 | 9.5 | 9.5 | 9.5 | 8.0 | 8.0 | 8.5 | 8.0 |
| 16 | 11.0 | 10.5 | 11.0 | 11.0 | 9.5 | 9.5 | 9.5 | 9.0 | 8.0 | 8.0 | 8.5 | 8.0 |
| 17 | 10.5 | 10.5 | 11.0 | 10.5 | 9.5 | 9.5 | 9.0 | 8.5 | 8.0 | 7.0 | 8.5 | 8.5 |
| 18 | 10.5 | 10.5 | 11.0 | 10.5 | 9.5 | 9.5 | 9.0 | 8.5 | 7.0 | 7.0 | 10.0 | 8.5 |
| 19 | 10.5 | 10.5 | 11.0 | 11.0 | 9.5 | 9.5 | 9.0 | 9.0 | 7.0 | 6.5 | 10.5 | 9.5 |
| 20 | 11.0 | 10.5 | 11.0 | 10.5 | 9.5 | 9.5 | 9.0 | 8.5 | 7.0 | 7.0 | 9.5 | 8.5 |
| 21 | 10.5 | 10.5 | 11.0 | 10.5 | 9.5 | 9.5 | 9.0 | 8.5 | 8.0 | 7.0 | 9.0 | 8.5 |
| 22 | 10.5 | 10.5 | 11.0 | 11.0 | 9.5 | 9.5 | 8.5 | 8.5 | 8.0 | 7.0 | 8.5 | 8.5 |
| 23 | 10.5 | 10.5 | 11.0 | 11.0 | 9.5 | 9.5 | 8.5 | 8.5 | 8.0 | 8.0 | 8.5 | 8.5 |
| 24 | 10.5 | 10.5 | 11.0 | 11.0 | 9.5 | 9.5 | 8.5 | 8.5 | 8.0 | 8.0 | 8.5 | 8.5 |
| 25 | 11.0 | 10.5 | 11.0 | 10.5 | 9.5 | 9.0 | 8.5 | 8.5 | 9.0 | 8.0 | 9.0 | 8.5 |
| 26 | 10.5 | 10.5 | 10.5 | 10.5 | 9.0 | 9.0 | 8.5 | 8.5 | 9.0 | 8.5 | 9.5 | 8.5 |
| 27 | 11.0 | 10.5 | 10.5 | 10.0 | 9.5 | 9.0 | 8.5 | 8.5 | 8.5 | 8.0 | 9.0 | 8.5 |
| 28 | 11.0 | 10.5 | 11.0 | 10.5 | 9.5 | 9.5 | 8.5 | 8.5 | 8.5 | 8.0 | 9.0 | 8.5 |
| 29 | 11.0 | 10.5 | 11.0 | 10.5 | 9.5 | 9.5 | 8.5 | 8.0 | --- | --- | 9.0 | 8.5 |
| 30 | 11.0 | 10.5 | 11.0 | 10.5 | 9.5 | 9.5 | 8.5 | 8.0 | --- | --- | 9.5 | 8.5 |
| 31 | 11.0 | 10.5 | --- | --- | 9.5 | 9.5 | 8.5 | 8.0 | --- | --- | 10.0 | 9.5 |
| MONTH | 12.0 | 9.5 | 11.0 | 10.0 | 11.0 | 9.0 | 9.5 | 8.0 | 9.0 | 6.5 | 10.5 | 8.0 |

SACRAMENTO RIVER BASIN

11407000 FEATHER RIVER AT OROVILLE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|-------|------|------|------|------|------|------|------|--------|------|-----------|------|
| | APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
| 1 | 10.5 | 9.5 | 11.5 | 11.0 | 13.0 | 11.5 | 15.0 | 14.0 | 18.0 | 17.0 | 14.0 | 13.5 |
| 2 | 10.5 | 9.5 | 11.0 | 10.5 | 13.0 | 13.0 | 15.0 | 13.5 | 18.0 | 17.0 | 14.5 | 13.5 |
| 3 | 10.0 | 10.0 | 11.5 | 10.5 | 14.0 | 12.0 | 14.0 | 13.0 | 18.0 | 17.0 | 14.5 | 13.5 |
| 4 | 10.5 | 10.0 | 11.0 | 10.5 | 14.0 | 13.0 | 13.5 | 13.0 | 17.0 | 16.5 | 14.0 | 13.5 |
| 5 | 10.5 | 9.5 | 11.0 | 10.5 | 14.0 | 12.0 | 14.0 | 13.5 | 17.0 | 16.0 | 14.5 | 13.5 |
| 6 | 10.5 | 10.0 | 11.0 | 10.5 | 13.0 | 12.0 | 14.0 | 14.0 | 18.5 | 16.0 | 14.5 | 14.0 |
| 7 | 10.0 | 10.0 | 11.5 | 11.0 | 14.0 | 13.0 | 14.5 | 14.0 | 18.5 | 17.0 | 14.0 | 13.0 |
| 8 | 10.0 | 9.5 | 11.5 | 11.5 | 13.5 | 13.0 | 15.0 | 14.5 | 18.5 | 16.5 | 14.0 | 12.0 |
| 9 | 10.5 | 10.0 | 12.0 | 11.5 | 13.5 | 13.0 | 15.0 | 14.0 | 17.0 | 15.5 | 14.0 | 13.0 |
| 10 | 10.5 | 10.0 | 12.0 | 11.0 | 14.5 | 13.0 | 14.5 | 14.0 | 16.5 | 16.0 | 14.0 | 13.0 |
| 11 | 11.0 | 10.5 | 11.5 | 11.0 | 15.0 | 13.0 | 14.5 | 14.0 | 16.5 | 14.5 | 14.0 | 13.0 |
| 12 | 11.0 | 10.5 | 12.0 | 11.0 | 14.0 | 13.0 | 15.0 | 14.5 | 16.5 | 15.5 | 14.0 | 13.5 |
| 13 | 11.5 | 10.5 | 12.0 | 11.0 | 13.5 | 13.0 | 15.5 | 15.0 | 16.5 | 15.5 | 14.5 | 13.5 |
| 14 | 11.0 | 10.0 | 12.0 | 11.0 | 13.5 | 13.0 | 15.5 | 14.5 | 16.5 | 15.0 | 14.5 | 12.0 |
| 15 | 12.0 | 10.5 | 12.0 | 11.5 | 13.5 | 12.0 | 15.0 | 14.5 | 16.0 | 14.5 | 13.5 | 12.0 |
| 16 | 12.0 | 10.5 | 12.0 | 12.0 | 13.5 | 13.0 | 16.5 | 15.0 | 16.0 | 15.5 | 12.0 | 12.0 |
| 17 | 11.0 | 10.0 | 12.0 | 12.0 | 14.0 | 13.0 | 15.5 | 15.0 | 17.0 | 15.5 | 12.0 | 11.5 |
| 18 | 11.5 | 11.0 | 13.0 | 12.0 | 14.5 | 13.5 | 15.5 | 14.5 | 16.5 | 15.5 | 12.0 | 11.0 |
| 19 | 11.5 | 11.0 | 13.5 | 12.0 | 14.5 | 13.5 | 16.0 | 15.0 | 16.0 | 13.5 | 13.5 | 11.5 |
| 20 | 11.5 | 10.5 | 13.5 | 12.0 | 14.5 | 14.0 | 17.0 | 16.0 | 15.0 | 13.5 | 14.0 | 11.5 |
| 21 | 11.5 | 11.5 | 12.0 | 11.5 | 14.0 | 13.5 | 18.0 | 17.0 | 16.0 | 14.0 | 14.0 | 13.0 |
| 22 | 11.5 | 11.5 | 13.0 | 12.0 | 14.0 | 13.5 | 18.5 | 17.0 | 16.0 | 15.0 | 14.0 | 13.0 |
| 23 | 11.5 | 9.0 | 13.0 | 13.0 | 14.0 | 14.0 | 17.0 | 16.0 | 16.5 | 15.5 | 13.5 | 13.0 |
| 24 | 11.0 | 9.0 | 13.0 | 13.0 | 15.5 | 14.5 | 16.5 | 16.0 | 16.5 | 15.5 | 13.5 | 13.0 |
| 25 | 11.5 | 11.0 | 13.5 | 13.0 | 16.5 | 14.5 | 17.0 | 16.0 | 15.5 | 14.0 | 14.0 | 13.0 |
| 26 | 11.5 | 11.0 | 14.5 | 13.5 | 14.5 | 14.0 | 17.0 | 16.5 | 15.5 | 14.5 | 13.5 | 13.0 |
| 27 | 11.5 | 11.0 | 15.5 | 14.5 | 14.5 | 14.5 | 16.5 | 16.0 | 15.0 | 13.5 | 13.5 | 13.0 |
| 28 | 11.0 | 10.5 | 15.5 | 15.5 | 14.5 | 14.5 | 16.5 | 16.0 | 15.0 | 13.5 | 13.5 | 12.0 |
| 29 | 11.0 | 10.0 | 15.5 | 13.0 | 15.0 | 13.5 | 16.5 | 15.5 | 15.0 | 14.0 | 13.5 | 12.0 |
| 30 | 11.0 | 10.0 | 13.0 | 11.5 | 14.5 | 13.0 | 17.0 | 15.5 | 15.0 | 14.5 | 13.0 | 12.0 |
| 31 | --- | --- | 11.5 | 11.5 | --- | --- | 18.0 | 16.5 | 14.5 | 14.0 | --- | --- |
| MONTH | 12.0 | 9.0 | 15.5 | 10.5 | 16.5 | 11.5 | 18.5 | 13.0 | 18.5 | 13.5 | 14.5 | 11.0 |

11407150 FEATHER RIVER NEAR GRIDLEY, CA

LOCATION.--Lat 39°22'00", long 121°38'46", in Boga Fernandez Grant, T.18 N., R.3 E., Butte County, Hydrologic Unit 18020106, on right bank 300 ft upstream from highway bridge and 2.7 mi east of Gridley.

DRAINAGE AREA.--3,676 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1964 to current year. January 1944 to September 1964 are published in reports by California Department of Water Resources.

REVISED RECORDS.--WDR CA-80-4: 1967(M), 1968(M).

GAGE.--Water-stage recorder. Datum of gage is 2.91 ft below National Geodetic Vertical Datum of 1929. Prior to Mar. 13, 1966, water-stage recorder on left bank, at same datum. Mar. 14, 1966, to Sept. 30, 1973, gage at present location, with datum 47.09 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Lake Oroville since November 1967 (station 11406800) and Thermalito Afterbay release to the Feather River since December 1968 (station 11406920). See schematic diagrams showing diversions and storage from Feather River at Lake Oroville and lower Sacramento River basin.

AVERAGE DISCHARGE.--26 years, 4,962 ft³/s, 3,595,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 151,000 ft³/s, Dec. 23, 1964, gage height, 100.43 ft, present datum; minimum daily, 117 ft³/s, June 27, 1966. Since completion of Oroville Dam in 1967, maximum discharge, 150,000 ft³/s, Feb. 19, 1986, gage height, 100.06 ft; minimum daily, 366 ft³/s, July 26, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 102.25 ft, present datum, discharge unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,790 ft³/s, Apr. 5, gage height, 78.33 ft; minimum daily, 856 ft³/s, June 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|-------|--------|--------|--------|-------|--------|--------|-------|
| 1 | 2470 | 2390 | 3120 | 7400 | 2260 | 1480 | 6630 | 1740 | 871 | 1370 | 2640 | 930 |
| 2 | 2480 | 2390 | 4220 | 7040 | 2360 | 1490 | 6700 | 1550 | 871 | 1370 | 3110 | 921 |
| 3 | 2480 | 2390 | 4390 | 6880 | 2230 | 1510 | 6670 | 1360 | 875 | 1410 | 4010 | 916 |
| 4 | 2480 | 2370 | 4440 | 6570 | 2020 | 1510 | 6980 | 1400 | 865 | 978 | 5040 | 922 |
| 5 | 2460 | 2370 | 4470 | 6570 | 1830 | 1480 | 7730 | 1780 | 856 | 885 | 5950 | 923 |
| 6 | 3190 | 2380 | 5080 | 6560 | 1650 | 1480 | 7670 | 1780 | 863 | 883 | 6040 | 917 |
| 7 | 3400 | 2380 | 6290 | 6560 | 1550 | 1490 | 7650 | 2080 | 864 | 883 | 5570 | 917 |
| 8 | 3390 | 2400 | 6480 | 5310 | 1560 | 1490 | 7560 | 2870 | 894 | 1070 | 5460 | 923 |
| 9 | 3420 | 2360 | 6470 | 3690 | 1570 | 1470 | 7640 | 2920 | 904 | 1920 | 5460 | 918 |
| 10 | 3740 | 2380 | 6570 | 2240 | 1560 | 1500 | 7660 | 3000 | 897 | 2010 | 5450 | 916 |
| 11 | 4530 | 2360 | 6450 | 2020 | 1540 | 1480 | 7630 | 3330 | 890 | 2010 | 5430 | 921 |
| 12 | 4530 | 2340 | 6190 | 1850 | 1530 | 1470 | 7490 | 3340 | 886 | 2000 | 5400 | 917 |
| 13 | 4520 | 2370 | 5820 | 1730 | 1530 | 1470 | 7390 | 3340 | 890 | 2370 | 5370 | 914 |
| 14 | 4080 | 2360 | 5760 | 1730 | 1520 | 1460 | 7230 | 3340 | 892 | 2900 | 4900 | 912 |
| 15 | 2760 | 2390 | 5720 | 1690 | 1520 | 1460 | 7190 | 3350 | 894 | 2960 | 4420 | 910 |
| 16 | 2760 | 2390 | 5670 | 1670 | 1610 | 1460 | 7210 | 3350 | 895 | 3360 | 4360 | 903 |
| 17 | 2750 | 2400 | 5590 | 1660 | 1610 | 1460 | 7220 | 3120 | 883 | 3440 | 4340 | 910 |
| 18 | 2750 | 2350 | 5540 | 1640 | 1540 | 1460 | 7210 | 2280 | 888 | 3830 | 3930 | 914 |
| 19 | 2770 | 2330 | 5520 | 1650 | 1540 | 1470 | 7220 | 2120 | 876 | 3890 | 3460 | 912 |
| 20 | 2740 | 2320 | 5530 | 1640 | 1530 | 2320 | 7230 | 2020 | 879 | 3870 | 2820 | 1090 |
| 21 | 2750 | 2330 | 5570 | 1650 | 1550 | 2470 | 7210 | 1900 | 884 | 3890 | 2230 | 1140 |
| 22 | 2750 | 2330 | 5520 | 1640 | 1510 | 2480 | 7180 | 1730 | 902 | 3850 | 2130 | 1160 |
| 23 | 2800 | 2310 | 5510 | 1640 | 1510 | 3170 | 7210 | 1560 | 879 | 3870 | 1890 | 1150 |
| 24 | 2700 | 2320 | 5910 | 1650 | 1510 | 3300 | 7130 | 1350 | 883 | 3710 | 1700 | 1150 |
| 25 | 2240 | 2340 | 5970 | 1650 | 1490 | 3290 | 7150 | 1150 | 883 | 2960 | 1480 | 1130 |
| 26 | 2020 | 2320 | 6200 | 1610 | 1500 | 3300 | 5770 | 995 | 879 | 2740 | 1280 | 1160 |
| 27 | 1830 | 2290 | 6750 | 1590 | 1500 | 4740 | 3220 | 939 | 885 | 2650 | 1100 | 1180 |
| 28 | 1620 | 2290 | 7560 | 1610 | 1480 | 5030 | 2330 | 923 | 905 | 2480 | 960 | 1170 |
| 29 | 1620 | 2290 | 7710 | 1610 | --- | 5020 | 2110 | 892 | 1280 | 2460 | 930 | 1150 |
| 30 | 1880 | 2300 | 7700 | 1630 | --- | 5540 | 1920 | 897 | 1370 | 2470 | 937 | 1160 |
| 31 | 2370 | --- | 7640 | 1610 | --- | 6460 | --- | 880 | --- | 2490 | 931 | --- |
| TOTAL | 88280 | 70540 | 181360 | 93990 | 46110 | 75210 | 197140 | 63286 | 27383 | 76979 | 108728 | 30056 |
| MEAN | 2848 | 2351 | 5850 | 3032 | 1647 | 2426 | 6571 | 2041 | 913 | 2483 | 3507 | 1002 |
| MAX | 4530 | 2400 | 7710 | 7400 | 2360 | 6460 | 7730 | 3350 | 1370 | 3890 | 6040 | 1180 |
| MIN | 1620 | 2290 | 3120 | 1590 | 1480 | 1460 | 1920 | 880 | 856 | 883 | 930 | 903 |
| AC-FT | 175100 | 139900 | 359700 | 186400 | 91460 | 149200 | 391000 | 125500 | 54310 | 152700 | 215700 | 59620 |

CAL YR 1989 TOTAL 1122885 MEAN 3076 MAX 8130 MIN 908 AC-FT 2227000
WTR YR 1990 TOTAL 1059062 MEAN 2902 MAX 7730 MIN 856 AC-FT 2101000

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL DATA: Water years 1979-81.

WATER TEMPERATURE: Water years 1965 to current year.

SEDIMENT DATA: Water years 1965 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1964 to June 1978.

SUSPENDED-SEDIMENT DISCHARGE: October 1964 to current year.

REVISED RECORDS.--WDR CA-73-2: 1966, sediment. WDR CA-74-2: 1965, 1970, 1971, 1973, sediment.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE (water years 1965-69, 1971-78): Maximum recorded, 29.5 °C, June 25, 1977; minimum recorded, 4.0 °C, several days during December and January of most years.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,340 mg/L, Dec. 25, 1964; minimum daily mean, 0 mg/L, many days during the 1989 water year.

SEDIMENT LOAD: Maximum daily, 527,000 tons, Dec. 23, 1964; minimum daily, 0 tons, many days during the 1989 water year.

EXTREMES FOR CURRENT YEAR.--

SEDIMENT CONCENTRATION: Maximum daily mean, 17 mg/L, Mar. 30; minimum daily mean, 1 mg/L, Sept. 16-19.

SEDIMENT LOAD: Maximum daily, 254 tons, Mar. 30; minimum daily, 2.4 tons, Sept. 16.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | --- | --- | 13.0 | --- | --- | 11.0 | 13.0 | 18.0 | 17.0 | --- | 22.0 | --- |
| 2 | --- | --- | --- | --- | --- | 13.0 | --- | 17.0 | --- | --- | --- | --- |
| 3 | --- | --- | --- | --- | --- | --- | --- | 21.5 | --- | --- | --- | --- |
| 4 | --- | 13.5 | --- | 8.5 | --- | --- | --- | --- | 20.5 | --- | 22.0 | 23.5 |
| 5 | 17.5 | 15.0 | --- | --- | --- | 10.5 | 13.5 | --- | --- | --- | --- | --- |
| 6 | --- | --- | --- | --- | --- | --- | 13.0 | --- | --- | --- | --- | 25.0 |
| 7 | 17.0 | 14.0 | --- | --- | --- | 12.0 | 13.5 | --- | --- | --- | 26.0 | --- |
| 8 | --- | 13.5 | --- | 10.5 | --- | 13.5 | --- | 18.5 | --- | --- | --- | 24.0 |
| 9 | 17.0 | 13.0 | --- | --- | --- | --- | 14.0 | 19.0 | --- | 24.5 | 22.0 | --- |
| 10 | 16.0 | 13.0 | --- | --- | --- | --- | 13.5 | 16.0 | --- | 21.5 | --- | --- |
| 11 | 16.0 | --- | --- | --- | --- | --- | --- | --- | 21.5 | --- | 24.0 | 23.5 |
| 12 | --- | --- | --- | --- | --- | --- | 12.5 | --- | --- | 22.0 | --- | 20.0 |
| 13 | 16.0 | --- | --- | --- | --- | 11.5 | 14.0 | --- | --- | --- | 22.0 | --- |
| 14 | --- | --- | --- | --- | --- | 12.0 | --- | 19.0 | --- | --- | --- | 21.5 |
| 15 | 16.0 | 12.0 | 10.5 | --- | --- | 10.5 | --- | 17.5 | --- | 22.5 | 22.0 | --- |
| 16 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17 | 15.0 | 13.0 | 10.0 | 10.0 | --- | --- | --- | --- | --- | 22.5 | 21.5 | 22.0 |
| 18 | --- | --- | --- | --- | --- | --- | 15.0 | --- | 21.5 | 22.5 | --- | --- |
| 19 | 13.5 | 13.0 | 9.0 | --- | --- | 12.5 | --- | --- | 22.0 | 22.0 | --- | --- |
| 20 | --- | --- | --- | --- | --- | 13.0 | 14.0 | --- | --- | 22.5 | --- | --- |
| 21 | 13.0 | 13.0 | 9.0 | --- | 9.5 | 16.5 | 15.5 | 15.5 | --- | 23.5 | --- | --- |
| 22 | --- | 13.0 | --- | --- | 9.5 | 14.0 | --- | 15.5 | --- | 24.0 | 24.5 | --- |
| 23 | 13.5 | --- | 8.5 | --- | 10.0 | 14.0 | --- | 15.0 | --- | 23.5 | --- | 21.0 |
| 24 | 14.0 | 13.0 | --- | --- | 11.5 | --- | 13.5 | 18.0 | --- | --- | --- | 21.0 |
| 25 | 14.0 | --- | 8.5 | --- | 11.0 | --- | 14.5 | 16.0 | --- | --- | 20.5 | 19.0 |
| 26 | 14.0 | 13.5 | --- | --- | 10.0 | 15.0 | 15.5 | --- | --- | --- | --- | --- |
| 27 | 14.0 | --- | --- | --- | 10.0 | --- | 14.5 | --- | --- | --- | 20.5 | --- |
| 28 | --- | 13.0 | --- | --- | 10.5 | 16.0 | --- | 18.0 | --- | --- | --- | --- |
| 29 | 14.5 | 13.0 | --- | --- | --- | 13.0 | 14.5 | 19.0 | --- | --- | --- | --- |
| 30 | --- | 10.5 | --- | --- | --- | 13.0 | 15.5 | 17.5 | --- | --- | 24.5 | --- |
| 31 | 15.0 | --- | --- | --- | --- | 14.0 | --- | 17.0 | --- | --- | --- | --- |

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | |
| 1 | 2470 | | 13 | 2390 | 4 | 26 | 3120 | 5 | 42 |
| 2 | 2480 | | 20 | 2390 | 4 | 26 | 4220 | 5 | 57 |
| 3 | 2480 | | 27 | 2390 | 5 | 32 | 4390 | 5 | 59 |
| 4 | 2480 | | 33 | 2370 | 5 | 32 | 4440 | 5 | 60 |
| 5 | 2460 | | 40 | 2370 | 6 | 38 | 4470 | 5 | 60 |
| 6 | 3190 | | 52 | 2380 | 6 | 39 | 5080 | 5 | 69 |
| 7 | 3400 | | 55 | 2380 | 7 | 45 | 6290 | 5 | 85 |
| 8 | 3390 | | 55 | 2400 | 5 | 32 | 6480 | 6 | 105 |
| 9 | 3420 | | 65 | 2360 | 3 | 19 | 6470 | 6 | 105 |
| 10 | 3740 | | 91 | 2380 | 2 | 13 | 6570 | 6 | 106 |
| 11 | 4530 | | 110 | 2360 | 2 | 13 | 6450 | 6 | 104 |
| 12 | 4530 | | 98 | 2340 | 2 | 13 | 6190 | 6 | 100 |
| 13 | 4520 | | 73 | 2370 | 3 | 19 | 5820 | 6 | 94 |
| 14 | 4080 | | 88 | 2360 | 3 | 19 | 5760 | 6 | 93 |
| 15 | 2760 | | 75 | 2390 | 3 | 19 | 5720 | 6 | 93 |
| 16 | 2760 | | 75 | 2390 | 9 | 58 | 5670 | 4 | 61 |
| 17 | 2750 | | 74 | 2400 | 14 | 91 | 5590 | 2 | 30 |
| 18 | 2750 | | 74 | 2350 | 9 | 57 | 5540 | 2 | 30 |
| 19 | 2770 | | 75 | 2330 | 4 | 25 | 5520 | 3 | 45 |
| 20 | 2740 | | 59 | 2320 | 4 | 25 | 5530 | 2 | 30 |
| 21 | 2750 | | 45 | 2330 | 4 | 25 | 5570 | 2 | 30 |
| 22 | 2750 | | 45 | 2330 | 3 | 19 | 5520 | 2 | 30 |
| 23 | 2800 | | 45 | 2310 | 3 | 19 | 5510 | 2 | 30 |
| 24 | 2700 | | 66 | 2320 | 3 | 19 | 5910 | 2 | 32 |
| 25 | 2240 | | 24 | 2340 | 2 | 13 | 5970 | 2 | 32 |
| 26 | 2020 | | 22 | 2320 | 2 | 13 | 6200 | 2 | 33 |
| 27 | 1830 | | 9.9 | 2290 | 2 | 12 | 6750 | 2 | 36 |
| 28 | 1620 | | 8.7 | 2290 | 3 | 19 | 7560 | 3 | 61 |
| 29 | 1620 | | 13 | 2290 | 3 | 19 | 7710 | 3 | 62 |
| 30 | 1880 | | 20 | 2300 | 4 | 25 | 7700 | 4 | 83 |
| 31 | 2370 | | 26 | --- | --- | --- | 7640 | 4 | 83 |
| TOTAL | 88280 | --- | 1576.6 | 70540 | --- | 824 | 181360 | --- | 1940 |
| JANUARY | | | FEBRUARY | | | MARCH | | | |
| 1 | 7400 | | 80 | 2260 | --- | e37 | 1480 | 4 | 16 |
| 2 | 7040 | | 95 | 2360 | --- | e45 | 1490 | 5 | 20 |
| 3 | 6880 | | 93 | 2230 | --- | e36 | 1510 | 5 | 20 |
| 4 | 6570 | | 89 | 2020 | --- | e33 | 1510 | 6 | 24 |
| 5 | 6570 | | 89 | 1830 | --- | e25 | 1480 | 6 | 24 |
| 6 | 6560 | | 106 | 1650 | --- | e18 | 1480 | 6 | 24 |
| 7 | 6560 | | 106 | 1550 | --- | e17 | 1490 | 6 | 24 |
| 8 | 5310 | | 86 | 1560 | --- | e17 | 1490 | 7 | 28 |
| 9 | 3690 | --- | e60 | 1570 | --- | e17 | 1470 | 7 | 28 |
| 10 | 2240 | --- | e30 | 1560 | --- | e17 | 1500 | 7 | 28 |
| 11 | 2020 | --- | e27 | 1540 | --- | e17 | 1480 | 6 | 24 |
| 12 | 1850 | --- | e25 | 1530 | --- | e17 | 1470 | 6 | 24 |
| 13 | 1730 | --- | e19 | 1530 | --- | e17 | 1470 | 6 | 24 |
| 14 | 1730 | --- | e19 | 1520 | --- | e16 | 1460 | 5 | 20 |
| 15 | 1690 | --- | e18 | 1520 | --- | e16 | 1460 | 6 | 24 |
| 16 | 1670 | --- | e14 | 1610 | --- | e17 | 1460 | 5 | 20 |
| 17 | 1660 | --- | e13 | 1610 | --- | e17 | 1460 | 5 | 20 |
| 18 | 1640 | --- | e13 | 1540 | --- | e17 | 1460 | 5 | 20 |
| 19 | 1650 | --- | e13 | 1540 | --- | e17 | 1470 | 4 | 16 |
| 20 | 1640 | --- | e13 | 1530 | --- | e17 | 2320 | 7 | 44 |
| 21 | 1650 | --- | e13 | 1550 | 3 | 13 | 2470 | 7 | 47 |
| 22 | 1640 | --- | e13 | 1510 | 4 | 16 | 2480 | 9 | 60 |
| 23 | 1640 | --- | e13 | 1510 | 4 | 16 | 3170 | 16 | 137 |
| 24 | 1650 | --- | e13 | 1510 | 6 | 24 | 3300 | 14 | 125 |
| 25 | 1650 | --- | e18 | 1490 | 4 | 16 | 3290 | 14 | 124 |
| 26 | 1610 | --- | e17 | 1500 | 4 | 16 | 3300 | 12 | 107 |
| 27 | 1590 | --- | e17 | 1500 | 3 | 12 | 4740 | 13 | 166 |
| 28 | 1610 | --- | e17 | 1480 | 4 | 16 | 5030 | 14 | 190 |
| 29 | 1610 | --- | e17 | --- | --- | --- | 5020 | 13 | 176 |
| 30 | 1630 | --- | e18 | --- | --- | --- | 5540 | 17 | 254 |
| 31 | 1610 | --- | e17 | --- | --- | --- | 6460 | 12 | 209 |
| TOTAL | 93990 | --- | 1181 | 46110 | --- | 559 | 75210 | --- | 2067 |

e Estimated.

SACRAMENTO RIVER BASIN

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|-------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| APRIL | | | MAY | | | JUNE | | | |
| 1 | 6630 | 14 | 251 | 1740 | 7 | 33 | 871 | 6 | 14 |
| 2 | 6700 | 13 | 235 | 1550 | 4 | 17 | 871 | 6 | 14 |
| 3 | 6670 | 12 | 216 | 1360 | 5 | 18 | 875 | 6 | 14 |
| 4 | 6980 | 11 | 207 | 1400 | 5 | 19 | 865 | 6 | 14 |
| 5 | 7730 | 10 | 209 | 1780 | 6 | 29 | 856 | 6 | 14 |
| 6 | 7670 | 10 | 207 | 1780 | 7 | 34 | 863 | 6 | 14 |
| 7 | 7650 | 12 | 248 | 2080 | 8 | 45 | 864 | 6 | 14 |
| 8 | 7560 | 11 | 225 | 2870 | 8 | 62 | 894 | 6 | 14 |
| 9 | 7640 | 10 | 206 | 2920 | 10 | 79 | 904 | 6 | 15 |
| 10 | 7660 | 12 | 248 | 3000 | 10 | 81 | 897 | 6 | 15 |
| 11 | 7630 | 9 | 185 | 3330 | 10 | 90 | 890 | 6 | 14 |
| 12 | 7490 | 6 | 121 | 3340 | 10 | 90 | 886 | 6 | 14 |
| 13 | 7390 | 4 | 80 | 3340 | 11 | 99 | 890 | 6 | 14 |
| 14 | 7230 | 4 | 78 | 3340 | 11 | 99 | 892 | 6 | 14 |
| 15 | 7190 | 5 | 97 | 3350 | 12 | 109 | 894 | 6 | 14 |
| 16 | 7210 | 5 | 97 | 3350 | 12 | 109 | 895 | 6 | 14 |
| 17 | 7220 | 6 | 117 | 3120 | 13 | 110 | 883 | 6 | 14 |
| 18 | 7210 | 6 | 117 | 2280 | 13 | 80 | 888 | 6 | 14 |
| 19 | 7220 | 6 | 117 | 2120 | 13 | 74 | 876 | 8 | 19 |
| 20 | 7230 | 7 | 137 | 2020 | 14 | 76 | 879 | 8 | 19 |
| 21 | 7210 | 8 | 156 | 1900 | 14 | 72 | 884 | 8 | 19 |
| 22 | 7180 | 8 | 155 | 1730 | 6 | 28 | 902 | 8 | 19 |
| 23 | 7210 | 9 | 175 | 1560 | 6 | 25 | 879 | 8 | 19 |
| 24 | 7130 | 9 | 173 | 1350 | 6 | 22 | 883 | 8 | 19 |
| 25 | 7150 | 6 | 116 | 1150 | 7 | 22 | 883 | 8 | 19 |
| 26 | 5770 | 10 | 156 | 995 | 7 | 19 | 879 | 8 | 19 |
| 27 | 3220 | 8 | 70 | 939 | 8 | 20 | 885 | 8 | 19 |
| 28 | 2330 | 6 | 38 | 923 | 8 | 20 | 905 | 8 | 20 |
| 29 | 2110 | 5 | 28 | 892 | 3 | 7.2 | 1280 | 8 | 28 |
| 30 | 1920 | 10 | 52 | 897 | 9 | 22 | 1370 | 7 | 26 |
| 31 | --- | --- | --- | 880 | 6 | 14 | --- | --- | --- |
| TOTAL | 197140 | --- | 4517 | 63286 | --- | 1624.2 | 27383 | --- | 499 |
| JULY | | | AUGUST | | | SEPTEMBER | | | |
| 1 | 1370 | 7 | 26 | 2640 | 5 | 36 | 930 | 3 | 7.5 |
| 2 | 1370 | 7 | 26 | 3110 | 5 | 42 | 921 | 3 | 7.5 |
| 3 | 1410 | 7 | 27 | 4010 | 6 | 65 | 916 | 4 | 9.9 |
| 4 | 978 | 7 | 18 | 5040 | 6 | 82 | 922 | 4 | 10 |
| 5 | 885 | 7 | 17 | 5950 | 7 | 112 | 923 | 4 | 10 |
| 6 | 883 | 7 | 17 | 6040 | 7 | 114 | 917 | 4 | 9.9 |
| 7 | 883 | 7 | 17 | 5570 | 8 | 120 | 917 | 3 | 7.4 |
| 8 | 1070 | 7 | 20 | 5460 | 8 | 118 | 923 | 2 | 5.0 |
| 9 | 1920 | 7 | 36 | 5460 | 8 | 118 | 918 | 2 | 5.0 |
| 10 | 2010 | 3 | 16 | 5450 | 6 | 88 | 916 | 2 | 4.9 |
| 11 | 2010 | 4 | 22 | 5430 | 4 | 59 | 921 | 2 | 5.0 |
| 12 | 2000 | 5 | 27 | 5400 | 4 | 58 | 917 | 2 | 5.0 |
| 13 | 2370 | 5 | 32 | 5370 | 5 | 72 | 914 | 2 | 4.9 |
| 14 | 2900 | 6 | 47 | 4900 | 5 | 66 | 912 | 2 | 4.9 |
| 15 | 2960 | 6 | 48 | 4420 | 5 | 60 | 910 | 2 | 4.9 |
| 16 | 3360 | 6 | 54 | 4360 | 4 | 47 | 903 | 1 | 2.4 |
| 17 | 3440 | 5 | 46 | 4340 | 4 | 47 | 910 | 1 | 2.5 |
| 18 | 3830 | 5 | 52 | 3930 | 5 | 53 | 914 | 1 | 2.5 |
| 19 | 3890 | 6 | 63 | 3460 | 6 | 56 | 912 | 1 | 2.5 |
| 20 | 3870 | 5 | 52 | 2820 | 6 | 46 | 1090 | 2 | 5.9 |
| 21 | 3890 | 5 | 53 | 2230 | 7 | 42 | 1140 | 2 | 6.2 |
| 22 | 3850 | 4 | 42 | 2130 | 8 | 46 | 1160 | 2 | 6.3 |
| 23 | 3870 | 6 | 63 | 1890 | 7 | 36 | 1150 | 2 | 6.2 |
| 24 | 3710 | 6 | 60 | 1700 | 7 | 32 | 1150 | 2 | 6.2 |
| 25 | 2960 | 6 | 48 | 1480 | 6 | 24 | 1130 | 3 | 9.2 |
| 26 | 2740 | 6 | 44 | 1280 | 9 | 31 | 1160 | 3 | 9.4 |
| 27 | 2650 | 6 | 43 | 1100 | 12 | 36 | 1180 | 3 | 9.6 |
| 28 | 2480 | 5 | 33 | 960 | 9 | 23 | 1170 | 3 | 9.5 |
| 29 | 2460 | 5 | 33 | 930 | 5 | 13 | 1150 | 3 | 9.3 |
| 30 | 2470 | 5 | 33 | 937 | 2 | 5.1 | 1160 | 3 | 9.4 |
| 31 | 2490 | 5 | 34 | 931 | 2 | 5.0 | --- | --- | --- |
| TOTAL | 76979 | --- | 1149 | 108728 | --- | 1752.1 | 30056 | --- | 198.9 |
| YEAR | 1059062 | | 17887.8 | | | | | | |

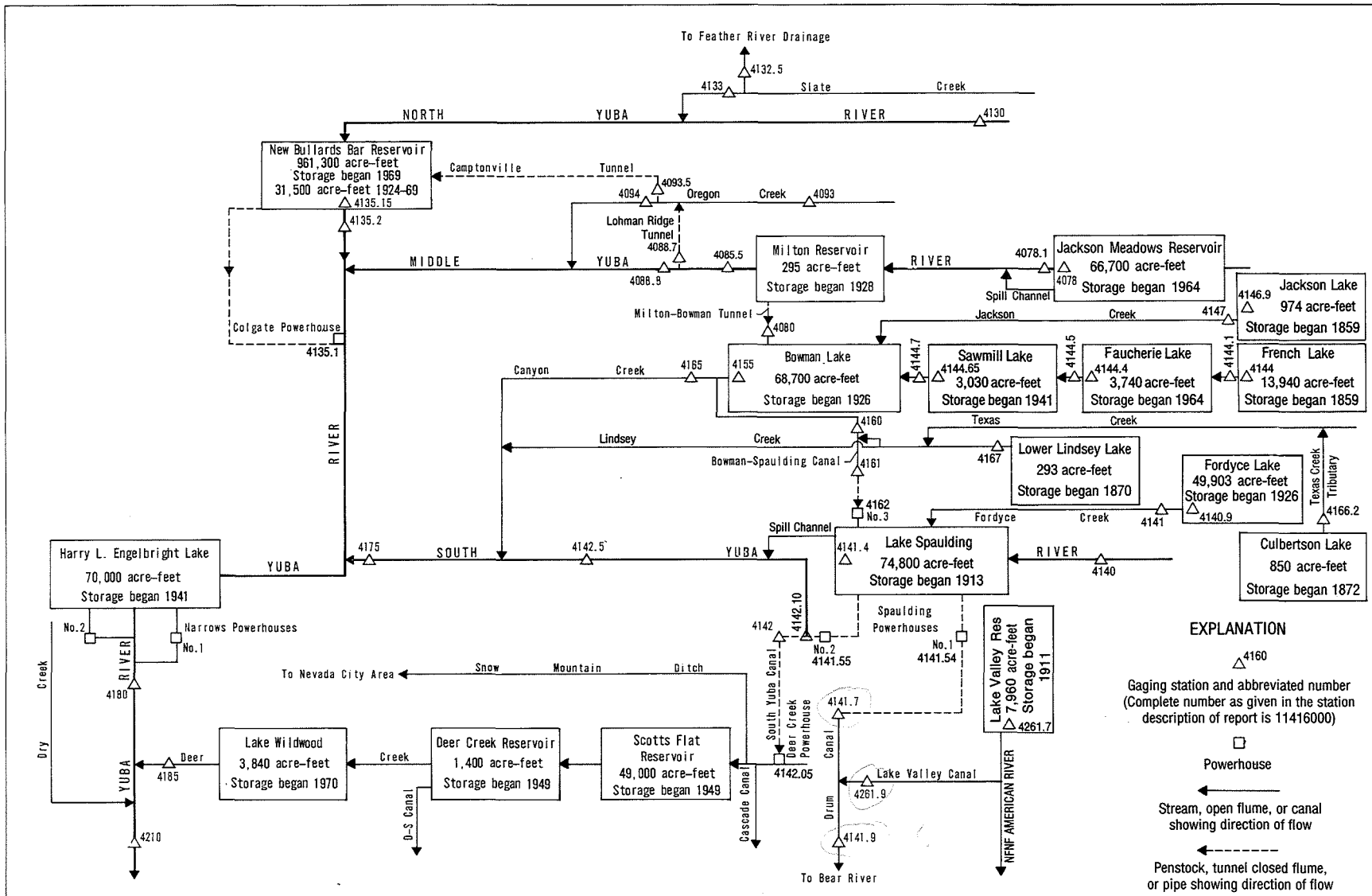


Figure 35. Diversions and storage in Yuba River basin.

SACRAMENTO RIVER BASIN

11407800 JACKSON MEADOWS RESERVOIR NEAR SIERRA CITY, CA

LOCATION.--Lat 39°30'33", Long 120°33'08", in NW 1/4 SE 1/4 sec.18, T.19 N., R.13 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank at Jackson Meadows Dam on Middle Yuba River, 0.7 mi downstream from Pass Creek, and 5.7 mi southeast of Sierra City.

DRAINAGE AREA.--37.6 mi².

PERIOD OF RECORD.--November 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Nov. 9, 1964. Usable capacity, 66,700 acre-ft between elevations 5,933.0 ft, bottom of intake tower, and 6,036.0 ft, top of radial spillway gates. Dead contents, 2,500 acre-ft. Records, including extremes, represent total contents. See schematic diagram of Yuba River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 71,000 acre-ft, several days in 1969-71, elevation, 6,037.7 ft; minimum since reservoir first filled, 2,500 acre-ft, Sept. 27-29, 1976, elevation, 5,933.1 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 63,700 acre-ft, June 27 to July 3, elevation, 6,030.69 ft; minimum, 25,400 acre-ft, Sept. 30, elevation, 5,986.74 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Nevada Irrigation District, dated February 1965)

| | | | |
|-------|--------|-------|--------|
| 5,930 | 2,000 | 5,990 | 27,600 |
| 5,940 | 3,920 | 6,000 | 35,300 |
| 5,950 | 6,760 | 6,010 | 43,900 |
| 5,960 | 10,600 | 6,020 | 53,200 |
| 5,970 | 15,400 | 6,030 | 63,000 |
| 5,980 | 21,000 | 6,040 | 73,500 |

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 47900 | 48700 | 43700 | 35300 | 37400 | 38700 | e38600 | 52700 | 60100 | 63700 | 53600 | 39000 |
| 2 | 48000 | 48700 | 43300 | 35300 | 37400 | 38700 | e38700 | 53100 | 60600 | 63700 | 53200 | 38600 |
| 3 | 48000 | 48700 | 43000 | 35300 | 37500 | 38700 | e38900 | 53500 | 61000 | 63700 | 52700 | 38100 |
| 4 | 48000 | 48700 | 42600 | 35300 | 37600 | 38700 | e39100 | 54100 | 61300 | 63600 | 52200 | 37600 |
| 5 | 48000 | 48700 | 42300 | 35300 | 37600 | 38700 | e39400 | 54500 | 61600 | 63600 | 51700 | 37200 |
| 6 | 47900 | 48700 | 41900 | 35300 | 37600 | 38700 | e39600 | 54900 | 61800 | 63600 | 51200 | 36700 |
| 7 | 47900 | 48700 | 41600 | 35500 | 37700 | 38600 | e39900 | 55300 | 62100 | 63600 | 50800 | 36200 |
| 8 | 47900 | 48800 | 41200 | 35800 | 37700 | 38600 | e40100 | 55500 | 62300 | 63600 | 50300 | 35700 |
| 9 | 47900 | 48800 | 40900 | 36000 | 37700 | 38400 | e40400 | 55900 | 62400 | 63600 | 49800 | 35300 |
| 10 | 47900 | 48800 | 40500 | 36100 | 37800 | e38400 | e40700 | 56100 | 62500 | 63500 | 49400 | 34800 |
| 11 | 47900 | 48800 | 40200 | 36100 | 37800 | e38300 | e41000 | 56400 | 62700 | 63200 | 48900 | 34300 |
| 12 | 47800 | 48800 | 39800 | 36200 | 37800 | e38300 | e41400 | 56600 | 62800 | 62900 | 48400 | 33800 |
| 13 | 47800 | 48800 | 39500 | 36400 | 37800 | e38200 | e42100 | 56800 | 62900 | 62500 | 48000 | 33300 |
| 14 | 47800 | 48800 | 39100 | 36500 | 37900 | e38100 | e42700 | 57000 | 63000 | 62000 | 47500 | 32800 |
| 15 | 47800 | 48700 | 38800 | 36600 | 37900 | e38000 | e43300 | 57000 | 63100 | 61600 | 47000 | 32300 |
| 16 | 47800 | 48400 | 38400 | 36700 | 38100 | e37900 | e43900 | 57000 | 63200 | 61200 | 46500 | 31900 |
| 17 | 47800 | 48100 | 38100 | 36700 | 38200 | e37700 | e44300 | 57000 | 63300 | 60800 | 46000 | 31400 |
| 18 | 47700 | 47700 | 37800 | 36800 | 38300 | e37700 | e45000 | 56900 | 63300 | 60300 | 45500 | 30900 |
| 19 | 47700 | 47400 | 37400 | 36800 | 38300 | e37700 | e45700 | 56800 | 63400 | 59800 | 45100 | 30400 |
| 20 | 47700 | 47100 | 37100 | 36800 | 38300 | e37600 | e46400 | 57000 | 63500 | 59300 | 44600 | 30000 |
| 21 | 47800 | 46700 | 36800 | 36900 | 38300 | e37600 | e47000 | 57200 | 63500 | 58900 | 44200 | 29500 |
| 22 | 47900 | 46400 | 36600 | 36900 | 38400 | e37600 | e47600 | 57200 | 63600 | 58400 | 43700 | 29000 |
| 23 | 48300 | 46000 | 36400 | 37000 | 38400 | e37600 | e48300 | 57400 | 63600 | 57900 | 43200 | 28500 |
| 24 | 48500 | 45800 | 36200 | 37000 | 38400 | e37700 | e48900 | 57500 | 63600 | 57400 | 42700 | 28100 |
| 25 | 48600 | 45700 | 36000 | 37000 | 38500 | e37800 | e49600 | 57600 | 63600 | 56900 | 42200 | 27600 |
| 26 | 48600 | 45400 | 35800 | 37100 | 38500 | e38000 | 50100 | 57700 | 63600 | 56500 | 41800 | 27200 |
| 27 | 48600 | 45100 | 35500 | 37100 | 38600 | e38100 | 50700 | 58100 | 63700 | 56000 | 41300 | 26700 |
| 28 | 48600 | 44700 | 35400 | 37100 | 38600 | e38100 | 51400 | 58200 | 63700 | 55500 | 40800 | 26200 |
| 29 | 48700 | 44400 | 35300 | 37200 | --- | e38200 | 51900 | 58400 | 63700 | 55100 | 40400 | 25800 |
| 30 | 48700 | 44000 | 35300 | 37300 | --- | e38200 | 52300 | 59100 | 63700 | 54600 | 39900 | 25400 |
| 31 | 48700 | --- | 35300 | 37300 | --- | e38400 | --- | 59500 | --- | 54100 | 39500 | --- |
| MAX | 48700 | 48800 | 43700 | 37300 | 38600 | 38700 | 52300 | 59500 | 63700 | 63700 | 53600 | 39000 |
| MIN | 47700 | 44000 | 35300 | 35300 | 37400 | 37600 | 38600 | 52700 | 60100 | 54100 | 39500 | 25400 |
| a | 6015.25 | 6010.10 | 5999.94 | 6002.40 | 6003.96 | 6003.66 | 6019.10 | 6026.57 | 6030.69 | 6020.99 | 6005.00 | 5986.74 |
| b | +800 | -4700 | -8700 | +2000 | +1300 | -200 | +13900 | +7200 | +4200 | -9600 | -14600 | -14100 |

CAL YR 1989 MAX 70700 MIN 14200 b +20700
WTR YR 1990 MAX 63700 MIN 25400 b -22500

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11407810 MIDDLE YUBA RIVER AT JACKSON MEADOWS DAM, NEAR SIERRA CITY, CA

LOCATION.--Lat 39°30'36", long 120°33'15", in NW 1/4 SE 1/4 sec.18, T.19 N., R.13 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, in outlet structure near right bank below Jackson Meadows Dam on Middle Yuba River, 0.7 mi downstream from Pass Creek, and 5.7 mi southeast of Sierra City.

DRAINAGE AREA.--37.6 mi².

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

GAGE.--Differential-pressure recorder and orifice control in outlet pipe. Elevation of gage is 5,910 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated by Jackson Meadows Reservoir (station 11407800). Flow over the spillway and large releases bypass this station. See schematic diagram of Yuba River basin.

COOPERATION.--Records provided by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 8.0 ft³/s, many days in 1989; minimum daily, 5.3 ft³/s, Jan. 19, 1989.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 7.3 | 7.4 | 7.1 | 6.8 | 6.8 | 6.9 | e6.9 | 7.4 | 7.6 | e7.8 | 7.6 | 7.0 |
| 2 | 7.3 | 7.4 | 7.1 | 6.8 | 6.8 | 6.9 | e6.9 | 7.5 | 7.7 | e7.8 | 7.6 | 7.0 |
| 3 | 7.3 | 7.4 | 7.1 | 6.8 | 6.8 | 6.9 | e6.9 | 7.5 | 7.7 | e7.8 | 7.5 | 7.0 |
| 4 | 7.3 | 7.3 | 7.1 | 6.8 | 6.8 | 6.9 | e6.9 | 7.5 | e7.7 | e7.8 | 7.5 | 7.0 |
| 5 | 7.3 | 7.3 | 7.1 | 6.8 | 6.8 | 6.9 | e6.9 | 7.6 | e7.7 | e7.8 | 7.5 | 6.9 |
| 6 | 7.3 | 7.3 | 7.1 | 6.8 | 6.8 | 6.9 | e6.9 | 7.6 | e7.7 | 7.8 | 7.5 | 6.9 |
| 7 | 7.3 | 7.3 | 7.0 | 6.7 | 6.8 | 6.9 | e6.9 | 7.6 | e7.7 | 7.8 | 7.5 | 6.9 |
| 8 | 7.3 | 7.3 | 7.0 | 6.7 | 6.8 | 6.9 | e7.1 | 7.6 | e7.7 | 7.8 | 7.4 | 6.9 |
| 9 | 7.3 | 7.3 | 7.0 | 6.7 | 6.8 | 6.9 | e7.1 | 7.6 | e7.7 | 7.8 | 7.4 | 6.8 |
| 10 | 7.3 | 7.3 | 7.0 | 6.8 | 6.8 | 6.9 | e7.1 | 7.6 | e7.7 | 7.8 | 7.4 | 6.8 |
| 11 | 7.3 | 7.3 | 7.0 | 6.8 | 6.8 | 6.9 | e7.1 | 7.6 | e7.7 | 7.8 | 7.3 | 6.8 |
| 12 | 7.3 | 7.3 | 7.0 | 6.8 | 6.8 | 7.0 | e7.1 | 7.6 | e7.7 | 7.8 | 7.3 | 6.8 |
| 13 | 7.3 | 7.3 | 7.0 | 6.8 | 6.8 | 7.1 | 7.1 | 7.6 | e7.8 | 7.8 | 7.3 | 6.7 |
| 14 | 7.3 | 7.3 | 6.9 | 6.8 | 6.8 | 7.2 | 7.1 | 7.6 | e7.8 | 7.8 | 7.3 | 6.7 |
| 15 | 7.3 | 7.3 | 6.9 | 6.8 | 6.8 | 7.0 | 7.1 | 7.6 | e7.8 | 7.8 | 7.3 | 6.7 |
| 16 | 7.3 | 7.3 | 6.9 | 6.8 | 6.8 | 6.9 | 7.1 | 7.6 | e7.8 | 7.8 | 7.3 | 6.7 |
| 17 | 7.3 | 7.3 | 6.9 | 6.8 | 6.8 | 6.9 | 7.1 | 7.6 | e7.8 | 7.8 | 7.3 | 6.6 |
| 18 | 7.3 | 7.3 | 6.9 | 6.8 | 6.8 | 6.9 | 7.1 | 7.6 | e7.8 | 7.8 | 7.2 | 6.6 |
| 19 | 7.3 | 7.3 | 6.9 | 6.8 | 6.8 | 6.9 | 7.1 | 7.6 | e7.8 | 7.7 | 7.2 | 6.6 |
| 20 | 7.3 | 7.3 | 6.9 | 6.8 | 6.8 | 6.9 | 7.2 | 7.6 | e7.8 | 7.7 | 7.2 | 6.6 |
| 21 | 7.3 | 7.3 | 6.9 | 6.8 | 6.8 | 6.8 | 7.1 | 7.6 | e7.8 | 7.7 | 7.1 | 6.6 |
| 22 | 7.2 | 7.2 | 6.8 | 6.8 | 6.8 | 6.8 | 7.2 | 7.6 | e7.8 | 7.7 | 7.1 | 6.5 |
| 23 | 7.2 | 7.2 | 6.8 | 6.8 | 6.8 | 6.9 | 7.2 | 7.6 | e7.8 | 7.7 | 7.1 | 6.5 |
| 24 | 7.2 | 7.2 | 6.8 | 6.8 | 6.8 | 6.9 | 7.2 | 7.6 | e7.8 | 7.7 | 7.1 | 6.5 |
| 25 | 7.2 | 7.2 | 6.8 | 6.8 | 6.8 | 6.9 | 7.3 | 7.6 | e7.8 | 7.6 | 7.1 | 6.4 |
| 26 | 7.3 | 7.2 | 6.8 | 6.8 | 6.8 | 6.9 | 7.3 | 7.6 | e7.8 | 7.6 | 7.1 | 6.4 |
| 27 | 7.3 | 7.2 | 6.8 | 6.8 | 6.8 | 6.9 | 7.4 | 7.6 | e7.8 | 7.6 | 7.1 | 6.4 |
| 28 | 7.3 | 7.2 | 6.8 | 6.8 | 6.9 | 6.9 | 7.4 | 7.6 | 7.8 | 7.6 | 7.1 | 6.4 |
| 29 | 7.3 | 7.2 | 6.8 | 6.8 | --- | e6.9 | 7.4 | 7.6 | 7.8 | 7.6 | 7.1 | 6.4 |
| 30 | 7.3 | 7.1 | 6.8 | 6.8 | --- | e6.9 | 7.4 | 7.6 | 7.8 | 7.6 | 7.1 | 6.4 |
| 31 | 7.4 | --- | 6.8 | 6.8 | --- | e6.9 | --- | 7.6 | --- | 7.6 | 7.1 | --- |
| TOTAL | 226.0 | 218.3 | 214.8 | 210.5 | 190.5 | 214.4 | 213.6 | 235.1 | 232.7 | 239.8 | 225.7 | 200.5 |
| MEAN | 7.29 | 7.28 | 6.93 | 6.79 | 6.80 | 6.92 | 7.12 | 7.58 | 7.76 | 7.74 | 7.28 | 6.68 |
| MAX | 7.4 | 7.4 | 7.1 | 6.8 | 6.9 | 7.2 | 7.4 | 7.6 | 7.8 | 7.8 | 7.6 | 7.0 |
| MIN | 7.2 | 7.1 | 6.8 | 6.7 | 6.8 | 6.8 | 6.9 | 7.4 | 7.6 | 7.6 | 7.1 | 6.4 |
| AC-FT | 448 | 433 | 426 | 418 | 378 | 425 | 424 | 466 | 462 | 476 | 448 | 398 |

CAL YR 1989 TOTAL 2580.3 MEAN 7.07 MAX 8.0 MIN 5.3 AC-FT 5120
WTR YR 1990 TOTAL 2621.9 MEAN 7.18 MAX 7.8 MIN 6.4 AC-FT 5200

e Estimated.

SACRAMENTO RIVER BASIN

11408000 MILTON-BOWMAN TUNNEL OUTLET NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°27'37", long 120°36'37", in NW 1/4 NE 1/4 sec.3, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on right bank 100 ft downstream from tunnel outlet near upper end of Bowman Lake, and 6.9 mi east of Graniteville.

PERIOD OF RECORD.--May 1928 to September 1930, February 1931 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to October 1962, published as "Milton-Bowman tunnel at outlet."

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 5,592.51 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 22, 1964, at datum 0.56 ft higher.

REMARKS.--No estimated daily discharges. Records excellent. Tunnel diverts from Middle Yuba River at Milton Reservoir, in sec.12, T.19 N., R.12 E., and discharges into Bowman Lake. Nearly the entire flow of Middle Yuba River is diverted during low and medium flows. Middle Yuba River is regulated by Jackson Meadows Reservoir (station 11407800) since November 1964. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--62 years, 74.2 ft³/s, 53,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 492 ft³/s, Feb. 11, 1941; minimum daily, 0.4 ft³/s, Oct. 7, 1944.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|-------|------|------|------|------|------|------|-------|-------|
| 1 | 8.9 | 12 | 197 | 10 | 13 | 24 | 118 | 24 | 42 | 11 | 240 | 235 |
| 2 | 12 | 12 | 196 | 10 | 12 | 57 | 119 | 23 | 38 | 11 | 239 | 234 |
| 3 | 12 | 12 | 196 | 9.8 | 12 | 65 | 120 | 23 | 32 | 11 | 239 | 233 |
| 4 | 11 | 12 | 196 | 9.7 | 13 | 62 | 123 | 22 | 27 | 11 | 238 | 233 |
| 5 | 10 | 12 | 195 | 9.7 | 12 | 60 | 124 | 22 | 24 | 11 | 238 | 232 |
| 6 | 9.8 | 12 | 195 | 9.7 | 12 | 59 | 126 | 21 | 23 | 11 | 237 | 233 |
| 7 | 9.6 | 12 | 195 | 15 | 12 | 77 | 125 | 20 | 21 | 11 | 237 | 240 |
| 8 | 9.4 | 11 | 194 | 39 | 12 | 107 | 123 | 19 | 20 | 11 | 238 | 240 |
| 9 | 9.2 | 11 | 193 | 23 | 12 | 108 | 122 | 18 | 19 | 11 | 237 | 239 |
| 10 | 9.1 | 11 | 193 | 18 | 11 | 110 | 124 | 18 | 18 | 27 | 243 | 238 |
| 11 | 9.0 | 11 | 192 | 16 | 12 | 108 | 125 | 17 | 17 | 129 | 237 | 237 |
| 12 | 8.8 | 11 | 191 | 17 | 12 | 107 | 105 | 17 | 16 | 194 | 235 | 236 |
| 13 | 8.7 | 11 | 191 | 20 | 12 | 106 | 75 | 16 | 16 | 203 | 234 | 239 |
| 14 | 8.6 | 11 | 190 | 19 | 11 | 105 | 77 | 32 | 16 | 206 | 237 | 243 |
| 15 | 8.6 | 27 | 190 | 16 | 11 | 106 | 77 | 98 | 15 | 207 | 239 | 243 |
| 16 | 8.6 | 166 | 189 | 16 | 12 | 106 | 75 | 99 | 15 | 207 | 238 | 242 |
| 17 | 8.5 | 176 | 188 | 15 | 12 | 106 | 72 | 99 | 15 | 222 | 238 | 242 |
| 18 | 8.5 | 177 | 188 | 15 | 12 | 108 | 71 | 98 | 14 | 234 | 238 | 241 |
| 19 | 8.5 | 177 | 187 | 14 | 12 | 110 | 63 | 98 | 14 | 246 | 237 | 241 |
| 20 | 8.5 | 177 | 187 | 14 | 12 | 111 | 40 | 107 | 14 | 241 | 237 | 242 |
| 21 | 14 | 180 | 169 | 14 | 11 | 113 | 52 | 104 | 13 | 237 | 236 | 240 |
| 22 | 16 | 192 | 122 | 14 | 12 | 114 | 45 | 101 | 13 | 236 | 235 | 240 |
| 23 | 30 | 195 | 121 | 13 | 12 | 115 | 64 | 109 | 13 | 236 | 234 | 240 |
| 24 | 23 | 201 | 121 | 13 | 12 | 116 | 51 | 107 | 12 | 236 | 233 | 240 |
| 25 | 17 | 204 | 121 | 13 | 12 | 118 | 40 | 104 | 12 | 237 | 232 | 239 |
| 26 | 14 | 207 | 121 | 13 | 13 | 119 | 36 | 106 | 12 | 237 | 231 | 239 |
| 27 | 14 | 203 | 120 | 13 | 14 | 118 | 34 | 117 | 12 | 237 | 230 | 238 |
| 28 | 14 | 200 | 110 | 13 | 14 | 117 | 33 | 113 | 12 | 236 | 230 | 235 |
| 29 | 13 | 198 | 72 | 12 | --- | 116 | 30 | 101 | 12 | 236 | 229 | 234 |
| 30 | 12 | 198 | 14 | 14 | --- | 115 | 26 | 79 | 11 | 237 | 231 | 216 |
| 31 | 12 | --- | 11 | 13 | --- | 116 | --- | 54 | --- | 239 | 236 | --- |
| TOTAL | 366.3 | 3039 | 4945 | 460.9 | 339 | 3079 | 2415 | 1986 | 538 | 4819 | 7313 | 7124 |
| MEAN | 11.8 | 101 | 160 | 14.9 | 12.1 | 99.3 | 80.5 | 64.1 | 17.9 | 155 | 236 | 237 |
| MAX | 30 | 207 | 197 | 39 | 14 | 119 | 126 | 117 | 42 | 246 | 243 | 243 |
| MIN | 8.5 | 11 | 11 | 9.7 | 11 | 24 | 26 | 16 | 11 | 11 | 229 | 216 |
| AC-FT | 727 | 6030 | 9810 | 914 | 672 | 6110 | 4790 | 3940 | 1070 | 9560 | 14510 | 14130 |

CAL YR 1989 TOTAL 29420.2 MEAN 80.6 MAX 344 MIN 8.5 AC-FT 58350
WTR YR 1990 TOTAL 36424.2 MEAN 99.8 MAX 246 MIN 8.5 AC-FT 72250

11408550 MIDDLE YUBA RIVER BELOW MILTON DAM, NEAR SIERRA CITY, CA

LOCATION.--Lat 39°31'19", long 120°34'57", in SW 1/4 SW 1/4 sec.12, T.19 N., R.12 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 350 ft downstream from Milton Dam, and 4.1 mi southeast of Sierra City.

DRAINAGE AREA.--39.9 mi².

PERIOD OF RECORD.--October 1987 to current year. Unpublished records for water years 1965-87 available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder, sharp-crested weir, and crest-stage gage. Elevation of gage is 5,690 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1987, nonrecording gage 450 ft downstream at different datum.

REMARKS.--Records good. Middle Yuba River is regulated by Jackson Meadows Reservoir (station 11407800) since November 1964 and Milton Reservoir. Tunnel diverts from Middle Yuba River at Milton Dam, in sec.12, T.19 N., R.12 E., and discharges into Bowman Lake via Milton-Bowman tunnel (station 11408000). Practically the entire flow of Middle Yuba River is diverted during low and medium flows. See schematic diagram of Yuba River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 324 ft³/s, May 14, June 9, 1989, gage height, 7.16 ft; minimum daily, 3.0 ft³/s, July 3-9, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4.4 ft³/s, Oct. 23 and Nov. 25, gage height, 4.77 ft; minimum daily, 3.0 ft³/s, July 3-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 3.5 | 3.8 | 4.0 | 3.3 | 3.3 | 3.3 | 3.7 | 3.3 | 3.7 | 3.3 | 3.7 | 3.4 |
| 2 | 3.6 | 3.8 | 4.0 | 3.3 | 3.3 | 3.3 | 3.6 | 3.4 | 3.5 | 3.1 | 3.7 | 3.4 |
| 3 | 3.7 | 3.8 | 4.0 | 3.3 | 3.3 | 3.4 | 3.6 | e3.3 | 3.5 | 3.0 | 3.8 | 3.3 |
| 4 | 3.6 | 3.8 | 4.0 | 3.3 | 3.3 | 3.3 | 3.6 | e3.3 | 3.5 | 3.0 | 3.8 | 3.4 |
| 5 | 3.5 | 3.8 | 4.0 | 3.3 | 3.3 | 3.3 | 3.6 | e3.4 | 3.5 | 3.0 | 3.8 | 3.4 |
| 6 | 3.5 | 3.8 | 4.0 | 3.3 | 3.3 | 3.3 | 3.7 | e3.4 | 3.5 | 3.0 | 3.8 | 3.4 |
| 7 | 3.5 | 3.7 | 4.0 | 3.3 | 3.3 | 3.4 | 3.7 | e3.5 | 3.5 | 3.0 | 3.8 | 3.4 |
| 8 | 3.5 | 3.7 | 4.0 | 3.5 | 3.3 | 3.4 | 3.7 | e3.5 | 3.4 | 3.0 | 3.7 | 3.4 |
| 9 | 3.5 | 3.7 | 4.0 | 3.4 | 3.3 | 3.4 | 3.6 | 3.5 | 3.5 | 3.0 | 3.7 | 3.4 |
| 10 | 3.5 | 3.7 | 4.0 | 3.4 | 3.3 | 3.4 | 3.6 | 3.5 | 3.4 | 3.1 | 3.7 | 3.4 |
| 11 | 3.6 | 3.7 | 3.9 | 3.4 | 3.3 | 3.4 | 3.5 | 3.5 | 3.3 | 3.4 | 3.5 | 3.4 |
| 12 | 3.7 | 3.7 | 3.9 | 3.3 | 3.3 | 3.4 | 3.5 | 3.5 | 3.3 | 3.6 | 3.4 | 3.4 |
| 13 | 3.7 | 3.7 | 3.9 | 3.3 | 3.3 | 3.4 | 3.5 | 3.5 | 3.3 | 3.7 | 3.4 | 3.4 |
| 14 | 3.7 | 3.7 | 3.9 | 3.3 | 3.3 | 3.4 | 3.5 | 3.5 | 3.3 | 3.7 | 3.4 | 3.5 |
| 15 | 3.7 | 3.7 | 3.9 | 3.3 | 3.3 | 3.4 | 3.5 | 3.6 | 3.3 | 3.7 | 3.4 | 3.4 |
| 16 | 3.7 | 3.8 | 3.9 | 3.3 | 3.4 | 3.4 | 3.5 | 3.7 | 3.3 | 3.7 | 3.4 | 3.4 |
| 17 | 3.7 | 3.8 | 3.9 | 3.3 | 3.4 | 3.4 | 3.4 | 3.8 | 3.3 | 3.7 | 3.4 | 3.5 |
| 18 | 3.7 | 3.8 | 3.9 | 3.3 | 3.4 | 3.5 | 3.4 | 3.8 | 3.3 | 3.7 | 3.4 | 3.5 |
| 19 | 3.7 | 3.8 | 3.9 | 3.3 | 3.4 | 3.5 | 3.4 | 3.7 | 3.3 | 3.7 | 3.3 | 3.5 |
| 20 | 3.7 | 3.8 | 3.9 | 3.3 | 3.3 | 3.5 | 3.4 | 3.7 | 3.3 | 3.7 | 3.3 | 3.4 |
| 21 | 3.7 | 3.8 | 3.8 | 3.3 | 3.3 | 3.5 | 3.4 | 3.7 | 3.4 | 3.7 | 3.3 | 3.4 |
| 22 | 4.0 | 3.9 | 3.7 | 3.3 | 3.3 | 3.5 | 3.4 | 3.7 | 3.4 | 3.7 | 3.3 | 3.5 |
| 23 | 4.1 | 4.0 | 3.7 | 3.3 | 3.3 | 3.6 | 3.4 | 3.7 | 3.3 | 3.7 | 3.2 | 3.4 |
| 24 | 4.0 | 4.1 | 3.7 | 3.3 | 3.3 | 3.6 | 3.4 | 3.7 | 3.3 | 3.7 | 3.3 | 3.5 |
| 25 | 4.0 | 4.2 | 3.7 | 3.3 | 3.3 | 3.6 | 3.3 | 3.7 | 3.3 | 3.7 | 3.3 | 3.5 |
| 26 | 3.9 | 4.3 | 3.6 | 3.3 | 3.3 | 3.6 | 3.3 | 3.7 | 3.3 | 3.7 | 3.3 | 3.5 |
| 27 | 3.9 | 4.2 | 3.6 | 3.3 | 3.3 | 3.5 | 3.3 | 3.7 | 3.3 | 3.7 | 3.3 | 3.5 |
| 28 | 3.9 | 4.1 | 3.6 | 3.3 | 3.3 | 3.5 | 3.3 | 3.7 | 3.3 | 3.7 | 3.4 | 3.4 |
| 29 | 3.8 | 4.1 | 3.5 | 3.3 | --- | 3.5 | 3.3 | 3.7 | 3.3 | 3.7 | 3.4 | 3.4 |
| 30 | 3.8 | 4.0 | 3.4 | 3.3 | --- | 3.5 | 3.3 | 3.7 | 3.4 | 3.7 | 3.4 | 3.3 |
| 31 | 3.8 | --- | 3.3 | 3.3 | --- | 3.6 | --- | 3.7 | --- | 3.7 | 3.4 | --- |
| TOTAL | 115.2 | 115.8 | 118.6 | 102.8 | 92.8 | 106.8 | 104.4 | 111.1 | 101.3 | 107.8 | 108.0 | 102.7 |
| MEAN | 3.72 | 3.86 | 3.83 | 3.32 | 3.31 | 3.45 | 3.48 | 3.58 | 3.38 | 3.48 | 3.48 | 3.42 |
| MAX | 4.1 | 4.3 | 4.0 | 3.5 | 3.4 | 3.6 | 3.7 | 3.8 | 3.7 | 3.7 | 3.8 | 3.5 |
| MIN | 3.5 | 3.7 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.0 | 3.2 | 3.3 |
| AC-FT | 228 | 230 | 235 | 204 | 184 | 212 | 207 | 220 | 201 | 214 | 214 | 204 |

CAL YR 1989 TOTAL 6382.3 MEAN 17.5 MAX 310 MIN 3.1 AC-FT 12660
WTR YR 1990 TOTAL 1287.3 MEAN 3.53 MAX 4.3 MIN 3.0 AC-FT 2550

e Estimated.

SACRAMENTO RIVER BASIN

11408870 LOHMAN RIDGE TUNNEL AT INTAKE, NEAR CAMPTONVILLE, CA

LOCATION.--Lat 39°24'25", long 120°59'43", in SW 1/4 NE 1/4 sec.20, T.18 N., R.8 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, at tunnel intake at Our House Dam and 4.0 mi southeast of Camptonville.

PERIOD OF RECORD.--October 1988 to current year. Records of monthly diversion published with Middle Yuba River below Our House Dam, near Camptonville (station 11408880) since October 1968.

GAGE.--Water-stage recorder. Datum of gage is 2,014.77 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Tunnel diverts water from Middle Yuba River to New Bullards Bar Reservoir (station 11413515) for power development. See schematic diagram of Yuba River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 839 ft³/s, Mar. 25, 1989; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|---------|------|------|------|------|-------|-------|-------|------|-------|-------|-------|
| 1 | .73 | 47 | 71 | 20 | 109 | 324 | 275 | 185 | 612 | 42 | 5.7 | .01 |
| 2 | 8.8 | 45 | 67 | 23 | 99 | 341 | 279 | 170 | 507 | 39 | 5.3 | .00 |
| 3 | 45 | 43 | 63 | 17 | 106 | 696 | 283 | 163 | 439 | 37 | 4.6 | .00 |
| 4 | 16 | 40 | 59 | 16 | 128 | 526 | 306 | 160 | 365 | 36 | 4.0 | .00 |
| 5 | 10 | 37 | 60 | 17 | 121 | 443 | 305 | 155 | 308 | 34 | 3.2 | .00 |
| 6 | 5.6 | 35 | 63 | 16 | 121 | 385 | 316 | 148 | 260 | 33 | 2.2 | .00 |
| 7 | 3.2 | 32 | 59 | 71 | 103 | 344 | 318 | 135 | 224 | 32 | 1.4 | .00 |
| 8 | 1.8 | 32 | 54 | 534 | 96 | 327 | 301 | 122 | 191 | 30 | 1.4 | .00 |
| 9 | 1.0 | 29 | 51 | 290 | 90 | 306 | 277 | 108 | 170 | 28 | 1.7 | .00 |
| 10 | .55 | 27 | 47 | 178 | 90 | 328 | 265 | 103 | 149 | 26 | 2.1 | .00 |
| 11 | .20 | 26 | 43 | 135 | 104 | 321 | 280 | 97 | 135 | 25 | .89 | .00 |
| 12 | .15 | 26 | 40 | 139 | 117 | 294 | 275 | 90 | 121 | 23 | .43 | .00 |
| 13 | .04 | 25 | 38 | 476 | 113 | 254 | 284 | 82 | 112 | 22 | .21 | .00 |
| 14 | .00 | 24 | 36 | 442 | 93 | 115 | 291 | 76 | 104 | 26 | .18 | .00 |
| 15 | .00 | 22 | 34 | 312 | 93 | 122 | 289 | 71 | 99 | 28 | .18 | .00 |
| 16 | .00 | 21 | 32 | 242 | 93 | 258 | 285 | 65 | 104 | 22 | .17 | .00 |
| 17 | .00 | 20 | 30 | 195 | 90 | 280 | 259 | 56 | 102 | 19 | .17 | .00 |
| 18 | .00 | 19 | 29 | 168 | 105 | 311 | 221 | 50 | 97 | 18 | .46 | .00 |
| 19 | .00 | 17 | 27 | 142 | 91 | 331 | 218 | 47 | 92 | 18 | .73 | .00 |
| 20 | .00 | 17 | 26 | 124 | 88 | 347 | 208 | 119 | 84 | 16 | 3.8 | .00 |
| 21 | 13 | 17 | 25 | 114 | 89 | 355 | 257 | 133 | 77 | 15 | 4.0 | .00 |
| 22 | 151 | 16 | 24 | 106 | 123 | 362 | 245 | 92 | 72 | 13 | 1.7 | .00 |
| 23 | 301 | 16 | 23 | 100 | 154 | 362 | 471 | 205 | 67 | 12 | .76 | .00 |
| 24 | 294 | 48 | 22 | 95 | 186 | 368 | 487 | 214 | 63 | 11 | .23 | 8.5 |
| 25 | 234 | 215 | 21 | 91 | 235 | 381 | 357 | 162 | 59 | 11 | .15 | 3.0 |
| 26 | 126 | 308 | 21 | 87 | 288 | 373 | 298 | 148 | 55 | 11 | .15 | 2.6 |
| 27 | 98 | 76 | 20 | 81 | 327 | 346 | 268 | 320 | 52 | 10 | .56 | 10 |
| 28 | 99 | 74 | 20 | 74 | 331 | 330 | 264 | 459 | 50 | 9.2 | .28 | 3.5 |
| 29 | 72 | 70 | 19 | 72 | --- | 302 | 238 | 337 | 48 | 8.5 | .17 | .35 |
| 30 | 59 | 80 | 18 | 107 | --- | 285 | 205 | 421 | 45 | 7.2 | .11 | .03 |
| 31 | 53 | --- | 18 | 106 | --- | 276 | --- | 791 | --- | 6.1 | .06 | --- |
| TOTAL | 1593.07 | 1504 | 1160 | 4590 | 3783 | 10393 | 8625 | 5484 | 4863 | 668.0 | 46.99 | 27.99 |
| MEAN | 51.4 | 50.1 | 37.4 | 148 | 135 | 335 | 287 | 177 | 162 | 21.5 | 1.52 | .93 |
| MAX | 301 | 308 | 71 | 534 | 331 | 696 | 487 | 791 | 612 | 42 | 5.7 | 10 |
| MIN | .00 | 16 | 18 | 16 | 88 | 115 | 205 | 47 | 45 | 6.1 | .06 | .00 |
| AC-FT | 3160 | 2980 | 2300 | 9100 | 7500 | 20610 | 17110 | 10880 | 9650 | 1320 | 93 | 56 |

CAL YR 1989 TOTAL 58539.95 MEAN 160 MAX 839 MIN .00 AC-FT 116100

WTR YR 1990 TOTAL 42738.05 MEAN 117 MAX 791 MIN .00 AC-FT 84770

SACRAMENTO RIVER BASIN

191

11408880 MIDDLE YUBA RIVER BELOW OUR HOUSE DAM, NEAR CAMPTONVILLE, CA

LOCATION.--Lat 39°24'42", long 120°59'49", in SW 1/4 NW 1/4 sec.20, T.18 N., R.9 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 400 ft downstream from Our House Dam, and 4.0 mi southeast of Camptonville.

DRAINAGE AREA.--145 mi².

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,957.51 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 4, 1970, at datum 10.0 ft higher.

REMARKS.--No estimated daily discharges. Records good. Natural flow of stream affected by Jackson Meadows Reservoir (station 11407800), Milton-Bowman tunnel (station 11408000) which diverts upstream from station to Bowman Lake (station 11415500), and Lohman Ridge tunnel (station 11408870) which diverts 400 ft upstream to Oregon Creek and then to New Bullards Bar Reservoir (station 11413515) via Camptonville tunnel (station 11409350). Other small diversions upstream from station. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--22 years, 135 ft³/s, 97,810 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft³/s, Feb. 17, 1986, gage height, 27.4 ft, from floodmark, present datum, from rating curve extended above 8,600 ft³/s on basis of theoretical rating of Our House Dam spillway; minimum daily, 2.1 ft³/s, Jan. 10, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 602 ft³/s, May 31, gage height, 13.19; minimum daily, 27 ft³/s, Sept. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 37 | 35 | 37 | 35 | 36 | 40 | 41 | 58 | 68 | 34 | 33 | 31 |
| 2 | 37 | 34 | 37 | 35 | 36 | 39 | 41 | 58 | 67 | 34 | 33 | 31 |
| 3 | 38 | 33 | 37 | 35 | 36 | 70 | 39 | 58 | 65 | 34 | 33 | 30 |
| 4 | 38 | 32 | 36 | 35 | 36 | 43 | 39 | 58 | 64 | 34 | 33 | 30 |
| 5 | 38 | 34 | 36 | 35 | 36 | 41 | 38 | 58 | 63 | 34 | 33 | 30 |
| 6 | 37 | 35 | 36 | 35 | 36 | 40 | 38 | 57 | 62 | 34 | 33 | 30 |
| 7 | 37 | 35 | 36 | 36 | 36 | 38 | 37 | 58 | 61 | 34 | 33 | 29 |
| 8 | 37 | 33 | 36 | 42 | 36 | 38 | 38 | 58 | 62 | 35 | 33 | 29 |
| 9 | 37 | 34 | 35 | 37 | 35 | 38 | 39 | 59 | 61 | 35 | 33 | 29 |
| 10 | 37 | 34 | 36 | 36 | 35 | 38 | 38 | 57 | 61 | 35 | 33 | 29 |
| 11 | 37 | 34 | 35 | 37 | 35 | 38 | 38 | 57 | 61 | 35 | 33 | 29 |
| 12 | 37 | 34 | 35 | 36 | 35 | 37 | 37 | 59 | 61 | 35 | 33 | 29 |
| 13 | 36 | 34 | 35 | 40 | 36 | 36 | 37 | 59 | 56 | 35 | 33 | 28 |
| 14 | 36 | 34 | 35 | 40 | 36 | 146 | 50 | 58 | 60 | 34 | 33 | 28 |
| 15 | 35 | 34 | 35 | 38 | 35 | 184 | 59 | 58 | 59 | 34 | 33 | 28 |
| 16 | 35 | 34 | 35 | 37 | 39 | 39 | 60 | 58 | 45 | 34 | 33 | 28 |
| 17 | 35 | 34 | 35 | 36 | 37 | 39 | 59 | 59 | 37 | 34 | 32 | 28 |
| 18 | 35 | 34 | 36 | 35 | 36 | 39 | 59 | 60 | 36 | 34 | 32 | 28 |
| 19 | 35 | 35 | 36 | 35 | 36 | 40 | 58 | 60 | 36 | 34 | 32 | 29 |
| 20 | 35 | 35 | 36 | 35 | 36 | 39 | 59 | 61 | 36 | 34 | 32 | 29 |
| 21 | 36 | 34 | 36 | 35 | 36 | 39 | 59 | 62 | 36 | 34 | 33 | 28 |
| 22 | 39 | 34 | 36 | 34 | 36 | 39 | 59 | 61 | 36 | 34 | 33 | 27 |
| 23 | 51 | 34 | 36 | 34 | 37 | 39 | 63 | 63 | 35 | 34 | 33 | 27 |
| 24 | 40 | 35 | 36 | 34 | 38 | 39 | 63 | 63 | 35 | 34 | 33 | 31 |
| 25 | 39 | 45 | 36 | 35 | 40 | 40 | 61 | 62 | 34 | 34 | 32 | 31 |
| 26 | 37 | 65 | 36 | 36 | 40 | 42 | 60 | 60 | 34 | 34 | 32 | 31 |
| 27 | 36 | 39 | 35 | 37 | 39 | 43 | 59 | 64 | 34 | 34 | 32 | 31 |
| 28 | 34 | 37 | 35 | 37 | 40 | 43 | 59 | 67 | 34 | 33 | 32 | 32 |
| 29 | 34 | 37 | 35 | 36 | --- | 42 | 59 | 64 | 34 | 33 | 32 | 32 |
| 30 | 33 | 37 | 35 | 36 | --- | 39 | 58 | 76 | 34 | 33 | 32 | 30 |
| 31 | 33 | --- | 35 | 36 | --- | 39 | --- | 287 | --- | 33 | 31 | --- |
| TOTAL | 1141 | 1078 | 1106 | 1120 | 1025 | 1506 | 1504 | 2097 | 1467 | 1056 | 1011 | 882 |
| MEAN | 36.8 | 35.9 | 35.7 | 36.1 | 36.6 | 48.6 | 50.1 | 67.6 | 48.9 | 34.1 | 32.6 | 29.4 |
| MAX | 51 | 65 | 37 | 42 | 40 | 184 | 63 | 287 | 68 | 35 | 33 | 32 |
| MIN | 33 | 32 | 35 | 34 | 35 | 36 | 37 | 57 | 34 | 33 | 31 | 27 |
| AC-FT | 2260 | 2140 | 2190 | 2220 | 2030 | 2990 | 2980 | 4160 | 2910 | 2090 | 2010 | 1750 |

CAL YR 1989 TOTAL 45773 MEAN 125 MAX 3820 MIN 29 AC-FT 90790
WTR YR 1990 TOTAL 14993 MEAN 41.1 MAX 287 MIN 27 AC-FT 29740

SACRAMENTO RIVER BASIN

11409300 OREGON CREEK AT CAMPTONVILLE, CA

LOCATION.--Lat 39°26'46", long 121°02'43", in SE 1/4 NE 1/4 sec.11, T.18 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 25 ft downstream from county bridge, 0.5 mi southeast of Camptonville, and 5.5 mi upstream from mouth.

DRAINAGE AREA.--23.0 mi².

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,230 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--23 years, 67.7 ft³/s, 49,050 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,550 ft³/s, Feb. 17, 1986, gage height, 11.56 ft, from rating curve extended above 1,600 ft³/s; minimum daily, 0.53 ft³/s, Aug. 14-16, 1977, Sept. 6, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Mar. 3 | 0345 | *368 | *6.06 | | | | |

Minimum daily, 1.7 ft³/s, Sept. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|--------|------|------|------|------|------|-------|------|------|
| 1 | 3.4 | 7.2 | 15 | 5.5 | 34 | 102 | 70 | 26 | 177 | 12 | 3.8 | 2.4 |
| 2 | 7.5 | 6.7 | 13 | 6.1 | 30 | 120 | 67 | 24 | 133 | 11 | 3.7 | 2.3 |
| 3 | 7.7 | 6.2 | 12 | 5.1 | 32 | 286 | 66 | 22 | 108 | 11 | 3.6 | 2.1 |
| 4 | 4.5 | 5.9 | 11 | 5.0 | 37 | 199 | 68 | 21 | 92 | 10 | 3.5 | 2.1 |
| 5 | 3.8 | 5.9 | 10 | 5.2 | 33 | 158 | 67 | 20 | 80 | 9.7 | 3.4 | 2.0 |
| 6 | 3.5 | 5.7 | 9.8 | 5.3 | 33 | 136 | 64 | 19 | 70 | 9.4 | 3.2 | 2.0 |
| 7 | 3.2 | 5.5 | 9.2 | 26 | 28 | 122 | 61 | 19 | 62 | 9.0 | 2.9 | 2.0 |
| 8 | 3.1 | 5.4 | 8.7 | 164 | 26 | 117 | 58 | 18 | 54 | 8.6 | 2.8 | 1.9 |
| 9 | 3.0 | 5.3 | 8.3 | 68 | 25 | 110 | 54 | 17 | 48 | 8.1 | 2.7 | 1.9 |
| 10 | 3.0 | 5.1 | 7.9 | 44 | 26 | 115 | 49 | 17 | 43 | 7.6 | 2.6 | 1.9 |
| 11 | 2.9 | 5.0 | 7.5 | 33 | 30 | 108 | 45 | 17 | 38 | 7.2 | 2.5 | 1.8 |
| 12 | 2.9 | 4.9 | 7.3 | 37 | 34 | 98 | 43 | 16 | 34 | 6.8 | 2.5 | 1.8 |
| 13 | 2.9 | 4.7 | 7.2 | 189 | 34 | 88 | 40 | 15 | 32 | 6.4 | 2.4 | 1.8 |
| 14 | 2.9 | 4.7 | 7.0 | 145 | 31 | 83 | 38 | 15 | 29 | 8.5 | 2.4 | 1.8 |
| 15 | 2.9 | 4.5 | 6.8 | 104 | 29 | 80 | 35 | 14 | 28 | 12 | 2.4 | 1.8 |
| 16 | 2.9 | 4.5 | 6.6 | 81 | 56 | 83 | 33 | 13 | 26 | 7.0 | 2.5 | 1.8 |
| 17 | 2.9 | 4.5 | 6.5 | 63 | 71 | 88 | 32 | 13 | 24 | 6.3 | 2.6 | 1.9 |
| 18 | 2.9 | 4.5 | 6.3 | 53 | 52 | 95 | 30 | 12 | 23 | 6.0 | 2.6 | 1.9 |
| 19 | 2.9 | 4.4 | 6.2 | 44 | 28 | 98 | 29 | 12 | 22 | 5.8 | 2.7 | 1.9 |
| 20 | 2.9 | 4.4 | 6.1 | 38 | 25 | 101 | 28 | 32 | 21 | 5.6 | 2.8 | 1.8 |
| 21 | 7.2 | 4.3 | 6.1 | 33 | 26 | 103 | 28 | 27 | 20 | 5.3 | 3.0 | 1.7 |
| 22 | 15 | 4.3 | 5.8 | 30 | 30 | 104 | 28 | 20 | 19 | 5.1 | 3.0 | 1.7 |
| 23 | 46 | 4.4 | 5.7 | 28 | 39 | 103 | 70 | 46 | 18 | 4.9 | 2.8 | 2.0 |
| 24 | 46 | 10 | 5.6 | 26 | 47 | 102 | 71 | 49 | 17 | 4.7 | 2.6 | 2.8 |
| 25 | 40 | 56 | 5.5 | 25 | 60 | 100 | 52 | 36 | 17 | 4.7 | 2.5 | 2.9 |
| 26 | 21 | 113 | 5.3 | 25 | 75 | 97 | 44 | 34 | 16 | 4.6 | 2.6 | 2.7 |
| 27 | 16 | 38 | 5.3 | 23 | 89 | 92 | 39 | 94 | 15 | 4.5 | 2.7 | 2.5 |
| 28 | 14 | 24 | 5.3 | 22 | 99 | 87 | 35 | 166 | 14 | 4.4 | 2.7 | 2.5 |
| 29 | 11 | 20 | 5.1 | 21 | --- | 82 | 31 | 116 | 13 | 4.3 | 2.6 | 2.2 |
| 30 | 9.1 | 17 | 4.9 | 39 | --- | 77 | 29 | 154 | 12 | 4.2 | 2.5 | 2.0 |
| 31 | 8.0 | --- | 5.1 | 35 | --- | 74 | --- | 262 | --- | 3.9 | 2.4 | --- |
| TOTAL | 305.0 | 396.0 | 232.1 | 1428.2 | 1159 | 3408 | 1404 | 1366 | 1305 | 218.6 | 87.0 | 61.9 |
| MEAN | 9.84 | 13.2 | 7.49 | 46.1 | 41.4 | 110 | 46.8 | 44.1 | 43.5 | 7.05 | 2.81 | 2.06 |
| MAX | 46 | 113 | 15 | 189 | 99 | 286 | 71 | 262 | 177 | 12 | 3.8 | 2.9 |
| MIN | 2.9 | 4.3 | 4.9 | 5.0 | 25 | 74 | 28 | 12 | 12 | 3.9 | 2.4 | 1.7 |
| AC-FT | 605 | 785 | 460 | 2830 | 2300 | 6760 | 2780 | 2710 | 2590 | 434 | 173 | 123 |

CAL YR 1989 TOTAL 23829.2 MEAN 65.3 MAX 1250 MIN 1.2 AC-FT 47270
WTR YR 1990 TOTAL 11370.8 MEAN 31.2 MAX 286 MIN 1.7 AC-FT 22550

11409350 CAMPTONVILLE TUNNEL AT INTAKE, NEAR CAMPTONVILLE, CA

LOCATION.--Lat 39°26'25", long 121°03'30", in NW 1/4 SW 1/4 sec.11, T.18 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Tahoe National Forest, at tunnel intake at Log Cabin Dam 1.0 mi southwest of town of Camptonville.

PERIOD OF RECORD.--October 1988 to current year. Records of monthly diversion published with Oregon Creek below Log Cabin Dam near Camptonville (station 11409400) since October 1968.

GAGE.--Water-stage recorder. Datum of gage is 1,952.00 ft above National Geodetic Vertical Datum of 1929 (from contractor's drawings).

REMARKS.--No estimated daily discharges. Records good. Water is diverted to Oregon Creek from the Middle Yuba River through Lohman Ridge tunnel (station 11408870) 1,000 ft upstream. Camptonville tunnel diverts water from Oregon Creek to New Bullards Bar Reservoir (station 11413515) for power development. See schematic diagram of Yuba River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,090 ft³/s, Mar. 25, 1989; no flow for many days each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|---------|--------|------|-------|------|-------|-------|-------|-------|-------|------|------|
| 1 | .00 | 45 | 70 | 16 | 129 | 442 | 348 | 186 | 755 | 42 | 2.6 | .00 |
| 2 | 5.4 | 42 | 66 | 22 | 115 | 461 | 348 | 161 | 641 | 39 | 2.3 | .00 |
| 3 | 41 | 40 | 62 | 13 | 122 | 881 | 349 | 150 | 550 | 37 | 1.7 | .00 |
| 4 | 10 | 38 | 59 | 12 | 154 | 715 | 373 | 142 | 459 | 36 | 1.1 | .00 |
| 5 | 4.1 | 35 | 59 | 13 | 143 | 611 | 376 | 137 | 390 | 34 | .35 | .00 |
| 6 | .55 | 33 | 60 | 12 | 143 | 541 | 374 | 129 | 330 | 33 | .00 | .00 |
| 7 | .00 | 30 | 57 | 80 | 119 | 483 | 379 | 119 | 285 | 31 | .00 | .00 |
| 8 | .00 | 29 | 53 | 673 | 108 | 458 | 360 | 110 | 235 | 29 | .00 | .00 |
| 9 | .00 | 26 | 50 | 386 | 101 | 432 | 334 | 92 | 200 | 27 | .00 | .00 |
| 10 | .00 | 24 | 46 | 231 | 100 | 454 | 314 | 85 | 171 | 24 | .00 | .00 |
| 11 | .00 | 23 | 43 | 165 | 117 | 447 | 322 | 80 | 152 | 22 | .00 | .00 |
| 12 | .00 | 22 | 40 | 158 | 137 | 408 | 316 | 74 | 134 | 20 | .00 | .00 |
| 13 | .00 | 21 | 38 | 658 | 137 | 360 | 320 | 66 | 120 | 18 | .00 | .00 |
| 14 | .00 | 20 | 36 | 609 | 120 | 181 | 325 | 61 | 112 | 21 | .00 | .00 |
| 15 | .00 | 18 | 34 | 438 | 108 | 175 | 317 | 55 | 105 | 31 | .00 | .00 |
| 16 | .00 | 16 | 32 | 339 | 103 | 341 | 310 | 50 | 109 | 19 | .00 | .00 |
| 17 | .00 | 15 | 30 | 261 | 103 | 365 | 290 | 47 | 109 | 15 | .00 | .00 |
| 18 | .00 | 14 | 28 | 210 | 120 | 409 | 249 | 42 | 99 | 13 | .00 | .00 |
| 19 | .00 | 12 | 26 | 171 | 104 | 434 | 240 | 40 | 93 | 13 | .00 | .00 |
| 20 | .00 | 11 | 25 | 146 | 99 | 453 | 226 | 111 | 84 | 11 | .03 | .00 |
| 21 | 5.5 | 11 | 24 | 131 | 100 | 460 | 267 | 143 | 77 | 9.6 | .39 | .00 |
| 22 | 143 | 10 | 22 | 121 | 141 | 469 | 272 | 88 | 72 | 8.1 | .00 | .00 |
| 23 | 323 | 9.8 | 21 | 112 | 186 | 468 | 486 | 198 | 67 | 7.1 | .00 | .00 |
| 24 | 385 | 43 | 20 | 105 | 237 | 472 | 599 | 248 | 62 | 6.5 | .00 | 2.4 |
| 25 | 286 | 228 | 19 | 99 | 310 | 482 | 422 | 184 | 58 | 6.3 | .00 | .13 |
| 26 | 135 | 587 | 17 | 95 | 372 | 476 | 349 | 156 | 55 | 6.1 | .00 | .00 |
| 27 | 95 | 212 | 17 | 88 | 426 | 449 | 305 | 341 | 52 | 5.7 | .00 | 3.3 |
| 28 | 97 | 129 | 16 | 81 | 444 | 427 | 292 | 648 | 49 | 5.3 | .00 | .87 |
| 29 | 66 | 98 | 15 | 78 | --- | 394 | 270 | 481 | 48 | 4.7 | .00 | .00 |
| 30 | 55 | 82 | 13 | 129 | --- | 369 | 224 | 543 | 45 | 3.8 | .00 | .00 |
| 31 | 50 | --- | 14 | 128 | --- | 352 | --- | 918 | --- | 3.1 | .00 | --- |
| TOTAL | 1701.55 | 1923.8 | 1112 | 5780 | 4598 | 13869 | 9956 | 5885 | 5718 | 581.3 | 8.47 | 6.70 |
| MEAN | 54.9 | 64.1 | 35.9 | 186 | 164 | 447 | 332 | 190 | 191 | 18.8 | .27 | .22 |
| MAX | 385 | 587 | 70 | 673 | 444 | 881 | 599 | 918 | 755 | 42 | 2.6 | 3.3 |
| MIN | .00 | 9.8 | 13 | 12 | 99 | 175 | 224 | 40 | 45 | 3.1 | .00 | .00 |
| AC-FT | 3380 | 3820 | 2210 | 11460 | 9120 | 27510 | 19750 | 11670 | 11340 | 1150 | 17 | 13 |

CAL YR 1989 TOTAL 79511.18 MEAN 218 MAX 1090 MIN .00 AC-FT 157700
WTR YR 1990 TOTAL 51139.82 MEAN 140 MAX 918 MIN .00 AC-FT 101400

11409400 OREGON CREEK BELOW LOG CABIN DAM, NEAR CAMPTONVILLE, CA

LOCATION.--Lat 39°26'22", long 121°03'29", in SW 1/4 SW 1/4 sec.11, T.18 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 500 ft downstream from Log Cabin Dam, 670 ft upstream from High Point Ravine, and 1.1 mi southwest of Camptonville.

DRAINAGE AREA.--29.1 mi².

PERIOD OF RECORD.--August 1968 to current year.

REVISED RECORDS.--WDR CA-81-4: 1980(M).

GAGE.--Water-stage recorder. Datum of gage is 1,919.96 ft above National Geodetic Vertical Datum of 1929 (levels by Yuba County Water Agency). Prior to July 24, 1973, at site 470 ft downstream at datum 8.40 ft lower. July 24, 1973, to Sept. 30, 1986, at site on right bank at present datum.

REMARKS.--No estimated daily discharges. Records good. Lohman Ridge tunnel (station 11408870) diverts water into the basin from the Middle Yuba River. Camptonville tunnel (station 11409350), maximum capacity, about 1,000 ft³/s, 520 ft upstream, diverts water out of the basin to New Bullards Bar Reservoir (station 11413515); diversion began October 1968. See schematic diagram showing diversions and storage in Yuba River basin.

AVERAGE DISCHARGE.--22 years, 31.3 ft³/s, 22,680 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,400 ft³/s, Feb. 17, 1986, gage height, 11.24 ft, datum then in use, from rating curve extended above 50 ft³/s based on flow-over-dam computation; minimum daily, 0.34 ft³/s, Sept. 18, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 494 ft³/s, Mar. 14, gage height, 4.53 ft; minimum daily, 2.4 ft³/s, Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|
| 1 | 7.1 | 11 | 10 | 9.7 | 11 | 14 | 9.3 | 13 | 21 | 8.8 | 8.7 | 3.3 |
| 2 | 8.5 | 11 | 10 | 9.8 | 11 | 14 | 9.3 | 13 | 20 | 8.9 | 8.7 | 3.1 |
| 3 | 13 | 11 | 9.8 | 9.7 | 11 | 19 | 9.4 | 13 | 18 | 9.0 | 8.6 | 3.1 |
| 4 | 12 | 11 | 9.9 | 9.7 | 12 | 17 | 9.5 | 13 | 17 | 9.1 | 8.6 | 3.0 |
| 5 | 12 | 11 | 10 | 9.6 | 12 | 16 | 9.4 | 13 | 15 | 9.1 | 8.5 | 3.0 |
| 6 | 11 | 11 | 11 | 9.5 | 12 | 14 | 9.4 | 13 | 14 | 9.0 | 8.1 | 2.9 |
| 7 | 9.6 | 11 | 10 | 11 | 11 | 12 | 9.2 | 13 | 14 | 9.1 | 6.7 | 2.8 |
| 8 | 7.7 | 11 | 10 | 16 | 11 | 12 | 9.2 | 13 | 13 | 9.0 | 5.4 | 2.7 |
| 9 | 6.2 | 11 | 10 | 14 | 11 | 11 | 9.2 | 13 | 13 | 9.4 | 5.9 | 2.7 |
| 10 | 5.4 | 11 | 10 | 13 | 11 | 11 | 9.2 | 13 | 13 | 9.5 | 6.3 | 2.7 |
| 11 | 4.7 | 11 | 10 | 12 | 11 | 11 | 9.4 | 13 | 13 | 9.6 | 5.7 | 2.7 |
| 12 | 4.2 | 10 | 9.8 | 12 | 12 | 11 | 9.4 | 13 | 13 | 9.5 | 4.4 | 2.6 |
| 13 | 4.1 | 10 | 9.8 | 17 | 12 | 11 | 9.4 | 13 | 13 | 9.4 | 3.7 | 2.6 |
| 14 | 4.0 | 10 | 9.8 | 16 | 11 | 47 | 12 | 13 | 13 | 9.4 | 3.4 | 2.6 |
| 15 | 4.0 | 10 | 9.8 | 14 | 11 | 12 | 14 | 13 | 13 | 9.7 | 3.4 | 2.6 |
| 16 | 4.0 | 10 | 9.8 | 14 | 11 | 13 | 14 | 13 | 11 | 9.4 | 3.5 | 2.7 |
| 17 | 4.0 | 10 | 9.7 | 13 | 11 | 13 | 13 | 13 | 9.6 | 9.3 | 3.5 | 2.8 |
| 18 | 4.3 | 9.8 | 9.9 | 13 | 11 | 12 | 13 | 13 | 9.5 | 9.2 | 3.6 | 2.8 |
| 19 | 4.2 | 9.6 | 10 | 12 | 11 | 11 | 13 | 13 | 9.2 | 9.3 | 4.2 | 2.9 |
| 20 | 4.2 | 9.3 | 10 | 12 | 11 | 11 | 13 | 14 | 9.1 | 9.1 | 5.9 | 2.8 |
| 21 | 7.5 | 9.7 | 10 | 12 | 11 | 11 | 13 | 15 | 9.0 | 9.1 | 9.1 | 2.6 |
| 22 | 15 | 9.7 | 9.9 | 12 | 12 | 11 | 13 | 14 | 8.9 | 9.0 | 7.7 | 2.4 |
| 23 | 18 | 9.7 | 9.9 | 11 | 12 | 12 | 14 | 15 | 8.9 | 8.9 | 5.2 | 2.7 |
| 24 | 18 | 10 | 9.9 | 11 | 13 | 12 | 15 | 16 | 9.0 | 8.9 | 4.0 | 7.3 |
| 25 | 17 | 11 | 9.8 | 11 | 13 | 11 | 14 | 15 | 9.0 | 8.9 | 3.3 | 8.5 |
| 26 | 15 | 17 | 9.7 | 11 | 14 | 11 | 13 | 15 | 8.9 | 8.9 | 3.3 | 7.6 |
| 27 | 15 | 11 | 9.7 | 11 | 14 | 11 | 13 | 17 | 8.9 | 8.9 | 3.6 | 8.4 |
| 28 | 15 | 10 | 9.8 | 11 | 14 | 11 | 13 | 20 | 8.8 | 8.9 | 4.1 | 8.8 |
| 29 | 14 | 10 | 9.8 | 11 | --- | 10 | 13 | 18 | 8.9 | 8.9 | 3.6 | 5.3 |
| 30 | 12 | 10 | 9.8 | 11 | --- | 9.4 | 13 | 18 | 8.8 | 8.8 | 3.4 | 3.1 |
| 31 | 11 | --- | 9.8 | 11 | --- | 9.3 | --- | 24 | --- | 8.7 | 3.3 | --- |
| TOTAL | 291.7 | 317.8 | 307.4 | 370.0 | 328 | 410.7 | 347.3 | 447 | 360.5 | 282.7 | 167.4 | 113.1 |
| MEAN | 9.41 | 10.6 | 9.92 | 11.9 | 11.7 | 13.2 | 11.6 | 14.4 | 12.0 | 9.12 | 5.40 | 3.77 |
| MAX | 18 | 17 | 11 | 17 | 14 | 47 | 15 | 24 | 21 | 9.7 | 9.1 | 8.8 |
| MIN | 4.0 | 9.3 | 9.7 | 9.5 | 11 | 9.3 | 9.2 | 12 | 8.8 | 8.7 | 3.3 | 2.4 |
| AC-FT | 579 | 630 | 610 | 734 | 651 | 815 | 689 | 887 | 715 | 561 | 332 | 224 |

CAL YR 1989 TOTAL 6254.6 MEAN 17.1 MAX 917 MIN 2.8 AC-FT 12410
WTR YR 1990 TOTAL 3743.6 MEAN 10.3 MAX 47 MIN 2.4 AC-FT 7430

11413000 NORTH YUBA RIVER BELOW GOODYEARS BAR, CA

LOCATION.--Lat 39°31'30", long 120°56'13", in NE 1/4 SW 1/4 sec.11, T.19 N., R.9 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 200 ft downstream from St. Catherine Creek, 3.1 mi southwest of Goodyears Bar, and 6.4 mi southwest of Downieville.

DRAINAGE AREA.--250 mi².

PERIOD OF RECORD.--October 1930 to current year. Prior to October 1949, published as North Fork Yuba River below Goodyears Bar. Monthly and yearly discharge only for some periods, published in WSP 1315-A.

REVISED RECORDS.--WSP 1041: 1944. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,453 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--No estimated daily discharges. Records good except for period of ice effect, Feb. 15-17, which is fair. Several small diversions upstream from station for irrigation and mining. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--60 years, 755 ft³/s, 547,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s, Feb. 1, 1963, gage height, 25.8 ft, from floodmarks, from rating curve extended above 8,500 ft³/s on basis of one float measurement at 17,900 ft³/s and slope-area measurements at gage heights 19.15 and 23.8 ft; minimum daily, 60 ft³/s, Sept. 7-14, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|--------------------------------|------------------|------|------|--------------------------------|------------------|
| Oct. 23 | 1515 | *2,940 | *7.63 | | | | |

Minimum daily, 98 ft³/s, Sept. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1 | 148 | 259 | 260 | 183 | 315 | 652 | 879 | 810 | 1640 | 263 | 147 | 113 |
| 2 | 239 | 247 | 255 | 194 | 295 | 710 | 920 | 781 | 1520 | 255 | 146 | 113 |
| 3 | 239 | 242 | 249 | 179 | 304 | 1380 | 963 | 799 | 1380 | 251 | 143 | 111 |
| 4 | 194 | 238 | 245 | 175 | 329 | 1040 | 1060 | 815 | 1180 | 245 | 142 | 111 |
| 5 | 178 | 244 | 257 | 176 | 309 | 837 | 1030 | 807 | 1010 | 243 | 139 | 111 |
| 6 | 169 | 240 | 262 | 173 | 310 | 737 | 1100 | 791 | 902 | 241 | 135 | 109 |
| 7 | 162 | 226 | 258 | 253 | 282 | 693 | 1090 | 750 | 828 | 236 | 135 | 110 |
| 8 | 158 | 220 | 250 | 1300 | 276 | 686 | 1020 | 701 | 748 | 231 | 137 | 107 |
| 9 | 154 | 210 | 243 | 806 | 269 | 663 | 938 | 647 | 694 | 226 | 140 | 106 |
| 10 | 151 | 212 | 239 | 538 | 269 | 706 | 979 | 631 | 647 | 219 | 132 | 104 |
| 11 | 149 | 215 | 229 | 432 | 282 | 662 | 1050 | 604 | 599 | 218 | 127 | 102 |
| 12 | 147 | 215 | 224 | 454 | 298 | 614 | 1060 | 570 | 568 | 212 | 126 | 101 |
| 13 | 147 | 212 | 223 | 925 | 294 | 562 | 1130 | 536 | 543 | 206 | 125 | 100 |
| 14 | 143 | 207 | 217 | 757 | 276 | 535 | 1220 | 510 | 532 | 205 | 124 | 100 |
| 15 | 143 | 199 | 214 | 610 | 272 | 523 | 1250 | 482 | 504 | 205 | 124 | 100 |
| 16 | 144 | 192 | 212 | 554 | 273 | 540 | 1210 | 455 | 475 | 200 | 124 | 102 |
| 17 | 144 | 191 | 207 | 477 | 286 | 580 | 1070 | 441 | 449 | 193 | 123 | 102 |
| 18 | 143 | 189 | 205 | 418 | 301 | 661 | 986 | 419 | 428 | 190 | 126 | 103 |
| 19 | 141 | 188 | 201 | 373 | 281 | 742 | 1030 | 405 | 415 | 185 | 129 | 102 |
| 20 | 141 | 183 | 198 | 353 | 265 | 817 | 983 | 634 | 385 | 181 | 137 | 100 |
| 21 | 273 | 180 | 197 | 338 | 265 | 859 | 1170 | 758 | 367 | 177 | 136 | 98 |
| 22 | 578 | 179 | 193 | 329 | 286 | 905 | 1030 | 638 | 351 | 172 | 128 | 98 |
| 23 | 1340 | 176 | 191 | 314 | 315 | 932 | 1680 | 896 | 335 | 169 | 124 | 108 |
| 24 | 826 | 274 | 191 | 304 | 348 | 982 | 1420 | 841 | 325 | 165 | 121 | 120 |
| 25 | 590 | 612 | 190 | 299 | 413 | 1040 | 1180 | 752 | 313 | 164 | 118 | 117 |
| 26 | 412 | 773 | 189 | 297 | 496 | 1040 | 1110 | 774 | 302 | 163 | 122 | 128 |
| 27 | 371 | 407 | 188 | 282 | 590 | 977 | 1090 | 1250 | 293 | 160 | 125 | 149 |
| 28 | 344 | 328 | 186 | 275 | 626 | 949 | 1160 | 1340 | 287 | 158 | 121 | 119 |
| 29 | 298 | 295 | 182 | 272 | --- | 870 | 1040 | 1070 | 280 | 154 | 117 | 109 |
| 30 | 276 | 274 | 181 | 347 | --- | 835 | 885 | 1490 | 271 | 152 | 116 | 105 |
| 31 | 260 | --- | 179 | 318 | --- | 842 | --- | 2220 | --- | 148 | 115 | --- |
| TOTAL | 8802 | 7827 | 6715 | 12705 | 9125 | 24571 | 32733 | 24617 | 18571 | 6187 | 4004 | 3258 |
| MEAN | 284 | 261 | 217 | 410 | 326 | 793 | 1091 | 794 | 619 | 200 | 129 | 109 |
| MAX | 1340 | 773 | 262 | 1300 | 626 | 1380 | 1680 | 2220 | 1640 | 263 | 147 | 149 |
| MIN | 141 | 176 | 179 | 173 | 265 | 523 | 879 | 405 | 271 | 148 | 115 | 98 |
| AC-FT | 17460 | 15520 | 13320 | 25200 | 18100 | 48740 | 64930 | 48830 | 36840 | 12270 | 7940 | 6460 |

CAL YR 1989 TOTAL 271140 MEAN 743 MAX 7300 MIN 129 AC-FT 537800
WTR YR 1990 TOTAL 159115 MEAN 436 MAX 2220 MIN 98 AC-FT 315600

SACRAMENTO RIVER BASIN

11413250 SLATE CREEK TUNNEL NEAR STRAWBERRY VALLEY. CA

LOCATION.--Lat 39°36'57", long 121°03'03", in SE 1/4 SW 1/4 sec.2, T.20 N., R.8 E., Plumas County, Hydrologic Unit 18020125, Plumas National Forest, on right bank 30 ft upstream from diversion dam on Slate Creek, 0.3 mi upstream from Fenev Ravine, and 4.5 mi northeast of town of Strawberry Valley.

PERIOD OF RECORD.--October 1966 to current year. Records of daily discharge for December 1961 to September 1966 are in files of the U.S. Geological Survey. Monthly diversion used to adjust Slate Creek below diversion dam near Strawberry Valley (station 11413300) since February 1962.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Tunnel diverts water from Slate Creek to Sly Creek Reservoir (station 11395400) for power development. See schematic diagrams of South Fork Feather and Yuba River basins.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--24 years, 94.5 ft³/s, 68,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 863 ft³/s, Apr. 6, 1963; no flow for many days in each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

11413300 SLATE CREEK BELOW DIVERSION DAM, NEAR STRAWBERRY VALLEY, CA

LOCATION.--Lat 39°36'52", long 121°03'04", in SE 1/4 SW 1/4 sec.2, T.20 N., R.8 E., Plumas County, Hydrologic Unit 18020125, Plumas National Forest, on right bank 300 ft downstream from diversion dam, 0.2 mi upstream from Fenev Ravine, and 4.5 mi northeast of town of Strawberry Valley.

DRAINAGE AREA.--49.4 mi².

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder and 130° V-notch weir since October 1982. Elevation of gage is 3,570 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Slate Creek tunnel (station 11413250) diverts up to 900 ft³/s from Slate Creek Reservoir, capacity, 223 acre-ft, at diversion dam 300 ft upstream, to Sly Creek Reservoir (station 11395400). Diversion began in February 1962. See schematic diagrams of South Fork Feather and Yuba River basins.

AVERAGE DISCHARGE (adjusted for diversion to Slate Creek tunnel).--30 years, 207 ft³/s, 150,000 acre-ft/yr.

COOPERATION.--Records provided by Oroville-Wyandotte Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Creek only: Maximum discharge, 13,600 ft³/s, Feb. 17, 1986, gage height, 16.89 ft, from rating curve extended above 5,500 ft³/s on basis of computed flow over dam at gage heights 12.75, 15.90, and 16.89 ft; minimum, 0.3 ft³/s, Mar. 4, 5, 1962.
Combined flow: Maximum discharge, 13,900 ft³/s, Dec. 22, 1964; minimum daily, 2.3 ft³/s, Nov. 23, 1961.

EXTREMES FOR CURRENT YEAR.--Creek only: Maximum discharge, 1,020 ft³/s, Oct. 23, gage height, 7.78 ft; minimum daily, 8.9 ft³/s, Sept. 21, 22.
Combined flow: Maximum discharge, 1,050 ft³/s, Oct. 23; minimum daily, 8.9 ft³/s, Sept. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---------|------|------|------|------|------|-------|-------|-------|------|------|------|-------|
| 1 | 13 | e11 | 11 | 11 | e11 | 12 | 12 | 11 | 163 | 11 | 11 | 11 |
| 2 | 39 | e11 | 11 | 11 | 11 | 12 | 12 | 11 | 39 | 11 | 11 | 11 |
| 3 | 33 | 11 | 11 | 11 | 11 | 12 | 12 | 11 | e12 | 11 | 11 | 11 |
| 4 | 19 | 11 | 11 | 11 | 11 | e26 | 12 | 11 | e12 | 11 | 11 | 10 |
| 5 | 16 | 11 | 11 | 11 | 11 | e12 | 12 | 11 | 12 | 11 | 11 | 10 |
| 6 | 15 | 11 | 11 | 11 | 11 | e12 | 12 | 11 | 12 | 11 | 13 | 10 |
| 7 | 14 | 11 | 11 | 12 | 11 | 12 | 12 | 11 | 12 | 11 | e14 | 10 |
| 8 | 13 | 11 | 11 | 17 | 11 | 12 | 12 | 11 | 12 | 11 | e14 | 10 |
| 9 | 13 | 11 | 11 | 12 | 11 | 12 | 12 | 11 | 12 | 11 | e14 | 10 |
| 10 | 12 | 11 | 11 | 12 | 11 | 12 | 12 | 11 | 12 | 11 | e13 | 9.8 |
| 11 | 12 | 11 | 11 | 12 | 11 | 12 | 12 | 11 | 12 | 11 | 13 | 9.6 |
| 12 | 12 | 11 | 11 | 13 | 11 | 12 | 12 | 11 | 12 | 11 | 13 | 9.4 |
| 13 | 12 | 11 | 11 | 13 | 11 | 12 | 12 | 11 | 12 | 11 | 13 | 9.4 |
| 14 | 11 | 11 | 11 | 13 | 11 | 12 | 12 | 11 | 11 | 11 | 13 | 9.5 |
| 15 | 11 | 11 | 11 | e12 | 11 | 12 | 12 | 11 | 11 | 11 | e12 | 9.5 |
| 16 | 11 | 11 | 11 | e12 | 12 | 12 | 12 | 11 | 11 | 11 | 12 | 9.5 |
| 17 | 11 | 11 | 11 | e12 | 12 | 12 | 12 | 11 | 11 | 11 | 12 | 9.6 |
| 18 | 11 | 11 | 11 | 12 | 12 | 12 | 12 | 11 | 11 | 11 | 13 | 9.7 |
| 19 | 11 | 11 | 11 | 12 | 11 | 12 | 12 | 11 | 11 | 11 | 16 | 9.6 |
| 20 | 11 | 11 | 11 | 12 | 11 | 12 | 12 | 12 | 11 | 11 | 15 | 9.2 |
| 21 | 86 | 11 | 11 | 12 | 11 | 12 | 12 | 11 | 11 | 11 | 15 | 8.9 |
| 22 | 95 | 11 | 11 | 12 | 11 | 12 | 12 | 11 | 11 | 11 | 14 | 8.9 |
| 23 | e136 | 11 | 11 | 12 | 11 | 12 | 12 | 12 | 11 | 11 | 13 | 9.9 |
| 24 | e12 | 11 | 11 | 12 | 11 | 12 | 12 | 11 | 11 | 11 | 12 | 12 |
| 25 | e11 | 12 | 11 | 12 | 11 | 12 | 12 | 11 | 11 | 11 | 12 | 14 |
| 26 | e11 | 12 | 11 | 12 | 11 | 12 | 12 | 11 | 11 | 11 | 12 | 12 |
| 27 | e11 | 11 | 11 | 12 | 11 | 12 | 12 | 34 | 11 | 11 | 13 | 12 |
| 28 | e11 | 11 | 11 | 12 | 12 | 12 | 12 | 29 | 11 | 11 | 12 | 11 |
| 29 | e11 | 12 | 11 | 12 | --- | 12 | 12 | 12 | 11 | 11 | 12 | 10 |
| 30 | e11 | 11 | 11 | 12 | --- | 12 | 11 | 201 | 11 | 11 | 12 | 9.7 |
| 31 | e11 | --- | 11 | 12 | --- | 12 | --- | 466 | --- | 11 | 11 | --- |
| TOTAL | 706 | 333 | 341 | 374 | 312 | 386 | 359 | 1030 | 521 | 341 | 393 | 306.2 |
| MEAN | 22.8 | 11.1 | 11.0 | 12.1 | 11.1 | 12.5 | 12.0 | 33.2 | 17.4 | 11.0 | 12.7 | 10.2 |
| MAX | 136 | 12 | 11 | 17 | 12 | 26 | 12 | 466 | 163 | 11 | 16 | 14 |
| MIN | 11 | 11 | 11 | 11 | 11 | 12 | 11 | 11 | 11 | 11 | 11 | 8.9 |
| AC-FT | 1400 | 661 | 676 | 742 | 619 | 766 | 712 | 2040 | 1030 | 676 | 780 | 607 |
| MEAN a | 62.3 | 46.0 | 33.5 | 136 | 69.9 | 307 | 285 | 205 | 154 | 25.9 | 13.2 | 10.2 |
| AC-FT a | 3830 | 2740 | 2060 | 8350 | 3880 | 18900 | 16980 | 12680 | 9160 | 1590 | 812 | 607 |

CAL YR 1989 TOTAL 34756.6 MEAN 95.2 MAX 4010 MIN 8.6 AC-FT 68940 MEAN a 197 AC-FT a 142700
WTR YR 1990 TOTAL 5402.2 MEAN 14.8 MAX 466 MIN 8.9 AC-FT 10720 MEAN a 113 AC-FT a 81540

e Estimated.

a Adjusted for diversion to Slate Creek tunnel.

11413515 NEW BULLARDS BAR RESERVOIR NEAR NORTH SAN JUAN, CA

LOCATION.--Lat 39°23'34", long 121°08'25", in SE 1/4 NW 1/4 sec.25, T.18 N., R.7 E., Yuba County, Hydrologic Unit 18020125, Plumas National Forest, in center of dam on North Yuba River, 2.2 mi upstream from Middle Yuba River, and 2.4 mi northwest of North San Juan.

DRAINAGE AREA.--489 mi².

PERIOD OF RECORD.--January 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Yuba County Water Agency).

REMARKS.--Reservoir is formed by concrete-arch dam with a concrete-sidehill spillway. Spill controlled by three 30-ft by 53-ft radial gates. Storage began in January 1969. Usable capacity, 727,380 acre-ft between elevations 1,732.0 ft, minimum power pool, and 1,955.0 ft, normal gross pool. Dead storage, 233,920 acre-ft. Total capacity at normal gross pool, 961,300 acre-ft, elevation, 1,955.0 ft. Water is released to Colgate powerplant through a tunnel at the dam. Water is diverted into the reservoir from Middle Yuba River via Lohman Ridge tunnel to Oregon Creek then via Camptonville tunnel. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Yuba River basin.

COOPERATION.--Records provided by Yuba County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 966,103 acre-ft, June 12, 1982, elevation, 1,956.00 ft; minimum since reservoir first filled, 178,230 acre-ft, Dec. 29, 1980, elevation, 1,700.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 873,839 acre-ft, June 8, elevation, 1,936.15 ft; minimum, 567,258 acre-ft, Jan. 6, elevation, 1,858.20 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Yuba County Water Agency in 1969)

| | | | |
|-------|---------|-------|---------|
| 1,600 | 64,900 | 1,750 | 270,110 |
| 1,630 | 90,570 | 1,800 | 389,977 |
| 1,660 | 122,993 | 1,850 | 539,748 |
| 1,690 | 162,983 | 1,900 | 721,130 |
| 1,720 | 211,768 | 1,960 | 985,471 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 2400 HOURS

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 620167 | 615065 | 601329 | 574200 | 607177 | 643157 | 757465 | 831587 | 860742 | 827030 | 785416 | 737461 |
| 2 | 619807 | 613776 | 600996 | 572931 | 607995 | 647180 | 760743 | 831804 | 865509 | 825342 | 783993 | 735974 |
| 3 | 619447 | 613060 | 600304 | 571355 | 608777 | 655722 | 764114 | 832674 | 867698 | 823742 | 782362 | 734970 |
| 4 | 618907 | 612417 | 599669 | 570329 | 610417 | 662421 | 767947 | 832674 | 870742 | 823785 | 780816 | 734087 |
| 5 | 618152 | 611916 | 599563 | 568860 | 611381 | 667351 | 771752 | 832891 | 871459 | 822318 | 778982 | 732685 |
| 6 | 617505 | 610845 | 599105 | 567258 | 613561 | 671358 | 775943 | 834460 | 872805 | 821067 | 776900 | 732685 |
| 7 | 617900 | 610382 | 598084 | 567871 | 614957 | 675875 | 780023 | 834460 | 872985 | 819817 | 774656 | 731244 |
| 8 | 618331 | 609597 | 597239 | 573926 | 616212 | 679762 | 783616 | 834460 | 873839 | 819602 | 770965 | 730125 |
| 9 | 617685 | 608600 | 596466 | 577191 | 617289 | 683242 | 786715 | 834634 | 873120 | 818139 | 768980 | 728886 |
| 10 | 616499 | 607995 | 595025 | 577742 | 617649 | 687618 | 789678 | 834677 | 872312 | 817065 | 766255 | 727929 |
| 11 | 615065 | 606609 | 593797 | 577363 | 618008 | 691162 | 792473 | 834808 | 871460 | 816249 | 764689 | 727411 |
| 12 | 614169 | 605649 | 593447 | 578569 | 618871 | 694679 | 794709 | 834634 | 869623 | 814575 | 763578 | 726693 |
| 13 | 613489 | 604620 | 592361 | 585839 | 619087 | 698092 | 797033 | 834634 | 868370 | 813674 | 761441 | 725937 |
| 14 | 612524 | 603203 | 591452 | 591067 | 619807 | 700542 | 800250 | 833980 | 866358 | 813033 | 759800 | 725300 |
| 15 | 610346 | 602071 | 591452 | 594288 | 620167 | 702568 | 802881 | 833109 | 864483 | 811833 | 758668 | 724226 |
| 16 | 609419 | 601470 | 591241 | 597028 | 621934 | 705184 | 804923 | 831196 | 862790 | 810038 | 757097 | 723471 |
| 17 | 607817 | 599846 | 589809 | 598788 | 623378 | 708198 | 807009 | 828244 | 860920 | 808800 | 755175 | 722558 |
| 18 | 606822 | 599141 | 588624 | 600552 | 625078 | 711574 | 809184 | 826769 | 858609 | 807179 | 753827 | 722082 |
| 19 | 605507 | 597732 | 586986 | 601965 | 626310 | 715118 | 810893 | 823785 | 856479 | 806199 | 752157 | 720812 |
| 20 | 604620 | 596676 | 586534 | 602673 | 625947 | 718635 | 812048 | 823267 | 854795 | 804115 | 750446 | 719941 |
| 21 | 604620 | 595271 | 586326 | 603238 | 625367 | 722201 | 812262 | 823051 | 853159 | 802924 | 749226 | 719703 |
| 22 | 605082 | 594218 | 584207 | 603735 | 626019 | 725897 | 815390 | 822102 | 850597 | 801353 | 747196 | 718358 |
| 23 | 610488 | 593377 | 583409 | 604373 | 625766 | 728886 | 818956 | 823181 | 848216 | 799826 | 746668 | 718001 |
| 24 | 614420 | 592886 | 583202 | 604514 | 627216 | 732885 | 822490 | 822102 | 845532 | 798344 | 745741 | 717211 |
| 25 | 616212 | 595166 | 582024 | 604727 | 628487 | 737099 | 824477 | 821930 | 843160 | 796737 | 744724 | 717092 |
| 26 | 617289 | 600093 | 580916 | 604584 | 632125 | 739797 | 826381 | 822102 | 840794 | 795005 | 743632 | 716460 |
| 27 | 617289 | 601753 | 579949 | 604266 | 636070 | 743026 | 827160 | 826554 | 838868 | 793696 | 741935 | 715908 |
| 28 | 617397 | 602850 | 578672 | 604301 | 639369 | 746385 | 830414 | 832282 | 835767 | 791842 | 740804 | 715316 |
| 29 | 616535 | 602142 | 577742 | 605153 | --- | 749389 | 832326 | 835462 | 832717 | 790201 | 739635 | 714842 |
| 30 | 615495 | 602319 | 576502 | 605755 | --- | 752033 | 832239 | 840575 | 829545 | 788898 | 738870 | 714330 |
| 31 | 615674 | --- | 575436 | 606359 | --- | 754276 | --- | 852584 | --- | 786967 | 737623 | --- |
| MAX | 620167 | 615065 | 601329 | 606359 | 639369 | 754276 | 832326 | 852584 | 873839 | 827030 | 785416 | 737461 |
| MIN | 604620 | 592886 | 575436 | 567258 | 607177 | 643157 | 757465 | 821930 | 829545 | 786967 | 737623 | 714330 |
| a | 1872.05 | 1868.30 | 1860.59 | 1869.44 | 1878.58 | 1908.24 | 1926.74 | 1931.38 | 1926.12 | 1916.14 | 1904.13 | 1898.28 |
| b | -5214 | -13355 | -26883 | +30923 | +33010 | +114907 | +77963 | +20345 | -23039 | -42578 | -49344 | -23293 |

CAL YR 1989 b +16825

WTR YR 1990 b +93442

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11413520 NORTH YUBA RIVER BELOW NEW BULLARDS BAR DAM, NEAR NORTH SAN JUAN, CA

LOCATION.--Lat 39°23'26", long 121°08'36", in SE 1/4 NW 1/4 sec.25, T.18 N., R.7 E., Yuba County, Hydrologic Unit 18020125, Plumas National Forest, on right bank at old Colgate Dam, 0.2 mi downstream from New Bullards Bar Dam, and 2.5 mi northwest of North San Juan.

DRAINAGE AREA.--490 mi². *spill 39 24'48" 121°08'19" - 9 mi DS from Dam*
gate *in mouth but 39 22'48" 121°08'19"* *sta disc*

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder and sharp-crested low-water control since Oct. 1, 1986. Elevation of gage is 1,350 ft above National Geodetic Vertical Datum of 1929, from topographic map. Auxiliary water-stage recorder for high flow 0.9 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by New Bullards Bar Reservoir (station 11413515) since 1969. Prior to 1969, flow regulated by Bullards Bar Reservoir (usable capacity, 31,500 acre-ft). New Colgate powerplant (station 11413510) diverts at New Bullards Bar Dam 0.2 mi upstream. Water is diverted to Feather River basin through Slate Creek tunnel (station 11413250). Camptonville tunnel diverts water from Middle Yuba River to New Bullards Bar Reservoir. Records include flow over New Bullards Bar Reservoir spillway. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE (since construction of New Bullards Bar Dam, unadjusted).--21 years (water years 1970-90), 230 ft³/s, 166,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,200 ft³/s, Jan. 22, 1970, gage height, 35.29 ft, at auxiliary gage, from rating curve extended above 40,000 ft³/s on basis of computation of flow over old Colgate Dam; minimum daily, 0.42 ft³/s, Nov. 5, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 49.8 ft, from floodmarks, discharge, 91,600 ft³/s, at auxiliary gage, from computation of flow over old Colgate Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12 ft³/s, Jan. 12, gage height, 7.18 ft; minimum daily, 6.1 ft³/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
 MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 6.8 | 6.5 | 6.5 | 6.6 | 6.9 | 6.9 | 6.7 | 6.7 | 7.3 | 6.7 | 6.5 | 6.5 |
| 2 | 7.2 | 6.5 | 6.5 | 6.5 | 6.6 | 7.1 | 6.7 | 6.7 | 7.3 | 6.7 | 6.5 | 6.5 |
| 3 | 6.6 | 6.5 | 6.5 | 6.5 | 6.8 | 7.1 | 6.7 | 6.7 | 7.3 | 6.7 | 6.5 | 6.5 |
| 4 | 6.6 | 6.5 | 6.5 | 6.5 | 7.0 | 7.2 | 6.7 | 6.7 | 7.3 | 6.7 | 6.4 | 6.5 |
| 5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.7 | 7.1 | 6.7 | 6.7 | 7.3 | 6.7 | 6.5 | 6.5 |
| 6 | 6.5 | 6.5 | 6.6 | 6.5 | 7.0 | 6.9 | 6.7 | 6.7 | 7.3 | 6.7 | 6.5 | 6.5 |
| 7 | 6.5 | 6.5 | 6.5 | 7.8 | 6.7 | 6.7 | 6.9 | 6.7 | 7.1 | 6.7 | 6.5 | 6.5 |
| 8 | 6.5 | 6.5 | 6.5 | 7.2 | 6.6 | 6.7 | 6.9 | 6.7 | 7.1 | 6.7 | 6.5 | 6.5 |
| 9 | 6.4 | 6.5 | 6.5 | 6.5 | 6.6 | 6.7 | 6.9 | 6.7 | 7.1 | 6.7 | 6.5 | 6.5 |
| 10 | 6.3 | 6.5 | 6.5 | 6.5 | 6.5 | 7.1 | 6.9 | 6.7 | 7.1 | 6.7 | 6.5 | 6.5 |
| 11 | 6.4 | 6.5 | 6.5 | 6.6 | 6.5 | 6.8 | 6.9 | 6.7 | 7.1 | 6.7 | 6.5 | 6.5 |
| 12 | 6.5 | 6.5 | 6.5 | 7.8 | 6.5 | 6.8 | 6.9 | 6.7 | 7.0 | 6.7 | 6.5 | 6.5 |
| 13 | 6.5 | 6.6 | 6.5 | 8.4 | 6.5 | 6.7 | 6.9 | 6.7 | 6.9 | 6.7 | 6.5 | 6.5 |
| 14 | 6.5 | 6.7 | 6.5 | 7.8 | 6.5 | 6.6 | 6.9 | 6.7 | 6.9 | 6.7 | 6.5 | 6.5 |
| 15 | 6.5 | 6.7 | 6.5 | 6.9 | 6.5 | 6.5 | 6.9 | 6.6 | 6.9 | 6.5 | 6.5 | 6.5 |
| 16 | 6.4 | 6.7 | 6.5 | 7.0 | 7.4 | 6.5 | 6.9 | 6.6 | 6.9 | 6.5 | 6.5 | 6.5 |
| 17 | 6.4 | 6.5 | 6.5 | 6.6 | 8.2 | 6.5 | 6.9 | 6.6 | 6.9 | 6.5 | 6.5 | 6.5 |
| 18 | 6.5 | 6.5 | 6.5 | 6.5 | 8.1 | 6.5 | 6.9 | 6.5 | 6.9 | 6.5 | 6.5 | 6.5 |
| 19 | 6.5 | 6.5 | 6.5 | 6.5 | 7.9 | 6.5 | 6.9 | 6.5 | 6.8 | 6.5 | 6.5 | 6.5 |
| 20 | 6.5 | 6.5 | 6.5 | 6.5 | 7.7 | 6.5 | 6.9 | 7.7 | 6.7 | 6.5 | 6.5 | 6.5 |
| 21 | 6.8 | 6.5 | 6.5 | 6.5 | 7.7 | 6.5 | 6.9 | 6.9 | 6.7 | 6.5 | 6.5 | 6.5 |
| 22 | 6.5 | 6.5 | 6.5 | 6.5 | 7.4 | 6.5 | 7.1 | 6.9 | 6.7 | 6.5 | 6.5 | 6.5 |
| 23 | 7.4 | 6.5 | 6.5 | 6.5 | 6.9 | 6.5 | 8.1 | 7.0 | 6.7 | 6.5 | 6.5 | 6.5 |
| 24 | 7.0 | 6.6 | 6.5 | 6.5 | 6.9 | 6.5 | 7.7 | 6.9 | 6.7 | 6.5 | 6.5 | 6.5 |
| 25 | 7.0 | 7.7 | 6.5 | 6.5 | 6.9 | 6.5 | 6.9 | 6.9 | 6.7 | 6.5 | 6.5 | 6.5 |
| 26 | 6.5 | 7.0 | 6.5 | 6.5 | 6.9 | 6.7 | 6.9 | 6.8 | 6.7 | 6.5 | 6.5 | 6.4 |
| 27 | 6.5 | 6.5 | 6.5 | 6.5 | 6.9 | 6.7 | 6.9 | 7.8 | 6.7 | 6.5 | 6.5 | 6.5 |
| 28 | 6.5 | 6.5 | 6.5 | 6.5 | 6.9 | 6.7 | 6.9 | 7.4 | 6.7 | 6.5 | 6.5 | 6.4 |
| 29 | 6.5 | 6.5 | 6.5 | 6.5 | --- | 6.7 | 6.8 | 6.9 | 6.7 | 6.5 | 6.5 | 6.3 |
| 30 | 6.5 | 6.5 | 6.5 | 6.9 | --- | 6.7 | 6.7 | 7.6 | 6.7 | 6.5 | 6.5 | 6.1 |
| 31 | 6.5 | --- | 6.5 | 6.6 | --- | 6.7 | --- | 7.3 | --- | 6.5 | 6.5 | --- |
| TOTAL | 204.3 | 197.5 | 201.6 | 209.7 | 195.7 | 208.1 | 207.7 | 212.7 | 208.2 | 204.3 | 201.4 | 194.2 |
| MEAN | 6.59 | 6.58 | 6.50 | 6.76 | 6.99 | 6.71 | 6.92 | 6.86 | 6.94 | 6.59 | 6.50 | 6.47 |
| MAX | 7.4 | 7.7 | 6.6 | 8.4 | 8.2 | 7.2 | 8.1 | 7.8 | 7.3 | 6.7 | 6.5 | 6.5 |
| MIN | 6.3 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.7 | 6.5 | 6.7 | 6.5 | 6.4 | 6.1 |
| AC-FT | 405 | 392 | 400 | 416 | 388 | 413 | 412 | 422 | 413 | 405 | 399 | 385 |

CAL YR 1989 TOTAL 52726.7 MEAN 144 MAX 11100 MIN 6.1 AC-FT 104600
 WTR YR 1990 TOTAL 2445.4 MEAN 6.70 MAX 8.4 MIN 6.1 AC-FT 4850

SACRAMENTO RIVER BASIN

201

11414000 SOUTH YUBA RIVER NEAR CISCO, CA

LOCATION.--Lat 39°19'17", long 120°33'48", in NW 1/4 SW 1/4 sec.19, T.17 N., R.13 E., Nevada County, Hydrologic Unit 18020125, on right bank 0.9 mi downstream from Rattlesnake Creek, 1.5 mi west of Cisco Grove, and 1.6 mi northwest of Cisco.

DRAINAGE AREA.--51.8 mi².

PERIOD OF RECORD.--April 1942 to current year. Prior to October 1949, published as South Fork Yuba River near Cisco.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,500 ft above National Geodetic Vertical Datum of 1929, from topographic map. April 1942 to September 1945, water-stage recorder at site 1,100 ft upstream and October 1945 to Dec. 12, 1988, water-stage recorder at site 900 ft upstream at different datum.

REMARKS.--Records good. Low flow regulated by several small lakes operated by Pacific Gas & Electric Co. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--48 years, 201 ft³/s, 145,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s, Jan. 31, 1963, gage height, 19.6 ft from floodmarks in gage house, 20.6 ft from outside floodmarks, site and datum then in use, from rating curve extended above 5,000 ft³/s on basis of slope-area measurement at gage height 15.8 ft; minimum daily, 0.1 ft³/s, Nov. 5-7, 1954.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| May 27 | 1545 | *1,170 | *4.68 | | | | |

Minimum daily, 3.6 ft³/s, July 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|------|------|-------|-------|-------|------|-------|-------|-------|
| 1 | 9.6 | 46 | 44 | 25 | 50 | 158 | 471 | 264 | 557 | 11 | e7.8 | 10 |
| 2 | 12 | 50 | 43 | 24 | 46 | 141 | 527 | 302 | 647 | 12 | e7.8 | 10 |
| 3 | 13 | 48 | 42 | 24 | 45 | 200 | 550 | 389 | 502 | 12 | e7.8 | 9.8 |
| 4 | 14 | 55 | 45 | e24 | e45 | 158 | 575 | 457 | 339 | 11 | 7.8 | 12 |
| 5 | 12 | 69 | 56 | e25 | e44 | 118 | 551 | 428 | 244 | 9.5 | 7.7 | 45 |
| 6 | 11 | 55 | 60 | 25 | 44 | 113 | 604 | 394 | 202 | 8.9 | 7.3 | 46 |
| 7 | 10 | 40 | 47 | 60 | 44 | 139 | 533 | 334 | 178 | 8.1 | 7.4 | 44 |
| 8 | 9.8 | 33 | 42 | 634 | 45 | 142 | 412 | 304 | 152 | 7.5 | 7.2 | 44 |
| 9 | 9.8 | 31 | 37 | 293 | 40 | 137 | 387 | 247 | 134 | 7.4 | 7.4 | 43 |
| 10 | 8.9 | 37 | e38 | 161 | 44 | 137 | 518 | 281 | 114 | 6.2 | 7.1 | 42 |
| 11 | 8.5 | 49 | e39 | 111 | 52 | 124 | 622 | 235 | 100 | 5.9 | 8.2 | 41 |
| 12 | 8.2 | 50 | e40 | 129 | 58 | 101 | 636 | 191 | 88 | 5.3 | 8.8 | 40 |
| 13 | 7.9 | 43 | e40 | 168 | 55 | 91 | 733 | 175 | 77 | 5.4 | 8.9 | 39 |
| 14 | 7.9 | 36 | e38 | 117 | 49 | 89 | 764 | 156 | 69 | 6.7 | 9.4 | 38 |
| 15 | 7.8 | 30 | e36 | 98 | e49 | 93 | 743 | 137 | 61 | 8.3 | 9.5 | 37 |
| 16 | 7.7 | 27 | e35 | 91 | 49 | 108 | 651 | 124 | 64 | 8.0 | 9.5 | 35 |
| 17 | 7.6 | 25 | e34 | 81 | e49 | 145 | 477 | 117 | 54 | 6.5 | 9.7 | 24 |
| 18 | 7.4 | 25 | e33 | 73 | e49 | 243 | 465 | 103 | 49 | 5.9 | 10 | 10 |
| 19 | 7.1 | 24 | 31 | 66 | e49 | 317 | 550 | 90 | 47 | 5.6 | 11 | 7.3 |
| 20 | 6.9 | 23 | 29 | 66 | e48 | 357 | 493 | 170 | 39 | 4.8 | 11 | 6.0 |
| 21 | 23 | 20 | 29 | 64 | 47 | 379 | 634 | 390 | 35 | 3.6 | 11 | 7.0 |
| 22 | 85 | 20 | 28 | 64 | 47 | 405 | 450 | 297 | 31 | 5.4 | 11 | 8.0 |
| 23 | 337 | 19 | 28 | 62 | 57 | 428 | 917 | 379 | 28 | 6.3 | 11 | 8.9 |
| 24 | 186 | 34 | e28 | 59 | 64 | 470 | 594 | 339 | 24 | e7.8 | 10 | 11 |
| 25 | 101 | 69 | e28 | 58 | 77 | 511 | 501 | 289 | 22 | e7.8 | 10 | 10 |
| 26 | 68 | 70 | e28 | 58 | 99 | 486 | 550 | 338 | 20 | e7.8 | 10 | 11 |
| 27 | 65 | 55 | e27 | 53 | 138 | 445 | 601 | 746 | 18 | e7.8 | 10 | 11 |
| 28 | 58 | 54 | e26 | 50 | 153 | 419 | 685 | 607 | 16 | e7.8 | 10 | 9.4 |
| 29 | 46 | 53 | 25 | 48 | --- | 364 | 478 | 413 | 14 | e7.8 | 10 | 8.4 |
| 30 | 43 | 49 | 25 | 52 | --- | 364 | 292 | e558 | 12 | e7.8 | 10 | 7.8 |
| 31 | 46 | --- | 24 | 52 | --- | 406 | --- | e607 | --- | e7.8 | 10 | --- |
| TOTAL | 1245.1 | 1239 | 1105 | 2915 | 1636 | 7788 | 16964 | 9861 | 3937 | 233.7 | 284.3 | 675.6 |
| MEAN | 40.2 | 41.3 | 35.6 | 94.0 | 58.4 | 251 | 565 | 318 | 131 | 7.54 | 9.17 | 22.5 |
| MAX | 337 | 70 | 60 | 634 | 153 | 511 | 917 | 746 | 647 | 12 | 11 | 46 |
| MIN | 6.9 | 19 | 24 | 24 | 40 | 89 | 292 | 90 | 12 | 3.6 | 7.1 | 6.0 |
| AC-FT | 2470 | 2460 | 2190 | 5780 | 3250 | 15450 | 33650 | 19560 | 7810 | 464 | 564 | 1340 |

CAL YR 1989 TOTAL 83827.5 MEAN 230 MAX 2690 MIN 2.5 AC-FT 166300
WTR YR 1990 TOTAL 47883.7 MEAN 131 MAX 917 MIN 3.6 AC-FT 94980

e Estimated.

11414090 FORDYCE LAKE NEAR CISCO, CA

LOCATION.--Lat 39°22'44", long 120°29'40", in NE 1/4 SE 1/4 sec.34, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, near left abutment of Fordyce Dam on Fordyce Creek and 5.3 mi northeast of Cisco.

DRAINAGE AREA.--31.7 mi².

PERIOD OF RECORD.--October 1977 to current year. Periodic gage heights only for October 1965 to September 1976 and daily contents for water year 1977 are in the files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is 6,290.5 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Prior to Nov. 29, 1976, nonrecording gage on upstream side of dam at same datum.

REMARKS.--Lake is formed by a rockfill dam; storage began in 1926. In 1980 the capacity of Fordyce Lake was increased by the addition of 3 ft of flashboards. Capacity, 49,903 acre-ft between gage heights 0.85 ft, bottom of outlet valve, and 114.6 ft, top of flashboards in spillway. Released water flows down Fordyce Creek (station 11414100) to Lake Spaulding (station 11414140) for use in a power and irrigation system. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 49,903 acre-ft, June 27, July 4, 6, 1982, June 9, 15-17, 1984, and several days in June 1989, gage height, 114.60 ft; minimum, 250 acre-ft, Oct. 31 to Nov. 7, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 41,402 acre-ft, June 15, 18, gage height, 103.00 ft; minimum, 4,010 acre-ft, Nov. 9, gage height, 25.71 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., dated May 1981)

| | | | | | | | |
|----|-------|----|-------|----|--------|-------|--------|
| 4 | 219 | 20 | 2,608 | 40 | 8,183 | 80 | 26,770 |
| 5 | 278 | 25 | 3,827 | 50 | 11,797 | 90 | 32,820 |
| 10 | 774 | 30 | 5,170 | 60 | 16,174 | 100 | 39,342 |
| 15 | 1,570 | 35 | 6,628 | 70 | 21,196 | 114.6 | 49,903 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|
| 1 | 6533 | 5090 | 4891 | 5854 | 8173 | 9135 | --- | 29506 | 38673 | 36705 | 14650 | 5975 |
| 2 | e6570 | 4886 | 4902 | 5831 | 8196 | 9235 | --- | 29923 | 38922 | 35920 | 13954 | 5939 |
| 3 | 6607 | 4750 | 4997 | 5869 | 8245 | 9318 | --- | 30366 | 39024 | 35226 | 13148 | 6022 |
| 4 | 6652 | 4620 | 5039 | 5881 | 8270 | 9392 | --- | 30959 | 40023 | 34410 | 12440 | 6040 |
| 5 | 6693 | 4500 | 5100 | 5881 | 8304 | 9448 | --- | 31426 | 40262 | 33576 | 11713 | 6057 |
| 6 | 6732 | 4350 | 5153 | 5910 | 8349 | 9490 | 15985 | 31878 | 40496 | 32538 | 10843 | 6188 |
| 7 | 6777 | 4200 | 5184 | 5981 | 8356 | 9540 | 16473 | 32278 | 40661 | 31940 | 10272 | 6350 |
| 8 | 6856 | 4050 | 5255 | 6541 | 8390 | 9608 | 16873 | 32807 | 40854 | 31137 | 9640 | 6303 |
| 9 | 6859 | 4010 | 5300 | 6765 | 8409 | 9640 | 17486 | 33260 | 40930 | 30402 | 9084 | 6637 |
| 10 | 6925 | 4038 | 5337 | 6937 | 8419 | 9747 | 17974 | 33747 | 41062 | 29542 | 9080 | 6771 |
| 11 | 6946 | 4116 | 5369 | 7030 | e8450 | 9816 | 18572 | 34065 | 41193 | 28840 | 9029 | 6789 |
| 12 | 6853 | 4174 | 5377 | 7132 | 8488 | 9895 | 18972 | 34553 | 41179 | 28035 | 8995 | 7037 |
| 13 | 6759 | 4229 | 5429 | 7277 | 8538 | 9968 | 19372 | 35041 | e41200 | 27132 | 8961 | 7172 |
| 14 | 6654 | 4261 | 5434 | 7340 | 8538 | 10001 | 19772 | 34724 | 41256 | 26369 | 8930 | 7301 |
| 15 | 6559 | 4300 | 5434 | 7438 | 8541 | 9997 | 20172 | 34917 | 41402 | 25585 | 8704 | 7494 |
| 16 | 6438 | 4322 | 5509 | 7482 | 8664 | 10019 | 20572 | 35033 | 41249 | 24810 | 8491 | 7535 |
| 17 | 6303 | 4350 | 5497 | 7573 | 8701 | --- | 20972 | 35097 | 41228 | 24033 | 8128 | 7654 |
| 18 | 6185 | 4375 | 5549 | 7623 | e8710 | --- | 22915 | 34743 | 41402 | 23294 | 7635 | 7791 |
| 19 | 6087 | 4402 | 5584 | 7661 | 8728 | --- | 23388 | 34743 | 41172 | 22506 | 7249 | 7620 |
| 20 | 5942 | 4420 | 5607 | 7699 | 8741 | --- | 23977 | 34397 | 41138 | 21729 | 6768 | 7554 |
| 21 | 5934 | 4442 | 5592 | 7752 | 8755 | --- | 24589 | 34570 | 41193 | 21191 | 6598 | 7607 |
| 22 | 5869 | 4458 | 5621 | 7780 | 8778 | --- | 24923 | 34564 | 41041 | 20194 | 6010 | 7466 |
| 23 | 6224 | 4450 | 5621 | 7806 | 8805 | --- | 25803 | 34692 | 40889 | 19529 | 5860 | 7252 |
| 24 | 6236 | 4557 | 5647 | 7861 | 8839 | --- | 26212 | 34872 | 40737 | 18697 | 5872 | 7184 |
| 25 | 6144 | 4623 | 5714 | 7896 | 8869 | --- | 26560 | 35207 | 40585 | 18068 | 5884 | 7062 |
| 26 | 6037 | 4710 | 5740 | 7934 | 8880 | --- | 27103 | 35602 | 40393 | 17105 | 5898 | 7080 |
| 27 | 5854 | 4743 | 5761 | 7963 | 8995 | --- | 27827 | 36312 | 39995 | 16713 | 5931 | 7102 |
| 28 | 5708 | 4775 | 5781 | 7979 | 9063 | --- | 28499 | 36797 | 39078 | 16689 | 5913 | 7354 |
| 29 | 5509 | 4822 | 5793 | 8005 | --- | --- | 29080 | 37266 | 38264 | 16326 | 5925 | 7426 |
| 30 | 5380 | 4875 | 5799 | 8086 | --- | --- | 29380 | 37863 | 37491 | 16216 | 5978 | 7460 |
| 31 | 5199 | --- | 5819 | 8124 | --- | --- | --- | 38210 | --- | 15391 | 5989 | --- |
| MAX | 6946 | 5090 | 5819 | 8124 | 9063 | --- | --- | 38210 | 41402 | 36705 | 14650 | 7791 |
| MIN | 5199 | 4010 | 4891 | 5831 | 8173 | --- | --- | 29506 | 37491 | 15391 | 5860 | 5939 |
| a | 30.10 | 28.94 | 32.26 | 39.82 | 42.64 | --- | 84.40 | 98.32 | 97.24 | 58.33 | 32.84 | 37.73 |
| b | -1339 | -324 | +944 | +2305 | +939 | --- | --- | +8830 | -719 | -22100 | -9402 | +1471 |

CAL YR 1989 MAX 49903 MIN 4010 b -809
WTR YR 1990 MAX 41402 MIN 4010 b +922

e Estimated.

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

11414100 FORDYCE CREEK BELOW FORDYCE DAM, NEAR CISCO, CA

LOCATION.--Lat 39°22'48", long 120°29'54", in NW 1/4 SE 1/4 sec.34, T.18 N., R.13 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 850 ft downstream from Fordyce Dam, and 5.3 mi northeast of Cisco.

DRAINAGE AREA.--31.7 mi².

PERIOD OF RECORD.--June 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,250 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Fordyce Lake (station 11414090). See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--24 years, 131 ft³/s, 94,910 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,660 ft³/s, July 9, 1974, gage height, 7.90 ft in gage well, 6.82 ft from high-water marks, from rating curve extended above 1,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 3.5 ft³/s, Jan. 2-9, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 391 ft³/s, June 28, 29, July 5, gage height, 3.66 ft; minimum daily, 6.8 ft³/s, Nov. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|--------|-------|-------|------|------|------|------|------|-------|--------|-------|
| 1 | 54 | 103 | 8.4 | 9.2 | 12 | 14 | 20 | 34 | 46 | 375 | 357 | 9.5 |
| 2 | 54 | 102 | 8.6 | 9.1 | 12 | 14 | 21 | 35 | 46 | 370 | 353 | 9.5 |
| 3 | 54 | 102 | 8.6 | 8.9 | 12 | 14 | 21 | 36 | 46 | 368 | 349 | 9.5 |
| 4 | 54 | 101 | 8.8 | 9.1 | 13 | 14 | 21 | 37 | 47 | 364 | 345 | 9.5 |
| 5 | 54 | 100 | 8.7 | 9.2 | 12 | 14 | 21 | 38 | 48 | 372 | 341 | 9.5 |
| 6 | 55 | 99 | 8.7 | 9.2 | 12 | 14 | 21 | 39 | 49 | 378 | 337 | 9.5 |
| 7 | 56 | 99 | 8.9 | 11 | 12 | 14 | 21 | 39 | 49 | 375 | 331 | 9.7 |
| 8 | 56 | 98 | 8.9 | 13 | 13 | 14 | 20 | 39 | 49 | 372 | 326 | 9.8 |
| 9 | 56 | 44 | 8.9 | 11 | 13 | 15 | 19 | 39 | 49 | 369 | 215 | 10 |
| 10 | 56 | 6.8 | 8.9 | 11 | 13 | 15 | 20 | 40 | 50 | 366 | 15 | 10 |
| 11 | 56 | 7.1 | 8.9 | 11 | 13 | 15 | 23 | 40 | 50 | 362 | 15 | 10 |
| 12 | 93 | 7.2 | 8.9 | 11 | 13 | 14 | 26 | 40 | 50 | 367 | 15 | 11 |
| 13 | 114 | 7.4 | 8.9 | 12 | 13 | 14 | 28 | 42 | 50 | 370 | 15 | 11 |
| 14 | 114 | 7.5 | 8.9 | 12 | 12 | 15 | 28 | 41 | 50 | 366 | 15 | 11 |
| 15 | 113 | 7.7 | 8.9 | 12 | 12 | 14 | 29 | 40 | 50 | 362 | 46 | 11 |
| 16 | 113 | 7.7 | 8.9 | 12 | 13 | 14 | 30 | 38 | 50 | 359 | 176 | 11 |
| 17 | 112 | 7.7 | 8.9 | 12 | 13 | 15 | 30 | 121 | 50 | 356 | 219 | 11 |
| 18 | 111 | 7.7 | 8.9 | 12 | 13 | 15 | 32 | 214 | 50 | 353 | 216 | 12 |
| 19 | 110 | 7.7 | 8.9 | 12 | 13 | 15 | 32 | 213 | 50 | 363 | 212 | 12 |
| 20 | 110 | 7.7 | 8.9 | 12 | 13 | 15 | 34 | 213 | 50 | 367 | 209 | 12 |
| 21 | 110 | 7.7 | 9.0 | 12 | 13 | 15 | 34 | 213 | 73 | 363 | 207 | 12 |
| 22 | 109 | 7.7 | 8.9 | 12 | 13 | 16 | 37 | 213 | 99 | 359 | 204 | 12 |
| 23 | 114 | 7.7 | 8.9 | 12 | 13 | 18 | 36 | 214 | 99 | 356 | 101 | 12 |
| 24 | 111 | 8.1 | 8.9 | 12 | 13 | 19 | 36 | 118 | 98 | 353 | 10 | 12 |
| 25 | 111 | 8.3 | 8.9 | 12 | 13 | 19 | 36 | 40 | 98 | 349 | 10 | 12 |
| 26 | 109 | 8.4 | 8.9 | 12 | 13 | 20 | 38 | 40 | 163 | 346 | 9.8 | 12 |
| 27 | 108 | 8.3 | 8.9 | 12 | 13 | 21 | 39 | 42 | 220 | 211 | 9.8 | 12 |
| 28 | 107 | 8.3 | 8.9 | 12 | 13 | 21 | 40 | 42 | 325 | 23 | 9.8 | 12 |
| 29 | 106 | 8.3 | 9.1 | 12 | --- | 21 | 35 | 43 | 381 | 23 | 9.5 | 13 |
| 30 | 105 | 8.3 | 9.2 | 12 | --- | 21 | 33 | 45 | 377 | 190 | 9.5 | 13 |
| 31 | 104 | --- | 9.2 | 12 | --- | 21 | --- | 45 | --- | 360 | 9.5 | --- |
| TOTAL | 2789 | 1011.3 | 275.2 | 350.7 | 356 | 500 | 861 | 2433 | 2912 | 10267 | 4696.9 | 330.5 |
| MEAN | 90.0 | 33.7 | 8.88 | 11.3 | 12.7 | 16.1 | 28.7 | 78.5 | 97.1 | 331 | 152 | 11.0 |
| MAX | 114 | 103 | 9.2 | 13 | 13 | 21 | 40 | 214 | 381 | 378 | 357 | 13 |
| MIN | 54 | 6.8 | 8.4 | 8.9 | 12 | 14 | 19 | 34 | 46 | 23 | 9.5 | 9.5 |
| AC-FT | 5530 | 2010 | 546 | 696 | 706 | 992 | 1710 | 4830 | 5780 | 20360 | 9320 | 656 |

CAL YR 1989 TOTAL 48342.5 MEAN 132 MAX 633 MIN 6.8 AC-FT 95890
WTR YR 1990 TOTAL 26782.6 MEAN 73.4 MAX 381 MIN 6.8 AC-FT 53120

11414140 LAKE SPAULDING NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°19'35", long 120°38'32", in SE 1/4 NE 1/4 sec.20, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, near center of Spaulding Dam on South Yuba River and 2.5 mi northeast of Emigrant Gap.

DRAINAGE AREA.--118 mi².

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,809.6 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Prior to July 1968, nonrecording gage at same site and datum.

REMARKS. --Lake is formed by three concrete-arch dams with spillway on the middle arch. Storage began in 1913. Capacity, 74,773 acre-ft between gate heights 0.6 ft, bottom of outlet, and 205.0 ft, top of radial gates.

Released water flows through Spaulding powerplants Nos. 1 and 2 (stations 11414154 and 11414155). Flow through powerplant No. 1 is transported out of Yuba River basin by Drum Canal to Bear River basin. See schematic diagram of Yuba River and Bear River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 75,100 acre-ft, July 13, 1967, gage height, 205.5 ft; minimum, 914 acre-ft, Feb. 28, 1976, gage height, 25.5 ft.

EXTREMES FOR CURRENT YEAR. --Maximum contents, 74,508 acre-ft, May 31, gage height, 204.62 ft; minimum, 20,013 acre-ft, Feb. 24, 25, gage height, 101.28 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co., dated Apr. 23, 1965)

| | | | |
|----|-------|-----|--------|
| 20 | 566 | 70 | 9,632 |
| 25 | 874 | 100 | 19,541 |
| 30 | 1,352 | 150 | 41,545 |
| 40 | 2,742 | 200 | 71,329 |
| 50 | 4,578 | 206 | 75,473 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 53824 | 51210 | e45891 | 27146 | 23670 | 20841 | 36182 | 69698 | 74347 | 69383 | 60190 | 48480 |
| 2 | 54217 | 50828 | e45242 | 26738 | 23096 | 21184 | 37212 | 70140 | 74417 | 69130 | 59614 | 48247 |
| 3 | 55085 | 50646 | e44866 | 26350 | 22583 | 22182 | 39211 | 70382 | 74215 | 68870 | 59288 | 47992 |
| 4 | 55643 | 51382 | 44352 | 25993 | 22033 | 22715 | 40368 | 70517 | 74097 | 68531 | 59122 | 47345 |
| 5 | 56318 | 52157 | 43921 | 25565 | 21613 | 22956 | 41721 | 70949 | 74055 | 68232 | 58944 | 46512 |
| 6 | 56408 | 52100 | 43460 | 25133 | 21241 | 23042 | 43133 | 71553 | 74104 | 68272 | 58589 | 45723 |
| 7 | 56145 | 51611 | 42922 | 25003 | 20833 | 23190 | 44422 | 71553 | 74104 | 68757 | 58076 | 45022 |
| 8 | 55816 | 51125 | 42476 | 27235 | 20429 | 23417 | 45350 | 71234 | 73750 | 69190 | 57505 | 44598 |
| 9 | 55257 | 50657 | 42225 | 27731 | 20287 | 23674 | 46218 | 70861 | 73411 | 69103 | 56967 | 44182 |
| 10 | 54541 | 50391 | 41944 | 27735 | 20571 | 23971 | 47098 | 70625 | 73245 | 68770 | 56025 | 43497 |
| 11 | 53812 | 50885 | 41659 | 27591 | 20897 | 24106 | 47958 | 70315 | 73266 | 68398 | 55810 | 42549 |
| 12 | 53025 | 51302 | 41302 | 27608 | 21116 | 24170 | 48832 | 69939 | 73438 | 67882 | 55542 | 41597 |
| 13 | 52353 | 51022 | 40741 | 28180 | 21086 | 24186 | 49983 | 69530 | 73404 | 67263 | 55049 | 40721 |
| 14 | 51732 | 50306 | 40205 | 28460 | 21086 | 24158 | 51651 | 69090 | 73708 | 67315 | 54464 | 39752 |
| 15 | 51136 | 49617 | 39615 | 28555 | 21010 | 24134 | 53205 | 68690 | 73840 | 67374 | 53883 | 39641 |
| 16 | 50538 | 48921 | 39010 | 28429 | 21010 | 24222 | 54553 | 68266 | 73979 | 67092 | 53438 | 39935 |
| 17 | 50000 | 48175 | 38444 | 28124 | 20988 | 24522 | 55512 | 67941 | 74097 | 66470 | 53374 | 40240 |
| 18 | 49397 | 47467 | 37838 | 27197 | 20826 | 25092 | 56282 | 67816 | 73750 | 65923 | 53701 | 40511 |
| 19 | 48754 | 46769 | 37123 | 26529 | 20709 | 25907 | 57269 | 67710 | 73059 | 65430 | 54023 | 40741 |
| 20 | 48164 | 46071 | 36488 | 26562 | 20563 | 26801 | 58003 | 67981 | 72207 | 64926 | 53994 | 41019 |
| 21 | 48141 | 45356 | 35814 | 26625 | 20295 | 27714 | 59491 | 68863 | 71410 | 64745 | 53608 | 41261 |
| 22 | 48955 | 44920 | 34847 | 26487 | 20180 | 28719 | 60612 | 69430 | 70841 | 64533 | 53217 | 41514 |
| 23 | 50675 | 45518 | 33840 | 26200 | 20087 | 29707 | 63260 | 70490 | 70679 | 64103 | 52747 | 41804 |
| 24 | 51382 | 46223 | 32871 | 25907 | 20013 | 30844 | 64180 | 71240 | 70524 | 63508 | 52238 | 42121 |
| 25 | 51697 | 47428 | 31920 | 25619 | 20013 | 32044 | 64513 | 71607 | 69993 | 62936 | 52232 | 42413 |
| 26 | 51892 | 48192 | 31001 | 25357 | 20080 | 33010 | 65261 | 72043 | 69577 | 62524 | 52249 | 42686 |
| 27 | 52071 | 48058 | 30060 | 25418 | 20321 | 33662 | 66222 | 73556 | 69778 | 62423 | 51686 | 42686 |
| 28 | 51985 | 47494 | 29154 | 25496 | 20593 | 34245 | 67710 | 73667 | 69363 | 62278 | 50902 | 43027 |
| 29 | 51938 | 46955 | 28304 | 25145 | --- | 34686 | 68710 | 73314 | 69143 | 62001 | 50130 | 43270 |
| 30 | 51933 | 46425 | 27902 | 24655 | --- | 35037 | 69310 | 74396 | 69310 | 61298 | 49347 | 43555 |
| 31 | 51646 | --- | 27531 | 24158 | --- | 35530 | --- | 74508 | --- | 60749 | 48809 | --- |
| MAX | 56408 | 52157 | 45891 | 28555 | 23670 | 35530 | 69310 | 74508 | 74417 | 69383 | 60190 | 48480 |
| MIN | 48141 | 44920 | 27531 | 24158 | 20013 | 20841 | 36182 | 67710 | 69143 | 60749 | 48809 | 39641 |
| a | 168.51 | 159.18 | 120.27 | 112.08 | 102.84 | 137.95 | 197.00 | 204.62 | 197.00 | 183.73 | 163.50 | 153.84 |
| b | -1484 | -5221 | -18894 | -3373 | -3565 | +14937 | +33780 | +5198 | -5198 | -8561 | -11940 | -5254 |
| c | 22980 | 23110 | 25050 | 10210 | 6360 | 8880 | 13830 | 29220 | 29540 | 30930 | 26990 | 11080 |
| d | 2920 | 2020 | 1900 | 1640 | 1250 | 1740 | 1070 | 3390 | 4590 | 4700 | 4050 | 2860 |

| | | | | | |
|-------------|-----------|-----------|---------|----------|---------|
| CAL YR 1989 | MAX 74501 | MIN 16328 | b -1851 | c 321200 | d 58450 |
|-------------|-----------|-----------|---------|----------|---------|

| | | | | | | | | | | | | |
|-----|----|------|-----|-------|-----|-------|---|-------|---|--------|---|-------|
| WTR | YR | 1990 | MAX | 74508 | MIN | 20013 | b | -9575 | c | 238200 | d | 32130 |
|-----|----|------|-----|-------|-----|-------|---|-------|---|--------|---|-------|

e Estimated.

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

c Diversion, in acre-feet, to Spaulding No. 1 powerplant, provided by Pacific Gas & Electric Co.

d Diversion, in acre-feet, to Spaulding No. 2 powerplant, provided by Pacific Gas & Electric Co.

| | | | | | | | | | | |
|-------------|-------|-----------|------|-----|-----|-----|-----|-----|-------|--------|
| CAL YR 1989 | TOTAL | 199597.80 | MEAN | 547 | MAX | 832 | MIN | .00 | AC-FT | 395900 |
| WTR YR 1990 | TOTAL | 147230.50 | MEAN | 403 | MAX | 820 | MIN | .00 | AC-FT | 292000 |

11414190 DRUM CANAL ABOVE DRUM FOREBAY, NEAR BLUE CANYON, CA

LOCATION.--Lat 39°15'54", long 120°43'44", in NE 1/4 SW 1/4 sec.10, T.16 N., R.11 E., Placer County, Hydrologic Unit 18020126, on right bank 1.2 mi northwest of Blue Canyon and 1.5 mi upstream from Drum Forebay.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow is water diverted from South Yuba River through Spaulding No. 1 powerplant (station 11414154) plus diversion from North Fork American River basin by way of Lake Valley Canal (station 11426190). Most of the water from Drum Canal enters the Bear River via Drum powerplants Nos. 1 and 2 (stations 11414194 and 11414195) at Drum Afterbay. Some of the water is diverted out of Drum Forebay to Alta powerplant (station 11421725). See schematic diagrams of Yuba and Bear River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--26 years, 526 ft³/s, 381,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 856 ft³/s, May 8, 1982; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1 | e.00 | 680 | 659 | 307 | 439 | 257 | 409 | 201 | 741 | 605 | 585 | 298 |
| 2 | e.00 | 679 | 658 | 306 | 444 | 256 | 353 | 214 | 742 | 684 | 584 | 315 |
| 3 | e.00 | 578 | 656 | 305 | 452 | 256 | 140 | 367 | 739 | 757 | 583 | 317 |
| 4 | e48 | 128 | 653 | 304 | 454 | 256 | 144 | 496 | 676 | 758 | 582 | 470 |
| 5 | e18 | 127 | 653 | 308 | 403 | 256 | 265 | 332 | 529 | 757 | 582 | 579 |
| 6 | e231 | 443 | 653 | 313 | 363 | 256 | 269 | 201 | 420 | 636 | 659 | 586 |
| 7 | 445 | 682 | 652 | 322 | 361 | 256 | 269 | 376 | 453 | 401 | 759 | 550 |
| 8 | 473 | 680 | 625 | 337 | 361 | 257 | 265 | 493 | 564 | 402 | 760 | 381 |
| 9 | 542 | 657 | 536 | 315 | e213 | 252 | 263 | 493 | 556 | 625 | 761 | 394 |
| 10 | 658 | 500 | 536 | 309 | e23 | 253 | 382 | 494 | 422 | 756 | 741 | 505 |
| 11 | 681 | 140 | 532 | 310 | e23 | 250 | 503 | 495 | 358 | 755 | 359 | 643 |
| 12 | 684 | 141 | 547 | 312 | e106 | 247 | 505 | 493 | 317 | 754 | 369 | 637 |
| 13 | 682 | 444 | 647 | 325 | e181 | 242 | 477 | 492 | 320 | 734 | 486 | 632 |
| 14 | 676 | 677 | 637 | 319 | e221 | 243 | 263 | 491 | 323 | 399 | 563 | 625 |
| 15 | 672 | 677 | 644 | 340 | e216 | 244 | 265 | 490 | 322 | 372 | 563 | 250 |
| 16 | 668 | 674 | 640 | 445 | e248 | 246 | 264 | 490 | 322 | 413 | 562 | e.00 |
| 17 | 665 | 672 | 637 | 560 | e257 | 252 | 261 | 489 | 321 | 586 | 428 | e.00 |
| 18 | 662 | 670 | 634 | 561 | e256 | 252 | 259 | 495 | 477 | 585 | 198 | e.00 |
| 19 | 661 | 668 | 631 | 553 | e256 | 249 | 262 | 500 | 718 | 585 | 201 | e.00 |
| 20 | 661 | 666 | 627 | 179 | e255 | 254 | 327 | 504 | 748 | 566 | 361 | e.00 |
| 21 | 559 | 662 | 623 | 147 | e254 | 260 | 124 | 495 | 742 | 414 | 573 | e.00 |
| 22 | 162 | 526 | 620 | 244 | e251 | 266 | 124 | 496 | 673 | 414 | 572 | e.00 |
| 23 | 292 | 57 | 614 | 329 | e252 | 269 | 283 | 509 | 457 | 512 | 557 | e.00 |
| 24 | 429 | 95 | 609 | 329 | e249 | 274 | 569 | 511 | 457 | 591 | 467 | e.00 |
| 25 | 433 | 205 | 603 | 328 | e249 | 277 | 623 | 509 | 622 | 589 | 162 | e.00 |
| 26 | 437 | 201 | 598 | 322 | e251 | 333 | 393 | 511 | 616 | 505 | 162 | e8.0 |
| 27 | 443 | 433 | 592 | 136 | e254 | 410 | 347 | 583 | 327 | 371 | 426 | 68 |
| 28 | 445 | 661 | 582 | 134 | e256 | 404 | 125 | 716 | 758 | 102 | 573 | 100 |
| 29 | 438 | 662 | 541 | 309 | --- | 401 | 123 | 700 | 733 | 102 | 571 | 51 |
| 30 | 471 | 659 | 311 | 446 | --- | 401 | 147 | 728 | 604 | 370 | 567 | 48 |
| 31 | 589 | --- | 308 | 441 | --- | 403 | --- | 733 | --- | 584 | 530 | --- |
| TOTAL | 13825.00 | 14744 | 18458 | 10195 | 7548 | 8732 | 9003 | 15097 | 16057 | 16684 | 15846 | 7457.00 |
| MEAN | 446 | 491 | 595 | 329 | 270 | 282 | 300 | 487 | 535 | 538 | 511 | 249 |
| MAX | 684 | 682 | 659 | 561 | 454 | 410 | 623 | 733 | 758 | 758 | 761 | 643 |
| MIN | .00 | 57 | 308 | 134 | 23 | 242 | 123 | 201 | 317 | 102 | 162 | .00 |
| AC-FT | 27420 | 29240 | 36610 | 20220 | 14970 | 17320 | 17860 | 29940 | 31850 | 33090 | 31430 | 14790 |
| a | 12160 | 11570 | 13890 | 3990 | 7670 | 6740 | 7790 | 14570 | 16070 | 17590 | 15470 | 7070 |
| b | 14500 | 17170 | 21650 | 15140 | 7520 | 11690 | 10360 | 14530 | 14850 | 13870 | 14290 | 6090 |
| c | 1220 | 1100 | 743 | 549 | 289 | 198 | 287 | 182 | 192 | 239 | 227 | 237 |

CAL YR 1989 TOTAL 199066.00 MEAN 545 MAX 818 MIN .00 AC-FT 394800 a 144100 b 236500 c 12500
WTR YR 1990 TOTAL 153646.00 MEAN 421 MAX 761 MIN .00 AC-FT 304800 a 134600 b 161700 c 5460

e Estimated.

a Discharge, in acre-feet, to Drum No. 1 powerplant, provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, to Drum No. 2 powerplant, provided by Pacific Gas & Electric Co.

c Discharge, in acre-feet, to Alta powerplant, provided by Pacific Gas & Electric Co.

PYRAMID AND WINNEMUCCA LAKES BASIN

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11414200 SOUTH YUBA CANAL NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°18'49", Long 120°39'43", in SE 1/4 NE 1/4 sec.30, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on left bank of concrete flume 400 ft downstream from Bowman Lake Road and 2.5 mi northeast of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,590 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Canal diverts from Spaulding No. 2 powerplant (station 11414155) at Lake Spaulding Dam. Downstream from the gage, some flow is diverted to Bear River. The remainder of the water enters Deer Creek at Deer Creek powerplant (station 11414205). See schematic diagrams of Yuba and Bear River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--26 years, 88.9 ft³/s, 64,410 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 165 ft³/s, Aug. 3, 1965; no flow Apr. 20-22, 1966, Apr. 6-11, 1971, and Apr. 5-21, 1986.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 57 | 55 | 45 | 45 | 39 | 60 | 25 | 38 | 111 | 81 | 83 | 61 |
| 2 | 55 | 53 | 45 | 46 | 39 | 57 | 16 | 45 | 121 | 81 | 82 | 60 |
| 3 | 54 | 45 | 45 | 46 | 40 | 54 | 16 | 51 | 113 | 80 | 82 | 60 |
| 4 | 55 | 48 | 45 | 46 | 43 | 57 | 16 | 55 | 58 | 82 | 82 | 60 |
| 5 | 56 | 48 | 45 | 45 | 40 | 60 | 16 | 59 | 58 | 82 | 81 | 60 |
| 6 | 56 | 49 | 46 | 45 | 43 | 60 | 16 | 59 | 58 | 82 | 81 | 60 |
| 7 | 56 | 46 | 49 | 44 | 40 | 60 | 16 | 59 | 58 | 82 | 81 | 61 |
| 8 | 56 | 45 | 49 | 42 | 41 | 60 | 16 | 60 | 58 | 81 | 81 | 63 |
| 9 | 57 | 46 | 47 | 45 | 41 | 51 | 16 | 59 | 59 | 81 | 81 | 62 |
| 10 | 58 | 43 | 45 | 45 | 41 | 50 | 16 | 59 | 58 | 82 | 81 | 62 |
| 11 | 57 | 50 | 45 | 45 | 41 | 53 | 15 | 59 | 58 | 81 | 78 | 61 |
| 12 | 57 | 51 | 45 | 44 | 40 | 52 | 24 | 59 | 68 | 81 | 79 | 60 |
| 13 | 57 | 49 | 45 | 44 | 41 | 60 | 39 | 59 | 80 | 81 | 78 | 60 |
| 14 | 57 | 45 | 46 | 50 | 49 | 60 | 40 | 59 | 82 | 80 | 75 | 60 |
| 15 | 56 | 45 | 47 | 46 | 60 | 60 | 41 | 59 | 81 | 80 | 70 | 65 |
| 16 | 56 | 45 | 47 | 47 | 49 | 52 | 41 | 58 | 81 | 80 | 65 | 67 |
| 17 | 55 | 47 | 47 | 48 | 49 | 43 | 41 | 58 | 81 | 82 | 66 | 66 |
| 18 | 55 | 47 | 47 | 47 | 49 | 41 | 42 | 58 | 80 | 81 | 66 | 67 |
| 19 | 56 | 46 | 47 | 47 | 49 | 40 | 42 | 58 | 78 | 81 | 67 | 67 |
| 20 | 56 | 45 | 47 | 48 | 48 | 40 | 42 | 58 | 80 | 81 | 66 | 67 |
| 21 | 57 | 47 | 46 | 46 | 47 | 40 | 43 | 56 | 80 | 81 | 66 | 65 |
| 22 | 53 | 47 | 44 | 46 | 47 | 40 | 44 | 58 | 80 | 81 | 65 | 65 |
| 23 | 52 | 46 | 48 | 46 | 47 | 40 | 41 | 59 | 81 | 81 | 66 | 64 |
| 24 | 52 | 46 | 48 | 45 | 48 | 40 | 40 | 58 | 80 | 82 | 65 | 64 |
| 25 | 54 | 40 | 47 | 45 | 49 | 40 | 39 | 58 | 81 | 82 | 66 | 63 |
| 26 | 57 | 43 | 47 | 45 | 56 | 41 | 38 | 59 | 81 | 82 | 66 | 62 |
| 27 | 59 | 45 | 46 | 45 | 61 | 42 | 39 | 71 | 81 | 82 | 67 | 60 |
| 28 | 58 | 46 | 46 | 45 | 60 | 42 | 40 | 114 | 82 | 81 | 67 | 59 |
| 29 | 56 | 46 | 47 | 43 | --- | 41 | 40 | 88 | 81 | 82 | 67 | 57 |
| 30 | 55 | 46 | 48 | 41 | --- | 41 | 38 | 53 | 79 | 81 | 62 | 58 |
| 31 | 56 | --- | 45 | 40 | --- | 41 | --- | 63 | --- | 82 | 60 | --- |
| TOTAL | 1731 | 1400 | 1436 | 1402 | 1297 | 1518 | 938 | 1866 | 2327 | 2519 | 2242 | 1866 |
| MEAN | 55.8 | 46.7 | 46.3 | 45.2 | 46.3 | 49.0 | 31.3 | 60.2 | 77.6 | 81.3 | 72.3 | 62.2 |
| MAX | 59 | 55 | 49 | 50 | 61 | 60 | 44 | 114 | 121 | 82 | 83 | 67 |
| MIN | 52 | 40 | 44 | 40 | 39 | 40 | 15 | 38 | 58 | 80 | 60 | 57 |
| AC-FT | 3430 | 2780 | 2850 | 2780 | 2570 | 3010 | 1860 | 3700 | 4620 | 5000 | 4450 | 3700 |
| a | 2940 | 2380 | 2430 | 2400 | 1490 | 2680 | 1270 | 3180 | 3760 | 4320 | 3830 | 3060 |

CAL YR 1989 TOTAL 28894.1 MEAN 79.2 MAX 141 MIN 8.1 AC-FT 57310 a 37030
WTR YR 1990 TOTAL 20542 MEAN 56.3 MAX 121 MIN 15 AC-FT 40750 a 33740

a Discharge, in acre-feet, to Deer Creek powerplant, provided by Pacific Gas & Electric Co.

11414210 SOUTH YUBA RIVER BELOW SPAULDING NO. 2 POWERPLANT, NEAR EMIGRANT GAP, CA.

LOCATION.--Lat 39°19'28", long 120°38'42", in NE 1/4 SE 1/4 sec.20, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on left bank 200 ft downstream from Spaulding No. 2 powerplant, 0.2 mi downstream from Spaulding dam, and 2.3 mi northeast of Emigrant Gap.

DRAINAGE AREA.--118 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1965-85 in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir and steel-lipped rectangular weir. Elevation of gage is 4,670 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 1988, at same site and different datum.

REMARKS.--No estimated daily discharges. Flow regulated by Lake Spaulding (station 11414140) 0.2 mi upstream. Water is released at the intake to South Yuba Canal (station 11414200) 100 ft upstream. See schematic diagram of Yuba and Bear River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--5 years, 12.5 ft³/s, 9,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 194 ft³/s, Apr. 14, June 8, 1986, gage height, 3.37 ft, from rating curve extended above 45 ft³/s, on basis of weir formula; minimum daily, 0.09 ft³/s, Nov. 5-7, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 75 ft³/s, May 31, gage height, 2.22 ft; minimum daily, 1.3 ft³/s, Jan. 15, Feb. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| 1 | 5.6 | 4.8 | 1.7 | 4.8 | 1.8 | 1.8 | 4.8 | 2.0 | 53 | 2.4 | 5.1 | 5.2 |
| 2 | 5.8 | 4.8 | 1.7 | 4.8 | 1.8 | 3.2 | 5.5 | 2.0 | 36 | 2.5 | 5.2 | 5.0 |
| 3 | 5.7 | 4.7 | 1.7 | 4.8 | 1.7 | 3.5 | 6.4 | 2.1 | 3.5 | 2.5 | 5.0 | 5.0 |
| 4 | 5.5 | 4.5 | 1.7 | 4.8 | 1.7 | 2.0 | 5.0 | 2.1 | 2.1 | 2.5 | 5.0 | 5.1 |
| 5 | 5.3 | 4.5 | 1.7 | 4.8 | 1.7 | 2.0 | 5.0 | 2.1 | 1.8 | 2.7 | 5.0 | 5.2 |
| 6 | 5.3 | 4.6 | 1.6 | 4.8 | 1.7 | 1.8 | 5.0 | 2.0 | 1.8 | 2.9 | 5.0 | 5.1 |
| 7 | 5.5 | 4.8 | 1.6 | 5.6 | 1.7 | 1.8 | 5.0 | 2.1 | 1.8 | 2.9 | 5.2 | 5.3 |
| 8 | 5.6 | 4.8 | 1.6 | 6.1 | 1.7 | 1.9 | 5.1 | 2.1 | 1.9 | 3.0 | 5.2 | 5.3 |
| 9 | 5.3 | 4.6 | 1.6 | 5.1 | 1.7 | 1.8 | 5.3 | 2.1 | 1.9 | 3.2 | 5.0 | 5.3 |
| 10 | 5.0 | 4.5 | 1.6 | 3.7 | 2.7 | 1.8 | 5.3 | 2.1 | 1.9 | 3.2 | 5.0 | 5.3 |
| 11 | 5.0 | 4.5 | 1.6 | 1.8 | 5.0 | 1.8 | 5.1 | 2.1 | 1.9 | 3.2 | 5.0 | 5.2 |
| 12 | 5.0 | 4.5 | 1.6 | 1.4 | 4.6 | 1.7 | 4.3 | 2.1 | 1.9 | 3.2 | 5.0 | 5.0 |
| 13 | 5.0 | 4.6 | 1.6 | 1.9 | 4.0 | 1.7 | 3.1 | 2.1 | 1.9 | 3.2 | 5.0 | 5.0 |
| 14 | 4.9 | 4.8 | 2.7 | 1.5 | 3.8 | 1.7 | 3.3 | 2.1 | 1.9 | 3.2 | 5.1 | 5.0 |
| 15 | 4.9 | 4.8 | 4.5 | 1.3 | 3.5 | 1.9 | 3.2 | 2.1 | 1.9 | 3.2 | 5.3 | 5.0 |
| 16 | 5.0 | 4.8 | 4.5 | 1.5 | 1.3 | 1.9 | 2.6 | 2.9 | 1.9 | 3.5 | 5.3 | 5.0 |
| 17 | 5.1 | 4.8 | 4.0 | 1.8 | 1.5 | 2.0 | 2.6 | 3.6 | 1.9 | 3.8 | 5.4 | 5.0 |
| 18 | 5.3 | 4.8 | 3.5 | 1.7 | 1.5 | 2.0 | 2.5 | 3.7 | 1.9 | 3.5 | 5.6 | 5.0 |
| 19 | 5.3 | 4.8 | 3.5 | 1.7 | 1.5 | 2.0 | 2.5 | 3.8 | 1.9 | 3.5 | 5.6 | 5.0 |
| 20 | 5.3 | 4.8 | 3.5 | 1.7 | 2.5 | 1.9 | 2.5 | 3.9 | 1.9 | 3.5 | 5.5 | 5.0 |
| 21 | 5.9 | 4.6 | 3.5 | 1.7 | 3.6 | 1.9 | 2.5 | 2.1 | 1.9 | 3.5 | 5.3 | 5.0 |
| 22 | 5.7 | 4.5 | 3.5 | 1.7 | 3.6 | 1.9 | 2.5 | 2.2 | 1.9 | 3.9 | 5.3 | 5.0 |
| 23 | 6.1 | 4.5 | 3.5 | 1.7 | 3.1 | 1.8 | 3.5 | 3.4 | 1.8 | 4.3 | 5.3 | 5.1 |
| 24 | 2.4 | 4.8 | 3.9 | 1.7 | 2.4 | 1.9 | 2.9 | 2.3 | 2.0 | 4.5 | 5.3 | 5.0 |
| 25 | 2.1 | 6.2 | 4.3 | 1.7 | 2.4 | 1.9 | 2.4 | 2.2 | 2.4 | 4.5 | 5.3 | 5.0 |
| 26 | 3.1 | 2.0 | 4.4 | 1.7 | 2.4 | 1.8 | 1.9 | 2.1 | 2.3 | 4.7 | 5.3 | 5.0 |
| 27 | 4.9 | 1.9 | 4.8 | 1.7 | 1.9 | 1.8 | 1.8 | 6.1 | 2.0 | 5.3 | 5.3 | 5.0 |
| 28 | 4.8 | 1.6 | 4.8 | 1.7 | 1.8 | 1.8 | 1.8 | 63 | 2.1 | 5.4 | 5.3 | 4.9 |
| 29 | 4.8 | 1.7 | 4.8 | 1.7 | --- | 2.0 | 1.8 | 38 | 2.3 | 5.6 | 5.3 | 5.2 |
| 30 | 4.8 | 1.7 | 4.8 | 1.7 | --- | 2.9 | 2.0 | 6.4 | 2.5 | 5.7 | 5.3 | 5.6 |
| 31 | 4.8 | --- | 4.8 | 1.8 | --- | 4.9 | --- | 15 | --- | 5.5 | 5.3 | --- |
| TOTAL | 154.8 | 127.3 | 94.6 | 84.4 | 68.6 | 64.8 | 107.2 | 191.9 | 145.9 | 114.5 | 161.8 | 152.8 |
| MEAN | 4.99 | 4.24 | 3.05 | 2.72 | 2.45 | 2.09 | 3.57 | 6.19 | 4.86 | 3.69 | 5.22 | 5.09 |
| MAX | 6.1 | 6.2 | 4.8 | 6.1 | 5.0 | 4.9 | 6.4 | 63 | 53 | 5.7 | 5.6 | 5.6 |
| MIN | 2.1 | 1.6 | 1.6 | 1.3 | 1.3 | 1.7 | 1.8 | 2.0 | 1.8 | 2.4 | 5.0 | 4.9 |
| AC-FT | 307 | 252 | 188 | 167 | 136 | 129 | 213 | 381 | 289 | 227 | 321 | 303 |

CAL YR 1989 TOTAL 4900.9 MEAN 13.4 MAX 45 MIN 1.5 AC-FT 9720
WTR YR 1990 TOTAL 1468.6 MEAN 4.02 MAX 63 MIN 1.3 AC-FT 2910

11414250 SOUTH YUBA RIVER AT LANGS CROSSING, NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°19'07", long 120°39'24", in SW 1/4 SW 1/4 sec.20, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on right bank 50 ft downstream from road bridge, 0.8 mi downstream from Spaulding Nos. 1 and 2 powerplants, and 1.6 mi northeast of Emigrant Gap.

DRAINAGE AREA.--120 mi².

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,432.44 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--No estimated daily discharges. Flow regulated by Lake Spaulding (station 11414140) 0.8 mi upstream. Lake Spaulding receives water from Canyon Creek via the Bowman-Spaulding canal (station 11416100). Most of the water is diverted out of the Yuba River just downstream from Spaulding Dam via Drum canal (station 11414170) and South Yuba canal (station 11414200). See schematic diagram of Yuba and Bear River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--24 years (water years 1967-90), 99.9 ft³/s, 72,380 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft³/s, Feb. 18, 1986, gage height, 19.95 ft, from rating curve extended above 8,800 ft³/s on basis of spillway rating at Spaulding Dam; minimum daily, 2.1 ft³/s, on several days during July and September 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,570 ft³/s, May 31, gage height, 7.49 ft; minimum daily, 5.4 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| 1 | 6.9 | 8.1 | 9.0 | 6.7 | 6.4 | 19 | 11 | 7.0 | 227 | 6.1 | 6.2 | 5.9 |
| 2 | 8.6 | 8.0 | 8.1 | 6.7 | 6.3 | 26 | 11 | 6.9 | 68 | 6.0 | 6.1 | 5.8 |
| 3 | 7.6 | 7.8 | 8.1 | 6.6 | 6.7 | 47 | 13 | 6.8 | 25 | 5.9 | 6.0 | 6.3 |
| 4 | 7.3 | 7.7 | 7.8 | 6.6 | 6.7 | 26 | 11 | 6.8 | 20 | 5.7 | 6.1 | 6.3 |
| 5 | 7.0 | 7.5 | 7.4 | 6.4 | 6.7 | 20 | 11 | 6.5 | 17 | 5.8 | 6.1 | 6.4 |
| 6 | 6.7 | 7.3 | 7.2 | 6.3 | 6.9 | 19 | 11 | 6.4 | 15 | 6.1 | 6.1 | 6.2 |
| 7 | 6.6 | 7.3 | 6.8 | 14 | 6.5 | 18 | 11 | 7.0 | 15 | 5.9 | 6.2 | 6.1 |
| 8 | 6.6 | 7.2 | 6.6 | 24 | 6.3 | 17 | 11 | 7.3 | 14 | 6.0 | 6.1 | 6.1 |
| 9 | 6.4 | 7.0 | 6.3 | 15 | 6.5 | 17 | 11 | 6.8 | 12 | 6.2 | 6.1 | 6.0 |
| 10 | 6.0 | 7.0 | 6.3 | 11 | 8.9 | 16 | 10 | 6.6 | 11 | 6.3 | 6.1 | 5.9 |
| 11 | 5.9 | 6.8 | 6.2 | 7.7 | 19 | 15 | 9.9 | 6.3 | 10 | 6.2 | 6.0 | 5.9 |
| 12 | 5.9 | 6.8 | 6.2 | 7.2 | 21 | 14 | 8.8 | 6.3 | 9.7 | 6.1 | 6.1 | 6.0 |
| 13 | 5.7 | 6.6 | 6.0 | 15 | 19 | 12 | 6.9 | 6.4 | 9.8 | 6.0 | 6.1 | 5.9 |
| 14 | 5.7 | 6.6 | 6.5 | 14 | 19 | 12 | 5.8 | 6.2 | 9.8 | 5.9 | 6.1 | 5.9 |
| 15 | 5.7 | 6.5 | 8.2 | 12 | 18 | 13 | 6.3 | 5.8 | 9.8 | 5.7 | 6.2 | 6.9 |
| 16 | 5.7 | 6.5 | 8.1 | 10 | 16 | 15 | 6.6 | 6.2 | 9.9 | 5.8 | 6.4 | 6.9 |
| 17 | 5.7 | 6.5 | 7.8 | 9.6 | 16 | 17 | 6.5 | 7.1 | 9.8 | 6.2 | 6.5 | 6.2 |
| 18 | 5.9 | 6.5 | 7.5 | 8.7 | 15 | 17 | 6.6 | 7.0 | 9.6 | 5.8 | 6.5 | 6.2 |
| 19 | 5.9 | 6.5 | 7.1 | 7.9 | 15 | 18 | 6.3 | 6.8 | 9.1 | 5.7 | 6.5 | 6.1 |
| 20 | 5.9 | 6.4 | 7.0 | 7.6 | 16 | 17 | 6.3 | 12 | 8.5 | 5.7 | 6.6 | 6.0 |
| 21 | 11 | 6.3 | 7.0 | 7.1 | 18 | 16 | 6.3 | 8.5 | 7.7 | 5.5 | 6.4 | 5.9 |
| 22 | 12 | 6.3 | 6.7 | 6.9 | 18 | 16 | 6.3 | 7.0 | 7.0 | 5.5 | 6.2 | 5.9 |
| 23 | 33 | 6.0 | 6.6 | 6.8 | 12 | 15 | 16 | 15 | 6.5 | 5.7 | 6.3 | 7.4 |
| 24 | 22 | 9.1 | 6.7 | 6.8 | 12 | 14 | 17 | 13 | 6.3 | 5.9 | 6.2 | 6.1 |
| 25 | 19 | 47 | 7.0 | 6.7 | 14 | 13 | 9.4 | 11 | 6.6 | 5.6 | 6.1 | 6.2 |
| 26 | 14 | 28 | 7.0 | 6.6 | 17 | 12 | 7.2 | 10 | 6.4 | 5.7 | 6.1 | 5.9 |
| 27 | 13 | 17 | 7.3 | 6.3 | 20 | 11 | 6.6 | 23 | 5.9 | 5.6 | 6.0 | 5.7 |
| 28 | 11 | 13 | 7.0 | 6.1 | 21 | 10 | 6.3 | 181 | 5.9 | 5.6 | 6.0 | 5.4 |
| 29 | 9.7 | 12 | 6.8 | 5.9 | --- | 9.1 | 6.8 | 153 | 5.9 | 5.7 | 6.0 | 5.5 |
| 30 | 8.9 | 11 | 6.8 | 6.4 | --- | 9.1 | 7.0 | 47 | 6.1 | 5.7 | 6.0 | 5.9 |
| 31 | 8.5 | --- | 6.7 | 6.3 | --- | 12 | --- | 929 | --- | 5.8 | 5.9 | --- |
| TOTAL | 289.8 | 296.3 | 219.8 | 274.9 | 373.9 | 512.2 | 269.9 | 1535.7 | 584.3 | 181.4 | 191.3 | 182.9 |
| MEAN | 9.35 | 9.88 | 7.09 | 8.87 | 13.4 | 16.5 | 9.00 | 49.5 | 19.5 | 5.85 | 6.17 | 6.10 |
| MAX | 33 | 47 | 9.0 | 24 | 21 | 47 | 17 | 929 | 227 | 6.3 | 6.6 | 7.4 |
| MIN | 5.7 | 6.0 | 6.0 | 5.9 | 6.3 | 9.1 | 5.8 | 5.8 | 5.9 | 5.5 | 5.9 | 5.4 |
| AC-FT | 575 | 588 | 436 | 545 | 742 | 1020 | 535 | 3050 | 1160 | 360 | 379 | 363 |

CAL YR 1989 TOTAL 36914.0 MEAN 101 MAX 1400 MIN 5.2 AC-FT 73220

WTR YR 1990 TOTAL 4912.4 MEAN 13.5 MAX 929 MIN 5.4 AC-FT 9740

SACRAMENTO RIVER BASIN

11414400 FRENCH LAKE NEAR CISCO, CA

LOCATION.--Lat 39°25'16", long 120°32'28", in SE 1/4 SW 1/4 sec.17, T.18 N., R.13 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank near French Lake Dam on Canyon Creek, 0.5 mi upstream from Weil Lake, and 8.2 mi north of Cisco.

DRAINAGE AREA.--4.60 mi².

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1966-86 available in the files of the U.S. Geological Survey.

GAGE.--Staff gages, observed approximately weekly except during the winter months. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Reservoir is formed on natural lake by rock-filled dam completed in 1859. Usable capacity, 13,940 acre-ft between elevations 6,594.90 ft, invert of outlet gate, and 6,660.28 ft, crest of spillway. Figures given represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Nevada Irrigation District in 1964)

| | | | |
|-------|-------|-------|--------|
| 6,610 | 1,805 | 6,640 | 8,006 |
| 6,620 | 3,636 | 6,650 | 10,701 |
| 6,630 | 5,677 | 6,662 | 14,542 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|------|------|------|------|-----|-----|------|-------|-------|-------|-------|-------|
| 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | --- | 4819 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4 | 4219 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5 | --- | --- | --- | --- | --- | --- | 7167 | --- | --- | --- | --- | --- |
| 6 | --- | --- | --- | --- | --- | --- | --- | --- | 12367 | --- | --- | --- |
| 7 | --- | --- | 5201 | --- | --- | --- | --- | --- | 12367 | --- | --- | --- |
| 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10 | 4209 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 11813 | --- |
| 11 | --- | --- | --- | 5646 | --- | --- | --- | --- | --- | --- | --- | --- |
| 12 | --- | --- | --- | --- | --- | --- | 8200 | --- | --- | 12203 | --- | --- |
| 13 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 11302 |
| 14 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 12143 | --- | --- |
| 17 | --- | --- | --- | --- | --- | --- | --- | 10533 | --- | --- | --- | --- |
| 18 | 4173 | --- | --- | --- | --- | --- | --- | --- | --- | 12143 | --- | --- |
| 19 | --- | --- | --- | --- | --- | --- | 8420 | --- | --- | --- | --- | --- |
| 20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 11212 |
| 21 | --- | --- | 5233 | --- | --- | --- | --- | --- | 12465 | --- | --- | --- |
| 22 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 11632 | --- |
| 23 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 11632 | --- |
| 24 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 26 | --- | --- | --- | --- | --- | --- | --- | --- | 12399 | --- | --- | --- |
| 27 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 28 | --- | --- | 5242 | --- | --- | --- | --- | --- | --- | --- | 11542 | 11152 |
| 29 | --- | --- | --- | --- | --- | --- | --- | 11572 | --- | --- | --- | --- |
| 30 | --- | 5125 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31 | --- | --- | --- | --- | --- | --- | --- | 11903 | --- | --- | --- | --- |

11414410 CANYON CREEK BELOW FRENCH LAKE, NEAR CISCO, CA

LOCATION.--Lat 39°25'16", long 120°32'30", in SE 1/4 SW 1/4 sec.17, T.18 N., R.13 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 10 ft downstream from outlet at French Lake Dam on Canyon Creek, 0.5 mi upstream from Weil Lake, and 8.2 mi north of Cisco.

DRAINAGE AREA.--4.60 mi².

PERIOD OF RECORD.--January 1989 to current year (low flow records only). Unpublished records for water years 1967-88 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,590 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to January 1989, nonrecording gages at three sites and datums.

REMARKS.--No estimated daily discharges. No records computed above 3.2 ft³/s. Flow regulated by French Lake (station 11414400). Flow over the spillway bypasses this station. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|-----|-----|
| 1 | 2.8 | 2.9 | 2.9 | 2.8 | 2.9 | 2.9 | 2.8 | 3.0 | 3.2 | 3.2 | 3.2 | --- |
| 2 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.8 | 3.0 | 3.2 | 3.2 | --- | --- |
| 3 | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 2.8 | 3.0 | 3.2 | 3.2 | --- | --- |
| 4 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.8 | 3.0 | 3.2 | 3.2 | --- | --- |
| 5 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 2.8 | 2.9 | 3.0 | 3.2 | 3.2 | --- | --- |
| 6 | 2.9 | 2.8 | 2.8 | 2.9 | 2.9 | 2.9 | 3.0 | 3.0 | 3.2 | 3.2 | --- | --- |
| 7 | 2.8 | 2.9 | 2.9 | 2.8 | 2.9 | 2.9 | 2.9 | 3.0 | 3.2 | 3.2 | --- | --- |
| 8 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 2.8 | 2.9 | 3.0 | 3.2 | 3.2 | --- | --- |
| 9 | 2.8 | 2.9 | 2.9 | 2.8 | 2.9 | 2.9 | 2.9 | 3.1 | 3.2 | 3.2 | --- | --- |
| 10 | 2.8 | 2.9 | 2.9 | 2.9 | 2.8 | 2.9 | 2.9 | 3.2 | 3.2 | 3.2 | --- | --- |
| 11 | 2.7 | 2.9 | 2.9 | 2.8 | 2.8 | 2.9 | 2.8 | 3.2 | 3.2 | 3.2 | --- | --- |
| 12 | 2.7 | 2.9 | 2.9 | 2.8 | 2.9 | 2.9 | 2.9 | 3.1 | 3.2 | 3.2 | --- | --- |
| 13 | 2.8 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 2.9 | 3.1 | 3.2 | 3.2 | --- | --- |
| 14 | 2.8 | 2.9 | 2.9 | 2.8 | 3.0 | 2.9 | 2.9 | 3.1 | 3.2 | 3.2 | --- | --- |
| 15 | 2.7 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 3.0 | 3.2 | 3.1 | --- | --- |
| 16 | 2.7 | 2.8 | 2.8 | 2.8 | 2.9 | 2.9 | 2.9 | 3.0 | 3.2 | 3.2 | --- | --- |
| 17 | 2.7 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 | 3.0 | 3.2 | 3.2 | --- | --- |
| 18 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 2.8 | 2.9 | 3.1 | 3.2 | 3.1 | --- | --- |
| 19 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 2.8 | 2.9 | 3.1 | 3.2 | 3.1 | --- | --- |
| 20 | 2.8 | 2.9 | 2.8 | 2.9 | 2.9 | 2.9 | 2.9 | 3.1 | 3.2 | 3.1 | --- | --- |
| 21 | 2.8 | 2.9 | 2.8 | 2.8 | 2.9 | 2.8 | 3.0 | 3.1 | 3.2 | 3.1 | --- | --- |
| 22 | 2.8 | 2.9 | 2.7 | 2.9 | 2.9 | 2.8 | 3.0 | 3.1 | 3.2 | 3.1 | --- | --- |
| 23 | 2.8 | 2.8 | 2.7 | 2.9 | 2.9 | 2.9 | 3.0 | 3.2 | 3.2 | 3.1 | --- | --- |
| 24 | 2.8 | 2.9 | 2.7 | 2.8 | 2.9 | 2.9 | 3.0 | 3.2 | 3.2 | 3.1 | --- | --- |
| 25 | 2.9 | 2.9 | 2.8 | 2.8 | 2.9 | 2.9 | 2.9 | 3.1 | 3.2 | 3.1 | --- | 3.2 |
| 26 | 2.9 | 2.8 | 2.8 | 2.9 | 2.9 | 2.9 | 3.0 | 3.2 | 3.2 | 3.1 | --- | 2.9 |
| 27 | 2.9 | 2.9 | 2.8 | 2.9 | 2.9 | 2.9 | 3.1 | 3.2 | 3.2 | 3.1 | --- | 2.8 |
| 28 | 2.9 | 2.9 | 2.7 | 2.9 | 2.9 | 2.8 | 3.1 | 3.2 | 3.2 | 3.1 | --- | 2.9 |
| 29 | 2.8 | 2.9 | 2.7 | 2.9 | --- | 2.8 | 3.1 | 3.2 | 3.2 | 3.2 | --- | 2.7 |
| 30 | 2.8 | 2.9 | 2.7 | 2.9 | --- | 2.8 | 3.1 | 3.2 | 3.2 | 3.1 | --- | 2.7 |
| 31 | 2.9 | --- | 2.7 | 2.9 | --- | 2.8 | --- | 3.2 | --- | 3.1 | --- | --- |
| TOTAL | 86.9 | 86.4 | 87.6 | 88.7 | 81.1 | 88.9 | 87.9 | 96.0 | 96.0 | 97.8 | --- | --- |
| MEAN | 2.80 | 2.88 | 2.83 | 2.86 | 2.90 | 2.87 | 2.93 | 3.10 | 3.20 | 3.15 | --- | --- |
| MAX | 2.9 | 2.9 | 2.9 | 2.9 | 3.0 | 2.9 | 3.1 | 3.2 | 3.2 | 3.2 | --- | --- |
| MIN | 2.7 | 2.8 | 2.7 | 2.8 | 2.8 | 2.8 | 2.8 | 3.0 | 3.2 | 3.1 | --- | --- |
| AC-FT | 172 | 171 | 174 | 176 | 161 | 176 | 174 | 190 | 190 | 194 | --- | --- |

SACRAMENTO RIVER BASIN

11414440 FAUCHERIE LAKE NEAR CISCO, CA

LOCATION.--Lat 39°25'45", long 120°34'04", in SE 1/4 NE 1/4 sec.13, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, near right bank end of Faucherie Dam on Canyon Creek, 8.5 mi north of Cisco.

DRAINAGE AREA.--8.97 mi².

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1965-86 available in files of the U.S. Geological Survey.

GAGE.--Staff gages, observed approximately weekly during the summer months. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Reservoir is formed on natural lake by earth-filled dam initially constructed prior to 1880 and enlarged in 1964. Usable capacity, 3,740 acre-ft between elevations 6,090.00 ft, invert of outlet gate, and 6,123.00 ft, crest of spillway. Dead storage, below elevation 6,090 ft, 240 acre-ft. Figures given represent total contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Nevada Irrigation District in 1964)

| | | | |
|-------|-------|-------|-------|
| 6,090 | 240 | 6,110 | 2,216 |
| 6,095 | 628 | 6,115 | 2,854 |
| 6,100 | 1,095 | 6,120 | 3,540 |
| 6,105 | 1,629 | 6,125 | 4,280 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | 3995 | --- | --- | --- | --- | --- | --- | 4025 | --- | --- | --- | --- |
| 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5 | --- | --- | --- | --- | --- | --- | 3260 | --- | 4010 | --- | --- | 3980 |
| 6 | 3992 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | --- | 3995 | 3055 | --- | --- | 1800 | --- | --- | 4007 | --- | 3980 | --- |
| 8 | --- | --- | --- | --- | 1167 | --- | --- | --- | --- | 3989 | --- | --- |
| 9 | --- | --- | --- | --- | --- | --- | --- | 4025 | --- | --- | --- | --- |
| 10 | 3992 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 11 | --- | --- | --- | 1975 | --- | --- | --- | --- | --- | --- | --- | --- |
| 12 | --- | --- | --- | --- | --- | --- | 3980 | --- | --- | --- | --- | --- |
| 13 | --- | --- | --- | --- | --- | --- | --- | --- | 3995 | --- | --- | 3983 |
| 14 | --- | 3995 | --- | --- | --- | --- | --- | --- | 3995 | --- | --- | --- |
| 15 | --- | --- | --- | --- | 1250 | --- | --- | --- | --- | --- | --- | --- |
| 16 | --- | --- | --- | --- | --- | --- | --- | 4002 | --- | --- | --- | --- |
| 17 | 3872 | --- | --- | --- | --- | --- | --- | --- | --- | 3989 | --- | --- |
| 18 | --- | --- | --- | 1846 | --- | --- | --- | --- | --- | --- | --- | 3980 |
| 19 | --- | --- | --- | --- | --- | --- | 4010 | --- | --- | --- | --- | --- |
| 20 | --- | --- | --- | --- | --- | --- | --- | --- | 3995 | --- | --- | --- |
| 21 | --- | --- | 2322 | --- | --- | --- | --- | --- | --- | --- | 3989 | --- |
| 22 | --- | 3583 | --- | --- | --- | 2292 | --- | --- | --- | --- | 3989 | --- |
| 23 | --- | --- | --- | --- | --- | --- | --- | 4025 | --- | --- | --- | --- |
| 24 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3980 | --- | --- |
| 25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3989 |
| 26 | --- | --- | --- | --- | --- | --- | --- | --- | 3995 | --- | --- | --- |
| 27 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3980 | --- |
| 28 | --- | --- | 1987 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 29 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3980 | --- |
| 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3980 | --- | --- |
| 31 | 3998 | --- | --- | --- | --- | --- | --- | 4040 | --- | --- | --- | --- |

11414450 CANYON CREEK BELOW FAUCHERIE LAKE, NEAR CISCO, CA

LOCATION.--Lat 39°25'46", long 120°34'06", in SE 1/4 NE 1/4 sec.13, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 80 ft downstream from Faucherie Dam on Canyon Creek, 8.5 mi north of Cisco.

DRAINAGE AREA.--8.97 mi².

PERIOD OF RECORD.--January 1989 to current year (low flow records only). Unpublished records for water years 1965-88 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,080 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1964 to July 1988, nonrecording gage at site 10 ft downstream at different datum. July 1988 to January 1989, nonrecording gage at same site and datum.

REMARKS.--No records computed above 3.2 ft³/s. Flow regulated by Faucherie Lake (station 11414440). Flow over the spillway bypasses this station. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-----|-----|-----|------|-----|-----|------|------|------|------|------|
| 1 | 2.8 | 2.9 | --- | --- | --- | --- | --- | 2.9 | 2.9 | e2.9 | 2.9 | 2.9 |
| 2 | 2.8 | 2.9 | --- | --- | --- | --- | --- | 2.9 | 2.9 | e2.9 | 2.9 | 2.9 |
| 3 | 2.8 | 2.9 | --- | --- | --- | --- | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 |
| 4 | 2.8 | 2.9 | --- | --- | --- | --- | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 |
| 5 | 2.8 | 2.9 | --- | --- | --- | --- | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 |
| 6 | 2.8 | 2.9 | --- | --- | --- | --- | 2.9 | 3.0 | 2.9 | 2.9 | 2.9 | 2.9 |
| 7 | 2.9 | 2.9 | --- | --- | --- | --- | 2.9 | 3.0 | e2.9 | 2.9 | 2.9 | 2.9 |
| 8 | 2.9 | 2.8 | --- | --- | --- | --- | 2.9 | 3.0 | e2.9 | 2.9 | 2.9 | 3.0 |
| 9 | 2.9 | 2.8 | --- | --- | e2.9 | --- | 3.0 | 3.0 | e2.9 | 2.9 | 2.9 | 2.9 |
| 10 | 2.9 | 2.8 | --- | --- | e2.9 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 11 | 2.9 | 2.8 | --- | --- | 3.0 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 12 | 2.9 | 2.8 | --- | --- | 3.0 | --- | 3.1 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 13 | 2.9 | 2.8 | --- | --- | 3.0 | --- | 3.1 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 14 | 2.9 | --- | --- | --- | 3.0 | --- | 3.1 | 2.9 | e2.9 | e2.9 | 2.9 | 2.9 |
| 15 | 2.9 | --- | --- | --- | 3.0 | --- | 3.1 | 2.9 | e2.9 | e2.9 | 2.9 | 2.9 |
| 16 | 2.9 | --- | --- | --- | 3.0 | --- | 3.0 | 2.9 | e2.9 | e2.9 | 2.9 | 2.9 |
| 17 | 2.9 | --- | --- | --- | 3.0 | --- | 3.0 | 2.9 | e2.9 | e2.9 | 2.9 | 2.9 |
| 18 | 2.9 | --- | --- | --- | 3.0 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 19 | 2.9 | --- | --- | --- | 3.1 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 20 | 2.9 | --- | --- | --- | 3.1 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 21 | 2.9 | --- | --- | --- | 3.1 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 22 | 2.9 | --- | --- | --- | 3.1 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 23 | 3.0 | --- | --- | --- | 3.1 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 24 | 2.9 | --- | --- | --- | 3.2 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 25 | 2.9 | --- | --- | --- | 3.2 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 26 | 2.9 | --- | --- | --- | 3.2 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 27 | 2.9 | --- | --- | --- | 3.2 | --- | 3.0 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 28 | 2.9 | --- | --- | --- | 3.2 | --- | 2.9 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 29 | 2.9 | --- | --- | --- | --- | --- | 2.9 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 30 | 2.9 | --- | --- | --- | --- | --- | 2.9 | 2.9 | e2.9 | 2.9 | 2.9 | 2.9 |
| 31 | 2.9 | --- | --- | --- | --- | --- | --- | 2.9 | --- | 2.9 | 2.9 | --- |
| TOTAL | 89.4 | --- | --- | --- | --- | --- | --- | 90.6 | 87.0 | 89.9 | 89.9 | 87.1 |
| MEAN | 2.88 | --- | --- | --- | --- | --- | --- | 2.92 | 2.90 | 2.90 | 2.90 | 2.90 |
| MAX | 3.0 | --- | --- | --- | --- | --- | --- | 3.0 | 2.9 | 2.9 | 2.9 | 3.0 |
| MIN | 2.8 | --- | --- | --- | --- | --- | --- | 2.9 | 2.9 | 2.9 | 2.9 | 2.9 |
| AC-FT | 177 | --- | --- | --- | --- | --- | --- | 180 | 173 | 178 | 178 | 173 |

e Estimated.

SACRAMENTO RIVER BASIN

11414465 SAWMILL LAKE NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°26'44", long 120°36'02", in NW 1/4 NW 1/4 sec.11, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, near right bank end of Sawmill Lake Dam on Canyon Creek, 0.8 mi upstream from Bowman Lake, and 7.2 mi east of Graniteville.

DRAINAGE AREA.--16.4 mi².

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1966-86 available in the files of the U.S. Geological Survey.

GAGE.--Staff gages, observed approximately weekly during the summer months. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Reservoir is formed by a rock-filled dam initially constructed prior to 1880 and enlarged in 1941. Usable capacity, 3,030 acre-ft between elevations 5,805 ft, base of dam, and 5,860 ft, crest of spillway. Figures given represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Nevada Irrigation District in 1964)

| | | | |
|-------|-------|-------|-------|
| 5,805 | 0 | 5,850 | 2,000 |
| 5,820 | 110 | 5,860 | 3,030 |
| 5,830 | 430 | 5,863 | 3,375 |
| 5,840 | 1,130 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-----|------|------|-----|-----|-----|------|------|------|------|------|------|
| 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | --- | --- | --- | --- | --- | --- | --- | 3076 | --- | 3030 | --- | --- |
| 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5 | --- | --- | --- | --- | --- | --- | 3076 | --- | 3076 | --- | --- | 2999 |
| 6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | --- | --- | 2361 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | --- | --- | --- | --- | --- | --- | --- | 3076 | --- | 3036 | --- | --- |
| 9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 11 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 13 | --- | --- | --- | --- | --- | --- | --- | --- | 3076 | --- | --- | --- |
| 14 | --- | 3065 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16 | --- | --- | --- | --- | --- | --- | --- | 3071 | --- | --- | --- | --- |
| 17 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3036 | --- | 2979 |
| 18 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2977 |
| 19 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3030 | --- |
| 22 | --- | 2680 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23 | --- | --- | --- | --- | --- | --- | --- | 3099 | --- | --- | --- | --- |
| 24 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3030 | --- | --- |
| 25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2979 |
| 26 | --- | --- | --- | --- | --- | --- | --- | --- | 3053 | --- | --- | --- |
| 27 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3026 | --- |
| 28 | --- | --- | --- | --- | --- | --- | --- | --- | 3042 | --- | --- | --- |
| 29 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3009 | --- |
| 30 | --- | 2567 | --- | --- | --- | --- | --- | --- | --- | 3030 | --- | --- |
| 31 | --- | --- | --- | --- | --- | --- | --- | 3111 | --- | --- | --- | --- |

11414470 CANYON CREEK BELOW SAWMILL LAKE, NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°26'44", long 120°36'05", in NW 1/4 NW 1/4 sec.11, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 130 ft downstream from outlet at Sawmill Lake Dam on Canyon Creek, 0.8 mi upstream from Bowman Lake, and 7.2 mi east of Graniteville.

DRAINAGE AREA.--16.4 mi².

PERIOD OF RECORD.--October 1989 to September 1990. Unpublished records for water years 1965-89 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir in concrete control. Elevation of gage is 5,790 ft above National Geodetic Vertical Datum of 1929, from topographic map. September 1964 to July 6, 1988, nonrecording gage at two sites 470 ft downstream at different datum. July 7, 1988 to January 1989, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Flow completely regulated by Sawmill Lake (station 11414465). Flow over the spillway bypasses this station. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 66 ft³/s, Nov. 22-30, 1989, gage height, 1.73 ft; minimum daily, 2.5 ft³/s, Oct. 7, 1989.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|--------|------|------|-------|-------|-------|-------|-------|------|-------|-------|
| 1 | 43 | 4.4 | 65 | 56 | 54 | 4.2 | 4.8 | 3.2 | 4.0 | 3.2 | 4.1 | 4.4 |
| 2 | 6.0 | 4.4 | 65 | 56 | 53 | 4.4 | 4.8 | 3.2 | 4.0 | 3.2 | 4.1 | 4.4 |
| 3 | 4.6 | 4.4 | 65 | 54 | 52 | 4.4 | 4.8 | 3.2 | 4.0 | 3.2 | 4.2 | 4.4 |
| 4 | 2.7 | 4.4 | 65 | 54 | 51 | 4.4 | 4.8 | 3.2 | 4.0 | 3.2 | 4.2 | 4.4 |
| 5 | 2.7 | 4.4 | 64 | 54 | 51 | 4.4 | 3.9 | 3.2 | 4.0 | 3.2 | 4.2 | 4.4 |
| 6 | 2.7 | 4.4 | 63 | 54 | 51 | 4.5 | 3.0 | 3.2 | 4.0 | 3.2 | 4.2 | 4.4 |
| 7 | 2.5 | 4.4 | 63 | 54 | 34 | 4.5 | 2.9 | 3.2 | 4.0 | 3.2 | 4.2 | 4.4 |
| 8 | 3.1 | 4.4 | 63 | 53 | 13 | 4.5 | 2.9 | 3.2 | 4.0 | 3.2 | 4.2 | 4.4 |
| 9 | 4.4 | 4.4 | 63 | 57 | 14 | 4.5 | 2.8 | 3.2 | 4.0 | 3.2 | 4.2 | 4.3 |
| 10 | 4.4 | 4.4 | 63 | 59 | 13 | 4.5 | 2.7 | 3.2 | 4.0 | 3.2 | 4.2 | 4.4 |
| 11 | 4.3 | 4.4 | 63 | 59 | 12 | 4.5 | 2.7 | 3.2 | 4.0 | 3.2 | 4.2 | 4.4 |
| 12 | 4.3 | 4.4 | 63 | 59 | 11 | 4.5 | 2.9 | 3.2 | 4.0 | 3.2 | 4.2 | 4.4 |
| 13 | 4.2 | 4.4 | 62 | 59 | 11 | 4.5 | 3.4 | 3.2 | 4.0 | 3.2 | 4.2 | 4.3 |
| 14 | 4.2 | 31 | 61 | 59 | 11 | 4.5 | 3.4 | 3.2 | 4.1 | 3.2 | 4.2 | 4.2 |
| 15 | 4.2 | 63 | 61 | 59 | 7.6 | 4.5 | 3.4 | 3.2 | 4.1 | 3.2 | 4.2 | 4.2 |
| 16 | 4.2 | 63 | 61 | 59 | 4.0 | 4.6 | 3.4 | 3.2 | 4.1 | 3.2 | 4.2 | 4.2 |
| 17 | 4.2 | 63 | 61 | 59 | 4.0 | 4.6 | 3.4 | 3.2 | 4.1 | 3.2 | 4.2 | 4.4 |
| 18 | 4.2 | 61 | 61 | 59 | 4.1 | 4.6 | 3.4 | 3.2 | 4.1 | 2.8 | 4.2 | 4.0 |
| 19 | 4.2 | 61 | 61 | 58 | 4.1 | 4.6 | 3.3 | 3.2 | 4.1 | 2.9 | 4.2 | 3.8 |
| 20 | 4.2 | 61 | 61 | 59 | 4.1 | 4.6 | 3.2 | 3.2 | 4.1 | 2.8 | 4.2 | 4.0 |
| 21 | 4.3 | 61 | 61 | 59 | 4.1 | 4.6 | 3.2 | 3.2 | 4.1 | 2.9 | 4.2 | 3.9 |
| 22 | 4.3 | 59 | 61 | 58 | 4.2 | 4.6 | 3.2 | 3.2 | 4.1 | 2.9 | 4.2 | 3.9 |
| 23 | 4.3 | 66 | 61 | 57 | 4.2 | 4.6 | 3.2 | 3.2 | 4.1 | 2.9 | 4.3 | 4.1 |
| 24 | 4.2 | 66 | 60 | 57 | 4.1 | 4.6 | 3.2 | 3.3 | 4.1 | 2.9 | 4.4 | 4.0 |
| 25 | 4.1 | 66 | 59 | 57 | 4.1 | 4.6 | 3.2 | 3.4 | 4.1 | 2.9 | 4.3 | 4.0 |
| 26 | 4.1 | 66 | 59 | 56 | 4.2 | 4.6 | 3.2 | 3.4 | 3.7 | 2.8 | 4.4 | 3.9 |
| 27 | 4.4 | 66 | 59 | 56 | 4.2 | 4.6 | 3.2 | 3.6 | 3.2 | 2.9 | 4.4 | 3.8 |
| 28 | 4.4 | 66 | 58 | 55 | 4.2 | 4.6 | 3.2 | 3.6 | 3.2 | 2.8 | 4.3 | 3.9 |
| 29 | 4.4 | 66 | 57 | 54 | --- | 4.6 | 3.2 | 3.7 | 3.2 | 2.8 | 4.4 | 3.8 |
| 30 | 4.4 | 65 | 57 | 54 | --- | 4.6 | 3.2 | 3.8 | 3.2 | 3.3 | 4.4 | 3.9 |
| 31 | 4.4 | --- | 57 | 54 | --- | 4.6 | --- | 4.0 | --- | 4.1 | 4.4 | --- |
| TOTAL | 165.6 | 1107.2 | 1903 | 1757 | 492.2 | 140.4 | 101.9 | 102.4 | 117.7 | 96.1 | 131.5 | 125.0 |
| MEAN | 5.34 | 36.9 | 61.4 | 56.7 | 17.6 | 4.53 | 3.40 | 3.30 | 3.92 | 3.10 | 4.24 | 4.17 |
| MAX | 43 | 66 | 65 | 59 | 54 | 4.6 | 4.8 | 4.0 | 4.1 | 4.1 | 4.4 | 4.4 |
| MIN | 2.5 | 4.4 | 57 | 53 | 4.0 | 4.2 | 2.7 | 3.2 | 3.2 | 2.8 | 4.1 | 3.8 |
| AC-FT | 328 | 2200 | 3770 | 3490 | 976 | 278 | 202 | 203 | 233 | 191 | 261 | 248 |

WTR YR 1990 TOTAL 6240.0 MEAN 17.1 MAX 66 MIN 2.5 AC-FT 12380

SACRAMENTO RIVER BASIN

11414690 JACKSON LAKE NEAR SIERRA CITY, CA

LOCATION.--Lat 39°27'52", long 120°33'44", in SW 1/4 SW 1/4 sec.31, T.19 N., R.13 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on outlet structure on Jackson Lake Dam on Jackson Creek, 3.0 mi upstream from Bowman Lake, and 8.0 mi southeast of Sierra City.

DRAINAGE AREA.--0.65 mi².

PERIOD OF RECORD.--October 1986 to current year. Unpublished records for water years 1965-86 available in the files of U.S. Geological Survey.

GAGE.--Staff gage, observed approximately weekly except during the winter months. Datum of gage is 6,570 ft above National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Reservoir is formed on natural lake by earth-filled dam completed in 1859. Usable capacity, 974 acre-ft between gage height 0.0 ft, invert of outlet, and 22.67 ft, crest of spillway. Dead storage below gage height 0.0 ft, 360 acre-ft. Figures given represent total contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Nevada Irrigation District in 1964)

| | | | |
|----|-----|----|-------|
| 0 | 360 | 15 | 958 |
| 5 | 545 | 20 | 1,185 |
| 10 | 730 | 24 | 1,407 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|-----|-----|
| 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 821 |
| 6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | --- | 940 | 890 | --- | --- | --- | --- | --- | 1145 | --- | 935 | --- |
| 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10 | --- | --- | --- | --- | --- | --- | --- | 1029 | --- | --- | --- | --- |
| 11 | 930 | --- | --- | 821 | --- | --- | --- | --- | --- | --- | --- | --- |
| 12 | --- | --- | --- | --- | --- | --- | 812 | --- | --- | --- | --- | --- |
| 13 | --- | --- | --- | --- | --- | --- | --- | --- | 1140 | --- | --- | 794 |
| 14 | --- | --- | --- | --- | --- | --- | --- | --- | 1140 | --- | --- | --- |
| 15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17 | --- | --- | --- | --- | --- | --- | --- | 1035 | --- | 1031 | --- | --- |
| 18 | 908 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19 | --- | --- | --- | --- | --- | --- | 849 | --- | --- | --- | --- | --- |
| 20 | --- | --- | --- | --- | --- | --- | --- | --- | 1122 | --- | --- | 767 |
| 21 | --- | --- | 867 | --- | --- | --- | --- | --- | --- | --- | 876 | --- |
| 22 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 24 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1003 | --- | 748 |
| 25 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 751 |
| 26 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 27 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 28 | --- | --- | 867 | --- | --- | --- | --- | --- | 1099 | --- | 844 | --- |
| 29 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 844 | --- |
| 30 | --- | 908 | --- | --- | --- | --- | --- | 1099 | --- | 972 | --- | --- |
| 31 | --- | --- | --- | --- | --- | --- | --- | 1117 | --- | --- | --- | --- |

11414700 JACKSON CREEK BELOW JACKSON LAKE, NEAR SIERRA CITY, CA

LOCATION.--Lat 39°27'53", long 120°33'46", in SW 1/4 SW 1/4 sec.31, T.19 N., R.13 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 75 ft downstream from Jackson Lake Dam on Jackson Creek, 3.0 mi upstream from Bowman Lake, and 8.0 mi southeast of Sierra City.

DRAINAGE AREA.--0.65 mi².

PERIOD OF RECORD.--January 1989 to current year (low-flow records only). Unpublished records for water years 1965-88 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,570 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1964 to October 1986, nonrecording gage at site 25 ft downstream at different datum. October 1986 to January 1989, nonrecording gage at same site and datum.

REMARKS.--No records computed above 2.9 ft³/s. Flow regulated by Jackson Lake (station 11414690). Flow over spillway bypasses this station. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 1.6 | 1.7 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.0 | e1.7 |
| 2 | 1.6 | 1.7 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.0 | e1.7 |
| 3 | 1.6 | 1.7 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.0 | e1.7 |
| 4 | 1.7 | 1.7 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.0 | e1.6 |
| 5 | 1.7 | 1.8 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.0 | e1.6 |
| 6 | 1.7 | 1.8 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.0 | e1.6 |
| 7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.1 | e1.6 |
| 8 | 1.7 | 1.8 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.2 | e1.6 |
| 9 | 1.7 | 1.8 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.1 | e1.6 |
| 10 | 1.7 | 1.8 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.1 | 1.6 |
| 11 | 1.7 | 1.8 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.1 | 1.6 |
| 12 | 1.7 | 1.8 | 1.7 | 1.6 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.1 | 1.5 |
| 13 | 1.7 | 1.8 | 1.7 | 1.6 | 1.5 | 1.8 | 1.8 | 1.9 | 1.8 | 1.6 | 2.1 | 1.7 |
| 14 | 1.7 | 1.8 | 1.7 | 1.5 | 1.5 | 1.8 | 1.8 | 1.9 | 1.7 | 1.6 | 2.1 | 1.9 |
| 15 | 1.7 | 1.8 | 1.7 | 1.5 | 1.7 | 1.8 | 1.8 | 1.9 | 1.7 | 1.6 | 2.0 | 1.8 |
| 16 | 1.7 | 1.8 | 1.7 | 1.5 | 1.8 | 1.8 | 1.8 | 1.9 | 1.7 | 1.6 | 2.0 | 1.8 |
| 17 | 1.7 | 1.8 | 1.7 | 1.5 | 1.7 | 1.8 | 1.8 | 1.9 | 1.7 | 1.7 | 2.0 | 1.8 |
| 18 | 1.7 | 1.8 | 1.7 | 1.5 | 1.8 | 1.8 | 1.8 | 1.9 | 1.7 | 1.9 | 2.0 | 1.8 |
| 19 | 1.7 | 1.8 | 1.7 | 1.5 | 1.9 | 1.8 | 1.8 | 1.9 | 1.7 | 1.9 | 2.0 | 1.8 |
| 20 | 1.7 | 1.8 | 1.7 | 1.5 | 2.0 | 1.8 | 1.8 | 1.9 | 1.7 | 1.7 | 2.0 | 1.7 |
| 21 | 1.7 | 1.8 | 1.7 | 1.5 | 1.8 | 1.8 | 1.8 | 2.0 | 1.7 | 1.8 | e2.0 | 1.7 |
| 22 | 1.7 | 1.8 | 1.7 | 1.5 | 1.7 | 1.8 | 1.8 | 2.0 | 1.7 | 1.8 | e2.0 | 1.7 |
| 23 | 1.7 | 1.8 | 1.7 | 1.5 | 1.8 | 1.8 | 1.8 | 2.0 | 1.7 | 1.9 | e1.9 | 1.6 |
| 24 | 1.7 | 1.8 | 1.7 | 1.5 | 1.8 | 1.8 | 1.8 | 2.0 | 1.7 | 2.0 | e1.9 | 1.7 |
| 25 | 1.7 | 1.8 | 1.7 | 1.5 | 1.7 | 1.8 | 1.8 | 2.0 | 1.7 | 2.1 | e1.8 | 1.9 |
| 26 | 1.7 | 1.7 | 1.7 | 1.5 | 1.7 | 1.8 | 1.8 | 2.0 | 1.7 | 2.2 | e1.8 | 1.8 |
| 27 | 1.7 | 1.7 | 1.7 | 1.5 | 1.7 | 1.8 | 1.8 | 2.0 | 1.7 | 2.3 | e1.7 | 1.6 |
| 28 | 1.7 | 1.7 | 1.7 | 1.5 | 1.8 | 1.8 | 1.8 | 2.0 | 1.7 | 2.3 | e1.7 | 1.5 |
| 29 | 1.7 | 1.7 | 1.7 | 1.5 | --- | 1.8 | 1.8 | 2.0 | 1.6 | 2.3 | e1.7 | 1.4 |
| 30 | 1.7 | 1.7 | 1.7 | 1.5 | --- | 1.8 | 1.9 | 2.0 | 1.7 | 2.1 | e1.7 | 1.3 |
| 31 | 1.7 | --- | 1.7 | 1.5 | --- | 1.8 | --- | 1.9 | --- | 2.0 | e1.7 | --- |
| TOTAL | 52.4 | 53.1 | 52.7 | 48.9 | 45.9 | 55.8 | 54.1 | 59.9 | 52.2 | 55.6 | 60.8 | 49.9 |
| MEAN | 1.69 | 1.77 | 1.70 | 1.58 | 1.64 | 1.80 | 1.80 | 1.93 | 1.74 | 1.79 | 1.96 | 1.66 |
| MAX | 1.7 | 1.8 | 1.7 | 1.7 | 2.0 | 1.8 | 1.9 | 2.0 | 1.8 | 2.3 | 2.2 | 1.9 |
| MIN | 1.6 | 1.7 | 1.7 | 1.5 | 1.5 | 1.8 | 1.8 | 1.9 | 1.6 | 1.6 | 1.7 | 1.3 |
| AC-FT | 104 | 105 | 105 | 97 | 91 | 111 | 107 | 119 | 104 | 110 | 121 | 99 |

WTR YR 1990 TOTAL 641.3 MEAN 1.76 MAX 2.3 MIN 1.3 AC-FT 1270

e Estimated.

11415500 BOWMAN LAKE NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°27'01", long 120°39'09", in SE 1/4 SW 1/4 sec.5, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on right bank near rockfill portion of Bowman Dam on Canyon Creek, 4.6 mi east of Graniteville, and 8 mi south of Sierra City.

DRAINAGE AREA.--27.1 mi².

PERIOD OF RECORD.--December 1926 to current year.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District). Prior to Oct. 8, 1964, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by one rockfill and one concrete-arch dam; storage began in November 1926. Total capacity, 68,700 acre-ft between elevations 5,400 ft, bottom of outlet tunnel, and 5,563.6 ft, top of radial spillway gates and crest of concrete-arch dam. Flashboards are occasionally added, increasing elevation to 5,565.8 ft and capacity to 70,400 acre-ft, all of which is available for release. Lake receives water from Middle Yuba River via Milton-Bowman tunnel (station 11408000), and releases it through Bowman-Spaulding canal (station 11416000) which conveys it to reservoirs of Pacific Gas & Electric Co. Water is eventually used for irrigation by Nevada Irrigation District. Records, including extremes, represent total contents. See schematic diagram of Yuba River basin.

COOPERATION.--Selected gage-height readings provided by Nevada Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 71,000 acre-ft, May 30, 1965, elevation, 5,566.5 ft; lake completely drained for inspection and repair Nov. 25 to Dec. 9, 1949, Oct. 1-20, 1966, Oct. 4-29, 1972, and Sept. 21-30, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 56,800 acre-ft, June 5, 6, elevation, 5,548.81 ft; minimum, 25,200 acre-ft, Dec.16-18, elevation, 5,502.13 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated Nov. 24, 1926)

| | | | |
|---------|-------|-------|--------|
| 5,419.6 | 0 | 5,470 | 10,200 |
| 5,430 | 900 | 5,480 | 14,200 |
| 5,440 | 2,100 | 5,510 | 30,000 |
| 5,450 | 4,100 | 5,540 | 49,800 |
| 5,460 | 6,900 | 5,570 | 73,800 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 47400 | 33200 | 25800 | 27900 | 29400 | 28200 | 34200 | 48100 | e55600 | 45400 | 48600 | 47500 |
| 2 | 46900 | 32700 | 25700 | 28000 | 29500 | 28400 | 34600 | 48300 | e56100 | 44900 | 48900 | 47500 |
| 3 | 46400 | 32200 | 25700 | 28000 | 29500 | 28600 | 34800 | 48600 | e56500 | 44300 | 48900 | 47500 |
| 4 | 45800 | 31800 | 25600 | 28100 | 29600 | 28700 | 35300 | 48900 | e56700 | 43800 | 49000 | 47600 |
| 5 | 45200 | 31300 | 25600 | 28200 | 29600 | 28800 | 35700 | 49200 | 56800 | 43200 | 49000 | 47700 |
| 6 | 44700 | 30800 | 25600 | 28200 | 29700 | 28900 | 36200 | 49400 | 56800 | 42600 | 49000 | 47800 |
| 7 | 44100 | 30300 | 25600 | 28500 | 29700 | 29000 | 36600 | 49600 | 56700 | 42100 | 49000 | 47900 |
| 8 | 43500 | 29800 | 25500 | 28900 | 29600 | 29200 | 37000 | e49900 | 56600 | 41500 | 48900 | 48000 |
| 9 | 42900 | 29300 | 25500 | 29000 | 29600 | 29400 | 37400 | 50000 | 56400 | 40900 | 48700 | 48100 |
| 10 | 42300 | 28700 | 25500 | 29100 | 29500 | 29600 | 37800 | 50200 | 56300 | 40400 | 48600 | 48200 |
| 11 | 41700 | 28200 | 25400 | 29300 | 29500 | 29900 | 38200 | 50400 | 55900 | 40000 | 48400 | 48300 |
| 12 | 41300 | 27600 | 25400 | 29200 | 29400 | 30100 | 38600 | 50500 | 55400 | 40100 | 48200 | 48400 |
| 13 | 40700 | 27100 | 25400 | 29100 | 29400 | 30200 | 39100 | 50500 | 54900 | 40300 | 48000 | 48500 |
| 14 | 40100 | 26600 | 25400 | 29100 | 29300 | 30300 | 39600 | 50600 | 54400 | 40700 | 47800 | 48600 |
| 15 | 39500 | 26200 | 25300 | 28900 | 29200 | 30500 | 40100 | 50700 | 53900 | 41000 | 47700 | 48700 |
| 16 | 38900 | 26000 | 25200 | 28700 | 29200 | 30600 | 40500 | 50700 | 53500 | 41400 | 47700 | 48800 |
| 17 | 38300 | 25900 | 25200 | 28600 | 29100 | 30800 | 41000 | 50700 | 52900 | 41900 | 47700 | 48900 |
| 18 | 37700 | 25800 | 25200 | 28700 | 28900 | 31000 | 41400 | 50800 | 52400 | 42400 | 47600 | 49000 |
| 19 | 37100 | 25700 | 25300 | 28800 | 28800 | 31200 | 41900 | 50800 | 52000 | 42900 | 47700 | 49100 |
| 20 | 36500 | 25500 | 25300 | 28800 | 28700 | 31400 | 42300 | 51000 | 51400 | 43300 | 47700 | 49200 |
| 21 | 36100 | 25500 | 25500 | 28900 | 28600 | 31600 | 43100 | 51300 | 50900 | 43700 | 47600 | 49300 |
| 22 | 35800 | 25500 | 25800 | 28900 | 28500 | 31800 | 43600 | 51300 | 50300 | 44200 | 47600 | 49400 |
| 23 | 36200 | 25400 | 26100 | 29000 | 28500 | 32000 | 44700 | 51400 | 49800 | 44600 | 47600 | 49500 |
| 24 | 36200 | 25500 | 26400 | 29000 | 28400 | 32200 | 45400 | 51500 | 49200 | 45100 | 47600 | 49700 |
| 25 | 36000 | 25700 | 26700 | 29000 | 28300 | 32500 | 45900 | 51500 | 48700 | 45500 | 47600 | 49800 |
| 26 | 35500 | 25900 | 27000 | 29100 | 28300 | 32700 | 46300 | 51600 | 48200 | 46000 | 47600 | 50000 |
| 27 | 35100 | 26000 | 27300 | 29100 | 28300 | 33000 | 46800 | 52200 | 47600 | 46400 | 47600 | 50200 |
| 28 | 35000 | 25900 | 27600 | 29200 | 28300 | 33200 | 47200 | 52800 | 47100 | 46900 | 47600 | 50300 |
| 29 | 34600 | 25900 | 27700 | 29200 | --- | 33400 | 47600 | 53200 | 46500 | 47300 | 47500 | 50400 |
| 30 | 34100 | 25900 | 27800 | 29300 | --- | 33600 | 47800 | 54200 | 46000 | 47700 | 47500 | 50400 |
| 31 | 33600 | --- | 27900 | 29400 | --- | 33900 | --- | 55100 | --- | 48200 | 47500 | --- |
| MAX | 47400 | 33200 | 27900 | 29400 | 29700 | 33900 | 47800 | 55100 | 56800 | 48200 | 49000 | 50400 |
| MIN | 33600 | 25400 | 25200 | 27900 | 28300 | 28200 | 34200 | 48100 | 46000 | 40000 | 47500 | 47500 |
| a | 5516.17 | 5503.27 | 5506.57 | 5509.00 | 5507.23 | 5516.62 | 5537.23 | 5546.71 | 5534.62 | 5537.79 | 5536.84 | 5540.83 |
| b | -14300 | -7700 | +2000 | +1500 | -1100 | +5600 | +13900 | +7300 | -9100 | +2200 | -700 | +2900 |

CAL YR 1989 MAX 68500 MIN 17400 b +6600

WTR YR 1990 MAX 56800 MIN 25200 b +2500

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11416000 BOWMAN-SPAULDING CANAL INTAKE NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°26'26", Long 120°39'29", in NW 1/4 SW 1/4 sec.8, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 0.6 mi downstream from Bowman Dam, 4.2 mi east of Graniteville, and 8.5 mi south of Sierra City.

PERIOD OF RECORD.--October 1927 to current year. Prior to October 1970, published as Bowman-Spauldning Canal at intake or Bowman-Spauldning Canal intake, near Sierra City.

REVISED RECORDS.--WSP 1395: 1935-36, 1940.

GAGE.--Water-stage recorder. Datum of gage is 5,390.39 ft above National Geodetic Vertical Datum of 1929. Prior to July 1965 at site 0.3 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from left bank of Canyon Creek at diversion dam 500 ft downstream from Bowman Dam. Water is diverted to Lake Spaulding (station 11414140) and after passing through several powerplants is used for irrigation by Nevada Irrigation District. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--63 years, 160 ft³/s, 115,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 345 ft³/s, Sept. 5, 1986; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|---------|--------|-------|---------|--------|-------|
| 1 | 299 | 286 | 292 | 50 | 65 | 63 | 64 | 1.4 | 52 | 313 | 1.3 | 229 |
| 2 | 302 | 299 | 296 | 50 | 64 | 65 | 69 | 1.2 | 52 | 311 | 111 | 229 |
| 3 | 306 | 306 | 288 | 50 | 64 | 66 | 65 | 1.1 | 53 | 315 | 207 | 229 |
| 4 | 304 | 304 | 288 | 49 | 64 | 63 | 61 | 1.1 | 53 | 317 | 211 | 193 |
| 5 | 306 | 302 | 288 | 49 | 64 | 63 | 61 | 1.1 | 84 | 321 | 217 | 182 |
| 6 | 302 | 300 | 277 | 49 | 64 | 63 | 62 | 1.3 | 128 | 321 | 242 | 183 |
| 7 | 310 | 301 | 260 | 52 | 63 | 63 | 61 | 1.3 | 149 | 318 | 217 | 182 |
| 8 | 314 | 302 | 269 | 54 | 63 | 63 | 61 | 1.4 | 148 | 316 | 305 | 186 |
| 9 | 311 | 302 | 269 | 50 | 63 | 63 | 61 | 1.3 | 148 | 313 | 313 | 186 |
| 10 | 310 | 298 | 267 | 49 | 63 | 63 | 61 | 2.0 | 148 | 311 | 310 | 186 |
| 11 | 308 | 296 | 264 | 49 | 63 | 62 | 61 | 37 | 221 | 309 | 307 | 185 |
| 12 | 221 | 299 | 264 | 135 | 63 | 62 | 62 | 61 | 289 | 169 | 305 | 185 |
| 13 | 317 | 302 | 264 | 188 | 63 | 62 | 62 | 61 | 288 | 93 | 303 | 184 |
| 14 | 307 | 295 | 263 | 166 | 62 | 62 | 62 | 61 | 287 | 98 | 311 | 183 |
| 15 | 317 | 299 | 263 | 181 | 89 | 61 | 63 | 91 | 286 | 36 | 299 | 183 |
| 16 | 314 | 297 | 263 | 191 | 118 | 61 | 63 | 130 | 285 | .03 | 225 | 182 |
| 17 | 313 | 302 | 263 | 123 | 107 | 62 | 22 | 137 | 284 | .00 | 236 | 182 |
| 18 | 311 | 307 | 236 | 67 | 104 | 62 | .55 | 137 | 283 | .01 | 237 | 182 |
| 19 | 309 | 306 | 203 | 67 | 100 | 61 | .55 | 137 | 288 | .00 | 226 | 182 |
| 20 | 308 | 305 | 239 | 67 | 103 | 65 | .55 | 140 | 297 | .01 | 236 | 183 |
| 21 | 294 | 259 | 147 | 67 | 61 | 74 | .84 | 185 | 296 | .00 | 237 | 183 |
| 22 | 217 | 255 | 52 | 66 | 62 | 75 | 5.9 | 218 | 300 | .01 | 236 | 184 |
| 23 | 236 | 306 | 52 | 66 | 62 | 65 | 7.6 | 266 | 308 | .01 | 233 | 183 |
| 24 | 247 | 311 | 52 | 66 | 63 | 59 | 1.1 | 238 | 306 | .01 | 233 | 155 |
| 25 | 272 | 274 | 52 | 66 | 63 | 60 | 2.1 | 237 | 304 | .05 | 232 | 183 |
| 26 | 282 | 224 | 52 | 66 | 63 | 60 | 4.0 | 237 | 306 | .04 | 232 | 146 |
| 27 | 282 | 250 | 52 | 65 | 63 | 60 | 3.9 | 188 | 308 | .02 | 231 | 181 |
| 28 | 119 | 277 | 53 | 65 | 63 | 60 | 3.3 | 114 | 314 | .01 | 230 | 182 |
| 29 | 309 | 281 | 57 | 65 | --- | 60 | 2.6 | 73 | 318 | .00 | 230 | 182 |
| 30 | 314 | 280 | 49 | 65 | --- | 60 | 1.7 | 55 | 316 | .05 | 231 | 183 |
| 31 | 294 | --- | 50 | 65 | --- | 60 | --- | 54 | --- | .12 | 231 | --- |
| TOTAL | 8955 | 8725 | 5984 | 2458 | 2009 | 1948 | 1055.69 | 2870.2 | 6899 | 3861.37 | 7375.3 | 5578 |
| MEAN | 289 | 291 | 193 | 79.3 | 71.7 | 62.8 | 35.2 | 92.6 | 230 | 125 | 238 | 186 |
| MAX | 317 | 311 | 296 | 191 | 118 | 75 | 69 | 266 | 318 | 321 | 313 | 229 |
| MIN | 119 | 224 | 49 | 49 | 61 | 59 | .55 | 1.1 | 52 | .00 | 1.3 | 146 |
| AC-FT | 17760 | 17310 | 11870 | 4880 | 3980 | 3860 | 2090 | 5690 | 13680 | 7660 | 14630 | 11060 |

CAL YR 1989 TOTAL 69777.56 MEAN 191 MAX 320 MIN .00 AC-FT 138400
WTR YR 1990 TOTAL 57718.56 MEAN 158 MAX 321 MIN .00 AC-FT 114500

11416100 BOWMAN-SPAULDING CANAL AT JORDAN CREEK SIPHON VENTURI, NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°20'32", long 120°38'26", in SW 1/4 NW 1/4 sec.16, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, at outlet of Jordan Creek siphon, 0.6 mi downstream from Fuller Lake and 3.5 mi northeast of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and Venturi section. Elevation of gage is 5,340 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records show water diverted from Bowman Lake (station 11415500) plus numerous small tributaries before it enters Lake Spaulding (station 11414140). Most of the water at this gage flows downstream through Spaulding No. 3 powerplant (station 11416200). See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--26 years, 218 ft³/s, 157,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 335 ft³/s, Dec. 25, 1983; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|---------|------|------|---------|-------|---------|---------|-------|
| 1 | 301 | 295 | 294 | 72 | 81 | 81 | 133 | 68 | 170 | 302 | .00 | 226 |
| 2 | 301 | 293 | 302 | 72 | 83 | 90 | 138 | 59 | 146 | 300 | .00 | 226 |
| 3 | 305 | 298 | 301 | 71 | 82 | 128 | 142 | 57 | 128 | 299 | 135 | 226 |
| 4 | 305 | 302 | 298 | 67 | 85 | 137 | 147 | 55 | 134 | 300 | 202 | 199 |
| 5 | 305 | 302 | 298 | 63 | 85 | 123 | 148 | 53 | 155 | 301 | 208 | 173 |
| 6 | 303 | 301 | 297 | 60 | 85 | 78 | 149 | 46 | 162 | 303 | 227 | 174 |
| 7 | 301 | 299 | 271 | 61 | 85 | 81 | 157 | .00 | 181 | 302 | 272 | 172 |
| 8 | 303 | 299 | 298 | 89 | 85 | 98 | 156 | .00 | 184 | 300 | 233 | 174 |
| 9 | 303 | 299 | 304 | 80 | 121 | 105 | 152 | 31 | 180 | 298 | 287 | 175 |
| 10 | 305 | 298 | 309 | 67 | 152 | 100 | 147 | 56 | 176 | 296 | 301 | 176 |
| 11 | 303 | 297 | 306 | 70 | 75 | 101 | 146 | 63 | 202 | 294 | 304 | 176 |
| 12 | 254 | 296 | 308 | 121 | 75 | 100 | 148 | 80 | 282 | 194 | 306 | 175 |
| 13 | 269 | 293 | 306 | 231 | 72 | 97 | 149 | 83 | 299 | 105 | 306 | 177 |
| 14 | 294 | 291 | 304 | 208 | 75 | 94 | 153 | 83 | 300 | 111 | 305 | 177 |
| 15 | 302 | 298 | 303 | 198 | 76 | 91 | 155 | 107 | 300 | 55 | 309 | 177 |
| 16 | 304 | 301 | 301 | 212 | 22 | 91 | 155 | 139 | 299 | .00 | 244 | 177 |
| 17 | 303 | 295 | 298 | 159 | .00 | 98 | 123 | 143 | 297 | .00 | 219 | 177 |
| 18 | 300 | 301 | 291 | 80 | .00 | 103 | 94 | 145 | 293 | .00 | 228 | 178 |
| 19 | 296 | 301 | 231 | 83 | .00 | 122 | 83 | 146 | 292 | .00 | 230 | 177 |
| 20 | 299 | 301 | 265 | 84 | 29 | 135 | 78 | 151 | 297 | .00 | 243 | 177 |
| 21 | 305 | 294 | 256 | 84 | 88 | 134 | 79 | 222 | 298 | .00 | 267 | 177 |
| 22 | 272 | 223 | 106 | 84 | 91 | 138 | 79 | 255 | 297 | .00 | 244 | 178 |
| 23 | 257 | 303 | 77 | 82 | 88 | 140 | 135 | 255 | 299 | 82 | 229 | 179 |
| 24 | 281 | 307 | 77 | 84 | 79 | 140 | 170 | 286 | 300 | 116 | 226 | 181 |
| 25 | 280 | 317 | 77 | 83 | 76 | 142 | 123 | 280 | 300 | 116 | 225 | 170 |
| 26 | 287 | 288 | 78 | 82 | 74 | 145 | 96 | 272 | 298 | 116 | 224 | 175 |
| 27 | 289 | 254 | 77 | 82 | 76 | 144 | 89 | 277 | 299 | 205 | 224 | 161 |
| 28 | 195 | 276 | 78 | 80 | 78 | 142 | 85 | 229 | 300 | 129 | 223 | 168 |
| 29 | 215 | 288 | 77 | 80 | --- | 138 | 84 | 151 | 303 | .00 | 215 | 172 |
| 30 | 295 | 293 | 76 | 80 | --- | 134 | 81 | 109 | 304 | .00 | 228 | 174 |
| 31 | 298 | --- | 73 | 81 | --- | 133 | --- | 208 | --- | .00 | 227 | --- |
| TOTAL | 8930 | 8803 | 6937 | 3050 | 2018.00 | 3583 | 3774 | 4109.00 | 7475 | 4524.00 | 7091.00 | 5424 |
| MEAN | 288 | 293 | 224 | 98.4 | 72.1 | 116 | 126 | 133 | 249 | 146 | 229 | 181 |
| MAX | 305 | 317 | 309 | 231 | 152 | 145 | 170 | 286 | 304 | 303 | 309 | 226 |
| MIN | 195 | 223 | 73 | 60 | .00 | 78 | 78 | .00 | 128 | .00 | .00 | 161 |
| AC-FT | 17710 | 17460 | 13760 | 6050 | 4000 | 7110 | 7490 | 8150 | 14830 | 8970 | 14060 | 10760 |
| a | 17550 | 17530 | 13560 | 5990 | 4070 | 7010 | 7430 | 8550 | 14720 | 7660 | 13500 | 10660 |

CAL YR 1989 TOTAL 82706.60 MEAN 227 MAX 327 MIN .00 AC-FT 164000 a 164600
WTR YR 1990 TOTAL 65718.00 MEAN 180 MAX 317 MIN .00 AC-FT 130400 a 128200

a Discharge, in acre-feet, through Spaulding No. 3 powerplant, provided by Pacific Gas & Electric Co.

11416500 CANYON CREEK BELOW BOWMAN LAKE, CA

LOCATION.--Lat 39°26'23", long 120°39'37", in NE 1/4 SE 1/4 sec.7, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, on left bank 1 mi downstream from Bowman Dam, 3.5 mi upstream from Texas Creek, and 8.8 mi south of Sierra City.

DRAINAGE AREA.--28.3 mi².

PERIOD OF RECORD.--January 1927 to current year.

REVISED RECORDS.--WSP 1315-A: 1930(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5,300 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Flow regulated by Bowman Lake (station 11415500), several smaller reservoirs, and diversion into Bowman-Spaulding Canal (station 11416000). See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--63 years, 34.4 ft³/s, 24,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,970 ft³/s, Mar. 8, 1986, gage height, 9.08 ft, from rating curve extended above 1,500 ft³/s, on basis of computation of flow over Bowman dam; maximum gage height, 9.42 ft in gage well, 10.32 ft from floodmarks, Jan. 22, 1970; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57 ft³/s, Oct. 23, gage height, 3.62 ft; minimum daily, 3.0 ft³/s, July 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 4.0 | 4.5 | 4.7 | 3.6 | 3.8 | 7.4 | 5.1 | 4.1 | 6.3 | 4.1 | 5.6 | 4.9 |
| 2 | 5.2 | 4.4 | 4.7 | 3.6 | 3.7 | 15 | 5.1 | 4.2 | 4.9 | 4.1 | 5.9 | 4.9 |
| 3 | 4.6 | 4.3 | 4.7 | 3.6 | 4.6 | 24 | 5.1 | 4.2 | 4.4 | 4.1 | 6.2 | 4.9 |
| 4 | 4.3 | 4.3 | 4.7 | 3.6 | 4.7 | 8.9 | 5.2 | 4.1 | 4.2 | 4.1 | 6.2 | 4.9 |
| 5 | 4.2 | 4.3 | 4.9 | 3.6 | 3.8 | 6.9 | 4.8 | 4.2 | 4.2 | 4.1 | 6.4 | 4.8 |
| 6 | 4.1 | 4.3 | 4.8 | 3.6 | 3.8 | 6.7 | 6.3 | 4.2 | 4.2 | 4.1 | 6.5 | 4.7 |
| 7 | 4.0 | 4.2 | 4.4 | 12 | 3.8 | 6.9 | 5.4 | 4.2 | 4.1 | 4.0 | 6.5 | 4.6 |
| 8 | 4.0 | 4.2 | 4.3 | 19 | 3.7 | 8.6 | 4.7 | 4.2 | 4.1 | 4.0 | 6.6 | 4.6 |
| 9 | 4.0 | 4.2 | 4.2 | 5.2 | 3.7 | 7.3 | 4.5 | 4.2 | 4.0 | 4.0 | 6.7 | 4.6 |
| 10 | 4.0 | 4.2 | 4.2 | 4.3 | 3.9 | 6.7 | 4.4 | 4.3 | 4.0 | 3.9 | 6.7 | 4.6 |
| 11 | 4.0 | 4.2 | 4.2 | 4.0 | 4.4 | 5.6 | 4.4 | 4.3 | 4.1 | 3.9 | 6.6 | 4.6 |
| 12 | 3.9 | 4.1 | 4.2 | 5.3 | 4.5 | 5.1 | 4.3 | 4.3 | 4.3 | 3.8 | 6.7 | 4.5 |
| 13 | 4.0 | 4.1 | 4.1 | 9.4 | 4.1 | 4.8 | 4.2 | 4.2 | 4.3 | 3.6 | 6.9 | 4.5 |
| 14 | 4.0 | 4.1 | 4.1 | 5.6 | 4.0 | 4.7 | 4.3 | 4.1 | 4.3 | 4.6 | 6.9 | 4.5 |
| 15 | 4.0 | 4.0 | 4.0 | 4.8 | 3.9 | 5.3 | 4.3 | 4.0 | 4.3 | 5.4 | 7.0 | 4.5 |
| 16 | 4.0 | 4.0 | 4.0 | 4.7 | e4.3 | 7.8 | 4.2 | 4.0 | 4.3 | 3.0 | 6.6 | 4.5 |
| 17 | 4.0 | 4.0 | 4.0 | 4.3 | e4.3 | 11 | 4.3 | 4.0 | 4.2 | 3.1 | 6.7 | 4.3 |
| 18 | 4.0 | 4.0 | 4.0 | 4.0 | e4.3 | 11 | 4.3 | 4.0 | 4.2 | 3.1 | 6.7 | 4.3 |
| 19 | 4.0 | 4.0 | 3.9 | 3.9 | 4.3 | 11 | 4.3 | 4.0 | 4.2 | 3.2 | 6.7 | 4.3 |
| 20 | 4.1 | 4.0 | 3.9 | 3.8 | 4.1 | 10 | 4.3 | 6.2 | 4.2 | 3.1 | 6.7 | 4.3 |
| 21 | 9.6 | 4.0 | 3.9 | 3.9 | 4.2 | 9.1 | 4.6 | 5.3 | 4.2 | 3.2 | 6.8 | 4.3 |
| 22 | 8.8 | 4.0 | 3.6 | 3.9 | 4.6 | 8.2 | 4.8 | 4.6 | 4.2 | 3.3 | 6.8 | 4.3 |
| 23 | 21 | 4.2 | 3.6 | 3.8 | 5.1 | 7.1 | 12 | 8.9 | 4.2 | 3.2 | 6.8 | 4.7 |
| 24 | 12 | 9.2 | 3.6 | 3.8 | 5.7 | 7.2 | 6.6 | 6.2 | 4.2 | 4.2 | 6.8 | 4.4 |
| 25 | 7.7 | 18 | 3.6 | 3.9 | 6.9 | 7.1 | 5.0 | 5.0 | 4.2 | 4.9 | 6.9 | 4.4 |
| 26 | 5.9 | 9.1 | 3.6 | 3.9 | 8.4 | 5.9 | 4.6 | 4.9 | 4.2 | 4.3 | 6.9 | 4.4 |
| 27 | 6.9 | 5.7 | 3.6 | 3.8 | 8.1 | 5.5 | 4.3 | 9.4 | 4.2 | 4.8 | 6.6 | 4.3 |
| 28 | 5.3 | 5.0 | 3.6 | 3.7 | 8.2 | 5.0 | 4.1 | 6.9 | 4.2 | 5.0 | 6.6 | 4.3 |
| 29 | 5.0 | 4.9 | 3.8 | 3.7 | --- | 4.8 | 4.0 | 5.6 | 4.2 | 4.7 | 6.5 | 4.3 |
| 30 | 4.7 | 4.7 | 3.6 | 4.1 | --- | 4.7 | 4.0 | 16 | 4.2 | 5.1 | 5.3 | 4.3 |
| 31 | 4.5 | --- | 3.6 | 3.8 | --- | 5.0 | --- | 15 | --- | 5.7 | 5.1 | --- |
| TOTAL | 173.8 | 152.2 | 126.1 | 154.2 | 132.9 | 244.3 | 147.5 | 172.8 | 128.8 | 125.7 | 201.9 | 135.5 |
| MEAN | 5.61 | 5.07 | 4.07 | 4.97 | 4.75 | 7.88 | 4.92 | 5.57 | 4.29 | 4.05 | 6.51 | 4.52 |
| MAX | 21 | 18 | 4.9 | 19 | 8.4 | 24 | 12 | 16 | 6.3 | 5.7 | 7.0 | 4.9 |
| MIN | 3.9 | 4.0 | 3.6 | 3.6 | 3.7 | 4.7 | 4.0 | 4.0 | 4.0 | 3.0 | 5.1 | 4.3 |
| AC-FT | 345 | 302 | 250 | 306 | 264 | 485 | 293 | 343 | 255 | 249 | 400 | 269 |

CAL YR 1989 TOTAL 2822.1 MEAN 7.73 MAX 77 MIN 3.4 AC-FT 5600
WTR YR 1990 TOTAL 1895.7 MEAN 5.19 MAX 24 MIN 3.0 AC-FT 3760

e Estimated.

11416620 TEXAS CREEK TRIBUTARY BELOW CULBERTSON LAKE, NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°25'17", long 120°37'21", in SW 1/4 SW 1/4 sec.15, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 150 ft downstream from outlet structure on Culbertson Lake Dam, 0.15 mi upstream from Texas Creek, and 6.4 mi east of Graniteville.

DRAINAGE AREA.--0.44 mi².

PERIOD OF RECORD.--October 1988 to current year (low-flow periods only). Unpublished records for water years 1965-88 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,420 ft above National Geodetic Vertical Datum of 1929. October 1965 to August 1988, nonrecording gage at site 10 ft downstream at different datum. August to September 1988, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records not computed for winter months or above 1.1 ft³/s. Low and medium flow regulated by Culbertson Lake (capacity, 850 acre-ft). See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-------|-----|-----|-----|-----|-----|-------|-------|-----|-------|-----|
| 1 | --- | .85 | .88 | --- | --- | --- | --- | .81 | .95 | .79 | .91 | .91 |
| 2 | --- | .78 | .88 | --- | --- | --- | --- | .80 | .94 | .81 | .94 | .89 |
| 3 | 1.1 | .78 | .83 | --- | --- | --- | --- | .79 | .94 | .81 | .94 | .88 |
| 4 | 1.1 | .78 | .75 | --- | --- | --- | --- | .78 | .94 | .81 | .94 | .88 |
| 5 | 1.1 | .78 | --- | --- | --- | --- | --- | .85 | .86 | .81 | .94 | .87 |
| 6 | 1.1 | .88 | --- | --- | --- | --- | --- | .90 | .76 | .81 | .96 | .86 |
| 7 | 1.0 | .88 | --- | --- | --- | --- | --- | .88 | .75 | .80 | .98 | .85 |
| 8 | 1.0 | .88 | --- | --- | --- | --- | --- | .81 | .75 | .81 | .97 | --- |
| 9 | 1.0 | .88 | --- | --- | --- | --- | --- | .75 | .75 | .80 | .97 | --- |
| 10 | 1.0 | .91 | --- | --- | --- | --- | --- | .81 | .74 | .81 | .96 | --- |
| 11 | 1.0 | .98 | --- | --- | --- | --- | .78 | .87 | .72 | .80 | .94 | --- |
| 12 | 1.0 | .97 | --- | --- | --- | --- | .78 | .83 | .81 | .80 | .94 | --- |
| 13 | 1.0 | .97 | --- | --- | --- | --- | .78 | .81 | .94 | .77 | .92 | --- |
| 14 | 1.0 | .96 | --- | --- | --- | --- | .79 | .82 | .91 | --- | .91 | --- |
| 15 | 1.0 | .98 | --- | --- | --- | --- | .78 | .81 | .91 | --- | .91 | --- |
| 16 | 1.0 | .97 | --- | --- | --- | --- | .79 | .81 | .91 | --- | .90 | --- |
| 17 | 1.0 | .95 | --- | --- | --- | --- | .81 | .81 | .91 | --- | .92 | --- |
| 18 | 1.0 | .96 | --- | --- | --- | --- | .80 | .81 | .91 | .77 | 1.0 | --- |
| 19 | 1.0 | .95 | --- | --- | --- | --- | .78 | .82 | .89 | .76 | 1.0 | --- |
| 20 | 1.0 | .95 | --- | --- | --- | --- | .75 | .85 | .88 | .68 | 1.0 | --- |
| 21 | --- | .95 | --- | --- | --- | --- | .79 | .84 | .87 | .75 | 1.0 | --- |
| 22 | 1.0 | .95 | --- | --- | --- | --- | .79 | .82 | .85 | .95 | 1.0 | --- |
| 23 | --- | .95 | --- | --- | --- | --- | .84 | .84 | .84 | .94 | .99 | --- |
| 24 | --- | .96 | --- | --- | --- | --- | .83 | .85 | .81 | .94 | .98 | --- |
| 25 | 1.1 | .97 | --- | --- | --- | --- | .81 | .85 | .81 | .92 | .98 | --- |
| 26 | .95 | .98 | --- | --- | --- | --- | .81 | .85 | .81 | .91 | .98 | .85 |
| 27 | .94 | .98 | --- | --- | --- | --- | .79 | .88 | .80 | .91 | .96 | .84 |
| 28 | .92 | .95 | --- | --- | --- | --- | .79 | .88 | .79 | .88 | .95 | .82 |
| 29 | .91 | .89 | --- | --- | --- | --- | .78 | .88 | .78 | .88 | .95 | .83 |
| 30 | .91 | .88 | --- | --- | --- | --- | .74 | .92 | .78 | .89 | .92 | .89 |
| 31 | .91 | --- | --- | --- | --- | --- | --- | .94 | --- | .91 | .91 | --- |
| TOTAL | --- | 27.50 | --- | --- | --- | --- | --- | 25.97 | 25.31 | --- | 29.57 | --- |
| MEAN | --- | .92 | --- | --- | --- | --- | --- | .84 | .84 | --- | .95 | --- |
| MAX | --- | .98 | --- | --- | --- | --- | --- | .94 | .95 | --- | 1.0 | --- |
| MIN | --- | .78 | --- | --- | --- | --- | --- | .75 | .72 | --- | .90 | --- |
| AC-FT | --- | 55 | --- | --- | --- | --- | --- | 52 | 50 | --- | 59 | --- |

11416700 LINDSEY CREEK BELOW LOWER LINDSEY LAKE, NEAR GRANITEVILLE, CA

LOCATION.--Lat 39°24'43", long 120°38'35", in NE 1/4 SE 1/4 sec.20, T.18 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 10 ft downstream from outlet structure on Lower Lindsey Lake Dam and 5.5 mi east of Graniteville.

DRAINAGE AREA.--0.91 mi².

PERIOD OF RECORD.--October 1988 to current year. Unpublished records for water years 1965-88 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,225 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1965 to July 1984, nonrecording gage at same site and different datum. July 1984 to August 1988, nonrecording gage at same site and different datum.

REMARKS.--No estimated daily discharges. Records not computed for winter months or above 1.2 ft³/s. Low and medium flow regulated by Lower Lindsey Lake, capacity, 293 acre-ft. Spillway flows bypass this station. See schematic diagram of Yuba River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|
| 1 | .88 | .69 | .85 | --- | --- | --- | --- | --- | 1.1 | 1.2 | 1.0 | .85 |
| 2 | .88 | .70 | .85 | --- | --- | --- | --- | --- | --- | 1.1 | 1.0 | .84 |
| 3 | .87 | .70 | .85 | --- | --- | --- | --- | --- | --- | 1.1 | 1.0 | .83 |
| 4 | .85 | .72 | .87 | --- | --- | --- | --- | --- | --- | 1.1 | 1.0 | 1.0 |
| 5 | .85 | .75 | --- | --- | --- | --- | --- | --- | --- | 1.2 | 1.0 | 1.2 |
| 6 | .85 | .75 | --- | --- | --- | --- | --- | --- | --- | 1.2 | 1.0 | 1.2 |
| 7 | .85 | .75 | --- | --- | --- | --- | --- | --- | --- | 1.2 | 1.1 | 1.2 |
| 8 | .85 | .74 | --- | --- | --- | --- | --- | --- | --- | 1.2 | 1.1 | 1.2 |
| 9 | .85 | .73 | --- | --- | --- | --- | --- | --- | --- | 1.1 | 1.1 | 1.2 |
| 10 | .85 | .73 | --- | --- | --- | --- | --- | --- | --- | 1.1 | 1.1 | 1.2 |
| 11 | .85 | .73 | --- | --- | --- | --- | .95 | --- | --- | 1.1 | 1.1 | 1.2 |
| 12 | .82 | .73 | --- | --- | --- | --- | .95 | --- | --- | 1.1 | 1.1 | 1.2 |
| 13 | .79 | .73 | --- | --- | --- | --- | .95 | --- | --- | 1.1 | 1.0 | 1.2 |
| 14 | .79 | .73 | --- | --- | --- | --- | .95 | --- | --- | 1.2 | .93 | 1.2 |
| 15 | .79 | .71 | --- | --- | --- | --- | .95 | --- | --- | 1.1 | .92 | 1.2 |
| 16 | .79 | .70 | --- | --- | --- | --- | .95 | --- | --- | 1.1 | .95 | 1.2 |
| 17 | .79 | .70 | --- | --- | --- | --- | --- | --- | --- | 1.1 | .91 | 1.2 |
| 18 | .76 | .67 | --- | --- | --- | --- | --- | --- | --- | 1.1 | .93 | 1.2 |
| 19 | .72 | .76 | --- | --- | --- | --- | --- | 1.1 | --- | 1.1 | .94 | 1.2 |
| 20 | .73 | .85 | --- | --- | --- | --- | --- | 1.1 | --- | 1.0 | .92 | 1.1 |
| 21 | .73 | .85 | --- | --- | --- | --- | --- | 1.1 | --- | .93 | .92 | 1.1 |
| 22 | .74 | .85 | --- | --- | --- | --- | --- | .94 | 1.1 | .77 | .92 | --- |
| 23 | .76 | .84 | --- | --- | --- | --- | --- | .85 | .91 | .59 | .94 | --- |
| 24 | .76 | .83 | --- | --- | --- | --- | --- | .99 | .82 | .83 | .94 | --- |
| 25 | .77 | .85 | --- | --- | --- | --- | --- | 1.1 | .86 | 1.1 | .92 | --- |
| 26 | .78 | .85 | --- | --- | --- | --- | --- | --- | --- | 1.1 | .92 | .99 |
| 27 | .76 | .85 | --- | --- | --- | --- | --- | --- | --- | 1.1 | .88 | .95 |
| 28 | .76 | .85 | --- | --- | --- | --- | --- | --- | 1.2 | 1.1 | .85 | .99 |
| 29 | .74 | .85 | --- | --- | --- | --- | --- | --- | 1.2 | 1.1 | .85 | 1.1 |
| 30 | .66 | .85 | --- | --- | --- | --- | --- | 1.1 | 1.2 | 1.1 | .85 | 1.2 |
| 31 | .64 | --- | --- | --- | --- | --- | --- | 1.1 | --- | 1.1 | .85 | --- |
| TOTAL | 24.51 | 23.04 | --- | --- | --- | --- | --- | --- | --- | 33.32 | 29.94 | --- |
| MEAN | .79 | .77 | --- | --- | --- | --- | --- | --- | --- | 1.07 | .97 | --- |
| MAX | .88 | .85 | --- | --- | --- | --- | --- | --- | --- | 1.2 | 1.1 | --- |
| MIN | .64 | .67 | --- | --- | --- | --- | --- | --- | --- | .59 | .85 | --- |
| AC-FT | 49 | 46 | --- | --- | --- | --- | --- | --- | --- | 66 | 59 | --- |

SACRAMENTO RIVER BASIN

11417500 SOUTH YUBA RIVER AT JONES BAR, NEAR GRASS VALLEY, CA

LOCATION.--Lat 39°17'32", Long 121°06'13", in NW 1/4 SE 1/4 sec.32, T.17 N., R.8 E., Nevada County, Hydrologic Unit 18020125, on left bank at Jones Bar, 100 ft upstream from Rush Creek, 0.9 mi downstream from bridge on State Highway 49, and 5 mi northwest of Grass Valley.

DRAINAGE AREA.--308 mi².

PERIOD OF RECORD.--October 1940 to September 1948, April 1959 to current year. Published as South Fork Yuba River at Jones Bar 1940-48, and as South Yuba River at Jones Bar 1959-63.

SEDIMENT DATA: Water years 1966-74.

WATER TEMPERATURE: Water years 1965-79 (daily records).

REVISED RECORDS.--WSP 1315-A: 1942-43(M), drainage area at former site. WSP 1931: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,060 ft above National Geodetic Vertical Datum of 1929, from river-profile map. Oct. 1, 1940, to Sept. 30, 1948, at site 150 ft upstream at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Lake Spaulding, Fordyce Lake, and Bowman Lake (stations 11414040, 11414090, and 11415500) and many smaller reservoirs. Diversions into and out of basin for several powerplants and for irrigation of about 20,000 acres by the Nevada Irrigation District. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--39 years, 451 ft³/s, 326,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,600 ft³/s, Dec. 22, 1964, gage height, 25.0 ft, from floodmarks, from rating curve extended above 23,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 1.0 ft³/s, Sept. 10-13, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 23, 1955, reached a stage of 30.7 ft, from floodmarks, present datum, at site 100 ft upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,270 ft³/s, Nov. 26, gage height, 8.84 ft; minimum daily, 29 ft³/s, Sept. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|------|-------|-------|-------|-------|-------|-------|--------|------|------|
| 1 | 53 | 95 | 117 | 56 | 173 | 462 | 256 | 140 | 810 | 75 | 41 | 36 |
| 2 | 57 | 91 | 109 | 65 | 164 | 450 | 251 | 132 | 476 | 73 | 42 | 35 |
| 3 | 76 | 86 | 104 | 58 | 186 | 1050 | 244 | 125 | 342 | 70 | 41 | 34 |
| 4 | 67 | 84 | 99 | 54 | 287 | 724 | 251 | 120 | 275 | 70 | 39 | 33 |
| 5 | 57 | 83 | 96 | 54 | 224 | 596 | 243 | 114 | 236 | 69 | 38 | 33 |
| 6 | 53 | 81 | 96 | 53 | 237 | 508 | 238 | 109 | 208 | 69 | 37 | 33 |
| 7 | 51 | 77 | 93 | 109 | 197 | 443 | 238 | 104 | 194 | 69 | 36 | 33 |
| 8 | 49 | 77 | 88 | 549 | 165 | 415 | 227 | 101 | 177 | 66 | 36 | 32 |
| 9 | 49 | 75 | 84 | 299 | 153 | 395 | 222 | 97 | 161 | 63 | 36 | 32 |
| 10 | 48 | 73 | 82 | 175 | 145 | 442 | 211 | 94 | 149 | 61 | 36 | 31 |
| 11 | 47 | 70 | 79 | 135 | 149 | 487 | 207 | 94 | 140 | 61 | 36 | 31 |
| 12 | 46 | 69 | 76 | 225 | 175 | 438 | 199 | 92 | 136 | 59 | 37 | 30 |
| 13 | 48 | 68 | 75 | 821 | 179 | 391 | 194 | 88 | 131 | 57 | 37 | 30 |
| 14 | 46 | 67 | 74 | 745 | 161 | 365 | 190 | 85 | 131 | 52 | 36 | 31 |
| 15 | 45 | 66 | 73 | 447 | 146 | 355 | 183 | 82 | 128 | 52 | 37 | 31 |
| 16 | 45 | 63 | 70 | 348 | 170 | 352 | 177 | 79 | 127 | 56 | 38 | 31 |
| 17 | 45 | 63 | 70 | 291 | 173 | 364 | 179 | 77 | 122 | 59 | 40 | 32 |
| 18 | 45 | 63 | 69 | 231 | 193 | 384 | 172 | 75 | 116 | 54 | 38 | 33 |
| 19 | 45 | 62 | 68 | 193 | 168 | 386 | 163 | 75 | 115 | 54 | 38 | 32 |
| 20 | 45 | 62 | 67 | 167 | 155 | 383 | 159 | 114 | 109 | 51 | 39 | 32 |
| 21 | 57 | 62 | 65 | 149 | 160 | 376 | 154 | 177 | 102 | 49 | 42 | 29 |
| 22 | 215 | 62 | 64 | 139 | 222 | 373 | 163 | 126 | 97 | 46 | 41 | 30 |
| 23 | 378 | 61 | 62 | 131 | 288 | 364 | 262 | 186 | 93 | 44 | 39 | 31 |
| 24 | 477 | 89 | 61 | 124 | 344 | 358 | 394 | 299 | 89 | 43 | 38 | 38 |
| 25 | 396 | 347 | 60 | 118 | 397 | 359 | 249 | 179 | 86 | 43 | 37 | 47 |
| 26 | 226 | 1030 | 60 | 116 | 443 | 347 | 209 | 149 | 85 | 45 | 36 | 42 |
| 27 | 160 | 315 | 58 | 113 | 476 | 325 | 185 | 249 | 82 | 46 | 38 | 41 |
| 28 | 152 | 195 | 58 | 106 | 482 | 307 | 170 | 503 | 80 | 45 | 39 | 44 |
| 29 | 128 | 152 | 56 | 102 | --- | 291 | 159 | 481 | 79 | 42 | 38 | 38 |
| 30 | 140 | 131 | 55 | 156 | --- | 271 | 148 | 440 | 78 | 43 | 38 | 35 |
| 31 | 119 | --- | 55 | 175 | --- | 257 | --- | 1660 | --- | 42 | 37 | --- |
| TOTAL | 3465 | 3919 | 2343 | 6504 | 6412 | 13018 | 6297 | 6446 | 5154 | 1728 | 1181 | 1020 |
| MEAN | 112 | 131 | 75.6 | 210 | 229 | 420 | 210 | 208 | 172 | 55.7 | 38.1 | 34.0 |
| MAX | 477 | 1030 | 117 | 821 | 482 | 1050 | 394 | 1660 | 810 | 75 | 42 | 47 |
| MIN | 45 | 61 | 55 | 53 | 145 | 257 | 148 | 75 | 78 | 42 | 36 | 29 |
| AC-FT | 6870 | 7770 | 4650 | 12900 | 12720 | 25820 | 12490 | 12790 | 10220 | 3430 | 2340 | 2020 |
| CAL YR 1989 | TOTAL | 133263 | MEAN | 365 | MAX | 4460 | MIN | 37 | AC-FT | 264300 | | |
| WTR YR 1990 | TOTAL | 57487 | MEAN | 157 | MAX | 1660 | MIN | 29 | AC-FT | 114000 | | |

11418000 YUBA RIVER BELOW ENGLEBRIGHT DAM, NEAR SMARTVILLE, CA

LOCATION.--Lat 39°14'07", long 121°16'23", in NW 1/4 NW 1/4 sec.23, T.16 N., R.6 E., Yuba County, Hydrologic Unit 18020125, on right bank 2,000 ft downstream from Englebright Dam, 0.5 mi upstream from Deer Creek, and 2.3 mi northeast of Smartville.

DRAINAGE AREA.--1,108 mi².

PERIOD OF RECORD.--October 1941 to current year. Prior to October 1953, published as "at Narrows Dam." October 1953 to Sept. 30, 1969, published as "at Englebright Dam." If records for Deer Creek near Smartville (station 11418500) since 1941 are added to records at this station, records equivalent to those published from 1903 to 1941 as Yuba River at Smartville (station 11419000) can be obtained.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 278.68 ft above National Geodetic Vertical Datum of 1929 (levels by International Engineering Co.). Prior to Sept. 19, 1958, at site 2,000 ft upstream at datum 248.31 ft higher, and Sept. 19, 1958, to Sept. 30, 1969, at datum 278.68 ft lower. Supplementary gage 2,000 ft upstream since Oct. 1, 1969, at Englebright Dam at datum 248.31 ft higher.

REMARKS.--No estimated daily discharges. Records good. Diversions up to 1,800 ft³/s (see stations 11413250, 11414190, and 11414200) out of basin for power and irrigation upstream from station. Flow regulation by Lake Spaulding (station 11414140), Jackson Meadows and New Bullards Bar Reservoirs (stations 11407800 and 11413515), Englebright Reservoir beginning in 1941, capacity, 70,000 acre-ft, Bowman and Fordyce Lakes (stations 11415500 and 11414090), and many smaller reservoirs. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--49 years, 2,473 ft³/s, 1,792,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 171,000 ft³/s, Dec. 22, 1964, gage height, 546.14 ft, site and datum then in use, from rating curve extended above 25,000 ft³/s on basis of computation of peak flow over spillway of dam at gage heights 544.72 and 546.14 ft; no flow at times in 1942, 1949, 1956, 1958-61, 1968-69.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,090 ft³/s, May 31, gage height, 9.01 ft; minimum daily, 336 ft³/s, Apr. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
| 1 | 699 | 869 | 881 | 1030 | 710 | 649 | 582 | 1160 | 1770 | 1720 | 1100 | 677 |
| 2 | 696 | 880 | 927 | 1030 | 697 | 649 | 489 | 1150 | 1500 | 1410 | 1100 | 680 |
| 3 | 698 | 890 | 914 | 1040 | 679 | 846 | 385 | 1120 | 1510 | 1190 | 1100 | 642 |
| 4 | 697 | 889 | 905 | 1040 | 644 | 1220 | 336 | 1120 | 1480 | 1100 | 1100 | 627 |
| 5 | 713 | 877 | 907 | 1030 | 639 | 1000 | 341 | 1110 | 1470 | 1040 | 1100 | 636 |
| 6 | 741 | 880 | 923 | 1030 | 639 | 654 | 342 | 1080 | 1500 | 1020 | 1360 | 639 |
| 7 | 762 | 893 | 948 | 1030 | 639 | 654 | 340 | 1060 | 1560 | 1040 | 1620 | 639 |
| 8 | 784 | 901 | 892 | 1030 | 639 | 654 | 339 | 1040 | 1650 | 1020 | 1550 | 639 |
| 9 | 781 | 913 | 897 | 1040 | 639 | 654 | 376 | 1030 | 1690 | 990 | 1550 | 639 |
| 10 | 806 | 905 | 893 | 1030 | 639 | 654 | 444 | 1000 | 1820 | 974 | 1460 | 620 |
| 11 | 836 | 906 | 895 | 1030 | 639 | 654 | 456 | 964 | 1900 | 967 | 1200 | 617 |
| 12 | 857 | 903 | 898 | 1030 | 639 | 654 | 532 | 959 | 1920 | 973 | 1110 | 631 |
| 13 | 871 | 905 | 897 | 1360 | 639 | 654 | 660 | 979 | 1940 | 1040 | 1080 | 626 |
| 14 | 843 | 906 | 899 | 1930 | 635 | 654 | 710 | 989 | 1970 | 1060 | 1070 | 641 |
| 15 | 832 | 904 | 894 | 1920 | 634 | 654 | 713 | 1290 | 1960 | 1110 | 1050 | 639 |
| 16 | 833 | 907 | 892 | 1590 | 562 | 654 | 727 | 1810 | 1960 | 1130 | 1040 | 610 |
| 17 | 827 | 907 | 899 | 1040 | 573 | 654 | 744 | 1840 | 1950 | 1140 | 1040 | 591 |
| 18 | 833 | 913 | 906 | 968 | 647 | 654 | 782 | 1850 | 1930 | 1130 | 1020 | 574 |
| 19 | 847 | 911 | 906 | 777 | 641 | 651 | 840 | 1830 | 1910 | 1130 | 1010 | 546 |
| 20 | 857 | 914 | 906 | 703 | 987 | 649 | 900 | 1830 | 1910 | 1130 | 984 | 546 |
| 21 | 855 | 909 | 906 | 703 | 1480 | 649 | 925 | 1780 | 1910 | 1130 | 937 | 546 |
| 22 | 863 | 903 | 906 | 713 | 1410 | 649 | 939 | 1730 | 1860 | 1130 | 896 | 547 |
| 23 | 869 | 901 | 906 | 727 | 843 | 651 | 943 | 1690 | 1940 | 1120 | 874 | 550 |
| 24 | 861 | 899 | 906 | 737 | 649 | 651 | 942 | 1640 | 1950 | 1120 | 844 | 556 |
| 25 | 876 | 906 | 906 | 752 | 649 | 649 | 936 | 1580 | 1950 | 1120 | 830 | 568 |
| 26 | 870 | 916 | 906 | 800 | 649 | 649 | 946 | 1520 | 1960 | 1120 | 815 | 568 |
| 27 | 871 | 908 | 906 | 753 | 649 | 653 | 973 | 1490 | 1960 | 1110 | 812 | 568 |
| 28 | 873 | 907 | 906 | 755 | 649 | 655 | 1030 | 1450 | 1960 | 1100 | 793 | 568 |
| 29 | 871 | 881 | 906 | 758 | --- | 659 | 1040 | 1440 | 1960 | 1100 | 732 | 568 |
| 30 | 875 | 840 | 906 | 765 | --- | 659 | 1080 | 1400 | 1960 | 1110 | 690 | 834 |
| 31 | 872 | --- | 906 | 766 | --- | 659 | --- | 1660 | --- | 1100 | 680 | --- |
| TOTAL | 25369 | 26943 | 28045 | 30907 | 20138 | 21349 | 20792 | 42591 | 54710 | 34574 | 32547 | 18332 |
| MEAN | 818 | 898 | 905 | 997 | 719 | 689 | 693 | 1374 | 1824 | 1115 | 1050 | 611 |
| MAX | 876 | 916 | 948 | 1930 | 1480 | 1220 | 1080 | 1850 | 1970 | 1720 | 1620 | 834 |
| MIN | 696 | 840 | 881 | 703 | 562 | 649 | 336 | 959 | 1470 | 967 | 680 | 546 |
| AC-FT | 50320 | 53440 | 55630 | 61300 | 39940 | 42350 | 41240 | 84480 | 108500 | 68580 | 64560 | 36360 |

CAL YR 1989 TOTAL 780218 MEAN 2138 MAX 21000 MIN 623 AC-FT 1548000
WTR YR 1990 TOTAL 356297 MEAN 976 MAX 1970 MIN 336 AC-FT 706700

11418500 DEER CREEK NEAR SMARTVILLE, CA

LOCATION.--Lat 39°13'28", long 121°16'03", in SW 1/4 SE 1/4 sec.23, T.16 N., R.6 E., Nevada County, Hydrologic Unit 18020125, on left bank 400 ft upstream from county road bridge, 0.9 mi upstream from mouth, and 2 mi northeast of Smartville.

DRAINAGE AREA.--84.6 mi².

PERIOD OF RECORD.--June 1935 to current year.

WATER TEMPERATURE: Water years 1974-79.

SEDIMENT DATA: Water years 1974-79.

REVISED RECORDS.--WSP 1395: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 630 ft above National Geodetic Vertical Datum of 1929, from river-profile map. June 21, 1935, to Nov. 30, 1938, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good except for periods of backwater from beaver dams (July 23 to Aug. 6 and Aug. 27 - 31) which are fair. Natural flow of stream is affected by Scotts Flat Reservoir beginning in 1949, usable capacity, 26,300 acre-ft, increased to 49,000 acre-ft in July 1964; Deer Creek Reservoir, capacity, 1,400 acre-ft beginning 1949; Lake Wildwood, capacity, 3,840 acre-ft beginning in 1970, power developments, and diversion for irrigation. At times water from South Yuba River is diverted to Deer Creek and water from Deer Creek is diverted to Bear River. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--55 years, 127 ft³/s, 92,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft³/s, Feb. 17, 1986, gage height, 14.05 ft, from rating curve extended above 5,200 ft³/s; minimum daily, 0.06 ft³/s, Aug. 5, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of March 1928 reached a stage of 14.5 ft from floodmarks, discharge, 14,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,040 ft³/s, Jan. 13, gage height, 8.31 ft; minimum daily, 2.5 ft³/s, Sept. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|-------|--------|------|------|------|--------|-------|-------|-------|-------|
| 1 | 12 | 6.5 | 7.3 | 6.1 | 136 | 65 | 29 | 5.3 | 65 | 9.5 | 6.9 | 5.2 |
| 2 | 14 | 6.1 | 6.9 | 8.4 | 87 | 66 | 27 | 5.0 | 39 | 6.7 | 8.1 | 5.3 |
| 3 | 18 | 11 | 6.7 | 6.8 | 107 | 232 | 25 | 5.3 | 29 | 8.5 | 8.1 | 4.5 |
| 4 | 13 | 27 | 6.3 | 6.4 | 328 | 210 | 23 | 5.7 | 22 | 9.7 | 9.0 | 3.0 |
| 5 | 11 | 19 | 5.5 | 6.5 | 106 | 258 | 22 | 6.7 | 17 | 7.3 | 8.3 | 2.5 |
| 6 | 11 | 12 | 5.5 | 6.3 | 267 | 117 | 21 | 8.9 | 12 | 7.6 | 6.3 | 3.1 |
| 7 | 9.7 | 6.4 | 5.7 | 74 | 135 | 84 | 20 | 5.8 | 9.9 | 9.9 | 5.5 | 3.4 |
| 8 | 9.7 | 5.8 | 5.9 | 155 | 72 | 69 | 20 | 6.2 | 12 | 8.8 | 5.4 | 4.7 |
| 9 | 9.6 | 5.4 | 6.3 | 25 | 51 | 60 | 20 | 5.9 | 13 | 6.7 | 5.5 | 5.5 |
| 10 | 8.4 | 5.2 | 6.3 | 16 | 41 | 152 | 20 | 6.0 | 11 | 7.6 | 5.5 | 4.5 |
| 11 | 8.4 | 5.3 | 6.1 | 12 | 36 | 178 | 18 | 7.4 | 9.1 | 8.0 | 6.2 | 4.5 |
| 12 | 9.4 | 5.3 | 5.9 | 342 | 34 | 187 | 15 | 8.5 | 8.3 | 7.5 | 6.0 | 5.4 |
| 13 | 11 | 5.0 | 5.8 | 1220 | 31 | 154 | 15 | 7.8 | 8.4 | 8.0 | 4.8 | 5.1 |
| 14 | 13 | 5.1 | 5.8 | 866 | 28 | 100 | 13 | 6.3 | 8.2 | 11 | 6.1 | 4.9 |
| 15 | 11 | 5.0 | 5.8 | 224 | 26 | 86 | 17 | 6.1 | 7.8 | 8.9 | 4.7 | 5.4 |
| 16 | 9.8 | 4.9 | 5.9 | 143 | 90 | 71 | 17 | 6.0 | 9.0 | 6.5 | 4.4 | 5.9 |
| 17 | 79 | 5.3 | 5.7 | 102 | 168 | 62 | 19 | 5.4 | 8.5 | 6.6 | 4.2 | 4.9 |
| 18 | 399 | 5.6 | 5.5 | 58 | 169 | 55 | 19 | 5.4 | 6.1 | 7.2 | 5.4 | 5.2 |
| 19 | 389 | 5.7 | 5.4 | 44 | 134 | 51 | 15 | 6.4 | 6.3 | 7.6 | 5.6 | 5.5 |
| 20 | 377 | 5.1 | 5.3 | 36 | 110 | 47 | 14 | 35 | 5.7 | 7.7 | 5.5 | 6.4 |
| 21 | 235 | 4.8 | 5.3 | 32 | 126 | 45 | 14 | 35 | 6.4 | 8.2 | 5.3 | 6.9 |
| 22 | 72 | 23 | 5.4 | 29 | 212 | 41 | 15 | 18 | 7.3 | 7.6 | 4.7 | 6.4 |
| 23 | 87 | 61 | 5.5 | 26 | 233 | 39 | 52 | 25 | 9.2 | 5.9 | 4.5 | 5.8 |
| 24 | 100 | 34 | 5.4 | 25 | 221 | 38 | 36 | 27 | 8.7 | 6.2 | 3.8 | 5.9 |
| 25 | 171 | 153 | 5.4 | 23 | 184 | 38 | 15 | 14 | 7.7 | 5.9 | 3.9 | 6.4 |
| 26 | 71 | 383 | 5.5 | 22 | 140 | 38 | 11 | 12 | 7.9 | 6.1 | 4.2 | 7.0 |
| 27 | 40 | 74 | 5.5 | 21 | 105 | 35 | 13 | 87 | 8.0 | 6.4 | 4.3 | 6.6 |
| 28 | 29 | 12 | 5.7 | 20 | 81 | 31 | 12 | 291 | 8.1 | 8.8 | 4.4 | 6.1 |
| 29 | 23 | 8.9 | 5.8 | 19 | --- | 28 | 11 | 68 | 8.3 | 10 | 6.0 | 6.1 |
| 30 | 16 | 7.8 | 5.8 | 47 | --- | 28 | 14 | 119 | 9.6 | 6.2 | 4.9 | 6.0 |
| 31 | 6.8 | --- | 5.6 | 43 | --- | 30 | --- | 233 | --- | 5.7 | 4.7 | --- |
| TOTAL | 2273.8 | 918.2 | 180.5 | 3664.5 | 3458 | 2695 | 582 | 1084.1 | 388.5 | 238.3 | 172.2 | 158.1 |
| MEAN | 73.3 | 30.6 | 5.82 | 118 | 123 | 86.9 | 19.4 | 35.0 | 12.9 | 7.69 | 5.55 | 5.27 |
| MAX | 399 | 383 | 7.3 | 1220 | 328 | 258 | 52 | 291 | 65 | 11 | 9.0 | 7.0 |
| MIN | 6.8 | 4.8 | 5.3 | 6.1 | 26 | 28 | 11 | 5.0 | 5.7 | 5.7 | 3.8 | 2.5 |
| AC-FT | 4510 | 1820 | 358 | 7270 | 6860 | 5350 | 1150 | 2150 | 771 | 473 | 342 | 314 |

CAL YR 1989 TOTAL 33648.6 MEAN 92.2 MAX 2580 MIN 2.4 AC-FT 66740
WTR YR 1990 TOTAL 15813.2 MEAN 43.3 MAX 1220 MIN 2.5 AC-FT 31370

11421000 YUBA RIVER NEAR MARYSVILLE, CA

LOCATION.--Lat 39°10'33", long 121°31'26", in New Helvetia Grant, Yuba County, Hydrologic Unit 18020107, on left bank 4.2 mi northeast of Marysville and 5 mi downstream from Dry Creek.

DRAINAGE AREA.--1,339 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1940 to current year (prior to October 1943, low-water periods only). Published as "at Marysville" October 1940 to September 1957. Separate records published for two sites August 1954 to September 1955. Yearly discharge for the 1945 water year published in WSP 1315-A.

REVISED RECORDS.--WSP 1715: 1956(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2.95 ft below National Geodetic Vertical Datum of 1929. Prior to August 1954 and Oct. 1, 1956, to Sept. 30, 1957, at Simpson Lane bridge in Marysville 4.2 mi downstream at same datum. Sept. 3, 1963, to Sept. 23, 1968, auxiliary water-stage recorder at Simpson Lane bridge at same datum.

REMARKS.--Records good, except for estimated discharges, which are poor. Flow regulated by several reservoirs upstream from station. Many diversions upstream from station for power. Diversions for irrigation of about 13,000 acres between stations below Englebright Dam and near Marysville. See schematic diagrams of Yuba River basin and lower Sacramento River basin.

AVERAGE DISCHARGE.--47 years (water years 1944-90), 2,490 ft³/s, 1,804,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1944, 1947-90), 180,000 ft³/s, Dec. 22, 1964, gage height, 90.15 ft, from floodmarks, from rating curve extended above 91,000 ft³/s on basis of U.S. Army Corps of Engineers flood-routing study; minimum recorded, 10 ft³/s, July 2, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,970 ft³/s, Jan. 13, gage height, 63.68 ft; minimum daily, 317 ft³/s, July 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 717 | 717 | 714 | 806 | 846 | 757 | 635 | 447 | 1690 | 1100 | 335 | 390 |
| 2 | 710 | 710 | 749 | 838 | 799 | 753 | 546 | 454 | 1270 | 841 | 338 | 395 |
| 3 | 704 | 709 | 748 | 836 | 754 | 885 | 447 | 416 | 1250 | 636 | 348 | 392 |
| 4 | 682 | 727 | 737 | 839 | 978 | 1270 | 377 | 424 | 1230 | 494 | 353 | 369 |
| 5 | 674 | 724 | 741 | 839 | 806 | 1540 | e350 | 430 | 1260 | 422 | 361 | 376 |
| 6 | 691 | 710 | 735 | 839 | 916 | 1090 | e350 | 409 | 1230 | 357 | 434 | 374 |
| 7 | 707 | 704 | 778 | 963 | 871 | 976 | e350 | 403 | 1230 | 364 | 775 | 371 |
| 8 | 727 | 703 | 733 | 1200 | 761 | 898 | e350 | 390 | 1280 | 370 | 734 | 372 |
| 9 | 723 | 710 | 730 | 1050 | 714 | 860 | e360 | 419 | 1250 | 359 | 733 | 375 |
| 10 | 726 | 712 | 734 | 1010 | 686 | 934 | 376 | 409 | 1270 | 336 | 718 | 371 |
| 11 | 738 | 713 | 737 | 1000 | 667 | 1130 | 346 | 395 | 1270 | 321 | 535 | 360 |
| 12 | 724 | 718 | 740 | 1170 | 655 | 1000 | 322 | 372 | 1200 | 317 | 416 | 381 |
| 13 | 731 | 722 | 740 | 3390 | 648 | 1000 | 402 | 401 | 1230 | 344 | 387 | 379 |
| 14 | 727 | 728 | 740 | 3790 | 639 | 908 | 467 | 422 | 1250 | 350 | 374 | 380 |
| 15 | 709 | 730 | 737 | 2480 | 630 | 871 | 438 | 540 | 1240 | 383 | 374 | 407 |
| 16 | 707 | 734 | 731 | 2060 | 806 | 838 | 420 | 1040 | 1240 | 409 | 365 | 414 |
| 17 | 709 | 734 | 731 | 1340 | 1140 | 819 | 400 | 1190 | 1260 | 347 | 370 | 388 |
| 18 | 906 | 736 | 734 | 1100 | 1150 | 782 | 393 | 1200 | 1250 | 340 | 374 | 404 |
| 19 | 962 | 736 | 734 | 928 | 973 | 766 | 396 | 1210 | 1230 | 337 | 377 | 392 |
| 20 | 958 | 740 | 734 | 790 | 1020 | 731 | 422 | 1290 | 1220 | 333 | 381 | 380 |
| 21 | 912 | 734 | 734 | 759 | 1360 | 722 | 376 | 1350 | 1210 | 336 | 397 | 381 |
| 22 | 784 | 737 | 734 | 741 | 1620 | 728 | 408 | 1260 | 1160 | 334 | 372 | 401 |
| 23 | 811 | 785 | 734 | 740 | 1200 | 728 | 458 | 1240 | 1210 | 335 | 374 | 406 |
| 24 | 839 | 783 | 734 | 737 | 918 | 728 | 464 | 1280 | 1230 | 334 | 378 | 414 |
| 25 | 867 | 796 | 734 | 743 | 878 | 722 | 419 | 1250 | 1240 | 335 | 356 | 419 |
| 26 | 805 | 1110 | 734 | 773 | 837 | 721 | 395 | 1220 | 1210 | 337 | 371 | 406 |
| 27 | 751 | 889 | 734 | 754 | 804 | 716 | 398 | 1380 | 1210 | 340 | 410 | 405 |
| 28 | 731 | 795 | 734 | 746 | 774 | 697 | 436 | 1640 | 1210 | 329 | 460 | 404 |
| 29 | 715 | 773 | 743 | 746 | --- | 682 | 437 | 1350 | 1220 | 329 | 428 | 395 |
| 30 | 715 | 730 | 746 | 765 | --- | 667 | 423 | 1280 | 1230 | 338 | 378 | 464 |
| 31 | 716 | --- | 746 | 783 | --- | 660 | --- | 1510 | --- | 327 | 384 | --- |
| TOTAL | 23578 | 22549 | 22864 | 35555 | 24850 | 26579 | 12361 | 27021 | 37480 | 12434 | 13390 | 11765 |
| MEAN | 761 | 752 | 738 | 1147 | 887 | 857 | 412 | 872 | 1249 | 401 | 432 | 392 |
| MAX | 962 | 1110 | 778 | 3790 | 1620 | 1540 | 635 | 1640 | 1690 | 1100 | 775 | 464 |
| MIN | 674 | 703 | 714 | 737 | 630 | 660 | 322 | 372 | 1160 | 317 | 335 | 360 |
| AC-FT | 46770 | 44730 | 45350 | 70520 | 49290 | 52720 | 24520 | 53600 | 74340 | 24660 | 26560 | 23340 |

CAL YR 1989 TOTAL 737387 MEAN 2020 MAX 22000 MIN 556 AC-FT 1463000
WTR YR 1990 TOTAL 270426 MEAN 741 MAX 3790 MIN 317 AC-FT 536400

e Estimated.

SACRAMENTO RIVER BASIN

11421000 YUBA RIVER NEAR MARYSVILLE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1951-52, 1973-80, October 1989 to September 1990. Published as Yuba River at Marysville (station 11421500) during water years 1966, 1973-76.

CHEMICAL DATA: Water years 1951-52, 1973-80. Published as Yuba River at Marysville (station 11421500) during water years 1966, 1973-76.

WATER TEMPERATURE: Water years 1973-78. October 1989 to September 1990.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1972 to September 1978, October 1989 to September 1990.

INSTRUMENTATION.--Temperature recorder November 1972 to September 1978, October 1989 to September 1990.

REMARKS.--Water temperatures can be affected by releases from Englebright Reservoir located approximately 13 mi upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 28.5 °C, July 16, 30, 1977; minimum recorded, 5.0 °C, Feb. 16, 1990.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 27.5 °C, July 21; minimum recorded, 5.0 °C, Feb. 16.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|---------|------|----------|------|----------|-----|---------|-----|----------|-----|-------|------|
| | OCTOBER | | NOVEMBER | | DECEMBER | | JANUARY | | FEBRUARY | | MARCH | |
| 1 | 17.0 | 12.5 | 13.5 | 10.5 | 11.0 | 8.5 | 8.0 | 7.5 | 9.0 | 7.0 | 10.5 | 8.5 |
| 2 | 15.5 | 13.0 | 13.5 | 10.5 | 10.5 | 8.5 | 8.5 | 6.5 | 9.5 | 6.5 | 9.5 | 9.0 |
| 3 | --- | 12.5 | 13.5 | 10.5 | 10.5 | 8.0 | 8.0 | 6.0 | 8.0 | 7.5 | 12.5 | 9.0 |
| 4 | 16.5 | 12.5 | 13.5 | 10.5 | 10.5 | 8.0 | 8.0 | 6.0 | 9.5 | 7.5 | 9.0 | 8.0 |
| 5 | 16.5 | 12.5 | 13.5 | 10.5 | 11.0 | 8.5 | 8.0 | 6.0 | 9.0 | 7.0 | 11.0 | 8.0 |
| 6 | 16.5 | 12.5 | 12.5 | 10.5 | 11.0 | 8.5 | 8.0 | 6.0 | 9.0 | 7.5 | 12.0 | 8.0 |
| 7 | 16.5 | 12.5 | 12.5 | 10.0 | 10.0 | 8.0 | 8.0 | 7.5 | 9.0 | 6.0 | 11.0 | 8.5 |
| 8 | 16.5 | 12.5 | 13.0 | 10.0 | 10.0 | 8.5 | 9.5 | 8.0 | 8.0 | 6.5 | 12.0 | 9.0 |
| 9 | 17.0 | 12.5 | 13.0 | 10.0 | 10.5 | 8.5 | 10.0 | 7.5 | 10.0 | 7.0 | 12.0 | 8.0 |
| 10 | 17.0 | 13.0 | 13.0 | 10.0 | 10.0 | 7.5 | 9.0 | 7.5 | 10.5 | 7.0 | 10.5 | 8.5 |
| 11 | 16.5 | 12.5 | 13.0 | 10.0 | 9.5 | 7.0 | 9.5 | 7.0 | 10.0 | 7.0 | 11.0 | 8.0 |
| 12 | 16.5 | 12.5 | 12.5 | 10.0 | 9.0 | 7.5 | 9.0 | 7.5 | 10.5 | 7.5 | 11.5 | 8.0 |
| 13 | 16.0 | 12.5 | 12.5 | 10.0 | 9.5 | 7.0 | 9.5 | 8.5 | 9.5 | 6.5 | 11.5 | 7.5 |
| 14 | 16.0 | 12.5 | 12.5 | 9.5 | 9.5 | 7.0 | 8.5 | 8.0 | 8.5 | 5.5 | 10.0 | 8.5 |
| 15 | 16.0 | 12.5 | 11.5 | 9.5 | 9.5 | 7.0 | 9.5 | 7.5 | 7.5 | 5.5 | 12.5 | 8.0 |
| 16 | 16.0 | 12.5 | 12.0 | 9.5 | 9.0 | 7.0 | 8.0 | 7.5 | 6.5 | 5.0 | 12.0 | 9.0 |
| 17 | 16.0 | 12.5 | 12.5 | 9.5 | 9.0 | 7.0 | 9.0 | 7.0 | 6.5 | 5.5 | 13.5 | 9.5 |
| 18 | 16.5 | 12.0 | 12.5 | 9.5 | 9.0 | 6.5 | 9.0 | 7.0 | 9.0 | 5.5 | 14.0 | 9.5 |
| 19 | 16.0 | 13.0 | 12.5 | 9.5 | 8.5 | 6.5 | 9.0 | 7.0 | 9.5 | 5.5 | 13.5 | 10.0 |
| 20 | 15.0 | 13.0 | 12.0 | 9.5 | 8.0 | 7.0 | 9.0 | 6.5 | 7.5 | 6.0 | 14.5 | 9.5 |
| 21 | 14.0 | 13.5 | 11.5 | 9.0 | 7.5 | 7.0 | 9.0 | 6.5 | 9.5 | 6.5 | 15.0 | 10.0 |
| 22 | 15.0 | 13.0 | 12.0 | 9.5 | 7.5 | 7.0 | 9.0 | 6.5 | 9.5 | 6.5 | 14.5 | 10.5 |
| 23 | 13.5 | 12.5 | 10.5 | 9.0 | 7.5 | 7.0 | 9.0 | 6.5 | 10.5 | 7.0 | 15.0 | 10.5 |
| 24 | 13.5 | 12.0 | 11.0 | 10.0 | 7.5 | 7.0 | 9.0 | 6.5 | 10.5 | 7.5 | 15.0 | 10.5 |
| 25 | 14.5 | 12.0 | 10.5 | 10.0 | 7.5 | 7.0 | 8.0 | 7.0 | 11.0 | 8.0 | 15.0 | 10.5 |
| 26 | 14.0 | 11.5 | 11.0 | 9.0 | 7.5 | 7.0 | 9.5 | 7.0 | 12.0 | 8.0 | 15.0 | 10.0 |
| 27 | 14.5 | 12.0 | 11.0 | 8.5 | 7.5 | 6.5 | 9.0 | 6.0 | 12.0 | 8.0 | 15.5 | 10.0 |
| 28 | 14.0 | 11.0 | 11.0 | 8.0 | 8.0 | 7.0 | 9.5 | 6.5 | 12.0 | 8.5 | 15.0 | 10.5 |
| 29 | 14.0 | 10.5 | 10.5 | 8.0 | 8.5 | 6.0 | 9.5 | 7.0 | --- | --- | 15.0 | 10.0 |
| 30 | 14.0 | 10.5 | 11.0 | 8.5 | 8.0 | 6.5 | 9.5 | 8.0 | --- | --- | 15.5 | 10.0 |
| 31 | 14.0 | 10.5 | --- | --- | 8.5 | 6.0 | 9.0 | 7.0 | --- | --- | 16.0 | 10.5 |
| MONTH | --- | 10.5 | 13.5 | 8.0 | 11.0 | 6.0 | 10.0 | 6.0 | 12.0 | 5.0 | 16.0 | 7.5 |

11421000 YUBA RIVER NEAR MARYSVILLE, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|-------|------|------|------|------|------|------|------|--------|------|-----------|------|
| | APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
| 1 | 16.0 | 10.5 | 19.0 | 13.0 | 18.5 | 13.5 | 22.0 | 16.5 | 26.0 | 19.5 | 21.5 | 16.0 |
| 2 | 16.5 | 11.0 | 20.0 | 13.5 | 19.5 | 14.5 | 22.5 | 16.5 | 26.0 | 19.5 | 22.0 | 16.0 |
| 3 | 17.5 | 12.0 | 20.5 | 14.0 | 20.0 | 14.5 | 23.0 | 16.5 | 25.5 | 19.5 | 21.5 | 16.0 |
| 4 | 18.0 | 13.0 | 21.0 | 14.5 | 20.5 | 15.0 | 22.5 | 16.5 | 26.0 | 19.0 | 21.5 | 16.0 |
| 5 | 18.0 | 13.0 | 21.5 | 14.5 | 20.5 | 15.0 | 23.5 | 17.0 | 26.0 | 19.0 | 22.0 | 16.0 |
| 6 | 18.0 | 13.0 | 21.0 | 14.5 | 19.5 | 15.5 | 24.5 | 17.5 | 26.0 | 19.5 | 21.5 | 16.0 |
| 7 | 14.5 | 13.0 | 20.5 | 14.5 | 21.0 | 15.0 | 24.5 | 17.5 | 23.0 | 18.0 | 21.5 | 16.0 |
| 8 | 15.0 | 12.5 | 20.5 | 14.0 | 21.0 | 15.0 | 24.5 | 17.5 | 23.5 | 17.5 | 21.5 | 16.0 |
| 9 | 18.0 | 12.0 | 20.5 | 14.5 | 21.0 | 15.5 | 24.5 | 18.0 | 23.0 | 18.0 | 21.5 | 15.5 |
| 10 | 17.5 | 13.0 | 19.5 | 14.5 | 21.0 | 15.5 | 25.5 | 18.5 | 23.0 | 17.0 | 21.5 | 16.0 |
| 11 | 19.0 | 13.0 | 20.5 | 14.0 | 21.0 | 15.5 | 26.0 | 19.0 | 23.5 | 17.5 | 22.0 | 16.0 |
| 12 | 19.5 | 13.0 | 20.5 | 14.5 | 21.0 | 15.5 | 26.0 | 19.5 | 24.0 | 17.5 | 21.0 | 15.5 |
| 13 | 19.0 | 13.0 | 21.0 | 14.5 | 20.5 | 15.0 | 26.0 | 19.5 | 24.0 | 18.0 | 20.5 | 15.5 |
| 14 | 19.5 | 13.5 | 21.0 | 14.5 | 21.0 | 15.5 | 26.5 | 19.5 | 22.5 | 17.5 | 20.5 | 15.5 |
| 15 | 18.5 | 13.5 | 21.0 | 14.5 | 21.0 | 15.5 | 25.5 | 19.5 | 23.0 | 17.0 | 20.5 | 15.0 |
| 16 | 15.5 | 14.0 | 19.0 | 14.0 | 21.0 | 15.5 | 25.0 | 19.0 | 23.0 | 17.0 | 20.5 | 15.0 |
| 17 | 18.0 | 13.5 | 19.0 | 13.5 | 21.0 | 15.5 | 25.5 | 19.0 | 23.5 | 17.0 | 20.5 | 15.5 |
| 18 | 20.0 | 14.0 | 18.0 | 13.5 | 21.0 | 15.5 | 24.5 | 19.5 | 22.5 | 17.5 | 20.0 | 16.0 |
| 19 | 17.5 | 13.5 | 16.5 | 13.5 | 22.0 | 16.0 | 26.5 | 19.5 | 23.0 | 17.0 | 21.0 | 15.5 |
| 20 | 19.5 | 13.5 | 15.0 | 13.5 | 22.0 | 16.5 | 27.0 | 20.0 | 22.0 | 17.0 | 21.0 | 16.0 |
| 21 | 19.5 | 13.5 | 18.5 | 14.0 | 22.0 | 16.5 | 27.5 | 20.0 | 22.5 | 16.5 | 21.0 | 15.5 |
| 22 | 16.0 | 14.0 | 17.0 | 14.0 | 21.5 | 16.0 | 26.5 | 20.0 | 23.0 | 16.5 | 21.0 | 16.5 |
| 23 | 17.5 | 14.0 | 17.0 | 14.0 | 21.5 | 16.0 | 26.0 | 19.0 | 23.0 | 17.0 | 19.5 | 16.5 |
| 24 | 19.0 | 12.5 | 18.5 | 13.5 | 22.0 | 16.0 | 25.5 | 19.0 | 22.0 | 16.5 | 20.5 | 16.0 |
| 25 | 19.5 | 13.5 | 18.5 | 13.5 | 21.5 | 16.0 | 25.5 | 19.0 | 20.5 | 16.0 | 19.0 | 16.5 |
| 26 | 19.5 | 14.0 | 17.5 | 14.0 | 21.5 | 16.0 | 26.0 | 19.0 | 20.5 | 16.0 | 20.5 | 16.0 |
| 27 | 20.5 | 14.0 | 15.5 | 14.5 | 22.0 | 16.0 | 26.5 | 19.5 | 22.0 | 16.5 | 20.5 | 16.0 |
| 28 | 19.0 | 14.5 | 17.5 | 14.0 | 22.0 | 16.5 | 26.5 | 20.0 | 21.5 | 16.0 | 20.5 | 16.0 |
| 29 | 18.5 | 12.5 | 18.5 | 14.0 | 22.0 | 16.5 | 26.5 | 19.5 | 21.0 | 16.5 | 21.0 | 16.0 |
| 30 | 18.5 | 12.5 | 15.5 | 14.0 | 22.5 | 16.5 | 26.5 | 19.5 | 22.0 | 16.5 | 21.0 | 16.0 |
| 31 | --- | --- | 17.5 | 13.5 | --- | --- | 26.5 | 19.5 | 22.0 | 16.0 | --- | --- |
| MONTH | 20.5 | 10.5 | 21.5 | 13.0 | 22.5 | 13.5 | 27.5 | 16.5 | 26.0 | 16.0 | 22.0 | 15.0 |

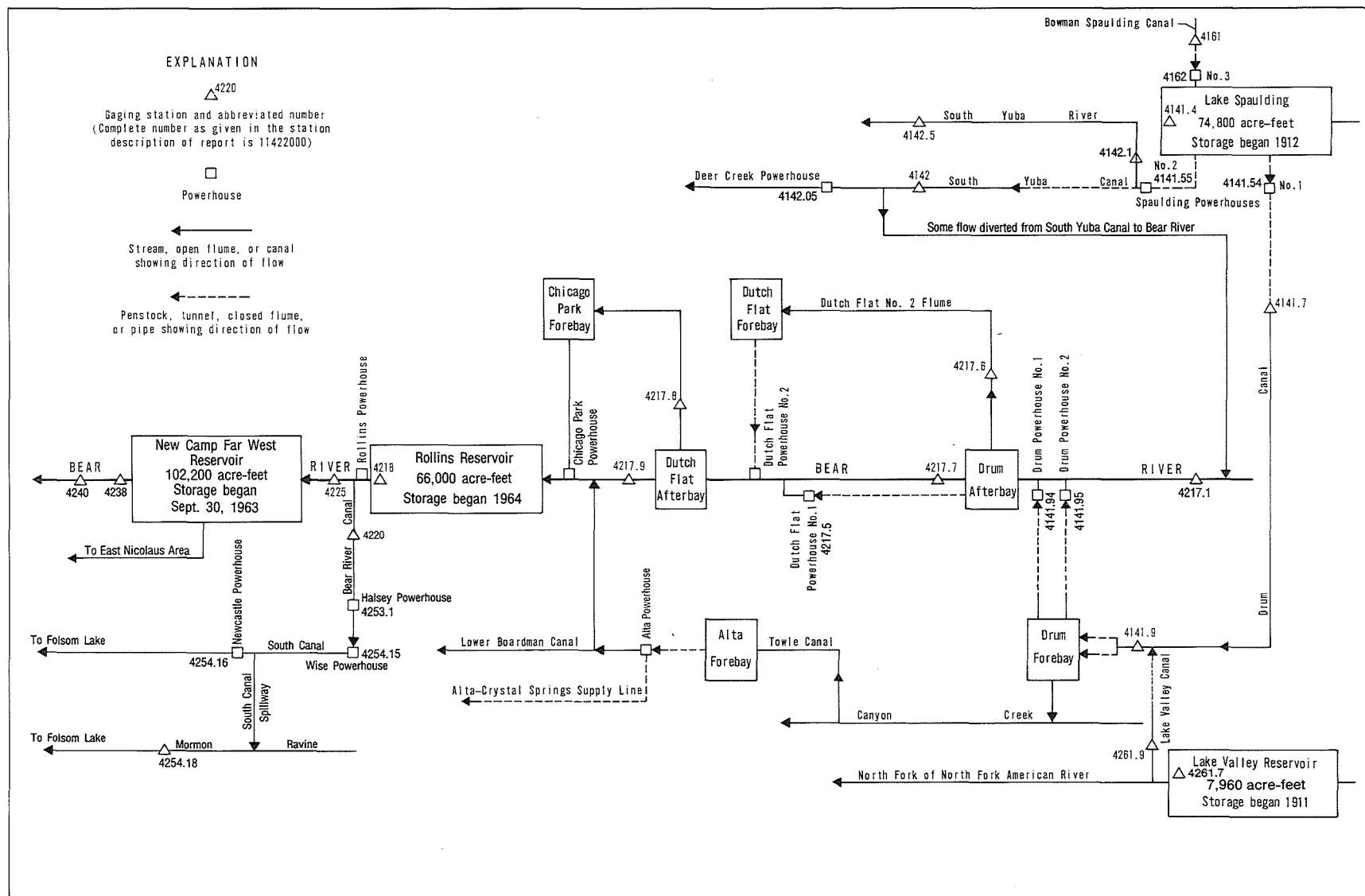


Figure 36. Diversions and storage in Bear River basin.

11421710 BEAR RIVER NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°18'23", long 120°40'41", in NW 1/4 SW 1/4 sec.30, T.17 N., R.12 E., Placer County, Hydrologic Unit 18020126, on left bank 20 ft upstream from Highway 20 bridge and 0.7 mi northwest of Emigrant Gap.

DRAINAGE AREA.--0.76 mi².

PERIOD OF RECORD.--October 1987 to current year (low-flow records only). Unpublished records for water years 1981-87 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder and concrete culvert. Elevation of gage is 4,550 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1987, nonrecording gage at same site and datum.

REMARKS.--No records computed above 160 ft³/s. Some water is diverted into stream from South Yuba Canal (station 11414200). See schematic diagram of Bear River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-------|-------|-------|-------|-------|-------|-------|-----|-------|-------|-------|
| 1 | 8.2 | 9.4 | 11 | 6.6 | 7.5 | 11 | 11 | 7.1 | 156 | 8.8 | 7.5 | 6.8 |
| 2 | 9.3 | 9.8 | 11 | 7.9 | 7.5 | 14 | 12 | 7.0 | --- | 9.3 | 7.4 | 6.4 |
| 3 | 9.3 | 9.3 | 11 | 7.7 | 7.8 | 27 | 10 | 8.2 | --- | 10 | 7.7 | 6.1 |
| 4 | --- | 6.5 | 11 | 6.5 | 7.8 | 15 | 9.9 | 9.0 | 13 | 10 | 7.5 | 6.1 |
| 5 | 23 | 7.9 | 11 | 6.1 | 7.5 | 12 | 11 | 7.7 | 11 | 10 | 7.4 | 6.6 |
| 6 | 8.3 | 8.8 | 11 | 6.1 | 7.1 | 11 | 11 | 6.6 | 10 | 8.8 | 7.9 | 6.5 |
| 7 | 8.2 | 9.5 | 10 | 8.4 | 7.1 | 11 | 11 | 8.1 | 10 | 6.6 | 8.8 | 6.8 |
| 8 | 7.6 | 9.8 | 10 | 20 | 7.1 | 12 | 11 | 8.9 | 10 | 6.6 | 8.7 | 6.4 |
| 9 | 7.8 | 9.8 | 9.4 | 12 | 6.6 | 12 | 10 | 8.8 | 10 | 7.9 | 8.7 | 6.3 |
| 10 | 8.4 | 8.7 | 9.0 | 9.0 | 6.0 | 11 | 11 | 9.0 | 9.2 | 8.9 | 8.6 | 6.5 |
| 11 | 7.6 | 7.1 | 8.8 | 7.9 | 6.9 | 11 | 12 | 9.0 | 8.6 | 8.9 | 6.3 | 7.0 |
| 12 | 7.9 | 6.7 | 8.6 | 7.6 | 7.4 | 9.6 | 11 | 8.9 | 8.1 | 8.9 | 6.0 | 7.0 |
| 13 | 8.1 | 7.5 | 9.2 | 9.9 | 7.8 | 9.1 | 9.3 | 8.8 | 8.1 | 8.8 | 6.6 | 7.0 |
| 14 | 8.5 | 9.3 | 9.4 | 10 | 7.7 | 8.9 | 7.7 | 8.8 | 8.1 | 6.7 | 7.0 | 7.0 |
| 15 | 8.8 | 9.4 | 9.4 | 8.8 | 7.2 | 9.3 | 7.7 | 8.8 | 8.2 | 6.3 | 7.0 | 9.1 |
| 16 | 8.8 | 9.7 | 9.4 | 8.6 | e7.0 | 10 | 8.2 | 8.7 | 8.1 | 6.6 | 7.0 | 9.8 |
| 17 | 9.1 | 9.8 | 9.4 | 9.0 | e6.9 | 12 | 7.9 | 8.7 | 7.8 | 8.1 | 6.8 | 9.2 |
| 18 | 8.9 | 9.8 | 9.4 | 9.0 | e6.8 | 13 | 7.9 | 8.7 | 8.9 | 8.1 | 6.0 | 9.1 |
| 19 | 8.9 | 9.8 | 9.4 | 8.9 | e6.7 | 13 | 7.7 | 8.9 | 11 | 8.1 | 6.0 | 9.6 |
| 20 | 9.3 | 9.8 | 9.4 | 8.1 | 6.7 | 13 | 8.1 | 15 | 11 | 7.9 | 6.3 | 10 |
| 21 | 12 | 9.7 | 9.4 | 5.8 | 6.7 | 13 | 6.4 | 11 | 11 | 6.9 | 7.3 | 8.9 |
| 22 | 8.5 | 9.2 | 9.1 | 5.9 | 7.1 | 13 | 6.7 | 10 | 9.5 | 6.7 | 7.4 | 5.6 |
| 23 | 18 | 6.2 | 9.0 | 6.6 | 7.3 | 13 | 15 | 16 | 7.7 | 7.3 | 7.2 | 6.3 |
| 24 | 13 | 7.8 | 9.0 | 6.8 | 7.6 | 13 | 14 | 13 | 7.7 | 7.8 | 7.1 | 6.1 |
| 25 | 12 | 23 | 8.7 | 7.0 | 8.1 | 13 | 12 | 11 | 8.7 | 7.6 | 5.6 | 6.0 |
| 26 | 9.6 | 15 | 8.6 | 7.1 | 9.0 | 12 | 9.5 | 11 | 9.0 | 6.9 | 5.4 | 5.5 |
| 27 | 8.9 | 9.7 | 8.4 | 6.2 | 10 | 12 | 8.9 | 18 | 11 | 6.2 | 6.7 | 5.1 |
| 28 | 8.6 | 12 | 8.2 | 5.6 | 11 | 12 | 7.0 | 145 | 10 | 5.1 | 7.4 | 5.6 |
| 29 | 8.1 | 11 | 8.0 | 5.7 | --- | 11 | 6.8 | 116 | 9.9 | 5.8 | 7.3 | 5.8 |
| 30 | 7.9 | 11 | 7.0 | 6.8 | --- | 11 | 6.9 | 35 | 8.8 | 6.6 | 7.2 | 6.4 |
| 31 | 8.4 | --- | 6.4 | 7.3 | --- | 11 | --- | 83 | --- | 7.5 | 7.1 | --- |
| TOTAL | --- | 293.0 | 288.6 | 248.9 | 209.9 | 378.9 | 288.6 | 643.7 | --- | 239.7 | 220.9 | 210.6 |
| MEAN | --- | 9.77 | 9.31 | 8.03 | 7.50 | 12.2 | 9.62 | 20.8 | --- | 7.73 | 7.13 | 7.02 |
| MAX | --- | 23 | 11 | 20 | 11 | 27 | 15 | 145 | --- | 10 | 8.8 | 10 |
| MIN | --- | 6.2 | 6.4 | 5.6 | 6.0 | 8.9 | 6.4 | 6.6 | --- | 5.1 | 5.4 | 5.1 |
| AC-FT | --- | 581 | 572 | 494 | 416 | 752 | 572 | 1280 | --- | 475 | 438 | 418 |

e Estimated.

LOCATION.--Lat 39°13'02", long 120°50'04", in SE 1/4 SE 1/4 sec.27, T.16 N., R.10 E., Placer County, Hydrologic Unit 18020126, in powerplant on left bank of Dutch Flat Afterbay and 0.8 mi north of Dutch Flat.

GAGE.--Discharge computed from powerplant output. Elevation of gage is 2,740 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Water is diverted from Drum Afterbay through Dutch Flat tunnel and discharges into Dutch Flat Afterbay. See schematic diagram of Bear River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 571 ft³/s, Apr. 13, May 9, 1982, Nov. 17, 1983, June 24, 1987; no flow at times in most years.

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|---------|---------|-------|-------|---------|---------|---------|-------|-------|---------|---------|---------|
| 1 | .00 | 330 | 398 | 286 | 339 | .00 | 205 | 142 | 339 | 166 | 142 | 245 |
| 2 | .00 | 189 | 253 | 339 | 320 | .00 | 111 | 173 | 312 | 245 | 166 | 212 |
| 3 | .00 | 36 | 158 | 303 | 388 | .00 | .00 | 236 | 438 | 278 | 197 | 189 |
| 4 | .00 | 103 | 205 | 295 | 278 | .00 | 173 | 142 | 220 | 312 | 205 | 212 |
| 5 | 36 | 150 | 220 | 253 | 359 | .00 | 253 | 158 | 79 | 378 | 197 | 205 |
| 6 | .00 | 205 | 197 | 236 | 312 | .00 | 270 | 126 | 245 | 220 | 173 | 220 |
| 7 | .00 | 212 | 236 | 197 | 320 | .00 | 212 | 126 | 253 | 295 | 261 | 166 |
| 8 | 286 | 253 | 220 | 166 | 286 | .00 | 197 | 111 | 173 | 253 | 278 | 150 |
| 9 | 150 | 166 | 150 | 205 | 166 | 126 | 286 | 189 | 197 | 236 | 236 | 119 |
| 10 | 253 | 103 | 189 | 261 | 55 | 111 | 142 | 278 | 189 | 388 | 236 | 197 |
| 11 | 320 | 87 | 103 | 253 | 55 | 253 | 142 | 228 | 126 | 339 | 261 | 261 |
| 12 | 261 | 95 | 142 | 270 | 71 | 245 | 126 | 270 | 119 | 261 | 261 | 220 |
| 13 | 261 | 245 | 205 | 95 | 119 | 261 | 181 | 166 | 212 | 349 | 197 | 253 |
| 14 | 220 | 261 | 166 | 79 | 126 | 236 | 142 | 228 | 270 | 142 | 253 | 245 |
| 15 | 236 | 261 | 212 | 181 | 181 | 245 | 228 | 134 | 220 | 189 | 181 | 55 |
| 16 | 236 | 181 | 261 | 158 | 9.9 | 142 | 228 | 205 | 330 | 158 | 150 | .00 |
| 17 | 212 | 270 | 253 | 181 | 205 | 245 | 150 | 189 | 158 | 197 | 79 | .00 |
| 18 | 212 | 181 | 212 | 150 | 245 | 245 | 278 | 150 | 253 | 150 | 150 | .00 |
| 19 | 253 | 236 | 189 | 103 | 228 | 261 | 320 | 158 | 295 | 245 | 142 | .00 |
| 20 | 228 | 189 | 150 | 119 | 245 | 253 | 142 | 166 | 270 | 189 | 181 | .00 |
| 21 | 142 | 197 | 212 | 150 | 205 | 197 | 63 | 181 | 261 | 126 | 142 | .00 |
| 22 | 103 | 36 | 212 | 253 | 236 | 212 | 134 | 197 | 261 | 126 | 189 | .00 |
| 23 | 150 | .00 | 189 | 270 | 212 | 278 | 158 | 236 | 261 | 197 | 220 | .00 |
| 24 | 119 | .00 | 197 | 253 | 220 | 228 | 236 | 205 | 339 | 181 | 166 | .00 |
| 25 | 119 | 71 | 205 | 278 | 189 | 270 | 261 | 212 | 320 | 173 | .00 | .00 |
| 26 | 330 | 63 | 253 | 278 | 63 | 286 | 189 | 158 | 212 | 173 | 71 | .00 |
| 27 | 428 | 228 | 212 | 95 | .00 | 320 | 55 | 228 | 150 | 134 | 181 | .00 |
| 28 | 320 | 158 | 126 | 103 | .00 | 142 | 119 | 286 | 270 | .00 | 142 | .00 |
| 29 | 408 | 205 | 158 | 286 | --- | 286 | 103 | 330 | 320 | .00 | 166 | .00 |
| 30 | 339 | 212 | 173 | 368 | --- | 253 | 150 | 220 | 253 | 173 | 173 | .00 |
| 31 | 245 | --- | 150 | 359 | --- | 220 | --- | 228 | --- | 166 | 150 | --- |
| TOTAL | 5867.00 | 4923.00 | 6206 | 6823 | 5432.90 | 5315.00 | 5254.00 | 6056 | 7345 | 6439.00 | 5546.00 | 2949.00 |
| MEAN | 189 | 164 | 200 | 220 | 194 | 171 | 175 | 195 | 245 | 208 | 179 | 98.3 |
| MAX | 428 | 330 | 398 | 368 | 388 | 320 | 320 | 330 | 438 | 388 | 278 | 261 |
| MIN | .00 | .00 | 103 | 79 | .00 | .00 | .00 | 111 | 79 | .00 | .00 | .00 |
| AC-FT | 11640 | 9760 | 12310 | 13530 | 10780 | 10540 | 10420 | 12010 | 14570 | 12770 | 11000 | 5850 |

| | | | | | | | | | | |
|-------------|-------|----------|------|-----|-----|-----|-----|-----|-------|--------|
| CAL YR 1989 | TOTAL | 80277.00 | MEAN | 220 | MAX | 529 | MIN | .00 | AC-FT | 159200 |
| WTR YR 1990 | TOTAL | 68155.90 | MEAN | 187 | MAX | 438 | MIN | .00 | AC-FT | 135200 |

11421760 DUTCH FLAT NO. 2 FLUME NEAR BLUE CANYON, CA

LOCATION.--Lat 39°15'16", long 120°46'28", in SE 1/4 NE 1/4 sec.18, T.16 N., R.11 E., Placer County, Hydrologic Unit 18020126, on left bank 600 ft downstream from Drum Afterbay and 3.6 mi west of Blue Canyon.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,348.09 ft above National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Records good. Water is diverted from Drum Afterbay through the flume to Dutch Flat No. 2 powerplant and then to Dutch Flat Afterbay. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE.--24 years, 327 ft³/s, 236,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 626 ft³/s, Sept. 29, 1983; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| 1 | e1.3 | 393 | 392 | 7.5 | 20 | 326 | 185 | 7.2 | 565 | 375 | 363 | 11 |
| 2 | e1.3 | 463 | 409 | 7.5 | 10 | 313 | 193 | 7.5 | 561 | 313 | 364 | 11 |
| 3 | e1.3 | 295 | 376 | 7.4 | 46 | 503 | 52 | 173 | 566 | 363 | 388 | 11 |
| 4 | e1.3 | 4.2 | 407 | 6.4 | 124 | 316 | 32 | 330 | 476 | 416 | 323 | 229 |
| 5 | 14 | 4.2 | 383 | 6.2 | 6.8 | 363 | 7.4 | 138 | 375 | 318 | 310 | 327 |
| 6 | 87 | 330 | 398 | 6.4 | 6.8 | 307 | 7.2 | 23 | 171 | 324 | 392 | 387 |
| 7 | 261 | 407 | 369 | 94 | 6.8 | 252 | 6.4 | 229 | 194 | 7.2 | 448 | 310 |
| 8 | 249 | 378 | 383 | 241 | 6.8 | 390 | 6.6 | 359 | 328 | 6.2 | 454 | 227 |
| 9 | 335 | 427 | 371 | 124 | 6.8 | 164 | 6.7 | 298 | 319 | 336 | 464 | 251 |
| 10 | 415 | 310 | 327 | 19 | 7.1 | 94 | 256 | 166 | 193 | 433 | 463 | 227 |
| 11 | 311 | 4.3 | 419 | 9.8 | 7.1 | 84 | 353 | 188 | 213 | 377 | 32 | 402 |
| 12 | 402 | 5.4 | 367 | 69 | 7.1 | 5.2 | 316 | 228 | 121 | 398 | 9.6 | 338 |
| 13 | 391 | 319 | 413 | 237 | 7.1 | 4.3 | 278 | 218 | 10 | 304 | 269 | 276 |
| 14 | 381 | 412 | 414 | 270 | 6.9 | 4.5 | 15 | 296 | 6.0 | 155 | 303 | 376 |
| 15 | 393 | 412 | 381 | 183 | 6.8 | 5.0 | 7.0 | 314 | 6.1 | 164 | 308 | 4.1 |
| 16 | 390 | 417 | 386 | 320 | 190 | 104 | 6.9 | 288 | 6.2 | 195 | 388 | e6.0 |
| 17 | 400 | 406 | 350 | 381 | 127 | 27 | 7.0 | 268 | 4.2 | 411 | 226 | e.00 |
| 18 | 410 | 416 | 387 | 406 | 29 | 5.6 | 6.8 | 317 | 234 | 352 | 8.9 | e.00 |
| 19 | 381 | 390 | 376 | 373 | 6.8 | 6.1 | 7.3 | 293 | 382 | 329 | 8.1 | e.00 |
| 20 | 367 | 430 | 389 | 36 | 6.8 | 5.4 | 187 | 305 | 405 | 298 | 202 | e.00 |
| 21 | 257 | 391 | 390 | 7.5 | 6.8 | 5.6 | 16 | 311 | 424 | 194 | 395 | e.00 |
| 22 | 86 | 281 | 389 | 7.3 | 6.8 | 5.9 | 6.8 | 294 | 397 | 224 | 347 | e.00 |
| 23 | 307 | 16 | 399 | 6.8 | 6.8 | 5.7 | 165 | 275 | 6.9 | 266 | 341 | e.00 |
| 24 | 304 | 77 | 361 | 6.8 | 6.8 | 6.4 | 343 | 247 | 6.5 | 336 | 238 | e.00 |
| 25 | 269 | 261 | 347 | 6.8 | 7.1 | 6.1 | 259 | 298 | 276 | 343 | 22 | e.00 |
| 26 | 55 | 206 | 344 | 6.8 | 257 | 5.7 | 249 | 319 | 388 | 321 | 14 | e.00 |
| 27 | 3.5 | 319 | 324 | 6.8 | 296 | 281 | 195 | 355 | 146 | 217 | 340 | e.00 |
| 28 | 3.0 | 421 | 335 | 6.8 | 286 | 270 | 9.7 | 541 | 404 | 7.9 | 351 | e.00 |
| 29 | 3.1 | 443 | 303 | 6.8 | --- | 143 | 8.9 | 529 | 427 | 7.9 | 360 | e.00 |
| 30 | 119 | 419 | 17 | 56 | --- | 139 | 7.1 | 475 | 338 | 217 | 336 | e.00 |
| 31 | 215 | --- | 7.2 | 7.1 | --- | 183 | --- | 565 | --- | 323 | 298 | --- |
| TOTAL | 6813.8 | 9057.1 | 10913.2 | 2929.7 | 1509.0 | 4330.5 | 3195.8 | 8654.7 | 7948.9 | 8331.2 | 8765.6 | 3393.10 |
| MEAN | 220 | 302 | 352 | 94.5 | 53.9 | 140 | 107 | 279 | 265 | 269 | 283 | 113 |
| MAX | 415 | 463 | 419 | 406 | 296 | 503 | 353 | 565 | 566 | 433 | 464 | 402 |
| MIN | 1.3 | 4.2 | 7.2 | 6.2 | 6.8 | 4.3 | 6.4 | 7.2 | 4.2 | 6.2 | 8.1 | .00 |
| AC-FT | 13520 | 17960 | 21650 | 5810 | 2990 | 8590 | 6340 | 17170 | 15770 | 16520 | 17390 | 6730 |

CAL YR 1989 TOTAL 125459.2 MEAN 344 MAX 588 MIN 1.3 AC-FT 248800
WTR YR 1990 TOTAL 75842.60 MEAN 208 MAX 566 MIN .00 AC-FT 150400

e Estimated.

SACRAMENTO RIVER BASIN

11421770 BEAR RIVER BELOW DRUM AFTERBAY, NEAR BLUE CANYON, CA

LOCATION.--Lat 39°15'16", long 120°46'26", in SW 1/4 NW 1/4 sec.17, T.16 N., R.11 E., Placer County, Hydrologic Unit 18020126, on left bank 60 ft downstream from Drum Afterbay Dam and 3.5 mi west of Blue Canyon.

DRAINAGE AREA.--12.3 mi².

PERIOD OF RECORD.--April 1966 to current year, low flows only April to September 1966.

GAGE.--Water-stage recorder and 4-ft steel Cipolletti weir set in a concrete broad-crested weir. Elevation of gage is 3,300 ft above National Geodetic Vertical Datum of 1929, from topographic map. April 1966 to May 25, 1967, water-stage recorder at present site at different datum. May 26, 1967, to Feb. 11, 1968, water-stage recorder at site 1,000 ft downstream at different datum.

REMARKS.--Water for Dutch Flat No. 1 powerplant (station 11421750) and Dutch Flat No. 2 flume (station 11421760) is diverted from Drum Afterbay just upstream from station. See schematic diagram of Bear River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--24 years, 20.5 ft³/s, 14,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,530 ft³/s, Apr. 11, 1982, gage height, 4.64 ft, from rating curve extended above 1,200 ft³/s; minimum daily, 1.0 ft³/s, Dec. 9, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 148 ft³/s, Oct. 26, gage height, 1.80 ft; minimum daily, 5.8 ft³/s, June 17, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 11 | e6.6 | 6.9 | 6.9 | 6.9 | 7.0 | 6.9 | 6.8 | 6.7 | 6.5 | 14 | 6.6 |
| 2 | 9.9 | e6.0 | 6.9 | 7.0 | 7.0 | 6.9 | 6.9 | 6.8 | 6.5 | 6.1 | 14 | 6.7 |
| 3 | 7.2 | 6.9 | 6.9 | 7.0 | 7.0 | 6.9 | 6.9 | 6.8 | 6.5 | 6.2 | 13 | 6.6 |
| 4 | 7.2 | 12 | 6.9 | 6.9 | 7.0 | 6.9 | 6.9 | 6.8 | 6.6 | 6.4 | 10 | 6.6 |
| 5 | 7.3 | 14 | 6.9 | 6.9 | 7.0 | 6.9 | 6.9 | 6.7 | 6.7 | 6.4 | 6.6 | 6.6 |
| 6 | 6.8 | 11 | 6.9 | 7.0 | 7.0 | 6.9 | 6.8 | 6.7 | 6.7 | 6.5 | 6.6 | 6.6 |
| 7 | 6.9 | 6.8 | 6.9 | 6.9 | 7.0 | 7.0 | 6.7 | 6.8 | 6.7 | 6.5 | 6.6 | 6.6 |
| 8 | 7.0 | 7.0 | 7.1 | 6.9 | 7.0 | 7.0 | 6.8 | 6.8 | 6.7 | 6.1 | 6.6 | 6.6 |
| 9 | 7.0 | 7.3 | 6.9 | 6.9 | 7.0 | 6.8 | 6.8 | 6.8 | 6.7 | 6.4 | 6.6 | 6.6 |
| 10 | 6.9 | 7.2 | 6.9 | 6.9 | 7.0 | 6.9 | 6.6 | 6.9 | 6.7 | 6.3 | 6.6 | 6.6 |
| 11 | 7.0 | 6.9 | 7.0 | 6.9 | 7.0 | 6.9 | 6.8 | 6.8 | 6.6 | 6.1 | 6.3 | 7.4 |
| 12 | 7.0 | 7.4 | 7.0 | 6.8 | 7.0 | 6.9 | 6.8 | 6.9 | 6.9 | 6.3 | 6.4 | 7.0 |
| 13 | 6.9 | 7.7 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.8 | 6.6 | 6.5 | 6.6 | 6.8 |
| 14 | 6.9 | 7.6 | 6.9 | 6.9 | 7.0 | 6.9 | 6.8 | 6.8 | 6.6 | 6.5 | 6.6 | 7.1 |
| 15 | 6.8 | 7.5 | 6.9 | 6.9 | 7.0 | 7.0 | 6.8 | 6.7 | 6.7 | 6.5 | 6.6 | 7.1 |
| 16 | 7.0 | 7.1 | 7.0 | 6.9 | 7.0 | 7.0 | 6.8 | 6.7 | 5.9 | 6.5 | 6.5 | 12 |
| 17 | 6.9 | 7.7 | 7.0 | 7.0 | 6.8 | 6.9 | 6.8 | 6.7 | 5.8 | 6.6 | 6.6 | 16 |
| 18 | 7.0 | 7.6 | 6.9 | 7.0 | 6.8 | 6.9 | 6.8 | 6.7 | 5.8 | 6.2 | 6.6 | 8.6 |
| 19 | 6.9 | 7.6 | 7.0 | 7.0 | 6.9 | 6.9 | 6.9 | 6.8 | 5.9 | 6.4 | 6.7 | 9.5 |
| 20 | 7.0 | 7.5 | 7.0 | 7.0 | 6.9 | 6.8 | 6.9 | 6.8 | 6.1 | 11 | 6.7 | 13 |
| 21 | 7.0 | 7.4 | 6.9 | 7.0 | 6.9 | 6.9 | 6.8 | 6.8 | 6.7 | 12 | 6.6 | 14 |
| 22 | 6.9 | 7.5 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.8 | 6.5 | 13 | 6.6 | 12 |
| 23 | 7.0 | 7.5 | 6.9 | 7.0 | 6.9 | 6.8 | 6.9 | 6.8 | 6.4 | 13 | 6.6 | 8.5 |
| 24 | 6.8 | 7.7 | 6.7 | 6.9 | 6.9 | 6.8 | 6.7 | 6.6 | 6.4 | 13 | 6.7 | 7.1 |
| 25 | 6.8 | 7.7 | 6.9 | 7.0 | 6.9 | 6.8 | 6.7 | 6.7 | 6.3 | 13 | 6.7 | 7.1 |
| 26 | 13 | 7.6 | 6.4 | 6.9 | 6.9 | 6.8 | 6.8 | 6.6 | 6.5 | 13 | 6.6 | 7.2 |
| 27 | 6.9 | 7.7 | 6.9 | 7.0 | 7.0 | 6.9 | 6.5 | 6.6 | 6.5 | 13 | 6.6 | 7.1 |
| 28 | 7.0 | 7.8 | 7.0 | 6.9 | 7.0 | 6.8 | 6.8 | 6.2 | 6.5 | 13 | 6.6 | 6.3 |
| 29 | 7.0 | 7.6 | 6.9 | 6.9 | --- | 6.9 | 6.8 | 6.5 | 6.2 | 13 | 6.6 | 6.2 |
| 30 | 6.8 | 7.2 | 6.9 | 6.9 | --- | 6.9 | 6.7 | 6.5 | 6.5 | 13 | 6.6 | 7.4 |
| 31 | e7.1 | --- | 7.0 | 7.0 | --- | 6.9 | --- | 6.3 | --- | 14 | 6.6 | --- |
| TOTAL | 228.9 | 235.1 | 214.2 | 215.0 | 194.6 | 213.7 | 204.1 | 208.0 | 193.9 | 275.0 | 229.0 | 243.5 |
| MEAN | 7.38 | 7.84 | 6.91 | 6.94 | 6.95 | 6.89 | 6.80 | 6.71 | 6.46 | 8.87 | 7.39 | 8.12 |
| MAX | 13 | 14 | 7.1 | 7.0 | 7.0 | 7.0 | 6.9 | 6.9 | 6.9 | 14 | 14 | 16 |
| MIN | 6.8 | 6.0 | 6.4 | 6.8 | 6.8 | 6.8 | 6.5 | 6.2 | 5.8 | 6.1 | 6.3 | 6.2 |
| AC-FT | 454 | 466 | 425 | 426 | 386 | 424 | 405 | 413 | 385 | 545 | 454 | 483 |

CAL YR 1989 TOTAL 3725.0 MEAN 10.2 MAX 236 MIN 2.9 AC-FT 7390
WTR YR 1990 TOTAL 2655.0 MEAN 7.27 MAX 16 MIN 5.8 AC-FT 5270

e Estimated.

11421780 CHICAGO PARK FLUME NEAR DUTCH FLAT, CA

LOCATION.--Lat 39°12'55", long 120°50'23", in NW 1/4 NE 1/4 sec.34, T.16 N., R.10 E., Nevada County, Hydrologic Unit 18020126, on left bank 670 ft downstream from Dutch Flat Afterbay and 0.6 mi north of Dutch Flat.

PERIOD OF RECORD.--November 1965 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,600 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 8, 1968, at site 420 ft upstream at same datum.

REMARKS.--Records excellent except for discharges below 70 ft³/s, which are poor. Water is diverted from Dutch Flat Afterbay through the flume to Chicago Park powerplant and then to Bear River. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE.--24 years, 603 ft³/s, 436,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,130 ft³/s, Nov. 19, 1983; no flow for several days in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1 | e.00 | 657 | 737 | 349 | 410 | 306 | 432 | 239 | 1030 | 588 | 590 | 321 |
| 2 | e.00 | 732 | 670 | 400 | 445 | 422 | 373 | 246 | 1020 | 708 | 569 | 312 |
| 3 | e.00 | 552 | 687 | 340 | 455 | 626 | e198 | 390 | 1020 | 762 | 556 | 309 |
| 4 | e.00 | 128 | 692 | 339 | 501 | 356 | e145 | 525 | 724 | 811 | 541 | 379 |
| 5 | e40 | 128 | 689 | 326 | 441 | 339 | 338 | 367 | 556 | 755 | 544 | 524 |
| 6 | e10 | 431 | 602 | 312 | 369 | 550 | 353 | 192 | 437 | 653 | 676 | 505 |
| 7 | e64 | 697 | 646 | 315 | 369 | 297 | 317 | 432 | 482 | 390 | 741 | 484 |
| 8 | 484 | 702 | 667 | 453 | 334 | 340 | 291 | 552 | 601 | 390 | 775 | 355 |
| 9 | 542 | 621 | 539 | 335 | 312 | 261 | 295 | 545 | 560 | 587 | 821 | 349 |
| 10 | 640 | 467 | 555 | 335 | e20 | 260 | 382 | 506 | 456 | 816 | 820 | 451 |
| 11 | 657 | 152 | 555 | 335 | e20 | 286 | 545 | 474 | 380 | 729 | 406 | 639 |
| 12 | 656 | 150 | 563 | 346 | e151 | 356 | 543 | 477 | 331 | 734 | 330 | 607 |
| 13 | 653 | 486 | 640 | 362 | 218 | 359 | 503 | 504 | 308 | 769 | 450 | 529 |
| 14 | 683 | 727 | 639 | 531 | 213 | 357 | 291 | 518 | 330 | 388 | 561 | 546 |
| 15 | 677 | 685 | 642 | 394 | 215 | 244 | 297 | 520 | 333 | 370 | 574 | 360 |
| 16 | 647 | 685 | 684 | 408 | 291 | 265 | 296 | 513 | 333 | 372 | 574 | e5.0 |
| 17 | 672 | 684 | 712 | 620 | 303 | 419 | 296 | 493 | 330 | 589 | 482 | e.00 |
| 18 | 608 | 673 | 657 | 606 | 310 | 310 | 297 | 469 | 461 | 586 | 213 | e.00 |
| 19 | 637 | 679 | 589 | 545 | 417 | 303 | 298 | 486 | 775 | 586 | 200 | e.00 |
| 20 | 634 | 699 | 645 | 180 | 268 | 307 | 340 | 501 | 774 | 565 | 306 | e.00 |
| 21 | 468 | 662 | 644 | 198 | 244 | 307 | 158 | 535 | 787 | 361 | 462 | e.00 |
| 22 | 198 | 477 | 643 | 288 | 292 | 321 | 161 | 541 | 712 | 366 | 548 | e.00 |
| 23 | 401 | e20 | 642 | 361 | 331 | 380 | 313 | 517 | 416 | 495 | 547 | e.00 |
| 24 | 526 | e146 | 642 | 384 | 305 | 411 | 706 | 520 | 419 | 583 | 475 | e.00 |
| 25 | 463 | 339 | 640 | 385 | 234 | 354 | 676 | 574 | 633 | 605 | e157 | e.00 |
| 26 | 423 | 512 | 596 | 320 | 317 | 346 | 420 | 587 | 669 | 512 | e78 | e.00 |
| 27 | 413 | 410 | 583 | 127 | 400 | 425 | 374 | 621 | 360 | 390 | 426 | e.00 |
| 28 | 437 | 714 | 574 | 132 | 300 | 430 | 143 | 987 | 695 | 131 | 572 | e.00 |
| 29 | 433 | 696 | 536 | 319 | --- | 508 | 141 | 962 | 761 | 123 | 499 | e.00 |
| 30 | 372 | 742 | 260 | 551 | --- | 442 | 173 | 673 | 595 | 275 | 503 | e.00 |
| 31 | 550 | --- | 255 | 449 | --- | 431 | --- | 1020 | --- | 613 | 541 | --- |
| TOTAL | 12988.00 | 15453 | 18825 | 11345 | 8485 | 11318 | 10095 | 16486 | 17288 | 16602 | 15537 | 6675.00 |
| MEAN | 419 | 515 | 607 | 366 | 303 | 365 | 336 | 532 | 576 | 536 | 501 | 222 |
| MAX | 683 | 742 | 737 | 620 | 501 | 626 | 706 | 1020 | 1030 | 816 | 821 | 639 |
| MIN | .00 | 20 | 255 | 127 | 20 | 244 | 141 | 192 | 308 | 123 | 78 | .00 |
| AC-FT | 25760 | 30650 | 37340 | 22500 | 16830 | 22450 | 20020 | 32700 | 34290 | 32930 | 30820 | 13240 |

CAL YR 1989 TOTAL 226876.50 MEAN 622 MAX 1080 MIN .00 AC-FT 450000
WTR YR 1990 TOTAL 161097.00 MEAN 441 MAX 1030 MIN .00 AC-FT 319500

e Estimated.

SACRAMENTO RIVER BASIN

11421790 BEAR RIVER BELOW DUTCH FLAT AFTERBAY, NEAR DUTCH FLAT, CA

LOCATION.--Lat 39°12'55", long 120°50'23", in NE 1/4 NW 1/4 sec.34, T.16 N., R.10 E., Placer County, Hydrologic Unit 18020126, at left bank downstream end of spillway on Dutch Flat Afterbay Dam, 0.6 mi north of Dutch Flat.

DRAINAGE AREA.--21.5 mi².

PERIOD OF RECORD.--December 1965 to current year.

REVISED RECORDS.--WDR CA-82-4: 1978, 1979(M), 1980.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,600 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records excellent except for discharges above 20 ft³/s, which are good. Water is imported from South Yuba River basin via Drum Canal above forebay (station 11414190). Chicago Park flume (station 11421780) diverts upstream from station to Chicago Park powerplant. Records include spill over Dutch Flat Afterbay Dam. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE.--24 years, 28.1 ft³/s, 20,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,240 ft³/s, Feb. 17, 1986; minimum daily, 0.08 ft³/s, Mar. 8-19, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 66 ft³/s, May 23; minimum daily, 5.9 ft³/s, Feb. 20, and Mar. 7-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|
| 1 | 11 | 8.1 | 6.2 | 6.3 | 6.2 | 6.1 | 6.4 | 11 | 11 | 12 | 12 | 11 |
| 2 | 11 | 6.3 | 6.2 | 6.5 | 6.1 | 6.1 | 6.4 | 11 | 11 | 12 | 12 | 11 |
| 3 | 11 | 6.2 | 6.2 | 6.4 | 6.2 | 6.1 | 6.4 | 12 | 11 | 12 | 12 | 11 |
| 4 | 11 | 6.3 | 6.2 | 6.4 | 6.2 | 6.0 | 6.3 | 12 | 11 | 11 | 12 | 11 |
| 5 | 11 | 6.3 | 6.2 | 6.3 | 6.2 | 6.1 | 6.4 | 12 | 12 | 12 | 12 | 11 |
| 6 | 11 | 6.3 | 6.2 | 6.3 | 6.1 | 6.0 | 6.5 | 12 | 12 | 12 | 12 | 11 |
| 7 | 12 | 6.3 | 6.3 | 6.3 | 6.2 | 5.9 | 6.3 | 12 | 12 | 12 | 12 | 12 |
| 8 | 12 | 6.3 | 6.2 | 6.5 | 6.2 | 5.9 | 6.3 | 11 | 12 | 12 | 12 | 12 |
| 9 | 12 | 6.2 | 6.3 | 6.4 | 6.1 | 5.9 | 6.3 | 11 | 12 | 11 | 12 | 12 |
| 10 | 12 | 6.3 | 6.3 | 6.4 | 6.2 | 6.1 | 6.4 | 11 | 12 | 11 | 12 | 12 |
| 11 | 12 | 6.3 | 6.3 | 6.4 | 6.3 | 6.1 | 6.4 | 11 | 12 | 12 | 12 | 11 |
| 12 | 12 | 6.3 | 6.2 | 6.4 | 6.3 | 6.1 | 6.4 | 11 | 12 | 12 | 12 | 11 |
| 13 | 12 | 6.3 | 6.2 | 6.5 | 6.3 | 6.1 | 6.4 | 12 | 12 | 12 | 12 | 11 |
| 14 | 12 | 6.3 | 6.2 | 6.4 | 6.3 | 6.2 | 6.4 | 11 | 12 | 12 | 12 | 11 |
| 15 | 12 | 6.3 | 6.2 | 6.3 | 6.3 | 6.2 | 6.3 | 11 | 12 | 12 | 12 | 11 |
| 16 | 12 | 6.4 | 6.2 | 6.4 | 6.3 | 6.3 | 6.3 | 11 | 12 | 12 | 12 | 11 |
| 17 | 12 | 6.3 | 6.2 | 6.4 | 6.3 | 6.3 | 6.3 | 11 | 11 | 12 | 12 | 11 |
| 18 | 12 | 6.3 | 6.2 | 6.4 | 6.1 | 6.2 | 6.3 | 11 | 11 | 12 | 11 | 11 |
| 19 | 12 | 6.3 | 6.2 | 6.4 | 6.0 | 6.3 | 6.3 | 11 | 12 | 12 | 11 | 11 |
| 20 | 12 | 6.3 | 6.2 | 6.5 | 5.9 | 6.3 | 6.3 | 12 | 11 | 12 | 12 | 11 |
| 21 | 12 | 6.3 | 6.2 | 6.5 | 6.0 | 6.3 | 6.3 | 11 | 11 | 12 | 12 | 11 |
| 22 | 12 | 6.2 | 6.2 | 6.5 | 6.1 | 6.4 | 6.3 | 11 | 11 | 12 | 12 | 11 |
| 23 | 12 | 6.3 | 6.2 | 6.5 | 6.1 | 6.3 | 6.4 | 12 | 12 | 12 | 12 | 11 |
| 24 | 12 | 6.3 | 6.2 | 6.4 | 6.0 | 6.3 | 6.4 | 13 | 12 | 12 | 12 | 11 |
| 25 | 12 | 6.3 | 6.2 | 6.3 | 6.0 | 6.3 | 6.3 | 12 | 12 | 12 | 12 | 11 |
| 26 | 11 | 6.3 | 6.2 | 6.3 | 6.1 | 6.3 | 6.4 | 11 | 12 | 12 | 11 | 11 |
| 27 | 12 | 6.2 | 6.2 | 6.3 | 6.0 | 6.3 | 6.3 | 11 | 12 | 12 | 12 | 11 |
| 28 | 12 | 6.3 | 6.2 | 6.4 | 6.0 | 6.4 | 6.3 | 11 | 11 | 12 | 12 | 11 |
| 29 | 11 | 6.3 | 6.2 | 6.5 | --- | 6.4 | 6.3 | 11 | 12 | 12 | 12 | 11 |
| 30 | 12 | 6.2 | 6.2 | 6.4 | --- | 6.3 | 8.8 | 11 | 12 | 12 | 12 | 11 |
| 31 | 12 | --- | 6.3 | 6.3 | --- | 6.4 | --- | 12 | --- | 12 | 12 | --- |
| TOTAL | 364 | 190.4 | 192.7 | 198.3 | 172.1 | 192.0 | 192.9 | 353 | 350 | 369 | 369 | 334 |
| MEAN | 11.7 | 6.35 | 6.22 | 6.40 | 6.15 | 6.19 | 6.43 | 11.4 | 11.7 | 11.9 | 11.9 | 11.1 |
| MAX | 12 | 8.1 | 6.3 | 6.5 | 6.3 | 6.4 | 8.8 | 13 | 12 | 12 | 12 | 12 |
| MIN | 11 | 6.2 | 6.2 | 6.3 | 5.9 | 5.9 | 6.3 | 11 | 11 | 11 | 11 | 11 |
| AC-FT | 722 | 378 | 382 | 393 | 341 | 381 | 383 | 700 | 694 | 732 | 732 | 662 |

CAL YR 1989 TOTAL 8868.9 MEAN 24.3 MAX 873 MIN 5.9 AC-FT 17590
WTR YR 1990 TOTAL 3277.4 MEAN 8.98 MAX 13 MIN 5.9 AC-FT 6500

11421800 ROLLINS RESERVOIR NEAR COLFAX, CA

LOCATION.--Lat 39°08'08", long 120°57'03", in NE 1/4 SE 1/4 sec.22, T.15 N., R.9 E., Placer County, Hydrologic Unit 18020126, on left bank 300 ft upstream from Rollins Dam on Bear River, 2.3 mi north of Colfax.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District).

REMARKS.--Reservoir is formed by an earthfill dam. Storage began Dec. 15, 1964. Usable capacity, 66,000 acre-ft between elevations 1,970.0 ft, invert of outlet tunnel, and 2,171.0 ft, spillway crest. Dead storage, 270 acre-ft. Several diversions into and out of basin upstream for power development and irrigation. Water is normally released through Rollins powerplant (station 11421900). Part of the water then is diverted to Bear River Canal (station 11422000) for power development. Water is later used for irrigation. See schematic diagram of Bear River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 71,700 acre-ft, Feb. 17, 1986, elevation, 2,177.7 ft; minimum since reservoir first filled, 4,250 acre-ft, Oct. 10, 1977, elevation, 2,022.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 66,700 acre-ft, June 3, elevation, 2,171.80 ft; minimum, 35,600 acre-ft, Oct. 9, elevation, 2,125.57 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Nevada Irrigation District in 1964)

| | | | |
|-------|--------|-------|--------|
| 2,020 | 3,920 | 2,100 | 23,900 |
| 2,030 | 5,320 | 2,120 | 32,700 |
| 2,040 | 6,990 | 2,140 | 43,800 |
| 2,050 | 8,940 | 2,160 | 57,300 |
| 2,060 | 11,200 | 2,178 | 72,000 |
| 2,080 | 16,800 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-----------|-----------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 42200 | 50000 | 50600 | e40400 | 41600 | 45300 | 49700 | 58000 | 66500 | 60400 | 60400 | 55100 |
| 2 | 41100 | 51600 | 50400 | e39700 | 41700 | 45900 | 49900 | 57800 | 66600 | 60600 | 60400 | 54600 |
| 3 | 40000 | 52800 | 50300 | 39200 | 42000 | 47500 | 50300 | 57700 | 66700 | 61100 | 60300 | 54200 |
| 4 | 38900 | 52800 | 50200 | 38900 | 42500 | 48200 | e50400 | 58000 | 66300 | 61600 | 60200 | 53900 |
| 5 | 37900 | 52800 | 50000 | 38600 | 42700 | 48600 | e50900 | 57800 | 65900 | 62000 | 60200 | 53900 |
| 6 | 36700 | 53600 | 49700 | 38200 | 42900 | 49300 | e51400 | 57300 | 65200 | 62300 | 60300 | 54000 |
| 7 | 35700 | 55100 | 49500 | 38300 | 42900 | 49400 | e51900 | 57300 | 64600 | 62000 | 60700 | 54000 |
| 8 | 35700 | 56400 | 49300 | 39000 | 42800 | 49500 | e52400 | 57700 | 64300 | 61700 | 61100 | 53700 |
| 9 | 35700 | 57200 | 48900 | 38900 | 42700 | 49400 | e52900 | 58100 | 63800 | 61700 | 61600 | 53400 |
| 10 | 36000 | 57600 | 48500 | 38900 | 42000 | 49400 | 53500 | 58300 | 63100 | 62300 | 62000 | 53300 |
| 11 | 36300 | 57100 | 48000 | 39000 | 41200 | 49500 | 54400 | 58300 | 62300 | 62700 | 61700 | 53600 |
| 12 | 36700 | 56500 | 47600 | 39000 | 40800 | 49600 | 55200 | 58400 | 61400 | 63000 | 61200 | 53900 |
| 13 | 37000 | 56500 | 47400 | 40000 | 40700 | 49800 | 55900 | 58500 | 60400 | 63400 | 60900 | 54000 |
| 14 | 37400 | 56600 | 47100 | 41400 | 40600 | 49900 | 56100 | 58600 | 59800 | 63200 | 60900 | 54100 |
| 15 | 37800 | 56400 | 46900 | 41900 | 40500 | 49700 | 56300 | 58700 | 59400 | 62800 | 60800 | 53800 |
| 16 | 38100 | 56200 | 46700 | 42100 | 40800 | 49600 | 56600 | 58900 | 59100 | 62300 | 60800 | 52900 |
| 17 | 38500 | 56000 | 46600 | 42800 | 41200 | 49700 | 56900 | 59100 | 58600 | 62500 | 60600 | 51800 |
| 18 | 38700 | 55800 | 46400 | 43300 | 41700 | 49700 | 57200 | 59200 | 58400 | 62600 | 59700 | 50700 |
| 19 | 39000 | 55600 | 46000 | 43700 | 42700 | 49600 | 57500 | 59400 | 58800 | 62600 | 58900 | 49600 |
| 20 | 39300 | 55400 | 45800 | 43200 | 43200 | 49500 | 57900 | 59800 | 59300 | 62600 | 58300 | 48500 |
| 21 | 39600 | 55200 | 45600 | 42700 | 43500 | 49400 | 57700 | 60200 | 59700 | 62100 | 58000 | 47500 |
| 22 | 39900 | 54600 | 45400 | 42400 | 43700 | 49300 | 57700 | 60700 | 60100 | 61700 | 58000 | 46400 |
| 23 | 40900 | 53000 | 45200 | 42300 | 43900 | 49300 | 57800 | 61400 | 59800 | 61400 | 58100 | 45300 |
| 24 | 42200 | 51700 | 44900 | 42300 | 44100 | 49400 | 58400 | 62000 | 59500 | 61600 | 57900 | 44200 |
| 25 | 43400 | 51300 | 44700 | 42200 | 44100 | 49300 | 58900 | 62700 | 59700 | 62100 | 57000 | 43200 |
| 26 | 44300 | 51500 | 44400 | 42000 | 44400 | 49200 | 58800 | 63300 | 59900 | 62400 | 56000 | 42100 |
| 27 | 45100 | 50700 | 44000 | 41500 | 44900 | 49300 | 58900 | 63800 | 59500 | 62400 | 55700 | 41000 |
| 28 | 46000 | 50700 | 43700 | 41100 | 45100 | 49300 | 58600 | 64400 | 59700 | 61800 | 55800 | 40100 |
| 29 | 46800 | 50600 | 43300 | 40800 | --- | 49500 | 58300 | 64900 | 60200 | 61100 | 55700 | 39100 |
| 30 | 47600 | 50600 | 42200 | 41200 | --- | 49600 | 58100 | 65100 | 60300 | 60400 | 55600 | 38000 |
| 31 | 48700 | --- | 41200 | 41400 | --- | 49600 | --- | 66300 | --- | 60500 | 55600 | --- |
| MAX | 48700 | 57600 | 50600 | 43700 | 45100 | 49900 | 58900 | 66300 | 66700 | 63400 | 62000 | 55100 |
| MIN | 35700 | 50000 | 41200 | 38200 | 40500 | 45300 | 49700 | 57300 | 58400 | 60400 | 55600 | 38000 |
| a | 2147.71 | 2150.62 | 2135.63 | 2136.07 | 2142.14 | 2149.19 | 2161.06 | 2171.31 | 2163.86 | 2164.08 | 2157.65 | 2130.03 |
| b | +5400 | +1900 | -9400 | +200 | +3700 | +4500 | +8500 | +8200 | -6000 | +200 | -4900 | -17600 |
| c | 22650 | 30830 | 48870 | 30020 | 19370 | 20900 | 14690 | 28500 | 40250 | 33000 | 35400 | 30940 |
| CAL YR 1989 | MAX 68000 | MIN 35700 | b -9200 | c 459300 | | | | | | | | |
| WTR YR 1990 | MAX 66700 | MIN 35700 | b -5300 | c 363600 | | | | | | | | |

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Discharge, in acre-feet, through Rollins powerplant, provided by Nevada Irrigation District.

11422000 BEAR RIVER CANAL INTAKE NEAR COLFAX, CA

LOCATION.--Lat 39°07'58", long 120°57'12", in SW 1/4 SE 1/4 sec.22, T.15 N., R.9 E., Placer County, Hydrologic Unit 18020126, on right bank 400 ft downstream from canal inlet, 0.2 mi downstream from Rollins Dam, and 2.2 mi north of Colfax.

PERIOD OF RECORD.--January 1912 to September 1953, October 1964 to current year. Monthly discharge only for some periods published in WSP 1315-A. Prior to October 1912, published as Pacific Gas & Electric Co.'s Canal near Colfax; October 1912 to September 1953, published as Bear River Canal near Colfax.

GAGE.--Water-stage recorder. Elevation of gage is 1,950 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 25, 1946, water-stage recorder at site 1.5 mi downstream at different datum.

REMARKS.--Canal diverts from left bank of Bear River. Water is used to develop power at Halsey and Wise powerplants (stations 11425310 and 11425415). Part of the water is distributed for irrigation, and the remainder is eventually spilled into North Fork American River. See schematic diagram of Bear River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--67 years (water years 1913-53, 1965-90), 310 ft³/s, 224,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 531 ft³/s, Oct. 5, 6, 1980; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|---------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | e449 | e.00 | 472 | 472 | 451 | 404 | 453 | 245 | 442 | 451 | 463 | 448 |
| 2 | e455 | e.00 | 472 | 473 | 456 | 405 | 302 | 291 | 442 | 453 | 463 | 447 |
| 3 | e459 | 50 | 472 | 471 | 454 | 406 | 96 | 308 | 443 | 454 | 460 | 445 |
| 4 | e456 | 131 | 472 | 469 | 413 | 404 | 97 | 347 | 444 | 452 | 458 | 443 |
| 5 | e459 | 97 | 472 | 469 | 454 | 427 | 98 | 383 | 451 | 452 | 460 | 444 |
| 6 | e459 | e.00 | 473 | 470 | 454 | 452 | 97 | 384 | 455 | 452 | 460 | 445 |
| 7 | 455 | e.00 | 473 | 469 | 454 | 452 | 95 | 332 | 455 | 451 | 461 | 446 |
| 8 | 455 | 56 | 472 | 469 | 454 | 452 | 95 | 290 | 455 | 450 | 452 | 447 |
| 9 | 456 | 239 | 472 | 468 | 453 | 452 | 97 | 309 | 456 | 450 | 447 | 446 |
| 10 | 456 | 318 | 472 | 388 | 452 | 452 | 107 | 345 | 456 | 451 | 443 | 445 |
| 11 | 456 | 385 | 472 | 312 | 449 | 452 | 132 | 367 | 456 | 454 | 445 | 446 |
| 12 | 456 | 386 | 472 | 403 | 385 | 453 | 182 | 367 | 457 | 459 | 447 | 447 |
| 13 | 457 | 415 | 472 | 373 | 301 | 456 | 202 | 382 | 456 | 460 | 451 | 447 |
| 14 | 457 | 468 | 472 | 377 | 302 | 462 | 203 | 400 | 450 | 461 | 456 | 447 |
| 15 | 457 | 478 | 472 | 380 | 303 | 461 | 189 | 393 | 443 | 463 | 455 | 447 |
| 16 | 457 | 477 | 473 | 388 | 271 | 460 | 169 | 364 | 441 | 443 | 456 | 444 |
| 17 | 457 | 474 | 473 | 393 | 212 | 460 | 153 | 344 | 447 | 414 | 456 | 442 |
| 18 | 457 | 474 | 473 | 441 | 207 | 459 | 167 | 339 | 450 | 437 | 452 | 443 |
| 19 | 457 | 474 | 473 | 447 | 19 | 459 | 170 | 339 | 450 | 465 | 452 | 444 |
| 20 | 458 | 474 | 472 | 453 | 29 | 459 | 153 | 322 | 449 | 468 | 450 | 443 |
| 21 | 492 | 474 | 472 | 452 | 152 | 457 | 149 | 299 | 449 | 468 | 451 | 443 |
| 22 | e14 | 474 | 472 | 452 | 262 | 457 | 151 | 245 | 449 | 467 | 454 | 439 |
| 23 | e.00 | 474 | 472 | 453 | 360 | 456 | 247 | 203 | 449 | 472 | 454 | 442 |
| 24 | e.00 | 474 | 472 | 453 | 401 | 433 | 402 | 182 | 450 | 365 | 450 | 443 |
| 25 | e.00 | 474 | 472 | 452 | 402 | 456 | 424 | 207 | 423 | 238 | 451 | 442 |
| 26 | e.00 | 473 | 472 | 452 | 402 | 455 | 423 | 247 | 421 | 272 | 450 | 443 |
| 27 | e.00 | 473 | 473 | 356 | 404 | 455 | 328 | 359 | 449 | 272 | 451 | 441 |
| 28 | e.00 | 472 | 473 | 331 | 404 | 455 | 191 | 438 | 450 | 273 | 452 | 369 |
| 29 | e.00 | 472 | 473 | 449 | --- | 453 | 193 | 437 | 452 | 295 | 452 | 364 |
| 30 | e.00 | 472 | 473 | 453 | --- | 453 | 205 | 435 | 450 | 405 | 450 | 432 |
| 31 | e.00 | --- | 473 | 455 | --- | 453 | --- | 438 | --- | 457 | 449 | --- |
| TOTAL | 9634.00 | 10128.00 | 14643 | 13343 | 9760 | 13870 | 5970 | 10341 | 13440 | 13024 | 14051 | 13164 |
| MEAN | 311 | 338 | 472 | 430 | 349 | 447 | 199 | 334 | 448 | 420 | 453 | 439 |
| MAX | 492 | 478 | 473 | 473 | 456 | 462 | 453 | 438 | 457 | 472 | 463 | 448 |
| MIN | .00 | .00 | 472 | 312 | 19 | 404 | 95 | 182 | 421 | 238 | 443 | 364 |
| AC-FT | 19110 | 20090 | 29040 | 26470 | 19360 | 27510 | 11840 | 20510 | 26660 | 25830 | 27870 | 26110 |
| a | 18610 | 17620 | 26830 | 24590 | 17730 | 26160 | 11510 | 18930 | 24730 | 23140 | 25090 | 23730 |
| b | 14670 | 14240 | 22000 | 20750 | 15590 | 22730 | 8250 | 12820 | 19070 | 16390 | 18720 | 17910 |

CAL YR 1989 TOTAL 153111.00 MEAN 419 MAX 492 MIN .00 AC-FT 303700 AC-FT a 280200 b 228500
WTR YR 1990 TOTAL 141368.00 MEAN 387 MAX 492 MIN .00 AC-FT 280400 AC-FT a 258700 b 203200

e Estimated.

a Discharge, in acre-feet, to Halsey powerplant, provided by Pacific Gas & Electric Co.

b Discharge, in acre-feet, to Wise powerplant, provided by Pacific Gas & Electric Co.

11422500 BEAR RIVER BELOW ROLLINS DAM, NEAR COLFAX, CA

LOCATION.--Lat 39°07'53", Long 120°57'29", in SE 1/4 SW 1/4 sec.22, T.15 N., R.9 E., Nevada County, Hydrologic Unit 18020126, on right bank 20 ft upstream from new highway bridge, 0.5 mi downstream from Rollins Dam, and 2.2 mi north of Colfax.

DRAINAGE AREA.--105 mi².

PERIOD OF RECORD.--January 1912 to September 1913, October 1913 to July 1915 (gage heights and discharge measurements only), August 1915 to June 1917, November 1949 to September 1953, August 1964 to current year. Monthly discharge only for some periods, published in WSP 1315-A. Prior to August 1964, published as Bear River near Colfax. Records for November and December 1911 include diversion to Bear River Canal and are not equivalent.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,927.41 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 8, 1915, nonrecording gages at several sites above diversion dam 0.3 mi upstream at different datums. Aug. 8, 1915, to June 30, 1917, nonrecording gage 0.7 mi downstream at different datum. Nov. 1, 1949, to Sept. 30, 1953, at site 0.2 mi downstream at different datum. Aug. 17, 1964, to Feb. 4, 1986, at present site and datum. Feb. 5, 1986, to Mar. 19, 1987, at site 160 ft downstream at datum 8.00 ft lower.

REMARKS.--Records good. Flow regulated by Rollins Reservoir (station 11421800) beginning Dec. 15, 1964. Bear River Canal (station 11422000) diverts upstream from station. See schematic diagram of Bear River basin.

AVERAGE DISCHARGE (unadjusted).--31 years (water years 1913, 1916, 1951-53, 1965-90), 383 ft³/s, 277,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (prior to construction of Rollins Dam in 1964), 9,620 ft³/s, Nov. 20, 1950, gage height, 21.40 ft, site and datum then in use, from rating curve extended above 3,600 ft³/s on basis of slope-area measurement of peak flow; no flow at times in 1912, 1952. Maximum discharge since construction of Rollins Dam, 22,500 ft³/s, Feb. 17, 1986, gage height, 20.62 ft, site and datum then in use, from rating curve extended above 11,600 ft³/s; minimum daily, 0.5 ft³/s, Nov. 17, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 696 ft³/s, June 2, 3, gage height, 2.74 ft; minimum daily, 19 ft³/s, Feb. 17, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|------|------|------|------|------|-------|------|------|------|
| 1 | 87 | 49 | 323 | 292 | 31 | 24 | 30 | 80 | 622 | 119 | 155 | 95 |
| 2 | 87 | 23 | 325 | 289 | 28 | 25 | 27 | 79 | 683 | 121 | 154 | 83 |
| 3 | 87 | 23 | 323 | 140 | 30 | 27 | 24 | 78 | 696 | 121 | 143 | 85 |
| 4 | 87 | 24 | 322 | 33 | 32 | 27 | 24 | 81 | e650 | 120 | 121 | 84 |
| 5 | 87 | 26 | 322 | 32 | 29 | 28 | 23 | 83 | e400 | 115 | 119 | 85 |
| 6 | 87 | 25 | 322 | 31 | 31 | 30 | 23 | 83 | e386 | 109 | 119 | 84 |
| 7 | 87 | 24 | 321 | 35 | 29 | 31 | 23 | 80 | 380 | 110 | 119 | 83 |
| 8 | 87 | 26 | 320 | 38 | 27 | 32 | 23 | 77 | e380 | 109 | 120 | 83 |
| 9 | 90 | 29 | 320 | 36 | 27 | 32 | 25 | 79 | e378 | 108 | 119 | 83 |
| 10 | 92 | 28 | 318 | 32 | 27 | 33 | 27 | 89 | e378 | 109 | 119 | e81 |
| 11 | 92 | 28 | 316 | 32 | 26 | 32 | 27 | 96 | e378 | 113 | 117 | e80 |
| 12 | 91 | 26 | 315 | 29 | 27 | 32 | 26 | 96 | 375 | 120 | 114 | e79 |
| 13 | 92 | 53 | 314 | 37 | 25 | 32 | 26 | 98 | 370 | 119 | 115 | 78 |
| 14 | 94 | 223 | 313 | 32 | 25 | 31 | 26 | 88 | 194 | 116 | 115 | 79 |
| 15 | 92 | 338 | 313 | 26 | 25 | 31 | 25 | 82 | 75 | 116 | 115 | 78 |
| 16 | 92 | 339 | 312 | 73 | 25 | 29 | 25 | 80 | 74 | 116 | 128 | 78 |
| 17 | 90 | 341 | 311 | 55 | 19 | 29 | 26 | 80 | 89 | 118 | 142 | 78 |
| 18 | 90 | 341 | 311 | 37 | 19 | 29 | 26 | 77 | 99 | 121 | 142 | 78 |
| 19 | 90 | 339 | 310 | 33 | 26 | 29 | 26 | 75 | 101 | 127 | 143 | 78 |
| 20 | 92 | 339 | 309 | 28 | 44 | 29 | 58 | 80 | 104 | 127 | 143 | 78 |
| 21 | 93 | 338 | 309 | 28 | 48 | 28 | 76 | 83 | 100 | 126 | 143 | 78 |
| 22 | 96 | 337 | 308 | 27 | 30 | 28 | 76 | 81 | 99 | 125 | 134 | 78 |
| 23 | 97 | 334 | 308 | 27 | 24 | 30 | 77 | 82 | 99 | 121 | 124 | 77 |
| 24 | 94 | 329 | 307 | 27 | 27 | 28 | 77 | 81 | 99 | 117 | 128 | 76 |
| 25 | 92 | 330 | 306 | 27 | 27 | 30 | 77 | 80 | 110 | 114 | 127 | 76 |
| 26 | 92 | 329 | 305 | 27 | 26 | 30 | 77 | 78 | 121 | 114 | 129 | 76 |
| 27 | 92 | 324 | 304 | 27 | 25 | 30 | 76 | 179 | 130 | 114 | 130 | 76 |
| 28 | 92 | 323 | 304 | 27 | 24 | 30 | 77 | 400 | 130 | 128 | 129 | 76 |
| 29 | 93 | 323 | 302 | 28 | --- | 30 | 76 | 398 | 129 | 137 | 130 | 78 |
| 30 | 93 | 322 | 300 | 30 | --- | 30 | 77 | 400 | 121 | 146 | 129 | 79 |
| 31 | 93 | --- | 295 | 30 | --- | 30 | --- | 405 | --- | 154 | 125 | --- |
| TOTAL | 2820 | 5933 | 9688 | 1645 | 783 | 916 | 1306 | 3928 | 7950 | 3730 | 3990 | 2400 |
| MEAN | 91.0 | 198 | 313 | 53.1 | 28.0 | 29.5 | 43.5 | 127 | 265 | 120 | 129 | 80.0 |
| MAX | 97 | 341 | 325 | 292 | 48 | 33 | 77 | 405 | 696 | 154 | 155 | 95 |
| MIN | 87 | 23 | 295 | 26 | 19 | 24 | 23 | 75 | 74 | 108 | 114 | 76 |
| AC-FT | 5590 | 11770 | 19220 | 3260 | 1550 | 1820 | 2590 | 7790 | 15770 | 7400 | 7910 | 4760 |

CAL YR 1989 TOTAL 129852 MEAN 356 MAX 4000 MIN 21 AC-FT 257600
WTR YR 1990 TOTAL 45089 MEAN 124 MAX 696 MIN 19 AC-FT 89430

e Estimated.

11423800 BEAR RIVER FISH RELEASE BELOW NEW CAMP FAR WEST RESERVOIR, NEAR WHEATLAND, CA

LOCATION.--Lat 39°02'30", long 121°19'52", in NE 1/4 NW 1/4 sec.29, T.14 N., R.6 E., Placer County, Hydrologic Unit 18020108, on left bank 5.4 mi northeast of Wheatland and 1.2 mi downstream from New Camp Far West Reservoir.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--October 1989 to September 1990.

GAGE.--Water-stage recorder. Elevation of gage is 120 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--The gage measures required fish-release flow and is entirely regulated by New Camp Far West Reservoir.

COOPERATION.--Records provided by South Sutter Water District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 31 ft³/s, Apr. 6, 1990; minimum daily, 10 ft³/s, several days during August and September 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | e11 | 13 | 12 | 11 | 12 | 12 | 25 | 26 | 26 | 15 | 11 | 10 |
| 2 | 11 | 13 | 12 | 11 | 12 | 12 | 26 | 26 | 26 | 11 | 11 | 10 |
| 3 | 11 | 12 | 12 | 11 | 12 | 12 | 26 | 26 | 26 | 11 | 11 | 11 |
| 4 | 11 | 12 | 12 | 11 | 12 | 11 | 27 | 26 | 26 | 11 | 11 | 11 |
| 5 | 11 | 12 | 12 | 12 | 12 | 11 | 29 | 26 | 26 | 11 | 11 | 11 |
| 6 | 11 | 12 | 12 | 12 | 12 | 11 | 31 | 26 | 26 | 11 | 10 | 10 |
| 7 | 11 | 12 | 12 | 12 | 12 | 11 | 30 | 26 | 26 | 11 | 11 | 10 |
| 8 | 11 | 12 | 12 | 12 | 12 | 13 | 29 | 26 | 25 | 11 | 11 | 10 |
| 9 | 11 | 12 | 12 | 12 | 12 | 13 | 27 | 26 | 25 | 11 | 10 | 10 |
| 10 | 11 | 12 | 12 | 11 | 12 | 13 | 27 | 26 | 25 | 11 | 10 | 11 |
| 11 | 11 | 12 | 12 | 11 | 11 | 13 | 26 | 26 | 26 | 11 | 11 | 11 |
| 12 | 11 | 12 | 12 | 11 | 11 | 14 | 26 | 26 | 26 | 11 | 11 | 11 |
| 13 | 11 | 12 | 12 | 12 | 11 | 14 | 25 | 26 | 26 | 11 | 11 | 11 |
| 14 | 11 | 12 | 12 | 12 | 11 | 14 | 26 | 26 | 26 | 11 | 11 | 11 |
| 15 | 11 | 12 | 12 | 12 | 12 | 14 | 27 | 26 | 26 | 11 | 11 | 11 |
| 16 | 11 | 12 | 12 | 12 | 12 | 13 | 26 | 26 | 26 | 11 | 11 | 11 |
| 17 | 11 | 12 | 12 | 12 | 12 | 12 | 26 | 26 | 26 | 11 | 11 | 11 |
| 18 | 11 | 12 | 12 | 12 | 12 | 12 | 27 | 26 | 26 | 11 | 11 | 11 |
| 19 | 11 | 12 | 12 | 11 | 12 | 12 | 25 | 26 | 26 | 11 | 11 | 11 |
| 20 | 11 | 12 | 11 | 11 | 12 | 12 | 25 | 26 | 25 | 11 | 11 | 11 |
| 21 | 11 | 12 | 11 | 11 | 12 | 12 | 26 | 25 | 26 | 11 | 11 | 11 |
| 22 | 11 | 12 | 11 | 12 | 12 | 13 | 26 | 25 | 26 | 11 | 11 | 11 |
| 23 | 13 | 12 | 11 | 12 | 12 | 14 | 26 | 26 | 26 | 11 | 11 | 11 |
| 24 | 16 | 12 | 11 | 12 | 12 | 14 | 26 | 26 | 26 | 11 | 11 | 11 |
| 25 | 15 | 12 | 11 | 12 | 12 | 14 | 26 | 26 | 26 | 11 | 10 | 11 |
| 26 | 14 | 12 | 11 | 12 | 12 | 13 | 26 | 26 | 26 | 11 | 10 | 11 |
| 27 | 14 | 12 | 11 | 11 | 12 | 13 | 25 | 26 | 26 | 11 | 11 | 11 |
| 28 | 15 | 12 | 11 | 11 | 12 | 13 | 26 | 26 | 26 | 11 | 11 | 11 |
| 29 | 15 | 12 | 11 | 11 | --- | 13 | 26 | 26 | 25 | 11 | 11 | 11 |
| 30 | 15 | 12 | 11 | 12 | --- | 12 | 26 | 26 | 26 | 11 | 11 | 11 |
| 31 | 14 | --- | 11 | 12 | --- | 16 | --- | 26 | --- | 11 | 11 | --- |
| TOTAL | 373 | 362 | 360 | 359 | 332 | 396 | 795 | 804 | 775 | 345 | 336 | 324 |
| MEAN | 12.0 | 12.1 | 11.6 | 11.6 | 11.9 | 12.8 | 26.5 | 25.9 | 25.8 | 11.1 | 10.8 | 10.8 |
| MAX | 16 | 13 | 12 | 12 | 12 | 16 | 31 | 26 | 26 | 15 | 11 | 11 |
| MIN | 11 | 12 | 11 | 11 | 11 | 11 | 25 | 25 | 25 | 11 | 10 | 10 |
| AC-FT | 740 | 718 | 714 | 712 | 659 | 785 | 1580 | 1590 | 1540 | 684 | 666 | 643 |

WTR YR 1990 TOTAL 5561 MEAN 15.2 MAX 31 MIN 10 AC-FT 11030

e Estimated.

11424000 BEAR RIVER NEAR WHEATLAND, CA

LOCATION (REVISED).--Lat 39°00'00", long 121°24'20", in SE 1/4 SW 1/4 sec.3, T.13 N., R.5 E., Placer County, Hydrologic Unit 18020108, on right bank 200 ft downstream from bridge on State Highway 65, 1 mi southeast of Wheatland, and 6.5 mi downstream from New Camp Far West Reservoir.

DRAINAGE AREA.--292 mi².

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 71.92 ft above National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to May 28, 1970.

REMARKS.--Records good except for July 13 to Aug. 16 and Aug. 23 to Sept. 27, which are fair, and estimated discharges Nov. 1-9, which are poor. Natural flow of stream affected by inflow from Yuba and American River basins. Flow regulated by Lake Combie, usable capacity, 7,840 acre-ft; Rollins Reservoir (station 11421800) since December 1964; and New Camp Far West Reservoir, usable capacity, 102,200 acre-ft, since October 1963. Many diversions for irrigation and power. See schematic diagrams of Bear River and lower Sacramento River basins.

AVERAGE DISCHARGE (prior to regulation by New Camp Far West Reservoir).--34 years (water years 1930-63), 417 ft³/s, 301,900 acre-ft/yr; 27 years (water years 1964-90), 404 ft³/s, 292,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,000 ft³/s, Feb. 17, 1986, gage height, 21.60 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 849 ft³/s, Feb. 20, gage height, 6.03 ft; minimum daily, 8.1 ft³/s, Sept. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|-------|-------|------|------|------|-------|------|-------|
| 1 | 13 | e14 | 13 | 13 | 442 | 612 | 21 | 31 | 28 | 24 | 12 | 12 |
| 2 | 13 | e14 | 13 | 13 | 437 | 510 | 25 | 31 | 27 | 13 | 12 | 10 |
| 3 | 13 | e13 | 13 | 13 | 442 | 419 | 28 | 32 | 27 | 11 | 13 | 13 |
| 4 | 13 | e13 | 13 | 13 | 448 | 423 | 25 | 29 | 27 | 8.6 | 11 | 15 |
| 5 | 13 | e13 | 14 | 12 | 499 | 420 | 26 | 30 | 36 | 9.4 | 12 | 13 |
| 6 | 13 | e13 | 14 | 12 | 588 | 419 | 29 | 32 | 49 | 10 | 11 | 12 |
| 7 | 13 | e13 | 13 | 15 | 574 | 418 | 29 | 31 | 49 | 10 | 12 | 10 |
| 8 | 14 | e13 | 13 | 14 | 520 | 418 | 29 | 31 | 50 | 11 | 12 | 11 |
| 9 | 13 | e13 | 13 | 14 | 423 | 218 | 27 | 28 | 49 | 12 | 11 | 11 |
| 10 | 13 | 13 | 13 | 14 | 425 | 20 | 28 | 30 | 44 | 11 | 11 | 10 |
| 11 | 13 | 13 | 13 | 13 | 424 | 18 | 28 | 29 | 40 | 11 | 12 | 11 |
| 12 | 12 | 13 | 14 | 21 | 422 | 120 | 27 | 28 | 33 | 12 | 13 | 11 |
| 13 | 12 | 13 | 16 | 92 | 421 | 399 | 28 | 30 | 26 | 11 | 13 | 11 |
| 14 | 13 | 14 | 15 | 68 | 256 | 406 | 30 | 30 | 26 | 12 | 12 | 12 |
| 15 | 13 | 14 | 13 | 31 | 17 | 403 | 30 | 31 | 26 | 11 | 12 | 8.1 |
| 16 | 13 | 14 | 13 | 20 | 93 | 221 | 35 | 29 | 25 | 11 | 14 | 8.4 |
| 17 | 13 | 14 | 13 | 19 | 60 | 18 | 31 | 27 | 27 | 10 | 13 | 11 |
| 18 | 12 | 14 | 13 | 16 | 32 | 17 | 29 | 28 | 27 | 10 | 14 | 11 |
| 19 | 16 | 14 | 13 | 15 | 41 | 15 | 28 | 28 | 28 | 11 | 15 | 11 |
| 20 | 15 | 13 | 11 | 15 | 394 | 14 | 29 | 30 | 28 | 11 | 15 | 12 |
| 21 | 11 | 13 | 12 | 14 | 532 | 15 | 29 | 32 | 26 | 11 | 15 | 12 |
| 22 | 13 | 14 | 12 | 14 | 433 | 157 | 29 | 30 | 28 | 11 | 14 | 11 |
| 23 | 17 | 14 | 12 | 15 | 572 | 337 | 30 | 32 | 28 | 11 | 13 | 12 |
| 24 | 29 | 15 | 12 | 21 | 638 | 345 | 31 | 33 | 27 | 11 | 13 | 13 |
| 25 | 32 | 17 | 12 | 53 | 624 | 346 | 28 | 31 | 27 | 12 | 14 | 12 |
| 26 | 28 | 17 | 12 | 64 | 616 | 190 | 28 | 36 | 27 | 14 | 12 | 16 |
| 27 | 17 | 15 | 12 | 16 | 616 | 19 | 29 | 39 | 27 | 14 | 12 | 14 |
| 28 | 14 | 16 | 13 | 14 | 614 | 24 | 31 | 39 | 27 | 16 | 14 | 12 |
| 29 | 15 | 14 | 13 | 91 | --- | 25 | 31 | 35 | 26 | 15 | 15 | 13 |
| 30 | 16 | 14 | 13 | 436 | --- | 18 | 31 | 33 | 26 | 10 | 14 | 12 |
| 31 | 15 | --- | 13 | 434 | --- | 16 | --- | 31 | --- | 13 | 12 | --- |
| TOTAL | 470 | 417 | 402 | 1615 | 11603 | 7000 | 859 | 966 | 941 | 368.0 | 398 | 350.5 |
| MEAN | 15.2 | 13.9 | 13.0 | 52.1 | 414 | 226 | 28.6 | 31.2 | 31.4 | 11.9 | 12.8 | 11.7 |
| MAX | 32 | 17 | 16 | 436 | 638 | 612 | 35 | 39 | 50 | 24 | 15 | 16 |
| MIN | 11 | 13 | 11 | 12 | 17 | 14 | 21 | 27 | 25 | 8.6 | 11 | 8.1 |
| AC-FT | 932 | 827 | 797 | 3200 | 23010 | 13880 | 1700 | 1920 | 1870 | 730 | 789 | 695 |

CAL YR 1989 TOTAL 103597.8 MEAN 284 MAX 7090 MIN 8.1 AC-FT 205500
WTR YR 1990 TOTAL 25389.5 MEAN 69.6 MAX 638 MIN 8.1 AC-FT 50360

e Estimated.

SACRAMENTO RIVER BASIN

11425418 MORMON RAVINE NEAR NEWCASTLE, CA

LOCATION.--Lat 38°50'12", long 121°05'36", in SE 1/4 NW 1/4 sec.4, T.11 N., R.8 E., Placer County, Hydrologic Unit 18020128, on right bank 200 ft upstream from Folsom Lake, 700 ft north of Newcastle powerplant, and 3.3 mi southeast of Newcastle.

DRAINAGE AREA.--3.84 mi².

PERIOD OF RECORD.--October 1989 to September 1990 (low-flow records only).

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 500 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records not computed above 8.5 ft³/s. Low flow augmented by release from end of South Canal. Most of the water in South Canal is diverted to Newcastle powerplant (station 11425416). See schematic diagram of Bear River basin.

COOPERATION.--Records were collected by the Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|-------|
| 1 | 8.4 | 1.9 | 7.7 | --- | --- | --- | 7.6 | --- | --- | 6.8 | 7.4 | 6.3 |
| 2 | --- | 1.8 | 7.7 | --- | --- | --- | --- | --- | --- | 6.3 | 6.8 | 6.3 |
| 3 | --- | --- | --- | 7.6 | --- | --- | --- | --- | --- | 5.8 | 6.6 | 6.4 |
| 4 | --- | 2.0 | 7.3 | 7.3 | --- | --- | --- | --- | --- | 5.7 | 6.6 | --- |
| 5 | --- | 2.0 | 7.3 | 7.2 | --- | --- | --- | --- | 7.5 | 5.8 | 6.2 | --- |
| 6 | --- | 2.0 | --- | --- | --- | --- | --- | --- | 7.3 | 5.7 | 6.3 | 6.2 |
| 7 | --- | 2.1 | 7.2 | --- | --- | --- | --- | --- | 7.5 | 5.5 | --- | 6.1 |
| 8 | --- | 1.7 | --- | --- | --- | --- | --- | --- | --- | 5.2 | --- | 5.9 |
| 9 | --- | 1.5 | 7.3 | --- | --- | --- | --- | --- | 7.8 | 5.6 | --- | 5.9 |
| 10 | 7.9 | --- | 7.2 | --- | --- | --- | --- | --- | 7.5 | --- | --- | 6.1 |
| 11 | --- | --- | 7.6 | --- | --- | --- | --- | --- | 7.5 | --- | --- | 6.2 |
| 12 | 7.8 | 7.8 | 7.8 | --- | --- | --- | --- | --- | 7.9 | --- | --- | --- |
| 13 | 7.7 | 7.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 6.4 |
| 14 | 7.8 | 6.8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 6.7 |
| 15 | 8.0 | 6.7 | 7.2 | --- | 8.1 | --- | --- | --- | --- | --- | --- | 6.4 |
| 16 | 8.2 | 7.0 | 7.0 | --- | --- | --- | --- | --- | 8.0 | --- | --- | 6.5 |
| 17 | 8.2 | 7.2 | 7.1 | --- | --- | 8.1 | --- | --- | 7.7 | --- | --- | 6.3 |
| 18 | --- | 7.2 | 7.2 | --- | --- | 7.9 | --- | --- | 7.0 | 6.5 | 6.3 | 6.4 |
| 19 | --- | 6.8 | --- | --- | --- | --- | --- | --- | 6.9 | --- | 6.0 | --- |
| 20 | --- | --- | --- | --- | --- | --- | --- | --- | 6.9 | 6.9 | 6.1 | --- |
| 21 | 7.6 | 7.5 | --- | --- | --- | 7.5 | --- | --- | 6.7 | 6.6 | 6.1 | 6.0 |
| 22 | --- | 6.8 | 7.2 | --- | --- | --- | --- | --- | 6.7 | 6.7 | 6.1 | 6.1 |
| 23 | --- | 7.0 | 7.3 | --- | --- | --- | --- | --- | 7.1 | 7.3 | 5.9 | 6.4 |
| 24 | --- | --- | 7.7 | 8.5 | --- | --- | --- | --- | 7.0 | --- | 6.0 | 6.7 |
| 25 | 3.5 | --- | 7.7 | --- | --- | 7.6 | --- | --- | 7.0 | --- | 6.2 | 6.8 |
| 26 | 2.8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 6.4 | 6.8 |
| 27 | 2.2 | --- | --- | --- | --- | --- | --- | --- | 6.8 | --- | 6.2 | --- |
| 28 | 2.4 | 8.2 | --- | --- | --- | 7.7 | --- | --- | 6.6 | 7.1 | 6.1 | --- |
| 29 | 2.2 | 7.9 | 6.8 | 7.5 | --- | 7.6 | 6.8 | --- | 6.7 | --- | 6.3 | 6.5 |
| 30 | 2.0 | --- | 6.8 | --- | --- | 7.6 | --- | --- | 6.9 | --- | 6.1 | 6.1 |
| 31 | 1.9 | --- | 6.8 | --- | --- | 7.5 | --- | --- | --- | --- | 6.3 | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MEAN | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MAX | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MIN | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AC-FT | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a | 10130 | 11500 | 17300 | 17220 | 12610 | 17410 | 3470 | 1340 | 9360 | 2220 | 4950 | 11960 |

CAL YR AC-FT a 139600

WTR YR AC-FT a 119500

a Diversion, in acre-feet, to Newcastle powerplant, provided by Pacific Gas & Electric Co.

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|
| 1 | 10500 | 8810 | 13500 | 14100 | 10300 | 10800 | 13300 | 7230 | 19300 | 8200 | 9770 | 10800 |
| 2 | 10100 | 8780 | 12900 | 14100 | 11200 | 10600 | 13500 | 6680 | 20600 | 8460 | 9980 | 10700 |
| 3 | 9860 | 8940 | 13600 | 14000 | 11800 | 10700 | 13400 | 6220 | 18200 | 8360 | 10500 | 10500 |
| 4 | 9570 | 9210 | 13700 | 13700 | 12400 | 11500 | 12900 | 5900 | 14700 | 8120 | 11100 | 10400 |
| 5 | 9310 | 10100 | 13700 | 13300 | 13200 | 14000 | 13300 | 5900 | 11200 | 7760 | 12400 | 10400 |
| 6 | 9150 | 10600 | 13600 | 13300 | 13900 | 16300 | 14100 | 5940 | 9630 | 7390 | 13600 | 10400 |
| 7 | 9500 | 10900 | 14000 | 13800 | 14300 | 16900 | 14300 | 5930 | 8360 | 7410 | 13900 | 10300 |
| 8 | 9730 | 11100 | 15000 | 14600 | 13600 | 15600 | 14300 | 6570 | 7350 | 7440 | 13800 | 10400 |
| 9 | 9650 | 11400 | 15500 | 16700 | 12600 | 13900 | 14300 | 7900 | 7050 | 7410 | 13600 | 10300 |
| 10 | 9670 | 11500 | 15500 | 23400 | 11700 | 12800 | 14700 | 8000 | 6560 | 7840 | 13600 | 10000 |
| 11 | 9890 | 11700 | 15500 | 21400 | 11200 | 12800 | 15500 | 8070 | 6120 | 8190 | 13800 | 10000 |
| 12 | 10500 | 12000 | 15000 | 17500 | 10800 | 13400 | 15900 | 8800 | 5930 | 8180 | 13600 | 9830 |
| 13 | 11000 | 11900 | 14500 | 17500 | 10400 | 14200 | 15800 | 9160 | 5930 | 8120 | 13400 | 9810 |
| 14 | 11300 | 11800 | 14000 | 23900 | 10000 | 13200 | 16000 | 9560 | 6280 | 8260 | 13300 | 9360 |
| 15 | 11400 | 12000 | 13800 | 32900 | 9470 | 12000 | 16200 | 9830 | 6890 | 8840 | 13000 | 9150 |
| 16 | 10400 | 12100 | 13600 | 32800 | 9840 | 11300 | 16200 | 10300 | 7000 | 9420 | 12900 | 9040 |
| 17 | 10100 | 12300 | 13200 | 27800 | 14800 | 10700 | 16200 | 10800 | 7120 | 9800 | 13100 | 8750 |
| 18 | 10100 | 12200 | 12700 | 25100 | 16500 | 10400 | 16100 | 10900 | 7920 | 9830 | 13400 | 8510 |
| 19 | 10200 | 11900 | 12300 | 22100 | 15600 | 10000 | 15900 | 9770 | 8360 | 10200 | 13300 | 8360 |
| 20 | 10300 | 11900 | 12100 | 18500 | 14200 | 9610 | 15600 | 9590 | 8400 | 10500 | 13100 | 8520 |
| 21 | 10200 | 12200 | 12100 | 16000 | 13300 | 9900 | 15000 | 10800 | 8170 | 10700 | 12700 | 8290 |
| 22 | 10200 | 12500 | 12300 | 14300 | 12800 | 10200 | 14400 | 11200 | 8180 | 10800 | 12100 | 8200 |
| 23 | 10700 | 12600 | 12400 | 12900 | 12600 | 10300 | 14400 | 11400 | 8100 | 10800 | 12100 | 7870 |
| 24 | 12100 | 12900 | 12400 | 12200 | 12200 | 10800 | 14800 | 12400 | 7890 | 10700 | 12000 | 7580 |
| 25 | 15900 | 13300 | 12400 | 11500 | 11800 | 11000 | 14600 | 14000 | 7770 | 10500 | 11800 | 7350 |
| 26 | 18200 | 14200 | 12300 | 11100 | 11500 | 11300 | 14300 | 14000 | 7620 | 9790 | 11300 | 7580 |
| 27 | 17800 | 15000 | 12500 | 10700 | 11100 | 11500 | 12900 | 13100 | 7390 | 9450 | 11300 | 7750 |
| 28 | 14500 | 15000 | 13100 | 10300 | 10800 | 12300 | 10400 | 14400 | 7540 | 9580 | 11400 | 7860 |
| 29 | 11500 | 14600 | 13700 | 10200 | --- | 12500 | 8560 | 18000 | 7560 | 9440 | 11400 | 7810 |
| 30 | 9710 | 14000 | 14100 | 10100 | --- | 12300 | 7700 | 20500 | 7780 | 9510 | 11100 | 7570 |
| 31 | 8840 | --- | 14100 | 10200 | --- | 12700 | --- | 19700 | --- | 9650 | 10800 | --- |
| TOTAL | 341880 | 357440 | 419100 | 520000 | 343910 | 375510 | 424560 | 322550 | 270 | | | |

11426000 SACRAMENTO WEIR SPILL TO YOLO BYPASS NEAR SACRAMENTO, CA

LOCATION.--Lat 38°36'25", Long 121°33'15", unsurveyed, Sacramento County, Hydrologic Unit 18020109, on right bank 100 ft upstream from weir, 3.2 mi upstream from American River, 4 mi northwest of Sacramento, and 4.2 mi upstream from Sacramento.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for water years 1940-51, published in WSP 1735. Published as Sacramento weir near Sacramento 1939-61. Gage-height records collected at same site February 1926 to September 1934 and major flood flows only October 1934 to September 1939 are contained in reports of California Department of Water Resources.

GAGE.--Water-stage recorder and concrete weir crest. Datum of gage is 3.00 ft below National Geodetic Vertical Datum of 1929. October 1939 to September 1942, October 1959 to September 1963, water-stage recorder or nonrecording gage at downstream end of weir. October 1942 to September 1959, water-stage recorder on left bank at Sacramento River opposite center of weir. February 1963 to September 1985, water-stage recorder on right bank of Sacramento River 100 ft downstream from end of weir.

REMARKS.--Crest of weir is at gage height 20.2 ft and top of movable gates at 28.0 ft. Weir consists of 48 gates each 38.1 ft long. Flow over weir enters Yolo Bypass by way of Sacramento Bypass. Flow regulated by weir gates. February 1963 to September 1985, stage was obtained by averaging the stage obtained at sites on the Sacramento River above and below the weir. See schematic diagram of lower Sacramento River basin.

COOPERATION.--Records provided by California Department of Water Resources; not reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 128,000 ft³/s, Feb. 20, 1986, gage height, 30.84 ft; maximum gage height, 33.01 ft, Dec. 23, 1955; no flow all or most of each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

11426170 LAKE VALLEY RESERVOIR NEAR CISCO, CA

LOCATION.--Lat 39°38'01", long 120°15'46", in NE 1/4 NW 1/4 sec.35, T.17 N., R.12 E., Placer County, Hydrologic Unit 18020128, on dam near left abutment on North Fork of North Fork American River and 1.3 mi west of Cisco.

DRAINAGE AREA.--4.54 mi².

PERIOD OF RECORD.--July 1987 to current year. Unpublished records for water years 1980-86 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is 5,727.4 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Prior to July 1987, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by an earthfill dam; storage began in 1911. Usable capacity, 7,960 acre-ft between gage heights 6.2 ft, natural rim of lake, and 57.5 ft, top of flashboards. Released water is diverted downstream to Lake Valley canal (station 11426190) and then to several powerplants. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of Bear and Yuba River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 8,017 acre-ft, May 8, 1989, gage height, 57.68 ft; minimum, 1,153 acre-ft, Feb. 28, 1990, gage height, 25.01 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,789 acre-ft, Oct. 1, gage height, 53.54 ft; minimum, 1,153 acre-ft, Feb. 28, gage height, 25.01 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co., dated June 18, 1965)

| | | | | | |
|----|-----|----|-------|----|-------|
| 8 | 41 | 17 | 476 | 40 | 3,455 |
| 10 | 102 | 20 | 693 | 50 | 5,810 |
| 12 | 189 | 25 | 1,152 | 59 | 8,411 |
| 14 | 304 | 30 | 1,830 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | e6789 | 5791 | 4261 | 2511 | 2262 | 1157 | 2526 | 4412 | 5510 | 5766 | 5452 | 5096 |
| 2 | e6772 | 5735 | 4209 | 2450 | 2235 | 1193 | 2570 | 4442 | 5581 | 5763 | 5437 | 5087 |
| 3 | e6755 | 5666 | 4164 | 2395 | 2215 | 1272 | 2626 | 4467 | 5628 | 5754 | 5427 | 5073 |
| 4 | e6741 | 5606 | 4123 | 2341 | 2171 | 1331 | 2680 | 4498 | 5663 | 5743 | 5418 | 5067 |
| 5 | e6729 | 5538 | 4072 | 2298 | 2128 | 1354 | 2739 | 4523 | 5688 | 5735 | 5413 | 5057 |
| 6 | 6715 | 5474 | 4014 | 2273 | 2061 | 1369 | 2796 | 4542 | 5705 | 5730 | 5398 | 5050 |
| 7 | 6710 | 5423 | 3957 | 2304 | 2014 | 1385 | 2849 | 4561 | 5732 | 5724 | 5384 | 5043 |
| 8 | 6707 | 5362 | 3898 | 2459 | 1987 | 1413 | 2894 | 4575 | 5746 | 5716 | 5369 | 5029 |
| 9 | 6701 | 5309 | 3796 | 2500 | 1960 | 1452 | 2942 | 4587 | 5757 | 5707 | 5362 | 5018 |
| 10 | 6673 | 5250 | 3735 | 2525 | 1925 | 1514 | 2994 | 4596 | 5760 | 5705 | 5350 | 5011 |
| 11 | 6629 | 5188 | 3666 | 2545 | 1900 | 1554 | 3042 | 4610 | 5768 | 5691 | 5340 | 4999 |
| 12 | 6576 | 5126 | 3611 | 2579 | 1865 | 1586 | 3105 | 4621 | 5774 | 5685 | 5328 | 4985 |
| 13 | 6529 | 5064 | 3553 | 2618 | 1825 | 1615 | 3174 | 4630 | 5777 | 5677 | 5318 | 4978 |
| 14 | 6493 | 5006 | 3496 | 2624 | 1789 | 1647 | 3252 | 4639 | 5779 | 5663 | 5297 | 4957 |
| 15 | 6451 | 4943 | 3441 | 2615 | 1750 | 1674 | 3343 | 4643 | 5785 | 5655 | 5285 | 4945 |
| 16 | 6424 | 4876 | 3369 | 2609 | 1724 | 1701 | 3425 | 4652 | 5793 | 5641 | 5266 | 4934 |
| 17 | 6372 | 4823 | 3302 | 2585 | 1664 | 1732 | 3482 | 4652 | 5799 | 5630 | 5255 | 4922 |
| 18 | 6322 | 4750 | 3239 | 2548 | 1598 | 1775 | 3555 | 4652 | 5802 | 5617 | 5236 | 4911 |
| 19 | 6270 | 4700 | 3183 | 2519 | 1521 | 1822 | 3615 | 4648 | 5813 | 5606 | 5227 | 4901 |
| 20 | 6193 | 4639 | 3130 | 2500 | 1449 | 1875 | 3676 | 4707 | 5815 | 5595 | 5216 | 4892 |
| 21 | 6190 | 4575 | 3080 | 2482 | 1382 | 1933 | 3728 | 4750 | 5815 | 5581 | 5209 | 4881 |
| 22 | 6146 | 4509 | 3024 | 2464 | 1305 | 1996 | 3792 | 4768 | 5810 | 5568 | 5206 | 4867 |
| 23 | 6223 | 4444 | 2987 | 2442 | 1253 | 2061 | 3969 | 4830 | 5807 | 5551 | 5195 | 4864 |
| 24 | 6245 | 4419 | 2936 | 2423 | 1230 | 2129 | 4058 | 4867 | 5802 | 5538 | 5176 | 4855 |
| 25 | 6217 | 4444 | 2888 | 2401 | 1198 | 2196 | 4128 | 4892 | 5799 | 5525 | 5160 | 4848 |
| 26 | 6160 | 4451 | 2838 | 2374 | 1180 | 2259 | 4205 | 4924 | 5793 | 5515 | 5149 | 4818 |
| 27 | 6108 | 4426 | 2789 | 2350 | 1166 | 2316 | 4259 | 5027 | 5788 | 5506 | 5144 | 4770 |
| 28 | 6047 | 4391 | 2725 | 2331 | 1153 | 2362 | 4304 | 5098 | 5788 | 5496 | 5135 | 4720 |
| 29 | 5986 | 4345 | 2671 | 2307 | --- | 2403 | 4338 | 5142 | 5779 | 5484 | 5124 | 4666 |
| 30 | 5925 | 4300 | 2624 | 2298 | --- | 2441 | 4375 | 5276 | 5774 | 5474 | 5117 | 4662 |
| 31 | 5862 | --- | 2567 | 2287 | --- | 2482 | --- | 5418 | --- | 5459 | 5110 | --- |
| MAX | 6789 | 5791 | 4261 | 2624 | 2262 | 2482 | 4375 | 5418 | 5815 | 5766 | 5452 | 5096 |
| MIN | 5862 | 4300 | 2567 | 2273 | 1153 | 1157 | 2526 | 4412 | 5510 | 5459 | 5110 | 4662 |
| a | 50.19 | 43.69 | 34.94 | 33.09 | 25.01 | 34.39 | 44.02 | 48.52 | 49.87 | 48.69 | 47.21 | 45.26 |
| b | -944 | -1562 | -1733 | -280 | -1134 | +1329 | +1893 | +1043 | +356 | -315 | -349 | -448 |

CAL YR 1989 MAX 8017 MIN 1751 b -531
WTR YR 1990 MAX 6789 MIN 1153 b -2144

e Estimated.

a Gage height, in feet, at end of month.

b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11426190 LAKE VALLEY CANAL NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°17'56", long 120°38'31", in SE 1/4 NE 1/4 sec.32, T.17 N., R.12 E., Placer County, Hydrologic Unit 18020128, on right bank 0.8 mi upstream from inlet to Carpenter Flat siphon and 1.5 mi east of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 5,410 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1979, on right bank 0.7 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Canal diverts from right bank of the North Fork of North Fork American River, 2.0 mi downstream from Lake Valley Reservoir (station 11426170) to the Drum Canal in Bear River basin. See schematic diagrams of Bear and Yuba River basins.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--26 years, 16.3 ft³/s, 11,810 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 75 ft³/s, Jan. 13, 1980; no flow for many days in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|--------|---------|------|-------|--------|---------|-------|-------|--------|-------|------|--------|
| 1 | .00 | 33 | 32 | 31 | 20 | 21 | 25 | 8.6 | 32 | .43 | .00 | .00 |
| 2 | .00 | 33 | 33 | 31 | 19 | 19 | 26 | 7.4 | 28 | .27 | .00 | .00 |
| 3 | .00 | 33 | 31 | 31 | 21 | 37 | 27 | 7.0 | 20 | .20 | .00 | .00 |
| 4 | .00 | 32 | 30 | 31 | 29 | 31 | 29 | 6.2 | 13 | .20 | .00 | .00 |
| 5 | .00 | 32 | 31 | 25 | 21 | 26 | 26 | 5.7 | 9.4 | .20 | .00 | 3.8 |
| 6 | .00 | 32 | 33 | 18 | 32 | 24 | 26 | 5.3 | 8.5 | .20 | .00 | 13 |
| 7 | .00 | 32 | 33 | 25 | 28 | 24 | 25 | 5.1 | 6.9 | .20 | .00 | 13 |
| 8 | .00 | 33 | 33 | 35 | 19 | 22 | 20 | 4.2 | 5.1 | .20 | .00 | 13 |
| 9 | .00 | 33 | 33 | 18 | 19 | 18 | 17 | 3.4 | 4.6 | .20 | .00 | 12 |
| 10 | 7.7 | 33 | 33 | 12 | 19 | 16 | 17 | 3.6 | 4.3 | .20 | .00 | 11 |
| 11 | 30 | 33 | 33 | 9.7 | 19 | 15 | 17 | 3.7 | 4.0 | .20 | .00 | 10 |
| 12 | 35 | 34 | 33 | 11 | 19 | 13 | 17 | 3.5 | 3.8 | .15 | .00 | 8.1 |
| 13 | 34 | 34 | 32 | 28 | 19 | 12 | 21 | 3.3 | 2.8 | .10 | .00 | 6.1 |
| 14 | 29 | 33 | 32 | 27 | 19 | 11 | 22 | 3.1 | 1.8 | .08 | .00 | 4.3 |
| 15 | 27 | 34 | 32 | 24 | 22 | 11 | 21 | 3.0 | 1.7 | .08 | .00 | 1.5 |
| 16 | 26 | 33 | 32 | 24 | 31 | 12 | 20 | 3.0 | 1.6 | .08 | .00 | .08 |
| 17 | 26 | 33 | 32 | 26 | 33 | 15 | 20 | 2.9 | 1.4 | .08 | .00 | .04 |
| 18 | 25 | 33 | 31 | 32 | 34 | 19 | 18 | 2.4 | 1.4 | .08 | .00 | .03 |
| 19 | 26 | 34 | 31 | 28 | 33 | 21 | 18 | 2.0 | 1.4 | .08 | .00 | .03 |
| 20 | 28 | 34 | 31 | 21 | 33 | 22 | 16 | 8.8 | 1.3 | 1.0 | .00 | .03 |
| 21 | 33 | 33 | 30 | 21 | 33 | 23 | 15 | 12 | 1.2 | 2.5 | .00 | .03 |
| 22 | 30 | 33 | 30 | 21 | 31 | 24 | 14 | 8.1 | 1.1 | 2.5 | .00 | .03 |
| 23 | 30 | 33 | 30 | 20 | 29 | 24 | 28 | 12 | 1.0 | 1.4 | .00 | .03 |
| 24 | 23 | 35 | 30 | 20 | 23 | 25 | 31 | 15 | .80 | .13 | .00 | .03 |
| 25 | 27 | 37 | 30 | 20 | 23 | 27 | 23 | 11 | .51 | .20 | .00 | .02 |
| 26 | 31 | 35 | 30 | 20 | 23 | 27 | 19 | 11 | .51 | .20 | .00 | 8.1 |
| 27 | 35 | 31 | 29 | 20 | 23 | 27 | 16 | 24 | .47 | .20 | .00 | 20 |
| 28 | 34 | 29 | 30 | 19 | 24 | 27 | 14 | 30 | .43 | .20 | .00 | 21 |
| 29 | 34 | 33 | 32 | 19 | --- | 23 | 12 | 23 | .43 | .20 | .00 | 21 |
| 30 | 35 | 32 | 32 | 20 | --- | 21 | 10 | 28 | .43 | .20 | .00 | 21 |
| 31 | 33 | --- | 31 | 20 | --- | 22 | --- | 33 | --- | .11 | .00 | --- |
| TOTAL | 638.70 | 992 | 975 | 707.7 | 698 | 659 | 610 | 299.3 | 159.88 | 12.07 | 0.00 | 187.25 |
| MEAN | 20.6 | 33.1 | 31.5 | 22.8 | 24.9 | 21.3 | 20.3 | 9.65 | 5.33 | .39 | .000 | 6.24 |
| MAX | 35 | 37 | 33 | 35 | 34 | 37 | 31 | 33 | 32 | 2.5 | .00 | 21 |
| MIN | .00 | 29 | 29 | 9.7 | 19 | 11 | 10 | 2.0 | .43 | .08 | .00 | .00 |
| AC-FT | 1270 | 1970 | 1930 | 1400 | 1380 | 1310 | 1210 | 594 | 317 | 24 | .00 | 371 |
| CAL YR 1989 | TOTAL | 7625.42 | MEAN | 20.9 | MAX 67 | MIN .00 | AC-FT | 15130 | | | | |
| WTR YR 1990 | TOTAL | 5938.90 | MEAN | 16.3 | MAX 37 | MIN .00 | AC-FT | 11780 | | | | |

11427000 NORTH FORK AMERICAN RIVER AT NORTH FORK DAM, CA

LOCATION.--Lat 38°56'10", long 121°01'22", in SW 1/4 NW 1/4 sec.31, T.13 N., R.9 E., Placer County, Hydrologic Unit 18020128, on left bank 50 ft upstream from spillway at North Fork Dam, 2 mi upstream from Middle Fork, and 4 mi northeast of Auburn.

DRAINAGE AREA.--342 mi².

PERIOD OF RECORD.--October 1941 to current year.

CHEMICAL DATA: Water years 1977-80.

WATER TEMPERATURE: Water years 1959-83.

SEDIMENT DATA: Water year 1980 (periodic record).

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 715.0 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records good. Minor regulation by Lake Clementine, usable capacity, 12,800 acre-ft, formed by North Fork Dam. Storage in Big Reservoir and Lake Valley Reservoir (station 11426170), combined capacity, 10,300, acre-ft upstream from station. Lake Valley Canal (station 11426190) diverts from North Fork of North Fork American River into Bear River basin for power development in powerplants of Pacific Gas & Electric Co. Combined storage and diversion have small effect on natural flow. See schematic diagrams of lower Sacramento and Bear River basins.

AVERAGE DISCHARGE.--49 years, 818 ft³/s, 592,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,400 ft³/s, Dec. 23, 1964, gage height, 11.87 ft, from rating curve extended above 24,000 ft³/s on basis of computed flow over spillway of dam at gage height 10.22 ft; no flow Aug. 27-30, Sept. 2-11, 1944; Oct. 5, 6, 1963; Nov. 7-10, 1965, caused by operation of valve in North Fork Dam.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,300 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| May 31 | 0830 | *3,130 | *3.10 | | | | |

Minimum daily, 28 ft³/s, Sept. 11-17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1 | 65 | 130 | 215 | 132 | 341 | 788 | 798 | 564 | 1520 | 122 | 51 | 33 |
| 2 | 61 | 142 | 202 | 144 | 335 | 740 | 853 | 519 | 1250 | 118 | 49 | 32 |
| 3 | 66 | 142 | 200 | 133 | 316 | 1670 | 876 | 528 | 1020 | 114 | 49 | 31 |
| 4 | 72 | 136 | 194 | 127 | 465 | 1470 | 966 | 577 | 797 | 111 | 47 | 31 |
| 5 | 65 | 136 | 194 | 124 | 445 | 1190 | 999 | 590 | 662 | 105 | 47 | 33 |
| 6 | 65 | 144 | 208 | 124 | 420 | 997 | 1010 | 587 | 574 | 103 | 45 | 33 |
| 7 | 70 | 133 | 215 | 172 | 386 | 862 | 943 | 536 | 528 | 100 | 44 | 33 |
| 8 | 70 | 122 | 197 | 1410 | 335 | 811 | 895 | 483 | 483 | 95 | 43 | 33 |
| 9 | 67 | 116 | 191 | 961 | 306 | 788 | 802 | 440 | 451 | 93 | 41 | 33 |
| 10 | 62 | 111 | 182 | 497 | 284 | 825 | 787 | 418 | 414 | 91 | 40 | 30 |
| 11 | 62 | 111 | 174 | 360 | 292 | 933 | 878 | 438 | 381 | 95 | 39 | 28 |
| 12 | 61 | 114 | 164 | 311 | 313 | 809 | 888 | 386 | 352 | 93 | 37 | 28 |
| 13 | 60 | 116 | 161 | 621 | 317 | 708 | 930 | 355 | 333 | 90 | 36 | 28 |
| 14 | 62 | 113 | 153 | 1090 | 288 | 652 | 1040 | 335 | 307 | 88 | 35 | 28 |
| 15 | 59 | 110 | 147 | 788 | 258 | 617 | 1050 | 314 | 299 | 85 | 34 | 28 |
| 16 | 59 | 107 | 145 | 577 | 352 | 622 | 1020 | 292 | 297 | 87 | 35 | 28 |
| 17 | 59 | 104 | 145 | 505 | 371 | 648 | 971 | 280 | 271 | 83 | 35 | 28 |
| 18 | 59 | 103 | 140 | 419 | 381 | 756 | 789 | 270 | 247 | 81 | 35 | 29 |
| 19 | 59 | 102 | 138 | 363 | 397 | 865 | 811 | 253 | 237 | 78 | 36 | 32 |
| 20 | 59 | 96 | 134 | 319 | 369 | 930 | 793 | 300 | 223 | 74 | 36 | 31 |
| 21 | 67 | 92 | 131 | 290 | 327 | 959 | 881 | 489 | 211 | 72 | 36 | 29 |
| 22 | 140 | 91 | 130 | 279 | 377 | 994 | 851 | 444 | 204 | 64 | 37 | 29 |
| 23 | 298 | 93 | 129 | 267 | 461 | 985 | 1190 | 451 | 193 | 56 | 36 | 29 |
| 24 | 958 | 110 | 129 | 256 | 562 | 1010 | 1430 | 715 | 177 | 54 | 34 | 30 |
| 25 | 529 | 244 | 129 | 245 | 643 | 1080 | 960 | 529 | 164 | 54 | 33 | 34 |
| 26 | 328 | 1350 | 130 | 238 | 700 | 1070 | 836 | 440 | 157 | 55 | 33 | 39 |
| 27 | 232 | 516 | 130 | 232 | 761 | 967 | 815 | 644 | 148 | 55 | 34 | 39 |
| 28 | 204 | 326 | 127 | 220 | 795 | 915 | 863 | 1320 | 137 | 54 | 36 | 39 |
| 29 | 179 | 261 | 122 | 210 | --- | 817 | 832 | 898 | 128 | 53 | 35 | 37 |
| 30 | 158 | 234 | 121 | 274 | --- | 759 | 659 | 790 | 125 | 52 | 35 | 35 |
| 31 | 135 | --- | 118 | 316 | --- | 755 | --- | 2380 | --- | 52 | 33 | --- |
| TOTAL | 4490 | 5705 | 4895 | 12004 | 11597 | 27992 | 27416 | 17565 | 12290 | 2527 | 1196 | 950 |
| MEAN | 145 | 190 | 158 | 387 | 414 | 903 | 914 | 567 | 410 | 81.5 | 38.6 | 31.7 |
| MAX | 958 | 1350 | 215 | 1410 | 795 | 1670 | 1430 | 2380 | 1520 | 122 | 51 | 39 |
| MIN | 59 | 91 | 118 | 124 | 258 | 617 | 659 | 253 | 125 | 52 | 33 | 28 |
| AC-FT | 8910 | 11320 | 9710 | 23810 | 23000 | 55520 | 54380 | 34840 | 24380 | 5010 | 2370 | 1880 |

CAL YR 1989 TOTAL 249905 MEAN 685 MAX 8780 MIN 44 AC-FT 495700
WTR YR 1990 TOTAL 128627 MEAN 352 MAX 2380 MIN 28 AC-FT 255100

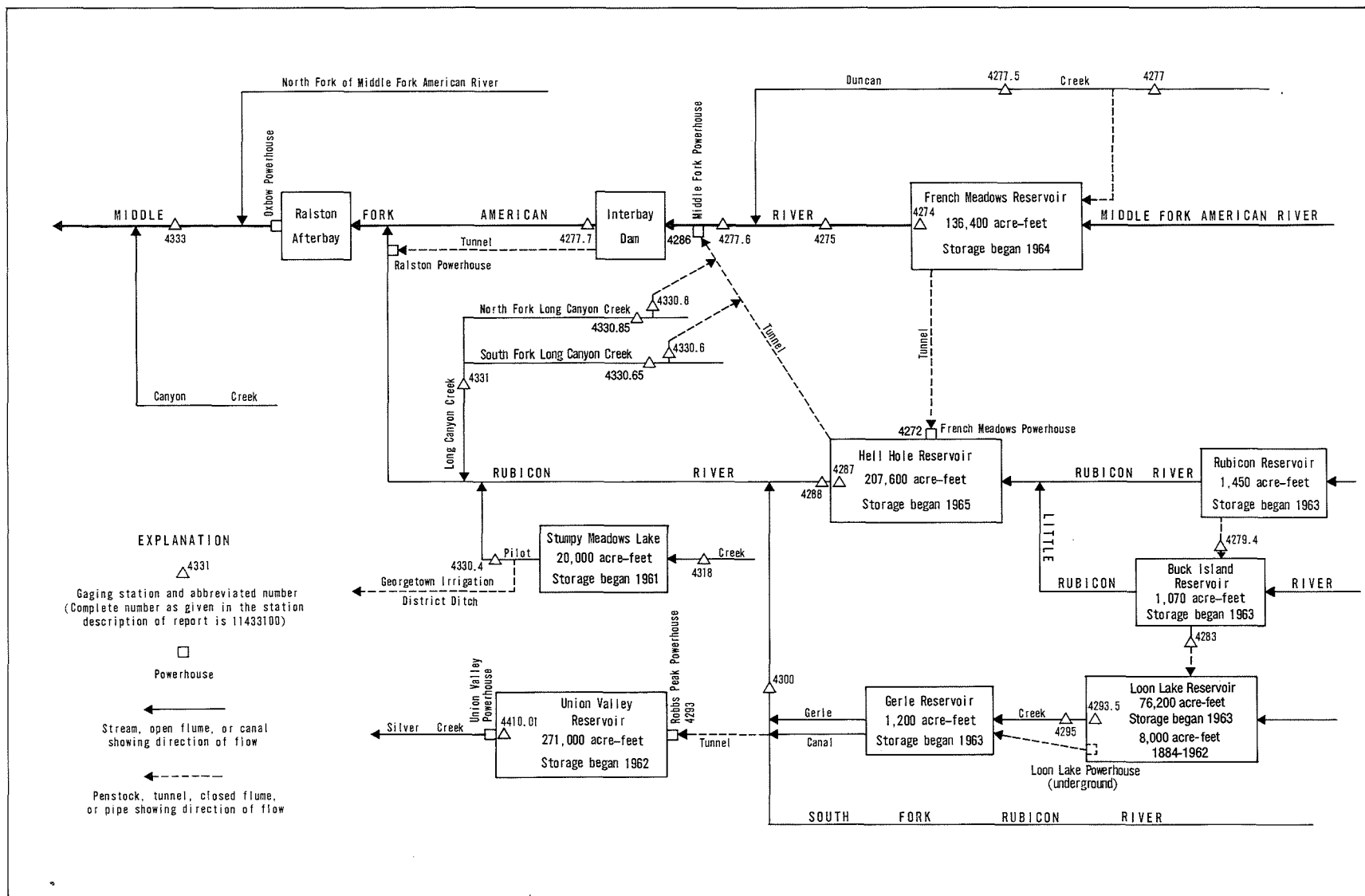


Figure 37. Diversions and storage in Middle Fork American and Rubicon River basins.

11427400 FRENCH MEADOWS RESERVOIR NEAR FORESTHILL, CA

LOCATION.--Lat 39°06'32", long 120°25'49", in SW 1/4 NE 1/4 sec.32, T.15 N., R.14 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on left bank 2.2 mi upstream from dam on Middle Fork American River, 6.9 mi upstream from Chipmunk Creek, and 21 mi northeast of Foresthill.

DRAINAGE AREA.--47.0 mi².

PERIOD OF RECORD.--December 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Placer County Water Agency).

REMARKS.--Reservoir is formed by rockfill dam with earth core. Storage began Dec. 21, 1964. Usable capacity, 125,601 acre-ft between elevations 5,125 ft, minimum operating level, and 5,263 ft, top of radial gates. Dead storage, 10,804 acre-ft. Reservoir is used to store water for hydroelectric power. Up to 400 ft³/s diverted from Duncan Creek through a tunnel to reservoir. Water is released through a tunnel to French Meadows powerplant at Hell Hole Reservoir (station 11428700) on the Rubicon River; releases began Dec. 13, 1965. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 137,700 acre-ft, May 19, 1966, elevation, 5,263.9 ft; minimum since reservoir first filled, 37,722 acre-ft, Nov. 20, 1977, elevation, 5,170.86 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 114,500 acre-ft, June 11, elevation, 5,246.8 ft; minimum, 48,500 acre-ft, Sept. 30, elevation 5,184.5 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on a survey by Placer County Water Agency in 1965)

| | | | |
|-------|--------|-------|---------|
| 5,125 | 10,800 | 5,200 | 62,400 |
| 5,130 | 13,100 | 5,230 | 94,100 |
| 5,150 | 23,700 | 5,270 | 146,500 |
| 5,170 | 37,100 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 2400 HOURS

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 81200 | 68100 | 60500 | 55800 | 59800 | 62400 | 74900 | 97100 | 110600 | 105600 | 85700 | 64100 |
| 2 | 80900 | 67500 | 60500 | 55900 | 59800 | 62600 | 75600 | 97600 | 111400 | 105000 | 85000 | 63300 |
| 3 | 80100 | 67100 | 60500 | 55900 | 60000 | 63100 | 76200 | 97900 | 112000 | 104400 | 84300 | 62600 |
| 4 | 79500 | 67100 | 60300 | 55900 | 60000 | 63600 | 77100 | 98400 | 112500 | 103800 | 83600 | 62100 |
| 5 | 79000 | 67200 | 59700 | 55900 | 60100 | 63800 | 77800 | 98900 | 112900 | 103200 | 83000 | 61300 |
| 6 | 78500 | 66800 | 59000 | 55900 | 60200 | 64000 | 78600 | 99400 | 113300 | 102600 | 82300 | 60700 |
| 7 | 78500 | 66100 | 58400 | 56200 | 60200 | 64300 | 79500 | 99700 | 113600 | 102000 | 81700 | 59900 |
| 8 | 78400 | 65500 | 58000 | 57000 | 60300 | 64600 | 80300 | 100100 | 113900 | 101400 | 81000 | 59200 |
| 9 | 78100 | 64800 | 58100 | 57200 | 60300 | 64800 | 80900 | 100400 | 114300 | 100700 | 80300 | 58500 |
| 10 | 77500 | 64500 | 58100 | 57400 | 60400 | 65100 | 81500 | 100800 | 114400 | 100100 | 79600 | 57800 |
| 11 | 77000 | 64500 | 57600 | 57500 | 60500 | 65400 | 82300 | 101000 | 114300 | 99500 | 78900 | 57000 |
| 12 | 76300 | 64600 | 57000 | 57700 | 60600 | 65600 | 83100 | 101400 | 113900 | 98800 | 78200 | 56300 |
| 13 | 75800 | 64600 | 56300 | 58000 | 60600 | 65800 | 83900 | 101500 | 113500 | 98200 | 77500 | 55600 |
| 14 | 75800 | 64600 | 55700 | 58200 | 60700 | 66000 | 84800 | 101700 | 113000 | 97600 | 76700 | 54900 |
| 15 | 75800 | 64600 | 55400 | 58300 | 60700 | 66100 | 85700 | 102000 | 112900 | 96900 | 76000 | 54100 |
| 16 | 75400 | 64200 | 55400 | 58500 | 60900 | 66300 | 86600 | 102100 | 113100 | 96300 | 75400 | 53400 |
| 17 | 74800 | 63900 | 55400 | 58500 | 61000 | 66600 | 87300 | 102400 | 113300 | 95600 | 74700 | 52600 |
| 18 | 74000 | 63900 | 55500 | 58600 | 61100 | 66900 | 87900 | 102500 | 113000 | 95000 | 73900 | 52300 |
| 19 | 73400 | 63900 | 55500 | 58700 | 61100 | 67400 | 88600 | 102600 | 112500 | 94300 | 73200 | 52200 |
| 20 | 73000 | 63500 | 55500 | 58800 | 61200 | 67900 | 89300 | 103100 | 112000 | 93600 | 72600 | 52100 |
| 21 | 73000 | 62800 | 55500 | 58900 | 61200 | 68400 | 90100 | 103300 | 111500 | 92900 | 71800 | 51500 |
| 22 | 73100 | 62400 | 55600 | 58900 | 61300 | 69000 | 90700 | 103600 | 111000 | 92200 | 71100 | 51500 |
| 23 | 73500 | 62400 | 55600 | 59000 | 61400 | 69600 | 92000 | 104200 | 110300 | 91500 | 70400 | 51500 |
| 24 | 73200 | 62500 | 55600 | 59100 | 61400 | 70200 | 92900 | 104500 | 109800 | 91000 | 69700 | 51200 |
| 25 | 72600 | 63000 | 55700 | 59200 | 61500 | 70900 | 93600 | 104800 | 109200 | 90400 | 69000 | 50500 |
| 26 | 72100 | 63100 | 55700 | 59300 | 61700 | 71600 | 94400 | 105300 | 108700 | 89700 | 68300 | 49800 |
| 27 | 71500 | 62800 | 55700 | 59300 | 61900 | 72200 | 95000 | 106200 | 108100 | 89000 | 67600 | 49100 |
| 28 | 70800 | 62100 | 55700 | 59300 | 62200 | 72700 | 95700 | 107000 | 107500 | 88400 | 66800 | 48600 |
| 29 | 70200 | 61400 | 55700 | 59300 | --- | 73200 | 96300 | 107600 | 106900 | 87700 | 66100 | 48600 |
| 30 | 69500 | 60800 | 55800 | 59600 | --- | 73700 | 96800 | 108700 | 106200 | 87000 | 65400 | 48500 |
| 31 | 68900 | --- | 55800 | 59700 | --- | 74400 | --- | 109700 | --- | 86400 | 64700 | --- |
| MAX | 81200 | 68100 | 60500 | 59700 | 62200 | 74400 | 96800 | 109700 | 114400 | 105600 | 85700 | 64100 |
| MIN | 68900 | 60800 | 55400 | 55800 | 59800 | 62400 | 74900 | 97100 | 106200 | 86400 | 64700 | 48500 |
| a | 5206.6 | 5198.3 | 5192.8 | 5197.1 | 5199.7 | 5212.0 | 5232.3 | 5243.0 | 5240.2 | 5223.2 | 5202.4 | 5184.5 |
| b | -12300 | -8100 | -5000 | +3900 | +2500 | +12200 | +22400 | +12900 | -3500 | -19800 | -21700 | -16200 |

CAL YR 1989 b -7900
WTR YR 1990 b -32700

a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.

11427500 MIDDLE FORK AMERICAN RIVER AT FRENCH MEADOWS, CA

LOCATION.--Lat 39°06'35", long 120°28'49", in SW 1/4 NW 1/4 sec.36, T.15 N., R.13 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on left bank 0.6 mi downstream from French Meadows Dam, 4.1 mi upstream from Chipmunk Creek, and 14 mi south of Cisco.

DRAINAGE AREA.--47.9 mi².

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1445: 1953-54. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,920 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1962, at site 0.8 mi upstream at different datum.

REMARKS.--Considerable regulation by French Meadows Reservoir (station 11427400) 0.6 mi upstream beginning December 1964. Water diverted into basin from Duncan Creek to French Meadows Reservoir since December 1964. Water diverted out of basin from French Meadows Reservoir through French Meadows powerplant (station 11427200) to Hell Hole Reservoir (station 11428700) since December 1965. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--13 years (water years 1952-64, prior to regulation by French Meadows Reservoir), 149 ft³/s, 107,900 acre-ft/yr; 26 years (water years 1965-90), 20.7 ft³/s, 15,000 acre-ft/yr.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,500 ft³/s, Jan. 31, 1963, gage height, 14.20 ft, from rating curve extended above 1,100 ft³/s on basis of peak flow at former site; minimum, 0.3 ft³/s, Oct. 4, 5, 21-25, 1960, Oct. 5, 6, 1961. Maximum discharge since construction of French Meadows Dam in 1964, 2,870 ft³/s, Mar. 8, 1986, gage height, 10.4 ft, from floodmarks, from flow over spillway of French Meadows Reservoir; minimum daily, 0.8 ft³/s, Oct. 22-25, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18 ft³/s, Nov. 25, gage height, 4.98 ft; minimum daily, 8.7 ft³/s, on several days during August.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| 1 | 9.6 | 9.4 | 9.7 | 9.0 | 9.6 | 10 | 12 | 9.2 | 12 | 9.5 | 8.9 | 9.8 |
| 2 | 9.6 | 9.4 | 9.5 | 8.9 | 9.6 | 11 | 12 | 9.2 | 11 | 9.3 | 8.9 | 9.8 |
| 3 | 9.6 | 9.4 | 9.5 | 8.9 | 9.6 | 15 | 11 | 9.2 | 11 | 9.2 | 8.9 | 9.8 |
| 4 | 9.6 | 9.4 | 9.5 | 8.9 | 9.6 | 13 | 11 | 9.0 | 11 | 9.2 | 8.9 | 9.8 |
| 5 | 9.5 | 9.4 | 9.5 | 8.9 | 9.5 | 12 | 10 | 8.9 | 11 | 9.2 | 8.9 | 9.8 |
| 6 | 9.4 | 9.4 | 9.5 | 8.9 | 9.5 | 12 | 10 | 8.9 | 11 | 9.3 | 8.8 | 9.6 |
| 7 | 9.4 | 9.4 | 9.5 | 10 | 9.5 | 12 | 10 | 8.9 | 10 | 9.5 | 8.7 | 9.5 |
| 8 | 9.4 | 9.4 | 9.5 | 12 | 9.5 | 12 | 11 | 8.9 | 9.8 | 9.5 | 8.7 | 9.5 |
| 9 | 9.4 | 9.4 | 9.5 | 10 | 9.5 | 12 | 10 | 9.3 | 9.8 | 9.5 | 8.8 | 9.5 |
| 10 | 9.4 | 9.4 | 9.5 | 9.7 | 9.6 | 12 | 10 | 9.8 | 9.6 | 9.5 | 8.9 | 9.5 |
| 11 | 9.4 | 9.4 | 9.2 | 9.5 | 9.7 | 11 | 9.9 | 9.8 | 9.5 | 9.5 | 8.9 | 9.5 |
| 12 | 9.4 | 9.4 | 9.2 | 9.7 | 9.8 | 11 | 9.8 | 9.8 | 9.5 | 9.5 | 8.9 | 9.5 |
| 13 | 9.4 | 9.4 | 9.2 | 11 | 9.7 | 11 | 9.6 | 9.8 | 9.5 | 9.5 | 8.9 | 9.3 |
| 14 | 9.4 | 9.4 | 9.2 | 10 | 9.5 | 11 | 9.5 | 9.8 | 9.5 | 9.5 | 8.9 | 9.2 |
| 15 | 9.4 | 9.4 | 9.2 | 10 | 9.5 | 11 | 9.5 | 9.8 | 9.6 | 9.5 | 8.7 | 9.5 |
| 16 | 9.4 | 9.4 | 9.2 | 10 | e9.5 | 11 | 9.6 | 9.8 | 9.5 | 9.5 | 8.7 | 9.8 |
| 17 | 9.4 | 9.4 | 9.2 | 9.8 | e9.5 | 12 | 9.5 | 9.8 | 9.5 | 9.5 | 8.7 | 9.8 |
| 18 | 9.4 | 9.4 | 9.2 | 9.8 | 9.5 | 12 | 9.5 | 9.8 | 9.5 | 9.5 | 8.7 | 9.8 |
| 19 | 9.4 | 9.4 | 9.2 | 9.7 | 9.5 | 12 | 9.5 | 9.8 | 9.5 | 9.5 | 9.3 | 10 |
| 20 | 9.4 | 9.4 | 9.0 | 9.5 | 9.5 | 13 | 9.5 | 10 | 9.5 | 9.5 | 9.8 | 10 |
| 21 | 9.6 | 9.4 | 8.9 | 9.5 | 9.7 | 13 | 9.3 | 10 | 9.5 | 9.6 | 9.8 | 10 |
| 22 | 9.4 | 9.4 | 8.9 | 9.5 | 9.9 | 13 | 9.3 | 9.9 | 9.5 | 9.5 | 9.7 | 10 |
| 23 | 11 | 9.4 | 8.9 | 9.5 | 9.8 | 13 | 11 | 11 | 9.3 | 9.2 | 9.8 | 10 |
| 24 | 11 | 9.9 | 8.9 | 9.5 | 9.8 | 13 | 10 | 10 | 9.2 | 9.0 | 9.8 | 10 |
| 25 | 10 | 12 | 8.9 | 9.5 | 9.9 | 13 | 9.8 | 10 | 9.2 | 8.9 | 9.8 | 9.8 |
| 26 | 9.7 | 11 | 8.9 | 9.5 | 10 | 13 | 9.5 | 10 | 9.2 | 8.9 | 9.8 | 9.8 |
| 27 | 9.6 | 10 | 8.9 | 9.5 | 10 | 13 | 9.5 | 11 | 9.2 | 8.9 | 9.8 | 9.8 |
| 28 | 9.6 | 10 | 8.9 | 9.5 | 10 | 12 | 9.5 | 11 | 9.2 | 8.9 | 9.8 | 9.8 |
| 29 | 9.4 | 9.8 | 8.9 | 9.5 | --- | 12 | 9.5 | 11 | 9.5 | 8.9 | 9.8 | 9.8 |
| 30 | 9.4 | 9.8 | 8.9 | 9.7 | --- | 12 | 9.3 | 12 | 9.5 | 8.9 | 9.8 | 9.8 |
| 31 | 9.4 | --- | 8.9 | 9.5 | --- | 12 | --- | 14 | --- | 8.9 | 9.8 | --- |
| TOTAL | 297.0 | 288.7 | 284.9 | 298.9 | 270.3 | 375 | 299.6 | 309.4 | 294.6 | 288.3 | 285.6 | 291.8 |
| MEAN | 9.58 | 9.62 | 9.19 | 9.64 | 9.65 | 12.1 | 9.99 | 9.98 | 9.82 | 9.30 | 9.21 | 9.73 |
| MAX | 11 | 12 | 9.7 | 12 | 10 | 15 | 12 | 14 | 12 | 9.6 | 9.8 | 10 |
| MIN | 9.4 | 9.4 | 8.9 | 8.9 | 9.5 | 10 | 9.3 | 8.9 | 9.2 | 8.9 | 8.7 | 9.2 |
| AC-FT | 589 | 573 | 565 | 593 | 536 | 744 | 594 | 614 | 584 | 572 | 566 | 579 |
| a | 13710 | 9190 | 6050 | 0 | 13 | 19 | 0 | 0 | 11160 | 20840 | 21090 | 14980 |

CAL YR 1989 TOTAL 3374.0 MEAN 9.24 MAX 29 MIN 5.5 AC-FT 6690
WTR YR 1990 TOTAL 3584.1 MEAN 9.82 MAX 15 MIN 8.7 AC-FT 7110

e Estimated

a Diversion, in acre-feet, from French Meadows Reservoir to Hell Hole Reservoir through French Meadows powerplant, provided by Placer County Water Agency.

11427700 DUNCAN CREEK NEAR FRENCH MEADOWS, CA

LOCATION.--Lat 39°08'09", long 120°28'39", in NE 1/4 NW 1/4 sec.24, T.15 N., R.13 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on left bank 0.2 mi upstream from diversion dam, 0.5 mi downstream from Little Duncan Creek, 2 mi northwest of French Meadows, and 20 mi northeast of Foresthill.

DRAINAGE AREA.--9.94 mi².

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,270 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 3, 1965, at site 150 ft upstream at datum 9.56 ft higher.

REMARKS.--Station is upstream from all diversion to French Meadows Reservoir. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--30 years, 37.1 ft³/s, 26,880 acre-ft/yr.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,650 ft³/s, Dec. 22, 1964, gage height, 10.6 ft, from floodmarks, from rating curve extended above 400 ft³/s on basis of computation of flow over diversion dam; minimum daily, 0.10 ft³/s, several days during July and August 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Jan. 8 | 0445 | *193 | *7.02 | | | | |

Minimum daily, 0.55 ft³/s, Sept. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|-------|-------|-------|------|------|------|-------|------|-------|-------|
| 1 | 1.3 | 5.6 | 6.2 | e3.6 | e7.9 | 18 | 54 | 40 | 93 | 4.5 | 1.2 | .80 |
| 2 | 1.5 | 5.4 | 6.5 | e3.6 | e7.9 | 23 | 58 | 38 | 72 | 5.2 | 1.2 | .78 |
| 3 | 1.6 | 5.2 | 6.7 | e3.6 | 7.8 | 40 | 65 | 38 | 55 | 4.5 | 1.1 | .76 |
| 4 | 1.3 | 5.6 | 7.4 | e3.4 | e7.3 | 31 | 72 | 38 | 44 | 4.2 | 1.1 | .72 |
| 5 | 1.1 | 5.6 | 8.5 | e3.4 | e7.3 | 26 | 77 | 36 | 36 | 4.0 | 1.1 | .66 |
| 6 | 1.0 | 5.1 | 8.3 | 3.3 | 7.7 | 24 | 77 | 33 | 32 | 3.8 | 1.0 | .62 |
| 7 | 1.0 | 4.5 | 7.3 | 47 | e7.3 | 25 | 73 | 29 | 28 | 3.7 | .95 | .61 |
| 8 | .98 | 4.1 | 6.8 | 100 | 7.3 | 27 | 73 | 25 | 24 | 3.5 | .95 | .61 |
| 9 | .97 | 3.9 | 6.5 | 28 | 7.3 | 27 | 65 | 23 | 21 | 3.2 | .95 | .61 |
| 10 | .91 | 4.1 | 6.2 | 19 | 8.4 | 26 | 69 | 22 | 19 | 3.0 | .88 | .59 |
| 11 | .90 | 4.5 | 5.7 | 16 | 9.4 | 22 | 74 | 20 | 17 | 2.9 | .85 | .58 |
| 12 | .87 | 4.4 | e5.5 | 17 | 9.6 | 20 | 77 | 18 | 16 | 2.7 | .86 | .57 |
| 13 | .87 | 4.0 | 5.2 | 21 | 8.6 | 19 | 88 | 16 | 15 | 2.6 | .83 | .57 |
| 14 | .86 | 3.7 | e5.1 | 17 | e7.3 | 18 | 97 | 15 | 14 | 3.2 | .79 | .57 |
| 15 | .86 | 3.4 | 5.1 | 15 | e7.3 | 18 | 97 | 14 | 14 | 2.9 | .81 | .57 |
| 16 | .86 | 3.3 | 5.1 | 14 | e7.0 | 19 | 94 | 13 | 13 | 2.5 | .82 | .60 |
| 17 | .86 | 3.1 | e4.7 | e12 | e7.0 | 23 | 80 | 12 | 12 | 2.3 | .88 | .58 |
| 18 | .86 | 3.0 | e4.7 | e11 | e7.0 | 30 | 69 | 11 | 11 | 2.1 | .91 | .58 |
| 19 | .85 | 2.8 | e4.9 | e11 | e7.0 | 34 | 66 | 10 | 10 | 2.0 | .95 | .58 |
| 20 | .86 | 2.7 | e4.7 | e11 | e7.0 | 40 | 61 | 24 | 9.1 | 1.9 | 1.1 | .56 |
| 21 | 5.3 | 2.6 | e4.2 | e11 | 7.3 | 44 | 57 | 27 | 8.4 | 1.8 | 1.1 | .55 |
| 22 | 6.3 | 2.5 | e4.2 | e11 | 8.5 | 47 | 56 | 21 | 7.8 | 1.7 | .97 | .55 |
| 23 | 33 | 2.5 | e4.1 | 10 | 9.6 | 51 | 138 | 31 | 7.2 | 1.6 | .89 | .75 |
| 24 | 16 | 5.8 | 4.0 | 10 | 10 | 58 | 98 | 30 | 6.7 | 1.5 | .84 | 2.1 |
| 25 | 9.4 | 14 | 4.1 | 10 | 12 | 63 | 80 | 25 | 6.4 | 1.5 | .84 | 1.5 |
| 26 | 6.8 | 11 | 4.1 | 9.6 | 15 | 62 | 74 | 28 | 5.9 | 1.5 | .94 | 2.0 |
| 27 | 7.0 | 7.3 | 4.0 | e7.9 | 17 | 58 | 72 | 77 | 5.6 | 1.5 | .96 | 1.3 |
| 28 | 6.6 | e6.5 | e3.8 | e8.2 | 19 | 54 | 68 | 76 | 5.3 | 1.4 | .88 | .99 |
| 29 | 5.8 | e6.2 | e3.6 | 8.3 | --- | 49 | 55 | 54 | 5.0 | 1.4 | .82 | .88 |
| 30 | 5.5 | e6.0 | e3.6 | e8.2 | --- | 47 | 46 | 98 | 4.7 | 1.3 | .82 | .79 |
| 31 | 5.6 | --- | e3.6 | e7.9 | --- | 49 | --- | 118 | --- | 1.2 | .81 | --- |
| TOTAL | 127.61 | 148.4 | 164.4 | 462.0 | 251.8 | 1092 | 2230 | 1060 | 618.1 | 81.1 | 29.10 | 23.93 |
| MEAN | 4.12 | 4.95 | 5.30 | 14.9 | 8.99 | 35.2 | 74.3 | 34.2 | 20.6 | 2.62 | .94 | .80 |
| MAX | 33 | 14 | 8.5 | 100 | 19 | 63 | 138 | 118 | 93 | 5.2 | 1.2 | 2.1 |
| MIN | .85 | 2.5 | 3.6 | 3.3 | 7.0 | 18 | 46 | 10 | 4.7 | 1.2 | .79 | .55 |
| AC-FT | 253 | 294 | 326 | 916 | 499 | 2170 | 4420 | 2100 | 1230 | 161 | 58 | 47 |

CAL YR 1989 TOTAL 13502.91 MEAN 37.0 MAX 555 MIN .60 AC-FT 26780
WTR YR 1990 TOTAL 6288.44 MEAN 17.2 MAX 138 MIN .55 AC-FT 12470

e Estimated.

11427750 DUNCAN CREEK BELOW DIVERSION DAM, NEAR FRENCH MEADOWS, CA

LOCATION.--Lat 39°07'59", long 120°28'58", in NE 1/4 SE 1/4 sec.23, T.15 N., R.13 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on right bank 800 ft downstream from unnamed right bank tributary, 1,000 ft downstream from Duncan Creek diversion dam, and 20 mi northeast of Foresthill.

DRAINAGE AREA.--10.5 mi².

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 5,210 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Natural flow affected by transmountain diversion through Duncan Creek diversion tunnel to French Meadows Reservoir (station 11427400). Maximum design flow of tunnel is 400 ft³/s. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--26 years, 13.8 ft³/s, 10,000 acre-ft/yr.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,640 ft³/s, Dec. 22, 1964, gage height, 8.74 ft, in gage well, 10.0 ft, from floodmarks, from rating curve extended above 400 ft³/s on basis of computation of peak flow over diversion dam; no flow at times in 1965-66.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 21 ft³/s, Jan. 8, gage height, 1.87 ft; minimum daily, 0.50 ft³/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|
| 1 | 1.3 | 5.7 | 6.8 | 4.2 | e8.8 | 15 | 9.4 | 9.6 | 14 | 5.2 | 1.3 | .70 |
| 2 | 1.5 | 5.6 | 7.1 | 4.1 | 9.1 | 15 | 9.7 | 9.4 | 12 | 5.8 | 1.2 | .68 |
| 3 | 1.7 | 5.2 | 7.3 | 4.0 | e9.1 | 18 | 10 | 9.3 | 11 | 5.1 | 1.2 | .65 |
| 4 | 1.4 | 5.6 | 7.9 | 4.1 | e9.1 | 16 | 10 | 9.3 | 11 | 4.7 | 1.2 | .63 |
| 5 | 1.2 | 5.7 | 9.0 | 4.0 | e8.8 | 15 | 10 | 9.3 | 11 | 4.5 | 1.1 | .59 |
| 6 | 1.2 | 5.1 | 9.2 | 3.9 | e8.6 | 13 | 9.9 | 9.2 | 11 | 4.3 | 1.0 | .53 |
| 7 | 1.2 | 4.5 | 8.1 | 8.6 | e8.6 | 11 | 9.9 | 9.1 | 10 | 4.0 | .97 | .52 |
| 8 | 1.1 | 4.1 | 7.7 | 17 | e8.3 | 11 | 9.9 | 9.1 | 10 | 3.9 | .97 | .53 |
| 9 | 1.1 | 3.9 | 7.3 | 13 | e8.3 | 11 | 9.6 | 9.2 | 10 | 3.6 | .96 | .55 |
| 10 | 1.0 | 4.1 | 7.1 | 12 | 9.2 | 11 | 9.6 | 9.6 | 10 | 3.4 | .88 | .54 |
| 11 | .97 | 4.5 | 6.5 | 12 | 10 | 11 | 9.5 | 9.7 | 9.9 | 3.2 | .83 | .51 |
| 12 | .97 | 4.3 | 6.1 | 12 | 11 | 10 | 10 | 9.6 | 9.9 | 3.0 | .82 | .51 |
| 13 | .97 | 4.0 | 6.1 | 12 | 10 | 9.8 | 10 | 9.6 | 9.8 | 2.8 | .79 | .50 |
| 14 | .97 | 3.6 | 5.9 | 12 | e8.1 | 9.6 | 10 | 9.6 | 9.6 | 3.5 | .75 | .51 |
| 15 | .97 | 3.3 | 5.9 | 12 | e7.8 | 9.6 | 10 | 9.6 | 9.6 | 3.3 | .75 | .51 |
| 16 | .97 | 3.2 | 6.0 | 12 | e7.8 | 9.7 | 10 | 9.6 | 9.6 | 2.8 | .76 | .53 |
| 17 | .91 | 3.1 | 5.5 | 12 | e7.8 | 10 | 10 | 9.4 | 9.6 | 2.5 | .81 | .55 |
| 18 | .90 | 3.0 | 5.4 | 12 | e7.8 | 11 | 9.9 | 9.3 | 9.6 | 2.3 | .87 | .55 |
| 19 | .89 | 2.8 | 5.1 | e12 | e7.8 | 12 | 10 | 9.2 | 9.6 | 2.2 | .90 | .55 |
| 20 | .88 | 2.6 | 5.0 | e12 | e7.8 | 12 | 9.9 | 9.8 | 9.6 | 2.1 | 1.0 | .56 |
| 21 | 3.9 | 2.5 | 4.9 | 12 | e9.1 | 12 | 9.9 | 9.6 | 9.4 | 1.9 | 1.1 | .52 |
| 22 | 7.7 | 2.4 | 4.7 | 12 | 9.7 | 12 | 9.9 | 9.6 | 8.6 | 1.8 | .95 | .52 |
| 23 | 9.1 | 2.4 | 4.7 | 11 | 11 | 12 | 11 | 9.9 | 8.1 | 1.8 | .84 | .70 |
| 24 | 11 | 5.8 | 4.8 | 11 | 12 | 12 | 11 | 10 | 7.6 | 1.7 | .77 | 2.3 |
| 25 | 10 | 8.7 | 4.8 | 11 | 13 | 12 | 11 | 9.9 | 7.2 | 1.7 | .76 | 1.8 |
| 26 | 7.2 | 11 | 4.8 | 11 | 14 | 11 | 10 | 9.9 | 6.9 | 1.7 | .86 | 2.3 |
| 27 | 7.1 | 8.1 | 4.7 | 9.9 | 15 | 11 | 9.9 | 12 | 6.5 | 1.6 | .90 | 1.5 |
| 28 | 6.7 | 7.1 | 4.5 | 9.4 | 15 | 10 | 9.9 | 12 | 6.1 | 1.6 | .84 | 1.1 |
| 29 | 6.2 | 7.0 | 4.3 | e9.3 | --- | 9.9 | 9.8 | 12 | 5.8 | 1.5 | .76 | .95 |
| 30 | 5.8 | 6.8 | 4.3 | e9.1 | --- | 9.6 | 9.6 | 13 | 5.5 | 1.4 | .73 | .85 |
| 31 | 5.8 | --- | 4.2 | e8.8 | --- | 9.5 | --- | 16 | --- | 1.3 | .72 | --- |
| TOTAL | 102.60 | 145.7 | 185.7 | 309.4 | 272.6 | 361.7 | 299.3 | 312.4 | 278.5 | 90.2 | 28.29 | 23.74 |
| MEAN | 3.31 | 4.86 | 5.99 | 9.98 | 9.74 | 11.7 | 9.98 | 10.1 | 9.28 | 2.91 | .91 | .79 |
| MAX | 11 | 11 | 9.2 | 17 | 15 | 18 | 11 | 16 | 14 | 5.8 | 1.3 | 2.3 |
| MIN | .88 | 2.4 | 4.2 | 3.9 | 7.8 | 9.5 | 9.4 | 9.1 | 5.5 | 1.3 | .72 | .50 |
| AC-FT | 204 | 289 | 368 | 614 | 541 | 717 | 594 | 620 | 552 | 179 | 56 | 47 |

CAL YR 1989 TOTAL 2371.72 MEAN 6.50 MAX 246 MIN .56 AC-FT 4700
WTR YR 1990 TOTAL 2410.13 MEAN 6.60 MAX 18 MIN .50 AC-FT 4780

e Estimated.

| | | | | | |
|-------------|-------------|-----------|---------|--------|-------------|
| CAL YR 1989 | TOTAL 29663 | MEAN 81.3 | MAX 771 | MIN 15 | AC-FT 58840 |
| WTR YR 1990 | TOTAL 16616 | MEAN 45.5 | MAX 220 | MIN 14 | AC-FT 32960 |

11427770 MIDDLE FORK AMERICAN RIVER BELOW INTERBAY DAM, NEAR FORESTHILL, CA

LOCATION.--Lat 39°01'35", long 120°36'09", in SW 1/4 SE 1/4 sec.26, T.14 N., R.12 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on right bank 500 ft downstream from Interbay Dam, 3.3 mi upstream from Big Mosquito Creek, and 10.6 mi east of Foresthill.

DRAINAGE AREA.--89.1 mi².

PERIOD OF RECORD.--October 1965 to current year (since October 1985, operated as low-flow station only).

GAGE.--Acoustic-velocity meter system. Elevation of gage is 2,470 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to February 1986, water-stage recorder at same site. March 1986 to September 1987, nonrecording gage and V-notch sharp-crested weir at same site and datum as previous gage.

REMARKS.--Flow regulated by French Meadows Reservoir (station 11427400) and after Aug. 22, 1966, by Interbay Reservoir (usable capacity, 130 acre-ft between normal operating limits) 500 ft upstream. Water is diverted out of the basin from French Meadows Reservoir to Hell Hole Reservoir (station 11428700) and from Interbay Reservoir to Ralston powerplant (station 11427765). Water is diverted into the basin from Hell Hole Reservoir to Middle Fork powerplant (station 11428600) and through South Fork and Middle Fork Long Canyon Creek Diversion Tunnels (stations 11433060 and 11433080). See schematic diagram of Middle Fork American and Rubicon River basins. Beginning October 1985, only flows less than 35 ft³/s are computed.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--20 years (water years 1966-85), 66.2 ft³/s, 47,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1966-85), 9,900 ft³/s, Jan. 13, 1980, gage height, 7.95 ft; minimum daily, 1.0 ft³/s, Oct. 25-30, 1966, Jan. 19, 1967.

EXTREMES FOR CURRENT YEAR.--Minimum daily, 16 ft³/s, Aug. 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|-------|-------|-------|-------|
| 1 | 22 | 25 | 24 | 24 | 24 | 24 | 25 | 24 | 24 | 24 | 19 | 17 |
| 2 | 21 | 25 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 19 | 17 |
| 3 | 21 | 25 | 24 | 24 | 24 | 24 | 25 | 24 | 24 | 24 | 19 | 17 |
| 4 | 20 | 25 | 24 | 24 | 24 | 24 | 25 | 26 | 24 | 24 | 19 | 17 |
| 5 | 20 | 25 | 24 | 24 | 24 | 24 | 24 | 26 | 26 | 24 | 19 | 17 |
| 6 | 20 | 25 | 24 | 24 | 24 | 24 | 25 | 24 | 26 | 24 | 19 | 17 |
| 7 | 19 | 25 | 24 | 24 | 24 | 24 | 25 | 24 | 24 | 24 | 19 | 17 |
| 8 | 19 | 25 | 24 | 24 | 24 | 24 | 24 | 25 | 24 | 24 | 19 | 17 |
| 9 | 19 | 25 | 24 | 24 | 24 | 24 | 24 | 25 | 24 | 24 | 19 | 17 |
| 10 | 19 | 25 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 19 | 17 |
| 11 | 18 | 25 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 19 | 17 |
| 12 | 18 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 19 | 17 |
| 13 | 19 | 24 | 24 | 24 | 24 | 25 | 24 | 24 | 24 | 24 | 19 | 17 |
| 14 | 20 | 24 | 24 | 24 | 24 | 26 | 25 | 24 | 24 | 24 | 19 | 17 |
| 15 | 20 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | e24 | 24 | 19 | 17 |
| 16 | 20 | 24 | 24 | 24 | e24 | 24 | 24 | 25 | e24 | 24 | 19 | 17 |
| 17 | 20 | 24 | 24 | 24 | e24 | 24 | 24 | 26 | 24 | 24 | 17 | 17 |
| 18 | 19 | 24 | 24 | 24 | 24 | 24 | 25 | 25 | 24 | 24 | 16 | 17 |
| 19 | 19 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 16 | 17 |
| 20 | 19 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 17 | 17 |
| 21 | 22 | 24 | 24 | 24 | 24 | 26 | 24 | 24 | 24 | 24 | 17 | 17 |
| 22 | 24 | 24 | 24 | 24 | 24 | 26 | 24 | 24 | 24 | 24 | 17 | 17 |
| 23 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 17 | 17 |
| 24 | 24 | 24 | 24 | 24 | 24 | 24 | e28 | 24 | 24 | 24 | 17 | 17 |
| 25 | 25 | 24 | 24 | 24 | 24 | 24 | e27 | 24 | 24 | 24 | 17 | 17 |
| 26 | 25 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 17 | 18 |
| 27 | 25 | 24 | 24 | 24 | 24 | 25 | 24 | 24 | 24 | 24 | 17 | 19 |
| 28 | 25 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 17 | 19 |
| 29 | 25 | 24 | 24 | 24 | --- | 24 | 24 | 24 | 24 | 24 | 17 | 18 |
| 30 | 25 | 24 | 24 | 24 | --- | 24 | 24 | 24 | 24 | 22 | 17 | 17 |
| 31 | 25 | --- | 24 | 24 | --- | 24 | --- | 24 | --- | 19 | 17 | --- |
| TOTAL | 661 | 731 | 744 | 744 | 672 | 752 | 734 | 754 | 724 | 737 | 557 | 516 |
| MEAN | 21.3 | 24.4 | 24.0 | 24.0 | 24.0 | 24.3 | 24.5 | 24.3 | 24.1 | 23.8 | 18.0 | 17.2 |
| MAX | 25 | 25 | 24 | 24 | 24 | 26 | 28 | 26 | 26 | 24 | 19 | 19 |
| MIN | 18 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 19 | 16 | 17 |
| AC-FT | 1310 | 1450 | 1480 | 1480 | 1330 | 1490 | 1460 | 1500 | 1440 | 1460 | 1100 | 1020 |
| a | 19950 | 34550 | 24460 | 3570 | 3490 | 4960 | 3430 | 2070 | 17820 | 47360 | 50420 | 26710 |

e Estimated.

a Diversion, in acre-feet, through Ralston powerplant, provided by Placer County Water Agency.

11427940 RUBICON-ROCKBOUND TUNNEL NEAR MEEKS BAY, CA

LOCATION.--Lat 38°59'16", long 120°13'29", in NE 1/4 SE 1/4 sec.8, T.13 N., R.16 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank at tunnel intake 100 ft upstream from diversion dam on Rubicon River, 3.5 mi upstream from Rubicon Springs, and 6.4 mi southwest of Meeks Bay.

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

GAGE.--Water-stage recorder. Datum of gage is 6,533.23 ft above National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District). Auxiliary water-stage recorder since Aug. 26, 1966, 220 ft downstream from tunnel outlet at different datum.

REMARKS.--Records good. Tunnel diverts water from Rubicon River to Rockbound Lake which flows into Buck Island Lake. Water is then diverted via Buck-Loon tunnel (station 11428300) to Loon Lake (station 11429350) for power development. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--27 years, 104 ft³/s, 75,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,120 ft³/s, Dec. 23, 1964; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|-------|--------|------|------|-------|-------|------|--------|------|------|
| 1 | 18 | 41 | 28 | 5.9 | 14 | 47 | 132 | 130 | 200 | 45 | .04 | .00 |
| 2 | 13 | 43 | 27 | 6.0 | 13 | 39 | 163 | 130 | 245 | 48 | .03 | .00 |
| 3 | 23 | 41 | 28 | 5.4 | 13 | 54 | 183 | 178 | 274 | 47 | .04 | .00 |
| 4 | 23 | 44 | 31 | 4.9 | 14 | 50 | 209 | 242 | 253 | 37 | .04 | .00 |
| 5 | 15 | 54 | 37 | 4.6 | 13 | 34 | 224 | 267 | 222 | 22 | .03 | .00 |
| 6 | 9.0 | 50 | 41 | 4.4 | 13 | 26 | 231 | 282 | 190 | .12 | .03 | .00 |
| 7 | 5.5 | 37 | 34 | 41 | e13 | 26 | 208 | 252 | 178 | .09 | .04 | .00 |
| 8 | 3.2 | 27 | 30 | 286 | 13 | 32 | 166 | 212 | 184 | .07 | .06 | .00 |
| 9 | 1.7 | 22 | 26 | 167 | 12 | 38 | 125 | 198 | 195 | .07 | .05 | .00 |
| 10 | .76 | 24 | 25 | 81 | 12 | 40 | 148 | 206 | 185 | .07 | .05 | .00 |
| 11 | .18 | 32 | 22 | 48 | 16 | 32 | 217 | 185 | 164 | .07 | .06 | .00 |
| 12 | .00 | 38 | 18 | 41 | 20 | 27 | 236 | 158 | 136 | .04 | .07 | .00 |
| 13 | .00 | 34 | 16 | 40 | 18 | 23 | 286 | 153 | 117 | .03 | .07 | .00 |
| 14 | .00 | 28 | 14 | 38 | 16 | 20 | 319 | 153 | 102 | .03 | .07 | .00 |
| 15 | .00 | 22 | 14 | 33 | 14 | 20 | 317 | 133 | 95 | .04 | .07 | .00 |
| 16 | .00 | 18 | 15 | 30 | e12 | 25 | 314 | 128 | 106 | .03 | .07 | .00 |
| 17 | .00 | 15 | 14 | 26 | e13 | 36 | 199 | 141 | 98 | .03 | .07 | .00 |
| 18 | .00 | 14 | 12 | 24 | e16 | 66 | 162 | 126 | 103 | .03 | .07 | .00 |
| 19 | .00 | 13 | 10 | 20 | e17 | 95 | 219 | 112 | 92 | .05 | .07 | .00 |
| 20 | .00 | 12 | 9.3 | 18 | e16 | 116 | 220 | 106 | 108 | .05 | .05 | .00 |
| 21 | .70 | 11 | 8.9 | 17 | e14 | 122 | 212 | 118 | 115 | .05 | .06 | .00 |
| 22 | 64 | 9.7 | 8.1 | 16 | 13 | 121 | 172 | 115 | 119 | .05 | .06 | .00 |
| 23 | 151 | 8.8 | 8.4 | 15 | 16 | 120 | 258 | 157 | 113 | .06 | .07 | .00 |
| 24 | 200 | 14 | 9.5 | 15 | 21 | 134 | 214 | 171 | 92 | .05 | .07 | .00 |
| 25 | 118 | 26 | 10 | 15 | 24 | 154 | 169 | 145 | 83 | .05 | .06 | .00 |
| 26 | 81 | 29 | 11 | 14 | 30 | 153 | 192 | 171 | 74 | .04 | .03 | .01 |
| 27 | 68 | 40 | 10 | 13 | 35 | 138 | 242 | 287 | 60 | .05 | .00 | .00 |
| 28 | 59 | 39 | 9.1 | 12 | 44 | 126 | 329 | 256 | 52 | .05 | .00 | .00 |
| 29 | 46 | 35 | 7.8 | 11 | --- | 106 | 297 | 162 | 47 | .05 | .00 | .00 |
| 30 | 39 | 31 | 6.4 | 12 | --- | 97 | 179 | 180 | 46 | .03 | .00 | .00 |
| 31 | 41 | --- | 6.1 | 13 | --- | 109 | --- | 242 | --- | .05 | .00 | --- |
| TOTAL | 980.04 | 852.5 | 546.6 | 1077.2 | 485 | 2226 | 6542 | 5496 | 4048 | 200.35 | 1.43 | 0.01 |
| MEAN | 31.6 | 28.4 | 17.6 | 34.7 | 17.3 | 71.8 | 218 | 177 | 135 | 6.46 | .046 | .000 |
| MAX | 200 | 54 | 41 | 286 | 44 | 154 | 329 | 287 | 274 | 48 | .07 | .01 |
| MIN | .00 | 8.8 | 6.1 | 4.4 | 12 | 20 | 125 | 106 | 46 | .03 | .00 | .00 |
| AC-FT | 1940 | 1690 | 1080 | 2140 | 962 | 4420 | 12980 | 10900 | 8030 | 397 | 2.8 | .02 |

CAL YR 1989 TOTAL 39664.62 MEAN 109 MAX 679 MIN .00 AC-FT 78670
WTR YR 1990 TOTAL 22455.13 MEAN 61.5 MAX 329 MIN .00 AC-FT 44540

e Estimated.

SACRAMENTO RIVER BASIN

11428300 BUCK-LOON TUNNEL NEAR MEEKS BAY. CA

LOCATION.--Lat 39°00'17", long 120°15'21", in SE 1/4 NW 1/4 sec.6, T.13 N., R.16 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank at tunnel intake near left abutment of diversion dam, 7.4 mi southwest of Meeks Bay.

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

GAGE.--Water-stage recorder. Datum of gage is 6,425.0 ft above National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District).

REMARKS.--No estimated daily discharges. Records good. Tunnel diverts water from Buck Island Lake and discharges into Loon Lake (station 11429350). Buck Island Lake receives water from Rubicon River via Rubicon-Rockbound tunnel (station 11427940). Gates are closed at the tunnel entrance during the summer and opened each fall to raise the level of Buck Island Lake for recreational purposes. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--27 years, 133 ft³/s, 96,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,240 ft³/s, Dec. 23, 1964; no flow at times in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|---------|----------|-------|--------|------|------|-------|-------|-------|--------|------|------|
| 1 | 28 | 53 | 41 | 8.1 | 20 | 56 | 136 | 159 | 259 | 49 | .20 | .00 |
| 2 | 23 | 54 | 37 | 8.5 | 19 | 55 | 178 | 136 | 289 | 49 | .20 | .00 |
| 3 | 33 | 55 | 36 | 7.8 | 17 | 63 | 214 | 174 | 334 | 51 | .19 | .00 |
| 4 | 48 | 56 | 37 | 7.0 | 20 | 68 | 256 | 261 | 315 | 47 | .18 | .00 |
| 5 | 35 | 66 | 43 | 6.3 | 18 | 57 | 281 | 309 | 272 | 22 | .18 | .00 |
| 6 | 24 | 72 | 50 | 5.8 | 18 | 42 | 288 | 324 | 225 | .24 | .17 | .00 |
| 7 | 16 | 60 | 50 | 17 | 18 | 35 | 270 | 307 | 201 | .25 | .16 | .00 |
| 8 | 11 | 45 | 44 | 282 | 16 | 36 | 229 | 256 | 196 | .26 | .15 | .00 |
| 9 | 7.7 | 34 | 39 | 295 | 15 | 42 | 165 | 227 | 211 | .26 | .14 | .00 |
| 10 | 5.2 | 30 | 35 | 153 | 15 | 50 | 160 | 229 | 204 | .26 | .13 | .00 |
| 11 | 3.6 | 34 | 32 | 88 | 16 | 51 | 238 | 225 | 186 | .26 | .12 | .00 |
| 12 | 2.5 | 43 | 28 | 62 | 19 | 41 | 281 | 185 | 152 | .26 | .10 | .00 |
| 13 | 1.7 | 46 | 24 | 60 | 21 | 34 | 327 | 167 | 129 | .26 | .07 | .00 |
| 14 | 1.1 | 42 | 21 | 58 | 20 | 29 | 388 | 164 | 113 | .26 | .05 | .00 |
| 15 | .74 | 34 | 20 | 50 | 18 | 26 | 397 | 150 | 101 | .26 | .04 | .00 |
| 16 | .46 | 28 | 19 | 44 | 23 | 27 | 403 | 136 | 104 | .26 | .04 | .00 |
| 17 | .27 | 23 | 18 | 39 | 27 | 36 | 286 | 142 | 102 | .26 | .03 | .00 |
| 18 | .14 | 19 | 17 | 33 | 25 | 59 | 206 | 138 | 103 | .26 | .02 | .00 |
| 19 | .08 | 18 | 16 | 29 | 21 | 91 | 263 | 124 | 99 | .25 | .01 | .00 |
| 20 | .02 | 16 | 14 | 26 | 20 | 123 | 284 | 116 | 102 | .25 | .00 | .00 |
| 21 | .59 | 15 | 13 | 23 | 18 | 136 | 287 | 130 | 111 | .25 | .00 | .00 |
| 22 | .47 | 14 | 12 | 22 | 16 | 137 | 225 | 125 | 115 | .24 | .00 | .00 |
| 23 | .173 | 12 | 11 | 21 | 17 | 136 | 290 | 155 | 117 | .24 | .00 | .00 |
| 24 | .323 | 17 | 11 | 20 | 20 | 143 | 299 | 212 | 104 | .24 | .00 | .00 |
| 25 | .208 | 29 | 12 | 19 | 24 | 167 | 215 | 187 | 90 | .23 | .00 | .00 |
| 26 | .134 | 53 | 13 | 19 | 30 | 182 | 215 | 186 | 81 | .23 | .00 | .00 |
| 27 | .101 | 51 | 13 | 18 | 41 | 165 | 270 | 344 | 70 | .22 | .00 | .00 |
| 28 | .87 | 52 | 13 | 17 | 50 | 150 | 367 | 373 | 61 | .22 | .00 | .00 |
| 29 | .71 | 49 | 12 | 15 | --- | 129 | 391 | 231 | 55 | .22 | .00 | .00 |
| 30 | .58 | 45 | 10 | 18 | --- | 115 | 246 | 198 | 51 | .21 | .00 | .00 |
| 31 | .53 | --- | 8.6 | 20 | --- | 117 | --- | 315 | --- | .21 | .00 | --- |
| TOTAL | 1497.10 | 1165 | 749.6 | 1491.5 | 602 | 2598 | 8055 | 6385 | 4552 | 224.36 | 2.18 | 0.00 |
| MEAN | 48.3 | 38.8 | 24.2 | 48.1 | 21.5 | 83.8 | 268 | 206 | 152 | 7.24 | .070 | .000 |
| MAX | 323 | 72 | 50 | 295 | 50 | 182 | 403 | 373 | 334 | 51 | .20 | .00 |
| MIN | .02 | 12 | 8.6 | 5.8 | 15 | 26 | 136 | 116 | 51 | .21 | .00 | .00 |
| AC-FT | 2970 | 2310 | 1490 | 2960 | 1190 | 5150 | 15980 | 12660 | 9030 | 445 | 4.3 | .00 |
| CAL YR 1989 | TOTAL | 47464.99 | MEAN | 130 | MAX | 922 | MIN | .02 | AC-FT | 94150 | | |
| WTR YR 1990 | TOTAL | 27321.74 | MEAN | 74.9 | MAX | 403 | MIN | .00 | AC-FT | 54190 | | |

11428700 HELL HOLE RESERVOIR NEAR MEEKS BAY, CA

LOCATION.--Lat 39°03'54", long 120°24'50", in SE 1/4 NW 1/4 sec.16, T.14 N., R.14 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 0.3 mi upstream from Hell Hole Dam on Rubicon River and 15.6 mi west of Meeks Bay.

DRAINAGE AREA.--114 mi².

PERIOD OF RECORD.--December 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Placer County Water Agency).

REMARKS.--Reservoir is formed by rockfill dam with earth core. Storage began Dec. 6, 1965. Usable capacity, 207,342 acre-ft between elevations 4,287.65 ft, invert of river outlet, and 4,630.0 ft, crest of ogee spillway. Dead storage 248 acre-ft. Reservoir is used to store water for hydroelectric power. Water is diverted into reservoir from French Meadows Reservoir (11427400) on the Middle Fork American River through French Meadows powerplant (station 11427200). Water is diverted out of reservoir to the Middle Fork American River through Middle Fork powerplant. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 211,050 acre-ft, Dec. 20, 1981, elevation, 4,632.75 ft; minimum since reservoir first filled, 37,499 acre-ft, Mar. 23, 1973, elevation, 4,428.28 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 172,400 acre-ft, July 2, elevation, 4,600.5 ft; minimum, 81,700 acre-ft, Jan. 5, 6, elevation, 4,498.2 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

(Based on survey by Placer County Water Agency in 1966)

| | | | | | |
|-------|--------|-------|--------|-------|---------|
| 4,340 | 5,220 | 4,400 | 24,200 | 4,550 | 122,700 |
| 4,360 | 9,840 | 4,450 | 49,600 | 4,600 | 171,900 |
| 4,380 | 16,200 | 4,500 | 83,000 | 4,650 | 233,400 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 2400 HOURS

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 123100 | 118700 | 98000 | 83500 | 89400 | 93400 | 113600 | 146300 | 168000 | 172200 | 143500 | 112700 |
| 2 | 123400 | 117600 | 97400 | 83100 | 89500 | 94000 | 114600 | 147000 | 168800 | 171900 | 142300 | 111500 |
| 3 | 124100 | 116300 | 97300 | 82600 | 89700 | 95000 | 115600 | 147800 | 169700 | 171100 | 141100 | 110500 |
| 4 | 124800 | 114600 | 96900 | 82100 | 89800 | 95600 | 116800 | 148600 | 170500 | 170400 | 141700 | 109200 |
| 5 | 125300 | 112800 | 96600 | 81700 | 90000 | 96100 | 118000 | 149200 | 171100 | 169800 | 142200 | 108400 |
| 6 | 125600 | 111400 | 96500 | 81700 | 90100 | 96500 | 119200 | 150000 | 171600 | 169100 | 141800 | 107500 |
| 7 | 125600 | 110400 | 96300 | 82400 | 90300 | 97000 | 120300 | 150700 | 171100 | 168300 | 140800 | 107300 |
| 8 | 125600 | 109200 | 95900 | 84000 | 90300 | 97400 | 121400 | 151300 | 170700 | 169000 | 139700 | 106500 |
| 9 | 125900 | 108300 | 95000 | 84300 | 90600 | 97900 | 122300 | 151900 | 170600 | 168400 | 138600 | 105800 |
| 10 | 126300 | 107400 | 94600 | 84600 | 90700 | 98500 | 123100 | 152500 | 171000 | 167700 | 137700 | 105000 |
| 11 | 126900 | 106300 | 94200 | 84900 | 90900 | 98900 | 124100 | 153000 | 170900 | 166600 | 136500 | 104300 |
| 12 | 127500 | 105700 | 93600 | 85200 | 91100 | 99300 | 125200 | 153500 | 171100 | 165500 | 135500 | 103600 |
| 13 | 127800 | 104700 | 92600 | 85800 | 91300 | 99500 | 126500 | 153900 | 171200 | 164300 | 134400 | 102700 |
| 14 | 127800 | 103500 | 91500 | 86100 | 91400 | 99900 | 127900 | 154300 | 172000 | 163300 | 133300 | 102000 |
| 15 | 127700 | 102200 | 90400 | 86400 | 91600 | 100200 | 129200 | 154700 | 172100 | 162100 | 132300 | 101200 |
| 16 | 127900 | 101400 | 90000 | 86700 | 91900 | 100600 | 130600 | 155700 | 171900 | 161000 | 131200 | 100600 |
| 17 | 128300 | 100800 | 90000 | 86900 | 92100 | 101000 | 131600 | 155300 | 172100 | 160300 | 130000 | 100500 |
| 18 | 127800 | 100300 | 89400 | 87100 | 92300 | 101700 | 132600 | 155600 | 171800 | 159200 | 128800 | 100600 |
| 19 | 127600 | 100300 | 88700 | 87300 | 92400 | 102400 | 133700 | 155900 | 171400 | 158100 | 127600 | 100600 |
| 20 | 126700 | 99800 | 88000 | 87400 | 91800 | 103200 | 134300 | 156300 | 171300 | 157100 | 128400 | 100600 |
| 21 | 125500 | 99400 | 87300 | 87600 | 91100 | 104100 | 135300 | 156700 | 171200 | 156000 | 125100 | 100600 |
| 22 | 124500 | 98800 | 86500 | 87800 | 90700 | 104900 | 136400 | 157100 | 171100 | 155000 | 123900 | 100600 |
| 23 | 124600 | 98800 | 86100 | 87900 | 91000 | 105700 | 138400 | 157900 | 171300 | 153800 | 122800 | 100500 |
| 24 | 124500 | 98700 | 86100 | 88100 | 91200 | 106800 | 139700 | 158500 | 172000 | 152800 | 121700 | 100500 |
| 25 | 123900 | 98800 | 86200 | 88200 | 91500 | 107800 | 140800 | 159000 | 171800 | 151600 | 120800 | 100600 |
| 26 | 123100 | 98900 | 85500 | 88400 | 91900 | 108800 | 141800 | 159300 | 171500 | 150600 | 119800 | 101400 |
| 27 | 122500 | 99100 | 84900 | 88500 | 92400 | 109700 | 142900 | 161000 | 171200 | 149400 | 118700 | 101700 |
| 28 | 122000 | 98900 | 84100 | 88700 | 92900 | 110500 | 144000 | 162200 | 170700 | 148200 | 117500 | 101800 |
| 29 | 121300 | 98600 | 83400 | 88800 | --- | 111300 | 145000 | 163000 | 170900 | 147000 | 116200 | 101700 |
| 30 | 120800 | 98400 | 83400 | 89100 | --- | 112000 | 145700 | 164700 | 171400 | 145900 | 115100 | 101700 |
| 31 | 119800 | --- | 83500 | 89200 | --- | 112700 | --- | 166700 | --- | 144700 | 113800 | --- |
| MAX | 128300 | 118700 | 98000 | 89200 | 92900 | 112700 | 145700 | 166700 | 172100 | 172200 | 143500 | 112700 |
| MIN | 119800 | 98400 | 83400 | 81700 | 89400 | 93400 | 113600 | 146300 | 168000 | 144700 | 113800 | 100500 |
| a | 4546.6 | 4520.3 | 4500.6 | 4508.3 | 4513.2 | 4538.1 | 4575.2 | 4595.4 | 4599.6 | 4574.2 | 4539.4 | 4524.5 |
| b | -3400 | -21400 | -14900 | +5700 | +3700 | +19800 | +33000 | +21000 | +4700 | -26700 | -30900 | -12100 |

CAL YR 1989 b -27500

WTR YR 1990 b -21500

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11428800 RUBICON RIVER BELOW HELL HOLE DAM, NEAR MEEKS BAY, CA

LOCATION.--Lat 39°03'24", long 120°24'25", in NE 1/4 NE 1/4 sec.21, T.14 N., R.14 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 600 ft downstream from outlet of dam, and 15.3 mi west of Meeks Bay.

DRAINAGE AREA.--114 mi².

PERIOD OF RECORD.--November 1965 to current year.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 4,231.52 ft above National Geodetic Vertical Datum of 1929 (levels by Placer County Water Agency).

REMARKS.--No estimated daily discharges. Flow completely regulated by Hell Hole Reservoir (station 11428700) 600 ft upstream from station. During years when Hell Hole Dam spills, records include flow which bypasses the station. Transbasin diversions upstream from station through Buck-Loon tunnel (station 11428300) to Loon Lake Reservoir (station 11429350); from Middle Fork American River basin through tunnel from French Meadows Reservoir (station 11427400) to Hell Hole Reservoir; from Hell Hole Reservoir through tunnel to Middle Fork powerplant (station 11428600). Diversion began Sept. 8, 1966. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--24 years, 29.8 ft³/s, 21,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s, Mar. 8, 1986, including flow over spillway; no flow Aug. 25 to Sept. 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 47 ft³/s, Oct. 1, gage height, 4.41 ft; minimum daily, 12 ft³/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|------|------|------|------|------|-------|-------|-------|-------|
| 1 | 47 | 22 | 22 | 12 | 12 | 12 | 12 | 12 | 25 | 23 | 22 | 22 |
| 2 | 43 | 22 | 22 | 12 | 12 | 13 | 13 | 12 | 25 | 23 | 22 | 22 |
| 3 | 36 | 22 | 22 | 12 | 12 | 15 | 13 | 12 | 25 | 23 | 22 | 22 |
| 4 | 36 | 22 | 22 | 12 | 12 | 13 | 13 | 12 | 24 | 23 | 22 | 22 |
| 5 | 33 | 22 | 22 | 12 | 12 | 13 | 13 | 12 | 23 | 23 | 22 | 22 |
| 6 | 32 | 22 | 22 | 12 | 12 | 12 | 13 | 12 | 23 | 23 | 22 | 22 |
| 7 | 32 | 22 | 22 | 13 | 12 | 12 | 13 | 12 | 23 | 23 | 22 | 22 |
| 8 | 32 | 22 | 22 | 14 | 12 | 12 | 13 | 12 | 24 | 23 | 22 | 22 |
| 9 | 32 | 22 | 22 | 13 | 12 | 12 | 12 | 12 | 23 | 23 | 22 | 22 |
| 10 | 29 | 22 | 22 | 13 | 12 | 12 | 12 | 12 | 23 | 23 | 22 | 22 |
| 11 | 27 | 22 | 22 | 12 | 13 | 13 | 12 | 12 | 23 | 23 | 22 | 22 |
| 12 | 27 | 22 | 22 | 12 | 13 | 12 | 12 | 12 | 23 | 23 | 22 | 22 |
| 13 | 27 | 22 | 22 | 14 | 13 | 12 | 12 | 12 | 23 | 23 | 22 | 22 |
| 14 | 27 | 22 | 22 | 14 | 12 | 13 | 13 | 19 | 23 | 23 | 22 | 22 |
| 15 | 27 | 22 | 16 | 13 | 12 | 13 | 13 | 23 | 24 | 23 | 22 | 22 |
| 16 | 26 | 22 | 14 | 13 | 12 | 13 | 13 | 23 | 24 | 23 | 22 | 22 |
| 17 | 22 | 22 | 13 | 13 | 12 | 13 | 13 | 23 | 23 | 22 | 22 | 22 |
| 18 | 22 | 22 | 17 | 13 | 12 | 12 | 12 | 23 | 23 | 22 | 22 | 21 |
| 19 | 22 | 22 | 13 | 12 | 12 | 13 | 12 | 23 | 23 | 22 | 22 | 21 |
| 20 | 22 | 22 | 12 | 12 | 12 | 13 | 12 | 23 | 23 | 23 | 22 | 21 |
| 21 | 22 | 22 | 12 | 12 | 12 | 13 | 12 | 23 | 23 | 23 | 22 | 22 |
| 22 | 22 | 22 | 12 | 12 | 13 | 13 | 12 | 23 | 23 | 23 | 22 | 22 |
| 23 | 25 | 22 | 12 | 12 | 13 | 13 | 13 | 24 | 23 | 23 | 22 | 22 |
| 24 | 25 | 22 | 12 | 12 | 14 | 13 | 13 | 23 | 23 | 23 | 22 | 22 |
| 25 | 24 | 26 | 12 | 12 | 14 | 13 | 13 | 23 | 23 | 23 | 22 | 22 |
| 26 | 23 | 25 | 12 | 12 | 14 | 13 | 13 | 23 | 23 | 23 | 22 | 22 |
| 27 | 22 | 23 | 12 | 12 | 13 | 13 | 13 | 24 | 23 | 22 | 22 | 22 |
| 28 | 22 | 22 | 12 | 12 | 13 | 12 | 13 | 25 | 23 | 22 | 22 | 22 |
| 29 | 22 | 22 | 12 | 12 | --- | 12 | 12 | 24 | 23 | 22 | 22 | 22 |
| 30 | 22 | 22 | 12 | 12 | --- | 12 | 12 | 25 | 23 | 22 | 22 | 22 |
| 31 | 22 | --- | 12 | 12 | --- | 12 | --- | 28 | --- | 22 | 22 | --- |
| TOTAL | 852 | 668 | 525 | 385 | 349 | 392 | 377 | 578 | 700 | 705 | 682 | 657 |
| MEAN | 27.5 | 22.3 | 16.9 | 12.4 | 12.5 | 12.6 | 12.6 | 18.6 | 23.3 | 22.7 | 22.0 | 21.9 |
| MAX | 47 | 26 | 22 | 14 | 14 | 15 | 13 | 28 | 25 | 23 | 22 | 22 |
| MIN | 22 | 22 | 12 | 12 | 12 | 12 | 12 | 12 | 23 | 22 | 22 | 21 |
| AC-FT | 1690 | 1320 | 1040 | 764 | 692 | 778 | 748 | 1150 | 1390 | 1400 | 1350 | 1300 |
| a | 19580 | 33250 | 23580 | 2270 | 2130 | 260 | 1330 | 645 | 16860 | 47770 | 50290 | 26110 |

CAL YR 1989 TOTAL 7385.6 MEAN 20.2 MAX 47 MIN 7.2 AC-FT 14650
WTR YR 1990 TOTAL 6870 MEAN 18.8 MAX 47 MIN 12 AC-FT 13630

a Diversion, in acre-feet, from Hell Hole Reservoir through Middle Fork powerplant, provided by Placer County Water Agency.

11429300 ROBBS PEAK POWERPLANT NEAR KYBURZ, CA

LOCATION.--Lat 38°53'50", long 120°22'38", in SE 1/4 SW 1/4 sec.11, T.12 N., R.14 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, in powerplant on shore of Union Valley Reservoir, and 9.5 mi northwest of Kyburz.

PERIOD OF RECORD.--October 1962 to current year. Prior to October 1965, published as Robbs Peak tunnel near Riverton.

GAGE.--Discharge computed from powerplant output. Elevation of gage is 4,880 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1965, water-stage recorder and concrete control in abandoned section of canal 0.5 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Water is imported from Loon Lake (station 11429350) via Loon Lake powerplant or Gerle Creek (stations 11429340 and 11429500) to tunnel intake. Tunnel diverts at South Fork Rubicon River diversion dam in NE 1/4 sec.27, T.13 N., R.14 E., and discharges into Union Valley Reservoir (station 11441001). See schematic diagrams of Middle Fork American and Rubicon River basins and South Fork American River basin.

COOPERATION.--Records provided by Sacramento Municipal Utility District, rounded to U.S. Geological Survey standards.

AVERAGE DISCHARGE.--28 years, 242 ft³/s, 175,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,440 ft³/s, Dec. 22-24, 1964; no flow for many days in most years.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|---------|---------|-------|------|--------|-------|-------|------|--------|---------|---------|--------|
| 1 | 1.0 | 394 | 155 | 86 | 70 | 168 | 233 | 111 | 426 | 137 | 1.0 | .50 |
| 2 | 1.0 | 108 | 218 | 62 | 73 | 122 | 268 | 224 | 411 | .00 | .50 | .50 |
| 3 | 1.0 | 8.1 | 90 | 74 | 124 | 299 | 260 | 137 | 165 | 42 | 1.0 | 1.0 |
| 4 | 1.0 | 48 | 260 | 160 | 95 | 228 | 381 | 257 | 123 | 16 | 92 | .50 |
| 5 | 1.0 | 41 | 306 | 152 | 68 | 169 | 340 | 174 | 61 | 168 | 1.0 | 1.0 |
| 6 | 1.0 | 227 | 312 | 69 | 50 | 126 | 418 | 110 | 156 | .50 | 340 | 81 |
| 7 | 1.0 | 467 | 301 | 209 | 79 | 139 | 327 | 117 | 45 | 60 | 498 | 68 |
| 8 | .50 | 527 | 294 | 436 | 280 | 291 | 295 | 36 | 344 | 53 | 387 | 78 |
| 9 | 1.0 | 544 | 282 | 300 | 143 | 241 | 317 | 47 | 387 | 343 | 620 | 38 |
| 10 | 59 | 548 | 126 | 263 | 98 | 251 | 210 | 84 | 430 | 426 | 321 | 11 |
| 11 | 1.0 | 459 | 107 | 179 | 64 | 128 | 343 | 71 | 423 | 569 | 441 | .50 |
| 12 | 1.0 | 460 | 228 | 121 | 66 | 174 | 453 | 90 | 387 | 476 | 384 | 1.0 |
| 13 | 1.0 | 433 | 82 | 149 | 72 | 133 | 378 | 33 | 333 | 491 | 106 | 1.0 |
| 14 | .50 | 480 | 168 | 81 | 168 | 82 | 390 | 35 | 322 | 237 | 74 | 1.5 |
| 15 | 291 | 480 | 208 | 81 | 39 | 76 | 390 | 87 | 212 | 89 | 29 | 27 |
| 16 | 190 | 469 | 249 | 103 | 135 | 119 | 411 | 45 | 53 | .50 | .50 | 15 |
| 17 | 411 | 320 | 54 | 161 | 43 | 157 | 383 | 25 | 114 | 1.0 | 159 | 1.0 |
| 18 | 380 | 56 | 140 | 112 | 7.1 | 205 | 218 | 207 | 1.0 | 106 | 1.0 | 5.5 |
| 19 | 360 | 26 | 244 | 222 | 7.1 | 235 | 360 | 32 | 117 | 176 | 298 | 5.5 |
| 20 | 244 | .50 | 99 | 38 | 61 | 298 | 243 | 77 | 103 | 248 | .50 | 1.5 |
| 21 | 190 | 188 | 30 | 50 | 20 | 307 | 215 | 127 | 77 | 39 | 1.0 | 1.5 |
| 22 | 257 | 245 | 52 | 47 | 58 | 245 | 156 | 18 | 35 | 54 | 1.0 | .50 |
| 23 | 328 | 47 | 16 | 151 | 73 | 262 | 428 | 109 | 64 | 81 | 187 | 1.0 |
| 24 | 407 | 258 | 71 | 86 | 40 | 290 | 298 | 150 | 13 | 1.0 | 1.0 | 1.0 |
| 25 | 336 | 120 | 52 | 252 | 86 | 310 | 231 | 127 | 38 | 1.0 | 1.0 | 16 |
| 26 | 231 | 34 | 158 | 185 | 167 | 288 | 178 | 141 | 36 | .50 | 1.0 | 10 |
| 27 | 339 | 194 | 110 | 95 | 129 | 253 | 194 | 322 | 203 | 61 | 136 | 24 |
| 28 | 321 | 187 | 80 | 148 | 286 | 247 | 146 | 288 | 181 | 76 | 38 | 1.0 |
| 29 | 337 | 199 | 69 | 36 | --- | 213 | 175 | 175 | 53 | 116 | 20 | .50 |
| 30 | 339 | 90 | 271 | 37 | --- | 217 | 193 | 286 | 163 | 9.1 | .00 | .50 |
| 31 | 417 | --- | 342 | 59 | --- | 200 | --- | 512 | --- | .50 | .00 | --- |
| TOTAL | 5449.00 | 7657.60 | 5174 | 4204 | 2601.2 | 6473 | 8832 | 4254 | 5476.0 | 4078.10 | 4140.50 | 395.00 |
| MEAN | 176 | 255 | 167 | 136 | 92.9 | 209 | 294 | 137 | 183 | 132 | 134 | 13.2 |
| MAX | 417 | 548 | 342 | 436 | 286 | 310 | 453 | 512 | 430 | 569 | 620 | 81 |
| MIN | .50 | .50 | 16 | 36 | 7.1 | 76 | 146 | 18 | 1.0 | .00 | .00 | .50 |
| AC-FT | 10810 | 15190 | 10260 | 8340 | 5160 | 12840 | 17520 | 8440 | 10860 | 8090 | 8210 | 783 |

CAL YR 1989 TOTAL 85773.60 MEAN 235 MAX 1130 MIN .00 AC-FT 170100
WTR YR 1990 TOTAL 58734.40 MEAN 161 MAX 620 MIN .00 AC-FT 116500

11429350 LOON LAKE NEAR MEEKS BAY, CA

LOCATION.--Lat 38°58'59", long 120°19'22", in SE 1/4 SW 1/4 sec.8, T.13 N., R.15 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, in powerplant intake structure, 1.6 mi southwest of right bank end of Loon Lake Dam on Gerle Creek, and 10 mi southwest of Meeks Bay.

DRAINAGE AREA.--7.96 mi².

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

REVISED RECORDS.--WDR CA-76-4: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District). Prior to Sept. 23, 1975, at site 1.6 mi northeast on right bank end of Loon Lake Dam at same datum.

REMARKS.--Reservoir is formed by an earthfill dam completed Dec. 27, 1963; storage began Dec. 5, 1963. Prior to September 1962, reservoir was formed by granite-block dam built in 1884, capacity, 8,000 acre-ft. Usable capacity, 73,900 acre-ft, between elevations 6,325 ft, invert of fishwater release valve, and 6,410 ft, crest of spillway. Dead storage, 2,300 acre-ft. Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (stations 11427940, 11428300). Records, including extremes, represent total contents. See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 77,700 acre-ft, June 6, 1969, elevation, 6,411.1 ft; minimum since reservoir first filled, 3,262 acre-ft, Nov. 8, 9, 1988, elevation, 6,328.70 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 74,184 acre-ft, June 7, elevation, 6,408.56 ft; minimum, 32,359 acre-ft, Feb. 14, elevation, 6,374.02 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sacramento Municipal Utility District dated June 1965)

| | | | |
|-------|--------|-------|--------|
| 6,330 | 3,600 | 6,370 | 28,500 |
| 6,340 | 7,200 | 6,390 | 50,000 |
| 6,350 | 12,500 | 6,412 | 79,000 |
| 6,360 | 19,600 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 61228 | 53188 | 41386 | 33724 | 33438 | 32935 | 40101 | 57426 | 71146 | 72658 | 64429 | 55027 |
| 2 | 61266 | 53251 | 41149 | 33650 | 33385 | 33089 | 40598 | 57478 | 71580 | 72728 | 64377 | 54990 |
| 3 | 61279 | 53301 | 41160 | 33501 | 33342 | 33321 | 41203 | 57721 | 72336 | 72784 | 64338 | 54939 |
| 4 | 61330 | 53402 | 40717 | 33194 | 33262 | 33597 | 41732 | 57990 | 72896 | 72826 | 64299 | 54889 |
| 5 | 61343 | 53515 | 40242 | 32935 | 33262 | 33756 | 42348 | 58566 | 73470 | 72574 | 64221 | 54851 |
| 6 | 61356 | 53226 | 39766 | 32820 | 33321 | 33851 | 42747 | 59270 | 73792 | 72546 | 63272 | 54813 |
| 7 | 61356 | 52218 | 39334 | 32887 | 33185 | 33947 | 43309 | 59922 | 74184 | 72350 | 62329 | 54612 |
| 8 | 61356 | 51184 | 38881 | 33682 | 32772 | 33597 | 43784 | 60511 | 74072 | 72252 | 61484 | 54574 |
| 9 | 61356 | 50113 | 38420 | 34031 | 32647 | 33682 | 44108 | 60985 | 73848 | 71622 | 60255 | 54549 |
| 10 | 61279 | 49064 | 38452 | 34031 | 32542 | 33745 | 44612 | 61458 | 73498 | 70474 | 59564 | 54498 |
| 11 | 61254 | 48260 | 38324 | 33968 | 32551 | 33883 | 44984 | 61932 | 73218 | 69284 | 58604 | 54460 |
| 12 | 61215 | 47456 | 37837 | 34063 | 32590 | 33894 | 45344 | 62316 | 72756 | 68342 | 57862 | 54423 |
| 13 | 61190 | 46532 | 37816 | 34296 | 32570 | 33862 | 45908 | 62662 | 72490 | 67432 | 57657 | 54372 |
| 14 | 61177 | 45620 | 37423 | 34508 | 32359 | 33925 | 46460 | 62986 | 72154 | 66990 | 57618 | 54322 |
| 15 | 60537 | 44636 | 37084 | 34614 | 32388 | 34000 | 47180 | 63285 | 72084 | 66977 | 57580 | 54284 |
| 16 | 60127 | 43687 | 36692 | 34699 | 32551 | 34063 | 47804 | 63584 | 72196 | 66951 | 57529 | 54234 |
| 17 | 59270 | 43179 | 36703 | 34625 | 32695 | 34190 | 48248 | 63896 | 72364 | 66886 | 56953 | 54183 |
| 18 | 58476 | 43168 | 36416 | 34508 | 32762 | 34392 | 48644 | 63844 | 72588 | 66678 | 56876 | 54145 |
| 19 | 57682 | 43168 | 36067 | 34180 | 32782 | 34689 | 49124 | 64104 | 72588 | 66262 | 56275 | 54108 |
| 20 | 57145 | 43190 | 35908 | 34233 | 32801 | 35007 | 49904 | 64416 | 72658 | 65625 | 56224 | 54032 |
| 21 | 56838 | 42769 | 35908 | 34243 | 32839 | 35378 | 50178 | 64702 | 72770 | 65573 | 56174 | 53982 |
| 22 | 56441 | 42315 | 35886 | 34286 | 32839 | 35812 | 51361 | 64949 | 72980 | 65521 | 56124 | 53944 |
| 23 | 56722 | 42315 | 35886 | 34127 | 32878 | 36247 | 52394 | 65443 | 73190 | 65313 | 55695 | 53944 |
| 24 | 56953 | 41916 | 35791 | 34116 | 32906 | 36692 | 53188 | 65963 | 73372 | 65222 | 55607 | 53956 |
| 25 | 56697 | 42261 | 35727 | 33629 | 32954 | 37190 | 53730 | 66392 | 73498 | 65170 | 55557 | 53982 |
| 26 | 56530 | 42423 | 35505 | 33427 | 32916 | 37731 | 54284 | 66873 | 73554 | 65118 | 55519 | 54032 |
| 27 | 56136 | 42142 | 35325 | 33175 | 32974 | 38187 | 54939 | 67835 | 73316 | 65040 | 55305 | 53994 |
| 28 | 55695 | 41894 | 35261 | 33146 | 32801 | 38643 | 55771 | 68693 | 73092 | 64832 | 55179 | 53931 |
| 29 | 55141 | 41656 | 35017 | 33156 | --- | 39010 | 56697 | 69200 | 73106 | 64559 | 55141 | 53906 |
| 30 | 54586 | 41710 | 34519 | 33321 | --- | 39345 | 57081 | 70026 | 72770 | 64507 | 55090 | 53893 |
| 31 | 53893 | --- | 33756 | 33374 | --- | 39669 | --- | 70908 | --- | 64468 | 55065 | --- |
| MAX | 61356 | 53515 | 41386 | 34699 | 33438 | 39669 | 57081 | 70908 | 74184 | 72826 | 64429 | 55027 |
| MIN | 53893 | 41656 | 33756 | 32820 | 32359 | 32935 | 40101 | 57426 | 71146 | 64468 | 55065 | 53893 |
| a | 6393.09 | 6382.88 | 6375.43 | 6375.07 | 6374.48 | 6380.99 | 6395.61 | 6406.22 | 6407.55 | 6401.36 | 6394.02 | 6393.09 |
| b | -7322 | -12183 | -7954 | -382 | -573 | +6868 | +17412 | +13827 | +1862 | -8302 | -9403 | -1172 |

CAL YR 1989 MAX 75234 MIN 11546 b +22246

WTR YR 1990 MAX 74184 MIN 32359 b -7332

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11429500 GERLE CREEK BELOW LOON LAKE DAM, NEAR MEEKS BAY, CA

LOCATION.--Lat 39°00'20", long 120°18'52", in NE 1/4 NE 1/4 sec.5, T.13 N., R.15 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 0.3 mi downstream from Loon Lake Dam, and 11 mi southwest of Meeks Bay.

DRAINAGE AREA.--8.01 mi².

PERIOD OF RECORD.--July 1910 to April 1914 (fragmentary), August 1962 to current year. Prior to August 1962, published as "near Rubicon Springs."

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Elevation of gage is 6,250 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to August 1962, nonrecording gage at site 1,400 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records excellent. Beginning in 1884, flow regulated by Loon Lake (station 11429350). Original dam was dismantled during September and October 1962 to permit construction of a new earthfill dam, which was completed Dec. 27, 1963. Loon Lake receives water from Rubicon River via Buck-Loon tunnel (station 11428300). Since August 1971, most of the water is diverted past the station via Loon Lake powerplant (station 11429340) and returns to Gerle Creek at Gerle Creek Dam. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--10 years (water years, 1911, 1963-71, prior to diversion to Loon Lake powerplant), 131 ft³/s, 94,910 acre-ft/yr; 19 years (water years 1972-90), 8.61 ft³/s, 6,240 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,240 ft³/s, unregulated, Feb. 1, 1963, gage height, 12.65 ft, from rating curve extended above 970 ft³/s on basis of slope-area measurement of peak flow; no flow Oct. 15, 1913. Maximum discharge since construction of Loon Lake Dam in 1963, 1,050 ft³/s, June 5, 1969, gage height, 9.03 ft; minimum daily, 3.6 ft³/s, Sept. 27, 28, Nov. 3, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19 ft³/s, Oct. 23, gage height, 2.21 ft; minimum daily, 8.3 ft³/s, Nov. 16-19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 8.9 | 8.9 | 9.2 | 9.2 | 9.6 | 9.3 | 9.3 | 9.5 | 9.5 | 8.9 | 9.2 | 8.6 |
| 2 | 8.9 | 8.9 | 8.9 | 9.2 | 9.5 | 9.4 | 9.3 | 9.5 | 9.2 | 8.9 | 9.2 | 8.6 |
| 3 | 8.9 | 8.9 | 8.9 | 9.2 | 9.5 | 10 | 9.5 | 9.5 | 9.2 | 8.9 | 9.2 | 8.6 |
| 4 | 8.9 | 8.9 | 8.8 | 9.2 | 9.5 | 9.5 | 9.6 | 9.2 | 9.3 | 8.9 | 9.2 | 8.6 |
| 5 | 8.9 | 8.9 | 8.7 | 9.2 | 9.5 | 9.5 | 9.7 | 9.3 | 9.2 | 8.9 | 9.2 | 8.6 |
| 6 | 8.8 | 8.9 | 8.6 | 9.3 | 9.5 | 9.5 | 9.1 | 9.2 | 9.2 | 8.9 | 9.2 | 8.6 |
| 7 | 8.9 | 8.8 | 8.6 | 13 | 9.5 | 9.5 | 9.2 | 9.2 | 9.2 | 8.9 | 9.2 | 8.4 |
| 8 | 8.9 | 8.6 | 8.6 | 11 | 9.5 | 9.6 | 9.2 | 9.2 | 9.2 | 8.9 | 9.2 | 8.8 |
| 9 | 8.9 | 8.6 | 8.6 | 9.4 | 9.5 | 9.6 | 9.2 | 9.2 | 9.2 | 8.9 | 9.2 | 8.8 |
| 10 | 8.9 | 8.6 | 8.6 | 9.2 | 9.5 | 9.6 | 9.6 | 9.2 | 9.2 | 8.9 | 9.2 | 8.9 |
| 11 | 8.9 | 8.6 | 8.6 | 9.2 | 9.5 | 9.5 | 9.4 | 9.4 | 9.2 | 8.9 | 9.2 | 8.9 |
| 12 | 8.9 | 8.6 | 8.6 | 9.3 | 9.5 | 9.5 | 9.4 | 9.5 | 9.2 | 8.9 | 8.9 | 8.9 |
| 13 | 8.9 | 8.6 | 8.6 | 9.7 | 9.5 | 9.2 | 9.5 | 9.5 | 9.2 | 8.9 | 8.9 | 8.9 |
| 14 | 8.9 | 8.6 | 8.6 | 10 | 9.5 | 8.6 | 9.5 | 9.3 | 9.2 | 8.9 | 9.0 | 8.9 |
| 15 | 8.9 | 8.5 | 8.7 | 10 | 9.5 | 8.7 | 9.4 | 9.2 | 9.2 | 8.9 | 9.2 | 8.9 |
| 16 | 8.9 | 8.3 | 8.9 | 10 | 9.7 | 8.7 | 9.7 | 9.2 | 9.2 | 8.9 | 9.2 | 8.9 |
| 17 | 8.9 | 8.3 | 8.9 | 10 | 9.5 | 8.8 | 9.5 | 9.2 | 9.2 | 8.9 | 9.2 | 8.9 |
| 18 | 8.9 | 8.3 | 9.1 | 10 | 9.5 | 8.9 | 9.4 | 9.2 | 9.2 | 8.9 | 9.2 | 8.9 |
| 19 | 9.1 | 8.3 | 8.8 | 10 | 9.5 | 8.9 | 9.9 | 9.2 | 9.2 | 8.9 | 9.2 | 8.9 |
| 20 | 9.2 | 8.5 | 8.6 | 10 | 9.5 | 9.0 | 9.9 | 9.7 | 9.2 | 8.9 | 9.2 | 8.9 |
| 21 | 9.9 | 8.9 | 9.6 | 10 | 9.5 | 9.0 | 9.9 | 9.2 | 9.2 | 8.9 | 9.2 | 8.9 |
| 22 | 9.4 | 8.9 | 9.2 | 10 | 9.5 | 8.9 | 9.8 | 9.2 | 9.1 | 8.9 | 9.2 | 8.9 |
| 23 | 12 | 8.9 | 9.2 | 10 | 9.5 | 9.1 | 12 | 11 | 9.1 | 9.0 | 9.0 | 8.9 |
| 24 | 9.6 | 9.1 | 9.2 | 10 | 9.5 | 9.2 | 9.9 | 9.9 | 9.2 | 9.2 | 8.6 | 9.1 |
| 25 | 9.2 | 9.0 | 9.2 | 10 | 9.5 | 9.2 | 9.6 | 9.5 | 9.2 | 9.3 | 8.6 | 9.0 |
| 26 | 9.2 | 9.5 | 9.2 | 10 | 9.7 | 9.0 | 9.5 | 10 | 9.2 | 9.2 | 8.6 | 9.3 |
| 27 | 9.2 | 9.5 | 9.2 | 9.8 | 9.7 | 9.0 | 9.5 | 11 | 9.0 | 9.2 | 8.6 | 8.9 |
| 28 | 9.0 | 9.4 | 9.2 | 9.8 | 9.7 | 8.8 | 9.5 | 10 | 8.9 | 9.2 | 8.6 | 8.9 |
| 29 | 8.9 | 9.2 | 9.2 | 9.8 | --- | 8.8 | 9.5 | 9.5 | 8.9 | 9.2 | 8.6 | 8.9 |
| 30 | 8.9 | 9.2 | 9.2 | 9.8 | --- | 8.9 | 9.5 | 11 | 8.9 | 9.2 | 8.6 | 8.9 |
| 31 | 8.9 | --- | 9.2 | 9.8 | --- | 9.1 | --- | 11 | --- | 9.2 | 8.6 | --- |
| TOTAL | 282.6 | 264.2 | 276.5 | 305.1 | 266.9 | 284.3 | 288.0 | 297.7 | 275.1 | 278.5 | 279.4 | 265.2 |
| MEAN | 9.12 | 8.81 | 8.92 | 9.84 | 9.53 | 9.17 | 9.60 | 9.60 | 9.17 | 8.98 | 9.01 | 8.84 |
| MAX | 12 | 9.5 | 9.6 | 13 | 9.7 | 10 | 12 | 11 | 9.5 | 9.3 | 9.2 | 9.3 |
| MIN | 8.8 | 8.3 | 8.6 | 9.2 | 9.5 | 8.6 | 9.1 | 9.2 | 8.9 | 8.9 | 8.6 | 8.4 |
| AC-FT | 561 | 524 | 548 | 605 | 529 | 564 | 571 | 590 | 546 | 552 | 554 | 526 |
| a | 10310 | 14940 | 8930 | 4330 | 2210 | 1060 | 3850 | 1230 | 8060 | 8090 | 8490 | 155 |

CAL YR 1989 TOTAL 3357.0 MEAN 9.20 MAX 16 MIN 7.7 AC-FT 6660 AC-FT a 34180
WTR YR 1990 TOTAL 3363.5 MEAN 9.22 MAX 13 MIN 8.3 AC-FT 6670 AC-FT a 71660

a Diversion, in acre-feet, to Loon Lake powerplant, provided by Sacramento Municipal Utility District.

11430000 SOUTH FORK RUBICON RIVER BELOW GERLE CREEK, NEAR GEORGETOWN, CA

LOCATION.--Lat 38°57'17", long 120°24'02", in SW 1/4 SW 1/4 sec.22, T.13 N., R.14 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on left bank 600 ft downstream from Gerle Creek, 1.2 mi downstream from South Fork Rubicon River diversion dam, and 18 mi east of Georgetown.

DRAINAGE AREA.--47.6 mi².

PERIOD OF RECORD.--February 1910 to June 1914 (published as Little South Fork Rubicon River below Gerle Creek near Quintette), August 1961 to current year.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,970 ft above National Geodetic Vertical Datum of 1929, from topographic map. Feb. 1, 1910, to June 21, 1914, nonrecording gage at site about 700 ft downstream at different datum.

REMARKS.--No estimated daily discharges. Records excellent. Beginning in 1884, flow regulated by Loon Lake (station 11429350). Original dam was dismantled during September and October 1962 to permit construction of a new earthfill dam completed Dec. 27, 1963. Loon Lake receives water from Rubicon River via Rubicon-Rockbound tunnel to Buck Island Lake and from Buck Island Lake to Loon Lake via Buck-Loon tunnel (stations 11427940 and 11428300). Prior to Dec. 3, 1961, water was diverted out of the basin in Georgetown Divide ditch. Water is diverted 1.2 mi upstream at South Fork Rubicon River diversion dam to Robbs Peak Powerplant (station 11429300). Diversion of up to 1,440 ft³/s to Silver Creek basin began in October 1962. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE (unadjusted).--28 years (water years 1963-90), 22.9 ft³/s, 16,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s, Jan. 31, 1963, gage height, 12.32 ft, from rating curve extended above 2,500 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.8 ft³/s, Sept. 21, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 159 ft³/s, Feb. 16, gage height, 3.55 ft; minimum daily, 5.0 ft³/s, Nov. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 11 | 11 | 6.2 | 6.4 | 6.1 | 7.4 | 6.0 | 5.5 | 9.6 | 6.5 | 6.6 | 5.3 |
| 2 | 11 | 9.0 | 6.2 | 6.3 | 6.0 | 8.0 | 6.0 | 5.5 | 9.0 | 6.6 | 6.8 | 5.4 |
| 3 | 11 | 5.1 | 6.1 | 6.2 | 6.1 | 11 | 5.9 | 5.4 | 7.6 | 6.7 | 6.6 | 5.5 |
| 4 | 11 | 5.3 | 6.0 | 6.1 | 6.2 | 9.5 | 6.5 | 5.4 | 6.9 | 6.0 | 6.5 | 5.5 |
| 5 | 11 | 5.2 | 6.1 | 5.9 | 6.0 | 8.5 | 6.4 | 5.7 | 5.6 | 6.0 | 5.5 | 5.6 |
| 6 | 11 | 5.3 | 6.1 | 5.7 | 6.0 | 8.3 | 6.0 | 5.6 | 6.4 | 5.6 | 5.6 | 5.5 |
| 7 | 11 | 5.8 | 6.0 | 9.0 | 6.0 | 8.4 | 5.8 | 5.6 | 6.5 | 5.7 | 6.3 | 5.8 |
| 8 | 11 | 7.7 | 6.0 | 9.2 | 6.2 | 8.8 | 5.9 | 5.6 | 6.9 | 5.8 | 6.5 | 7.0 |
| 9 | 11 | 8.7 | 6.0 | 7.5 | 6.1 | 8.8 | 5.4 | 6.0 | 6.4 | 5.9 | 7.0 | 6.6 |
| 10 | 12 | 6.8 | 5.8 | 7.2 | 6.1 | 8.7 | 5.3 | 5.9 | 6.5 | 5.4 | 8.1 | 6.2 |
| 11 | 12 | 5.3 | 5.7 | 7.0 | 6.2 | 8.0 | 5.4 | 5.8 | 6.3 | 5.6 | 6.5 | 6.2 |
| 12 | 12 | 5.1 | 5.6 | 7.7 | 6.2 | 7.6 | 5.7 | 5.8 | 5.9 | 5.6 | 6.1 | 5.6 |
| 13 | 11 | 5.4 | 5.7 | 9.9 | 6.1 | 7.1 | 5.5 | 5.7 | 6.2 | 5.9 | 5.7 | 5.5 |
| 14 | 11 | 5.3 | 5.7 | 8.6 | 6.0 | 6.6 | 5.3 | 5.7 | 6.8 | 5.5 | 5.6 | 5.5 |
| 15 | 11 | 5.2 | 5.6 | 7.8 | 5.4 | 6.7 | 5.3 | 5.7 | 6.2 | 7.0 | 5.6 | 5.5 |
| 16 | 11 | 5.1 | 5.6 | 7.8 | 14 | 7.1 | 5.9 | 5.7 | 6.0 | 6.3 | 5.3 | 5.4 |
| 17 | 11 | 5.0 | 5.4 | 7.5 | 12 | 7.8 | 6.6 | 5.7 | 6.0 | 5.8 | 5.4 | 5.3 |
| 18 | 11 | 5.1 | 5.6 | 7.0 | 11 | 8.5 | 6.4 | 5.7 | 5.5 | 6.4 | 6.0 | 5.3 |
| 19 | 10 | 6.1 | 6.5 | 6.7 | 9.7 | 8.9 | 6.4 | 5.7 | 5.9 | 6.1 | 6.4 | 5.3 |
| 20 | 10 | 5.5 | 6.7 | 6.6 | 9.6 | 8.9 | 6.0 | 6.8 | 5.8 | 6.1 | 6.2 | 5.3 |
| 21 | 11 | 5.6 | 6.3 | 6.5 | 7.9 | 8.4 | 5.9 | 6.0 | 5.9 | 6.4 | 6.1 | 5.3 |
| 22 | 12 | 5.5 | 6.0 | 6.3 | 6.2 | 8.1 | 5.9 | 5.8 | 5.6 | 6.9 | 6.2 | 5.2 |
| 23 | 16 | 5.3 | 5.9 | 6.1 | 6.0 | 7.7 | 8.9 | 7.5 | 5.7 | 6.1 | 6.2 | 5.6 |
| 24 | 16 | 7.3 | 6.1 | 6.1 | 6.0 | 7.3 | 7.6 | 6.9 | 5.2 | 6.0 | 5.7 | 5.7 |
| 25 | 13 | 12 | 6.1 | 6.1 | 6.1 | 7.4 | 6.7 | 6.4 | 5.2 | 6.3 | 5.8 | 5.5 |
| 26 | 13 | 10 | 6.3 | 6.1 | 6.5 | 6.9 | 6.2 | 6.5 | 5.2 | 6.5 | 5.9 | 5.5 |
| 27 | 12 | 7.6 | 6.4 | 5.9 | 7.0 | 6.4 | 6.0 | 8.9 | 5.1 | 6.7 | 5.9 | 5.3 |
| 28 | 12 | 7.1 | 6.2 | 5.9 | 7.4 | 6.2 | 5.7 | 8.3 | 5.2 | 6.3 | 5.4 | 5.2 |
| 29 | 12 | 7.4 | 6.2 | 5.9 | --- | 5.9 | 5.7 | 7.4 | 5.2 | 6.5 | 5.3 | 5.2 |
| 30 | 12 | 6.5 | 6.4 | 6.2 | --- | 5.7 | 5.6 | 10 | 5.8 | 6.5 | 5.3 | 5.2 |
| 31 | 11 | --- | 6.2 | 6.0 | --- | 5.8 | --- | 13 | --- | 6.4 | 5.3 | --- |
| TOTAL | 361 | 197.3 | 186.7 | 213.2 | 200.1 | 240.4 | 181.9 | 201.2 | 186.1 | 191.1 | 187.4 | 167.0 |
| MEAN | 11.6 | 6.58 | 6.02 | 6.88 | 7.15 | 7.75 | 6.06 | 6.49 | 6.20 | 6.16 | 6.05 | 5.57 |
| MAX | 16 | 12 | 6.7 | 9.9 | 14 | 11 | 8.9 | 13 | 9.6 | 7.0 | 8.1 | 7.0 |
| MIN | 10 | 5.0 | 5.4 | 5.7 | 5.4 | 5.7 | 5.3 | 5.4 | 5.1 | 5.4 | 5.3 | 5.2 |
| AC-FT | 716 | 391 | 370 | 423 | 397 | 477 | 361 | 399 | 369 | 379 | 372 | 331 |

CAL YR 1989 TOTAL 3792.5 MEAN 10.4 MAX 167 MIN 5.0 AC-FT 7520
WTR YR 1990 TOTAL 2513.4 MEAN 6.89 MAX 16 MIN 5.0 AC-FT 4990

11431800 PILOT CREEK ABOVE STUMPY MEADOWS LAKE, CA

LOCATION.--Lat 38°53'41", long 120°34'02", in NE 1/4 NW 1/4 sec.18, T.12 N., R.13 E., El Dorado County, Hydrologic Unit 18020128, on right bank 2.1 mi upstream from Stumpy Meadows Dam and 12.5 mi east of Georgetown.

DRAINAGE AREA.--11.7 mi².

PERIOD OF RECORD.--October 1960 to current year. Prior to October 1971, published as "above Stumpy Meadows Reservoir."

GAGE.--Water-stage recorder. Elevation of gage is 4,280 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. No regulation or diversion upstream from station. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--30 years, 25.2 ft³/s, 18,260 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,510 ft³/s, Feb. 17, 1986, gage height, 7.15 ft, from rating curve extended above 540 ft³/s on basis of slope-area measurement at gage height 6.31 ft.; maximum gage height, 8.05 ft, Jan. 31, 1963; minimum daily, 0.14 ft³/s, Aug. 16, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 140 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Nov. 25 | 2200 | *109 | *2.60 | | | | |

Minimum daily, 2.2 ft³/s, Sept. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|------|------|
| 1 | 5.7 | 8.3 | 11 | 6.4 | 10 | 15 | 30 | 13 | 28 | 7.1 | 3.4 | 3.1 |
| 2 | 5.4 | 8.0 | 10 | 6.6 | e9.7 | 18 | 29 | 12 | 22 | 7.6 | 3.4 | 3.1 |
| 3 | 5.5 | 7.7 | 9.7 | e6.8 | 9.4 | 51 | 29 | 12 | 19 | 7.0 | 3.3 | 3.1 |
| 4 | 5.2 | 7.5 | 9.4 | 7.1 | e9.4 | 40 | 30 | 11 | 17 | 6.8 | 3.4 | 3.0 |
| 5 | 5.1 | 7.4 | 9.3 | 7.0 | e9.4 | 31 | 29 | 11 | 16 | 6.6 | 3.3 | 2.8 |
| 6 | 4.9 | 7.2 | 9.2 | 6.5 | 9.5 | 28 | 28 | 11 | 15 | 6.6 | 3.1 | 2.7 |
| 7 | 4.9 | 7.2 | 8.7 | 12 | e9.1 | 26 | 27 | 11 | 14 | 6.5 | 3.1 | 2.6 |
| 8 | 4.7 | 6.9 | 8.5 | 20 | e9.0 | 27 | 26 | 10 | 14 | 6.3 | 3.1 | 2.6 |
| 9 | 4.7 | 6.9 | 8.4 | 14 | e8.9 | 27 | 24 | 10 | 13 | 6.1 | 3.0 | 2.6 |
| 10 | 4.6 | 6.7 | 8.1 | 11 | 8.7 | 28 | 23 | 10 | 13 | 5.9 | 2.8 | 2.6 |
| 11 | 4.5 | 6.4 | 7.9 | 10 | 8.9 | 26 | 22 | 10 | 12 | 5.9 | 3.0 | 2.5 |
| 12 | 4.5 | 6.4 | 7.8 | 10 | 9.1 | 23 | 21 | 10 | 12 | 5.7 | 3.0 | 2.5 |
| 13 | 4.5 | 6.2 | 7.6 | 20 | 9.3 | 22 | 20 | 9.9 | 12 | 5.5 | 2.8 | 2.6 |
| 14 | 4.5 | 6.2 | 7.5 | 19 | e9.1 | 20 | 19 | 9.7 | 11 | 5.4 | 2.8 | 2.6 |
| 15 | 4.5 | 6.2 | 7.5 | 16 | e8.8 | 20 | 18 | 9.4 | 11 | 5.2 | 2.8 | 2.8 |
| 16 | 4.6 | 6.2 | 7.2 | 15 | e8.5 | 20 | 19 | 9.3 | 11 | 5.0 | 2.8 | 2.8 |
| 17 | 4.5 | 6.0 | 7.1 | e14 | e9.0 | 22 | 19 | 9.1 | 10 | 4.8 | 2.8 | 2.7 |
| 18 | 4.3 | 5.9 | 7.0 | 13 | e10 | 25 | 18 | 9.0 | 10 | 4.8 | 3.1 | 2.6 |
| 19 | 4.2 | 5.7 | 6.9 | e12 | e10 | 28 | 17 | 9.1 | 10 | 4.8 | 3.3 | 2.6 |
| 20 | 4.1 | 5.7 | 6.8 | e11 | e9.5 | 32 | 16 | 14 | 9.5 | 4.6 | 3.3 | 2.4 |
| 21 | 5.5 | 5.7 | 6.7 | e10 | e10 | 35 | 16 | 12 | 9.1 | 4.6 | 3.6 | 2.2 |
| 22 | 9.0 | 5.6 | 6.7 | 10 | e10 | 37 | 16 | 10 | 8.7 | 4.4 | 3.4 | 2.4 |
| 23 | 27 | 5.5 | 6.5 | e9.4 | e11 | 38 | 24 | 17 | 8.4 | 4.1 | 3.3 | 3.2 |
| 24 | 36 | 9.6 | 6.4 | e9.2 | e11 | 39 | 21 | 16 | 8.3 | 4.1 | 3.1 | 5.1 |
| 25 | 24 | 33 | 6.7 | 9.1 | 11 | 41 | 18 | 13 | 8.0 | 4.2 | 3.3 | 4.9 |
| 26 | 16 | 44 | 6.5 | 9.0 | 11 | 39 | 16 | 11 | 7.8 | 4.0 | 3.6 | 4.7 |
| 27 | 13 | 20 | 6.4 | 9.3 | 13 | 37 | 15 | 18 | 7.5 | 3.9 | 3.4 | 4.1 |
| 28 | 11 | 15 | 6.4 | e9.0 | 14 | 35 | 15 | 22 | 7.5 | 4.0 | 3.3 | 3.8 |
| 29 | 10 | 13 | 6.4 | 8.7 | --- | 33 | 14 | 19 | 7.4 | 3.8 | 3.3 | 3.4 |
| 30 | 9.2 | 12 | 6.4 | 10 | --- | 32 | 14 | 23 | 7.2 | 3.6 | 3.1 | 3.3 |
| 31 | 8.6 | --- | 6.4 | 9.9 | --- | 30 | --- | 44 | --- | 3.5 | 3.1 | --- |
| TOTAL | 264.2 | 298.1 | 237.1 | 341.0 | 276.3 | 925 | 633 | 415.5 | 359.4 | 162.4 | 98.1 | 91.4 |
| MEAN | 8.52 | 9.94 | 7.65 | 11.0 | 9.87 | 29.8 | 21.1 | 13.4 | 12.0 | 5.24 | 3.16 | 3.05 |
| MAX | 36 | 44 | 11 | 20 | 14 | 51 | 30 | 44 | 28 | 7.6 | 3.6 | 5.1 |
| MIN | 4.1 | 5.5 | 6.4 | 6.4 | 8.5 | 15 | 14 | 9.0 | 7.2 | 3.5 | 2.8 | 2.2 |
| AC-FT | 524 | 591 | 470 | 676 | 548 | 1830 | 1260 | 824 | 713 | 322 | 195 | 181 |

CAL YR 1989 TOTAL 7224.2 MEAN 19.8 MAX 228 MIN 3.3 AC-FT 14330
WTR YR 1990 TOTAL 4101.5 MEAN 11.2 MAX 51 MIN 2.2 AC-FT 8140

e Estimated.

SACRAMENTO RIVER BASIN

11433040 PILOT CREEK BELOW MUTTON CANYON, NEAR GEORGETOWN, CA

LOCATION.--Lat 38°55'25", long 120°38'27", in NE 1/4 NW 1/4 sec.4, T.12 N., R.12 E., El Dorado County, Hydrologic Unit 18020128, Eldorado National Forest, on left bank 450 ft downstream from Mutton Canyon, 500 ft downstream from Georgetown Divide diversion dam, 2.5 mi downstream from Stumpy Meadows Dam, and 10 mi east of Georgetown.

DRAINAGE AREA.--21.1 mi².

PERIOD OF RECORD.--June 1961 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,760 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Stumpy Meadows Lake 2.5 mi upstream, usable capacity, 17,500 acre-ft, completed in November 1961. Georgetown Irrigation District ditch, capacity, about 60 ft³/s, diverts water out of Pilot Creek, 500 ft upstream from station. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--29 years, 30.0 ft³/s, 21,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,330 ft³/s, Feb. 18, 1986, gage height, 10.86 ft, from rating curve extended above 970 ft³/s on basis of slope-area measurement at gage height 10.06 ft; minimum daily, 0.20 ft³/s, Sept. 24, Nov. 1-5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15 ft³/s, Oct. 23, gage height, 3.67 ft; minimum daily, 1.7 ft³/s, several days during September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1 | 4.2 | 4.3 | 4.3 | 3.9 | 5.9 | 6.1 | 7.2 | 4.4 | 5.3 | 1.9 | 3.1 | 2.0 |
| 2 | 3.9 | 4.3 | 4.3 | 3.9 | 5.9 | 6.9 | 5.6 | 4.4 | 4.7 | 2.1 | 2.7 | 2.0 |
| 3 | 3.9 | 4.3 | 4.3 | 3.9 | 5.9 | 11 | 4.5 | 4.3 | 4.4 | 2.5 | 2.2 | 2.0 |
| 4 | 3.9 | 4.3 | 4.3 | 4.0 | 5.9 | 8.6 | 4.4 | 4.3 | 4.3 | 2.5 | 2.2 | 1.9 |
| 5 | 3.9 | 4.3 | 4.1 | 4.1 | 5.9 | 7.6 | 4.4 | 4.1 | 4.1 | 2.5 | 2.2 | 1.9 |
| 6 | 3.9 | 4.3 | 4.1 | 4.1 | 5.9 | 7.4 | 4.3 | 4.1 | 4.1 | 2.4 | 2.2 | 1.9 |
| 7 | 3.8 | 4.3 | 4.0 | 6.2 | 5.9 | 7.3 | 4.3 | 4.1 | 4.1 | 2.4 | 2.2 | 1.9 |
| 8 | 3.8 | 4.1 | 3.9 | 8.1 | 5.6 | 7.5 | 4.3 | 4.1 | 4.1 | 2.5 | 2.2 | 1.8 |
| 9 | 3.8 | 4.1 | 3.9 | 5.2 | 5.4 | 7.4 | 4.1 | 4.0 | 4.1 | 2.4 | 2.2 | 1.9 |
| 10 | 3.8 | 4.1 | 3.9 | 4.7 | 5.4 | 8.3 | 3.9 | 4.0 | 4.1 | 2.3 | 2.2 | 1.8 |
| 11 | 3.8 | 4.1 | 3.9 | 4.5 | 5.4 | 8.0 | 3.8 | 4.0 | 4.1 | 2.4 | 2.2 | 1.8 |
| 12 | 3.8 | 4.1 | 3.8 | 4.4 | 5.4 | 7.3 | 3.9 | 4.1 | 4.3 | 2.3 | 2.2 | 1.8 |
| 13 | 3.9 | 4.1 | 3.8 | 6.8 | 5.4 | 7.0 | 3.9 | 4.1 | 4.4 | 2.3 | 2.2 | 1.8 |
| 14 | 3.9 | 4.1 | 3.8 | 7.2 | 5.4 | 7.0 | 4.1 | 4.0 | 4.5 | 2.5 | 2.3 | 1.8 |
| 15 | 3.9 | 4.1 | 3.8 | 6.0 | 5.4 | 7.0 | 4.1 | 3.9 | 4.5 | 2.4 | 2.3 | 1.9 |
| 16 | 3.9 | 4.1 | 3.8 | 5.5 | 8.3 | 7.1 | 4.2 | 3.9 | 4.5 | 2.3 | 2.2 | 1.9 |
| 17 | 3.9 | 4.1 | 3.8 | 5.1 | 8.2 | 7.5 | 4.2 | 3.9 | 4.4 | 2.1 | 2.2 | 1.8 |
| 18 | 3.9 | 4.1 | 3.8 | 5.0 | 7.2 | 7.8 | 4.1 | 3.9 | 4.4 | 2.1 | 2.3 | 1.7 |
| 19 | 3.9 | 4.1 | 3.8 | 5.0 | 5.9 | 7.9 | 4.1 | 3.9 | 3.8 | 2.0 | 2.3 | 1.7 |
| 20 | 3.9 | 4.1 | 3.8 | 4.9 | 5.5 | 7.9 | 3.9 | 5.0 | 2.3 | 2.0 | 2.2 | 1.7 |
| 21 | 4.2 | 4.1 | 3.9 | 4.8 | 5.4 | 7.9 | 3.9 | 4.6 | 2.3 | 2.0 | 2.2 | 1.7 |
| 22 | 4.5 | 4.0 | 3.9 | 4.8 | 5.4 | 7.9 | 4.0 | 4.2 | 2.2 | 2.0 | 2.2 | 1.7 |
| 23 | 7.9 | 3.8 | 3.9 | 4.8 | 5.4 | 7.8 | 6.9 | 5.6 | 2.2 | 1.9 | 2.2 | 1.7 |
| 24 | 7.1 | 4.6 | 3.9 | 4.8 | 5.4 | 7.8 | 5.3 | 5.2 | 2.2 | 2.0 | 2.1 | 1.8 |
| 25 | 7.0 | 6.5 | 3.9 | 4.7 | 5.4 | 7.8 | 4.4 | 4.3 | 2.1 | 1.9 | 2.1 | 1.8 |
| 26 | 5.3 | 9.0 | 3.9 | 5.3 | 5.5 | 7.7 | 4.1 | 4.1 | 2.0 | 2.0 | 2.2 | 1.8 |
| 27 | 5.0 | 5.6 | 3.9 | 5.6 | 5.9 | 7.8 | 4.0 | 4.9 | 1.9 | 1.9 | 2.2 | 1.8 |
| 28 | 4.8 | 4.9 | 3.9 | 5.6 | 6.1 | 7.7 | 4.1 | 6.1 | 1.9 | 1.9 | 2.1 | 1.7 |
| 29 | 4.6 | 4.7 | 3.9 | 5.6 | --- | 7.5 | 4.1 | 5.1 | 1.9 | 1.9 | 2.0 | 1.7 |
| 30 | 4.5 | 4.5 | 3.9 | 6.5 | --- | 7.3 | 4.3 | 5.6 | 1.9 | 2.3 | 2.0 | 1.7 |
| 31 | 4.4 | --- | 3.9 | 6.2 | --- | 7.3 | --- | 6.9 | --- | 3.1 | 2.0 | --- |
| TOTAL | 137.0 | 135.1 | 122.1 | 161.2 | 164.3 | 237.1 | 132.4 | 139.1 | 105.1 | 68.8 | 69.1 | 54.4 |
| MEAN | 4.42 | 4.50 | 3.94 | 5.20 | 5.87 | 7.65 | 4.41 | 4.49 | 3.50 | 2.22 | 2.23 | 1.81 |
| MAX | 7.9 | 9.0 | 4.3 | 8.1 | 8.3 | 11 | 7.2 | 6.9 | 5.3 | 3.1 | 3.1 | 2.0 |
| MIN | 3.8 | 3.8 | 3.8 | 3.9 | 5.4 | 6.1 | 3.8 | 3.9 | 1.9 | 1.9 | 2.0 | 1.7 |
| AC-FT | 272 | 268 | 242 | 320 | 326 | 470 | 263 | 276 | 208 | 136 | 137 | 108 |

CAL YR 1989 TOTAL 2614.2 MEAN 7.16 MAX 87 MIN 1.3 AC-FT 5190
WTR YR 1990 TOTAL 1525.7 MEAN 4.18 MAX 11 MIN 1.7 AC-FT 3030

11433060 SOUTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CA

LOCATION.--Lat 39°03'04", long 120°28'14", in SW 1/4 NE 1/4 sec.24, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank at diversion dam, 3.3 mi upstream from confluence with North and South Forks Long Canyon Creek, and 17.2 mi east of Volcanoville.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and sharp-crested weir. Elevation of gage is 4,630 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Tunnel completed in September 1965; diversion began in February 1966. Flow is diverted from South Fork Long Canyon Creek to a tunnel from Hell Hole Reservoir to Middle Fork powerplant on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--25 years, 8.97 ft³/s, 6,500 acre-ft/yr.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 251 ft³/s, Nov. 12, 1973; no flow for part of each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|------|--------|--------|------|------|------|
| 1 | .00 | .00 | .00 | .00 | .00 | 10 | 20 | 8.3 | 21 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | .00 | .00 | 13 | 20 | 7.6 | 15 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | .00 | .00 | 31 | 21 | 6.9 | 12 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | .00 | .00 | 22 | 22 | 6.2 | 10 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | .00 | .00 | 16 | 22 | 5.6 | 8.7 | .00 | .00 | .00 |
| 6 | .00 | .00 | .00 | .00 | .00 | 15 | 21 | 5.3 | 7.9 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | .00 | .00 | 15 | 21 | 4.8 | 6.9 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | 4.7 | .00 | 16 | 24 | 4.2 | 5.6 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | 4.0 | .00 | 16 | 20 | 3.5 | 5.0 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | 1.6 | .00 | 15 | 19 | 3.5 | 4.2 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .45 | .00 | 12 | 18 | 3.0 | 3.7 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .00 | .00 | 10 | 18 | 2.5 | 3.2 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .00 | .00 | 8.7 | 18 | 2.1 | 2.8 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | .00 | .00 | 8.3 | 18 | 1.6 | 2.5 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | .74 | .00 | 8.7 | 17 | 1.4 | 3.2 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | 1.6 | .00 | 11 | 19 | .90 | 4.3 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | .90 | .00 | 13 | 18 | .57 | 2.8 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | 1.4 | .00 | 18 | 16 | .29 | 2.3 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .57 | .00 | 20 | 15 | .19 | 1.6 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | .29 | .00 | 22 | 14 | 3.1 | 1.1 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | .29 | .00 | 24 | 13 | 3.0 | .57 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | .29 | .00 | 24 | 12 | 1.6 | .29 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | .19 | .00 | 24 | 29 | 5.5 | .19 | .00 | .00 | .00 |
| 24 | .00 | .00 | .00 | .08 | .00 | 26 | 23 | 5.3 | .05 | .00 | .00 | .00 |
| 25 | .00 | .00 | .00 | .07 | .00 | 27 | 20 | 3.5 | .00 | .00 | .00 | .00 |
| 26 | .00 | .00 | .00 | .00 | .00 | 26 | 16 | 3.2 | .00 | .00 | .00 | .00 |
| 27 | .00 | .00 | .00 | .00 | 5.0 | 24 | 12 | 12 | .00 | .00 | .00 | .00 |
| 28 | .00 | .00 | .00 | .00 | 10 | 22 | 12 | 14 | .00 | .00 | .00 | .00 |
| 29 | .00 | .00 | .00 | .00 | --- | 20 | 11 | 9.4 | .00 | .00 | .00 | .00 |
| 30 | .00 | .00 | .00 | .00 | --- | 20 | 10 | 17 | .00 | .00 | .00 | .00 |
| 31 | .00 | --- | .00 | .00 | --- | 20 | --- | 34 | --- | .00 | .00 | --- |
| TOTAL | 0.00 | 0.00 | 0.00 | 17.17 | 15.00 | 557.7 | 539 | 180.05 | 124.90 | 0.00 | 0.00 | 0.00 |
| MEAN | .000 | .000 | .000 | .55 | .54 | 18.0 | 18.0 | 5.81 | 4.16 | .000 | .000 | .000 |
| MAX | .00 | .00 | .00 | 4.7 | 10 | 31 | 29 | 34 | 21 | .00 | .00 | .00 |
| MIN | .00 | .00 | .00 | .00 | .00 | 8.3 | 10 | .19 | .00 | .00 | .00 | .00 |
| AC-FT | .00 | .00 | .00 | 34 | 30 | 1110 | 1070 | 357 | 248 | .00 | .00 | .00 |

CAL YR 1989 TOTAL 5294.73 MEAN 14.5 MAX 150 MIN .00 AC-FT 10500
WTR YR 1990 TOTAL 1433.82 MEAN 3.93 MAX 34 MIN .00 AC-FT 2840

SACRAMENTO RIVER BASIN

11433065 SOUTH FORK LONG CANYON CREEK BELOW DIVERSION DAM, NEAR VOLCANOVILLE, CA

LOCATION.--Lat 39°03'04", long 120°28'14", in SW 1/4 NE 1/4 sec.24, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 21 ft below diversion dam, 3.3 mi upstream from confluence of North and South Forks Long Canyon Creek, and 17.2 mi east of Volcanoville.

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

GAGE.--Water-stage recorder. Elevation of gage is 4,630 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Discharge is computed only during periods of operation of South Fork Long Canyon Creek diversion tunnel (station 11433060). See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|-------|-------|-------|-----|-----|-----|-----|
| 1 | --- | --- | --- | --- | --- | 6.3 | 6.3 | 6.3 | 6.1 | --- | --- | --- |
| 2 | --- | --- | --- | --- | --- | 6.3 | 6.3 | 6.3 | 5.9 | --- | --- | --- |
| 3 | --- | --- | --- | --- | --- | 6.5 | 6.5 | 6.1 | 5.9 | --- | --- | --- |
| 4 | --- | --- | --- | --- | --- | 6.5 | 6.3 | 6.1 | 5.9 | --- | --- | --- |
| 5 | --- | --- | --- | --- | --- | 6.3 | 6.5 | 6.1 | 5.9 | --- | --- | --- |
| 6 | --- | --- | --- | --- | --- | 6.3 | 6.5 | 6.1 | 5.9 | --- | --- | --- |
| 7 | --- | --- | --- | --- | --- | 6.3 | 6.5 | 5.9 | 5.9 | --- | --- | --- |
| 8 | --- | --- | --- | 9.4 | --- | 6.5 | 6.5 | 5.9 | 5.9 | --- | --- | --- |
| 9 | --- | --- | --- | 7.0 | --- | 6.5 | 6.5 | 5.9 | 5.9 | --- | --- | --- |
| 10 | --- | --- | --- | 7.0 | --- | 6.5 | 6.5 | 5.9 | 5.9 | --- | --- | --- |
| 11 | --- | --- | --- | 7.0 | --- | 6.5 | 6.5 | 5.9 | 5.9 | --- | --- | --- |
| 12 | --- | --- | --- | --- | --- | 6.5 | 6.5 | 5.9 | 5.9 | --- | --- | --- |
| 13 | --- | --- | --- | --- | --- | 6.5 | 6.5 | 5.9 | 5.9 | --- | --- | --- |
| 14 | --- | --- | --- | --- | --- | 6.5 | 6.5 | 5.8 | 5.9 | --- | --- | --- |
| 15 | --- | --- | --- | 7.8 | --- | 6.5 | 6.5 | 5.8 | 5.9 | --- | --- | --- |
| 16 | --- | --- | --- | 7.0 | --- | 6.5 | 6.5 | 5.8 | 6.1 | --- | --- | --- |
| 17 | --- | --- | --- | 6.7 | --- | 6.7 | 6.5 | 5.8 | 5.9 | --- | --- | --- |
| 18 | --- | --- | --- | 6.5 | --- | 6.7 | 6.5 | 5.6 | 5.8 | --- | --- | --- |
| 19 | --- | --- | --- | 6.3 | --- | 6.7 | 6.5 | 5.4 | 5.6 | --- | --- | --- |
| 20 | --- | --- | --- | 6.3 | --- | 6.7 | 6.5 | 5.6 | 5.6 | --- | --- | --- |
| 21 | --- | --- | --- | 6.3 | --- | 6.7 | 6.5 | 5.6 | 5.6 | --- | --- | --- |
| 22 | --- | --- | --- | 6.3 | --- | 6.7 | 6.5 | 5.4 | 5.4 | --- | --- | --- |
| 23 | --- | --- | --- | 6.3 | --- | 6.7 | 6.7 | 5.8 | 5.4 | --- | --- | --- |
| 24 | --- | --- | --- | 6.3 | --- | 6.5 | 5.7 | 5.6 | 5.4 | --- | --- | --- |
| 25 | --- | --- | --- | 6.3 | --- | 6.5 | 3.7 | 5.6 | 5.3 | --- | --- | --- |
| 26 | --- | --- | --- | --- | --- | 6.5 | 5.2 | 5.6 | --- | --- | --- | --- |
| 27 | --- | --- | --- | --- | 7.8 | 6.5 | 6.9 | 5.8 | --- | --- | --- | --- |
| 28 | --- | --- | --- | --- | 6.3 | 6.3 | 6.5 | 5.9 | --- | --- | --- | --- |
| 29 | --- | --- | --- | --- | --- | 6.3 | 6.5 | 5.8 | --- | --- | --- | --- |
| 30 | --- | --- | --- | --- | --- | 6.3 | 6.3 | 5.9 | --- | --- | --- | --- |
| 31 | --- | --- | --- | --- | --- | 6.3 | --- | 6.3 | --- | --- | --- | --- |
| TOTAL | --- | --- | --- | --- | --- | 201.1 | 189.9 | 181.4 | --- | --- | --- | --- |
| MEAN | --- | --- | --- | --- | --- | 6.49 | 6.33 | 5.85 | --- | --- | --- | --- |
| MAX | --- | --- | --- | --- | --- | 6.7 | 6.9 | 6.3 | --- | --- | --- | --- |
| MIN | --- | --- | --- | --- | --- | 6.3 | 3.7 | 5.4 | --- | --- | --- | --- |
| AC-FT | --- | --- | --- | --- | --- | 399 | 377 | 360 | --- | --- | --- | --- |

11433080 NORTH FORK LONG CANYON CREEK DIVERSION TUNNEL NEAR VOLCANOVILLE, CA

LOCATION.--Lat 39°02'57", long 120°28'56", in SW 1/4 NW 1/4 sec.24, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on left bank at diversion dam, 3.2 mi upstream from confluence of North and South Forks Long Canyon Creek, and 16.9 mi east of Volcanoville.

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 4,700 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Tunnel completed in September 1965 and diversions began in February 1966. Flow is diverted from North Fork Long Canyon Creek to a tunnel from Hell Hole Reservoir to Middle Fork powerplant (stations 11428700 and 11428600) on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--25 years, 3.54 ft³/s, 2,560 acre-ft/yr.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 75 ft³/s, May. 25, 1983; no flow for part of each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|------|--------|-------|-------|-------|------|------|------|
| 1 | .00 | .00 | .00 | .00 | .00 | .00 | 9.1 | 2.2 | 9.3 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | .00 | .00 | .00 | 9.1 | 1.8 | 5.7 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | .00 | .00 | .00 | 9.3 | 1.5 | 3.9 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | .00 | .00 | .00 | 9.3 | 1.1 | 2.9 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | .00 | .00 | 6.4 | 9.3 | .84 | 2.4 | .00 | .00 | .00 |
| 6 | .00 | .00 | .00 | .00 | .00 | 10 | 8.7 | .61 | 2.2 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | .00 | .00 | 10 | 8.3 | .34 | 1.9 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | 4.6 | .00 | 11 | 9.7 | .14 | 1.4 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | 5.4 | .00 | 11 | 8.1 | .00 | 1.0 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | 2.6 | .00 | 9.7 | 7.3 | .00 | .76 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | .97 | .00 | 7.5 | 6.9 | .00 | .54 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | .00 | .00 | 6.0 | 6.6 | .00 | .34 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | .00 | .00 | 5.4 | 6.4 | .00 | .14 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | .00 | .00 | 4.5 | 6.0 | .00 | .00 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | .00 | .00 | 5.5 | 5.5 | .00 | .00 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | .00 | .00 | 6.8 | 5.8 | .00 | .00 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | .00 | .00 | 9.7 | 5.7 | .00 | .00 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | .00 | .00 | 12 | 5.0 | .00 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | .00 | .00 | 13 | 4.7 | .00 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | .00 | .00 | 14 | 4.2 | .00 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | .00 | .00 | 14 | 3.8 | .00 | .00 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | .00 | .00 | 14 | 3.6 | .00 | .00 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | .00 | .00 | 14 | 14 | .00 | .00 | .00 | .00 | .00 |
| 24 | .00 | .00 | .00 | .00 | .00 | 14 | 9.0 | .00 | .00 | .00 | .00 | .00 |
| 25 | .00 | .00 | .00 | .00 | .00 | 14 | 5.9 | .00 | .00 | .00 | .00 | .00 |
| 26 | .00 | .00 | .00 | .00 | .00 | 13 | 4.4 | .00 | .00 | .00 | .00 | .00 |
| 27 | .00 | .00 | .00 | .00 | .00 | 12 | 3.6 | 4.5 | .00 | .00 | .00 | .00 |
| 28 | .00 | .00 | .00 | .00 | .00 | 10 | 3.1 | 7.0 | .00 | .00 | .00 | .00 |
| 29 | .00 | .00 | .00 | .00 | --- | 9.3 | 2.7 | 3.8 | .00 | .00 | .00 | .00 |
| 30 | .00 | .00 | .00 | .00 | --- | 8.7 | 2.6 | 11 | .00 | .00 | .00 | .00 |
| 31 | .00 | --- | .00 | .00 | --- | 8.7 | --- | 20 | --- | .00 | .00 | --- |
| TOTAL | 0.00 | 0.00 | 0.00 | 13.57 | 0.00 | 274.20 | 197.7 | 54.83 | 32.48 | 0.00 | 0.00 | 0.00 |
| MEAN | .000 | .000 | .000 | .44 | .000 | 8.85 | 6.59 | 1.77 | 1.08 | .000 | .000 | .000 |
| MAX | .00 | .00 | .00 | 5.4 | .00 | 14 | 14 | 20 | 9.3 | .00 | .00 | .00 |
| MIN | .00 | .00 | .00 | .00 | .00 | .00 | 2.6 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | .00 | .00 | .00 | 27 | .00 | 544 | 392 | 109 | 64 | .00 | .00 | .00 |

CAL YR 1989 TOTAL 2148.58 MEAN 5.89 MAX 66 MIN .00 AC-FT 4260
WTR YR 1990 TOTAL 572.78 MEAN 1.57 MAX 20 MIN .00 AC-FT 1140

SACRAMENTO RIVER BASIN

11433085 NORTH FORK LONG CANYON CREEK BELOW DIVERSION DAM, NEAR VOLCANOVILLE, CA

LOCATION.--Lat 39°02'57", long 120°28'56", in SW 1/4 NW 1/4 sec.24, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 26 ft below diversion dam, 3.2 mi upstream from confluence of North and South Forks Long Canyon Creek, and 16.9 mi east of Volcanoville.

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

GAGE.--Water-stage recorder. Elevation of gage is 4,700 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Discharge is computed only during periods of operation of North Fork Long Canyon Creek diversion tunnel (station 11433080). See schematic diagram of Middle Fork American and Rubicon River basins.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-----|-----|-----|-----|-----|------|------|-----|-----|-----|-----|-----|
| 1 | --- | --- | --- | --- | --- | --- | 3.1 | 2.7 | 3.1 | --- | --- | --- |
| 2 | --- | --- | --- | --- | --- | --- | 3.1 | 2.6 | 2.9 | --- | --- | --- |
| 3 | --- | --- | --- | --- | --- | --- | 3.1 | 2.6 | 2.8 | --- | --- | --- |
| 4 | --- | --- | --- | --- | --- | --- | 3.2 | 2.6 | 2.8 | --- | --- | --- |
| 5 | --- | --- | --- | --- | --- | e7.0 | 3.2 | 2.6 | 2.8 | --- | --- | --- |
| 6 | --- | --- | --- | --- | --- | 3.3 | 3.2 | 2.6 | 2.8 | --- | --- | --- |
| 7 | --- | --- | --- | --- | --- | 3.3 | 3.2 | 2.5 | 2.8 | --- | --- | --- |
| 8 | --- | --- | --- | e13 | --- | 3.3 | 3.3 | 2.6 | 2.8 | --- | --- | --- |
| 9 | --- | --- | --- | 2.7 | --- | 3.3 | 3.2 | --- | 2.7 | --- | --- | --- |
| 10 | --- | --- | --- | 2.8 | --- | 3.3 | 3.1 | --- | 2.7 | --- | --- | --- |
| 11 | --- | --- | --- | 3.1 | --- | 3.2 | 3.0 | --- | 2.7 | --- | --- | --- |
| 12 | --- | --- | --- | --- | --- | 3.1 | 3.0 | --- | 2.7 | --- | --- | --- |
| 13 | --- | --- | --- | --- | --- | 2.7 | 3.0 | --- | 2.7 | --- | --- | --- |
| 14 | --- | --- | --- | --- | --- | 3.0 | 3.0 | --- | --- | --- | --- | --- |
| 15 | --- | --- | --- | --- | --- | 3.1 | 2.9 | --- | --- | --- | --- | --- |
| 16 | --- | --- | --- | --- | --- | 3.1 | 3.0 | --- | --- | --- | --- | --- |
| 17 | --- | --- | --- | --- | --- | 3.2 | 3.0 | --- | --- | --- | --- | --- |
| 18 | --- | --- | --- | --- | --- | 3.3 | 3.0 | --- | --- | --- | --- | --- |
| 19 | --- | --- | --- | --- | --- | 3.3 | 3.0 | --- | --- | --- | --- | --- |
| 20 | --- | --- | --- | --- | --- | 3.3 | 3.0 | --- | --- | --- | --- | --- |
| 21 | --- | --- | --- | --- | --- | 3.3 | 3.0 | --- | --- | --- | --- | --- |
| 22 | --- | --- | --- | --- | --- | 3.3 | 3.0 | --- | --- | --- | --- | --- |
| 23 | --- | --- | --- | --- | --- | 3.3 | 3.4 | --- | --- | --- | --- | --- |
| 24 | --- | --- | --- | --- | --- | 3.3 | 3.1 | --- | --- | --- | --- | --- |
| 25 | --- | --- | --- | --- | --- | 3.3 | 2.9 | --- | --- | --- | --- | --- |
| 26 | --- | --- | --- | --- | --- | 3.3 | 2.8 | --- | --- | --- | --- | --- |
| 27 | --- | --- | --- | --- | --- | 3.2 | 2.8 | 3.8 | --- | --- | --- | --- |
| 28 | --- | --- | --- | --- | --- | 3.2 | 2.8 | 3.1 | --- | --- | --- | --- |
| 29 | --- | --- | --- | --- | --- | 3.2 | 2.8 | 2.9 | --- | --- | --- | --- |
| 30 | --- | --- | --- | --- | --- | 3.1 | 2.8 | 3.2 | --- | --- | --- | --- |
| 31 | --- | --- | --- | --- | --- | 3.1 | --- | 3.5 | --- | --- | --- | --- |
| TOTAL | --- | --- | --- | --- | --- | --- | 91.0 | --- | --- | --- | --- | --- |
| MEAN | --- | --- | --- | --- | --- | --- | 3.03 | --- | --- | --- | --- | --- |
| MAX | --- | --- | --- | --- | --- | --- | 3.4 | --- | --- | --- | --- | --- |
| MIN | --- | --- | --- | --- | --- | --- | 2.8 | --- | --- | --- | --- | --- |
| AC-FT | --- | --- | --- | --- | --- | --- | 180 | --- | --- | --- | --- | --- |

e Estimated.

11433100 LONG CANYON CREEK NEAR FRENCH MEADOWS, CA

LOCATION.--Lat 39°01'16", long 120°30'53", in SE 1/4 NW 1/4 sec.34, T.14 N., R.13 E., Placer County, Hydrologic Unit 18020128, Eldorado National Forest, on right bank 75 ft downstream from North Fork Long Canyon, 6.5 mi south of French Meadows, and 18 mi east of Foresthill.

DRAINAGE AREA.--18.0 mi².

PERIOD OF RECORD.--August 1960 to current year.

REVISED RECORDS.--WDR CA-86-4: 1980(M), 1982-84(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,100 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Since February 1966, natural flow of stream affected by transbasin diversions 3 mi upstream from station through tunnels from South and North Forks Long Canyon Creek diversion dams (stations 11433060 and 11433080) to Middle Fork powerplant via tunnel from Hell Hole Reservoir (stations 11428700 and 11428600). See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--25 years (water years 1966-90), 30.8 ft³/s, 22,310 acre-ft/yr.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,690 ft³/s, Dec. 23, 1964, gage height, 11.20 ft, from rating curve extended above 300 ft³/s on basis of slope-area measurements at gage heights 6.62 and 10.27 ft; minimum daily, 0.08 ft³/s, Sept. 27, 28, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 131 ft³/s, Nov. 25, gage height, 4.01 ft; minimum daily, 0.55 ft³/s, Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|------|------|------|-------|-------|-------|------|-------|
| 1 | 2.0 | 5.4 | 9.5 | 4.8 | 12 | 25 | 21 | 13 | 20 | 7.1 | 2.3 | 1.1 |
| 2 | 1.9 | 5.0 | 9.7 | 4.9 | 11 | 28 | 20 | 13 | 18 | 7.5 | 2.3 | 1.0 |
| 3 | 2.0 | 4.9 | 9.5 | 4.6 | 12 | 64 | 20 | 13 | 16 | 6.8 | 2.1 | 1.0 |
| 4 | 2.0 | 4.9 | 9.5 | 4.5 | 12 | 44 | 20 | 12 | 16 | 6.4 | 1.7 | .90 |
| 5 | 2.0 | 4.7 | 9.7 | 4.5 | 11 | 30 | 19 | 12 | 15 | 6.1 | 1.7 | .85 |
| 6 | 1.9 | 4.7 | 9.8 | 4.6 | 12 | 24 | 19 | 12 | 14 | 6.0 | 1.6 | .85 |
| 7 | 1.8 | 4.5 | 9.1 | 18 | 11 | 24 | 19 | 12 | 14 | 5.7 | 1.5 | .85 |
| 8 | 1.8 | 4.2 | 8.7 | 46 | 11 | 24 | 19 | 12 | 14 | 5.5 | 1.6 | .85 |
| 9 | 1.8 | 4.2 | 8.2 | 14 | 11 | 24 | 18 | 12 | 14 | 5.3 | 1.7 | .85 |
| 10 | 1.7 | 4.1 | 7.8 | 13 | 12 | 25 | 17 | 12 | 13 | 5.0 | 1.6 | .85 |
| 11 | 1.7 | 3.9 | 7.3 | 13 | 14 | 23 | 17 | 12 | 13 | 4.9 | 1.6 | .85 |
| 12 | 1.7 | 3.9 | 6.9 | 15 | 16 | 22 | 16 | 11 | 13 | 4.7 | 1.7 | .85 |
| 13 | 1.7 | 3.6 | 6.6 | 23 | 16 | 21 | 16 | 11 | 13 | 4.5 | 1.7 | .72 |
| 14 | 1.7 | 3.6 | 6.4 | 22 | e15 | 21 | 15 | 11 | 12 | 4.3 | 1.7 | .72 |
| 15 | 1.7 | 3.6 | 6.4 | 20 | e15 | 21 | 15 | 11 | 12 | 4.4 | 1.6 | .72 |
| 16 | 1.6 | 3.6 | 6.2 | 18 | 10 | 22 | 16 | 10 | 12 | 4.3 | 1.5 | .72 |
| 17 | 1.6 | 3.4 | 6.0 | 16 | 15 | 23 | 15 | 10 | 12 | 4.1 | 1.3 | .72 |
| 18 | 1.7 | 3.4 | 5.8 | 15 | 16 | 24 | 15 | 9.9 | 12 | 3.8 | 1.4 | .65 |
| 19 | 1.6 | 3.4 | 5.7 | 14 | 14 | 24 | 15 | 9.8 | 11 | 3.7 | 1.3 | .62 |
| 20 | 1.6 | 3.2 | 5.5 | 14 | 13 | 25 | 14 | 12 | 11 | 3.5 | 1.3 | .62 |
| 21 | 2.7 | 3.0 | 5.4 | 14 | 13 | 25 | 14 | 11 | 10 | 3.3 | 1.3 | .56 |
| 22 | 3.6 | 3.0 | 5.2 | 14 | 14 | 25 | 14 | 11 | 10 | 3.1 | 1.3 | .55 |
| 23 | 19 | 3.0 | 5.2 | 13 | 15 | 25 | 17 | 15 | 9.8 | 2.9 | 1.3 | .72 |
| 24 | 21 | 6.5 | 5.2 | 13 | 18 | 24 | 16 | 14 | 9.5 | 2.8 | 1.3 | 1.0 |
| 25 | 12 | 31 | 5.2 | 13 | 22 | 24 | 13 | 13 | 9.3 | 2.7 | 1.2 | 1.0 |
| 26 | 8.4 | 32 | 5.2 | 14 | 26 | 23 | 13 | 12 | 8.6 | 2.6 | 1.3 | 1.1 |
| 27 | 7.4 | 14 | 5.1 | 13 | 29 | 23 | 15 | 16 | 8.2 | 2.5 | 1.3 | 1.0 |
| 28 | 7.1 | 11 | 4.9 | 12 | 26 | 22 | 14 | 15 | 7.9 | 2.4 | 1.3 | 1.0 |
| 29 | 6.3 | 10 | 4.9 | 12 | --- | 22 | 14 | 14 | 7.6 | 2.4 | 1.3 | .85 |
| 30 | 5.7 | 9.8 | 4.7 | 13 | --- | 21 | 13 | 17 | 7.3 | 2.4 | 1.3 | .72 |
| 31 | 5.6 | --- | 4.7 | 12 | --- | 21 | --- | 22 | --- | 2.3 | 1.3 | --- |
| TOTAL | 134.3 | 205.5 | 210.0 | 431.9 | 422 | 793 | 489 | 390.7 | 363.2 | 133.0 | 47.4 | 24.79 |
| MEAN | 4.33 | 6.85 | 6.77 | 13.9 | 15.1 | 25.6 | 16.3 | 12.6 | 12.1 | 4.29 | 1.53 | .83 |
| MAX | 21 | 32 | 9.8 | 46 | 29 | 64 | 21 | 22 | 20 | 7.5 | 2.3 | 1.1 |
| MIN | 1.6 | 3.0 | 4.7 | 4.5 | 10 | 21 | 13 | 9.8 | 7.3 | 2.3 | 1.2 | .55 |
| AC-FT | 266 | 408 | 417 | 857 | 837 | 1570 | 970 | 775 | 720 | 264 | 94 | 49 |

CAL YR 1989 TOTAL 6187.54 MEAN 17.0 MAX 357 MIN .62 AC-FT 12270
WTR YR 1990 TOTAL 3644.79 MEAN 9.99 MAX 64 MIN .55 AC-FT 7230

e Estimated.

11433300 MIDDLE FORK AMERICAN RIVER NEAR FORESTHILL, CA

LOCATION.--Lat 39°00'22", long 120°45'35", in NW 1/4 NW 1/4 sec.4, T.13 N., R.11 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on right bank 1.6 mi downstream from Oxbow powerplant and 3.3 mi east of Foresthill.

DRAINAGE AREA.--524 mi².

PERIOD OF RECORD.--October 1958 to current year.

CHEMICAL DATA: Water year 1979.

BIOLOGICAL DATA: Water year 1979.

GAGE.--Water-stage recorder. Elevation of gage is 1,070 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 22, 1965, at site 3.2 mi downstream at different datum. Oct. 22, 1965, to Aug. 28, 1985, at site 400 ft downstream at different datum.

REMARKS.--Flow regulated by French Meadows Reservoir, Hell Hole Reservoir, Loon Lake (stations 11427400, 11428700, and 11429350), Stumpy Meadows Lake, usable capacity, 17,500 acre-ft, and several smaller reservoirs. Robbs Peak powerplant (station 11429300) and Georgetown Divide ditch, capacity about 60 ft³/s, divert water out of basin upstream from station. See schematic diagrams of Middle Fork American and Rubicon River basins and lower Sacramento River basin.

AVERAGE DISCHARGE.--32 years, 1,128 ft³/s, 817,200 acre-ft/yr.

COOPERATION.--Records provided by Placer County Water Agency, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 310,000 ft³/s, Dec. 23, 1964, gage height, 69.0 ft from floodmarks, site and datum then in use, caused by overtopping of the partly constructed Hell Hole Dam on the Rubicon River, from rating curve extended above 28,000 ft³/s on basis of slope-area measurement at gage height 38.0 ft and slope-conveyance study at gage height 69.0 ft, at site and datum then in use; next highest peak, 113,000 ft³/s, Feb. 1, 1963, gage height, 38.00 ft, site and datum then in use; minimum, 35 ft³/s, Oct. 10-20, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,210 ft³/s, Nov. 26, gage height, 15.28 ft; minimum daily, 81 ft³/s, Sept. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 130 | 1010 | 634 | 103 | 237 | 583 | 516 | 278 | 732 | 91 | 1020 | 1010 |
| 2 | 127 | 1010 | 524 | 381 | 266 | 655 | 496 | 229 | 737 | 504 | 1020 | 984 |
| 3 | 130 | 1020 | 274 | 370 | 233 | 1630 | 492 | 251 | 438 | 832 | 977 | 873 |
| 4 | 123 | 1010 | 704 | 381 | 326 | 1280 | 505 | 207 | 854 | 783 | 330 | 994 |
| 5 | 114 | 1010 | 625 | 331 | 250 | 888 | 490 | 324 | 579 | 782 | 87 | 788 |
| 6 | 110 | 979 | 663 | 108 | 317 | 763 | 460 | 205 | 187 | 831 | 465 | 847 |
| 7 | 105 | 999 | 671 | 194 | 260 | 700 | 470 | 205 | 370 | 822 | 911 | 506 |
| 8 | 98 | 1000 | 623 | 680 | 197 | 685 | 537 | 202 | 653 | 102 | 890 | 820 |
| 9 | 97 | 926 | 664 | 518 | 264 | 684 | 416 | 193 | 558 | 707 | 952 | 749 |
| 10 | 97 | 744 | 437 | 268 | 190 | 720 | 525 | 181 | 260 | 810 | 867 | 828 |
| 11 | 97 | 714 | 574 | 229 | 282 | 818 | 512 | 188 | 637 | 967 | 910 | 762 |
| 12 | 97 | 440 | 761 | 201 | 220 | 499 | 360 | 233 | 601 | 999 | 917 | 789 |
| 13 | 97 | 581 | 1010 | 392 | 303 | 571 | 383 | 122 | 574 | 1020 | 922 | 806 |
| 14 | 97 | 698 | 1050 | 594 | 212 | 509 | 379 | 234 | 284 | 1020 | 954 | 756 |
| 15 | 94 | 682 | 964 | 483 | 220 | 504 | 359 | 138 | 558 | 1020 | 919 | 796 |
| 16 | 90 | 768 | 407 | 411 | 285 | 508 | 352 | 226 | 468 | 1000 | 931 | 718 |
| 17 | 87 | 562 | 114 | 323 | 264 | 544 | 360 | 173 | 214 | 760 | 979 | 473 |
| 18 | 207 | 388 | 492 | 307 | 361 | 636 | 339 | 126 | 615 | 1000 | 978 | 149 |
| 19 | 495 | 83 | 498 | 249 | 230 | 680 | 325 | 225 | 762 | 956 | 985 | 81 |
| 20 | 717 | 547 | 467 | 261 | 679 | 701 | 519 | 191 | 652 | 931 | 991 | 83 |
| 21 | 731 | 620 | 549 | 221 | 649 | 713 | 526 | 265 | 596 | 955 | 998 | 261 |
| 22 | 725 | 584 | 516 | 222 | 592 | 734 | 283 | 179 | 678 | 921 | 1000 | 89 |
| 23 | 889 | 97 | 421 | 222 | 365 | 707 | 450 | 275 | 395 | 964 | 1010 | 88 |
| 24 | 1230 | 338 | 94 | 188 | 407 | 714 | 474 | 368 | 183 | 955 | 969 | 235 |
| 25 | 1170 | 604 | 117 | 210 | 485 | 719 | 376 | 282 | 611 | 905 | 823 | e484 |
| 26 | 1090 | 1290 | 487 | 197 | 534 | 698 | 341 | 428 | 618 | 918 | 874 | e251 |
| 27 | 829 | 561 | 439 | 187 | 616 | 650 | 299 | 282 | 681 | 1020 | 999 | 221 |
| 28 | 834 | 762 | 548 | 189 | 644 | 625 | 288 | 484 | 674 | 1020 | 1010 | 252 |
| 29 | 860 | 641 | 474 | 177 | --- | 580 | 233 | 381 | 595 | 1010 | 1010 | 82 |
| 30 | 752 | 674 | 115 | 276 | --- | 546 | 282 | 387 | 193 | 934 | 1010 | 109 |
| 31 | 877 | --- | 116 | 258 | --- | 515 | --- | 1110 | --- | 994 | 1010 | --- |
| TOTAL | 13196 | 21342 | 16032 | 9131 | 9888 | 21759 | 12347 | 8572 | 15957 | 26533 | 27718 | 15884 |
| MEAN | 426 | 711 | 517 | 295 | 353 | 702 | 412 | 277 | 532 | 856 | 894 | 529 |
| MAX | 1230 | 1290 | 1050 | 680 | 679 | 1630 | 537 | 1110 | 854 | 1020 | 1020 | 1010 |
| MIN | 87 | 83 | 94 | 103 | 190 | 499 | 233 | 122 | 183 | 91 | 87 | 81 |
| AC-FT | 26170 | 42330 | 31800 | 18110 | 19610 | 43160 | 24490 | 17000 | 31650 | 52630 | 54980 | 31510 |

CAL YR 1989 TOTAL 365605 MEAN 1002 MAX 6920 MIN 83 AC-FT 725200

WTR YR 1990 TOTAL 198359 MEAN 543 MAX 1630 MIN 81 AC-FT 393400

e Estimated.

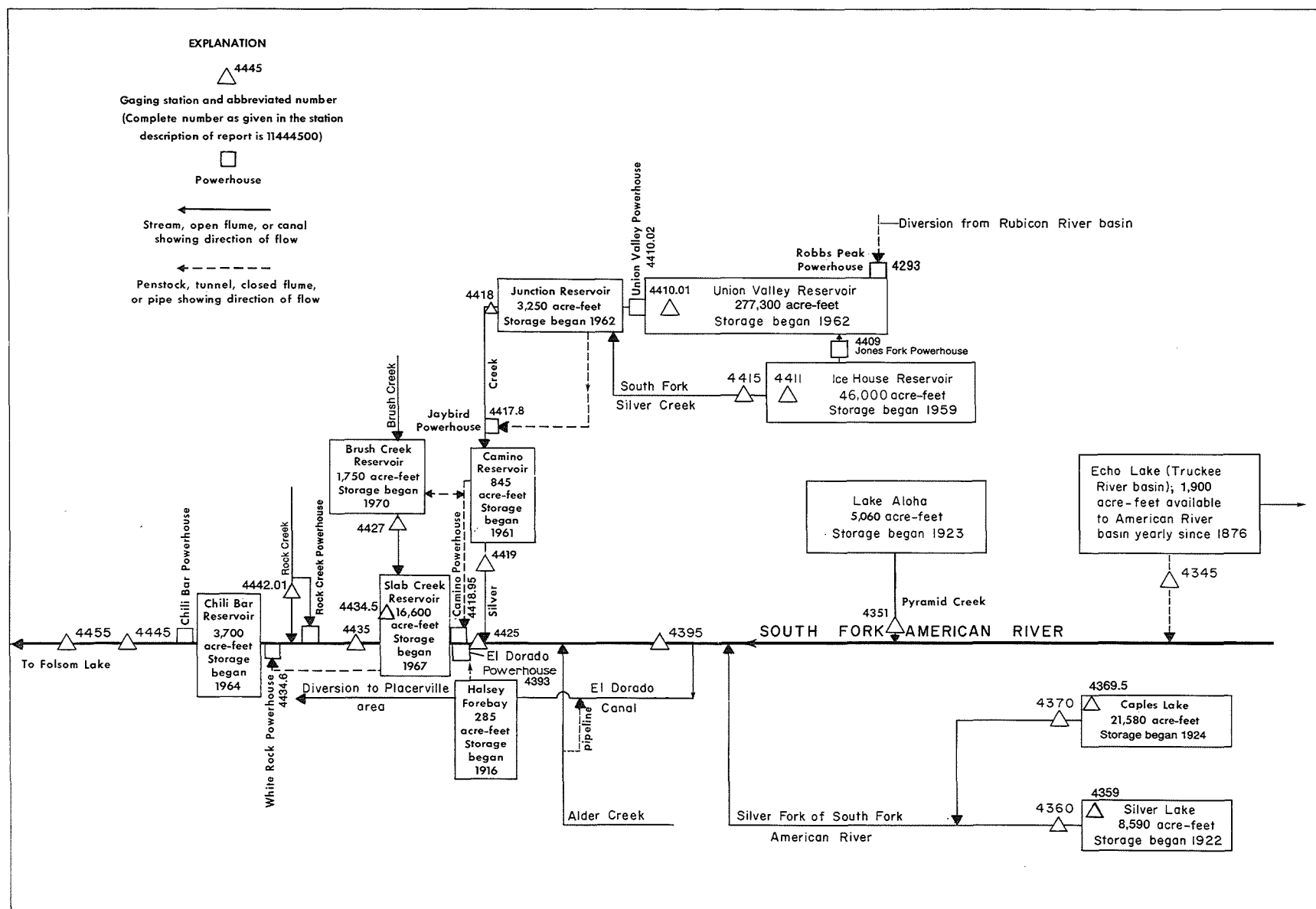


Figure 38. Diversions and storage in South Fork American River basin.

11434500 ECHO LAKE CONDUIT NEAR PHILLIPS, CA

LOCATION.--Lat 38°49'52", long 120°02'12", in NW 1/4 NW 1/4 sec.6, T.11 N., R.18 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank in Berkeley Municipal Camp, 0.5 mi downstream from intake, and 2.4 mi northeast of Phillips.

PERIOD OF RECORD.--August 1923 to current year. Prior to October 1974 diversion seasons only. Monthly discharge only for July 1933, published in WSP 1315-A. Published as Echo Lake flume near Vade prior to 1943 and as Echo Lake conduit near Vade for seasons 1944-53.

GAGE.--Water-stage recorder. Elevation of gage is 7,420 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 16, 1929, nonrecording gage at site 0.4 mi upstream at different datum.

REMARKS.--Conduit diverts from Echo Lake, capacity, 1,900 acre-ft, in Truckee River basin into South Fork American River basin for power and irrigation. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE.--67 years, 2.31 ft³/s, 1,670 acre-ft/yr.

COOPERATION.--Records were collected by the Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 33 ft³/s, Sept. 10, 11, 1980; no flow most of each year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|--------|------|-------|------|------|--------|
| 1 | 23 | 10 | 6.2 | 3.8 | 5.0 | 4.3 | 6.9 | .00 | .00 | .00 | .00 | .00 |
| 2 | 16 | 10 | 5.9 | 4.1 | 5.0 | 4.3 | 6.9 | .00 | .00 | .00 | .00 | .00 |
| 3 | 8.1 | 9.6 | 5.8 | 4.1 | 4.7 | 4.7 | 7.0 | .00 | .00 | .00 | .00 | .00 |
| 4 | 8.0 | 9.4 | 5.6 | 4.1 | 5.3 | 4.8 | 7.3 | .00 | .00 | .00 | .00 | .00 |
| 5 | 8.0 | 9.0 | 5.6 | 4.1 | 5.2 | 5.0 | 7.7 | .00 | .00 | .00 | .00 | .00 |
| 6 | 7.8 | 8.6 | 5.6 | 3.9 | 5.0 | 5.0 | 7.9 | .00 | .00 | .00 | .00 | e.23 |
| 7 | 7.8 | 8.2 | 5.7 | 3.9 | 5.3 | 4.7 | 8.1 | .00 | .00 | .00 | .00 | e.00 |
| 8 | 16 | 7.9 | 4.6 | 4.9 | 5.1 | 4.5 | 8.2 | .00 | .00 | .00 | .00 | .00 |
| 9 | 20 | 7.6 | 5.1 | 5.5 | 4.9 | 4.5 | 7.9 | .00 | .00 | .00 | .00 | .00 |
| 10 | 19 | 7.3 | 5.2 | 5.7 | 4.7 | 4.4 | 7.7 | .00 | .00 | .00 | .00 | 15 |
| 11 | 17 | 7.0 | 5.2 | 5.7 | 4.6 | 4.8 | 7.8 | .00 | .00 | .00 | .00 | 26 |
| 12 | 16 | 6.8 | 5.3 | 5.6 | 4.4 | 5.0 | 7.8 | .00 | .00 | .00 | .00 | 25 |
| 13 | 15 | 6.6 | 5.2 | 5.9 | 4.4 | 5.0 | 8.2 | .00 | .00 | .00 | .00 | 25 |
| 14 | 13 | 6.7 | 5.2 | 6.3 | 4.3 | 4.9 | 9.3 | .00 | .00 | .00 | .00 | 25 |
| 15 | 12 | 7.3 | 5.1 | 6.3 | 4.3 | 4.7 | 10 | .00 | .00 | .00 | .00 | 12 |
| 16 | 11 | 7.2 | 5.1 | 6.1 | 4.2 | 4.6 | 11 | .00 | .00 | .00 | .00 | .07 |
| 17 | 9.9 | 7.0 | 4.9 | 6.0 | 3.8 | 4.6 | 11 | .00 | .00 | .00 | .00 | .06 |
| 18 | 9.0 | 6.8 | 4.9 | 5.8 | e5.4 | 4.6 | e2.4 | .00 | .00 | .00 | .00 | .03 |
| 19 | 8.2 | 6.5 | 4.8 | 5.6 | 5.3 | 4.7 | .00 | .00 | .00 | .00 | .00 | .02 |
| 20 | 7.5 | 6.3 | 4.7 | 5.3 | 5.3 | 5.1 | .00 | .00 | .00 | .00 | .00 | .03 |
| 21 | 5.0 | 6.0 | 4.7 | 5.1 | 5.1 | 5.5 | .00 | .00 | .00 | .00 | .00 | .05 |
| 22 | 4.5 | 5.8 | 4.7 | 5.0 | 4.8 | 5.9 | .00 | .00 | .00 | .00 | .00 | .06 |
| 23 | 7.4 | 5.5 | 4.6 | 4.8 | 4.6 | 6.2 | .00 | .00 | .00 | .00 | .00 | .06 |
| 24 | 13 | 6.1 | 4.5 | 4.7 | 4.5 | 6.6 | .00 | .00 | .00 | .00 | .00 | .01 |
| 25 | 14 | 6.4 | 4.5 | 4.2 | 4.3 | 6.9 | .00 | .00 | e6.4 | .00 | .00 | .01 |
| 26 | 14 | 8.5 | 4.4 | 3.7 | 4.3 | 7.2 | .00 | .00 | e7.4 | .00 | .00 | .01 |
| 27 | 13 | 8.5 | 4.3 | 4.2 | 4.3 | 7.4 | .00 | .00 | .00 | .00 | .00 | .02 |
| 28 | 12 | 7.9 | 4.2 | 4.1 | 4.3 | 7.3 | .00 | .00 | .00 | .00 | .00 | .02 |
| 29 | 12 | 7.0 | 4.1 | 3.5 | --- | 7.2 | .00 | .00 | .00 | .00 | .00 | .01 |
| 30 | 11 | 6.5 | 4.1 | 4.4 | --- | 7.0 | .00 | .00 | .00 | .00 | .00 | .01 |
| 31 | 11 | --- | 4.0 | 4.8 | --- | 7.0 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | 369.2 | 224.0 | 153.8 | 151.2 | 132.4 | 168.4 | 143.10 | 0.00 | 13.80 | 0.00 | 0.00 | 128.70 |
| MEAN | 11.9 | 7.47 | 4.96 | 4.88 | 4.73 | 5.43 | 4.77 | .000 | .46 | .000 | .000 | 4.29 |
| MAX | 23 | 10 | 6.2 | 6.3 | 5.4 | 7.4 | 11 | .00 | 7.4 | .00 | .00 | 26 |
| MIN | 4.5 | 5.5 | 4.0 | 3.5 | 3.8 | 4.3 | .00 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | 732 | 444 | 305 | 300 | 263 | 334 | 284 | .00 | 27 | .00 | .00 | 255 |

CAL YR 1989 TOTAL 1262.00 MEAN 3.46 MAX 28 MIN .00 AC-FT 2500
WTR YR 1990 TOTAL 1484.60 MEAN 4.07 MAX 26 MIN .00 AC-FT 2940

e Estimated.

11435100 PYRAMID CREEK AT TWIN BRIDGES, CA

LOCATION.--Lat 38°48'57", long 120°06'58", in NW 1/4 SW 1/4 sec.9, T.11 N., R.17 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 0.5 mi northeast of Twin Bridges, 2.2 mi west of Phillips, and 3.6 mi downstream from Lake Aloha.

DRAINAGE AREA.--8.76 mi².

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 6,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1987, at datum 1.00 ft higher.

REMARKS.--Flow regulated by Lake Aloha, capacity, 5,060 acre-ft. Lake of the Woods, Ropi Lake, and Toem Lake (unknown capacities) also regulate at times. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by the Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--20 years, 39.2 ft³/s, 28,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 858 ft³/s, June 26, 1971, gage height, 5.62 ft, present datum, from rating curve extended above 300 ft³/s; minimum daily, 0.07 ft³/s, Sept. 20-24, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 92 ft³/s, Apr. 15, gage height, 3.02 ft; minimum daily, 0.50 ft³/s, Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|------|------|------|------|------|------|-------|-------|
| 1 | 11 | 16 | 13 | 8.7 | 15 | 15 | 32 | 31 | 41 | 43 | 69 | 2.2 |
| 2 | 8.5 | 16 | 13 | 11 | 14 | 14 | 37 | 38 | 60 | 43 | 68 | 2.0 |
| 3 | 8.0 | 14 | 13 | e10 | 11 | 18 | 41 | 58 | 65 | 41 | 67 | 1.9 |
| 4 | 7.5 | 15 | 14 | e9.5 | e15 | 14 | 43 | 69 | 55 | 19 | 65 | 1.7 |
| 5 | 6.7 | 16 | 15 | e9.1 | e14 | 14 | 44 | 69 | 48 | 13 | 63 | 1.6 |
| 6 | 6.0 | 14 | 15 | 8.9 | 13 | 13 | 45 | 69 | 43 | 13 | 62 | 1.6 |
| 7 | 5.5 | 12 | 13 | 21 | e12 | 13 | 38 | 61 | 42 | 12 | 60 | 1.5 |
| 8 | 5.2 | 9.8 | 12 | 59 | e11 | 15 | 32 | 54 | 44 | 11 | 59 | 1.5 |
| 9 | 4.9 | e9.6 | 11 | 28 | 11 | 15 | 27 | 53 | 45 | 11 | 54 | 1.5 |
| 10 | 4.6 | e9.8 | 11 | 20 | 11 | 15 | 37 | 53 | 42 | 15 | 47 | 1.4 |
| 11 | 4.4 | e9.6 | 10 | 17 | 12 | 15 | 48 | 43 | 35 | 81 | 42 | 1.3 |
| 12 | 4.3 | e11 | 9.3 | 16 | 12 | 14 | 53 | 39 | 29 | 87 | 36 | 1.3 |
| 13 | 4.2 | 11 | 9.1 | 18 | e11 | 13 | 64 | 42 | 25 | 86 | 24 | 1.2 |
| 14 | 4.0 | 10 | 8.9 | 18 | e11 | 13 | 66 | 42 | 24 | 86 | 9.7 | 1.2 |
| 15 | 4.1 | 8.6 | 9.1 | 16 | e11 | 13 | 67 | 35 | 26 | 86 | 5.3 | 1.1 |
| 16 | 4.4 | 7.5 | 9.2 | 15 | e12 | 14 | 64 | 38 | 32 | 85 | 4.4 | 1.0 |
| 17 | 4.4 | 7.2 | 8.5 | 15 | e14 | 17 | 37 | 41 | 26 | 84 | 4.3 | .91 |
| 18 | 4.4 | 6.8 | 8.1 | 13 | e16 | 22 | 42 | 34 | 26 | 84 | 4.2 | .86 |
| 19 | 4.4 | 6.7 | 7.8 | e13 | e15 | 28 | 55 | 29 | 22 | 82 | 4.3 | .78 |
| 20 | 4.2 | 6.6 | 7.6 | e12 | e13 | 30 | 52 | 28 | 25 | 81 | 5.5 | .70 |
| 21 | 7.8 | 6.5 | 7.5 | 12 | e12 | 31 | 49 | 28 | 24 | 80 | 4.6 | .63 |
| 22 | 28 | 6.3 | 7.7 | 11 | 11 | 30 | 40 | 31 | 24 | 79 | 4.3 | .61 |
| 23 | 42 | 6.1 | 8.1 | 11 | 12 | 32 | 59 | 40 | 23 | 78 | 4.2 | .71 |
| 24 | 40 | 11 | 8.7 | 11 | 12 | 35 | 44 | 42 | 20 | 77 | 4.0 | .94 |
| 25 | 27 | 15 | 9.0 | 11 | 13 | 37 | 42 | 34 | 19 | 73 | 3.7 | .83 |
| 26 | 20 | 27 | 9.1 | 10 | 14 | 34 | 50 | 47 | 18 | 73 | 3.5 | .71 |
| 27 | 19 | 19 | 9.0 | e10 | 15 | 30 | 61 | 71 | 17 | 73 | 3.1 | .63 |
| 28 | 17 | 15 | 8.7 | 10 | 16 | 27 | 75 | 57 | 17 | 72 | 2.6 | .61 |
| 29 | 16 | 14 | e8.7 | 9.6 | --- | 25 | 58 | 42 | 42 | 70 | 2.3 | .55 |
| 30 | 15 | 13 | 8.7 | 12 | --- | 25 | 39 | 41 | 46 | 69 | 2.2 | .50 |
| 31 | 15 | --- | 8.7 | 16 | --- | 27 | --- | 46 | --- | 71 | 2.2 | --- |
| TOTAL | 357.5 | 350.1 | 311.5 | 461.8 | 359 | 658 | 1441 | 1405 | 1005 | 1878 | 790.4 | 33.97 |
| MEAN | 11.5 | 11.7 | 10.0 | 14.9 | 12.8 | 21.2 | 48.0 | 45.3 | 33.5 | 60.6 | 25.5 | 1.13 |
| MAX | 42 | 27 | 15 | 59 | 16 | 37 | 75 | 71 | 65 | 87 | 69 | 2.2 |
| MIN | 4.0 | 6.1 | 7.5 | 8.7 | 11 | 13 | 27 | 28 | 17 | 11 | 2.2 | .50 |
| AC-FT | 709 | 694 | 618 | 916 | 712 | 1310 | 2860 | 2790 | 1990 | 3730 | 1570 | 67 |

CAL YR 1989 TOTAL 14850.5 MEAN 40.7 MAX 188 MIN 1.9 AC-FT 29460
WTR YR 1990 TOTAL 9051.27 MEAN 24.8 MAX 87 MIN .50 AC-FT 17950

e Estimated.

SACRAMENTO RIVER BASIN

11435900 SILVER LAKE NEAR KIRKWOOD, CA

LOCATION.--Lat 38°40'07", long 120°07'14", in NW 1/4 SE 1/4 sec.32, T.10 N., R.17 E., Amador County, Hydrologic Unit 18020129, Eldorado National Forest, on outlet structure, 3.5 mi southwest of Kirkwood.

DRAINAGE AREA.--15.2 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1981-85 available in files of U.S. Geological Survey.

GAGE.--Nonrecording gage read periodically. Datum of gage is 7,184.3 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.).

REMARKS.--Lake is formed by earthfill and rock masonry dam initially constructed in 1876 and enlarged in 1929. Capacity, 8,590 acre-ft between gage heights 0.0 ft, invert of outlet, and 22.7 ft, top of radial gates and flashboards. Released water is used for power development on South Fork American River. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 8,741 acre-ft, May 15, 29, 1990, gage height, 23.0 ft; minimum observed, 234 acre-ft, Jan. 2, 1987, gage height, 0.9 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 8,741 acre-ft, May 15, 29, gage height, 23.0 ft; minimum observed, 598 acre-ft, Feb. 2, gage height, 2.2 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on table provided by Pacific Gas & Electric Co., recomputed Oct. 1, 1989)

| | | | |
|-----|-------|------|-------|
| 0.0 | 0 | 12.0 | 3,840 |
| 2.0 | 540 | 15.0 | 5,010 |
| 4.0 | 1,120 | 18.0 | 6,350 |
| 6.0 | 1,720 | 21.0 | 7,740 |
| 9.0 | 2,730 | 24.0 | 9,241 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|------|------|------|-----|-----|------|------|------|------|------|------|------|
| 1 | --- | --- | --- | --- | --- | --- | --- | 7645 | 8615 | 8090 | 6580 | --- |
| 2 | 4730 | 2660 | 1540 | --- | 598 | 801 | --- | 7740 | 8590 | 8064 | 6534 | --- |
| 3 | --- | --- | --- | --- | --- | --- | --- | --- | 8640 | 8040 | 6488 | --- |
| 4 | 4650 | 2520 | --- | 830 | --- | --- | --- | 8089 | 8665 | --- | 6464 | 5332 |
| 5 | --- | 2520 | --- | 772 | --- | --- | 2730 | --- | 8665 | 7790 | 6442 | 5268 |
| 6 | --- | --- | 1480 | --- | --- | --- | --- | --- | 8640 | 7693 | 6396 | 5225 |
| 7 | --- | --- | --- | --- | --- | --- | --- | 8691 | 8590 | 7599 | 6396 | 5182 |
| 8 | 4454 | 2380 | 1420 | 772 | --- | --- | --- | 8640 | 8615 | 7505 | 6396 | 5139 |
| 9 | --- | --- | --- | 801 | --- | 917 | --- | 8791 | 8665 | 7317 | 6350 | 5010 |
| 10 | --- | 2311 | 1420 | --- | --- | --- | --- | 8716 | 8640 | 7224 | 6304 | --- |
| 11 | 4144 | --- | --- | 830 | --- | --- | 3992 | 8640 | 8615 | 7224 | 6258 | 4810 |
| 12 | 4030 | 2244 | --- | --- | --- | --- | --- | 8590 | 8590 | 7198 | 6234 | 4690 |
| 13 | --- | --- | 1300 | 888 | --- | --- | --- | 8615 | 8490 | 7178 | 6212 | --- |
| 14 | 3802 | --- | --- | --- | --- | --- | --- | 8691 | 8490 | --- | 6212 | 4493 |
| 15 | --- | 2108 | 1240 | --- | --- | --- | --- | 8741 | 8490 | 7178 | 6120 | --- |
| 16 | --- | --- | --- | --- | --- | 1062 | 5311 | 8691 | 8440 | 7178 | --- | 4415 |
| 17 | --- | 2024 | --- | 975 | --- | --- | --- | 8716 | 8440 | 7132 | 6074 | --- |
| 18 | 3386 | --- | --- | --- | --- | --- | 5530 | 8640 | 8465 | 7086 | 6050 | 4376 |
| 19 | --- | --- | --- | --- | --- | --- | --- | 8615 | 8440 | 7086 | 6028 | --- |
| 20 | --- | --- | 1120 | --- | --- | --- | --- | 8615 | 8440 | 7040 | 6028 | 4356 |
| 21 | --- | --- | --- | --- | --- | --- | --- | 8490 | 8440 | 6994 | 5982 | --- |
| 22 | --- | 1784 | --- | --- | 714 | 1420 | --- | 8540 | 8390 | 6948 | 5958 | 4317 |
| 23 | --- | --- | --- | 830 | --- | --- | --- | 8590 | 8390 | --- | 5936 | --- |
| 24 | 3201 | --- | --- | 786 | --- | --- | --- | 8590 | 8340 | 6856 | 5913 | --- |
| 25 | --- | --- | --- | --- | --- | --- | 6580 | 8590 | 8340 | 6856 | 5845 | 4298 |
| 26 | --- | --- | --- | --- | --- | --- | --- | 8640 | 8290 | 6810 | 5755 | 4259 |
| 27 | 3090 | --- | 946 | --- | --- | --- | 7040 | 8691 | 8290 | 6764 | --- | --- |
| 28 | --- | --- | --- | 786 | --- | --- | --- | --- | 8240 | 6718 | --- | --- |
| 29 | 2910 | 1630 | --- | --- | --- | --- | --- | 8741 | 8190 | 6672 | 5620 | 4201 |
| 30 | 2874 | --- | --- | --- | --- | 2244 | --- | 8665 | 8140 | 6672 | 5575 | --- |
| 31 | --- | --- | --- | --- | --- | --- | --- | 8665 | --- | 6626 | 5530 | --- |

11436000 SILVER LAKE OUTLET NEAR KIRKWOOD, CA

LOCATION.--Lat 38°40'18", long 120°07'19", in NE 1/4 SW 1/4 sec.32, T.10 N., R.17 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 1,000 ft downstream from Silver Lake Dam and 3.5 mi southwest of Kirkwood.

DRAINAGE AREA.--15.2 mi².

PERIOD OF RECORD.--September 1922 to current year. Records for water year 1923 incomplete, yearly estimate published in WSP 1315-A.

REVISED RECORDS.--WDR CA-75-4: 1927(M), 1929(M), 1932(M), 1937-38(M), 1940-45(M), 1950-53(M), 1955-58(M), 1963(M), 1965(M), 1967(M), 1969-70(M), 1973(M).

GAGE.--Water-stage recorder. Concrete control since Sept. 8, 1986. Datum of gage is 7,198.0 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co).

REMARKS.--No estimated daily discharges. Low and medium flow regulated by Silver Lake (station 11435900) 1,000 ft upstream. Some water, in addition to that released through dam and over spillway, escapes from Silver Lake through porous rock formation and is measured at staff gage 0.25 mi east of station. For leakage from Silver Lake, refer to monthly figures below. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (adjusted for leakage from Silver Lake bypassing the gage).--68 years, 39.2 ft³/s, 28,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,160 ft³/s, Feb. 19, 1986, gage height, 6.22 ft, from rating curve extended above 430 ft³/s; no flow many days in February and March 1948, Jan. 13, 14, 1954, Nov. 3, 1959, to Feb. 5, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 125 ft³/s, May 10, gage height, 4.35 ft; minimum daily, 3.8 ft³/s, July 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|------|------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| 1 | 4.5 | 48 | 23 | 12 | 15 | 5.4 | 9.6 | 11 | 72 | 4.2 | 5.2 | 16 |
| 2 | 12 | 48 | 23 | 14 | 15 | 5.4 | 9.8 | 9.9 | 55 | 4.0 | 5.1 | 16 |
| 3 | 20 | 47 | 23 | 14 | 13 | 5.5 | 10 | 13 | 55 | 23 | 5.0 | 16 |
| 4 | 20 | 39 | 22 | 13 | 11 | 5.7 | 10 | 15 | 74 | 40 | 4.8 | 15 |
| 5 | 19 | 32 | 22 | 13 | 10 | 5.7 | 11 | 22 | 73 | 38 | 4.6 | 15 |
| 6 | 19 | 31 | 22 | 13 | 10 | 5.8 | 11 | 27 | 70 | 38 | 4.4 | 15 |
| 7 | 19 | 31 | 22 | 12 | 10 | 5.8 | 11 | 42 | 45 | 41 | 4.6 | 15 |
| 8 | 42 | 31 | 22 | 8.5 | 9.5 | 5.8 | 11 | 55 | 25 | 45 | 4.8 | 38 |
| 9 | 63 | 31 | 22 | 5.1 | 9.0 | 5.9 | 11 | 82 | 38 | 50 | 4.9 | 58 |
| 10 | 61 | 31 | 21 | 5.2 | 8.6 | 6.0 | 12 | 78 | 48 | 35 | 4.8 | 56 |
| 11 | 59 | 30 | 21 | 5.2 | 8.4 | 6.2 | 12 | 51 | 45 | 4.2 | 4.8 | 55 |
| 12 | 62 | 30 | 21 | 5.3 | 8.2 | 6.2 | 12 | 26 | 36 | 4.0 | 4.7 | 54 |
| 13 | 64 | 30 | 21 | 5.2 | 8.2 | 6.3 | 13 | 14 | 20 | 4.4 | 4.7 | 53 |
| 14 | 61 | 30 | 20 | 5.2 | 8.1 | 6.4 | 13 | 17 | 11 | 4.7 | 4.6 | 31 |
| 15 | 60 | 29 | 20 | 5.2 | 7.9 | 6.4 | 14 | 26 | 7.8 | 4.9 | 4.5 | 6.4 |
| 16 | 58 | 29 | 20 | 5.4 | 6.5 | 6.4 | 14 | 33 | 6.3 | 4.6 | 4.3 | 5.8 |
| 17 | 56 | 29 | 19 | 12 | 9.6 | 6.4 | 15 | 53 | 6.1 | 4.0 | 4.2 | 5.2 |
| 18 | 55 | 28 | 19 | 17 | 12 | 6.6 | 15 | 61 | 5.2 | 3.8 | 4.2 | 5.0 |
| 19 | 54 | 28 | 19 | 17 | 11 | 6.7 | 15 | 61 | 4.5 | 4.3 | 4.2 | 4.6 |
| 20 | 53 | 28 | 19 | 16 | 10 | 6.8 | 15 | 55 | 4.1 | 4.7 | 4.2 | 4.3 |
| 21 | 53 | 27 | 18 | 16 | 9.7 | 7.0 | 15 | 25 | 4.1 | 4.6 | 4.2 | 4.2 |
| 22 | 53 | 25 | 18 | 16 | 7.0 | 7.2 | 15 | 8.6 | 4.0 | 4.4 | 4.0 | 6.3 |
| 23 | 53 | 25 | 18 | 15 | 5.1 | 7.5 | 16 | 11 | 4.2 | 4.6 | 3.9 | 7.4 |
| 24 | 53 | 25 | 18 | 11 | 5.1 | 7.8 | 16 | 42 | 4.3 | 4.4 | 9.0 | 7.3 |
| 25 | 52 | 25 | 17 | 6.7 | 5.2 | 8.1 | 12 | 43 | 5.8 | 4.2 | 15 | 7.2 |
| 26 | 52 | 25 | 17 | 6.7 | 5.2 | 8.5 | 8.2 | 48 | 7.1 | 4.1 | 17 | 6.7 |
| 27 | 51 | 24 | 17 | 6.7 | 5.3 | 8.7 | 6.5 | 64 | 5.9 | 4.3 | 16 | 6.8 |
| 28 | 51 | 24 | 16 | 10 | 5.4 | 8.9 | 6.2 | 59 | 4.5 | 4.3 | 16 | 6.7 |
| 29 | 50 | 24 | 16 | 16 | --- | 9.0 | 8.1 | 69 | 4.1 | 4.1 | 16 | 6.4 |
| 30 | 49 | 24 | 15 | 16 | --- | 9.1 | 11 | 78 | 4.4 | 5.0 | 16 | 6.0 |
| 31 | 49 | --- | 15 | 16 | --- | 9.4 | --- | 79 | --- | 5.8 | 16 | --- |
| TOTAL | 1427.5 | 908 | 606 | 339.4 | 249.0 | 212.6 | 358.4 | 1278.5 | 749.4 | 411.6 | 225.7 | 549.3 |
| MEAN | 46.0 | 30.3 | 19.5 | 10.9 | 8.89 | 6.86 | 11.9 | 41.2 | 25.0 | 13.3 | 7.28 | 18.3 |
| MAX | 64 | 48 | 23 | 17 | 15 | 9.4 | 16 | 82 | 74 | 50 | 17 | 58 |
| MIN | 4.5 | 24 | 15 | 5.1 | 5.1 | 5.4 | 6.2 | 8.6 | 4.0 | 3.8 | 3.9 | 4.2 |
| AC-FT | 2830 | 1800 | 1200 | 673 | 494 | 422 | 711 | 2540 | 1490 | 816 | 448 | 1090 |
| a | .1 | .00 | .00 | .00 | .00 | .00 | .83 | 785 | 770 | 446 | 207 | 23 |

CAL YR 1989 TOTAL 13423.5 MEAN 36.8 MAX 278 MIN 3.3 AC-FT 26630 AC-FT a 2710
WTR YR 1990 TOTAL 7315.4 MEAN 20.0 MAX 82 MIN 3.8 AC-FT 14510 AC-FT a 2310

a Leakage, in acre-feet, from Silver Lake, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

11436950 CAPLES LAKE NEAR KIRKWOOD, CA

LOCATION.--Lat 38°42'27", long 120°02'55", in SW 1/4 SW 1/4 sec.18, T.10 N., R.18 E., Alpine County, Hydrologic Unit 18020129, Eldorado National Forest, on Caples Lake Dam near the center of the earthfill portion, and 1.3 mi east of Kirkwood.

DRAINAGE AREA.--13.5 mi².

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1981-85 available in files of the U.S. Geological Survey.

GAGE.--Nonrecording gage read periodically. Datum of gage is 7,894.0 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Oct. 16, 1986, to Sept. 30, 1987, water-stage recorder at same site and datum.

REMARKS.--Lake is formed by one earthfill and one concrete dam at spillway; dam was completed and storage began in 1924. Capacity, 21,581 acre-ft, between gage heights 6.0 and 62.0 ft, top of 3 ft of flashboards; capacity, 19,751 acre-ft at spillway level. Released water flows past Caples Lake Outlet (station 11437000). In addition, when gage height is above spillway crest of 59.0 ft, there is leakage or spill; this water is included in outlet gage record. Released water is used for power development on South Fork American River. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed contents, 21,581 acre-ft, many days in 1986 and 1989, gage height, 62.0 ft; minimum, 2,427 acre-ft, Mar. 30, 31, 1987, gage height, 20.7 ft.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 17,074 acre-ft, July 18, 19, gage height, 54.45 ft; minimum observed, 5,295 acre-ft, Mar. 9, gage height 29.6 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co., dated Mar. 24, 1934)

| | | | |
|------|-------|------|--------|
| 15.0 | 1,061 | 45.0 | 12,037 |
| 20.0 | 2,238 | 50.0 | 14,609 |
| 25.0 | 3,703 | 55.0 | 17,390 |
| 30.0 | 5,442 | 60.0 | 20,356 |
| 35.0 | 7,432 | 63.0 | 22,201 |
| 40.0 | 9,648 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|-------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|
| 1 | --- | --- | --- | --- | --- | --- | --- | 9880 | 14026 | 16960 | 16817 | --- |
| 2 | 13041 | 11791 | 10112 | --- | 6728 | 5332 | --- | 10019 | 14184 | 16989 | 16788 | --- |
| 3 | --- | --- | --- | --- | --- | --- | --- | --- | 14343 | 17046 | 16760 | --- |
| 4 | 13041 | 11717 | --- | 7646 | --- | --- | --- | 10300 | 14503 | --- | 16704 | 12336 |
| 5 | --- | 11594 | --- | 7475 | --- | --- | 6092 | --- | 14663 | 17046 | 16648 | 12037 |
| 6 | --- | --- | 9973 | --- | --- | --- | --- | --- | 14825 | 17046 | 16591 | 11889 |
| 7 | --- | --- | --- | --- | --- | --- | --- | 11061 | --- | 17046 | 16534 | 11840 |
| 8 | 12990 | 11400 | 9973 | --- | --- | --- | --- | 11255 | 15175 | 17046 | 16478 | 11693 |
| 9 | --- | --- | --- | --- | 6288 | 5295 | --- | 11448 | 15367 | 17046 | 16421 | 11594 |
| 10 | --- | 11279 | 9880 | --- | --- | --- | --- | 11643 | 15532 | 17046 | 16365 | --- |
| 11 | 12940 | --- | --- | 7646 | --- | --- | 6688 | 11840 | 15696 | 17046 | 16308 | 11497 |
| 12 | 12889 | 11158 | --- | --- | --- | --- | --- | 11939 | 15863 | 17046 | 16196 | 11351 |
| 13 | --- | --- | 9694 | 7646 | --- | --- | --- | 12037 | 16030 | 17046 | 16085 | --- |
| 14 | 12814 | --- | --- | --- | 6208 | --- | --- | 12186 | 16030 | --- | 16002 | 11255 |
| 15 | --- | 10965 | 9648 | --- | --- | --- | --- | 12336 | 16058 | 17046 | 15863 | --- |
| 16 | --- | --- | --- | --- | --- | 5332 | 7646 | 12485 | 16141 | 17046 | 15614 | 11206 |
| 17 | --- | 10774 | --- | 7604 | --- | --- | --- | 12586 | 16196 | 17046 | 15477 | --- |
| 18 | 12535 | --- | --- | --- | --- | --- | 7861 | 12687 | 16252 | 17074 | 15258 | 11158 |
| 19 | --- | --- | --- | --- | --- | --- | --- | 12788 | 16308 | 17074 | 15040 | --- |
| 20 | --- | --- | 9237 | --- | --- | --- | --- | 12889 | 16421 | 17046 | 14878 | --- |
| 21 | --- | --- | --- | --- | 5332 | --- | --- | 12940 | 16478 | 17046 | 14717 | --- |
| 22 | --- | 10536 | --- | --- | 5332 | 5518 | --- | 12990 | 16534 | 17046 | 14503 | 11061 |
| 23 | --- | --- | --- | 7098 | --- | --- | --- | 13041 | 16648 | --- | 14343 | --- |
| 24 | 12286 | --- | --- | 7098 | --- | --- | --- | 13195 | 16704 | 17046 | 14184 | --- |
| 25 | --- | --- | --- | --- | --- | --- | 8786 | 13298 | 16817 | 17017 | 13921 | 11061 |
| 26 | --- | --- | --- | --- | --- | --- | --- | 13401 | 16817 | 16989 | 13764 | 11061 |
| 27 | 12186 | --- | 8475 | --- | --- | --- | 9146 | 13504 | 16874 | 16960 | --- | --- |
| 28 | --- | --- | --- | --- | --- | --- | --- | --- | 16903 | 16932 | --- | --- |
| 29 | 12037 | 10253 | --- | --- | --- | --- | --- | 13712 | 16932 | 16874 | 13298 | 10965 |
| 30 | 11988 | 10183 | --- | --- | --- | 5859 | --- | 13816 | 16932 | 16903 | 13041 | --- |
| 31 | --- | --- | --- | --- | --- | --- | --- | 13921 | --- | 16874 | 12915 | --- |

11437000 CAPLES LAKE OUTLET NEAR KIRKWOOD, CA

LOCATION.--Lat 38°42'31", long 120°03'02", in NW 1/4 SW 1/4 sec.18, T.10 N., R.18 E., Alpine County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 500 ft downstream from main dam and outlet gate of Caples Lake and 1.3 mi east of Kirkwood.

DRAINAGE AREA.--13.5 mi².

PERIOD OF RECORD.--September 1922 to current year. Records for water year 1945 incomplete, yearly estimate published in WSP 1315-A. Prior to October 1969, published as Twin Lakes Outlet near Kirkwood.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder and concrete control below outlet gate and nonrecording gage on Caples Lake used to compute spill. Elevation of gage is 7,730 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated by Caples Lake (station 11436950) 500 ft upstream. There was no spill over Caples Lake spillway this year. No diversion upstream from station. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--(including flow over Caples Lake spillway).--68 years, 37.1 ft³/s, 26,880 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum combined daily discharge for outlet and spillway, 669 ft³/s, June 3, 1969; minimum daily, 0.1 ft³/s, Mar. 25-31, 1944, Nov. 27, 28, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 98 ft³/s, Aug. 17-19, gage height, 2.42 ft; minimum daily, 5.4 ft³/s, Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| 1 | 13 | 40 | 24 | 53 | 39 | 6.7 | 6.0 | 8.0 | 7.0 | 7.2 | 15 | 90 |
| 2 | 13 | 40 | 24 | 53 | 39 | 6.7 | 6.2 | 8.0 | 7.0 | 7.2 | 22 | 89 |
| 3 | 13 | 40 | 24 | 62 | 39 | 6.8 | 6.5 | 8.1 | 7.0 | 7.2 | 23 | 89 |
| 4 | 12 | 40 | 23 | 72 | 39 | 6.8 | 6.7 | 8.4 | 7.0 | 7.2 | 24 | 89 |
| 5 | 12 | 40 | 23 | 53 | 39 | 6.7 | 7.0 | 8.4 | 7.0 | 7.2 | 28 | 89 |
| 6 | 12 | 40 | 17 | 37 | 39 | 6.6 | 7.1 | 8.4 | 7.0 | 7.2 | 30 | 88 |
| 7 | 12 | 40 | 12 | 37 | 39 | 6.6 | 6.9 | 7.7 | 7.1 | 7.2 | 30 | 88 |
| 8 | 12 | 40 | 12 | 21 | 39 | 6.7 | 7.1 | 6.8 | 7.2 | 7.2 | 30 | 63 |
| 9 | 12 | 40 | 12 | 8.0 | 39 | 6.9 | 7.1 | 6.4 | 7.2 | 7.2 | 30 | 33 |
| 10 | 12 | 39 | 19 | 8.0 | 39 | 6.8 | 6.7 | 6.5 | 7.2 | 7.2 | 30 | 33 |
| 11 | 12 | 39 | 24 | 8.0 | 39 | 5.9 | 6.6 | 6.5 | 7.2 | 7.2 | 40 | 32 |
| 12 | 20 | 39 | 24 | 8.0 | 39 | 5.9 | 6.8 | 6.5 | 7.2 | 7.2 | 51 | 32 |
| 13 | 26 | 39 | 31 | 19 | 39 | 5.9 | 6.9 | 6.6 | 7.3 | 7.2 | 53 | 32 |
| 14 | 31 | 39 | 38 | 30 | 45 | 5.9 | 6.9 | 6.6 | 7.2 | 7.2 | 63 | 21 |
| 15 | 34 | 39 | 42 | 30 | 53 | 5.8 | 6.9 | 6.6 | 7.2 | 7.2 | 84 | 9.2 |
| 16 | 34 | 39 | 44 | 30 | 53 | 5.8 | 7.2 | 6.5 | 7.2 | 7.2 | 95 | 9.2 |
| 17 | 34 | 39 | 44 | 30 | 53 | 5.8 | 6.9 | 6.5 | 7.2 | 7.2 | 96 | 9.1 |
| 18 | 38 | 39 | 44 | 30 | 53 | 5.7 | 6.3 | 6.5 | 7.2 | 7.2 | 97 | 8.8 |
| 19 | 40 | 39 | 44 | 30 | 53 | 5.8 | 6.3 | 6.6 | 7.2 | 7.2 | 97 | 8.6 |
| 20 | 40 | 39 | 50 | 30 | 52 | 5.8 | 6.5 | 6.5 | 7.0 | 7.2 | 97 | 8.2 |
| 21 | 40 | 39 | 55 | 30 | 40 | 5.9 | 6.8 | 6.5 | 7.2 | 7.2 | 97 | 7.9 |
| 22 | 40 | 39 | 55 | 30 | 18 | 5.8 | 6.9 | 6.5 | 7.2 | 7.2 | 96 | 7.6 |
| 23 | 40 | 39 | 55 | 20 | 6.6 | 5.8 | 7.3 | 6.6 | 7.2 | 7.2 | 96 | 7.5 |
| 24 | 40 | 39 | 55 | 9.7 | 6.6 | 6.0 | 7.3 | 6.6 | 7.2 | 7.2 | 89 | 7.3 |
| 25 | 40 | 39 | 54 | 16 | 6.6 | 6.1 | 7.3 | 6.6 | 7.2 | 7.2 | 85 | 6.9 |
| 26 | 40 | 39 | 54 | 21 | 6.6 | 6.2 | 7.9 | 6.6 | 7.2 | 7.2 | 84 | 6.1 |
| 27 | 41 | 39 | 54 | 21 | 6.7 | 6.3 | 8.1 | 6.6 | 7.2 | 7.2 | 84 | 5.4 |
| 28 | 41 | 39 | 54 | 27 | 6.7 | 6.5 | 8.1 | 6.6 | 7.2 | 7.2 | 84 | 5.8 |
| 29 | 41 | 39 | 53 | 39 | --- | 6.5 | 8.2 | 6.6 | 7.3 | 7.2 | 84 | 6.3 |
| 30 | 41 | 32 | 53 | 39 | --- | 6.6 | 8.0 | 6.7 | 7.4 | 7.2 | 87 | 7.0 |
| 31 | 40 | --- | 53 | 39 | --- | 6.6 | --- | 6.8 | --- | 7.3 | 90 | --- |
| TOTAL | 876 | 1172 | 1170 | 940.7 | 966.8 | 193.9 | 210.5 | 214.8 | 214.9 | 223.3 | 2011 | 988.9 |
| MEAN | 28.3 | 39.1 | 37.7 | 30.3 | 34.5 | 6.25 | 7.02 | 6.93 | 7.16 | 7.20 | 64.9 | 33.0 |
| MAX | 41 | 40 | 55 | 72 | 53 | 6.9 | 8.2 | 8.4 | 7.4 | 7.3 | 97 | 90 |
| MIN | 12 | 32 | 12 | 8.0 | 6.6 | 5.7 | 6.0 | 6.4 | 7.0 | 7.2 | 15 | 5.4 |
| AC-FT | 1740 | 2320 | 2320 | 1870 | 1920 | 385 | 418 | 426 | 426 | 443 | 3990 | 1960 |

CAL YR 1989 TOTAL 14388.7 MEAN 39.4 MAX 145 MIN 7.4 AC-FT 28540
WTR YR 1990 TOTAL 9182.8 MEAN 25.2 MAX 97 MIN 5.4 AC-FT 18210

SACRAMENTO RIVER BASIN

11439500 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CA

LOCATION.--Lat 38°45'49", long 120°19'39", in SW 1/4 SW 1/4 sec.29, T.11 N., R.15 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 0.8 mi downstream from Silver Fork American River, and 1.9 mi southwest of Kyburz.

DRAINAGE AREA.--193 mi².

PERIOD OF RECORD.--August to December 1907, October 1922 to current year. Prior to October 1956, records for river and El Dorado canal published separately; combined flow only, October 1956 to September 1960.

CHEMICAL DATA: Water years 1979, 1980.

BIOLOGICAL DATA: Water years 1979, 1980.

SUSPENDED SEDIMENT: Water year 1980.

WATER TEMPERATURE: Water years 1966-79.

REVISED RECORDS.--WSP 1445: 1923(M), 1925(M), 1927(M), 1928 (river only), 1935-37(M). WSP 1515: 1928 (combined). WSP 1931: Drainage area.

GAGE.--Water-stage recorder on river; water-stage recorder for canal diversion (station 11439000). Elevation of gage is 3,840 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1962, at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Low and medium flows regulated by Silver Lake, Caples Lake (stations 11435900 and 11436950), Lake Aloha, and Echo Lake, total capacity, 37,100 acre-ft. See schematic diagram of South Fork American River basin. For records of combined discharge of river and canal, see following page.

COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--River only: 68 years (water years 1923-90), 298 ft³/s, 215,900 acre-ft/yr.
Combined river and diversion: 68 years (water years 1923-90), 411 ft³/s, 297,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 17,400 ft³/s, Dec. 23, 1964, gage height, 10.92 ft, from rating curve extended above 6,300 ft³/s on basis of contracted-opening measurement at gage height 10.40 ft; minimum daily, 0.13 ft³/s, Nov. 26, 1977.
Combined flow: Maximum discharge, 17,500 ft³/s, Dec. 23, 1964; minimum daily, 10 ft³/s, Oct. 17, 19, 1929.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 926 ft³/s, Apr. 16, gage height, 4.48 ft; minimum daily, 13 ft³/s, Sept 7.
Combined flow: Maximum discharge, 1,060 ft³/s, Apr. 16; minimum daily, 26 ft³/s, Sept. 21, 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|------|------|------|------|-------|-------|-------|--------|------|------|
| 1 | 69 | 51 | 54 | 54 | 54 | 57 | 295 | 335 | 493 | 20 | 22 | 19 |
| 2 | 62 | 51 | 54 | 54 | 53 | 55 | 357 | 342 | 525 | 20 | 22 | 16 |
| 3 | 65 | 51 | 53 | 54 | 53 | 69 | 410 | 421 | 461 | 20 | 22 | 14 |
| 4 | 63 | 52 | 54 | 57 | 55 | 71 | 428 | 496 | 371 | 21 | 22 | 14 |
| 5 | 60 | 52 | 54 | 55 | 53 | 54 | 419 | 512 | 321 | 21 | 23 | 14 |
| 6 | 51 | 52 | 54 | 54 | 53 | 54 | 436 | 522 | 287 | 21 | 23 | 14 |
| 7 | 47 | 52 | 54 | 67 | 54 | 54 | 458 | 464 | 249 | 21 | 23 | 13 |
| 8 | 47 | 52 | 53 | 240 | 58 | 54 | 400 | 417 | 218 | 20 | 23 | 14 |
| 9 | 58 | 52 | 56 | 79 | 56 | 54 | 315 | 445 | 223 | 20 | 23 | 14 |
| 10 | 47 | 52 | 57 | 58 | 54 | 61 | 384 | 461 | 210 | 21 | 23 | 14 |
| 11 | 47 | 52 | 55 | 57 | 53 | 54 | 475 | 390 | 178 | 22 | 22 | 14 |
| 12 | 47 | 52 | 55 | 57 | 53 | 54 | 508 | 310 | 138 | 21 | 22 | 14 |
| 13 | 48 | 51 | 55 | 58 | 54 | 58 | 615 | 255 | 109 | 20 | 22 | 14 |
| 14 | 49 | 52 | 55 | 56 | 56 | 54 | 690 | 247 | 82 | 21 | 22 | 14 |
| 15 | 48 | 52 | 55 | 55 | 59 | 54 | 695 | 208 | 86 | 21 | 22 | 14 |
| 16 | 47 | 52 | 55 | 55 | 67 | 54 | 707 | 211 | 107 | 21 | 21 | 25 |
| 17 | 48 | 51 | 55 | 55 | 88 | 55 | 527 | 226 | 70 | 21 | 22 | 26 |
| 18 | 48 | 51 | 55 | 55 | 96 | 105 | 483 | 206 | 64 | 22 | 22 | 26 |
| 19 | 47 | 51 | 55 | 56 | 87 | 170 | 538 | 180 | 52 | 21 | 21 | 26 |
| 20 | 47 | 53 | 55 | 58 | 81 | 207 | 501 | 170 | 39 | 22 | 21 | 25 |
| 21 | 48 | 52 | 55 | 56 | 66 | 234 | 502 | 147 | 33 | 22 | 21 | 24 |
| 22 | 76 | 53 | 54 | 53 | 58 | 254 | 421 | 113 | 26 | 22 | 21 | 24 |
| 23 | 226 | 53 | 54 | 54 | 55 | 266 | 696 | 191 | 21 | 22 | 21 | 27 |
| 24 | 372 | 55 | 54 | 55 | 55 | 301 | 562 | 163 | 21 | 22 | 21 | 35 |
| 25 | 110 | 63 | 53 | 55 | 55 | 356 | 476 | 168 | 22 | 22 | 21 | 40 |
| 26 | 52 | 62 | 54 | 56 | 56 | 351 | 516 | 197 | 22 | 22 | 21 | 33 |
| 27 | 49 | 54 | 54 | 55 | 56 | 315 | 576 | 398 | 22 | 22 | 21 | 29 |
| 28 | 51 | 54 | 54 | 56 | 55 | 289 | 642 | 452 | 22 | 22 | 21 | 27 |
| 29 | 49 | 53 | 54 | 56 | --- | 236 | 558 | 384 | 21 | 22 | 22 | 26 |
| 30 | 50 | 54 | 54 | 56 | --- | 219 | 413 | 410 | 20 | 22 | 22 | 25 |
| 31 | 50 | --- | 54 | 57 | --- | 244 | --- | 647 | --- | 22 | 21 | --- |
| TOTAL | 2178 | 1587 | 1687 | 1943 | 1693 | 4513 | 15003 | 10088 | 4513 | 659 | 676 | 634 |
| MEAN | 70.3 | 52.9 | 54.4 | 62.7 | 60.5 | 146 | 500 | 325 | 150 | 21.3 | 21.8 | 21.1 |
| MAX | 372 | 63 | 57 | 240 | 96 | 356 | 707 | 647 | 525 | 22 | 23 | 40 |
| MIN | 47 | 51 | 53 | 53 | 53 | 54 | 295 | 113 | 20 | 20 | 21 | 13 |
| AC-FT | 4320 | 3150 | 3350 | 3850 | 3360 | 8950 | 29760 | 20010 | 8950 | 1310 | 1340 | 1260 |
| CAL YR 1989 | TOTAL | 104874 | MEAN | 287 | MAX | 1790 | MIN | 22 | AC-FT | 208000 | | |
| WTR YR 1990 | TOTAL | 45174 | MEAN | 124 | MAX | 707 | MIN | 13 | AC-FT | 89600 | | |

11439501 SOUTH FORK AMERICAN RIVER NEAR KYBURZ, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SOUTH FORK AMERICAN RIVER
AND EL DORADO CANAL NEAR KYBURZ, CA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------|--------|------|------|------|-------|-------|-------|-------|--------|------|------|
| 1 | 70 | 160 | 123 | 113 | 131 | 162 | 431 | 475 | 652 | 141 | 111 | 121 |
| 2 | 63 | 161 | 120 | 114 | 128 | 153 | 493 | 481 | 684 | 148 | 115 | 120 |
| 3 | 66 | 156 | 120 | 114 | 123 | 213 | 546 | 562 | 620 | 137 | 120 | 119 |
| 4 | 64 | 160 | 127 | 144 | 125 | 215 | 564 | 637 | 530 | 148 | 119 | 118 |
| 5 | 61 | 161 | 134 | 134 | 130 | 172 | 555 | 653 | 480 | 130 | 118 | 117 |
| 6 | 58 | 155 | 141 | 97 | 125 | 162 | 572 | 663 | 446 | 127 | 121 | 117 |
| 7 | 56 | 142 | 120 | 136 | 110 | 163 | 594 | 605 | 408 | 124 | 122 | 116 |
| 8 | 54 | 133 | 113 | 371 | 129 | 178 | 536 | 558 | 377 | 123 | 129 | 120 |
| 9 | 97 | 129 | 108 | 206 | 131 | 188 | 451 | 587 | 382 | 123 | 129 | 103 |
| 10 | 99 | 131 | 106 | 145 | 120 | 200 | 520 | 603 | 369 | 124 | 115 | 97 |
| 11 | 96 | 139 | 109 | 124 | 127 | 174 | 611 | 532 | 337 | 141 | 106 | 106 |
| 12 | 94 | 143 | 107 | 124 | 133 | 162 | 644 | 452 | 297 | 153 | 114 | 118 |
| 13 | 107 | 135 | 107 | 147 | 118 | 150 | 751 | 399 | 269 | 146 | 111 | 116 |
| 14 | 108 | 129 | 114 | 152 | 81 | 148 | 826 | 394 | 242 | 147 | 95 | 114 |
| 15 | 112 | 123 | 116 | 141 | 104 | 146 | 831 | 356 | 246 | 155 | 99 | 67 |
| 16 | 111 | 120 | 122 | 136 | 123 | 161 | 843 | 359 | 267 | 156 | 119 | 38 |
| 17 | 110 | 116 | 118 | 133 | 143 | 183 | 663 | 374 | 229 | 140 | 120 | 28 |
| 18 | 108 | 115 | 115 | 137 | 172 | 241 | 619 | 354 | 223 | 136 | 123 | 28 |
| 19 | 111 | 112 | 114 | 127 | 172 | 306 | 674 | 330 | 210 | 135 | 122 | 28 |
| 20 | 109 | 112 | 112 | 138 | 166 | 343 | 637 | 319 | 197 | 133 | 133 | 27 |
| 21 | 121 | 107 | 125 | 140 | 153 | 370 | 638 | 295 | 190 | 130 | 129 | 26 |
| 22 | 217 | 104 | 122 | 128 | 126 | 390 | 557 | 261 | 184 | 127 | 125 | 26 |
| 23 | 372 | 103 | 123 | 124 | 111 | 402 | 832 | 307 | 174 | 124 | 122 | 28 |
| 24 | 525 | 131 | 123 | 107 | 112 | 437 | 698 | 323 | 158 | 121 | 119 | 36 |
| 25 | 263 | 163 | 123 | 93 | 118 | 492 | 616 | 330 | 149 | 119 | 118 | 41 |
| 26 | 205 | 174 | 123 | 102 | 128 | 487 | 660 | 353 | 155 | 118 | 121 | 34 |
| 27 | 195 | 157 | 122 | 95 | 135 | 451 | 720 | 555 | 136 | 117 | 120 | 30 |
| 28 | 189 | 146 | 119 | 100 | 151 | 425 | 787 | 611 | 126 | 115 | 119 | 28 |
| 29 | 171 | 142 | 116 | 121 | --- | 372 | 703 | 542 | 136 | 113 | 118 | 27 |
| 30 | 163 | 139 | 116 | 127 | --- | 355 | 556 | 569 | 146 | 109 | 117 | 26 |
| 31 | 163 | --- | 115 | 133 | --- | 380 | --- | 807 | --- | 112 | 121 | --- |
| TOTAL | 4338 | 4098 | 3673 | 4203 | 3625 | 8381 | 19128 | 14646 | 9019 | 4072 | 3670 | 2120 |
| MEAN | 140 | 137 | 118 | 136 | 129 | 270 | 638 | 472 | 301 | 131 | 118 | 70.7 |
| MAX | 525 | 174 | 141 | 371 | 172 | 492 | 843 | 807 | 684 | 156 | 133 | 121 |
| MIN | 54 | 103 | 106 | 93 | 81 | 146 | 431 | 261 | 126 | 109 | 95 | 26 |
| AC-FT | 8600 | 8130 | 7290 | 8340 | 7190 | 16620 | 37940 | 29050 | 17890 | 8080 | 7280 | 4210 |
| CAL YR 1989 | TOTAL | 142662 | MEAN | 391 | MAX | 1920 | MIN | 53 | AC-FT | 283000 | | |
| WTR YR 1990 | TOTAL | 80973 | MEAN | 222 | MAX | 843 | MIN | 26 | AC-FT | 160600 | | |

11441001 UNION VALLEY RESERVOIR NEAR RIVERTON, CA

LOCATION.--Lat 38°51'49", long 120°26'15", in NW 1/4 NW 1/4 sec.29, T.12 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, in valve control house near left bank at Union Valley Dam on Silver Creek, 0.7 mi upstream from Little Silver Creek, and 6.6 mi north of Riverton.

DRAINAGE AREA.--83.7 mi².

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District).

REMARKS.--Reservoir is formed by earthfill dam completed in December 1962; storage began May 1962. Usable capacity, 270,300 acre-ft between elevations 4,645.0 ft, minimum operating level, and 4,870.0 ft, top of radial spillway gates. Dead storage, 7,000 acre-ft. Reservoir receives water from the South Fork Rubicon River via Robbs Peak powerplant (station 11429300). Water is used for power development in the South Fork American River basin. Discharge to Union Valley powerplant (station 11441002) is shown as a line item below this table. Records, including extremes, represent total contents. See schematic diagrams of Middle Fork American and Rubicon River basins and South Fork American River basin.

COOPERATION.--Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 279,100 acre-ft, July 9, 1974, elevation, 4,870.6 ft; minimum since reservoir first filled, 18,300 acre-ft, Jan. 13, 1977, elevation, 4,683.3 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 270,999 acre-ft, June 15, elevation, 4,867.85 ft; minimum, 153,701 acre-ft, Sept. 30, elevation, 4,819.63 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by Sacramento Municipal Utility District, resurveyed in 1976)

| | | | |
|-------|--------|-------|---------|
| 4,680 | 17,000 | 4,780 | 90,000 |
| 4,700 | 25,000 | 4,800 | 118,900 |
| 4,720 | 35,300 | 4,820 | 154,400 |
| 4,740 | 48,800 | 4,840 | 197,400 |
| 4,760 | 66,800 | 4,870 | 277,300 |

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|------------|------------|-----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 161517 | 175934 | 191242 | 184415 | 182366 | 181745 | 202565 | 246139 | 261208 | 263522 | 224891 | 186323 |
| 2 | 161497 | 175200 | 191219 | 183165 | 182233 | 181478 | 203601 | 246139 | 263063 | 261750 | 223240 | 185087 |
| 3 | 161881 | 174534 | 190897 | 182877 | 182277 | 182832 | 205147 | 246498 | 264239 | 260752 | 221697 | 183654 |
| 4 | 162488 | 173893 | 191081 | 182633 | 182100 | 183766 | 207286 | 247104 | 264670 | 259925 | 219603 | 182455 |
| 5 | 162712 | 173358 | 191127 | 182788 | 181745 | 184146 | 208878 | 248070 | 265329 | 259075 | 218131 | 181082 |
| 6 | 162835 | 173978 | 191196 | 182277 | 181104 | 184438 | 210849 | 248401 | 265387 | 257574 | 217016 | 179301 |
| 7 | 162651 | 175286 | 191173 | 182855 | 180774 | 184438 | 212833 | 248926 | 265100 | 256219 | 216387 | 177753 |
| 8 | 162610 | 176646 | 191449 | 184594 | 180708 | 185423 | 214503 | 248732 | 265616 | 254474 | 215709 | 176236 |
| 9 | 162325 | 178102 | 191288 | 185289 | 180357 | 185984 | 216212 | 248649 | 266799 | 253019 | 214930 | 174598 |
| 10 | 162204 | 179499 | 191127 | 185065 | 180422 | 186957 | 217624 | 249370 | 267665 | 252068 | 213905 | 172802 |
| 11 | 162427 | 180752 | 190620 | 185378 | 179895 | 187228 | 219450 | 249898 | 268012 | 251481 | 212858 | 171976 |
| 12 | 162022 | 181900 | 190989 | 185490 | 179653 | 187205 | 221697 | 249593 | 269228 | 250731 | 211640 | 170305 |
| 13 | 161780 | 183054 | 190781 | 185782 | 179235 | 187386 | 223832 | 249343 | 269954 | 249648 | 209738 | 169046 |
| 14 | 161578 | 184281 | 190277 | 186029 | 178908 | 187386 | 226033 | 249204 | 270244 | 248511 | 208731 | 167981 |
| 15 | 162164 | 185490 | 190026 | 185759 | 178734 | 187341 | 228091 | 249454 | 270999 | 247408 | 207286 | 166963 |
| 16 | 162549 | 186617 | 189798 | 185916 | 178908 | 187228 | 230108 | 249093 | 270709 | 246056 | 205778 | 166032 |
| 17 | 163365 | 187024 | 189661 | 185804 | 179279 | 187907 | 231980 | 248704 | 270535 | 244194 | 204637 | 165125 |
| 18 | 164180 | 186843 | 189296 | 185378 | 179499 | 188269 | 233226 | 249315 | 270099 | 242964 | 203456 | 164507 |
| 19 | 164899 | 186572 | 189090 | 185311 | 179719 | 189364 | 234529 | 249287 | 269664 | 241958 | 203480 | 163487 |
| 20 | 165496 | 186459 | 188794 | 184953 | 179961 | 190459 | 235891 | 249426 | 268850 | 240762 | 201894 | 161598 |
| 21 | 166114 | 186911 | 188725 | 184953 | 180093 | 191058 | 236426 | 249343 | 267723 | 239627 | 200964 | 160325 |
| 22 | 166838 | 187567 | 188429 | 184393 | 180357 | 191979 | 237364 | 248954 | 267290 | 238305 | 199298 | 159525 |
| 23 | 168314 | 187364 | 187364 | 184214 | 180664 | 193180 | 239896 | 249870 | 266973 | 237738 | 198423 | 158624 |
| 24 | 169822 | 188246 | 187002 | 184146 | 180906 | 194551 | 240599 | 250287 | 266511 | 236239 | 196890 | 157968 |
| 25 | 170768 | 189182 | 186527 | 184057 | 181148 | 196023 | 241985 | 250426 | 266136 | 234822 | 194969 | 157195 |
| 26 | 171425 | 189547 | 186527 | 183833 | 180225 | 196890 | 242638 | 250731 | 265818 | 233678 | 193738 | 156997 |
| 27 | 172251 | 190048 | 186368 | 183521 | 180620 | 198139 | 243291 | 252879 | 265703 | 232429 | 192785 | 155971 |
| 28 | 172973 | 190574 | 185558 | 183654 | 181060 | 199274 | 244359 | 254249 | 266049 | 231268 | 192048 | 155343 |
| 29 | 173743 | 191104 | 185065 | 183343 | --- | 199962 | 245262 | 255150 | 265559 | 229976 | 190482 | 154518 |
| 30 | 174577 | 191403 | 185154 | 182899 | --- | 200964 | 245563 | 257149 | 264297 | 228195 | 189319 | 153701 |
| 31 | 175545 | --- | 184908 | 182966 | --- | 201655 | --- | 259528 | --- | 226552 | 188042 | --- |
| MAX | 175500 | 191400 | 191400 | 186000 | 182400 | 201700 | 245600 | 259500 | 271000 | 263500 | 224900 | 186300 |
| MIN | 161500 | 173400 | 184900 | 182300 | 178700 | 181500 | 202600 | 246100 | 261200 | 226600 | 188000 | 153700 |
| a | 4830.29 | 4837.41 | 4834.55 | 4833.68 | 4832.82 | 4841.78 | 4858.86 | 4863.86 | 4865.53 | 4851.75 | 4835.94 | 4819.63 |
| b | +13645 | +15858 | -6495 | -1942 | -1906 | +20595 | +43908 | +13965 | +4769 | -37745 | -38510 | -34341 |
| c | 3460 | 6470 | 19960 | 17740 | 12030 | 8470 | 4790 | 10960 | 16170 | 46480 | 48930 | 35630 |
| CAL YR 1989 | MAX 275000 | MIN 31000 | b +143608 | c 214100 | | | | | | | | |
| WTR YR 1990 | MAX 271000 | MIN 153700 | b -8199 | c 231100 | | | | | | | | |

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Diversion, in acre-feet, to Union Valley powerplant, provided by Sacramento Municipal Utility District.

11441100 ICE HOUSE RESERVOIR NEAR KYBURZ, CA

LOCATION.--Lat 38°49'51", long 120°21'35", in SE 1/4 NW 1/4 sec.1, T.11 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, in powerplant intake structure near right bank, 0.5 mi north of Ice House Dam on South Fork Silver Creek, and 5.2 mi northwest of Kyburz.

DRAINAGE AREA.--27.2 mi².

PERIOD OF RECORD.--October 1959 to current year.

REVISED RECORDS.--WSP 1931: 1960.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District). Prior to July 15, 1985, at site 0.5 mi downstream at Ice House Dam at same datum.

REMARKS.--Reservoir is formed by an earthfill dam; storage began Dec. 15, 1959. Usable capacity, 45,800 acre-ft between elevations 5,327.5 ft, centerline of fishwater outlet, and 5,450.0 ft, top of spillway gates. Dead storage, 160 acre-ft. Reservoir is used to store water for power development. Reservoir is also forebay for Jones Fork powerplant (station 11440900) which diverts up to 350 ft³/s to powerplant completed in April 1985, then to Union Valley Reservoir (station 11441001). Records, including extremes, represent total contents. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 46,400 acre-ft, June 27, 1971, elevation, 5,450.6 ft; minimum since reservoir first filled, 1,450 acre-ft, Dec. 8, 1983, elevation, 5,347.9 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 45,261 acre-ft, June 24, elevation, 5,449.08 ft; minimum, 25,640 acre-ft, Nov. 22, elevation, 5,416.48 ft.

Capacity table (elevation, in feet, and contents in acre-feet)
(Based on survey made in 1946)

| | | | |
|-------|-------|-------|--------|
| 5,345 | 1,080 | 5,400 | 17,600 |
| 5,350 | 1,760 | 5,420 | 27,400 |
| 5,360 | 3,840 | 5,440 | 39,200 |
| 5,380 | 9,600 | 5,451 | 46,700 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-----------|-----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 30429 | 27520 | 26100 | 26715 | 27980 | 28972 | 32822 | 37092 | 43280 | 44829 | 43933 | 39867 |
| 2 | 30132 | 27540 | 26125 | 26720 | 28000 | 29066 | 33068 | 37293 | 43579 | 44878 | 43912 | 39848 |
| 3 | 29797 | 27560 | 26160 | 26735 | 28055 | 29181 | 33206 | 37554 | 43877 | 44913 | 43891 | 39829 |
| 4 | 29445 | 27590 | 26185 | 26740 | 28085 | 29291 | 33008 | 37820 | 44157 | 44934 | 43870 | 39803 |
| 5 | 29099 | 27630 | 26220 | 26750 | 28105 | 29351 | 32906 | 38119 | 44402 | 44948 | 43849 | 39783 |
| 6 | 28769 | 27650 | 26260 | 26740 | 28155 | 29412 | 32870 | 38386 | 44612 | 44969 | 43566 | 39763 |
| 7 | 28559 | 27440 | 26300 | 26875 | 28175 | 29467 | 32732 | 38633 | 44801 | 44976 | 43287 | 39731 |
| 8 | 28350 | 27225 | 26330 | 27045 | 28190 | 29533 | 32582 | 38847 | 44836 | 44983 | 43053 | 39712 |
| 9 | 28160 | 27015 | 26355 | 27155 | 28205 | 29594 | 32372 | 39042 | 44836 | 44990 | 42708 | 39698 |
| 10 | 28140 | 26810 | 26380 | 27220 | 28225 | 29709 | 32426 | 39237 | 44836 | 44997 | 42351 | 39490 |
| 11 | 27930 | 26670 | 26400 | 27270 | 28250 | 29797 | 32324 | 39393 | 44815 | 44864 | 42078 | 39373 |
| 12 | 27750 | 26545 | 26420 | 27340 | 28270 | 29869 | 32186 | 39530 | 44808 | 44668 | 41928 | 39354 |
| 13 | 27730 | 26385 | 26445 | 27455 | 28305 | 29918 | 32198 | 39666 | 44766 | 44493 | 41831 | 39321 |
| 14 | 27575 | 26200 | 26460 | 27515 | 28320 | 29968 | 32222 | 39789 | 44717 | 44437 | 41817 | 39302 |
| 15 | 27555 | 26035 | 26480 | 27555 | 28335 | 30017 | 32390 | 39900 | 44668 | 44486 | 41798 | 39283 |
| 16 | 27535 | 25860 | 26500 | 27630 | 28455 | 30066 | 32600 | 40011 | 44752 | 44507 | 41772 | 39263 |
| 17 | 27510 | 25725 | 26520 | 27515 | 28526 | 30127 | 32582 | 40128 | 44836 | 44521 | 41596 | 39243 |
| 18 | 27420 | 25740 | 26535 | 27575 | 28565 | 30209 | 32792 | 40225 | 44948 | 44444 | 41596 | 39224 |
| 19 | 27400 | 25755 | 26540 | 27600 | 28593 | 30314 | 33134 | 40316 | 44948 | 44444 | 41323 | 39205 |
| 20 | 27260 | 25770 | 26550 | 27620 | 28620 | 30457 | 33446 | 40433 | 44990 | 44157 | 41304 | 39191 |
| 21 | 27160 | 25780 | 26560 | 27650 | 28642 | 30622 | 33734 | 40550 | 45046 | 44150 | 41278 | 39159 |
| 22 | 27210 | 25640 | 26570 | 27680 | 28675 | 30798 | 33998 | 40641 | 45116 | 44136 | 41083 | 39153 |
| 23 | 27330 | 25660 | 26580 | 27695 | 28703 | 30974 | 34508 | 40830 | 45193 | 44129 | 40842 | 39153 |
| 24 | 27490 | 25720 | 26595 | 27720 | 28730 | 31183 | 34863 | 40966 | 45261 | 44108 | 40830 | 39172 |
| 25 | 27560 | 25885 | 26610 | 27740 | 28774 | 31409 | 35188 | 41103 | 45200 | 44094 | 40804 | 39185 |
| 26 | 27600 | 25940 | 26630 | 27770 | 28813 | 31634 | 35545 | 41291 | 45060 | 44045 | 40790 | 39179 |
| 27 | 27630 | 25975 | 26640 | 27785 | 28862 | 31838 | 35935 | 41668 | 44913 | 44024 | 40472 | 39172 |
| 28 | 27645 | 26020 | 26660 | 27805 | 28906 | 32048 | 36338 | 42045 | 44752 | 44017 | 40160 | 39139 |
| 29 | 27660 | 26040 | 26650 | 27820 | --- | 32228 | 36676 | 42298 | 44773 | 43996 | 39926 | 39133 |
| 30 | 27675 | 26070 | 26675 | 27905 | --- | 32396 | 36910 | 42649 | 44801 | 43975 | 39907 | 39120 |
| 31 | 27690 | --- | 26685 | 27945 | --- | 32594 | --- | 43020 | --- | 43961 | 39887 | --- |
| MAX | 30429 | 27650 | 26685 | 27945 | 28906 | 32594 | 36910 | 43020 | 45261 | 44997 | 43933 | 39867 |
| MIN | 27160 | 25640 | 26100 | 26715 | 27980 | 28972 | 32186 | 37092 | 43280 | 43961 | 39887 | 39120 |
| a | 5420.58 | 5417.34 | 5418.57 | 5421.09 | 5422.92 | 5429.49 | 5436.40 | 5445.80 | 5448.43 | 5447.23 | 5440.98 | 5439.80 |
| b | -2810 | -1620 | +615 | +1260 | +961 | +3688 | +4316 | +6110 | +1781 | -840 | -4074 | -767 |
| CAL YR 1989 | MAX 45500 | MIN 9360 | b +17075 | | | | | | | | | |
| WTR YR 1990 | MAX 45261 | MIN 25640 | b +8620 | | | | | | | | | |

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11441500 SOUTH FORK SILVER CREEK NEAR ICE HOUSE, CA

LOCATION.--Lat 38°49'08", long 120°21'51", in NW 1/4 NW 1/4 sec.12, T.11 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 300 ft upstream from Peavine Creek, 0.4 mi downstream from Ice House Dam, and 4.8 mi northwest of Kyburz.

DRAINAGE AREA.--27.5 mi².

PERIOD OF RECORD.--October 1924 to current year.

REVISED RECORDS.--WSP 1395: 1928, 1938. WSP 1635: Drainage area at former site.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 5,290 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1959, at site 0.3 mi upstream at different datum.

REMARKS.--Records excellent. Flow regulated by Ice House Reservoir (station 11441100) beginning in December 1959. Diversion to Jones Fork powerplant (station 11440900) starting April 1985 bypasses station and returns to Silver Creek at Union Valley Reservoir (station 11441001). See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE.--60 years (water years 1925-84, prior to diversion to Jones Fork powerplant), 78.1 ft³/s, 56,850 acre-ft/yr; 5 years (water years 1986-90), 8.20 ft³/s, 5,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,940 ft³/s, Dec. 23, 1955, gage height, 6.71 ft, site and datum then in use, from rating curve extended above 540 ft³/s on basis of slope-area measurement at gage height 6.69 ft; no flow Oct. 31 to Nov. 9, 1958. Maximum discharge since construction of Ice House Dam in 1959, 1,930 ft³/s, May 26, 1982, gage height, 5.74 ft, from rating curve extended above 730 ft³/s on basis of computation of flow over dam at gage height 5.66 ft; minimum daily, 1.2 ft³/s, Mar. 17-19, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 214 ft³/s, Apr. 3, gage height, 3.86 ft; minimum daily, 3.3 ft³/s, Feb. 18-21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 16 | 14 | 4.4 | 5.0 | 5.9 | 4.2 | 3.4 | 6.6 | 7.1 | 5.4 | 5.9 | 6.2 |
| 2 | 14 | 14 | 4.5 | 4.5 | 5.9 | 4.5 | 4.3 | 6.6 | 7.0 | 5.3 | 5.9 | 6.4 |
| 3 | 13 | 12 | 4.6 | 4.6 | 5.9 | 5.5 | 6.9 | 6.5 | 6.6 | 5.8 | 5.9 | 6.5 |
| 4 | 13 | 12 | 4.5 | 4.6 | 5.9 | 4.6 | 6.5 | 6.5 | 6.5 | 5.9 | 5.9 | 6.6 |
| 5 | 13 | 12 | 4.2 | 4.8 | 5.9 | 4.4 | 6.3 | 6.5 | 6.3 | 5.9 | 5.9 | 6.8 |
| 6 | 13 | 12 | 4.5 | 4.6 | 5.9 | 4.4 | 6.2 | 6.5 | 6.2 | 5.9 | 5.9 | 6.7 |
| 7 | 13 | 12 | 4.9 | 5.9 | 5.9 | 4.4 | 6.4 | 6.5 | 6.4 | 5.9 | 6.2 | 6.7 |
| 8 | 13 | 12 | 4.9 | 5.5 | 6.1 | 4.4 | 6.3 | 6.5 | 6.4 | 5.9 | 6.0 | 6.3 |
| 9 | 14 | 11 | 4.9 | 4.8 | 6.2 | 4.4 | 6.2 | 6.5 | 6.5 | 5.9 | 5.9 | 5.9 |
| 10 | 15 | 11 | 4.9 | 4.6 | 6.2 | 4.3 | 6.2 | 6.4 | 6.5 | 5.9 | 5.9 | 6.1 |
| 11 | 15 | 11 | 5.0 | 4.7 | 6.2 | 4.2 | 6.2 | 6.2 | 5.7 | 5.9 | 5.9 | 6.1 |
| 12 | 14 | 11 | 4.9 | 5.0 | 6.2 | 4.2 | 6.2 | 6.2 | 5.4 | 5.9 | 5.9 | 5.9 |
| 13 | 14 | 12 | 4.9 | 5.2 | 5.2 | 4.2 | 6.1 | 6.3 | 5.6 | 5.8 | 5.9 | 5.9 |
| 14 | 14 | 12 | 4.9 | 5.1 | 3.7 | 4.2 | 6.1 | 6.3 | 5.6 | 5.6 | 5.9 | 5.8 |
| 15 | 14 | 12 | 4.6 | 5.1 | 3.5 | 4.3 | 6.2 | 6.4 | 5.7 | 5.6 | 5.9 | 5.6 |
| 16 | 14 | 8.1 | 4.7 | 5.3 | 3.4 | 4.3 | 6.4 | 6.5 | 5.6 | 5.6 | 6.0 | 5.6 |
| 17 | 14 | 4.8 | 4.9 | 5.0 | 3.4 | 4.5 | 6.2 | 6.5 | 5.4 | 5.6 | 6.0 | 5.7 |
| 18 | 14 | 4.3 | 4.9 | 4.9 | 3.3 | 4.5 | 6.2 | 6.5 | 5.4 | 5.6 | 6.1 | 5.7 |
| 19 | 14 | 4.2 | 4.9 | 5.0 | 3.3 | 4.5 | 6.2 | 6.6 | 5.5 | 5.6 | 6.1 | 5.6 |
| 20 | 14 | 4.6 | 4.9 | 5.3 | 3.3 | 4.5 | 6.2 | 6.6 | 5.6 | 5.5 | 6.2 | 5.8 |
| 21 | 14 | 5.0 | 4.9 | 5.5 | 3.3 | 4.5 | 6.2 | 6.5 | 5.6 | 5.6 | 5.9 | 5.7 |
| 22 | 14 | 4.7 | 4.9 | 4.9 | 3.7 | 4.4 | 6.2 | 6.5 | 5.6 | 5.5 | 5.9 | 5.8 |
| 23 | 14 | 4.6 | 4.9 | 4.9 | 4.3 | 4.4 | 7.1 | 7.3 | 5.6 | 5.8 | 5.9 | 5.9 |
| 24 | 15 | 5.0 | 4.9 | 5.0 | 4.4 | 4.4 | 6.4 | 6.9 | 5.5 | 5.9 | 5.9 | 6.2 |
| 25 | 14 | 5.5 | 4.9 | 5.2 | 4.4 | 4.1 | 6.2 | 6.8 | 5.6 | 5.9 | 5.9 | 6.0 |
| 26 | 14 | 5.3 | 4.9 | 5.2 | 4.5 | 3.9 | 6.2 | 6.8 | 5.6 | 5.9 | 5.9 | 5.9 |
| 27 | 14 | 4.6 | 4.6 | 5.4 | 4.5 | 3.8 | 6.2 | 7.6 | 5.4 | 5.9 | 5.9 | 5.9 |
| 28 | 14 | 4.5 | 4.7 | 5.4 | 4.2 | 3.9 | 6.2 | 7.6 | 5.4 | 5.9 | 5.8 | 5.6 |
| 29 | 14 | 4.6 | 4.7 | 5.6 | --- | 3.8 | 6.2 | 6.8 | 5.4 | 5.9 | 5.9 | 5.6 |
| 30 | 13 | 4.4 | 4.9 | 6.0 | --- | 3.7 | 6.2 | 7.7 | 5.4 | 5.9 | 6.2 | 5.6 |
| 31 | 13 | --- | 4.9 | 5.9 | --- | 3.6 | --- | 7.5 | --- | 5.9 | 6.2 | --- |
| TOTAL | 431 | 254.2 | 148.1 | 158.5 | 134.6 | 133.0 | 183.8 | 207.2 | 176.1 | 178.6 | 184.7 | 180.1 |
| MEAN | 13.9 | 8.47 | 4.78 | 5.11 | 4.81 | 4.29 | 6.13 | 6.68 | 5.87 | 5.76 | 5.96 | 6.00 |
| MAX | 16 | 14 | 5.0 | 6.0 | 6.2 | 5.5 | 7.1 | 7.7 | 7.1 | 5.9 | 6.2 | 6.8 |
| MIN | 13 | 4.2 | 4.2 | 4.5 | 3.3 | 3.6 | 3.4 | 6.2 | 5.4 | 5.3 | 5.8 | 5.6 |
| AC-FT | 855 | 504 | 294 | 314 | 267 | 264 | 365 | 411 | 349 | 354 | 366 | 357 |
| a | 3320 | 2620 | 6.9 | 139 | 20 | 13 | 4960 | 63 | 2270 | 950 | 3400 | 285 |

CAL YR 1989 TOTAL 3574.9 MEAN 9.79 MAX 18 MIN 3.0 AC-FT 7090 AC-FT a 5940
WTR YR 1990 TOTAL 2371.2 MEAN 6.50 MAX 16 MIN 3.3 AC-FT 4700 AC-FT a 18040

e Estimated.

a Diversion, in acre-feet, to Jones Fork powerplant, provided by Sacramento Municipal Utility District.

11441800 SILVER CREEK BELOW JUNCTION DAM, NEAR POLLOCK PINES, CA

LOCATION.--Lat 38°51'08", long 120°27'22", in SW 1/4 SW 1/4 sec.30, T.12 N., R.14 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, at outlet structure on Junction Dam, and 9 mi northeast of Pollock Pines.

DRAINAGE AREA.--147 mi².

PERIOD OF RECORD.--October 1987 to current year. Unpublished records for water years 1965-87 available in files of the U.S. Geological Survey.

GAGE.--Differential-pressure gage and orifice control in outlet pipe. Auxiliary nonrecording gage 550 ft downstream at different datum. Elevation of gage is 4,280 ft above National Geodetic Vertical Datum of 1929, from topographic map. August 1964 to December 1986, nonrecording gage at site 500 ft downstream at different datum. December 1986 to September 1987, nonrecording gage at site 550 ft downstream.

REMARKS.--No estimated daily discharges. Flow completely regulated by Junction dam. Flow over the spillway bypasses this station. Diversion through Jaybird powerplant (station 11441780) began in 1962. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 27 ft³/s, May 1, 1989; minimum daily, 5.1 ft³/s, Nov. 6, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 21 ft³/s, Oct. 1-28, 30; minimum daily, 10 ft³/s, Nov. 2 to May 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|
| 1 | 21 | 14 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 2 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 3 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 4 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 5 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 6 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 7 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 8 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 9 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 10 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 11 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 12 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 13 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 14 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| 15 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 16 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 17 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 18 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 19 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 20 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 21 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 22 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 23 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 24 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 25 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 26 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 27 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 28 | 21 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 29 | 20 | 10 | 10 | 10 | --- | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 30 | 21 | 10 | 10 | 10 | --- | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| 31 | 20 | --- | 10 | 10 | --- | 10 | --- | 11 | --- | 11 | 11 | --- |
| TOTAL | 649 | 304 | 310 | 310 | 280 | 310 | 300 | 327 | 330 | 341 | 341 | 330 |
| MEAN | 20.9 | 10.1 | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 10.5 | 11.0 | 11.0 | 11.0 | 11.0 |
| MAX | 21 | 14 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 11 |
| MIN | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 11 | 11 | 11 | 11 |
| AC-FT | 1290 | 603 | 615 | 615 | 555 | 615 | 595 | 649 | 655 | 676 | 676 | 655 |
| a | 4653 | 7599 | 21614 | 20462 | 13132 | 13850 | 7416 | 13236 | 17565 | 48740 | 51046 | 38166 |

CAL YR 1989 TOTAL 5144.7 MEAN 14.1 MAX 27 MIN 5.2 AC-FT 10200 a 254168
WTR YR 1990 TOTAL 4132 MEAN 11.3 MAX 21 MIN 10 AC-FT 8200 a 257479

a Diversion, in acre-feet, to Jaybird powerplant, provided by Sacramento Municipal Utility District.

11441900 SILVER CREEK BELOW CAMINO DIVERSION DAM, CA

LOCATION.--Lat 38°49'26", long 120°32'18", on line between secs.4 and 5, T.11 N., R.13 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 300 ft downstream from Round Tent Canyon, 0.4 mi downstream from diversion dam, and 5 mi northeast of Pollock Pines.

DRAINAGE AREA.--171 mi².

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,754.06 ft above National Geodetic Vertical Datum of 1929 (Sacramento Municipal Utility District bench mark).

REMARKS.--No estimated daily discharges. Records good. Flow is regulated by Ice House Reservoir (station 11441100) since 1959, Union Valley Reservoir (station 11441001) since 1962, and Junction and Camino Reservoirs. Diversion to Camino powerplant (station 11441895) since 1961 bypasses this station. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE (unadjusted).--30 years, 88.3 ft³/s, 63,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,800 ft³/s, Feb. 17, 1986, gage height, 11.70 ft, from rating curve extended above 4,700 ft³/s on basis of slope-area measurement at gage height 11.28 ft; minimum daily, 1.0 ft³/s, Nov. 1, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,500 ft³/s, Feb. 17, gage height, 6.10 ft; minimum daily, 10 ft³/s, on many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 24 | 17 | 12 | 11 | 12 | 16 | 11 | 10 | 11 | 11 | 11 | 11 |
| 2 | 25 | 12 | 12 | 11 | 12 | 18 | 11 | 10 | 11 | 11 | 11 | 11 |
| 3 | 25 | 12 | 12 | 12 | 12 | 34 | 11 | 10 | 11 | 11 | 11 | 11 |
| 4 | 24 | 12 | 12 | 11 | 12 | 29 | 11 | 10 | 10 | 11 | 11 | 11 |
| 5 | 23 | 12 | 11 | 11 | 12 | 25 | 11 | 10 | 11 | 11 | 11 | 11 |
| 6 | 23 | 11 | 12 | 11 | 12 | 22 | 11 | 10 | 11 | 11 | 11 | 11 |
| 7 | 23 | 12 | 12 | 12 | 12 | 20 | 11 | 10 | 11 | 11 | 11 | 11 |
| 8 | 23 | 12 | 12 | 12 | 11 | 20 | 11 | 10 | 11 | 11 | 11 | 11 |
| 9 | 23 | 11 | 11 | 12 | 11 | 19 | 11 | 10 | 11 | 11 | 11 | 11 |
| 10 | 23 | 12 | 12 | 11 | 11 | 20 | 11 | 10 | 11 | 11 | 11 | 11 |
| 11 | 23 | 12 | 12 | 11 | 11 | 18 | 11 | 10 | 11 | 11 | 11 | 11 |
| 12 | 23 | 12 | 12 | 11 | 11 | 17 | 11 | 10 | 11 | 11 | 11 | 11 |
| 13 | 22 | 12 | 11 | 12 | 11 | 16 | 11 | 10 | 11 | 11 | 11 | 11 |
| 14 | 21 | 11 | 11 | 14 | 11 | 15 | 11 | 10 | 11 | 11 | 11 | 11 |
| 15 | 21 | 11 | 12 | 13 | 11 | 15 | 11 | 11 | 11 | 11 | 11 | 11 |
| 16 | 21 | 11 | 11 | 12 | 11 | 15 | 11 | 11 | 11 | 11 | 11 | 11 |
| 17 | 21 | 11 | 11 | 11 | 66 | 17 | 11 | 11 | 11 | 11 | 11 | 11 |
| 18 | 21 | 12 | 11 | 11 | 61 | 18 | 11 | 11 | 11 | 11 | 11 | 11 |
| 19 | 21 | 12 | 11 | 11 | 49 | 19 | 11 | 11 | 11 | 11 | 11 | 11 |
| 20 | 21 | 11 | 11 | 11 | 81 | 19 | 11 | 11 | 11 | 11 | 11 | 11 |
| 21 | 21 | 11 | 11 | 11 | 130 | 19 | 10 | 11 | 11 | 11 | 11 | 11 |
| 22 | 21 | 11 | 11 | 11 | 46 | 18 | 10 | 11 | 11 | 11 | 11 | 11 |
| 23 | 22 | 11 | 11 | 11 | 71 | 17 | 11 | 11 | 11 | 11 | 11 | 11 |
| 24 | 21 | 11 | 11 | 11 | 35 | 17 | 10 | 11 | 11 | 11 | 11 | 11 |
| 25 | 21 | 15 | 11 | 11 | 11 | 16 | 10 | 11 | 11 | 11 | 11 | 11 |
| 26 | 21 | 17 | 11 | 12 | 13 | 15 | 11 | 11 | 11 | 11 | 11 | 11 |
| 27 | 21 | 12 | 11 | 12 | 14 | 15 | 10 | 11 | 11 | 11 | 11 | 11 |
| 28 | 21 | 11 | 11 | 12 | 16 | 14 | 10 | 11 | 11 | 11 | 11 | 11 |
| 29 | 21 | 12 | 11 | 12 | --- | 13 | 10 | 11 | 11 | 11 | 11 | 11 |
| 30 | 21 | 12 | 11 | 12 | --- | 12 | 10 | 11 | 11 | 11 | 14 | 11 |
| 31 | 21 | --- | 11 | 12 | --- | 11 | --- | 14 | --- | 11 | 14 | --- |
| TOTAL | 683 | 361 | 352 | 358 | 776 | 559 | 322 | 330 | 329 | 341 | 347 | 330 |
| MEAN | 22.0 | 12.0 | 11.4 | 11.5 | 27.7 | 18.0 | 10.7 | 10.6 | 11.0 | 11.0 | 11.2 | 11.0 |
| MAX | 25 | 17 | 12 | 14 | 130 | 34 | 11 | 14 | 11 | 11 | 14 | 11 |
| MIN | 21 | 11 | 11 | 11 | 11 | 11 | 10 | 10 | 10 | 11 | 11 | 11 |
| AC-FT | 1350 | 716 | 698 | 710 | 1540 | 1110 | 639 | 655 | 653 | 676 | 688 | 655 |

CAL YR 1989 TOTAL 7013.2 MEAN 19.2 MAX 99 MIN 5.4 AC-FT 13910
WTR YR 1990 TOTAL 5088 MEAN 13.9 MAX 130 MIN 10 AC-FT 10090

11442500 SOUTH FORK AMERICAN RIVER BELOW SILVER CREEK, NEAR POLLOCK PINES, CA

LOCATION.--Lat 38°47'37", long 120°37'02", in NE 1/4 NE 1/4 sec.22, T.11 N., R.12 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on right bank 350 ft upstream from El Dorado powerplant, 2.4 mi downstream from Silver Creek, and 2.8 mi northwest of Pollock Pines.

DRAINAGE AREA.--449 mi².

PERIOD OF RECORD.--August to December 1923 (published as "below Silver Creek"), November 1969 to current year.

CHEMICAL DATA: Water year 1980, one sample.

BIOLOGICAL DATA: Water year 1980, one sample.

SUSPENDED SEDIMENT: Water year 1980, one sample.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,862.79 ft above National Geodetic Vertical Datum of 1929 (Pacific Gas & Electric Co. bench mark). Aug. 11 to Dec. 16, 1923, nonrecording gage at same site at different datum.

REMARKS.--No estimated daily discharges. Records good. Diversions to Camino powerplant and El Dorado powerplant (stations 11441895 and 11439300) bypass this station. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE (unadjusted).--20 years, 496 ft³/s, 359,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,500 ft³/s, Jan. 13, 1980, gage height, 17.83 ft, from rating curve extended above 13,000 ft³/s; minimum daily, 9.6 ft³/s, Oct. 19, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,290 ft³/s, Oct. 24, gage height, 7.63 ft; minimum daily, 26 ft³/s, Sept. 8, 9, 12-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 134 | 106 | 105 | 90 | 110 | 174 | 399 | 419 | 650 | 45 | 46 | 36 |
| 2 | 117 | 99 | 103 | 93 | 106 | 178 | 464 | 394 | 638 | 45 | 38 | 34 |
| 3 | 114 | 95 | 101 | 87 | 106 | 305 | 503 | 435 | 594 | 45 | 38 | 30 |
| 4 | 115 | 92 | 101 | 87 | 122 | 320 | 543 | 519 | 490 | 45 | 38 | 27 |
| 5 | 111 | 91 | 99 | 91 | 109 | 261 | 526 | 544 | 428 | 45 | 38 | 27 |
| 6 | 105 | 90 | 98 | 91 | 120 | 234 | 543 | 560 | 383 | 45 | 38 | 27 |
| 7 | 99 | 90 | 98 | 126 | 108 | 217 | 585 | 524 | 350 | 45 | 39 | 27 |
| 8 | 101 | 90 | 98 | 279 | 104 | 208 | 544 | 462 | 305 | 44 | 39 | 26 |
| 9 | 104 | 90 | 97 | 202 | 117 | 205 | 443 | 465 | 299 | 43 | 39 | 26 |
| 10 | 90 | 90 | 100 | 111 | 107 | 229 | 469 | 495 | 289 | 41 | 39 | 27 |
| 11 | 88 | 90 | 99 | 102 | 108 | 227 | 572 | 450 | 267 | 41 | 38 | 27 |
| 12 | 88 | 90 | 98 | 99 | 108 | 199 | 590 | 374 | 223 | 41 | 37 | 26 |
| 13 | 88 | 90 | 96 | 139 | 108 | 180 | 650 | 313 | 190 | 40 | 37 | 26 |
| 14 | 88 | 90 | 96 | 199 | 101 | 182 | 764 | 302 | 153 | 39 | 37 | 26 |
| 15 | 88 | 90 | 97 | 169 | 102 | 173 | 750 | 266 | 144 | 38 | 37 | 26 |
| 16 | 88 | 90 | 96 | 145 | 154 | 175 | 809 | 260 | 168 | 38 | 37 | 29 |
| 17 | 88 | 90 | 96 | 125 | 163 | 180 | 659 | 271 | 140 | 38 | 37 | 43 |
| 18 | 87 | 90 | 94 | 119 | 192 | 229 | 547 | 262 | 111 | 38 | 37 | 44 |
| 19 | 87 | 90 | 93 | 108 | 186 | 307 | 622 | 238 | 120 | 38 | 37 | 43 |
| 20 | 87 | 90 | 95 | 107 | 190 | 364 | 570 | 228 | 124 | 38 | 37 | 42 |
| 21 | 90 | 90 | 94 | 105 | 239 | 398 | 581 | 217 | 79 | 38 | 37 | 40 |
| 22 | 126 | 90 | 93 | 104 | 136 | 416 | 500 | 173 | 68 | 39 | 37 | 39 |
| 23 | 157 | 90 | 92 | 101 | 225 | 421 | 713 | 241 | 60 | 37 | 37 | 41 |
| 24 | 592 | 112 | 92 | 100 | 171 | 450 | 715 | 254 | 54 | 37 | 37 | 43 |
| 25 | 289 | 142 | 92 | 98 | 156 | 505 | 577 | 283 | 53 | 37 | 36 | 61 |
| 26 | 166 | 360 | 92 | 96 | 158 | 505 | 580 | 251 | 52 | 37 | 36 | 62 |
| 27 | 113 | 157 | 92 | 96 | 169 | 465 | 619 | 391 | 51 | 37 | 36 | 53 |
| 28 | 115 | 128 | 92 | 92 | 173 | 441 | 691 | 569 | 48 | 38 | 36 | 49 |
| 29 | 112 | 112 | 91 | 98 | --- | 388 | 667 | 496 | 49 | 39 | 36 | 46 |
| 30 | 107 | 106 | 89 | 118 | --- | 358 | 523 | 422 | 47 | 39 | 36 | 43 |
| 31 | 107 | --- | 88 | 111 | --- | 366 | --- | 841 | --- | 39 | 39 | --- |
| TOTAL | 3941 | 3220 | 2967 | 3688 | 3948 | 9260 | 17718 | 11919 | 6627 | 1249 | 1166 | 1096 |
| MEAN | 127 | 107 | 95.7 | 119 | 141 | 299 | 591 | 384 | 221 | 40.3 | 37.6 | 36.5 |
| MAX | 592 | 360 | 105 | 279 | 239 | 505 | 809 | 841 | 650 | 45 | 46 | 62 |
| MIN | 87 | 90 | 88 | 87 | 101 | 173 | 399 | 173 | 47 | 37 | 36 | 26 |
| AC-FT | 7820 | 6390 | 5890 | 7320 | 7830 | 18370 | 35140 | 23640 | 13140 | 2480 | 2310 | 2170 |
| a | 5350 | 8300 | 21360 | 20640 | 12850 | 17580 | 8020 | 14490 | 18200 | 46870 | 48150 | 35220 |
| b | 3290 | 4170 | 3430 | 4380 | 3970 | 8260 | 8330 | 7800 | 6610 | 3860 | 3000 | 1500 |

CAL YR 1989 TOTAL 148936 MEAN 408 MAX 2630 MIN 54 AC-FT 295400 a 271200 b 57650
WTR YR 1990 TOTAL 66799 MEAN 183 MAX 841 MIN 26 AC-FT 132500 a 257000 b 58600

a Diversion, in acre-feet, to Camino powerplant, provided by Sacramento Municipal Utility District.

b Diversion, in acre-feet, to El Dorado powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

11442700 BRUSH CREEK BELOW BRUSH CREEK DAM, NEAR POLLOCK PINES, CA

LOCATION.--Lat 38°48'43", long 120°37'16", in NW 1/4 SE 1/4 sec.10, T.11 N., R.12 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, at outlet structure on Brush Creek Dam, and 4.0 mi northwest of Pollock Pines.

DRAINAGE AREA.--7.99 mi².

PERIOD OF RECORD.--October 1987 to current year. Unpublished records for water years 1971-87 available in files of the U.S. Geological Survey.

GAGE.--Nonrecording gage and orifice control in outlet pipe. Auxiliary nonrecording gage 400 ft downstream at different datum. Elevation of gage is 2,700 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1987, nonrecording gage 400 ft downstream at different datum.

REMARKS.--No estimated daily discharges. Flow completely regulated by Brush Creek dam. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 8.4 ft³/s, Nov. 27-29, 1989; minimum daily, 2.1 ft³/s, many days in 1988.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 8.4 ft³/s, Nov. 27-29, minimum daily, 2.2 ft³/s, Aug. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| 1 | 3.4 | 7.9 | 8.2 | 7.1 | 6.8 | 6.8 | 4.5 | 4.5 | 3.4 | 2.5 | 2.5 | 2.7 |
| 2 | 3.3 | 7.9 | 8.1 | 7.1 | 6.8 | 6.8 | 4.5 | 4.5 | 2.8 | 2.5 | 2.5 | 2.7 |
| 3 | 3.3 | 7.9 | 8.1 | 7.1 | 6.8 | 6.8 | 4.5 | 4.5 | 2.8 | 2.5 | 2.5 | 2.7 |
| 4 | 3.3 | 8.0 | 8.0 | 7.1 | 6.8 | 6.8 | 4.5 | 4.5 | 2.8 | 2.5 | 2.5 | 2.7 |
| 5 | 3.4 | 8.0 | 8.0 | 7.1 | 6.8 | 6.8 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.7 |
| 6 | 3.4 | 8.0 | 8.1 | 7.1 | 6.8 | 6.8 | 4.5 | 4.5 | 2.4 | 2.5 | 2.5 | 2.7 |
| 7 | 3.4 | 8.0 | 8.1 | 7.1 | 6.8 | 6.8 | 4.5 | 4.5 | 2.4 | 2.5 | 2.5 | 2.7 |
| 8 | 3.4 | 8.0 | 8.2 | 7.1 | 6.8 | 6.8 | 4.5 | 4.5 | 2.4 | 2.5 | 2.5 | 2.7 |
| 9 | 3.4 | 8.0 | 8.2 | 7.1 | 6.8 | 6.9 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.7 |
| 10 | 3.4 | 8.0 | 8.2 | 7.1 | 6.8 | 6.9 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.7 |
| 11 | 3.4 | 8.0 | 8.2 | 7.1 | 6.8 | 7.0 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.7 |
| 12 | 3.4 | 8.0 | 8.1 | 7.0 | 6.8 | 7.1 | 4.5 | 4.5 | 2.5 | 2.5 | 2.4 | 2.7 |
| 13 | 3.4 | 8.0 | 8.0 | 6.9 | 6.8 | 6.2 | 4.5 | 4.5 | 2.5 | 2.5 | 2.4 | 2.7 |
| 14 | 3.4 | 8.0 | 7.9 | 6.8 | 6.8 | 4.3 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.7 |
| 15 | 3.3 | 8.0 | 7.9 | 6.8 | 6.6 | 4.3 | 4.5 | 4.5 | 2.5 | 2.4 | 2.2 | 2.7 |
| 16 | 3.3 | 7.9 | 7.8 | 6.8 | 6.6 | 4.3 | 4.5 | 4.5 | 2.5 | 2.4 | 2.5 | 2.7 |
| 17 | 3.3 | 7.9 | 7.8 | 6.8 | 6.6 | 4.4 | 4.5 | 4.5 | 2.5 | 2.4 | 2.5 | 2.7 |
| 18 | 3.4 | 7.9 | 7.8 | 6.8 | 6.6 | 4.4 | 4.5 | 4.5 | 2.4 | 2.5 | 2.8 | 2.7 |
| 19 | 3.4 | 7.9 | 7.8 | 6.8 | 6.6 | 4.4 | 4.5 | 4.5 | 2.4 | 2.5 | 2.8 | 2.7 |
| 20 | 3.4 | 8.0 | 7.7 | 6.8 | 6.6 | 4.5 | 4.5 | 4.5 | 2.4 | 2.5 | 2.7 | 2.7 |
| 21 | 3.4 | 8.0 | 7.7 | 6.8 | 6.6 | 4.5 | 4.5 | 4.5 | 2.5 | 2.5 | 2.6 | 2.7 |
| 22 | 3.4 | 8.1 | 7.8 | 6.8 | 6.6 | 4.5 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.7 |
| 23 | 3.4 | 8.1 | 7.7 | 6.8 | 6.6 | 4.5 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.6 |
| 24 | 3.4 | 8.2 | 7.7 | 6.8 | 6.6 | 4.5 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.9 |
| 25 | 3.4 | 8.3 | 7.7 | 6.8 | 6.6 | 4.5 | 4.5 | 4.5 | 2.5 | 2.5 | 2.5 | 2.3 |
| 26 | 3.4 | 8.3 | 7.6 | 6.8 | 6.6 | 4.5 | 4.5 | 4.5 | 2.5 | 2.5 | 2.6 | 2.4 |
| 27 | 3.4 | 8.4 | 7.6 | 6.8 | 6.6 | 4.5 | 4.5 | 4.5 | 2.5 | 2.5 | 2.7 | 2.4 |
| 28 | 3.4 | 8.4 | 7.2 | 6.8 | 6.6 | 4.5 | 4.5 | 4.5 | 2.5 | 2.5 | 2.6 | 2.4 |
| 29 | 3.4 | 8.4 | 7.0 | 6.8 | --- | 4.5 | 4.5 | 4.5 | 2.5 | 2.5 | 2.7 | 2.4 |
| 30 | 3.4 | 8.2 | 7.0 | 6.8 | --- | 4.5 | 4.5 | 4.5 | 2.5 | 2.6 | 2.6 | 2.4 |
| 31 | 6.2 | --- | 7.0 | 6.8 | --- | 4.5 | --- | 4.5 | --- | 2.6 | 2.7 | --- |
| TOTAL | 107.6 | 241.7 | 242.2 | 214.4 | 190.0 | 168.6 | 135.0 | 139.5 | 76.2 | 77.4 | 78.8 | 79.2 |
| MEAN | 3.47 | 8.06 | 7.81 | 6.92 | 6.79 | 5.44 | 4.50 | 4.50 | 2.54 | 2.50 | 2.54 | 2.64 |
| MAX | 6.2 | 8.4 | 8.2 | 7.1 | 6.8 | 7.1 | 4.5 | 4.5 | 3.4 | 2.6 | 2.8 | 2.9 |
| MIN | 3.3 | 7.9 | 7.0 | 6.8 | 6.6 | 4.3 | 4.5 | 4.5 | 2.4 | 2.4 | 2.2 | 2.3 |
| AC-FT | 213 | 479 | 480 | 425 | 377 | 334 | 268 | 277 | 151 | 154 | 156 | 157 |

CAL YR 1989 TOTAL 1840.7 MEAN 5.04 MAX 8.4 MIN 3.3 AC-FT 3650
WTR YR 1990 TOTAL 1750.6 MEAN 4.80 MAX 8.4 MIN 2.2 AC-FT 3470

11443450 SLAB CREEK RESERVOIR NEAR CAMINO, CA

LOCATION.--Lat 38°46'21", long 120°41'58", in SW 1/4 NE 1/4 sec.25, T.11 N., R.11 E., El Dorado County, Hydrologic Unit 18020129, Eldorado National Forest, on left bank 100 ft upstream from dam on South Fork American River, 1,600 ft upstream from Iowa Canyon, and 2.7 mi northwest of Camino.

DRAINAGE AREA.--493 mi².

PERIOD OF RECORD.--May 1987 to current year. Unpublished records for water years 1969-86 available in files of the U.S. Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Sacramento Municipal Utility District). Prior to May 26, 1987, nonrecording gage at same site and datum. Since September 1980, supplementary water-stage recorder operated by U.S. Geological Survey during periods of spill at left abutment of dam.

REMARKS.--Reservoir is formed by concrete arch dam completed in 1967. Storage began in October 1967. Usable capacity, 16,600 acre-ft, between elevations 1,670 ft, invert of tunnel, and 1,850 ft, crest of spillway. Dead storage, 600 acre-ft. Reservoir receives water from South Fork American River and Silver Creek via El Dorado and Camino powerplants (stations 11439300 and 11441895) 10 mi upstream. Nearly the entire flow is diverted at this reservoir to White Rock powerplant (station 11443460). See South Fork American River near Camino (station 11443500) for additional information on diversions and releases from Slab Creek Reservoir. Records, including extremes, represent usable contents. See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 16,752 acre-ft, Mar. 8, 1989, elevation, 1,850.76 ft; minimum, 13,510 acre-ft, July 26, 1989, elevation, 1,834.11 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,742 acre-ft, Feb. 21, elevation, 1,850.71 ft, minimum, 13,631 acre-ft, Dec. 12, elevation, 1,834.76 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by Sacramento Municipal Utility District dated October 1967)

| | | | |
|-------|-------|-------|--------|
| 1,730 | 1,660 | 1,800 | 8,100 |
| 1,740 | 2,310 | 1,820 | 11,100 |
| 1,750 | 3,000 | 1,840 | 14,600 |
| 1,760 | 3,800 | 1,850 | 16,600 |
| 1,780 | 5,650 | 1,853 | 17,200 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 15816 | 15128 | 15132 | 15874 | 16292 | 16204 | 16244 | 15776 | 15948 | 16080 | 15158 | 14758 |
| 2 | 15058 | 15244 | 14738 | 16272 | 16120 | 16000 | 16418 | 15582 | 16112 | 15778 | 15276 | 15440 |
| 3 | 14200 | 15072 | 15326 | 16096 | 16112 | 16362 | 16324 | 15592 | 15842 | 15284 | 15400 | 15690 |
| 4 | 14352 | 14994 | 14776 | 15768 | 15714 | 16264 | 16432 | 15616 | 15990 | 15030 | 15950 | 14952 |
| 5 | 14496 | 14950 | 14550 | 16082 | 15888 | 16086 | 16342 | 15728 | 15966 | 16000 | 15490 | 13956 |
| 6 | 14856 | 13956 | 14471 | 16060 | 16032 | 16112 | 16446 | 16378 | 15874 | 15954 | 14254 | 14986 |
| 7 | 14587 | 14228 | 14134 | 15780 | 16002 | 16480 | 16400 | 16110 | 16114 | 15222 | 14271 | 15382 |
| 8 | 14165 | 14478 | 14243 | 16280 | 15150 | 16216 | 16346 | 16156 | 15842 | 15366 | 14150 | 16086 |
| 9 | 14802 | 14704 | 14836 | 15832 | 15912 | 16412 | 16338 | 16356 | 15566 | 15080 | 14108 | 16200 |
| 10 | 15292 | 15046 | 15240 | 16100 | 16190 | 16324 | 16474 | 16374 | 15488 | 14237 | 14030 | 16070 |
| 11 | 15888 | 15298 | 14616 | 15770 | 16342 | 15996 | 16316 | 15874 | 15388 | 14437 | 14117 | 15870 |
| 12 | 16354 | 15560 | 13631 | 15434 | 15918 | 16196 | 16318 | 15606 | 15750 | 13921 | 15028 | 16280 |
| 13 | 16108 | 16016 | 14071 | 15672 | 15688 | 16140 | 16374 | 15918 | 15720 | 14102 | 15644 | 16006 |
| 14 | 16260 | 15758 | 14886 | 15980 | 15704 | 16124 | 16232 | 15866 | 15978 | 14511 | 16202 | 15178 |
| 15 | 16184 | 15774 | 15354 | 16102 | 15784 | 16240 | 16128 | 15730 | 16186 | 15562 | 15756 | 15998 |
| 16 | 15956 | 15352 | 15368 | 16136 | 15512 | 16198 | 16244 | 15976 | 16310 | 15880 | 15366 | 15998 |
| 17 | 16130 | 15078 | 15352 | 15370 | 15872 | 16206 | 16232 | 16074 | 16016 | 15822 | 15848 | 15912 |
| 18 | 16314 | 14968 | 14992 | 15666 | 16286 | 16376 | 15856 | 16174 | 15888 | 15678 | 16318 | 15682 |
| 19 | 16490 | 14690 | 15272 | 15774 | 16664 | 16402 | 16492 | 16084 | 15112 | 15564 | 14616 | 15266 |
| 20 | 16296 | 14341 | 15770 | 15624 | 16676 | 16160 | 16402 | 15904 | 14824 | 16226 | 15666 | 15578 |
| 21 | 15986 | 14744 | 15272 | 15882 | 16718 | 16308 | 16390 | 15814 | 15906 | 15448 | 15696 | 15816 |
| 22 | 15696 | 15106 | 14874 | 15952 | 16672 | 16290 | 16380 | 16094 | 15866 | 15286 | 16030 | 15778 |
| 23 | 15744 | 15146 | 15168 | 15928 | 16626 | 16210 | 16614 | 16414 | 16122 | 16288 | 15676 | 15788 |
| 24 | 15628 | 15040 | 15956 | 15580 | 16608 | 16090 | 15806 | 15982 | 16100 | 14848 | 15496 | 15822 |
| 25 | 15446 | 15426 | 15882 | 15030 | 16062 | 16194 | 15938 | 16108 | 15576 | 15234 | 15704 | 15774 |
| 26 | 15344 | 15424 | 16132 | 15478 | 15472 | 16418 | 15874 | 16354 | 15352 | 15322 | 15688 | 15822 |
| 27 | 15082 | 16130 | 16084 | 15632 | 15826 | 16336 | 15978 | 16292 | 15840 | 15482 | 15240 | 16050 |
| 28 | 15014 | 16124 | 15644 | 15898 | 15930 | 16268 | 15812 | 16270 | 15630 | 14582 | 15034 | 15672 |
| 29 | 14752 | 15830 | 15916 | 16188 | --- | 16360 | 15992 | 16208 | 15864 | 14994 | 15480 | 15740 |
| 30 | 14528 | 15556 | 15752 | 16164 | --- | 16294 | 16128 | 16424 | 15838 | 15206 | 15976 | 15550 |
| 31 | 14874 | --- | 16042 | 16088 | --- | 16200 | --- | 16088 | --- | 14866 | 15830 | --- |
| MAX | 16490 | 16130 | 16132 | 16280 | 16718 | 16480 | 16614 | 16424 | 16310 | 16288 | 16318 | 16280 |
| MIN | 14165 | 13956 | 13631 | 15030 | 15150 | 15996 | 15806 | 15582 | 14824 | 13921 | 14030 | 13956 |
| a | 1841.37 | 1844.78 | 1847.21 | 1847.44 | 1846.65 | 1848.00 | 1847.64 | 1847.44 | 1846.19 | 1841.33 | 1846.15 | 1844.75 |
| b | -312 | +682 | +486 | +46 | -158 | +270 | -72 | -40 | -250 | -972 | +964 | -280 |

CAL YR 1989 MAX 16752 MIN 13510 b +832

WTR YR 1990 MAX 16718 MIN 13631 b +364

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11443500 SOUTH FORK AMERICAN RIVER NEAR CAMINO, CA

LOCATION.--Lat 38°46'23", long 120°41'51", in SW 1/4 NE 1/4 sec.25, T.11 N., R.11 E., El Dorado County, Hydrologic Unit 18020129, in Slab Creek Dam valve house, 1,500 ft upstream from Iowa Canyon Creek, and 2.8 mi northwest of Camino

DRAINAGE AREA.--493 mi².

PERIOD OF RECORD.--October 1922 to current year. Monthly discharge only for October 1922, WSP 1315-A. Records for river and American River flume, published separately October 1922 to September 1956, October 1962 to December 1964 when flume was destroyed. Records of river and flume combined October 1956 to September 1962.

REVISED RECORDS.--WSP 931: 1928, 1938, 1940(M). WSP 1931: Drainage area at former site.

GAGE.--Acoustic-velocity meter. Elevation of gage is 1,625 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 26, 1987, water-stage recorder at different datum at site 1,000 ft downstream. Auxiliary water-stage recorder on Slab Creek Dam records spill discharges which are combined with release discharges. See WSP 2131 for history of changes prior to Oct. 12, 1966.

REMARKS.--Flow regulated by several reservoirs. Since 1967 diversion from Slab Creek Dam to White Rock powerplant (station 11443460) bypasses this station. Echo Lake conduit (station 11434500) imports up to 1,900 acre-ft each year from Truckee River basin. Variable amounts of El Dorado canal water, up to 40 ft³/s May to October, and about 7 ft³/s remainder of the year, diverted for irrigation and domestic use between Pollock Pines and Placerville. Water from Jenkinson Lake in North Fork Cosumnes River basin diverted to Camino and substituted for flow from El Dorado Canal in some years. Since October 1962, water is imported from the Upper Rubicon River basin by way of Robbs Peak powerplant (station 11429300). See schematic diagram of South Fork American River basin.

COOPERATION.--Records were collected by Sacramento Municipal Utility District, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE.--37 years (water years 1923-59, prior to extensive regulation and transbasin diversion in South Fork American River basin), 961 ft³/s, 695,700 acre-ft/yr, combined flow of South Fork American River and American River flume; 8 years (water years 1960-67, transition period prior to bypass to White Rock powerplant), 1,062 ft³/s, 769,400 acre-ft/yr; 23 years (water years 1968-90), 139 ft³/s, 100,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,800 ft³/s, Dec. 23, 1955, gage height, 32.6 ft, from floodmarks, site and datum then in use, from rating curve extended above 24,000 ft³/s, on basis of computation of peak flow over dam; minimum daily, 1.3 ft³/s, Aug. 24, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 639 ft³/s, Feb. 21; minimum daily, 10 ft³/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-------------|-----------|---------|--------|-------------|----------|-------|-------|-------|-------|-------|-------|
| 1 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 2 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 3 | 36 | 36 | 36 | 36 | 37 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 4 | 36 | 36 | 36 | 36 | 36 | 36 | 20 | 10 | 36 | 36 | 36 | 36 |
| 5 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 6 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 7 | 37 | 36 | 36 | 36 | 36 | 37 | 10 | 10 | 36 | 36 | 36 | 36 |
| 8 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 9 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 10 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 11 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 12 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 13 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 37 | 36 | 36 | 36 |
| 14 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 15 | 36 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 16 | 36 | 36 | 36 | 36 | e44 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 17 | 36 | 36 | 36 | 36 | e50 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 18 | 36 | 36 | 36 | 36 | e50 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 19 | 36 | 36 | 36 | 36 | e190 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 20 | 36 | 36 | 36 | 36 | e315 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 21 | 36 | 36 | 36 | 36 | 406 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 22 | 36 | 36 | 36 | 36 | 329 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 23 | 36 | 36 | 36 | 36 | 303 | 36 | 34 | 10 | 36 | 36 | 36 | 36 |
| 24 | 36 | 36 | 36 | 36 | 46 | 36 | 42 | 10 | 36 | 36 | 36 | 36 |
| 25 | 37 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 36 | 36 | 36 | 36 |
| 26 | 36 | 36 | 36 | 36 | 36 | 20 | 10 | 10 | 36 | 36 | 36 | 36 |
| 27 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 10 | 36 | 36 | 36 | 36 |
| 28 | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 10 | 36 | 36 | 36 | 36 |
| 29 | 36 | 36 | 36 | 36 | --- | 10 | 10 | 10 | 36 | 36 | 36 | 36 |
| 30 | 36 | 36 | 36 | 36 | --- | 10 | 10 | 10 | 36 | 36 | 36 | 36 |
| 31 | 36 | --- | 36 | 36 | --- | 10 | --- | 23 | --- | 36 | 36 | --- |
| TOTAL | 1118 | 1080 | 1116 | 1116 | 2418 | 971 | 366 | 323 | 1081 | 1116 | 1116 | 1080 |
| MEAN | 36.1 | 36.0 | 36.0 | 36.0 | 86.4 | 31.3 | 12.2 | 10.4 | 36.0 | 36.0 | 36.0 | 36.0 |
| MAX | 37 | 36 | 36 | 36 | 406 | 37 | 42 | 23 | 37 | 36 | 36 | 36 |
| MIN | 36 | 36 | 36 | 36 | 36 | 10 | 10 | 10 | 36 | 36 | 36 | 36 |
| AC-FT | 2220 | 2140 | 2210 | 2210 | 4800 | 1930 | 726 | 641 | 2140 | 2210 | 2210 | 2140 |
| a | 14460 | 16300 | 26160 | 29900 | 21010 | 43570 | 49650 | 42500 | 33940 | 50140 | 48300 | 35560 |
| CAL YR 1989 | TOTAL 11048 | MEAN 30.3 | MAX 157 | MIN 10 | AC-FT 21910 | a 586700 | | | | | | |
| WTR YR 1990 | TOTAL 12901 | MEAN 35.3 | MAX 406 | MIN 10 | AC-FT 25590 | a 411500 | | | | | | |

e Estimated.

a Diversion, in acre-feet, to White Rock powerplant, provided by Sacramento Municipal Utility District.

11444201 ROCK CREEK NEAR PLACERVILLE, CA

LOCATION.--Lat 38°47'39", long 120°46'28", in NE 1/4 SW 1/4 sec.20, T.11 N., R.11 E., El Dorado County, Hydrologic Unit 18020129, on left bank 500 ft downstream from Rock Creek Road and 4.0 mi north of Placerville.

DRAINAGE AREA.--73.0 mi².

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

GAGE.--Water-stage recorder and broad-crested weir; water-stage recorder and sharp-crested weir. Elevation of gages is 1,305 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for periods of estimated daily discharge, which are poor. Flow at this station has two components which are combined for publication: flow over a broad-crested weir (station 11444200) and flow over a sharp-crested weir (station 11444260). Water is diverted upstream of weirs through a tunnel to Rock Creek powerplant (station 11444280), returning to Rock Creek (station 11444201) at its confluence with the South Fork American River. See schematic diagram of South Fork American River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,440 ft³/s, Mar. 25, 1989; no flow Sept. 29 to Oct. 3, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 352 ft³/s, Nov. 26; minimum daily, 3.6 ft³/s, Sept. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|-------|-------|------|------|------|------|-------|-------|-------|-------|
| 1 | e7.6 | 12 | 17 | 7.8 | 40 | 62 | 22 | 17 | 46 | 9.3 | 4.8 | 4.1 |
| 2 | e7.2 | 13 | 16 | 14 | 43 | 65 | 22 | 16 | 33 | 9.5 | 4.7 | 4.1 |
| 3 | e7.4 | 13 | 15 | 11 | 37 | 231 | 22 | 16 | 28 | 9.4 | 4.6 | 3.8 |
| 4 | e7.0 | 13 | 14 | 8.5 | 57 | 65 | 22 | 16 | 24 | 9.0 | 4.6 | 3.8 |
| 5 | e7.0 | 14 | 14 | 9.2 | 58 | 75 | 21 | 15 | 22 | 8.9 | 4.5 | 3.7 |
| 6 | e7.0 | 15 | 14 | 11 | 57 | 93 | 20 | 16 | 21 | 8.9 | 4.5 | 3.7 |
| 7 | e7.0 | 15 | 14 | 41 | 51 | 76 | 20 | 14 | 20 | 8.7 | 4.1 | 3.7 |
| 8 | e7.0 | 16 | 14 | 93 | 39 | 69 | 21 | 15 | 18 | 8.5 | 4.1 | 3.6 |
| 9 | e7.0 | 17 | 13 | 45 | 31 | 61 | 20 | 15 | 17 | 8.1 | 4.1 | 3.8 |
| 10 | e7.0 | 16 | 12 | 28 | 27 | 71 | 19 | 15 | 15 | 7.8 | 4.0 | 4.1 |
| 11 | e7.1 | 16 | 12 | 21 | 25 | 78 | 17 | 15 | 14 | 7.7 | 3.9 | 4.0 |
| 12 | e7.2 | 17 | 12 | 19 | 27 | 65 | 18 | 15 | 13 | 7.6 | 3.8 | 3.9 |
| 13 | e7.3 | 18 | 12 | 77 | 27 | 59 | 18 | 15 | 13 | 7.1 | 3.9 | 3.9 |
| 14 | e7.3 | 18 | 10 | 66 | 24 | 55 | 17 | 15 | 13 | 6.9 | 3.9 | 4.1 |
| 15 | e7.4 | 18 | 9.0 | 64 | 24 | 51 | 17 | 15 | 13 | 6.6 | 4.0 | 4.2 |
| 16 | e7.4 | 17 | 6.6 | 54 | 27 | 48 | 18 | 15 | 13 | 6.4 | 4.2 | 4.3 |
| 17 | e7.5 | 17 | 7.0 | 44 | 36 | 45 | 20 | 14 | 12 | 6.3 | 4.3 | 4.4 |
| 18 | e7.5 | 17 | 6.8 | 32 | 37 | 42 | 18 | 13 | 12 | 6.6 | 4.4 | 4.4 |
| 19 | e7.6 | 17 | 6.8 | 25 | 36 | 40 | 18 | 13 | 11 | 6.7 | 4.7 | 4.4 |
| 20 | e7.7 | 18 | 7.0 | 22 | 34 | 38 | 17 | 21 | 11 | 6.4 | 4.8 | 4.5 |
| 21 | e8.0 | 18 | 7.0 | 20 | 34 | 36 | 16 | 21 | 11 | 6.0 | 5.0 | 4.1 |
| 22 | e12 | 19 | 7.0 | 20 | 54 | 35 | 17 | 16 | 11 | 5.6 | 4.7 | 3.9 |
| 23 | e58 | 19 | 7.2 | 19 | 72 | 33 | 62 | 34 | 10 | 5.5 | 4.5 | 4.7 |
| 24 | 66 | 27 | 7.4 | 18 | 86 | 32 | 45 | 32 | 10 | 5.5 | 4.6 | 5.4 |
| 25 | 59 | 40 | 7.3 | 17 | 73 | 30 | 27 | 20 | 10 | 5.6 | 4.7 | 5.5 |
| 26 | 26 | 160 | 7.0 | 17 | 46 | 29 | 22 | 18 | 9.9 | 5.7 | 5.0 | 5.5 |
| 27 | 13 | 40 | 6.7 | 16 | 37 | 27 | 20 | 30 | 9.6 | 5.7 | 5.3 | 5.2 |
| 28 | 13 | 23 | 6.7 | 16 | 54 | 26 | 19 | 84 | 9.6 | 5.5 | 5.1 | 5.0 |
| 29 | 14 | 19 | 6.9 | 16 | --- | 24 | 18 | 48 | 9.6 | 5.3 | 4.8 | 4.7 |
| 30 | 13 | 16 | 6.9 | 29 | --- | 23 | 18 | 50 | 9.5 | 5.0 | 4.3 | 4.4 |
| 31 | 13 | --- | 6.9 | 35 | --- | 23 | --- | 76 | --- | 4.8 | 4.2 | --- |
| TOTAL | 440.2 | 698 | 309.2 | 915.5 | 1193 | 1707 | 651 | 735 | 469.2 | 216.6 | 138.1 | 128.9 |
| MEAN | 14.2 | 23.3 | 9.97 | 29.5 | 42.6 | 55.1 | 21.7 | 23.7 | 15.6 | 6.99 | 4.45 | 4.30 |
| MAX | 66 | 160 | 17 | 93 | 86 | 231 | 62 | 84 | 46 | 9.5 | 5.3 | 5.5 |
| MIN | 7.0 | 12 | 6.6 | 7.8 | 24 | 23 | 16 | 13 | 9.5 | 4.8 | 3.8 | 3.6 |
| AC-FT | 873 | 1380 | 613 | 1820 | 2370 | 3390 | 1290 | 1460 | 931 | 430 | 274 | 256 |
| a | 0 | 0 | 0 | 290 | 325 | 327 | 0 | 0 | 0 | 0 | 0 | 0 |

CAL YR 1989 TOTAL 10492.0 MEAN 28.7 MAX 1020 MIN 1.6 AC-FT 20810
WTR YR 1990 TOTAL 7601.7 MEAN 20.8 MAX 231 MIN 3.6 AC-FT 15080

e Estimated.

a Discharge, in acre-feet, through Rock Creek powerplant, provided by Sithe Energies U.S.A., Inc.

11444500 SOUTH FORK AMERICAN RIVER NEAR PLACERVILLE, CA

LOCATION.--Lat 38°46'16", long 120°48'55", in NE 1/4 SW 1/4 sec.25, T.11 N., R.10 E., El Dorado County, Hydrologic Unit 18020129, on right bank 700 ft downstream from Chili Bar Dam, 0.5 mi upstream from Big Canyon, and 2.5 mi north of Placerville.

DRAINAGE AREA.--598 mi².

PERIOD OF RECORD.--August 1911 to July 1920 (monthly discharge only for some periods, published in WSP 1315-A), July 1964 to current year.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 931.05 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Aug. 11, 1911, to July 31, 1920, nonrecording gage 0.6 mi downstream at different datum.

REMARKS.--Flow regulated by Chili Bar Reservoir, capacity, 3,700 acre-ft, Chili Bar powerplant, and other storage and powerplants (see station 11443500). See schematic diagram of South Fork American River basin.

COOPERATION.--Records provided by Pacific Gas & Electric Co., under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (prior to extensive regulation and transbasin diversion).--9 years (water years 1912-20), 1,132 ft³/s, 820,100 acre-ft/yr; 26 years (water years 1965-90), 1,451 ft³/s, 1,051,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,300 ft³/s, Dec. 23, 1964, gage height, 17.4 ft, from floodmarks, from rating curve extended above 18,000 ft³/s on basis of computations of flow over dam; minimum daily, 0.2 ft³/s, Nov. 12, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,810 ft³/s, Aug. 6, gage height, 7.04 ft; minimum daily, 98 ft³/s, Jan. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 533 | 197 | 611 | 870 | 703 | e700 | 916 | 1050 | 1020 | 633 | 803 | 1300 |
| 2 | 192 | 389 | 693 | 228 | 463 | 910 | 901 | 911 | 723 | 1070 | 909 | 756 |
| 3 | 616 | 689 | 359 | 701 | 632 | 1130 | 994 | 1020 | 1090 | 1070 | 903 | 644 |
| 4 | 113 | 689 | 549 | 671 | 769 | 1340 | 593 | 873 | 893 | 754 | 670 | 1030 |
| 5 | 108 | 760 | 768 | 99 | 473 | 919 | 878 | 883 | 708 | 607 | 1070 | 1330 |
| 6 | 111 | 910 | 690 | 639 | 546 | 1130 | 917 | 532 | 858 | 629 | 1790 | 557 |
| 7 | 335 | 152 | 635 | 617 | 263 | 515 | 829 | 1040 | 812 | 1340 | 1530 | 675 |
| 8 | 398 | 130 | 595 | 837 | 1410 | 861 | 830 | 822 | 920 | 1240 | 978 | 543 |
| 9 | 125 | 130 | 214 | 887 | 157 | 362 | 725 | 644 | 864 | 1160 | 1210 | 919 |
| 10 | 126 | 129 | 307 | 422 | 181 | 1090 | 778 | 656 | 804 | 1370 | 1240 | 1050 |
| 11 | 125 | 126 | 380 | 491 | 436 | 1290 | 1040 | 1050 | 627 | 1540 | 1220 | 965 |
| 12 | 124 | 124 | 958 | 721 | 771 | 596 | 776 | 1110 | 607 | 1100 | 778 | 509 |
| 13 | 124 | 125 | 720 | 815 | 752 | 681 | 858 | 777 | 506 | 1670 | 896 | 820 |
| 14 | 122 | e130 | e200 | 543 | e980 | 710 | 1030 | 402 | 125 | 371 | 601 | 766 |
| 15 | 232 | 133 | 114 | 875 | e360 | 777 | 1010 | 754 | 355 | 612 | 767 | 607 |
| 16 | 235 | 149 | 431 | 653 | e1200 | 682 | 936 | 697 | 642 | 353 | 848 | 367 |
| 17 | 119 | 474 | 581 | 1040 | e300 | 529 | 853 | 762 | 530 | 891 | 762 | 496 |
| 18 | 111 | 360 | 812 | 410 | e250 | 781 | 1150 | 468 | 648 | 946 | 677 | 521 |
| 19 | 131 | 391 | 257 | 533 | e220 | 1120 | 704 | 509 | 1300 | 1010 | 1100 | 854 |
| 20 | 136 | 334 | 461 | 492 | e220 | 775 | 901 | 679 | 1120 | 682 | 641 | 599 |
| 21 | 404 | 120 | 157 | 546 | e250 | 820 | 935 | 792 | 430 | 1080 | 574 | 571 |
| 22 | 383 | 118 | 764 | 494 | e900 | 1060 | 954 | 582 | 342 | 1180 | 1020 | 438 |
| 23 | 425 | 118 | 439 | 561 | e540 | 1000 | 862 | 606 | 365 | 136 | 1240 | 527 |
| 24 | 859 | 318 | 349 | 610 | e460 | 780 | 1560 | 711 | 567 | 1280 | 1080 | 624 |
| 25 | 863 | 383 | 177 | 731 | e880 | 1010 | 1090 | 633 | 737 | 610 | 436 | 507 |
| 26 | 350 | 711 | 605 | 495 | e1100 | 835 | 1050 | 416 | 611 | 583 | 491 | 329 |
| 27 | 451 | 164 | 425 | 472 | e900 | 996 | 1020 | 826 | 444 | 832 | 1100 | 417 |
| 28 | 477 | 347 | 782 | 346 | e470 | 1000 | 1320 | 976 | 311 | 1330 | 1040 | 400 |
| 29 | 404 | 374 | 541 | 98 | --- | 789 | 1130 | 758 | 471 | 922 | 864 | 667 |
| 30 | 424 | 521 | 361 | 645 | --- | 947 | 385 | 852 | 574 | 747 | 516 | 624 |
| 31 | 336 | --- | 540 | 518 | --- | 824 | --- | 1170 | --- | 1170 | 670 | --- |
| TOTAL | 9492 | 9695 | 15475 | 18060 | 16586 | 26959 | 27925 | 23961 | 20004 | 28918 | 28424 | 20412 |
| MEAN | 306 | 323 | 499 | 583 | 592 | 870 | 931 | 773 | 667 | 933 | 917 | 680 |
| MAX | 863 | 910 | 958 | 1040 | 1410 | 1340 | 1560 | 1170 | 1300 | 1670 | 1790 | 1330 |
| MIN | 108 | 118 | 114 | 98 | 157 | 362 | 385 | 402 | 125 | 136 | 436 | 329 |
| AC-FT | 18830 | 19230 | 30690 | 35820 | 32900 | 53470 | 55390 | 47530 | 39680 | 57360 | 56380 | 40490 |

CAL YR 1989 TOTAL 352233 MEAN 965 MAX 5420 MIN 107 AC-FT 698700
WTR YR 1990 TOTAL 245911 MEAN 674 MAX 1790 MIN 98 AC-FT 487800

e Estimated.

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA

LOCATION.--Lat 38°49'07", long 120°56'45", in NW 1/4 SW 1/4 sec.11, T.11 N., R.9 E., El Dorado County, Hydrologic Unit 18020129, on left bank 0.4 mi downstream from Greenwood Creek, 2.4 mi northwest of Lotus, and 3.3 mi northwest of Coloma.

DRAINAGE AREA.--673 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WSP 1931: Drainage area. WDR CA-75-4: 1964, 1966, 1970.

GAGE.--Water-stage recorder. Elevation of gage is 635 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagrams of South Fork American River basin and lower Sacramento River basin.

AVERAGE DISCHARGE.--11 years (water years 1952-62, prior to extensive regulation and transbasin diversion), 1,109 ft³/s, 802,900 acre-ft/yr; 28 years (water years 1963-90), 1,487 ft³/s, 1,077,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,800 ft³/s, Dec. 23, 1955, gage height, 21.37 ft; minimum daily, 14 ft³/s, several days during July 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since 1862 and prior to beginning of record, 20.4 ft from floodmarks, Nov. 21, 1950, discharge, 64,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,640 ft³/s, Aug. 6, gage height, 7.91 ft; minimum daily, 113 ft³/s, Oct. 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 713 | 211 | 687 | 715 | 806 | 701 | 853 | 920 | 1230 | 649 | 780 | 1110 |
| 2 | 200 | 383 | 648 | 534 | 543 | 853 | 853 | 891 | 596 | 910 | 768 | 1050 |
| 3 | 584 | 640 | 455 | 513 | 634 | 1310 | 1030 | 1070 | 975 | 1010 | 957 | 588 |
| 4 | 169 | 707 | 427 | 855 | 994 | 1430 | 694 | 836 | 1110 | 823 | 525 | 750 |
| 5 | 135 | 744 | 838 | 209 | 420 | 1310 | 819 | 877 | 572 | 641 | 991 | 1320 |
| 6 | 131 | 830 | 716 | 520 | 836 | 987 | 917 | 618 | 902 | 439 | 1640 | 800 |
| 7 | 331 | 301 | 677 | 734 | 423 | 815 | 788 | 948 | 883 | 1140 | 1550 | 553 |
| 8 | 395 | 143 | 613 | 1020 | 1470 | 848 | 769 | 791 | 807 | 1270 | 921 | 627 |
| 9 | 138 | 142 | 291 | 997 | 307 | 420 | 778 | 700 | 924 | 1090 | 1130 | 720 |
| 10 | 128 | 138 | 318 | 616 | 235 | 1090 | 706 | 581 | 798 | 1300 | 1160 | 1090 |
| 11 | 125 | 136 | 241 | 468 | 399 | 1140 | 903 | 890 | 553 | 1540 | 1140 | 1080 |
| 12 | 123 | 133 | 1040 | 772 | 726 | 852 | 820 | 1100 | 727 | 1050 | 907 | 499 |
| 13 | 121 | 136 | 745 | 868 | 806 | 694 | 976 | 734 | 492 | 1650 | 736 | 621 |
| 14 | 126 | 139 | 205 | 678 | 988 | 734 | 990 | 577 | 155 | 607 | 708 | 755 |
| 15 | 179 | 146 | 119 | 993 | 365 | 775 | 873 | 617 | 347 | 575 | 601 | 805 |
| 16 | 281 | 154 | 371 | 908 | 1240 | 697 | 952 | 710 | 454 | 347 | 754 | 367 |
| 17 | 140 | 449 | 606 | 984 | 296 | 555 | 926 | 735 | 604 | 609 | 658 | 427 |
| 18 | 113 | 422 | 669 | 619 | 244 | 781 | 1120 | 600 | 623 | 934 | 612 | 514 |
| 19 | 135 | 402 | 416 | 588 | 226 | 911 | 811 | 419 | 1050 | 972 | 981 | 760 |
| 20 | 135 | 341 | 440 | 538 | 219 | 880 | 823 | 642 | 1110 | 760 | 721 | 668 |
| 21 | 407 | 137 | 166 | 587 | 248 | 835 | 879 | 756 | 687 | 819 | 487 | 632 |
| 22 | 396 | 131 | 730 | 531 | 891 | 1010 | 825 | 634 | 324 | 1250 | 761 | 368 |
| 23 | 487 | 130 | 516 | 507 | 543 | 1040 | 881 | 650 | 367 | 287 | 1140 | 516 |
| 24 | 714 | 335 | 379 | 743 | 464 | 816 | 1520 | 538 | 479 | 942 | 1250 | 612 |
| 25 | 1140 | 415 | 136 | 733 | 867 | 982 | 1030 | 750 | 671 | 787 | 423 | 561 |
| 26 | 378 | 763 | 685 | 597 | 1140 | 799 | 1010 | 437 | 623 | 504 | 475 | 336 |
| 27 | 404 | 316 | 366 | 576 | 903 | 1030 | 1120 | 697 | 500 | 814 | 847 | 415 |
| 28 | 551 | 368 | 761 | 317 | 471 | 943 | 1280 | 1070 | 298 | 1080 | 983 | 364 |
| 29 | 405 | 337 | 664 | 231 | --- | 820 | 946 | 951 | 435 | 951 | 937 | 685 |
| 30 | 426 | 539 | 350 | 494 | --- | 916 | 599 | 861 | 491 | 698 | 603 | 501 |
| 31 | 351 | --- | 558 | 694 | --- | 856 | --- | 1160 | --- | 1060 | 529 | --- |
| TOTAL | 10061 | 10168 | 15833 | 20139 | 17704 | 27830 | 27491 | 23760 | 19787 | 27508 | 26675 | 20094 |
| MEAN | 325 | 339 | 511 | 650 | 632 | 898 | 916 | 766 | 660 | 887 | 860 | 670 |
| MAX | 1140 | 830 | 1040 | 1020 | 1470 | 1430 | 1520 | 1160 | 1230 | 1650 | 1640 | 1320 |
| MIN | 113 | 130 | 119 | 209 | 219 | 420 | 599 | 419 | 155 | 287 | 423 | 336 |
| AC-FT | 19960 | 20170 | 31400 | 39950 | 35120 | 55200 | 54530 | 47130 | 39250 | 54560 | 52910 | 39860 |

CAL YR 1989 TOTAL 349141 MEAN 957 MAX 6710 MIN 113 AC-FT 692500
WTR YR 1990 TOTAL 247050 MEAN 677 MAX 1650 MIN 113 AC-FT 490000

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1957-68, 1970 to current year.

CHEMICAL DATA: Water years 1958-66, 1978 to November 1980, December 1983 to current year.

BIOLOGICAL DATA: Water years 1979-80.

WATER TEMPERATURE: Water years 1960-68, 1970 to current year.

SEDIMENT DATA: Water years 1957-62.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: December 1959 to September 1968, February 1970 to current year.

INSTRUMENTATION.--Temperature recorder December 1959 to September 1968, February 1970 to current year.

REMARKS.--Interruptions in daily record were due to malfunction of the recording instrument. Water temperatures can be affected by releases from Chili Bar Reservoir located approximately 10 miles upstream from station.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 29.5 °C, July 20, 1968, Aug. 12, 22, 1977; minimum recorded, 1.0 °C, several days in 1960 and 1962.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 22.0 °C, June 22; minimum recorded, 3.0 °C, Feb. 14, 15.

WATER QUALITY DATA, WATER YEARS OCTOBER 1984 TO SEPTEMBER 1988
(NOT PREVIOUSLY PUBLISHED)

| DATE | TIME | NITRO- GEN, NITRITE TOTAL (MG/L AS N) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) | PHOS- PHORUS, ORTHO, TOTAL (MG/L AS P) |
|----------|------|--|--|---|---|
| DEC | | | | | |
| 06... | 1115 | 0.010 | <0.100 | 0.40 | <0.010 |
| MAR 1984 | | | | | |
| 08... | 1000 | -- | -- | <0.20 | 0.030 |
| JUN | | | | | |
| 14... | 0940 | <0.010 | <0.100 | <0.20 | <0.010 |
| SEP | | | | | |
| 13... | 1035 | <0.010 | <0.100 | 0.20 | 0.010 |
| DEC | | | | | |
| 20... | 1000 | <0.010 | <0.100 | <0.20 | <0.010 |
| MAR 1985 | | | | | |
| 21... | 0915 | <0.010 | 0.200 | 0.30 | <0.010 |
| JUN | | | | | |
| 13... | 1030 | <0.010 | <0.100 | -- | <0.010 |
| OCT | | | | | |
| 24... | 1130 | <0.010 | <0.100 | <0.20 | <0.010 |
| DEC | | | | | |
| 19... | 1100 | <0.010 | <0.100 | 0.30 | 0.010 |
| MAR 1986 | | | | | |
| 18... | 0920 | <0.010 | <0.100 | 0.20 | <0.010 |
| JUN | | | | | |
| 12... | 1045 | <0.010 | <0.100 | 0.30 | <0.010 |
| SEP | | | | | |
| 05... | 1015 | <0.010 | <0.100 | <0.20 | <0.010 |
| DEC | | | | | |
| 11... | 1010 | <0.010 | <0.100 | <0.20 | <0.010 |
| MAR 1987 | | | | | |
| 10... | 1305 | <0.010 | <0.100 | 0.70 | 0.010 |
| JUN | | | | | |
| 11... | 1050 | -- | <0.100 | 0.40 | -- |
| SEP | | | | | |
| 17... | 1045 | <0.010 | <0.100 | <0.20 | 0.010 |
| DEC | | | | | |
| 10... | 1115 | <0.010 | 0.100 | 0.30 | <0.010 |
| MAR 1988 | | | | | |
| 10... | 1020 | <0.010 | <0.100 | <0.20 | <0.010 |
| JUN | | | | | |
| 09... | 1030 | <0.010 | <0.100 | 0.20 | <0.010 |
| SEP | | | | | |
| 15... | 1050 | <0.010 | <0.100 | <0.20 | <0.010 |

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | DIS- CHARGE, INST. CUBIC FEET PER SECOND | SPE- CIFIC CON- DUCT- ANCE (US/CM) | PH (STAND- ARD UNITS) | TEMPER- ATURE WATER (DEG C) | BARO- METRIC PRES- SURE (MM OF HG) | OXYGEN, DIS- SOLVED (MG/L) | OXYGEN, DIS- SOLVED SATUR- ATION) | 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) |
|--------------|------|--|---|--------------------------------|--------------------------------------|--|-------------------------------------|---|---|--|--|--|
| DEC 21... | 1130 | 121 | 42 | 7.0 | 5.5 | 750 | 12.4 | 100 | 13 | 3.4 | 1.1 | 2.5 |
| MAR 27... | 0900 | 1050 | 46 | 7.4 | 8.0 | 740 | 12.1 | 105 | 14 | 3.8 | 1.1 | 3.2 |
| JUN 14... | 1140 | 150 | 40 | 7.8 | 17.5 | 740 | 10.0 | 108 | 13 | 3.7 | 1.0 | 2.7 |
| SEP 19... | 1000 | 750 | 23 | 7.3 | 13.0 | 750 | 10.5 | 101 | 8 | 2.1 | 0.56 | 1.5 |

| DATE | SODIUM PERCENT | SODIUM AD- SORP- TION RATIO | POTAS- SIUM, DIS- SOLVED (MG/L AS K) | 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) | SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) | SOLIDS, DIS- SOLVED (TONS PER AC-FT) |
|--------------|-------------------|---|---|---|---|---|---|--|---|--|---|---|
| DEC 21... | 28 | 0.3 | 0.60 | 17 | 14 | 1.0 | 2.9 | <0.10 | 8.3 | 31 | 28 | 0.04 |
| MAR 27... | 32 | 0.4 | 0.70 | 19 | 15 | 1.3 | 3.7 | <0.10 | 11 | 35 | 34 | 0.05 |
| JUN 14... | 30 | 0.3 | 0.50 | 20 | 16 | 1.0 | 2.9 | 0.20 | 11 | 30 | 33 | 0.04 |
| SEP 19... | 29 | 0.2 | 0.40 | 10 | 8 | <1.0 | 0.20 | 0.20 | 5.8 | 17 | 17 | 0.02 |

| DATE | NITRO- GEN, NITRITE TOTAL (MG/L AS N) | NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA TOTAL (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) | NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) | PHOS- PHORUS TOTAL (MG/L AS P) | PHOS- PHORUS DIS- SOLVED (MG/L AS P) | PHOS- PHORUS ORTHO TOTAL (MG/L AS P) | PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) |
|--------------|--|--|---|--|---|--|---|--|---|---|---|
| DEC 21... | <0.010 | <0.100 | <0.100 | <0.010 | <0.010 | 0.20 | <0.20 | <0.010 | <0.010 | <0.010 | <0.010 |
| MAR 27... | <0.010 | <0.100 | <0.100 | <0.010 | <0.010 | <0.20 | <0.20 | <0.010 | <0.010 | <0.010 | <0.010 |
| JUN 14... | <0.010 | <0.100 | <0.100 | 0.020 | 0.010 | 0.20 | 0.20 | 0.030 | <0.010 | <0.010 | <0.010 |
| SEP 19... | <0.010 | <0.100 | <0.100 | <0.010 | <0.010 | 0.20 | <0.20 | 0.020 | <0.010 | <0.010 | <0.010 |

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-----------|------|
| | OCTOBER | | NOVEMBER | | DECEMBER | | JANUARY | | FEBRUARY | | MARCH | |
| 1 | 14.5 | 11.5 | 11.5 | 9.5 | 7.5 | 6.5 | 5.5 | 5.0 | 6.5 | 5.5 | 7.5 | 6.5 |
| 2 | 14.0 | 13.0 | 11.5 | 9.5 | 7.5 | 6.0 | 6.5 | 5.5 | 6.0 | 4.5 | 6.5 | 5.5 |
| 3 | 14.5 | 12.0 | 11.0 | 9.0 | 7.0 | 6.0 | 5.5 | 4.5 | 6.0 | 5.0 | 8.5 | 5.5 |
| 4 | 15.0 | 11.5 | 10.5 | 9.0 | 7.0 | 6.0 | 5.5 | 4.5 | 6.5 | 5.0 | 7.0 | 5.5 |
| 5 | 16.0 | 12.5 | 10.5 | 8.5 | 7.5 | 6.0 | 5.5 | 4.0 | 6.5 | 4.5 | 7.5 | 5.5 |
| 6 | 16.5 | 13.5 | 10.0 | 8.5 | 7.5 | 6.0 | 5.5 | 4.0 | 6.0 | 5.0 | 7.5 | 5.5 |
| 7 | 15.5 | 14.0 | 9.5 | 8.5 | 6.5 | 5.5 | 5.5 | 5.0 | 6.0 | 4.5 | 8.0 | 5.0 |
| 8 | 15.0 | 13.0 | 10.0 | 8.0 | 7.0 | 5.5 | 7.5 | 5.5 | 5.5 | 4.0 | 8.0 | 6.0 |
| 9 | 16.5 | 13.5 | 10.5 | 8.5 | 7.5 | 6.0 | 7.0 | 6.0 | 6.5 | 4.0 | 8.5 | 5.5 |
| 10 | 17.0 | 14.0 | 10.5 | 9.0 | 7.0 | 5.5 | 6.5 | 6.0 | 7.5 | 5.0 | --- | --- |
| 11 | 17.0 | 14.0 | 11.0 | 9.0 | 6.0 | 5.0 | 6.5 | 5.5 | 7.0 | 5.5 | --- | --- |
| 12 | 16.5 | 14.0 | 11.0 | 9.5 | 6.5 | 5.0 | 6.5 | 5.5 | 6.5 | 5.0 | --- | --- |
| 13 | 16.5 | 14.0 | 11.0 | 9.5 | 6.5 | 5.0 | 7.0 | 6.0 | 6.0 | 4.0 | --- | --- |
| 14 | 16.5 | 14.0 | 10.5 | 9.0 | 6.5 | 5.0 | 7.0 | 6.0 | 5.5 | 3.0 | --- | --- |
| 15 | 16.0 | 14.0 | 10.0 | 9.0 | 6.0 | 5.0 | 7.0 | 5.5 | 4.5 | 3.0 | --- | --- |
| 16 | 15.0 | 13.0 | 10.5 | 8.5 | 6.0 | 5.0 | 6.5 | 5.5 | 4.5 | 3.5 | --- | --- |
| 17 | 16.5 | 13.0 | 10.0 | 8.5 | 6.0 | 5.0 | 6.0 | 4.5 | 4.0 | 3.5 | --- | --- |
| 18 | 16.0 | 14.0 | 9.5 | 8.0 | 6.0 | 4.5 | 6.0 | 4.5 | 6.5 | 4.0 | --- | --- |
| 19 | 16.0 | 14.0 | 9.5 | 8.0 | 6.0 | 4.5 | 6.0 | 4.5 | 7.0 | 4.0 | --- | --- |
| 20 | 15.5 | 14.0 | 9.5 | 8.0 | 6.0 | 5.0 | 5.5 | 4.0 | 6.0 | 4.5 | --- | --- |
| 21 | 15.0 | 13.5 | 9.5 | 8.0 | 6.5 | 5.5 | 5.5 | 4.0 | 7.5 | 4.5 | --- | --- |
| 22 | 14.5 | 13.5 | 9.5 | 8.0 | 6.0 | 5.0 | 5.5 | 4.0 | 6.5 | 4.0 | --- | --- |
| 23 | 14.0 | 13.0 | 9.0 | 8.5 | 6.0 | 5.0 | 5.5 | 4.0 | 7.0 | 4.5 | --- | --- |
| 24 | 13.0 | 12.5 | 9.5 | 9.0 | 6.5 | 5.5 | 5.5 | 4.0 | 8.5 | 6.5 | --- | --- |
| 25 | 13.0 | 11.5 | 9.0 | 9.0 | 6.5 | 4.5 | 6.0 | 4.0 | 7.5 | 5.0 | --- | --- |
| 26 | 12.5 | 10.5 | 10.0 | 8.0 | 6.5 | 4.5 | 6.5 | 5.0 | 7.0 | 5.0 | --- | --- |
| 27 | 12.0 | 11.5 | 8.5 | 7.0 | 6.0 | 5.0 | 5.5 | 4.0 | 7.5 | 4.5 | --- | --- |
| 28 | 12.0 | 10.0 | 8.0 | 6.5 | 7.0 | 5.5 | 6.0 | 4.0 | 8.0 | 5.0 | 11.0 | 8.0 |
| 29 | 11.5 | 9.5 | 7.5 | 6.5 | 6.0 | 4.5 | 6.5 | 4.5 | --- | --- | 11.0 | 7.5 |
| 30 | 11.5 | 9.5 | 8.0 | 6.5 | 5.5 | 4.5 | 7.5 | 5.5 | --- | --- | 11.5 | 7.5 |
| 31 | 11.0 | 9.5 | --- | --- | 6.0 | 4.5 | 6.0 | 4.5 | --- | --- | 12.0 | 8.0 |
| MONTH | 17.0 | 9.5 | 11.5 | 6.5 | 7.5 | 4.5 | 7.5 | 4.0 | 8.5 | 3.0 | --- | --- |
| | APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
| 1 | 12.0 | 8.5 | 15.0 | 11.5 | 15.5 | 12.0 | 19.0 | 17.0 | 18.0 | 13.5 | 16.0 | 13.0 |
| 2 | 12.0 | 8.0 | 14.0 | 13.0 | 16.5 | 13.5 | 19.0 | 16.0 | 18.0 | 14.0 | 15.5 | 12.0 |
| 3 | 12.0 | 8.0 | 14.0 | 13.0 | 16.5 | 12.5 | 19.0 | 14.5 | 18.0 | 14.0 | 16.0 | 13.5 |
| 4 | 13.0 | 9.0 | 14.0 | 13.0 | 16.0 | 12.5 | 18.0 | 14.0 | 18.5 | 14.0 | 16.0 | 13.0 |
| 5 | 12.0 | 9.5 | 14.0 | 13.0 | 17.5 | 13.5 | 18.0 | 16.0 | 19.0 | 14.5 | 15.5 | 12.5 |
| 6 | 12.5 | 9.0 | 14.0 | 13.0 | 17.5 | 13.0 | 19.5 | 16.0 | 17.0 | 13.5 | 15.5 | 12.0 |
| 7 | 11.5 | 9.5 | 14.0 | 13.5 | 17.0 | 13.5 | 18.5 | 14.5 | 16.5 | 13.0 | 16.5 | 14.0 |
| 8 | 11.0 | 9.5 | 14.0 | 13.0 | 17.5 | 14.5 | 17.5 | 13.5 | 18.0 | 13.0 | 16.0 | 12.5 |
| 9 | 13.0 | 8.5 | 14.0 | 13.0 | 17.5 | 14.0 | 18.0 | 14.0 | 16.5 | 14.0 | 16.0 | 13.5 |
| 10 | 13.5 | 9.5 | 14.0 | 13.5 | 18.0 | 14.5 | 17.0 | 13.5 | 17.0 | 13.0 | 15.5 | 12.5 |
| 11 | 13.5 | 9.5 | 14.0 | 13.5 | 18.5 | 14.5 | 16.0 | 13.5 | 17.0 | 13.0 | 14.5 | 12.0 |
| 12 | 13.5 | 9.5 | 14.0 | 13.5 | 18.5 | 14.5 | 19.0 | 13.5 | 17.5 | 12.5 | 16.0 | 11.5 |
| 13 | 14.5 | 10.0 | 14.5 | 13.5 | 18.0 | 16.0 | 17.0 | 13.0 | 18.5 | 14.0 | 15.0 | 12.5 |
| 14 | 13.5 | 10.5 | 14.5 | 13.5 | 20.0 | 15.5 | 19.5 | 13.5 | 16.0 | 13.5 | 15.0 | 12.0 |
| 15 | 13.0 | 10.0 | 14.5 | 14.0 | 19.5 | 18.0 | 20.0 | 16.0 | 17.0 | 14.0 | 14.5 | 12.0 |
| 16 | 11.5 | 10.0 | 14.5 | 13.5 | 19.5 | 17.0 | 19.5 | 15.5 | 17.0 | 13.0 | 15.0 | 12.5 |
| 17 | 12.5 | 10.0 | 14.5 | 13.5 | 19.0 | 15.0 | 20.5 | 16.0 | 17.0 | 13.0 | 16.5 | 13.5 |
| 18 | 13.5 | 10.5 | 16.0 | 13.5 | 19.0 | 16.5 | 17.0 | 14.0 | 16.5 | 13.5 | 15.0 | 13.0 |
| 19 | 13.5 | 11.0 | 16.0 | 14.0 | 20.0 | 16.0 | 18.5 | 13.5 | 16.0 | 13.0 | 15.0 | 13.0 |
| 20 | 14.5 | 11.5 | 14.0 | 13.5 | 20.0 | 15.5 | 18.5 | 13.5 | 16.5 | 12.5 | 15.0 | 12.0 |
| 21 | 14.0 | 10.5 | 16.0 | 13.0 | 20.0 | 15.5 | 18.5 | 15.5 | 18.0 | 13.0 | 15.0 | 13.5 |
| 22 | 12.5 | 10.5 | 16.0 | 13.5 | 22.0 | 18.0 | 18.0 | 14.0 | 17.0 | 13.0 | 16.5 | 14.0 |
| 23 | 14.0 | 11.5 | 16.0 | 14.0 | 20.5 | 17.5 | 19.5 | 13.5 | 16.5 | 13.0 | 14.5 | 13.5 |
| 24 | 13.5 | 10.5 | 16.5 | 13.5 | 20.0 | 18.5 | 19.5 | 14.5 | 16.0 | 12.5 | 15.0 | 12.5 |
| 25 | 15.0 | 10.5 | 16.0 | 12.5 | 19.5 | 17.0 | 18.5 | 13.5 | 16.5 | 13.0 | 14.5 | 13.0 |
| 26 | 15.0 | 11.0 | 16.5 | 13.5 | 19.0 | 15.5 | 18.0 | 15.0 | 16.0 | 14.0 | 15.5 | 13.5 |
| 27 | 15.0 | 11.0 | 15.5 | 13.5 | 19.5 | 16.0 | 18.0 | 14.5 | 16.0 | 13.0 | 15.5 | 13.5 |
| 28 | 14.0 | 11.0 | 14.0 | 13.0 | 21.5 | 17.5 | 17.5 | 14.5 | 15.0 | 12.5 | 15.5 | 13.0 |
| 29 | 14.0 | 10.0 | 16.0 | 13.0 | 21.5 | 18.5 | 18.0 | 13.5 | 16.0 | 12.5 | 15.5 | 13.0 |
| 30 | 15.5 | 11.0 | 14.0 | 13.0 | 21.0 | 18.0 | 19.0 | 14.5 | 16.0 | 13.0 | 16.5 | 14.0 |
| 31 | --- | --- | 14.5 | 12.5 | --- | --- | 18.0 | 14.5 | 16.5 | 14.5 | --- | --- |
| MONTH | 15.5 | 8.0 | 16.5 | 11.5 | 22.0 | 12.0 | 20.5 | 13.0 | 19.0 | 12.5 | 16.5 | 11.5 |

11446200 FOLSOM LAKE NEAR FOLSOM, CA

LOCATION.--Lat 38°42'29", long 121°09'22", in NW 1/4 NE 1/4 sec.24, T.10 N., R.7 E., Sacramento County, Hydrologic Unit 18020128, near center of dam on American River, 0.7 mi downstream from South Fork American River, and 2.3 mi northeast of Folsom.

DRAINAGE AREA.--1,861 mi².

PERIOD OF RECORD.--February 1955 to current year. Prior to October 1959, published as Folsom Reservoir near Folsom.

REVISED RECORDS.--WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by concrete gravity-type dam with rolled-earth-wing dams, auxiliary dams, and dikes, completed May 14, 1956; storage began Feb. 25, 1955. Total capacity, 1,010,300 acre-ft between elevations 205.5 ft, invert of lower tier of river outlets, and 466.0 ft, gross pool elevation, all of which is available for release. Spillway design flood pool elevation, 475.4 ft, capacity, 1,120,200 acre-ft. Records, including extremes, represent usable contents at 2400 hours. See schematic diagram of lower Sacramento River basin.

COOPERATION.--Records provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,024,400 acre-ft, June 15, 1963, elevation, 467.23 ft; minimum since storage pool first filled, 140,600 acre-ft, Nov. 20, 21, 1977, elevation, 347.57 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 598,600 acre-ft, June 8, elevation, 425.75 ft; minimum, 178,200 acre-ft, Sept. 13, 30, elevation, 358.99 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by U.S. Bureau of Reclamation in 1955)

| | | | | | |
|-----|---------|-----|---------|-----|-----------|
| 345 | 133,100 | 380 | 270,000 | 440 | 732,900 |
| 350 | 148,000 | 390 | 327,800 | 460 | 942,600 |
| 360 | 181,900 | 400 | 393,300 | 480 | 1,176,000 |
| 370 | 222,300 | 420 | 548,300 | | |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 2400 HOURS

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|---------|--------|--------|--------|--------|---------|--------|--------|--------|---------|--------|--------|
| 1 | 569800 | 438300 | 342000 | 309400 | 339300 | 381200 | 505200 | 525600 | 574400 | 515700 | 240700 | 191200 |
| 2 | 568300 | 433700 | 342400 | 308300 | 338100 | 384600 | 507900 | 526900 | 579400 | 506800 | 232300 | 191900 |
| 3 | 566900 | 429400 | 342100 | 308100 | 338400 | 392900 | 510100 | 528900 | 584300 | 500500 | 223700 | 190500 |
| 4 | 565000 | 425900 | 341600 | 308900 | 340400 | 401400 | 512600 | 530500 | 588800 | 494000 | 217400 | 189000 |
| 5 | 562700 | 422400 | 342900 | 308200 | 340700 | 408700 | 514300 | 532200 | 592600 | 486400 | 209900 | 188400 |
| 6 | 560500 | 419700 | 343300 | 307700 | 342900 | 413500 | 513700 | 533400 | 595700 | 478000 | 205100 | 187100 |
| 7 | 557200 | 417000 | 342000 | 308300 | 343600 | 417500 | 512200 | 534700 | 597900 | 471100 | 204700 | 184500 |
| 8 | 554000 | 415200 | 340300 | 312600 | 346200 | 421500 | 511400 | 534600 | 598600 | 464500 | 205200 | 182400 |
| 9 | 550700 | 413700 | 337800 | 316100 | 346500 | 424400 | 511000 | 534400 | 597800 | 456700 | 205800 | 179700 |
| 10 | 547200 | 411200 | 334800 | 317800 | 346100 | 428200 | 508800 | 533400 | 596400 | 447200 | 206800 | 179500 |
| 11 | 542000 | 409500 | 333600 | 317900 | 346200 | 434000 | 507900 | 530800 | 593500 | 436500 | 207400 | 180200 |
| 12 | 534400 | 406900 | 334800 | 318800 | 346800 | 438500 | 507000 | 530200 | 591900 | 424600 | 208100 | 179200 |
| 13 | 526500 | 401800 | 336300 | 322000 | 347800 | 441200 | 506100 | 529900 | 589700 | 417100 | 207800 | 178200 |
| 14 | 518200 | 397000 | 337100 | 326900 | 348900 | 444000 | 505500 | 529100 | 584700 | 407500 | 208000 | 178700 |
| 15 | 510500 | 391200 | 337200 | 330700 | 348800 | 446800 | 504400 | 529100 | 579700 | 397200 | 206700 | 179600 |
| 16 | 503100 | 386800 | 336800 | 333500 | 352700 | 449400 | 503900 | 529200 | 575000 | 387000 | 205200 | 179500 |
| 17 | 494500 | 381800 | 336300 | 335900 | 354300 | 451900 | 502700 | 529900 | 571000 | 376600 | 203100 | 178800 |
| 18 | 486300 | 376000 | 335700 | 337300 | 356000 | 455000 | 502700 | 530000 | 566600 | 368000 | 201400 | 178800 |
| 19 | 478700 | 368200 | 335200 | 338300 | 356600 | 457800 | 502500 | 529600 | 563900 | 359000 | 200100 | 178900 |
| 20 | 471100 | 360100 | 334400 | 338900 | 356800 | 462100 | 502200 | 530100 | 563800 | 350200 | 199300 | 179100 |
| 21 | 463700 | 354600 | 333300 | 339500 | 357100 | 466000 | 503300 | 531200 | 562900 | 340200 | 197700 | 179100 |
| 22 | 456400 | 349200 | 333100 | 339800 | 360200 | 470200 | 504600 | 532900 | 558500 | 331500 | 197100 | 178800 |
| 23 | 451200 | 345200 | 332900 | 339800 | 362800 | 474500 | 507400 | 534700 | 552700 | 321500 | 196900 | 178700 |
| 24 | 447400 | 341000 | 332000 | 339700 | 365000 | 478500 | 512700 | 536700 | 545600 | 312900 | 197500 | 178700 |
| 25 | 444800 | 339000 | 330100 | 340100 | 368100 | 482600 | 515600 | 538700 | 539800 | 303400 | 195800 | 179100 |
| 26 | 443300 | 342100 | 328900 | 340300 | 371800 | 486400 | 518500 | 540400 | 537000 | 293300 | 194200 | 179000 |
| 27 | 443400 | 340800 | 326100 | 340200 | 375400 | 490300 | 520600 | 543700 | 535500 | 284100 | 192900 | 178800 |
| 28 | 443400 | 340500 | 323300 | 339500 | 378200 | 493900 | 522900 | 549400 | 533900 | 275200 | 192900 | 178400 |
| 29 | 443300 | 341000 | 319600 | 338900 | --- | 497000 | 524700 | 553800 | 530800 | 267100 | 192800 | 178800 |
| 30 | 442900 | 341500 | 316300 | 338700 | --- | 499900 | 525200 | 557800 | 524700 | 257400 | 192300 | 178200 |
| 31 | 440600 | --- | 312300 | 339700 | --- | 502700 | --- | 566800 | --- | 249000 | 191400 | --- |
| MAX | 569800 | 438300 | 343300 | 340300 | 378200 | 502700 | 525200 | 566800 | 598600 | 515700 | 240700 | 191900 |
| MIN | 440600 | 339000 | 312300 | 307700 | 338100 | 381200 | 502200 | 525600 | 524700 | 249000 | 191400 | 178200 |
| a | 406.56 | 392.19 | 387.42 | 391.91 | 397.79 | 414.53 | 417.26 | 422.15 | 417.21 | 375.73 | 362.52 | 358.99 |
| b | -129900 | -99100 | -29200 | +27400 | +38500 | +124500 | +22500 | +41600 | -42100 | -275700 | -57600 | -13200 |
| c | 2200 | 910 | 480 | 570 | 680 | 1740 | 3080 | 4220 | 5340 | 4940 | 2610 | 1780 |

CAL YR 1989 b +65800

WTR YR 1990 b -392300

a Elevation, in feet, at end of month.

b Change in contents; in acre-feet.

c Evaporation, in acre-feet, provided by U.S. Bureau of Reclamation; not reviewed by U.S. Geological Survey.

11446500 AMERICAN RIVER AT FAIR OAKS, CA

LOCATION.--Lat 38°38'08", long 121°13'36", in SE 1/4 NE 1/4 sec.17, T.9 N., R.7 E., Sacramento County, Hydrologic Unit 18020111, on right bank 2,100 ft downstream from Nimbus Dam, 2.4 mi east of Fair Oaks, 8.1 mi downstream from South Fork, and at mile 22.2.

DRAINAGE AREA.--1,888 mi².

PERIOD OF RECORD.--November 1904 to current year. Monthly discharge only for some periods, published in WSP 1315-A.

WATER TEMPERATURE: Water years 1961-65.

CHEMICAL DATA: Water years 1960-62.

REVISED RECORDS.--WSP 1181: 1928(M). WSP 1515: 1907(M), 1910, 1931(M), 1943(M). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 71.53 ft above National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to July 15, 1970.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Folsom Lake beginning Feb. 25, 1955 (station 11446200). Some minor regulation of high flows by temporary pondage during period of construction January 1953 to February 1955. Diurnal fluctuations from Folsom powerplant re-regulated by Nimbus Reservoir, capacity, 2,800 acre-ft between normal operating elevations 118.5 and 125.0 ft and by Nimbus powerplant. Many diversions upstream from station for irrigation, municipal, and domestic water supply. Diversions for San Juan Suburban Water District, city of Folsom, city of Roseville, and State of California are made at Folsom Dam. Diversion to Folsom South canal from Nimbus Reservoir started in June 1973. Some inflow from Bear and Yuba River basins. See schematic diagram of lower Sacramento River basin.

AVERAGE DISCHARGE.--50 years (water years 1905-55, prior to regulation by Folsom Lake), 3,741 ft³/s, 2,708,000 acre-ft/yr; 35 years (water years 1956-90, unadjusted for storage or diversion), 3,779 ft³/s, 2,738,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180,000 ft³/s, Nov. 21, 1950, gage height, 31.85 ft, site and datum then in use; minimum, 3.6 ft³/s, Aug. 16, 1924. Maximum discharge since construction of Folsom Dam in 1953, 134,000 ft³/s, Feb. 19, 1986, gage height, 27.96 ft, present datum; minimum, 86 ft³/s, Apr. 7, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,100 ft³/s, July 11, gage height, 9.30 ft; minimum daily, 388 ft³/s, June 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|-------|-------|-------|--------|-------|--------|--------|--------|-------|
| 1 | 1420 | 2650 | 1250 | 2440 | 2160 | 915 | 928 | 1200 | 388 | 5020 | 6170 | 2050 |
| 2 | 1430 | 3790 | 1260 | 1810 | 2270 | 914 | 929 | 817 | 453 | 4990 | 6150 | 2050 |
| 3 | 1250 | 3690 | 1250 | 1120 | 1470 | 918 | 931 | 778 | 457 | 5080 | 6040 | 2050 |
| 4 | 1430 | 3690 | 1280 | 1090 | 1370 | 919 | 937 | 752 | 458 | 5070 | 4670 | 2550 |
| 5 | 1430 | 3690 | 1280 | 1090 | 1390 | 920 | 1750 | 736 | 485 | 5090 | 4640 | 2530 |
| 6 | 1430 | 3240 | 1280 | 1090 | 1130 | 919 | 2640 | 738 | 528 | 5080 | 3780 | 2530 |
| 7 | 2070 | 2690 | 2370 | 1100 | 1140 | 925 | 2620 | 737 | 538 | 5070 | 2700 | 2550 |
| 8 | 2080 | 2160 | 2490 | 1100 | 1140 | 933 | 2620 | 1450 | 1410 | 5080 | 1530 | 2540 |
| 9 | 2020 | 2090 | 2490 | 1090 | 1140 | 931 | 2650 | 1530 | 2560 | 5220 | 1470 | 2540 |
| 10 | 2030 | 2090 | 2510 | 1080 | 1150 | 933 | 2660 | 1500 | 2640 | 6830 | 1470 | 2060 |
| 11 | 2780 | 2110 | 1430 | 1080 | 1150 | 933 | 2660 | 2030 | 2610 | 7930 | 1470 | 1730 |
| 12 | 4020 | 2240 | 1360 | 1080 | 1130 | 934 | 2660 | 1820 | 2590 | 7800 | 1470 | 1710 |
| 13 | 4160 | 3380 | 1310 | 1090 | 1140 | 931 | 2650 | 1360 | 2630 | 6330 | 1470 | 1690 |
| 14 | 4450 | 3700 | 1290 | 1090 | 1140 | 931 | 2710 | 1130 | 3420 | 6230 | 1470 | 1510 |
| 15 | 4140 | 3680 | 1300 | 1090 | 1130 | 930 | 2770 | 793 | 3490 | 6240 | 2010 | 1220 |
| 16 | 4160 | 3680 | 1300 | 1090 | 1130 | 938 | 2710 | 741 | 3480 | 6210 | 2570 | 1210 |
| 17 | 4160 | 3680 | 1300 | 1100 | 1140 | 940 | 2650 | 745 | 3210 | 6180 | 2560 | 1220 |
| 18 | 4210 | 4190 | 1300 | 1100 | 1150 | 938 | 2150 | 746 | 3210 | 6150 | 2680 | 971 |
| 19 | 4150 | 4680 | 1310 | 1100 | 1150 | 939 | 2090 | 738 | 3180 | 6200 | 2680 | 964 |
| 20 | 5000 | 4570 | 1330 | 1100 | 1160 | 943 | 1990 | 747 | 2130 | 6230 | 2120 | 772 |
| 21 | 5000 | 3910 | 1330 | 1100 | 916 | 941 | 1470 | 737 | 2150 | 6180 | 2100 | 754 |
| 22 | 4980 | 3680 | 1320 | 1110 | 912 | 927 | 1470 | 551 | 3350 | 6190 | 2110 | 751 |
| 23 | 5050 | 2880 | 1330 | 1110 | 910 | 933 | 1230 | 537 | 4160 | 6160 | 2110 | 750 |
| 24 | 5100 | 2730 | 1320 | 1120 | 901 | 933 | 1220 | 534 | 3970 | 6140 | 2170 | 752 |
| 25 | 4330 | 2730 | 1330 | 1110 | 901 | 930 | 1220 | 533 | 3610 | 6150 | 2160 | 749 |
| 26 | 2690 | 2750 | 1320 | 1120 | 902 | 936 | 1220 | 531 | 2740 | 6150 | 2160 | 748 |
| 27 | 1550 | 2750 | 2350 | 1110 | 913 | 937 | 1210 | 530 | 2280 | 6150 | 2010 | 749 |
| 28 | 1390 | 1700 | 3190 | 1110 | 915 | 935 | 1220 | 529 | 1560 | 6150 | 2040 | 750 |
| 29 | 1380 | 1270 | 3210 | 1110 | --- | 935 | 1210 | 531 | 2520 | 6180 | 2060 | 752 |
| 30 | 1420 | 1260 | 3210 | 1110 | --- | 937 | 1210 | 531 | 4090 | 6200 | 2060 | 752 |
| 31 | 2520 | --- | 2960 | 1110 | --- | 927 | --- | 397 | --- | 6190 | 2050 | --- |
| TOTAL | 93230 | 91350 | 53560 | 36150 | 33050 | 28855 | 56385 | 27029 | 70297 | 185850 | 82150 | 43954 |
| MEAN | 3007 | 3045 | 1728 | 1166 | 1180 | 931 | 1879 | 872 | 2343 | 5995 | 2650 | 1465 |
| MAX | 5100 | 4680 | 3210 | 2440 | 2270 | 943 | 2770 | 2030 | 4160 | 7930 | 6170 | 2550 |
| MIN | 1250 | 1260 | 1250 | 1080 | 901 | 914 | 928 | 397 | 388 | 4990 | 1470 | 748 |
| AC-FT | 184900 | 181200 | 106200 | 71700 | 65550 | 57230 | 111800 | 53610 | 139400 | 368600 | 162900 | 87180 |

CAL YR 1989 TOTAL 1021470 MEAN 2799 MAX 24400 MIN 571 AC-FT 2026000
WTR YR 1990 TOTAL 801860 MEAN 2197 MAX 7930 MIN 388 AC-FT 1590000

11447500 SACRAMENTO RIVER AT SACRAMENTO, CA

LOCATION.--Lat 38°35'12", long 121°30'16", T.9 N., R.4 E., Sacramento County, Hydrologic Unit 18020109, on left bank 1,000 ft upstream from I Street Bridge, in city of Sacramento, and 0.5 mi downstream from American River.

DRAINAGE AREA.--23,502 mi².

REVISED RECORDS.--WDR CA-76-4: Drainage area.

PERIOD OF RECORD.--January 1904 to July 1905 (gage heights only), June to November 1921, October 1948 to September 1979 (water discharge), October 1985 to September 1989 (peak gage height of year only, see station 11447650), October 1989 to September 1990 (gage height only). Gage heights collected in this vicinity November 1879 to May 1888, December 1890 to September 1963 are contained in reports of National Weather Service. Gage height for October 1979 to September 1989 in files of the U. S. Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 15, 1912, nonrecording gage in vicinity of I Street Bridge. Oct. 15, 1912 to Nov. 16, 1956, water-stage recorder at various sites in vicinity of I Street Bridge. Prior to Nov. 16, 1956, datum of gages at low-water mark of Oct. 23, 1856, 0.12 ft NGVD.

REMARKS.--Natural flow of stream affected by storage reservoirs, power development, diversions for irrigation, return flow from irrigated areas. Flood flows bypass station through Yolo Bypass (see stations 11426000 and 11453000). See schematic diagram showing diversions and storage in the lower Sacramento River basin.

EXTREMES FOR PERIOD OF RECORD (since 1949).--Maximum gage height, 30.58 ft, Feb. 19, 1986; minimum gage height prior to October 1989 is unknown. Minimum gage height since October 1989, 1.09 ft, May 3, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 10.16 ft, Jan. 16; minimum gage height, 1.09 ft, May 3.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|---------|------|----------|------|----------|------|---------|------|----------|------|-------|------|
| | OCTOBER | | NOVEMBER | | DECEMBER | | JANUARY | | FEBRUARY | | MARCH | |
| 1 | 4.43 | 3.10 | 4.26 | 2.70 | 5.01 | 3.83 | 5.26 | 4.16 | 4.41 | 3.09 | 4.26 | 2.85 |
| 2 | 4.42 | 3.09 | 4.51 | 2.57 | 4.69 | 3.49 | 5.18 | 4.17 | 4.28 | 3.16 | 4.34 | 2.77 |
| 3 | 4.26 | 2.91 | 4.50 | 2.92 | 4.75 | 3.42 | 4.43 | 3.63 | 4.56 | 3.25 | 4.45 | 2.69 |
| 4 | 4.30 | 2.70 | 4.47 | 2.87 | 4.69 | 3.60 | 4.36 | 3.39 | 4.88 | 3.63 | 4.71 | 3.05 |
| 5 | 4.27 | 2.62 | 4.52 | 3.12 | 4.59 | 3.57 | 4.48 | 3.23 | 4.96 | 3.64 | 5.05 | 3.42 |
| 6 | 4.33 | 2.49 | 4.53 | 3.22 | 4.44 | 3.48 | 4.71 | 3.37 | 5.16 | 3.81 | 5.37 | 3.85 |
| 7 | 4.30 | 2.58 | 4.23 | 3.07 | 4.84 | 3.59 | 5.22 | 3.50 | 5.03 | 4.03 | 5.74 | 4.30 |
| 8 | 4.26 | 2.62 | 3.99 | 2.96 | 5.40 | 4.12 | 5.58 | 4.10 | 4.96 | 3.99 | 5.18 | 4.33 |
| 9 | 4.10 | 2.58 | 4.14 | 3.02 | 5.77 | 4.52 | 5.92 | 4.26 | 4.51 | 3.71 | 4.76 | 3.85 |
| 10 | 4.17 | 2.71 | 4.42 | 3.15 | 5.95 | 4.68 | 7.46 | 5.58 | 4.12 | 3.28 | 4.80 | 3.60 |
| 11 | 4.30 | 3.06 | 4.78 | 3.27 | 5.69 | 4.63 | 7.16 | 6.52 | 3.87 | 3.07 | 4.54 | 3.61 |
| 12 | 4.68 | 3.45 | 5.26 | 3.47 | 5.61 | 4.29 | 6.93 | 5.71 | 3.74 | 2.99 | 4.45 | 3.53 |
| 13 | 5.01 | 3.90 | 5.42 | 3.79 | 5.60 | 4.22 | 7.24 | 5.93 | 3.68 | 2.91 | 4.45 | 3.57 |
| 14 | 5.27 | 4.01 | 5.38 | 3.94 | 5.35 | 4.12 | 8.49 | 6.80 | 3.43 | 2.38 | 4.40 | 3.29 |
| 15 | 5.29 | 4.14 | 5.34 | 3.93 | 5.23 | 3.98 | 10.12 | 8.51 | 3.34 | 2.38 | 4.08 | 2.88 |
| 16 | 5.13 | 3.82 | 5.36 | 3.87 | 5.11 | 3.91 | 10.16 | 9.66 | 4.87 | 2.60 | 4.05 | 2.66 |
| 17 | 5.10 | 3.63 | 5.30 | 3.97 | 4.95 | 3.84 | 9.64 | 8.20 | 5.84 | 4.18 | 4.05 | 2.50 |
| 18 | 5.03 | 3.54 | 5.23 | 3.96 | 4.71 | 3.61 | 8.19 | 7.44 | 5.92 | 5.03 | 4.08 | 2.37 |
| 19 | 5.10 | 3.51 | 4.98 | 3.94 | 4.31 | 3.31 | 7.43 | 6.57 | 5.43 | 4.56 | 4.01 | 2.21 |
| 20 | 5.42 | 3.68 | 4.79 | 3.87 | 4.18 | 3.05 | 6.55 | 5.57 | 4.95 | 4.11 | 3.56 | 1.87 |
| 21 | 5.42 | 3.93 | 4.76 | 3.80 | 4.28 | 3.04 | 5.80 | 4.96 | 4.75 | 3.78 | 3.65 | 1.94 |
| 22 | 5.09 | 3.81 | 4.92 | 3.91 | 4.23 | 3.12 | 5.41 | 4.51 | 4.54 | 3.59 | 4.00 | 2.17 |
| 23 | 5.42 | 4.26 | 4.90 | 3.87 | 4.33 | 3.14 | 5.01 | 4.03 | 4.53 | 3.39 | 3.69 | 2.45 |
| 24 | 5.34 | 4.48 | 5.11 | 3.91 | 4.48 | 3.15 | 4.77 | 3.70 | 4.36 | 3.29 | 3.95 | 2.33 |
| 25 | 6.02 | 4.85 | 5.67 | 4.03 | 4.58 | 3.21 | 4.57 | 3.42 | 4.22 | 3.17 | 4.09 | 2.74 |
| 26 | 6.04 | 5.38 | 5.73 | 4.87 | 4.79 | 3.24 | 4.55 | 3.32 | 4.17 | 3.10 | 3.86 | 2.61 |
| 27 | 5.83 | 5.25 | 5.48 | 4.51 | 5.27 | 3.36 | 4.12 | 3.12 | 4.07 | 3.03 | 3.97 | 2.64 |
| 28 | 5.24 | 4.12 | 5.30 | 4.39 | 5.44 | 3.94 | 3.96 | 2.92 | 4.10 | 2.93 | 4.60 | 3.06 |
| 29 | 4.22 | 3.20 | 5.30 | 4.07 | 5.42 | 4.15 | 4.00 | 2.92 | --- | --- | 4.91 | 3.23 |
| 30 | 3.99 | 2.70 | 5.20 | 3.95 | 5.41 | 4.30 | 4.11 | 2.98 | --- | --- | 4.93 | 3.19 |
| 31 | 4.37 | 2.35 | --- | --- | 5.22 | 4.30 | 4.04 | 3.11 | --- | --- | 5.13 | 3.31 |
| MONTH | 6.04 | 2.35 | 5.73 | 2.57 | 5.95 | 3.04 | 10.16 | 2.92 | 5.92 | 2.38 | 5.74 | 1.87 |

SACRAMENTO RIVER BASIN

11447500 SACRAMENTO RIVER AT SACRAMENTO, CA--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|-------|------|------|------|------|------|------|------|--------|------|-----------|------|
| | APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
| 1 | 5.07 | 3.34 | 3.27 | 1.33 | 5.63 | 4.68 | 4.24 | 2.87 | 5.47 | 3.90 | 4.66 | 2.99 |
| 2 | 4.72 | 3.14 | 3.12 | 1.18 | 5.87 | 4.87 | 4.66 | 3.08 | 5.67 | 4.04 | 4.55 | 2.96 |
| 3 | 4.50 | 3.04 | 3.11 | 1.09 | 5.92 | 4.38 | 4.74 | 3.02 | 5.83 | 4.22 | 4.57 | 3.07 |
| 4 | 4.56 | 3.12 | 3.22 | 1.10 | 5.35 | 3.43 | 4.93 | 3.10 | 5.73 | 3.93 | 4.59 | 3.12 |
| 5 | 4.63 | 3.25 | 3.31 | 1.11 | 4.70 | 2.69 | 4.84 | 2.94 | 5.64 | 4.11 | 4.35 | 3.23 |
| 6 | 4.90 | 3.67 | 3.58 | 1.40 | 4.64 | 2.48 | 4.80 | 2.82 | 5.60 | 4.10 | 4.41 | 3.26 |
| 7 | 4.96 | 4.06 | 3.68 | 1.22 | 4.41 | 1.86 | 4.85 | 2.85 | 5.59 | 4.06 | 4.52 | 3.22 |
| 8 | 4.88 | 3.99 | 3.59 | 1.42 | 4.21 | 1.67 | 4.97 | 3.00 | 5.27 | 3.67 | 4.46 | 3.25 |
| 9 | 4.86 | 3.87 | 4.48 | 2.37 | 4.44 | 2.15 | 4.96 | 2.98 | 4.90 | 3.58 | 4.46 | 3.17 |
| 10 | 4.83 | 3.81 | 4.44 | 2.24 | 4.67 | 2.19 | 4.85 | 3.31 | 5.04 | 3.68 | 4.90 | 3.15 |
| 11 | 5.17 | 4.19 | 4.33 | 2.15 | 4.25 | 1.80 | 5.00 | 3.71 | 5.16 | 3.69 | 4.95 | 3.11 |
| 12 | 5.45 | 4.31 | 4.33 | 2.36 | 4.13 | 1.70 | 4.78 | 3.60 | 5.16 | 3.66 | 4.80 | 2.82 |
| 13 | 5.39 | 4.27 | 4.16 | 2.16 | 3.92 | 1.78 | 4.61 | 3.16 | 5.25 | 3.65 | 4.79 | 2.82 |
| 14 | 5.59 | 4.56 | 4.35 | 2.35 | 3.76 | 2.05 | 4.57 | 3.29 | 5.40 | 3.66 | 4.84 | 2.83 |
| 15 | 6.09 | 4.77 | 3.99 | 2.10 | 3.78 | 2.21 | 4.90 | 3.73 | 5.60 | 3.73 | 4.51 | 2.61 |
| 16 | 5.87 | 4.60 | 3.90 | 2.12 | 3.91 | 1.98 | 5.41 | 3.91 | 5.63 | 3.79 | 4.26 | 2.52 |
| 17 | 5.63 | 4.45 | 3.70 | 2.39 | 3.90 | 2.22 | 5.50 | 3.91 | 5.62 | 3.84 | 4.15 | 2.52 |
| 18 | 5.34 | 4.32 | 3.68 | 2.12 | 4.36 | 2.46 | 5.59 | 3.91 | 5.63 | 3.98 | 4.18 | 2.61 |
| 19 | 5.38 | 4.35 | 3.73 | 2.19 | 4.50 | 2.49 | 5.68 | 4.09 | 5.49 | 3.83 | 4.06 | 2.43 |
| 20 | 5.07 | 4.22 | 3.77 | 2.17 | 4.79 | 2.39 | 5.92 | 4.22 | 5.26 | 3.71 | 3.98 | 2.38 |
| 21 | 4.99 | 4.02 | 3.84 | 2.19 | 5.05 | 2.64 | 5.92 | 4.25 | 5.03 | 3.59 | 4.42 | 2.44 |
| 22 | 4.91 | 3.91 | 4.30 | 2.56 | 5.62 | 3.12 | 5.90 | 4.33 | 4.61 | 3.38 | 4.25 | 2.56 |
| 23 | 5.23 | 4.09 | 4.71 | 2.85 | 5.35 | 3.04 | 5.76 | 4.25 | 4.93 | 3.48 | 4.27 | 2.27 |
| 24 | 5.42 | 3.98 | 5.19 | 3.07 | 5.18 | 3.00 | 5.56 | 4.15 | 5.03 | 3.70 | 4.32 | 2.26 |
| 25 | 5.27 | 3.74 | 5.20 | 3.45 | 4.63 | 2.60 | 5.24 | 4.01 | 4.96 | 3.49 | 4.25 | 2.13 |
| 26 | 5.41 | 3.61 | 5.28 | 3.39 | 4.18 | 2.14 | 4.96 | 3.63 | 4.78 | 3.22 | 4.20 | 2.02 |
| 27 | 5.26 | 3.29 | 5.15 | 3.50 | 3.79 | 2.07 | 4.76 | 3.57 | 4.71 | 3.17 | 4.20 | 1.96 |
| 28 | 4.99 | 2.81 | 5.56 | 4.06 | 3.77 | 1.71 | 4.88 | 3.71 | 4.76 | 3.07 | 4.06 | 2.00 |
| 29 | 4.39 | 2.17 | 5.66 | 4.63 | 3.65 | 1.97 | 5.08 | 3.79 | 4.76 | 3.06 | 3.99 | 2.01 |
| 30 | 3.49 | 1.37 | 6.05 | 5.35 | 3.87 | 2.42 | 5.17 | 3.84 | 4.85 | 3.06 | 3.97 | 2.05 |
| 31 | --- | --- | 6.02 | 4.83 | --- | --- | 5.30 | 3.83 | 4.85 | 3.01 | --- | --- |
| MONTH | 6.09 | 1.37 | 6.05 | 1.09 | 5.92 | 1.67 | 5.92 | 2.82 | 5.83 | 3.01 | 4.95 | 1.96 |

11447650 SACRAMENTO RIVER AT FREEPORT, CA
(National stream-quality accounting network station)

LOCATION.--Lat 38°27'15", long 121°29'54", in SW 1/4 SW 1/4 sec.13, T.7 N., R.4 E., Sacramento County, Hydrologic Unit 18020109, on left bank 630 ft downstream from drawbridge at Freeport and 11 mi south of Sacramento.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1904 to July 1905 (gage heights only), June to November 1921, October 1948 to current year. Prior to October 1979, published as Sacramento River at Sacramento (station 11447500).

GAGE.--Water-stage recorder and acoustic-velocity system. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Natural flow of stream affected by storage reservoirs, power development, diversions for irrigation, return flow from irrigated areas, and tide. Flood flows bypass station through Sacramento Weir Spill to Yolo Bypass (stations 11426000 and 11453000). See schematic diagram for Lower Sacramento River basin.

AVERAGE DISCHARGE.--42 years (water years 1949-90), 23,630 ft³/s, 17,120,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (since 1949).--Maximum discharge, 117,000 ft³/s, Feb. 19, 1986, elevation, 25.00 ft; minimum daily, 3,970 ft³/s, Oct. 15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known prior to Nov. 21, 1950, 103,000 ft³/s, Jan. 17, 1909, elevation, 29.6 ft, site then in use at present datum, from reports of California Department of Water Resources.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 38,800 ft³/s, Jan. 16, elevation, 7.05 ft; minimum daily, 5,370 ft³/s, May 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 12400 | 11200 | 15200 | 16900 | 12400 | 11600 | 13400 | 8010 | 19300 | 11800 | 14400 | 12300 |
| 2 | 12000 | 11800 | 14600 | 17000 | 13700 | 11600 | 14000 | 7410 | 20600 | 12600 | 14400 | 12100 |
| 3 | 11800 | 12500 | 14800 | 15900 | 13500 | 11800 | 13900 | 6870 | 19000 | 12200 | 14900 | 11400 |
| 4 | 11200 | 12500 | 15300 | 15500 | 14200 | 11900 | 12900 | 5980 | 15900 | 12300 | 14700 | 11900 |
| 5 | 11200 | 13400 | 15500 | 14900 | 14700 | 14300 | 13400 | 5380 | 11800 | 11800 | 15400 | 12000 |
| 6 | 10800 | 13900 | 15500 | 14500 | 15200 | 16800 | 15000 | 5370 | 9800 | 11200 | 16000 | 11900 |
| 7 | 11700 | 13900 | 16000 | 14900 | 15700 | 17600 | 15800 | 6010 | 8840 | 11200 | e14900 | 11900 |
| 8 | 12300 | 13800 | 17000 | 15900 | 15100 | 17200 | 15900 | 6000 | 7860 | 11000 | e14300 | 12000 |
| 9 | 12300 | 13600 | 17700 | 17000 | 14300 | 15300 | 16000 | 7300 | 7880 | 11200 | e13900 | 12000 |
| 10 | 12200 | 13500 | 18000 | 23500 | 13300 | 13800 | 16200 | 8440 | 8330 | 12500 | e14200 | 11100 |
| 11 | 12700 | 13400 | 17700 | 24500 | 12500 | 13900 | 16900 | 8820 | 8020 | 14100 | e14300 | 11300 |
| 12 | 14100 | 13600 | 16600 | 20700 | 11900 | 14500 | 17600 | 9460 | 7480 | 14300 | e14100 | 11100 |
| 13 | 14900 | 14500 | 16000 | 21600 | 11600 | 15200 | 17300 | 9600 | 7420 | 13400 | 13700 | 11100 |
| 14 | 15000 | 14900 | 15600 | 26300 | 11600 | 14700 | 17000 | 9610 | 8200 | 12600 | 13300 | 10900 |
| 15 | 15500 | 15300 | 15400 | 34200 | 10600 | 13300 | 17900 | 9710 | 9170 | 13100 | 13800 | 10300 |
| 16 | 14700 | 15300 | 15200 | 36900 | 11600 | 12600 | 18200 | 10300 | 9840 | 13900 | 14200 | 9900 |
| 17 | 14300 | 15600 | 15000 | 32000 | 17300 | 11700 | 18100 | 10300 | 9300 | 14400 | 14400 | 9380 |
| 18 | 14200 | 16200 | 14700 | 28500 | 19100 | 11400 | 17700 | 11100 | 10300 | 14500 | 14500 | 8880 |
| 19 | 14400 | 16400 | 14400 | 25600 | 18000 | 11200 | 17500 | 9780 | 10600 | 14800 | 14700 | 8800 |
| 20 | 14500 | 16400 | 14000 | 21900 | 16300 | 10800 | 17500 | 9820 | 9930 | 15100 | 14000 | 8830 |
| 21 | 15500 | 16300 | 13900 | 18900 | 14700 | 10400 | 16500 | 10400 | 8890 | 15100 | 13800 | 8070 |
| 22 | 15700 | 16100 | 13900 | 16700 | 13900 | 10600 | 15500 | 10800 | 9460 | 15000 | 13200 | 8470 |
| 23 | 16300 | 15700 | 13900 | 14900 | 13500 | 11000 | 15200 | 10700 | 10400 | 15200 | 12700 | 8060 |
| 24 | 17900 | 15400 | 13800 | 14100 | 13200 | 11000 | 15600 | 11900 | 10600 | 15100 | 12600 | 7880 |
| 25 | 19800 | 15700 | 13900 | 13200 | 12800 | 11300 | 15000 | 13000 | 10400 | 14900 | 13100 | 7560 |
| 26 | 21100 | 17400 | 13700 | 12400 | 12200 | 11900 | 14700 | 13900 | 9680 | 14700 | 12700 | 7850 |
| 27 | 20600 | 17700 | 14000 | 12300 | 12000 | 11400 | 13600 | 13500 | 8660 | 14000 | 12500 | 8210 |
| 28 | 17300 | 17300 | 15400 | 11700 | 11600 | 12100 | 11200 | 14800 | 8730 | 14100 | 12700 | 8710 |
| 29 | 13800 | 16100 | 16500 | 11200 | --- | 12600 | 9490 | 17300 | 8870 | 14100 | 12500 | 8710 |
| 30 | 11600 | 15500 | 17000 | 10900 | --- | 12500 | 9150 | 20400 | 10300 | 14200 | 12500 | 8270 |
| 31 | 10700 | --- | 17100 | 11700 | --- | 12900 | --- | 20500 | --- | 14300 | 12600 | --- |
| TOTAL | 442500 | 444900 | 477300 | 586200 | 386500 | 398900 | 458140 | 322470 | 315560 | 418700 | 429000 | 300880 |
| MEAN | 14270 | 14830 | 15400 | 18910 | 13800 | 12870 | 15270 | 10400 | 10520 | 13510 | 13840 | 10030 |
| MAX | 21100 | 17700 | 18000 | 36900 | 19100 | 17600 | 18200 | 20500 | 20600 | 15200 | 16000 | 12300 |
| MIN | 10700 | 11200 | 13700 | 10900 | 10600 | 10400 | 9150 | 5370 | 7420 | 11000 | 12500 | 7560 |
| AC-FT | 877700 | 882500 | 946700 | 1163000 | 766600 | 791200 | 908700 | 639600 | 625900 | 830500 | 850900 | 596800 |

CAL YR 1989 TOTAL 6552660 MEAN 17950 MAX 73500 MIN 8460 AC-FT 13000000
WTR YR 1990 TOTAL 4981050 MEAN 13650 MAX 36900 MIN 5370 AC-FT 9880000

e Estimated.

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1957 to current year.

CHEMICAL DATA: Water year 1959 to current year.

BIOLOGICAL DATA: Water years 1974-81.

SPECIFIC CONDUCTANCE: Water years 1974-75, November 1988 to current year.

WATER TEMPERATURE: Water year 1960 to current year.

SEDIMENT DATA: Water year 1957 to current year (prior to water year 1980, published as 11447500 Sacramento River at Sacramento).

PERIOD OF DAILY RECORD.--

CHEMICAL DATA: June 1960 to June 1963.

SPECIFIC CONDUCTANCE: February 1974 to July 1975, November 1988 to current year.

WATER TEMPERATURE: June 1960 to current year.

SUSPENDED SEDIMENT: October 1956 to current year.

INSTRUMENTATION.--Temperature recorder June 1960 to November 1988. Water-quality monitor since November 1988.

REMARKS.--Records of sediment discharge from 1957 to 1979 were obtained at Sacramento and are considered equivalent.

Interruptions of record were due to malfunctions of the recording instruments. Additional specific conductance and monthly chemical and trace element data are available in files of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 318 microsiemens, Nov. 22, 1974; minimum recorded, 32 microsiemens, Apr. 6, 1974.

WATER TEMPERATURE: Maximum recorded, 27.0 °C, Sept. 8, 1977; minimum recorded, 4.5 °C, Dec. 30, 31, 1988, Feb. 8, 9, 1989.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,960 mg/L, Dec. 24, 1964; minimum daily, 4 mg/L, Mar. 16, 1988, Dec. 25, 1989, May 5, 1990.

SEDIMENT LOAD: Maximum daily, 525,000 tons, Dec. 24, 1964; minimum daily, 58 tons, May 5, 1990.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 213 microsiemens, May 30; minimum recorded, 93 microsiemens, Jan. 16.

WATER TEMPERATURE: Maximum recorded, 25.5 °C, Aug. 7-10; minimum recorded, 5.0 °C, Feb. 18.

SEDIMENT CONCENTRATION: Maximum daily mean, 215 mg/L, Jan. 16; minimum daily mean, 4 mg/L, Dec. 25, May 5.

SEDIMENT LOAD: Maximum daily, 21,400 tons, Jan. 16; minimum daily, 58 tons, May 5.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
(NOT PREVIOUSLY PUBLISHED)

| DATE | TIME | GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT) | GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) | GROSS BETA, DIS- SOLVED (PCI/L AS CS-137) | GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) | 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) |
|--------------|------|--|--|---|---|--|--|---|--|
| SEP 27... | 1200 | -- | 0.6 | -- | 0.7 | -- | 0.5 | 0.14 | 0.11 |

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | DIS- CHARGE, INST. CUBIC FEET PER SECOND | SPE- CIFIC CON- DUCT- ANCE (US/CM) | PH (STAND- ARD UNITS) | TEMPER- ATURE WATER (DEG C) | TUR- BID- ITY (NTU) | BARO- METRIC PRES- SURE (MM OF HG) | 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) |
|--------------|------|--|---|--------------------------------|--------------------------------------|------------------------------|--|-------------------------------------|--|--|--|
| DEC 19... | 1300 | 11300 | 119 | 7.9 | 8.0 | 3.4 | 765 | 11.0 | 92 | K18 | <25 |
| APR 10... | 1015 | 18200 | 141 | 7.8 | 15.0 | 6.2 | 765 | 9.6 | 95 | K11 | 26 |
| JUN 12... | 1030 | 12200 | 151 | 8.0 | 21.5 | 4.7 | 760 | 8.1 | 92 | K6 | 150 |
| SEP 11... | 1000 | 7510 | 183 | 7.8 | 22.0 | 10 | 760 | 9.5 | 109 | 23 | 460 |

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | 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) | 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) |
|--------------|---|--|--|--|-------------------|---|---|---|---|---|---|
| DEC 19... | 50 | 11 | 5.5 | 7.5 | 24 | 0.5 | 1.2 | 68 | 56 | 5.0 | 3.9 |
| APR 10... | 54 | 12 | 5.9 | 8.4 | 25 | 0.5 | 1.1 | 93 | 57 | 6.0 | 6.3 |
| JUN 12... | 54 | 11 | 6.3 | 9.2 | 27 | 0.5 | 1.3 | 69 | 56 | 7.3 | 8.7 |
| SEP 11... | 67 | 13 | 8.4 | 13 | 29 | 0.7 | 1.2 | 94 | 77 | 7.2 | 7.8 |

| 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) | NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) | NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) | NITRO- GEN, AMMONIA DIS- SOLVED TOTAL (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) |
|--------------|--|---|--|---|---|---|---|--|---|--|--|
| DEC 19... | <0.10 | 17 | 81 | 85 | 0.11 | <0.010 | 0.130 | 0.040 | 0.030 | <0.20 | 0.030 |
| APR 10... | 0.10 | 17 | 97 | 104 | 0.13 | <0.010 | 0.200 | 0.020 | 0.010 | 0.30 | 0.050 |
| JUN 12... | <0.10 | 17 | 95 | 95 | 0.13 | <0.010 | <0.100 | 0.030 | <0.010 | 0.30 | 0.040 |
| SEP 11... | <0.10 | 19 | 112 | 116 | 0.15 | <0.010 | <0.100 | 0.040 | <0.010 | 0.40 | 0.030 |

| DATE | 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) | ARSENIC DIS- SOLVED (UG/L AS AS) | BARIUM, DIS- SOLVED (UG/L AS BA) | BERYL- LIUM, DIS- SOLVED (UG/L AS BE) | 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) |
|--------------|---|---|---|--|--|--|--|---|--|--|--|
| DEC 19... | 0.020 | 0.020 | 20 | 2 | 17 | <0.5 | <1.0 | <1 | <3 | 3 | 23 |
| APR 10... | 0.020 | 0.020 | 20 | 2 | 20 | <0.5 | <1.0 | <1 | <3 | <3 | 25 |
| JUN 12... | 0.030 | 0.030 | 10 | <1 | 22 | <0.5 | <1.0 | <1 | <3 | 2 | 21 |
| SEP 11... | 0.020 | 0.030 | 10 | 2 | 29 | <0.5 | <1.0 | 1 | <3 | 3 | 19 |

| DATE | LEAD, DIS- SOLVED (UG/L AS PB) | 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) | VANA- DIUM, DIS- SOLVED (UG/L AS V) | ZINC, DIS- SOLVED (UG/L AS ZN) |
|--------------|--|--|--|--|---|--|---|--|--|--|--|
| DEC 19... | <1 | <4 | 3 | <0.1 | <10 | 1 | <1 | <1.0 | 74 | <6 | 7 |
| APR 10... | <1 | <4 | 8 | <0.1 | <10 | <1 | <1 | 2.0 | 82 | <6 | 8 |
| JUN 12... | <1 | <4 | 6 | <0.1 | <10 | 1 | <1 | <1.0 | 110 | <6 | 6 |
| SEP 11... | <1 | 4 | 4 | <0.1 | <10 | 1 | <1 | <1.0 | 120 | <6 | 5 |

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | DEPTH AT SAMPLE LOC- ATION TOTAL (FEET) | SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) | SPE- CIFIC CON- DUCT- ANCE (US/CM) | PH (STAND- ARD UNITS) | TEMPER- ATURE WATER (DEG C) | BARO- METRIC PRES- SURE (MM HG) | OXYGEN, DIS- SOLVED OF (MG/L) | OXYGEN, (PER- CENT SATUR- ATION) | SEDI- MENT, SUS- PENDED (MG/L) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|-------|------|---|---|---|--------------------------------|--------------------------------------|--|---|--|--|---|
| APR | | | | | | | | | | | |
| 10... | 0940 | 16.5 | 180 | 133 | 7.6 | 15.0 | 765 | 9.5 | 94 | 32 | 82 |
| 10... | 0942 | 23.9 | 290 | 138 | 7.7 | 15.0 | 765 | 9.6 | 94 | 28 | 86 |
| 10... | 0945 | 23.8 | 368 | 140 | 7.7 | 15.0 | 765 | 9.6 | 94 | 23 | 90 |
| 10... | 0950 | 28.8 | 460 | 140 | 7.7 | 15.0 | 765 | 9.7 | 96 | 24 | 90 |
| 10... | 0953 | 27.9 | 525 | 140 | 7.7 | 15.0 | 765 | 9.7 | 96 | 25 | 92 |
| SEP | | | | | | | | | | | |
| 11... | 0943 | 19.7 | 180 | 180 | 7.7 | 22.0 | 760 | 9.5 | 109 | 31 | 100 |
| 11... | 0953 | 22.8 | 290 | 180 | 7.9 | 22.0 | 760 | 9.5 | 109 | 38 | 100 |
| 11... | 1001 | 23.3 | 368 | 180 | 7.9 | 22.0 | 760 | 9.4 | 108 | 38 | 100 |
| 11... | 1010 | 28.2 | 460 | 180 | 7.8 | 22.0 | 760 | 9.5 | 109 | 37 | 100 |
| 11... | 1017 | 27.5 | 525 | 180 | 7.9 | 22.0 | 760 | 9.6 | 110 | 33 | 100 |

* Instantaneous streamflow at the time of cross-sectional measurement: Apr. 10, 18, 200 ft³/s;
Sept. 11, 7,510 ft³/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DATE | TIME | DIS- CHARGE, INST. CUBIC FEET PER SECOND | TEMPER- ATURE WATER (DEG C) | SEDI- MENT, SUS- PENDED (MG/L) | SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY) | SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM |
|-------|------|--|--------------------------------------|--|--|---|
| OCT | | | | | | |
| 30... | 1150 | 14300 | 13.0 | 29 | 1120 | 92 |
| NOV | | | | | | |
| 15... | 1100 | 16400 | 13.0 | 18 | 797 | 90 |
| DEC | | | | | | |
| 19... | 1200 | 8720 | 8.0 | 8 | 188 | 81 |
| JAN | | | | | | |
| 10... | 1007 | 24400 | 9.5 | 60 | 3950 | 72 |
| MAR | | | | | | |
| 14... | 1104 | 16900 | 12.0 | 24 | 1100 | 91 |
| APR | | | | | | |
| 10... | 0941 | 18300 | 15.0 | 27 | 1330 | 88 |
| JUN | | | | | | |
| 12... | 0958 | 10300 | 21.5 | 12 | 334 | 88 |
| SEP | | | | | | |
| 11... | 0912 | 10800 | 22.0 | 35 | 1020 | 100 |

SACRAMENTO RIVER BASIN

303

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|-------|---------|-----|----------|-----|----------|-----|---------|-----|----------|-----|-----------|-----|
| | OCTOBER | | NOVEMBER | | DECEMBER | | JANUARY | | FEBRUARY | | MARCH | |
| 1 | 193 | 174 | 156 | 131 | 151 | 138 | 123 | 111 | 181 | 167 | 173 | 162 |
| 2 | 199 | 170 | 135 | 132 | 154 | 140 | 119 | 116 | 172 | 152 | 177 | 170 |
| 3 | 194 | 173 | 143 | 127 | 147 | 131 | 126 | 115 | 163 | 146 | 177 | 166 |
| 4 | 195 | 169 | 152 | 141 | 138 | 126 | 129 | 122 | 157 | 145 | 178 | 167 |
| 5 | 185 | 167 | 150 | 129 | 135 | 124 | 131 | 122 | 170 | 152 | 182 | 167 |
| 6 | 170 | 159 | 146 | 141 | 138 | 127 | 132 | 122 | 175 | 156 | 175 | 159 |
| 7 | 172 | 159 | 140 | 130 | 134 | 128 | 132 | 122 | 169 | 148 | 201 | 156 |
| 8 | 169 | 147 | 132 | 130 | 129 | 121 | 138 | 125 | 164 | 147 | 184 | 147 |
| 9 | 146 | 143 | 148 | 133 | 121 | 117 | 138 | 130 | 162 | 142 | 160 | 141 |
| 10 | 148 | 143 | 153 | 140 | 135 | 118 | 154 | 135 | 150 | 135 | 159 | 140 |
| 11 | 158 | 144 | 158 | 145 | 132 | 122 | 140 | 101 | 159 | 140 | 167 | 145 |
| 12 | 142 | 121 | 151 | 141 | 126 | 120 | 157 | 107 | 167 | 159 | 182 | 149 |
| 13 | 121 | 116 | 152 | 139 | 124 | 120 | 162 | 137 | 162 | 156 | 182 | 154 |
| 14 | 121 | 117 | 138 | 124 | 122 | 119 | 166 | 144 | 165 | 152 | 175 | 153 |
| 15 | 130 | 118 | 129 | 121 | 123 | 119 | 151 | 124 | 161 | 152 | 166 | 149 |
| 16 | 141 | 119 | 136 | 130 | 122 | 119 | 123 | 93 | 163 | 147 | 165 | 144 |
| 17 | 156 | 123 | 141 | 126 | 133 | 119 | 130 | 112 | 158 | 128 | 175 | 158 |
| 18 | 128 | 121 | 144 | 121 | 137 | 120 | 148 | 133 | 195 | 140 | 182 | 169 |
| 19 | 128 | 120 | 141 | 125 | 136 | 118 | 159 | 142 | 175 | 154 | 185 | 172 |
| 20 | 128 | 123 | 142 | 127 | 121 | 116 | 161 | 154 | 167 | 150 | 188 | 175 |
| 21 | 122 | 115 | 135 | 126 | 119 | 116 | 171 | 152 | 174 | 155 | 187 | 173 |
| 22 | 117 | 109 | 138 | 127 | 120 | 118 | 184 | 174 | 179 | 155 | 202 | 168 |
| 23 | 135 | 110 | 135 | 127 | 125 | 118 | 197 | 156 | 181 | 154 | 191 | 175 |
| 24 | 140 | 118 | 136 | 126 | 134 | 120 | 179 | 155 | 184 | 155 | 189 | 167 |
| 25 | 141 | 123 | 142 | 135 | 142 | 125 | 191 | 174 | 168 | 150 | 167 | 157 |
| 26 | 131 | 124 | 151 | 130 | 133 | 118 | 194 | 177 | 184 | 164 | 166 | 156 |
| 27 | 129 | 123 | 149 | 135 | 120 | 116 | 188 | 178 | 189 | 168 | 171 | 157 |
| 28 | 148 | 129 | 146 | 135 | 115 | 110 | 192 | 178 | 174 | 168 | 197 | 158 |
| 29 | 152 | 137 | 145 | 139 | 112 | 109 | 195 | 174 | --- | --- | 172 | 152 |
| 30 | 151 | 140 | 145 | 140 | 110 | 107 | 179 | 172 | --- | --- | 160 | 151 |
| 31 | 155 | 145 | --- | --- | 121 | 108 | 179 | 164 | --- | --- | 161 | 150 |
| MONTH | 199 | 109 | 158 | 121 | 154 | 107 | 197 | 93 | 195 | 128 | 202 | 140 |
| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
| | APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | |
| 1 | 162 | 151 | 150 | 142 | 188 | 176 | 152 | 136 | 127 | 118 | 197 | 186 |
| 2 | 158 | 147 | 151 | 144 | 184 | 156 | 142 | 128 | 128 | 118 | 200 | 190 |
| 3 | 153 | 150 | 163 | 143 | 170 | 146 | 137 | 128 | 129 | 120 | 204 | 191 |
| 4 | 156 | 145 | 168 | 153 | 166 | 149 | 138 | 127 | 132 | 124 | 201 | 191 |
| 5 | 149 | 137 | 172 | 154 | 179 | 140 | 136 | 121 | 134 | 125 | 192 | 184 |
| 6 | 154 | 141 | 174 | 151 | 166 | 135 | 134 | 123 | 129 | 126 | 194 | 184 |
| 7 | 143 | 136 | 176 | 153 | 152 | 140 | 134 | 122 | 137 | 130 | 197 | 186 |
| 8 | 148 | 136 | 179 | 152 | 174 | 155 | 133 | 124 | 135 | 131 | 193 | 180 |
| 9 | 146 | 141 | 163 | 141 | 188 | 165 | 138 | 124 | 142 | 133 | 193 | 178 |
| 10 | 145 | 136 | 148 | 136 | 176 | 157 | 137 | 116 | 144 | 139 | 190 | 178 |
| 11 | 135 | 131 | 156 | 136 | 167 | 146 | 134 | 110 | 146 | 138 | 185 | 177 |
| 12 | 154 | 130 | 151 | 130 | 163 | 149 | 121 | 113 | 142 | 137 | 193 | 177 |
| 13 | 153 | 133 | 139 | 129 | 171 | 154 | 124 | 113 | 149 | 138 | 186 | 172 |
| 14 | 152 | 130 | 141 | 135 | 171 | 154 | 131 | 119 | 146 | 138 | 185 | 177 |
| 15 | 142 | 135 | 150 | 140 | 161 | 142 | 131 | 120 | 145 | 138 | 190 | 181 |
| 16 | 145 | 131 | 164 | 148 | 150 | 143 | 131 | 120 | 142 | 136 | 189 | 180 |
| 17 | 134 | 129 | 163 | 149 | 173 | 148 | 128 | 116 | 146 | 139 | 190 | 180 |
| 18 | 138 | 128 | 150 | 144 | 169 | 134 | 126 | 113 | 153 | 145 | 192 | 174 |
| 19 | 141 | 132 | 152 | 145 | 154 | 133 | 124 | 109 | 156 | 147 | 187 | 174 |
| 20 | 140 | 131 | 156 | 150 | 170 | 153 | 119 | 109 | 160 | 149 | 186 | 170 |
| 21 | 138 | 130 | 156 | 148 | 186 | 172 | 121 | 112 | 168 | 157 | 186 | 171 |
| 22 | 137 | 130 | 171 | 146 | 188 | 169 | 125 | 114 | 175 | 166 | 185 | 178 |
| 23 | 133 | 127 | 175 | 167 | 169 | 138 | 121 | 113 | 179 | 169 | 180 | 170 |
| 24 | 133 | 127 | 176 | 167 | 149 | 140 | 123 | 115 | 182 | 170 | 184 | 163 |
| 25 | 138 | 131 | 190 | 166 | 150 | 138 | 122 | 114 | 182 | 173 | 174 | 163 |
| 26 | 133 | 129 | 190 | 179 | 155 | 143 | 121 | 114 | 182 | 174 | 172 | 155 |
| 27 | 132 | 128 | 189 | 172 | 166 | 150 | 122 | 114 | 182 | 174 | 170 | 149 |
| 28 | 137 | 128 | 182 | 168 | 170 | 161 | 125 | 117 | 188 | 176 | 176 | 164 |
| 29 | 144 | 137 | 209 | 183 | 172 | 161 | 132 | 118 | 190 | 180 | 179 | 166 |
| 30 | 151 | 143 | 213 | 191 | 169 | 151 | 132 | 122 | 196 | 186 | 177 | 158 |
| 31 | --- | --- | 190 | 174 | --- | --- | 129 | 120 | 194 | 185 | --- | --- |
| MONTH | 162 | 127 | 213 | 129 | 188 | 133 | 152 | 109 | 196 | 118 | 204 | 149 |

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
|---------|------|----------|------|----------|------|---------|------|----------|------|-----------|------|------|
| OCTOBER | | NOVEMBER | | DECEMBER | | JANUARY | | FEBRUARY | | MARCH | | |
| 1 | 20.5 | 19.5 | 13.5 | 12.5 | 10.0 | 10.0 | 8.0 | 8.0 | 9.0 | 8.5 | 13.0 | 12.0 |
| 2 | 20.0 | 19.0 | 13.5 | 13.0 | 10.0 | 10.0 | 8.5 | 8.0 | 9.0 | 8.5 | 13.0 | 12.5 |
| 3 | 19.5 | 18.5 | 14.0 | 13.0 | 10.0 | 10.0 | 8.0 | 8.0 | 8.5 | 8.5 | 13.0 | 12.5 |
| 4 | 19.5 | 18.5 | 14.0 | 13.0 | 10.5 | 10.0 | 8.0 | 7.5 | 8.5 | 8.0 | 12.5 | 12.5 |
| 5 | 19.0 | 18.5 | 14.0 | 13.5 | 10.5 | 10.0 | 7.5 | 7.0 | 8.5 | 8.0 | 13.0 | 12.0 |
| 6 | 19.0 | 18.0 | 14.0 | 13.5 | 11.0 | 10.5 | 7.5 | 7.5 | 8.5 | 8.0 | 12.5 | 12.0 |
| 7 | 19.0 | 18.0 | 13.5 | 13.5 | 11.0 | 10.5 | 8.0 | 7.5 | 8.5 | 8.0 | 12.5 | 12.0 |
| 8 | 19.0 | 18.0 | 13.5 | 13.0 | 10.5 | 10.5 | 8.5 | 8.0 | 8.0 | 8.0 | 12.5 | 12.0 |
| 9 | 19.0 | 18.5 | 13.5 | 13.0 | 10.5 | 10.5 | 9.5 | 8.5 | 8.0 | 8.0 | 12.5 | 12.0 |
| 10 | 19.5 | 18.5 | 13.5 | 13.0 | 10.5 | 10.5 | 10.5 | 9.5 | 8.5 | 8.0 | 12.0 | 11.5 |
| 11 | 19.0 | 18.5 | 13.5 | 13.0 | 10.0 | 9.5 | 10.5 | 10.0 | 9.0 | 8.5 | 12.0 | 11.5 |
| 12 | 19.0 | 18.5 | 13.0 | 13.0 | 9.5 | 9.0 | 10.0 | 10.0 | 9.5 | 9.0 | 12.0 | 11.5 |
| 13 | 19.0 | 18.0 | 13.5 | 13.0 | 9.0 | 8.5 | 10.5 | 10.0 | 9.5 | 9.0 | 12.0 | 11.5 |
| 14 | 18.5 | 17.5 | 13.5 | 13.0 | 8.5 | 8.5 | 10.5 | 10.5 | 9.0 | 8.0 | 12.0 | 11.5 |
| 15 | 18.5 | 17.5 | 13.0 | 13.0 | 8.5 | 8.0 | 10.5 | 10.0 | 8.0 | 7.5 | 12.5 | 11.5 |
| 16 | 18.0 | 17.0 | 13.0 | 12.5 | 8.5 | 8.0 | 10.0 | 9.5 | 7.5 | 6.5 | 13.0 | 12.5 |
| 17 | 18.5 | 17.5 | 13.0 | 12.5 | 8.5 | 8.0 | 9.5 | 9.0 | 6.5 | 5.5 | 13.5 | 13.0 |
| 18 | 18.5 | 17.5 | 13.0 | 12.5 | 8.5 | 8.0 | 9.0 | 8.5 | 5.5 | 5.0 | 14.0 | 13.0 |
| 19 | 18.5 | 17.5 | 13.0 | 12.5 | 8.5 | 8.0 | 8.5 | 8.0 | 6.0 | 5.5 | 15.0 | 14.0 |
| 20 | 18.5 | 17.5 | 13.0 | 12.5 | 8.5 | 8.0 | 8.0 | 8.0 | 6.5 | 6.0 | 15.5 | 14.5 |
| 21 | 17.5 | 17.0 | 13.0 | 12.5 | 8.5 | 8.0 | 8.0 | 7.5 | 7.0 | 6.5 | 16.5 | 15.0 |
| 22 | 17.5 | 16.5 | 13.0 | 12.5 | 8.0 | 8.0 | 8.0 | 7.5 | 8.0 | 7.0 | 17.0 | 16.0 |
| 23 | 16.5 | 16.0 | 12.5 | 12.5 | 8.0 | 8.0 | 8.0 | 7.5 | 9.0 | 8.0 | 17.5 | 16.0 |
| 24 | 16.0 | 15.5 | 12.5 | 12.5 | 8.0 | 7.5 | 8.0 | 7.5 | 9.5 | 9.0 | 17.5 | 16.5 |
| 25 | 15.5 | 15.0 | 12.5 | 12.5 | 8.0 | 7.5 | 8.0 | 8.0 | 10.5 | 9.5 | 17.5 | 16.5 |
| 26 | 15.0 | 14.0 | 12.5 | 12.0 | 8.0 | 7.5 | 8.0 | 7.5 | 11.5 | 10.5 | 17.0 | 16.5 |
| 27 | 14.5 | 14.0 | 12.0 | 11.5 | 7.5 | 7.5 | 8.0 | 7.5 | 12.0 | 11.0 | 17.0 | 16.5 |
| 28 | 14.0 | 13.5 | 11.5 | 11.0 | 7.5 | 7.5 | 8.0 | 7.5 | 12.5 | 11.5 | 17.0 | 16.5 |
| 29 | 13.5 | 13.0 | 11.0 | 10.5 | 8.0 | 7.5 | 8.5 | 7.5 | --- | --- | 17.0 | 16.5 |
| 30 | 13.5 | 13.0 | 10.5 | 10.0 | 8.0 | 7.5 | 9.0 | 8.5 | --- | --- | 16.5 | 16.0 |
| 31 | 13.0 | 12.5 | --- | --- | 8.0 | 7.5 | 9.0 | 8.5 | --- | --- | 16.5 | 16.0 |
| MONTH | 20.5 | 12.5 | 14.0 | 10.0 | 11.0 | 7.5 | 10.5 | 7.0 | 12.5 | 5.0 | 17.5 | 11.5 |
| DAY | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN |
| APRIL | | MAY | | JUNE | | JULY | | AUGUST | | SEPTEMBER | | |
| 1 | 16.0 | 16.0 | 18.0 | 14.0 | 17.5 | 16.5 | 22.5 | 21.5 | 24.0 | 23.0 | 22.5 | 21.5 |
| 2 | 16.0 | 15.5 | 18.5 | 16.5 | 18.0 | 17.5 | 21.5 | 20.5 | 24.0 | 23.0 | 22.5 | 21.5 |
| 3 | 16.0 | 15.5 | 19.0 | 16.5 | 18.0 | 17.5 | 21.5 | 20.5 | 24.0 | 23.5 | 22.5 | 21.5 |
| 4 | 16.5 | 16.0 | 21.5 | 18.5 | 19.5 | 18.0 | 21.5 | 20.5 | 24.0 | 23.5 | 22.5 | 21.5 |
| 5 | 16.5 | 16.0 | 21.5 | 20.0 | 21.0 | 19.5 | 21.5 | 20.0 | 24.5 | 23.5 | 22.5 | 22.0 |
| 6 | 16.5 | 16.0 | 21.5 | 20.5 | 22.0 | 20.5 | 21.5 | 20.5 | 25.0 | 24.0 | 22.5 | 22.0 |
| 7 | 16.0 | 15.5 | 21.5 | 21.0 | 22.5 | 21.0 | 22.0 | 20.5 | 25.5 | 24.5 | 22.5 | 21.5 |
| 8 | 15.5 | 15.0 | 21.5 | 21.0 | 23.5 | 22.0 | 22.0 | 20.5 | 25.5 | 25.0 | 22.0 | 21.5 |
| 9 | 15.0 | 14.5 | 21.0 | 20.0 | 24.0 | 23.0 | 22.0 | 20.5 | 25.5 | 25.5 | 22.0 | 21.5 |
| 10 | 15.0 | 14.5 | 20.5 | 19.5 | 23.5 | 23.0 | 23.0 | 21.0 | 25.5 | 25.0 | 22.5 | 21.5 |
| 11 | 16.0 | 15.0 | 19.5 | 19.0 | 23.0 | 22.0 | 23.0 | 21.5 | 25.0 | 25.0 | 22.5 | 21.5 |
| 12 | 16.5 | 15.5 | 19.0 | 18.5 | 22.5 | 21.5 | 23.0 | 22.0 | 25.0 | 24.5 | 22.5 | 21.5 |
| 13 | 16.5 | 16.0 | 19.0 | 18.0 | 22.0 | 21.5 | 23.5 | 22.5 | 24.5 | 24.0 | 22.0 | 21.5 |
| 14 | 17.0 | 16.0 | 19.5 | 18.0 | 22.0 | 21.0 | 24.5 | 23.5 | 24.0 | 23.0 | 22.0 | 21.0 |
| 15 | 17.0 | 16.5 | 19.5 | 18.5 | 21.0 | 20.0 | 24.0 | 23.5 | 23.0 | 22.0 | 21.5 | 21.0 |
| 16 | 17.0 | 16.5 | 20.0 | 19.0 | 20.5 | 20.0 | 24.0 | 23.0 | 22.5 | 22.0 | 21.5 | 21.0 |
| 17 | 16.5 | 15.5 | 20.0 | 19.0 | 20.5 | 19.5 | 24.0 | 23.0 | 22.5 | 22.0 | 22.0 | 21.0 |
| 18 | 16.5 | 15.5 | 19.5 | 18.0 | 20.5 | 19.5 | 23.5 | 23.0 | 22.0 | 22.0 | 22.0 | 21.0 |
| 19 | 16.5 | 16.0 | 19.0 | 17.5 | 21.5 | 20.0 | 23.5 | 22.5 | 22.0 | 22.0 | 21.5 | 21.0 |
| 20 | 16.5 | 16.0 | 18.0 | 17.0 | 22.5 | 21.0 | 24.0 | 23.0 | 22.0 | 22.0 | 21.5 | 21.0 |
| 21 | 16.5 | 16.0 | 17.5 | 17.0 | 23.5 | 22.0 | 24.5 | 23.5 | 22.5 | 22.0 | 21.5 | 21.0 |
| 22 | 16.5 | 16.5 | 18.0 | 17.0 | 23.5 | 22.5 | 24.5 | 23.5 | 22.5 | 22.0 | 21.5 | 21.0 |
| 23 | 16.5 | 16.0 | 18.0 | 17.5 | 22.5 | 21.5 | 24.0 | 23.0 | 23.0 | 22.5 | 21.5 | 21.0 |
| 24 | 16.5 | 16.0 | 18.5 | 17.5 | 21.5 | 21.0 | 23.5 | 22.5 | 22.5 | 22.0 | 21.5 | 21.0 |
| 25 | 17.0 | 16.5 | 19.0 | 18.0 | 21.5 | 20.5 | 23.0 | 22.0 | 22.0 | 21.0 | 21.5 | 21.0 |
| 26 | 17.5 | 17.0 | 18.5 | 18.5 | 21.5 | 20.5 | 23.0 | 22.0 | 21.5 | 21.0 | 22.0 | 20.5 |
| 27 | 17.5 | 17.5 | 18.5 | 18.0 | 22.0 | 21.0 | 23.5 | 22.5 | 21.5 | 20.5 | 22.0 | 20.5 |
| 28 | 18.0 | 17.5 | 18.0 | 18.0 | 22.5 | 21.5 | 24.0 | 23.0 | 21.5 | 21.0 | 22.5 | 21.0 |
| 29 | 18.5 | 17.5 | 18.0 | 17.5 | 23.5 | 22.0 | 24.0 | 23.0 | 22.0 | 21.0 | 22.0 | 21.5 |
| 30 | 18.0 | 17.5 | 18.0 | 17.5 | 23.0 | 22.5 | 24.0 | 23.0 | 22.5 | 21.5 | 22.5 | 21.5 |
| 31 | --- | --- | 17.0 | 16.5 | --- | --- | 24.0 | 23.0 | 22.5 | 21.5 | --- | --- |
| MONTH | 18.5 | 12.5 | 21.5 | 14.0 | 24.0 | 16.5 | 24.5 | 20.0 | 25.5 | 20.5 | 22.5 | 20.5 |

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCEN- TRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|---------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| OCTOBER | | | NOVEMBER | | | DECEMBER | | | |
| 1 | 12400 | 20 | 670 | 11200 | 8 | 242 | 15200 | 8 | 328 |
| 2 | 12000 | 30 | 972 | 11800 | 9 | 287 | 14600 | 12 | 473 |
| 3 | 11800 | 27 | 860 | 12500 | 9 | 304 | 14800 | 16 | 639 |
| 4 | 11200 | 22 | 665 | 12500 | 10 | 337 | 15300 | 17 | 702 |
| 5 | 11200 | 16 | 484 | 13400 | 10 | 362 | 15500 | 14 | 586 |
| 6 | 10800 | 13 | 379 | 13900 | 10 | 375 | 15500 | 13 | 544 |
| 7 | 11700 | 14 | 442 | 13900 | 12 | 450 | 16000 | 13 | 562 |
| 8 | 12300 | 15 | 498 | 13800 | 14 | 522 | 17000 | 12 | 551 |
| 9 | 12300 | 16 | 531 | 13600 | 16 | 588 | 17700 | 24 | 1150 |
| 10 | 12200 | 14 | 461 | 13500 | 12 | 437 | 18000 | 24 | 1170 |
| 11 | 12700 | 17 | 583 | 13400 | 8 | 289 | 17700 | 8 | 382 |
| 12 | 14100 | 22 | 838 | 13600 | 14 | 514 | 16600 | 7 | 314 |
| 13 | 14900 | 13 | 523 | 14500 | 15 | 587 | 16000 | 6 | 259 |
| 14 | 15000 | 12 | 486 | 14900 | 16 | 644 | 15600 | 7 | 295 |
| 15 | 15500 | 16 | 670 | 15300 | 18 | 744 | 15400 | 9 | 374 |
| 16 | 14700 | 19 | 754 | 15300 | 17 | 702 | 15200 | 11 | 451 |
| 17 | 14300 | 23 | 888 | 15600 | 16 | 674 | 15000 | 12 | 486 |
| 18 | 14200 | 16 | 613 | 16200 | 14 | 612 | 14700 | 16 | 635 |
| 19 | 14400 | 15 | 583 | 16400 | 11 | 487 | 14400 | 8 | 311 |
| 20 | 14500 | 15 | 587 | 16400 | 9 | 399 | 14000 | 9 | 340 |
| 21 | 15500 | 14 | 586 | 16300 | 8 | 352 | 13900 | 8 | 300 |
| 22 | 15700 | 14 | 593 | 16100 | 7 | 304 | 13900 | 6 | 225 |
| 23 | 16300 | 14 | 616 | 15700 | 8 | 339 | 13900 | 5 | 188 |
| 24 | 17900 | 19 | 918 | 15400 | 8 | 333 | 13800 | 6 | 224 |
| 25 | 19800 | 24 | 1280 | 15700 | 8 | 339 | 13900 | 4 | 150 |
| 26 | 21100 | 25 | 1420 | 17400 | 14 | 658 | 13700 | 5 | 185 |
| 27 | 20600 | 26 | 1450 | 17700 | 12 | 573 | 14000 | 6 | 227 |
| 28 | 17300 | 27 | 1260 | 17300 | 10 | 467 | 15400 | 7 | 291 |
| 29 | 13800 | 28 | 1040 | 16100 | 10 | 435 | 16500 | 8 | 356 |
| 30 | 11600 | 29 | 908 | 15500 | 17 | 711 | 17000 | 13 | 597 |
| 31 | 10700 | 10 | 289 | --- | --- | --- | 17100 | 16 | 739 |
| TOTAL | 442500 | --- | 22847 | 444900 | --- | 14067 | 477300 | --- | 14034 |
| JANUARY | | | FEBRUARY | | | MARCH | | | |
| 1 | 16900 | 15 | 684 | 12400 | 15 | 502 | 11600 | 18 | 564 |
| 2 | 17000 | 19 | 872 | 13700 | 18 | 666 | 11600 | 18 | 564 |
| 3 | 15900 | 16 | 687 | 13500 | 20 | 729 | 11800 | 18 | 573 |
| 4 | 15500 | 13 | 544 | 14200 | 22 | 843 | 11900 | 18 | 578 |
| 5 | 14900 | 10 | 402 | 14700 | 18 | 714 | 14300 | 19 | 734 |
| 6 | 14500 | 7 | 274 | 15200 | 17 | 698 | 16800 | 21 | 953 |
| 7 | 14900 | 6 | 241 | 15700 | 16 | 678 | 17600 | 22 | 1050 |
| 8 | 15900 | 6 | 258 | 15100 | 22 | 897 | 17200 | 22 | 1020 |
| 9 | 17000 | 9 | 413 | 14300 | 48 | 1850 | 15300 | 22 | 909 |
| 10 | 23500 | 60 | 3810 | 13300 | 40 | 1440 | 13800 | 14 | 522 |
| 11 | 24500 | 158 | 10500 | 12500 | 32 | 1080 | 13900 | 14 | 525 |
| 12 | 20700 | 150 | 8380 | 11900 | 24 | 771 | 14500 | 13 | 509 |
| 13 | 21600 | 74 | 4320 | 11600 | 16 | 501 | 15200 | 18 | 739 |
| 14 | 26300 | 57 | 4050 | 11600 | 13 | 407 | 14700 | 24 | 953 |
| 15 | 34200 | 140 | 12900 | 10600 | 10 | 286 | 13300 | 24 | 862 |
| 16 | 36900 | 215 | 21400 | 11600 | 20 | 626 | 12600 | 36 | 1220 |
| 17 | 32000 | 147 | 12700 | 17300 | 68 | 3180 | 11700 | 21 | 663 |
| 18 | 28500 | 95 | 7310 | 19100 | 100 | 5160 | 11400 | 12 | 369 |
| 19 | 25600 | 68 | 4700 | 18000 | 31 | 1510 | 11200 | 18 | 544 |
| 20 | 21900 | 56 | 3310 | 16300 | 19 | 836 | 10800 | 15 | 437 |
| 21 | 18900 | 45 | 2300 | 14700 | 18 | 714 | 10400 | 11 | 309 |
| 22 | 16700 | 24 | 1080 | 13900 | 15 | 563 | 10600 | 8 | 229 |
| 23 | 14900 | 17 | 684 | 13500 | 13 | 474 | 11000 | 10 | 297 |
| 24 | 14100 | 15 | 571 | 13200 | 17 | 606 | 11000 | 8 | 238 |
| 25 | 13200 | 14 | 499 | 12800 | 14 | 484 | 11300 | 8 | 244 |
| 26 | 12400 | 12 | 402 | 12200 | 16 | 527 | 11900 | 12 | 386 |
| 27 | 12300 | 13 | 432 | 12000 | 18 | 583 | 11400 | 16 | 492 |
| 28 | 11700 | 16 | 505 | 11600 | 18 | 564 | 12100 | 20 | 653 |
| 29 | 11200 | 16 | 484 | --- | --- | --- | 12600 | 24 | 816 |
| 30 | 10900 | 16 | 471 | --- | --- | --- | 12500 | 22 | 742 |
| 31 | 11700 | 13 | 411 | --- | --- | --- | 12900 | 24 | 836 |
| TOTAL | 586200 | --- | 105594 | 386500 | --- | 27889 | 398900 | --- | 19530 |

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| DAY | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) | MEAN DISCHARGE (CFS) | MEAN CONCENTRATION (MG/L) | SEDIMENT DISCHARGE (TONS/DAY) |
|-------|----------------------------|---------------------------------|-------------------------------------|----------------------------|---------------------------------|-------------------------------------|----------------------------|---------------------------------|-------------------------------------|
| | APRIL | | | MAY | | | JUNE | | |
| 1 | 13400 | 26 | 941 | 8010 | 12 | 260 | 19300 | 81 | 4220 |
| 2 | 14000 | 20 | 756 | 7410 | 9 | 180 | 20600 | 83 | 4620 |
| 3 | 13900 | 15 | 563 | 6870 | 6 | 111 | 19000 | 86 | 4410 |
| 4 | 12900 | 10 | 348 | 5980 | 5 | 81 | 15900 | 88 | 3780 |
| 5 | 13400 | 14 | 507 | 5380 | 4 | 58 | 11800 | 58 | 1850 |
| 6 | 15000 | 18 | 729 | 5370 | 5 | 72 | 9800 | 28 | 741 |
| 7 | 15800 | 22 | 939 | 6010 | 6 | 97 | 8840 | 28 | 668 |
| 8 | 15900 | 23 | 987 | 6000 | 8 | 130 | 7860 | 27 | 573 |
| 9 | 16000 | 25 | 1080 | 7300 | 6 | 118 | 7880 | 27 | 574 |
| 10 | 16200 | 26 | 1140 | 8440 | 7 | 160 | 8330 | 22 | 495 |
| 11 | 16900 | 28 | 1280 | 8820 | 8 | 191 | 8020 | 14 | 303 |
| 12 | 17600 | 32 | 1520 | 9460 | 9 | 230 | 7480 | 12 | 242 |
| 13 | 17300 | 34 | 1590 | 9600 | 16 | 415 | 7420 | 13 | 260 |
| 14 | 17000 | 33 | 1510 | 9610 | 22 | 571 | 8200 | 14 | 310 |
| 15 | 17900 | 32 | 1550 | 9710 | 25 | 655 | 9170 | 15 | 371 |
| 16 | 18200 | 30 | 1470 | 10300 | 22 | 612 | 9840 | 14 | 372 |
| 17 | 18100 | 26 | 1270 | 10300 | 20 | 556 | 9300 | 14 | 352 |
| 18 | 17700 | 22 | 1050 | 11100 | 17 | 509 | 10300 | 14 | 389 |
| 19 | 17500 | 18 | 850 | 9780 | 14 | 370 | 10600 | 12 | 343 |
| 20 | 17500 | 14 | 661 | 9820 | 13 | 345 | 9930 | 13 | 349 |
| 21 | 16500 | 17 | 757 | 10400 | 11 | 309 | 8890 | 14 | 336 |
| 22 | 15500 | 20 | 837 | 10800 | 8 | 233 | 9460 | 15 | 383 |
| 23 | 15200 | 23 | 944 | 10700 | 14 | 404 | 10400 | 16 | 449 |
| 24 | 15600 | 26 | 1100 | 11900 | 20 | 643 | 10600 | 15 | 429 |
| 25 | 15000 | 12 | 486 | 13000 | 27 | 948 | 10400 | 14 | 393 |
| 26 | 14700 | 17 | 675 | 13900 | 23 | 863 | 9680 | 18 | 470 |
| 27 | 13600 | 22 | 808 | 13500 | 24 | 875 | 8660 | 18 | 421 |
| 28 | 11200 | 20 | 605 | 14800 | 24 | 959 | 8730 | 17 | 401 |
| 29 | 9490 | 18 | 461 | 17300 | 46 | 2150 | 8870 | 16 | 383 |
| 30 | 9150 | 15 | 371 | 20400 | 82 | 4520 | 10300 | 16 | 445 |
| 31 | --- | --- | --- | 20500 | 104 | 5760 | --- | --- | --- |
| TOTAL | 458140 | --- | 27785 | 322470 | --- | 23385 | 315560 | --- | 29332 |
| | JULY | | | AUGUST | | | SEPTEMBER | | |
| 1 | 11800 | 16 | 510 | 14400 | 13 | 505 | 12300 | 27 | 897 |
| 2 | 12600 | 15 | 510 | 14400 | 18 | 700 | 12100 | 34 | 1110 |
| 3 | 12200 | 14 | 461 | 14900 | 23 | 925 | 11400 | 29 | 893 |
| 4 | 12300 | 14 | 465 | 14700 | 28 | 1110 | 11900 | 24 | 771 |
| 5 | 11800 | 16 | 510 | 15400 | 30 | 1250 | 12000 | 17 | 551 |
| 6 | 11200 | 18 | 544 | 16000 | 32 | 1380 | 11900 | 10 | 321 |
| 7 | 11200 | 21 | 635 | e14900 | 24 | e966 | 11900 | 17 | 546 |
| 8 | 11000 | 23 | 683 | e14300 | 17 | e656 | 12000 | 24 | 778 |
| 9 | 11200 | 20 | 605 | e13900 | 9 | e338 | 12000 | 19 | 616 |
| 10 | 12500 | 18 | 607 | e14200 | 12 | e460 | 11100 | 14 | 420 |
| 11 | 14100 | 19 | 723 | e14300 | 12 | e463 | 11300 | 35 | 1070 |
| 12 | 14300 | 19 | 734 | e14100 | 14 | e533 | 11100 | 27 | 809 |
| 13 | 13400 | 20 | 724 | 13700 | 16 | 592 | 11100 | 18 | 539 |
| 14 | 12600 | 20 | 680 | 13300 | 20 | 718 | 10900 | 10 | 294 |
| 15 | 13100 | 20 | 707 | 13800 | 28 | 1040 | 10300 | 10 | 278 |
| 16 | 13900 | 20 | 751 | 14200 | 36 | 1380 | 9900 | 10 | 267 |
| 17 | 14400 | 16 | 622 | 14400 | 34 | 1320 | 9380 | 7 | 177 |
| 18 | 14500 | 12 | 470 | 14500 | 34 | 1330 | 8880 | 5 | 120 |
| 19 | 14800 | 13 | 519 | 14700 | 31 | 1230 | 8800 | 6 | 143 |
| 20 | 15100 | 12 | 489 | 14000 | 28 | 1060 | 8830 | 7 | 167 |
| 21 | 15100 | 12 | 489 | 13800 | 28 | 1040 | 8070 | 8 | 174 |
| 22 | 15000 | 12 | 486 | 13200 | 30 | 1070 | 8470 | 8 | 183 |
| 23 | 15200 | 12 | 492 | 12700 | 22 | 754 | 8060 | 9 | 196 |
| 24 | 15100 | 12 | 489 | 12600 | 20 | 680 | 7880 | 10 | 213 |
| 25 | 14900 | 12 | 483 | 13100 | 18 | 637 | 7560 | 9 | 184 |
| 26 | 14700 | 24 | 953 | 12700 | 17 | 583 | 7850 | 8 | 170 |
| 27 | 14000 | 22 | 832 | 12500 | 16 | 540 | 8210 | 7 | 155 |
| 28 | 14100 | 20 | 761 | 12700 | 9 | 309 | 8710 | 6 | 141 |
| 29 | 14100 | 18 | 685 | 12500 | 12 | 405 | 8710 | 7 | 165 |
| 30 | 14200 | 15 | 575 | 12500 | 14 | 472 | 8270 | 8 | 179 |
| 31 | 14300 | 12 | 463 | 12600 | 21 | 714 | --- | --- | --- |
| TOTAL | 418700 | --- | 18657 | 429000 | --- | 25160 | 300880 | --- | 12527 |
| YEAR | 4981050 | | 340807 | | | | | | |
| | e Estimated. | | | | | | | | |

11449500 KELSEY CREEK NEAR KELSEYVILLE, CA

LOCATION.--Lat 38°55'39", long 122°50'33", in SE 1/4 SE 1/4 sec.34, T.13 N., R.9 W., Lake County, Hydrologic Unit 18020116, on left bank 1.6 mi downstream from Widow Creek and 3.5 mi south of Kelseyville.

DRAINAGE AREA.--36.6 mi².

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1285: 1947-48(M), 1950-52(P). WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,475.44 ft above National Geodetic Vertical Datum of 1929. Prior to July 16, 1955, at site 600 ft upstream at different datum.

REMARKS.--Records good except for periods of estimated daily discharge, which are fair. Some minor diversions upstream from station.

AVERAGE DISCHARGE.--44 years, 72.7 ft³/s, 52,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,200 ft³/s, Jan. 26, 1983, gage height, 13.31 ft; maximum gage height, 13.48 ft, Jan. 5, 1965; minimum daily, 0.18 ft³/s, Aug. 15-23, 25, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|---------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| Oct. 23 | 0830 | *3,080 | *9.78 | | | | |

Minimum daily, 0.83 ft³/s, Aug. 13-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|--------|-------|-------|--------|------|------|-------|-------|-------|------|-------|------|
| 1 | 2.6 | 9.4 | 10 | 6.8 | 30 | 30 | 13 | 7.4 | 66 | 4.0 | 1.1 | 1.5 |
| 2 | 2.8 | 8.9 | 9.7 | 7.3 | 31 | 33 | 13 | e6.9 | 50 | 3.7 | 1.0 | 1.4 |
| 3 | 2.7 | 8.6 | 9.3 | 6.7 | 119 | 35 | 12 | e6.6 | 40 | 3.7 | 1.0 | 1.4 |
| 4 | 2.7 | 8.3 | 9.0 | 6.5 | 124 | 40 | 12 | e6.0 | 33 | 3.6 | 1.0 | 1.3 |
| 5 | 2.5 | 8.2 | 8.8 | 6.4 | 67 | 47 | 12 | e6.0 | 28 | 3.7 | .97 | 1.3 |
| 6 | 2.5 | 8.1 | 8.6 | 6.3 | 70 | 37 | 12 | e6.0 | 24 | 3.9 | .94 | 1.3 |
| 7 | 2.4 | 7.9 | 8.3 | 83 | 52 | 34 | 12 | e5.6 | 22 | 3.6 | .94 | 1.2 |
| 8 | 2.4 | 7.8 | 8.1 | 119 | 45 | 33 | 12 | e5.4 | 19 | 3.2 | .93 | 1.2 |
| 9 | 2.3 | 7.7 | 8.1 | 66 | 40 | 30 | 12 | e5.4 | 17 | 3.0 | .90 | 1.2 |
| 10 | 2.4 | 7.6 | 7.9 | 37 | 35 | 34 | 11 | e5.7 | 16 | 2.7 | .87 | 1.2 |
| 11 | 2.4 | 7.5 | 7.8 | 25 | 32 | 33 | 11 | e5.6 | 14 | 2.5 | .86 | 1.1 |
| 12 | 2.4 | 7.7 | 7.7 | 196 | 29 | 29 | 11 | e5.7 | 13 | 2.3 | .85 | 1.1 |
| 13 | 2.4 | 7.7 | 7.5 | 947 | 26 | 28 | 11 | e5.6 | 13 | 2.2 | .83 | 1.1 |
| 14 | 2.4 | 7.7 | 7.4 | 450 | 24 | 27 | 10 | e5.4 | 12 | 1.9 | .83 | 1.1 |
| 15 | 2.5 | 7.6 | 7.4 | 147 | 23 | 28 | 10 | e5.2 | 11 | 1.8 | .83 | 1.1 |
| 16 | 2.5 | 7.5 | 7.3 | 89 | 327 | 26 | 10 | e4.8 | 10 | 1.8 | .87 | 1.1 |
| 17 | 2.5 | 7.6 | 7.2 | 64 | 148 | 24 | 11 | e4.5 | 9.6 | 1.8 | .90 | 1.1 |
| 18 | 2.5 | 7.5 | 7.2 | 51 | 97 | 23 | 10 | e4.8 | 8.7 | 1.8 | .95 | 1.1 |
| 19 | 2.6 | 7.4 | 7.1 | 42 | 77 | 22 | 10 | e7.0 | 8.1 | 1.7 | 1.0 | 1.2 |
| 20 | 2.6 | 7.4 | 7.0 | 36 | 65 | 20 | 9.9 | e9.5 | 7.4 | 1.8 | 1.1 | 1.2 |
| 21 | 17 | 7.4 | 7.0 | 30 | 57 | 20 | 9.6 | e7.7 | 6.7 | 1.6 | 1.2 | 1.2 |
| 22 | 30 | 7.4 | 7.0 | 27 | 57 | 19 | 9.6 | e8.7 | 6.5 | 1.5 | 1.3 | 1.2 |
| 23 | 639 | 7.4 | 6.8 | 24 | 52 | 18 | 10 | e19 | 6.5 | 1.5 | 1.3 | e1.3 |
| 24 | 127 | 7.8 | 6.8 | 22 | 46 | 17 | 9.8 | e9.8 | 6.2 | 1.4 | 1.2 | e1.3 |
| 25 | 50 | 14 | 6.8 | 20 | 42 | 17 | 9.2 | e7.6 | 5.7 | 1.4 | 1.2 | e1.3 |
| 26 | 27 | 22 | 6.8 | 18 | 39 | 16 | 8.7 | e7.5 | 5.6 | 1.3 | 1.3 | e1.5 |
| 27 | 21 | 21 | 6.5 | 17 | 35 | 15 | 7.6 | e326 | 5.1 | 1.3 | 1.3 | e1.7 |
| 28 | 16 | 15 | 6.6 | 16 | 32 | 15 | 7.4 | e206 | 5.0 | 1.3 | 1.6 | e1.5 |
| 29 | 12 | 12 | 6.6 | 15 | --- | 14 | 7.2 | e78 | 4.7 | 1.2 | 1.6 | e1.5 |
| 30 | 11 | 11 | 6.5 | 24 | --- | 14 | 7.7 | 79 | 4.4 | 1.2 | 1.6 | e1.5 |
| 31 | 10 | --- | 6.5 | 23 | --- | 13 | --- | 115 | --- | 1.1 | 1.5 | --- |
| TOTAL | 1010.1 | 283.1 | 235.3 | 2628.0 | 1821 | 791 | 311.7 | 983.4 | 478.2 | 69.5 | 33.77 | 38.2 |
| MEAN | 32.6 | 9.44 | 7.59 | 84.8 | 65.0 | 25.5 | 10.4 | 31.7 | 15.9 | 2.24 | 1.09 | 1.27 |
| MAX | 639 | 22 | 10 | 947 | 327 | 47 | 13 | 326 | 66 | 4.0 | 1.6 | 1.7 |
| MIN | 2.3 | 7.4 | 6.5 | 6.3 | 23 | 13 | 7.2 | 4.5 | 4.4 | 1.1 | .83 | 1.1 |
| AC-FT | 2000 | 562 | 467 | 5210 | 3610 | 1570 | 618 | 1950 | 949 | 138 | 67 | 76 |

CAL YR 1989 TOTAL 11492.29 MEAN 31.5 MAX 1000 MIN .63 AC-FT 22790
WTR YR 1990 TOTAL 8683.27 MEAN 23.8 MAX 947 MIN .83 AC-FT 17220

e Estimated.

LOCATION.--Lat 39°02'21", long 122°54'44", in NE 1/4 NE 1/4 sec.25, T.14 N., R.10 W., Lake County, Hydrologic Unit 18020116, in concrete block building at 410 Esplanada Street in Lakeport.

PERIOD OF RECORD.--1874-1900 (incomplete), January 1913 to April 1982, October 1984 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,318.26 ft above National Geodetic Vertical Datum of 1929 (California State Land Commission bench mark). Prior to July 8, 1947, nonrecording gage, and July 8, 1947, to Mar. 17, 1949, at municipal wharf at foot of Third Street in Lakeport at datum 0.33 ft higher. Mar. 18, 1949, to Sept. 30, 1967, at private pier at foot of Fourth Street at datum 0.33 ft higher. Gage relocated at same datum, Apr. 20, 1982, and published "at Clearlake" for 1982-84.

REMARKS.--This natural lake is regulated by gates on a dam at outlet, completed in 1915. Capacity between gage heights 0.00 and 7.56 ft, limits stipulated by court decree of 1920, about 319,000 acre-ft. Water is released down natural channel of Cache Creek (see station 14451000) from which it is diverted for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 11.34 ft, Feb. 21, 1986, minimum observed, -3.50 ft, Sept. 24-27, 1920.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 4, 1983, reached a stage of 11.24 ft, present datum, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 3.44 ft, Mar. 28, 29; minimum daily, 0.83 ft, Sept. 30.

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------------|-----------|------|----------|----------|------|------|------|------|------|------|------|------|
| 1 | 1.62 | 1.60 | 1.55 | 1.50 | 2.41 | 3.09 | 3.36 | 3.14 | 2.99 | 2.53 | 1.90 | 1.20 |
| 2 | 1.61 | 1.59 | 1.55 | 1.49 | 2.43 | 3.13 | 3.36 | 3.13 | 2.99 | 2.50 | 1.88 | 1.18 |
| 3 | 1.61 | 1.57 | 1.55 | 1.50 | 2.46 | 3.15 | 3.36 | 3.13 | 2.98 | 2.49 | 1.86 | 1.16 |
| 4 | 1.59 | 1.58 | 1.55 | 1.50 | 2.52 | 3.16 | 3.36 | 3.12 | 2.98 | 2.45 | 1.85 | 1.15 |
| 5 | 1.59 | 1.58 | 1.55 | 1.49 | 2.55 | 3.20 | 3.35 | 3.11 | 2.96 | 2.42 | 1.82 | 1.14 |
| 6 | 1.58 | 1.57 | 1.55 | 1.50 | 2.57 | 3.23 | 3.35 | 3.08 | 2.95 | 2.40 | 1.80 | 1.12 |
| 7 | 1.57 | 1.57 | 1.55 | 1.60 | 2.59 | 3.24 | 3.33 | 3.08 | 2.95 | 2.40 | 1.78 | 1.10 |
| 8 | 1.57 | 1.57 | 1.55 | 1.69 | 2.61 | 3.24 | 3.33 | 3.07 | 2.95 | 2.39 | 1.76 | 1.08 |
| 9 | 1.56 | 1.57 | 1.55 | 1.72 | 2.63 | 3.25 | 3.34 | 3.04 | 2.93 | 2.38 | 1.74 | 1.07 |
| 10 | 1.55 | 1.56 | 1.54 | 1.73 | 2.64 | 3.25 | 3.33 | 3.00 | 2.91 | 2.36 | 1.71 | 1.06 |
| 11 | 1.54 | 1.56 | 1.54 | 1.74 | 2.64 | 3.26 | 3.32 | 2.99 | 2.89 | 2.35 | 1.68 | 1.03 |
| 12 | 1.53 | 1.55 | 1.53 | 1.80 | 2.62 | 3.28 | 3.33 | 2.97 | 2.86 | 2.32 | 1.65 | 1.02 |
| 13 | 1.51 | 1.55 | 1.52 | 1.99 | 2.61 | 3.30 | 3.33 | 2.96 | 2.84 | 2.31 | 1.63 | 1.00 |
| 14 | 1.49 | 1.55 | 1.52 | 2.21 | 2.63 | 3.31 | 3.32 | 2.94 | 2.84 | 2.30 | 1.60 | .97 |
| 15 | 1.49 | 1.54 | 1.52 | 2.27 | 2.63 | 3.32 | 3.31 | 2.93 | 2.82 | 2.28 | 1.55 | .95 |
| 16 | 1.48 | 1.54 | 1.52 | 2.29 | 2.73 | 3.34 | 3.29 | 2.91 | 2.82 | 2.27 | 1.52 | .93 |
| 17 | 1.47 | 1.52 | 1.52 | 2.33 | 2.85 | 3.34 | 3.30 | 2.88 | 2.81 | 2.24 | 1.49 | .93 |
| 18 | 1.46 | 1.54 | 1.51 | 2.34 | 2.90 | 3.35 | 3.29 | 2.86 | 2.79 | 2.22 | 1.44 | .90 |
| 19 | 1.46 | 1.53 | 1.51 | 2.35 | 2.93 | 3.35 | 3.28 | 2.82 | 2.78 | 2.20 | 1.44 | .91 |
| 20 | 1.44 | 1.53 | 1.51 | 2.34 | 2.95 | 3.36 | 3.28 | 2.84 | 2.77 | 2.18 | 1.43 | .90 |
| 21 | 1.46 | 1.52 | 1.51 | 2.35 | 2.98 | 3.37 | 3.27 | 2.83 | 2.76 | 2.16 | 1.41 | .87 |
| 22 | 1.50 | 1.52 | 1.51 | 2.35 | 3.00 | 3.36 | 3.25 | 2.83 | 2.73 | 2.14 | 1.40 | .86 |
| 23 | 1.57 | 1.52 | 1.51 | 2.36 | 3.01 | 3.37 | 3.22 | 2.80 | 2.71 | 2.10 | 1.38 | .85 |
| 24 | 1.63 | 1.51 | 1.51 | 2.36 | 3.03 | 3.37 | 3.23 | 2.80 | 2.69 | 2.06 | 1.33 | .85 |
| 25 | 1.64 | 1.53 | 1.50 | 2.36 | 3.05 | 3.35 | 3.21 | 2.79 | 2.67 | 2.04 | 1.32 | .85 |
| 26 | 1.64 | 1.54 | 1.50 | 2.33 | 3.06 | 3.37 | 3.22 | 2.80 | 2.64 | 2.02 | 1.30 | .85 |
| 27 | 1.64 | 1.56 | 1.49 | 2.35 | 3.07 | 3.37 | 3.21 | 2.88 | 2.60 | 2.00 | 1.28 | .84 |
| 28 | 1.64 | 1.57 | 1.50 | 2.35 | 3.08 | 3.38 | 3.17 | 2.93 | 2.59 | 1.98 | 1.27 | .84 |
| 29 | 1.63 | 1.56 | 1.49 | 2.36 | --- | 3.37 | 3.16 | 2.95 | 2.58 | 1.96 | 1.25 | .84 |
| 30 | 1.61 | 1.55 | 1.49 | 2.36 | --- | 3.36 | 3.16 | 2.95 | 2.56 | 1.94 | 1.23 | .83 |
| 31 | 1.61 | --- | 1.49 | 2.39 | --- | 3.36 | --- | 2.97 | --- | 1.92 | 1.21 | --- |
| MAX | 1.64 | 1.60 | 1.55 | 2.39 | 3.08 | 3.38 | 3.36 | 3.14 | 2.99 | 2.53 | 1.90 | 1.20 |
| MIN | 1.44 | 1.51 | 1.49 | 1.49 | 2.41 | 3.09 | 3.16 | 2.79 | 2.56 | 1.92 | 1.21 | .83 |
| CAL YR 1989 | MEAN 2.83 | | MAX 5.28 | MIN 1.44 | | | | | | | | |
| WTR YR 1990 | MEAN 2.21 | | MAX 3.38 | MIN .83 | | | | | | | | |

11451000 CACHE CREEK NEAR LOWER LAKE, CA

LOCATION.--Lat 38°55'27", long 122°33'53", in sec.6, T.12 N., R.6 W., Lake County, Hydrologic Unit 18020116, on left bank 500 ft downstream from Clear Lake Dam, 1.9 mi downstream from Copsey Creek, and 2.5 mi northeast of Lower Lake.

DRAINAGE AREA.--528 mi².

PERIOD OF RECORD.--May 1944 to current year.

GAGE.--Water-stage recorder and rain gage. Datum of gage is 1,279.64 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 2, 1987, at datum 1.00 ft higher.

REMARKS.--Records fair. Flow completely regulated by Clear Lake (station 11450000) 500 ft upstream.

AVERAGE DISCHARGE (unadjusted).--46 years, 361 ft³/s, 261,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft³/s, Feb. 24, 1958, gage height, 10.40 ft, present datum; no flow Nov. 8-20, 1977, Apr. 5, 6, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.3 ft³/s, Oct 23, gage height, 1.09 ft; minimum daily, 0.19 ft³/s, Dec. 19-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 1 | .77 | .70 | .45 | .23 | .42 | .76 | .35 | .56 | .37 | .80 | 1.3 | 1.3 |
| 2 | .78 | .70 | .41 | .23 | .38 | .70 | .33 | .54 | .37 | .79 | 1.2 | 1.3 |
| 3 | .76 | .70 | .41 | .24 | .42 | .69 | .34 | .47 | .37 | .78 | 1.2 | 1.3 |
| 4 | .78 | .70 | .37 | .25 | .40 | .68 | .33 | .39 | .36 | .79 | 1.2 | 1.3 |
| 5 | .83 | .70 | .35 | .25 | .37 | .68 | .35 | .35 | .36 | .71 | 1.2 | 1.3 |
| 6 | .85 | .70 | .36 | .25 | .38 | .63 | .34 | .32 | .37 | .74 | 1.2 | 1.3 |
| 7 | .82 | .70 | .34 | .31 | .38 | .62 | .37 | .30 | .39 | .78 | 1.2 | 1.3 |
| 8 | .82 | .70 | .32 | .29 | .36 | .62 | .40 | .29 | .42 | .81 | 1.2 | 1.3 |
| 9 | .82 | .70 | .31 | .29 | .36 | .66 | .40 | .32 | .42 | .82 | 1.2 | 1.3 |
| 10 | .84 | .70 | .31 | .28 | .36 | .63 | .41 | .31 | .42 | .79 | 1.2 | 1.3 |
| 11 | .83 | .70 | .30 | .30 | .35 | .62 | .42 | .32 | .43 | .82 | 1.2 | 1.5 |
| 12 | .84 | .70 | .28 | .39 | .34 | .62 | .40 | .37 | .42 | .83 | 1.2 | 1.5 |
| 13 | .83 | .70 | .27 | e.45 | .34 | .63 | .41 | .35 | .38 | .88 | 1.2 | 1.6 |
| 14 | .82 | .70 | .26 | e.45 | .33 | .67 | .41 | .37 | .38 | .91 | 1.2 | 1.6 |
| 15 | .85 | .71 | .26 | e.44 | .31 | .66 | .41 | .42 | .38 | .92 | 1.2 | 1.6 |
| 16 | .87 | .71 | .25 | e.43 | .35 | .59 | .40 | .43 | .41 | .94 | 1.2 | 1.5 |
| 17 | .87 | .70 | .22 | e.43 | .34 | .49 | .39 | .45 | .43 | .96 | 1.2 | 1.6 |
| 18 | .87 | .70 | .21 | .43 | .31 | .48 | .40 | .46 | .41 | 1.0 | 1.2 | 1.7 |
| 19 | .89 | .72 | .19 | .42 | .31 | .43 | .40 | .43 | .47 | 1.1 | 1.2 | 1.6 |
| 20 | .86 | .74 | .19 | .43 | .30 | .43 | .42 | .43 | .49 | 1.1 | 1.4 | 1.6 |
| 21 | .91 | .72 | .19 | .43 | .30 | .46 | .43 | .43 | .50 | 1.2 | 1.4 | 1.7 |
| 22 | .88 | .70 | .19 | .45 | .29 | .46 | .45 | .43 | .50 | 1.2 | 1.3 | 1.7 |
| 23 | 1.0 | .70 | .19 | .47 | .28 | .44 | .46 | .42 | .51 | 1.2 | 1.2 | 1.7 |
| 24 | .83 | .69 | .20 | .48 | .27 | .45 | .48 | .38 | .51 | 1.3 | 1.2 | 1.7 |
| 25 | .79 | .71 | .20 | .48 | .26 | .47 | .49 | .39 | .55 | 1.3 | 1.2 | 1.6 |
| 26 | .78 | .63 | .20 | .46 | .42 | .46 | .50 | .40 | .52 | 1.3 | 1.1 | 1.6 |
| 27 | .78 | .61 | .21 | .44 | .83 | .43 | .52 | .48 | .55 | 1.3 | 1.1 | 1.5 |
| 28 | .78 | .59 | .23 | .43 | .80 | .44 | .54 | .42 | .53 | 1.3 | 1.2 | 1.4 |
| 29 | .77 | .57 | .23 | .42 | --- | .41 | .55 | .38 | .67 | 1.4 | 1.1 | 1.4 |
| 30 | .71 | .55 | .23 | .42 | --- | .40 | .55 | .36 | .82 | 1.4 | 1.2 | 1.4 |
| 31 | .70 | --- | .23 | .42 | --- | .36 | --- | .36 | --- | 1.3 | 1.2 | --- |
| TOTAL | 25.53 | 20.55 | 8.36 | 11.69 | 10.56 | 17.07 | 12.65 | 12.33 | 13.71 | 31.47 | 37.5 | 44.5 |
| MEAN | .82 | .68 | .27 | .38 | .38 | .55 | .42 | .40 | .46 | 1.02 | 1.21 | 1.48 |
| MAX | 1.0 | .74 | .45 | .48 | .83 | .76 | .55 | .56 | .82 | 1.4 | 1.4 | 1.7 |
| MIN | .70 | .55 | .19 | .23 | .26 | .36 | .33 | .29 | .36 | .71 | 1.1 | 1.3 |
| AC-FT | 51 | 41 | 17 | 23 | 21 | 34 | 25 | 24 | 27 | 62 | 74 | 88 |
| a | 4.73 | 1.35 | 0 | 5.70 | 2.57 | 0.85 | 0.27 | 3.73 | 0.03 | 0 | 0.02 | 0.71 |

CAL YR 1989 TOTAL 25413.02 MEAN 69.6 MAX 357 MIN .19 AC-FT 50410
WTR YR 1990 TOTAL 245.92 MEAN .67 MAX 1.7 MIN .19 AC-FT 488

e Estimated.

a Precipitation, in inches.

11451100 NORTH FORK CACHE CREEK AT HOUGH SPRINGS, NEAR CLEARLAKE OAKS, CA

LOCATION.--Lat 39°09'56", long 122°37'08", in SE 1/4 NW 1/4 sec.10, T.15 N., R.7 W., Lake County, Hydrologic Unit 18020116, on right bank 0.5 mi upstream from Spanish Creek, 0.9 mi upstream from Hough Springs, and 10 mi northeast of Clearlake Oaks.

DRAINAGE AREA.--60.2 mi².

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,840 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 13, 1980, at datum 2.0 ft higher. Recording rain gage 4.7 mi northeast of gage. Elevation of rain gage is 2,050 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--19 years, 96.7 ft³/s, 70,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s, Feb. 17, 1986, gage height, 12.84 ft, from rating curve extended above 2,700 ft³/s on basis of slope-area measurement at gage height 11.23 ft; no flow at times in 1972, 1976-77, 1987-88, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|-----------------------------------|---------------------|------|------|-----------------------------------|---------------------|
| May 27 | 1800 | *832 | *5.42 | | | | |

No flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|--------|------|------|-------|--------|-------|-------|------|------|
| 1 | 2.0 | 6.2 | 8.0 | 5.3 | 33 | 55 | 19 | 8.2 | 105 | 6.4 | .21 | .12 |
| 2 | 1.8 | 6.0 | 7.9 | 4.9 | 34 | 66 | 18 | 7.9 | 74 | 6.1 | .17 | .10 |
| 3 | 1.7 | 5.6 | 6.9 | 4.4 | 71 | 78 | 17 | 7.5 | 57 | 6.0 | .19 | .08 |
| 4 | 1.6 | 5.6 | 6.9 | 4.5 | 111 | 86 | 17 | 7.3 | 47 | 5.5 | .22 | .14 |
| 5 | 1.6 | 5.6 | 6.9 | 4.4 | 70 | 91 | 17 | 7.2 | 40 | 5.5 | .15 | .07 |
| 6 | 1.6 | 5.2 | 6.5 | 4.4 | 82 | 75 | 16 | 6.6 | 34 | 5.6 | .09 | .06 |
| 7 | 1.6 | 5.4 | 6.5 | 187 | 63 | 65 | 16 | 6.3 | 31 | 5.1 | .04 | .07 |
| 8 | 1.6 | 5.2 | 6.5 | 140 | 53 | 59 | 16 | 6.2 | 27 | 4.7 | .03 | .06 |
| 9 | 1.6 | 5.2 | 6.1 | 84 | 47 | 53 | 15 | 5.9 | 24 | 4.6 | .02 | .04 |
| 10 | 1.6 | 5.2 | 6.0 | 50 | 43 | 56 | 15 | 5.9 | 22 | 4.1 | .00 | .03 |
| 11 | 1.3 | 5.2 | 5.7 | 33 | 41 | 54 | 14 | 5.8 | 21 | 3.7 | .00 | .02 |
| 12 | 1.3 | 5.2 | 5.6 | 111 | 40 | 49 | 14 | 5.7 | 20 | 3.3 | .00 | .00 |
| 13 | 1.3 | 4.8 | 5.6 | 468 | 36 | 44 | 13 | 5.4 | 19 | 3.0 | .00 | .00 |
| 14 | 1.6 | 4.8 | 5.6 | 297 | 32 | 44 | 13 | 5.4 | 19 | 2.6 | .00 | .00 |
| 15 | 1.6 | 4.8 | 5.6 | 139 | 30 | 49 | 12 | 5.2 | 18 | 2.4 | .01 | .06 |
| 16 | 1.6 | 4.8 | 5.6 | 87 | 116 | 44 | 12 | 4.8 | 17 | 2.1 | .03 | .11 |
| 17 | 1.6 | 4.7 | 5.6 | 62 | 89 | 41 | 12 | 4.6 | 16 | 1.9 | .06 | .14 |
| 18 | 1.6 | 4.4 | 5.5 | 48 | 64 | 38 | 12 | 4.5 | 15 | 1.7 | .05 | .06 |
| 19 | 1.6 | 4.4 | 5.2 | 39 | 55 | 35 | 11 | 4.9 | 14 | 1.7 | .24 | .09 |
| 20 | 1.8 | 4.4 | 5.2 | 33 | 53 | 33 | 11 | 9.8 | 13 | 1.4 | .77 | .05 |
| 21 | 7.7 | 4.4 | 5.2 | 29 | 51 | 31 | 11 | 7.4 | 12 | .99 | .97 | .02 |
| 22 | 8.1 | 4.4 | 5.2 | 26 | 74 | 29 | 11 | 9.4 | 11 | .82 | .57 | .01 |
| 23 | 172 | 4.4 | 4.9 | 24 | 87 | 28 | 12 | 25 | 11 | .67 | .35 | .11 |
| 24 | 47 | 5.0 | 4.8 | 22 | 95 | 27 | 12 | 14 | 10 | .66 | .15 | .73 |
| 25 | 23 | 24 | 4.8 | 21 | 93 | 25 | 10 | 9.8 | 9.4 | .69 | .13 | 1.8 |
| 26 | 13 | 42 | 4.8 | 20 | 82 | 24 | 9.7 | 10 | 8.9 | .68 | .29 | 1.1 |
| 27 | 11 | 18 | 4.8 | 18 | 71 | 23 | 9.4 | 319 | 8.4 | .61 | .76 | 1.1 |
| 28 | 8.9 | 12 | 4.7 | 17 | 61 | 22 | 9.2 | 201 | 7.9 | .51 | .48 | .76 |
| 29 | 7.9 | 9.7 | 4.4 | 17 | --- | 21 | 8.9 | 85 | 7.5 | .38 | .35 | .58 |
| 30 | 6.8 | 8.7 | 4.3 | 31 | --- | 20 | 8.4 | 86 | 7.0 | .33 | .26 | .42 |
| 31 | 6.5 | --- | 4.4 | 36 | --- | 20 | --- | 160 | --- | .25 | .18 | --- |
| TOTAL | 343.9 | 235.3 | 175.7 | 2066.9 | 1777 | 1385 | 391.6 | 1051.7 | 726.1 | 83.99 | 6.77 | 7.93 |
| MEAN | 11.1 | 7.84 | 5.67 | 66.7 | 63.5 | 44.7 | 13.1 | 33.9 | 24.2 | 2.71 | .22 | .26 |
| MAX | 172 | 42 | 8.0 | 468 | 116 | 91 | 19 | 319 | 105 | 6.4 | .97 | 1.8 |
| MIN | 1.3 | 4.4 | 4.3 | 4.4 | 30 | 20 | 8.4 | 4.5 | 7.0 | .25 | .00 | .00 |
| AC-FT | 682 | 467 | 349 | 4100 | 3520 | 2750 | 777 | 2090 | 1440 | 167 | 13 | 16 |
| a | 5.21 | 2.02 | 0.08 | 9.46 | 3.76 | 1.66 | 0 | 5.62 | 0.02 | 0 | 0.40 | 0.48 |

CAL YR 1989 TOTAL 19209.02 MEAN 52.6 MAX 1840 MIN .10 AC-FT 38100
WTR YR 1990 TOTAL 8251.89 MEAN 22.6 MAX 468 MIN .00 AC-FT 16370

a Precipitation, in inches.

11451300 NORTH FORK CACHE CREEK NEAR CLEARLAKE OAKS, CA

LOCATION.--Lat 39°04'50", long 122°32'07", in SE 1/4 SW 1/4 sec.4, T.14 N., R.6 W., Lake County, Hydrologic Unit 18020116, on right bank 2,500 ft downstream from Indian Valley Dam and 8 mi northeast of Clearlake Oaks.

DRAINAGE AREA.--121 mi².

PERIOD OF RECORD.--October 1983 to September 1985 (operated as a low-flow station only), October 1985 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Recording rain gage located on top of Indian Valley Dam.

REMARKS.--No estimated daily discharges. Records fair. Flow completely regulated by Indian Valley Reservoir, capacity 300,000 acre-ft.

AVERAGE DISCHARGE.--5 years (water years 1986-90), 128 ft³/s, 92,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,390 ft³/s, Mar. 12, 1986, gage height, 9.80 ft; minimum daily, 3.0 ft³/s, Feb. 5, 1986.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 26, 1983, reached a stage of 12.74 ft, present datum, discharge about 9,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28 ft³/s, Jan. 21, gage height, 1.87 ft; minimum daily, 3.9 ft³/s, Mar. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 8.3 | 7.4 | 9.8 | 8.9 | 8.0 | 9.5 | 7.1 | 9.3 | 8.6 | 8.2 | 8.9 | 6.7 |
| 2 | 8.5 | 9.6 | 9.9 | 9.2 | 8.0 | 10 | 7.4 | 9.9 | 8.3 | 8.0 | 8.7 | 6.9 |
| 3 | 8.9 | 9.4 | 10 | 9.3 | 8.0 | 6.6 | 8.3 | 9.9 | 8.3 | 8.0 | 7.6 | 7.7 |
| 4 | 8.9 | 8.9 | 10 | 9.3 | 7.6 | 6.9 | 9.4 | 9.9 | 8.2 | 8.2 | 6.6 | 8.2 |
| 5 | 8.9 | 8.9 | 10 | 9.3 | 8.0 | 6.8 | 9.9 | 10 | 8.2 | 8.1 | 6.6 | 8.7 |
| 6 | 8.9 | 8.9 | 10 | 9.3 | 5.1 | 6.1 | 9.9 | 10 | 8.3 | 8.1 | 6.7 | 9.5 |
| 7 | 8.6 | 9.1 | 11 | 10 | 7.1 | 6.5 | 9.9 | 10 | 7.9 | 8.2 | 7.1 | 9.7 |
| 8 | 8.6 | 9.0 | 12 | 9.2 | 8.8 | 6.2 | 9.4 | 10 | 7.8 | 8.3 | 8.3 | 9.9 |
| 9 | 8.6 | 9.7 | 11 | 8.6 | 7.0 | 5.9 | 9.3 | 10 | 8.0 | 8.1 | 8.4 | 9.9 |
| 10 | 8.7 | 11 | 10 | 8.6 | 7.4 | 6.0 | 9.3 | 10 | 8.0 | 8.2 | 8.3 | 9.9 |
| 11 | 8.4 | 11 | 12 | 8.6 | 6.1 | 6.1 | 9.3 | 9.2 | 8.0 | 8.7 | 8.4 | 11 |
| 12 | 8.3 | 11 | 10 | 9.2 | 5.7 | 6.1 | 9.4 | 8.9 | 8.0 | 8.9 | 8.7 | 11 |
| 13 | 8.3 | 11 | 9.9 | 12 | 5.5 | 6.1 | 9.6 | 9.9 | 8.3 | 8.7 | 6.5 | 10 |
| 14 | 8.4 | 11 | 9.9 | 12 | 7.0 | 6.1 | 9.6 | 9.8 | 8.3 | 8.7 | 6.2 | 8.6 |
| 15 | 8.3 | 10 | 9.9 | 11 | 7.5 | 6.2 | 9.6 | 9.3 | 8.4 | 8.6 | 9.8 | 8.4 |
| 16 | 8.3 | 9.4 | 9.6 | 11 | 8.0 | 6.3 | 9.6 | 8.8 | 8.7 | 8.3 | 9.9 | 8.6 |
| 17 | 8.3 | 9.4 | 9.6 | 11 | 7.1 | 5.9 | 9.6 | 8.7 | 8.6 | 8.0 | 9.9 | 9.4 |
| 18 | 8.3 | 9.6 | 9.5 | 9.3 | 6.7 | 11 | 9.6 | 8.7 | 8.8 | 8.3 | 8.9 | 10 |
| 19 | 8.3 | 9.6 | 8.9 | 6.2 | 6.6 | 5.7 | 9.6 | 8.8 | 9.0 | 8.4 | 8.0 | 10 |
| 20 | 8.3 | 9.6 | 8.9 | 6.1 | 5.7 | 3.9 | 9.6 | 9.6 | 9.0 | 8.1 | 8.4 | 10 |
| 21 | 8.0 | 9.3 | 9.1 | 7.8 | 5.4 | 6.2 | 9.6 | 9.6 | 9.0 | 8.0 | 8.6 | 10 |
| 22 | 8.0 | 9.3 | 9.3 | 7.2 | 8.0 | 7.4 | 9.6 | 9.6 | 9.2 | 8.0 | 8.6 | 11 |
| 23 | 7.2 | 9.3 | 9.3 | 7.1 | 7.7 | 7.1 | 9.6 | 9.6 | 9.4 | 8.1 | 8.6 | 11 |
| 24 | 4.6 | 9.3 | 9.3 | 10 | 9.7 | 7.0 | 9.6 | 9.6 | 9.2 | 7.9 | 8.6 | 9.4 |
| 25 | 4.5 | 9.3 | 9.1 | 8.7 | 6.5 | 6.9 | 9.4 | 9.3 | 8.9 | 7.5 | 8.4 | 6.0 |
| 26 | 4.5 | 9.3 | 8.9 | 7.5 | 6.3 | 6.9 | 8.9 | 9.3 | 8.9 | 7.5 | 8.6 | 5.6 |
| 27 | 4.0 | 8.6 | 8.9 | 7.4 | 9.7 | 6.9 | 9.1 | 9.4 | 8.9 | 7.7 | 8.6 | 10 |
| 28 | 6.4 | 7.5 | 8.9 | 7.8 | 9.8 | 6.9 | 9.3 | 9.2 | 8.7 | 7.7 | 8.6 | 9.2 |
| 29 | 7.9 | 9.0 | 8.9 | 8.0 | --- | 6.9 | 9.3 | 8.1 | 8.5 | 7.7 | 8.6 | 8.3 |
| 30 | 6.7 | 9.5 | 8.9 | 8.3 | --- | 6.9 | 9.3 | 8.3 | 8.3 | 8.1 | 7.7 | 8.3 |
| 31 | 4.8 | --- | 8.9 | 8.1 | --- | 7.1 | --- | 8.6 | --- | 8.7 | 6.6 | --- |
| TOTAL | 236.7 | 283.9 | 301.4 | 276.0 | 204.0 | 210.1 | 279.1 | 291.3 | 255.7 | 253.0 | 253.4 | 272.9 |
| MEAN | 7.64 | 9.46 | 9.72 | 8.90 | 7.29 | 6.78 | 9.30 | 9.40 | 8.52 | 8.16 | 8.17 | 9.10 |
| MAX | 8.9 | 11 | 12 | 12 | 9.8 | 11 | 9.9 | 10 | 9.4 | 8.9 | 9.9 | 11 |
| MIN | 4.0 | 7.4 | 8.9 | 6.1 | 5.1 | 3.9 | 7.1 | 8.1 | 7.8 | 7.5 | 6.2 | 5.6 |
| AC-FT | 469 | 563 | 598 | 547 | 405 | 417 | 554 | 578 | 507 | 502 | 503 | 541 |
| a | 2.28 | 0.90 | 0.00 | 5.25 | 1.83 | 0.96 | 0.31 | 2.30 | 0.00 | 0.00 | 0.60 | 0.67 |

CAL YR 1989 TOTAL 38904.8 MEAN 107 MAX 668 MIN 4.0 AC-FT 77170
WTR YR 1990 TOTAL 3117.5 MEAN 8.54 MAX 12 MIN 3.9 AC-FT 6180

a Precipitation, in inches.

11452500 CACHE CREEK AT YOLO, CA

LOCATION.--Lat 38°43'38", long 121°48'22", in Rio Jesus Maria Grant, Yolo County, Hydrologic Unit 18020129, on left bank 35 ft upstream from Interstate 5 highway bridge, 0.5 mi south of Yolo, and 7.3 mi downstream from Moore Dam.

DRAINAGE AREA.--1,139 mi².

PERIOD OF RECORD.--January 1903 to current year. Records for water year 1903 incomplete; yearly estimate published in WSP 1315-A.

WATER TEMPERATURE: Water years 1959-65, November 1966 to February 1967.

SEDIMENT DATA: Water years 1959-65, November 1966 to February 1967 (daily record), 1986 (periodic record).

REVISED RECORDS.--WSP 1315-A: 1914(M). WSP 1345: 1906. WSP 1445: 1955. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. See WSP 2131 for history of changes prior to Apr. 25, 1969. Apr. 25, 1969 to July 1976, at site 765 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Some regulation by Clear Lake (station 11450000) beginning in 1915 and Indian Valley Reservoir beginning in 1974, capacity, 300,000 acre-ft. Diversions for irrigation of about 30,000 acres between Capay and Yolo, from data furnished by Clear Lake Water Co. See schematic diagram of lower Sacramento River basin.

AVERAGE DISCHARGE.--88 years, 529 ft³/s, 383,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,400 ft³/s, Feb. 25, 1958, gage height, 85.35 ft, present datum; maximum stage observed, 88.44 ft, present datum, Mar. 10, 1904; no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,500 ft³/s, Jan. 14, gage height, 52.73 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|------|------|---------|------|--------|------|------|------|------|------|------|
| 1 | .00 | .00 | .00 | .00 | 20 | 46 | .00 | .00 | .00 | .00 | .00 | .00 |
| 2 | .00 | .00 | .00 | .00 | 18 | 47 | .00 | .00 | .00 | .00 | .00 | .00 |
| 3 | .00 | .00 | .00 | .00 | 20 | 49 | .00 | .00 | .00 | .00 | .00 | .00 |
| 4 | .00 | .00 | .00 | .00 | 31 | 49 | .00 | .00 | .00 | .00 | .00 | .00 |
| 5 | .00 | .00 | .00 | .00 | 58 | 53 | .00 | .00 | .00 | .00 | .00 | .00 |
| 6 | .00 | .00 | .00 | .00 | 75 | 51 | .00 | .00 | .00 | .00 | .00 | .00 |
| 7 | .00 | .00 | .00 | .00 | 56 | 55 | .00 | .00 | .00 | .00 | .00 | .00 |
| 8 | .00 | .00 | .00 | .00 | 49 | 48 | .00 | .00 | .00 | .00 | .00 | .00 |
| 9 | .00 | .00 | .00 | .00 | 44 | 42 | .00 | .00 | .00 | .00 | .00 | .00 |
| 10 | .00 | .00 | .00 | 9.7 | 39 | 40 | .00 | .00 | .00 | .00 | .00 | .00 |
| 11 | .00 | .00 | .00 | 13 | 37 | 38 | .00 | .00 | .00 | .00 | .00 | .00 |
| 12 | .00 | .00 | .00 | 9.6 | 33 | 35 | .00 | .00 | .00 | .00 | .00 | .00 |
| 13 | .00 | .00 | .00 | 15 | 28 | 32 | .00 | .00 | .00 | .00 | .00 | .00 |
| 14 | .00 | .00 | .00 | 950 | 24 | 27 | .00 | .00 | .00 | .00 | .00 | .00 |
| 15 | .00 | .00 | .00 | 644 | 21 | 25 | .00 | .00 | .00 | .00 | .00 | .00 |
| 16 | .00 | .00 | .00 | 243 | 39 | 22 | .00 | .00 | .00 | .00 | .00 | .00 |
| 17 | .00 | .00 | .00 | 132 | 222 | 22 | .00 | .00 | .00 | .00 | .00 | .00 |
| 18 | .00 | .00 | .00 | 95 | 259 | 20 | .00 | .00 | .00 | .00 | .00 | .00 |
| 19 | .00 | .00 | .00 | 75 | 164 | 18 | .00 | .00 | .00 | .00 | .00 | .00 |
| 20 | .00 | .00 | .00 | 61 | 115 | 11 | .00 | .00 | .00 | .00 | .00 | .00 |
| 21 | .00 | .00 | .00 | 52 | 95 | 12 | .00 | .00 | .00 | .00 | .00 | .00 |
| 22 | .00 | .00 | .00 | 41 | 84 | 8.2 | .00 | .00 | .00 | .00 | .00 | .00 |
| 23 | .00 | .00 | .00 | 35 | 72 | 7.2 | .00 | .00 | .00 | .00 | .00 | .00 |
| 24 | .00 | .00 | .00 | 32 | 70 | 3.4 | .00 | .00 | .00 | .00 | .00 | .00 |
| 25 | 13 | .00 | .00 | 28 | 66 | 1.2 | .00 | .00 | .00 | .00 | .00 | .00 |
| 26 | 39 | .00 | .00 | 26 | 63 | 2.5 | .00 | .00 | .00 | .00 | .00 | .00 |
| 27 | 21 | .00 | .00 | 25 | 58 | .25 | .00 | .00 | .00 | .00 | .00 | .00 |
| 28 | 8.4 | .00 | .00 | 23 | 52 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 29 | 1.7 | .00 | .00 | 21 | --- | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 30 | .09 | .00 | .00 | 19 | --- | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| 31 | .00 | --- | .00 | 17 | --- | .00 | --- | .00 | --- | .00 | .00 | --- |
| TOTAL | 83.19 | 0.00 | 0.00 | 2566.30 | 1912 | 764.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| MEAN | 2.68 | .000 | .000 | 82.8 | 68.3 | 24.7 | .000 | .000 | .000 | .000 | .000 | .000 |
| MAX | 39 | .00 | .00 | 950 | 259 | 55 | .00 | .00 | .00 | .00 | .00 | .00 |
| MIN | .00 | .00 | .00 | .00 | 18 | .00 | .00 | .00 | .00 | .00 | .00 | .00 |
| AC-FT | 165 | .00 | .00 | 5090 | 3790 | 1520 | .00 | .00 | .00 | .00 | .00 | .00 |

CAL YR 1989 TOTAL 11800.02 MEAN 32.3 MAX 1470 MIN .00 AC-FT 23410
WTR YR 1990 TOTAL 5326.24 MEAN 14.6 MAX 950 MIN .00 AC-FT 10560

11453000 YOLO BYPASS NEAR WOODLAND, CA

LOCATION.--Lat 38°40'40", long 121°38'35", unsurveyed, Yolo County, Hydrologic Unit 18020109, on left bank 300 ft upstream from Sacramento and Woodland railroad bridge, 6 mi upstream from Sacramento Bypass, 6 mi downstream from Fremont weir, and 7 mi east of Woodland.

PERIOD OF RECORD.--October 1939 to current year (since October 1977, high-flow records only). Monthly discharge only for some periods, published in WSP 1315-A.

SEDIMENT DATA: Water years 1957-61, 1980.

GAGE.--Water-stage recorder. Datum of gage is 3.41 ft below National Geodetic Vertical Datum of 1929. Prior to Dec. 17, 1941, nonrecording gage, and Dec. 18-31, 1941, water-stage recorder, at datum 0.73 ft higher. Prior to Sept. 30, 1977, a supplementary water-stage recorder 6 mi downstream at different datum recorded low flow.

REMARKS.--Flow is from Cache Creek and Knights Landing Ridge Cut plus floodwater passing over Fremont weir. Beginning October 1977, only flows above 1,000 ft³/s are computed. See schematic diagram of lower Sacramento River basin.

AVERAGE DISCHARGE.--38 years (water years 1940-77), 3,765 ft³/s, 2,728,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 374,000 ft³/s, Feb. 20, 1986, gage height, 34.87 ft; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--No flows above 1,000 ft³/s for the 1990 water year.

SACRAMENTO RIVER BASIN

11453900 LAKE BERRYESSA NEAR WINTERS, CA

LOCATION.--Lat 38°30'48", long 122°06'13", in SE 1/4 NW 1/4 sec.29, T.8 N., R.2 W., Napa County, Hydrologic Unit 18020117, near center of Monticello Dam on Putah Creek, 7.4 mi west of Winters.

DRAINAGE AREA.--566 mi².

PERIOD OF RECORD.--January 1957 to current year.

REVISED RECORDS.--WSP 1735: 1958-60. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Reclamation).

REMARKS.--Reservoir is formed by concrete arch-gravity dam completed November 1956. Usable capacity, 1,592,000 acre-ft between elevations 253.25 ft, invert of outlet valves, and 440 ft, crest of glory-hole spillway. Dead storage, 10,340 acre-ft. Water is released down Putah Creek and is diverted into Putah South diversion canal for irrigation of about 46,000 acres in the lower Sacramento Valley. Total diverted during current year was 183,801 acre-ft, provided by U.S. Bureau of Reclamation. Releases for irrigation began in May 1959. Records, including extremes, show total contents at 2400 hours. See schematic diagram of lower Sacramento River basin.

COOPERATION.--Records provided by U.S. Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,733,500 acre-ft, Mar. 2, 1983, elevation, 446.67 ft; minimum since irrigation pool first filled, 627,430 acre-ft, Sept. 30, 1990, elevation, 379.61 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 835,540 acre-ft, Mar. 18, 19, elevation, 394.90 ft; minimum, 627,430 acre-ft, Sept. 30, elevation, 379.61 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Provided by U.S. Bureau of Reclamation, from 1956 survey)

| | | | | | | | |
|-----|---------|-----|---------|-----|-----------|-----|-----------|
| 370 | 511,760 | 390 | 765,730 | 410 | 1,068,100 | 430 | 1,414,200 |
| 380 | 632,360 | 400 | 911,200 | 420 | 1,236,000 | 450 | 1,799,900 |

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 2400 HOURS

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 815030 | 806560 | 802140 | 796010 | 816030 | 833510 | 829740 | 797580 | 772730 | 738890 | 694570 | 654550 |
| 2 | 814450 | 806270 | 802000 | 796010 | 816030 | 834090 | 828730 | 796160 | 772730 | 737650 | 693110 | 653390 |
| 3 | 813880 | 805990 | 801860 | 795870 | 816750 | 834530 | 827860 | 794870 | 772590 | 736290 | 691650 | 652360 |
| 4 | 813450 | 805700 | 801710 | 795730 | 818040 | 834960 | 826990 | 793870 | 772310 | 734780 | 690320 | 651070 |
| 5 | 813160 | 805420 | 801570 | 795580 | 818040 | 835100 | 826120 | 792880 | 771890 | 733420 | 688990 | 650040 |
| 6 | 812870 | 805130 | 801430 | 795440 | 818040 | 835100 | 825110 | 791900 | 771610 | 732050 | 687660 | 648750 |
| 7 | 812440 | 804850 | 801290 | 795730 | 818480 | 835100 | 824090 | 790480 | 770630 | 730690 | 686200 | 647460 |
| 8 | 811860 | 804560 | 801140 | 796870 | 818620 | 835100 | 822930 | 789070 | 769790 | 729320 | 684740 | 646170 |
| 9 | 811290 | 803990 | 801000 | 797010 | 818760 | 834960 | 822210 | 787800 | 768810 | 727820 | 683290 | 645270 |
| 10 | 810710 | 803990 | 800860 | 797300 | 818760 | 834960 | 821490 | 786380 | 767550 | 726460 | 681980 | 644500 |
| 11 | 810140 | 803850 | 800720 | 797300 | 818760 | 835100 | 820630 | 784970 | 766290 | 725090 | 680530 | 643480 |
| 12 | 809560 | 803710 | 800430 | 799580 | 818760 | 835250 | 819620 | 783560 | 765030 | 723740 | 679210 | 642330 |
| 13 | 808990 | 803570 | 800150 | 808990 | 818620 | 835250 | 818760 | 782280 | 763920 | 722250 | 677900 | 641050 |
| 14 | 808410 | 803280 | 799860 | 812440 | 818480 | 835250 | 817900 | 780870 | 762670 | 720760 | 676450 | 639900 |
| 15 | 807840 | 803140 | 799580 | 813880 | 818910 | 835250 | 816750 | 779740 | 761280 | 719270 | 675140 | 639010 |
| 16 | 807270 | 802850 | 799290 | 814600 | 824820 | 835250 | 815740 | 778340 | 760030 | 717650 | 673820 | 638110 |
| 17 | 806700 | 802710 | 799150 | 814880 | 828300 | 835390 | 814740 | 777220 | 758640 | 716160 | 672510 | 637220 |
| 18 | 806130 | 802570 | 799010 | 815030 | 829890 | 835540 | 813730 | 775960 | 757250 | 714540 | 671190 | 636320 |
| 19 | 805700 | 802430 | 798860 | 815030 | 829890 | 835540 | 812580 | 774550 | 755860 | 712780 | 670020 | 635430 |
| 20 | 805130 | 802140 | 798720 | 815030 | 831340 | 835390 | 811430 | 773290 | 754470 | 711160 | 668850 | 634540 |
| 21 | 804420 | 802000 | 798580 | 814880 | 831770 | 835250 | 810280 | 771890 | 753360 | 709680 | 667670 | 633770 |
| 22 | 804990 | 801860 | 798440 | 814880 | 832060 | 835100 | 809130 | 771050 | 752390 | 708070 | 666370 | 632870 |
| 23 | 804990 | 801710 | 798010 | 814740 | 832350 | 834960 | 807980 | 769930 | 751140 | 706600 | 665070 | 632110 |
| 24 | 806990 | 802850 | 797720 | 814600 | 832640 | 834670 | 806840 | 768950 | 749770 | 705260 | 663770 | 631350 |
| 25 | 808560 | 803140 | 797580 | 814600 | 832930 | 834380 | 805700 | 767970 | 748110 | 703920 | 662460 | 630720 |
| 26 | 808560 | 803420 | 797440 | 815030 | 833080 | 834090 | 804420 | 766850 | 746600 | 702580 | 661160 | 630340 |
| 27 | 808560 | 803140 | 797150 | 815030 | 833370 | 833510 | 803140 | 766810 | 744950 | 701240 | 659860 | 629710 |
| 28 | 808410 | 802850 | 796870 | 815030 | 833510 | 833220 | 801860 | 772030 | 743570 | 699900 | 658820 | 628950 |
| 29 | 807700 | 802570 | 796580 | 815310 | --- | 832060 | 800570 | 772730 | 742050 | 698560 | 657650 | 628190 |
| 30 | 807130 | 802280 | 796300 | 815460 | --- | 831190 | 798720 | 772730 | 740400 | 697220 | 656490 | 627430 |
| 31 | 806840 | --- | 796010 | 815600 | --- | 830470 | --- | 772730 | --- | 695890 | 655710 | --- |
| MAX | 815030 | 806560 | 802140 | 815600 | 833510 | 835540 | 829740 | 797580 | 772730 | 738890 | 694570 | 654550 |
| MIN | 804420 | 801710 | 796010 | 795440 | 816030 | 830470 | 798720 | 766850 | 740400 | 695890 | 655710 | 627430 |
| a | 392.91 | 392.59 | 392.15 | 393.52 | 394.76 | 394.55 | 392.34 | 390.50 | 388.17 | 384.88 | 381.82 | 379.61 |
| b | -8620 | -4560 | -6270 | +19590 | +17910 | -3040 | -31750 | -25990 | -32330 | -44510 | -40180 | -28280 |
| c | 3287 | 1730 | 1269 | 1381 | 1456 | 3481 | 5238 | 7164 | 8989 | 10247 | 8380 | 6337 |

CAL YR 1989 b -166520

WTR YR 1990 b -188030

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Evaporation, in acre-feet, provided by U.S. Bureau of Reclamation; not reviewed by U.S. Geological Survey.

11454000 PUTAH CREEK NEAR WINTERS, CA

LOCATION.--Lat 38°30'55", long 122°04'51", in NE 1/4 NE 1/4 sec.28, T.8 N., R.2 W., Yolo County, Hydrologic Unit 18020109, on left bank 1 mi downstream from Cold Canyon, 1.3 mi downstream from Monticello Dam, and 6 mi west of Winters.

DRAINAGE AREA.--574 mi².

PERIOD OF RECORD.--July 1930 to current year.

CHEMICAL DATA: Water years 1951-66, 1973-81.

WATER TEMPERATURE: Water years 1966-81.

REVISED RECORDS.--WSP 901: 1937-38(M). WSP 1285: 1932(M), 1935-36(M), 1940(M), 1942-43(M), 1951, 1952(M).

WSP 1565: 1957. WSP 1931: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 160.75 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). June 28, 1930, to Feb. 29, 1940, at datum about 1 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Lake Berryessa (station 11453900) beginning January 1957. See schematic diagram of lower Sacramento River basin.

AVERAGE DISCHARGE.--26 years (water years 1931-56) prior to storage, 477 ft³/s, 345,600 acre-ft/yr; 34 years (water years 1957-90), 570 ft³/s, 413,000 acre-ft/yr, adjusted for change in contents and evaporation from Lake Berryessa; unadjusted flow for same period was 442 ft³/s, 320,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81,000 ft³/s, Feb. 27, 1940, gage height, 30.5 ft, present datum, from rating curve extended above 30,000 ft³/s; no flow Sept. 6-15, 1950, July 26 to Sept. 1, Sept. 6-9, 1955. Since completion of Monticello Dam in 1957, maximum discharge, 18,700 ft³/s, Mar. 2, 1983, gage height, 19.55 ft; minimum daily, 6.1 ft³/s, Dec. 19, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known since at least 1905, that of Feb. 27, 1940, on basis of records for station at Winters.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 721 ft³/s, July 14, gage height, 8.14 ft; minimum daily, 53 ft³/s, Jan. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| 1 | 153 | 89 | 64 | 76 | 57 | 87 | 403 | 529 | 182 | 555 | 586 | 426 |
| 2 | 154 | 89 | 66 | 62 | 57 | 87 | 411 | 528 | 182 | 508 | 623 | 438 |
| 3 | 154 | 91 | 66 | 62 | 59 | 87 | 415 | 517 | 182 | 528 | 639 | 419 |
| 4 | 138 | 90 | 65 | 62 | 72 | 87 | 432 | 522 | 219 | 502 | 607 | 452 |
| 5 | 91 | 90 | 65 | 62 | 88 | 86 | 447 | 533 | 250 | 521 | 553 | 440 |
| 6 | 118 | 90 | 66 | 62 | 88 | 86 | 447 | 534 | 292 | 569 | 528 | 418 |
| 7 | 170 | 91 | 75 | 62 | 88 | 86 | 429 | 534 | 337 | 577 | 559 | 418 |
| 8 | 193 | 94 | 88 | 62 | 88 | 76 | 402 | 532 | 370 | 559 | 556 | 460 |
| 9 | 193 | 94 | 88 | 62 | 88 | 59 | 400 | 530 | 423 | 569 | 525 | 458 |
| 10 | 193 | 94 | 89 | 62 | 74 | 59 | 406 | 567 | 450 | 576 | 547 | 425 |
| 11 | 239 | 94 | 89 | 62 | 60 | 60 | 403 | 575 | 491 | 620 | 522 | 425 |
| 12 | 255 | 94 | 89 | 59 | 60 | 60 | 401 | 558 | 523 | 670 | 490 | 490 |
| 13 | 208 | 94 | 89 | 55 | 60 | 60 | 448 | 536 | 497 | 687 | 489 | 405 |
| 14 | 208 | 90 | 76 | 55 | 60 | 73 | 476 | 509 | 512 | 669 | 488 | 418 |
| 15 | 187 | 66 | 91 | 54 | 60 | 85 | 457 | 519 | 547 | 626 | 491 | 387 |
| 16 | 169 | 66 | 91 | 53 | 67 | 85 | 453 | 545 | 552 | 623 | 497 | 320 |
| 17 | 205 | 66 | 77 | 68 | 66 | 85 | 455 | 592 | 512 | 623 | 482 | 328 |
| 18 | 203 | 67 | 64 | 87 | 63 | 85 | 482 | 623 | 487 | 649 | 469 | 347 |
| 19 | 204 | 67 | 61 | 87 | 62 | 85 | 508 | 587 | 466 | 681 | 477 | 341 |
| 20 | 204 | 67 | 61 | 87 | 61 | 84 | 522 | 529 | 543 | 703 | 469 | 337 |
| 21 | 174 | 67 | 61 | 87 | 60 | 113 | 536 | 494 | 610 | 666 | 468 | 326 |
| 22 | 117 | 76 | 61 | 88 | 60 | 146 | 533 | 507 | 610 | 590 | 450 | 327 |
| 23 | 75 | 86 | 62 | 87 | 60 | 146 | 485 | 483 | 596 | 522 | 486 | 306 |
| 24 | 63 | 86 | 65 | 87 | 60 | 158 | 479 | 451 | 586 | 484 | 529 | 278 |
| 25 | 63 | 78 | 65 | 87 | 60 | 169 | 542 | 450 | 618 | 521 | 492 | 278 |
| 26 | 61 | 66 | 65 | 73 | 68 | 169 | 572 | 450 | 636 | 528 | 429 | 279 |
| 27 | 62 | 66 | 79 | 57 | 87 | 204 | 567 | 347 | 642 | 506 | 445 | 277 |
| 28 | 63 | 66 | 93 | 57 | 87 | 325 | 569 | 253 | 617 | 484 | 465 | 272 |
| 29 | 72 | 66 | 93 | 58 | --- | 392 | 565 | 252 | 627 | 484 | 444 | 272 |
| 30 | 86 | 65 | 91 | 58 | --- | 431 | 546 | 230 | 625 | 489 | 433 | 243 |
| 31 | 87 | --- | 89 | 58 | --- | 423 | --- | 183 | --- | 525 | 418 | --- |
| TOTAL | 4562 | 2405 | 2344 | 2098 | 1920 | 4238 | 14191 | 14999 | 14184 | 17814 | 15656 | 11010 |
| MEAN | 147 | 80.2 | 75.6 | 67.7 | 68.6 | 137 | 473 | 484 | 473 | 575 | 505 | 367 |
| MAX | 255 | 94 | 93 | 88 | 88 | 431 | 572 | 623 | 642 | 703 | 639 | 490 |
| MIN | 61 | 65 | 61 | 53 | 57 | 59 | 400 | 183 | 182 | 484 | 418 | 243 |
| AC-FT | 9050 | 4770 | 4650 | 4160 | 3810 | 8410 | 28150 | 29750 | 28130 | 35330 | 31050 | 21840 |

CAL YR 1989 TOTAL 111728 MEAN 306 MAX 729 MIN 61 AC-FT 221600 MEAN a 162 AC-FT a 117100
WTR YR 1990 TOTAL 105421 MEAN 289 MAX 703 MIN 53 AC-FT 209100 MEAN a 111 AC-FT a 80000

a Adjusted for change in contents and evaporation from Lake Berryessa.

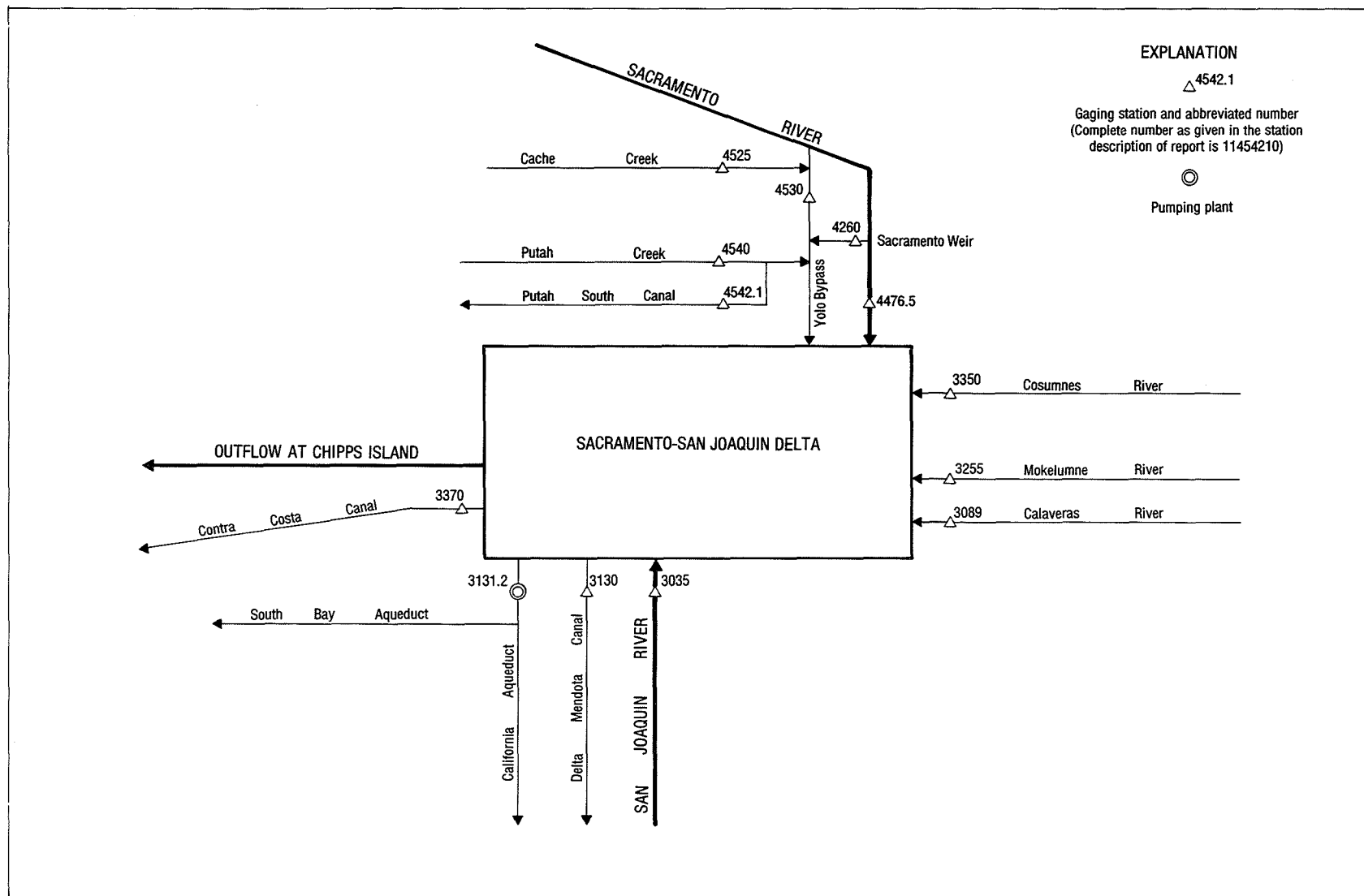


Figure 39. Principal inflows and diversions, Sacramento-San Joaquin Delta.

SACRAMENTO-SAN JOAQUIN DELTA, INFLOWS AND DIVERSIONS

LOCATION.--See schematic diagram of inflows and diversions, Sacramento-San Joaquin Delta.

PERIOD OF RECORD.--October 1971 to current year. Data for periods prior to October 1971 can be obtained from published records for stations tabulated below.

REMARKS.--Minor inflow streams and diversions are not included. The total for water year may not equal the sum of the individual months because of rounding.

COOPERATION.--Records for Delta-Mendota, Contra Costa, and Putah South Canals provided by U.S. Bureau of Reclamation; Records for California Aqueduct and Sacramento Weir spill provided by California Department of Water Resources; not reviewed by the U.S. Geological Survey.

SUMMARY OF PRINCIPAL INFLOWS AND DIVERSIONS IN THE
SACRAMENTO-SAN JOAQUIN DELTA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

| Inflows, in thousands of acre-feet | | | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|---------------|-------|-------|-------|-------|-------|---------------|
| Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Month Apr. | May | June | July | Aug. | Sept. | Water year |
| 11303500 SAN JOAQUIN RIVER NEAR VERNALIS | | | | | | | | | | | | |
| 86.14 | 83.56 | 84.93 | 76.36 | 75.83 | 108.2 | 77.91 | 78.67 | 66.43 | 62.04 | 63.51 | 52.12 | 915.8 |
| 11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM | | | | | | | | | | | | |
| .18 | 3.03 | 2.94 | .14 | .15 | .18 | .17 | 4.52 | 4.95 | 4.96 | 5.64 | 3.24 | 30.11 |
| 11325500 MOKELUMNE RIVER AT WOODBRIDGE | | | | | | | | | | | | |
| 2.12 | 7.36 | 2.37 | 2.31 | 2.26 | 1.17 | 1.27 | 1.85 | 1.49 | 1.50 | 1.61 | 1.63 | 27.06 |
| 11335000 COSUMNES RIVER AT MICHIGAN BAR | | | | | | | | | | | | |
| 3.46 | 4.00 | 3.34 | 8.21 | 11.83 | 26.88 | 16.27 | 8.09 | 6.35 | 1.29 | .29 | .22 | 90.22 |
| 11426000 SACRAMENTO WEIR SPILL | | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11447650 SACRAMENTO RIVER AT FREEPORT | | | | | | | | | | | | |
| 877.7 | 885.0 | 946.7 | 1163 | 768.2 | 791.6 | 908.7 | 639.6 | 625.9 | 827.7 | 850.9 | 596.8 | 9882 |
| 11453000 YOLO BYPASS NEAR WOODLAND ¹ | | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11454000 PUTAH CREEK NEAR WINTERS | | | | | | | | | | | | |
| 9.05 | 4.77 | 4.65 | 4.16 | 3.81 | 8.41 | 28.15 | 29.75 | 28.13 | 35.33 | 31.05 | 21.84 | 209.1 |
| TOTAL | | | | | | | | | | | | |
| 978.6 | 987.8 | 1045 | 1254 | 862.1 | 936.4 | 1032 | 762.5 | 733.2 | 932.8 | 953.0 | 675.8 | 11150 |
| Diversion, in thousands of acre-feet | | | | | | | | | | | | |
| Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Month Apr. | May | June | July | Aug. | Sept. | Water year |
| 11313000 DELTA-MENDOTA CANAL | | | | | | | | | | | | |
| 259.3 | 247.7 | 252.8 | 254.3 | 227.4 | 252.6 | 253.0 | 170.3 | 177.7 | 225.1 | 186.4 | 190.1 | 2697 |
| 11313120 CALIFORNIA AQUEDUCT (DELTA PUMPING PLANT) | | | | | | | | | | | | |
| 374.2 | 361.1 | 382.0 | 388.6 | 350.8 | 388.8 | 308.9 | 21.23 | 18.34 | 149.5 | 208.3 | 147.2 | 3099 |
| 11337000 CONTRA COSTA CANAL | | | | | | | | | | | | |
| 10.94 | 9.19 | 8.95 | 8.41 | 8.22 | 9.43 | 11.98 | 13.33 | 12.79 | 14.62 | 14.14 | 13.43 | 135.4 |
| 11454210 PUTAH SOUTH CANAL | | | | | | | | | | | | |
| 7.61 | 2.97 | 3.04 | 2.93 | 2.86 | 6.38 | 26.33 | 27.80 | 25.21 | 31.40 | 28.09 | 19.19 | 183.8 |
| TOTAL | | | | | | | | | | | | |
| 652.0 | 621.0 | 646.8 | 654.2 | 589.3 | 657.2 | 600.2 | 232.7 | 234.0 | 420.6 | 436.9 | 369.9 | 6115 |

¹Flow not computed below 1,000 ft³/s.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

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- or flood-flow analyses, depending on the type of data collected.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. The column headed "Period of record" shows the water years in which measurements were made at the same or practically the same site.

Discharge measurements made at low-flow partial-record stations during water year 1990

| Station No. | Station name | Location | Drainage area (mi ²) | Period of record | Measurements | |
|------------------------|------------------------|---|----------------------------------|-------------------------|--------------|--------------------------------|
| | | | | | Date | Discharge (ft ³ /s) |
| Sacramento River basin | | | | | | |
| 11341900 | Dog Creek at Delta, CA | Lat 40°56'17", long 122°25'13", in SE 1/4 NE 1/4 sec.34, T.36 N., R.5 W., Shasta County, Hydrologic Unit 18020005, 0.1 mi upstream from mouth, 0.5 mi southwest of Delta, and 25 mi north of Redding. | 17.3 | a1975, 1976-84, 1986-90 | 10-02-89 | b5.32 |
| | | | | | 10-24-89 | 109 |
| | | | | | 01-09-90 | 86.4 |
| | | | | | 03-02-90 | 37.3 |
| | | | | | 05-02-90 | 9.17 |
| | | | | | 05-23-90 | 443 |
| | | | | | 05-24-90 | 139 |
| | | | | | 06-01-90 | 157 |
| | | | | | 06-12-90 | 52.2 |
| | | | | | 07-02-90 | 15.4 |
| | | | | | 09-06-90 | b5.38 |

a Published as a miscellaneous measurement.

b Base flow.

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

| Multiply inch-pound units | By | To obtain SI units |
|--|------------------------|--|
| <i>Length</i> | | |
| inches (in) | 2.54×10^1 | millimeters (mm) |
| | 2.54×10^{-2} | meters (m) |
| feet (ft) | 3.048×10^{-1} | meters (m) |
| miles (mi) | 1.609×10^0 | kilometers (km) |
| <i>Area</i> | | |
| acres | 4.047×10^3 | square meters (m ²) |
| | 4.047×10^{-1} | square hectometers (hm ²) |
| | 4.047×10^{-3} | square kilometers (km ²) |
| square miles (mi ²) | 2.590×10^0 | square kilometers (km ²) |
| <i>Volume</i> | | |
| gallons (gal) | 3.785×10^0 | liters (L) |
| | 3.785×10^0 | cubic decimeters (dm ³) |
| | 3.785×10^{-3} | cubic meters (m ³) |
| million gallons | 3.785×10^3 | cubic meters (m ³) |
| | 3.785×10^{-3} | cubic hectometers (hm ³) |
| cubic feet (ft ³) | 2.832×10^1 | cubic decimeters (dm ³) |
| | 2.832×10^{-2} | cubic meters (m ³) |
| cfs-days | 2.447×10^3 | cubic meters (m ³) |
| | 2.447×10^{-3} | cubic hectometers (hm ³) |
| acre-feet (acre-ft) | 1.233×10^3 | cubic meters (m ³) |
| | 1.233×10^{-3} | cubic hectometers (hm ³) |
| | 1.233×10^{-6} | cubic kilometers (km ³) |
| <i>Flow</i> | | |
| cubic feet per second (ft ³ /s) | 2.832×10^1 | liters per second (L/s) |
| | 2.832×10^1 | cubic decimeters per second (dm ³ /s) |
| | 2.832×10^{-2} | cubic meters per second (m ³ /s) |
| gallons per minute (gal/min) | 6.309×10^{-2} | liters per second (L/s) |
| | 6.309×10^{-2} | cubic decimeters per second (dm ³ /s) |
| | 6.309×10^{-5} | cubic meters per second (m ³ /s) |
| million gallons per day | 4.381×10^1 | cubic decimeters per second (dm ³ /s) |
| | 4.381×10^{-2} | cubic meters per second (m ³ /s) |
| <i>Mass</i> | | |
| tons (short) | 9.072×10^{-1} | megagrams (Mg) or metric tons |

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