Water Resources Data California Water Year 1987

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-87-4
Prepared in cooperation with the California Department of Water Resources and with other agencies

CALENDAR FOR WATER YEAR 1987

1986

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Water Resources Data California

Water Year 1987

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 and R.G. Simpson

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-87-4
Prepared in cooperation with the California Department of Water Resources and with other agencies

DEPARTMENT OF THE INTERIOR

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U.S. GEOLOGICAL SURVEY

Dallas L. Peck, *Director*

For information on the water program in California write to
District Chief, Water Resources Division
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Sacramento, California 95825

1988

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 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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Supplementary Notes

Prepared in cooperation with the California Department of Water Resources and with other agencies.

Abstract (Limit: 200 words)

Water resources data for the 1987 water year for California consist of records of stage, discharge, and water quality of streams; stage and contents in lakes and reservoirs; and water levels and water quality in wells. Volume 4 contains discharge records for 154 gaging stations; stage and contents for 33 lakes and reservoirs; water precipitation data for 2 stations; and water quality for 5 stations. Also included is one low-flow partial-record station. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in California.

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IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

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

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

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

WATER RESOURCES DATA - CALIFORNIA, WATER YEAR 1987

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, and R.G. Simpson

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State 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 154 streamflow-gaging stations; (2) stage and content records for 33 lakes and reservoirs; and (3) water-quality records for 5 streamflow-gaging stations and 1 low-flow partial-record stations.

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, Federal Center, Building 810, Box 25425, 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-87-4." 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.
Oroville-Wyandotte Irrigation District, Gordon Andoe, President, Board of Directors.
Sacramento Municipal Utility District, John P. Hiltz, Manager.
Sacramento Regional County Sanitation District, John W. Newton, Chief of Administration.
Siskiyou County Flood Control and Water Conservation District, David A. Gavenkamp, Director.
Yolo County Flood Control and Water Conservation District, James F. Eagan, General Manager.
Yuba County Water Agency, Arthur Aseltine, Administrator.

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

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

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

As is common in California, streamflow varied greatly in the 1987 water year--month by month and regionally. The variations were related to differences in precipitation, temperature, topography, and geology. Runoff during the 1987 water year in the area covered by this volume was 46 percent of the 1951-80 median (based on five representative streamflow records). Total runoff in percent of median at selected sites in California is shown in figure 1. Runoff ranged from 32 percent of median at the Susan River at Susanville to 59 percent at the Sacramento River at Keswick. Monthly mean runoff during 1987 water year at four index stations is compared to the 1951-80 maximum, minimum, and median monthly mean runoff in figure 2.

Runoff in California for water year 1987 was about the 10th driest year of this century. The 1987 drought was comparable in intensity to 1920, 1929, 1933, and 1934; it is considered a critically dry year. A persistent high-pressure ridge off the California coast displaced the usual winter storm path, leaving most of the State deficient in precipitation. There were three significant storm periods, Jan. 3-5, Feb. 12-13, and Mar. 13-14. These storms produced no peaks of record and few peaks above base. Unimpaired snowmelt runoff averaged only 35 percent of normal. Warm temperatures in April and early May caused rapid melting, and the snowmelt peak occurred about a month early. Precipitation varied from 74 percent of average at Red Bluff to 40 percent at Paskenta. Precipitation in the area covered by this volume (based on five representative rain gages) was 57 percent of the long-term average.

In late August, as the result of very warm, moist, and unstable subtropical air moving over the State, intense and extensive thunderstorms occurred. These storms produced very little precipitation, but lightning started about 1,000 wildfires in critically dry forests, causing major damage in some river basins.

The water year began with reservoir levels at or above average for October 1, as a result of the February 1986 storm runoff. By the end of the water year, storage in major reservoirs was about 76 percent of the 10-year average. Many small to moderate-sized reservoirs were less than 50 percent of capacity.

Figure 1. - Runoff, in percent of median, for the 1987 water year.

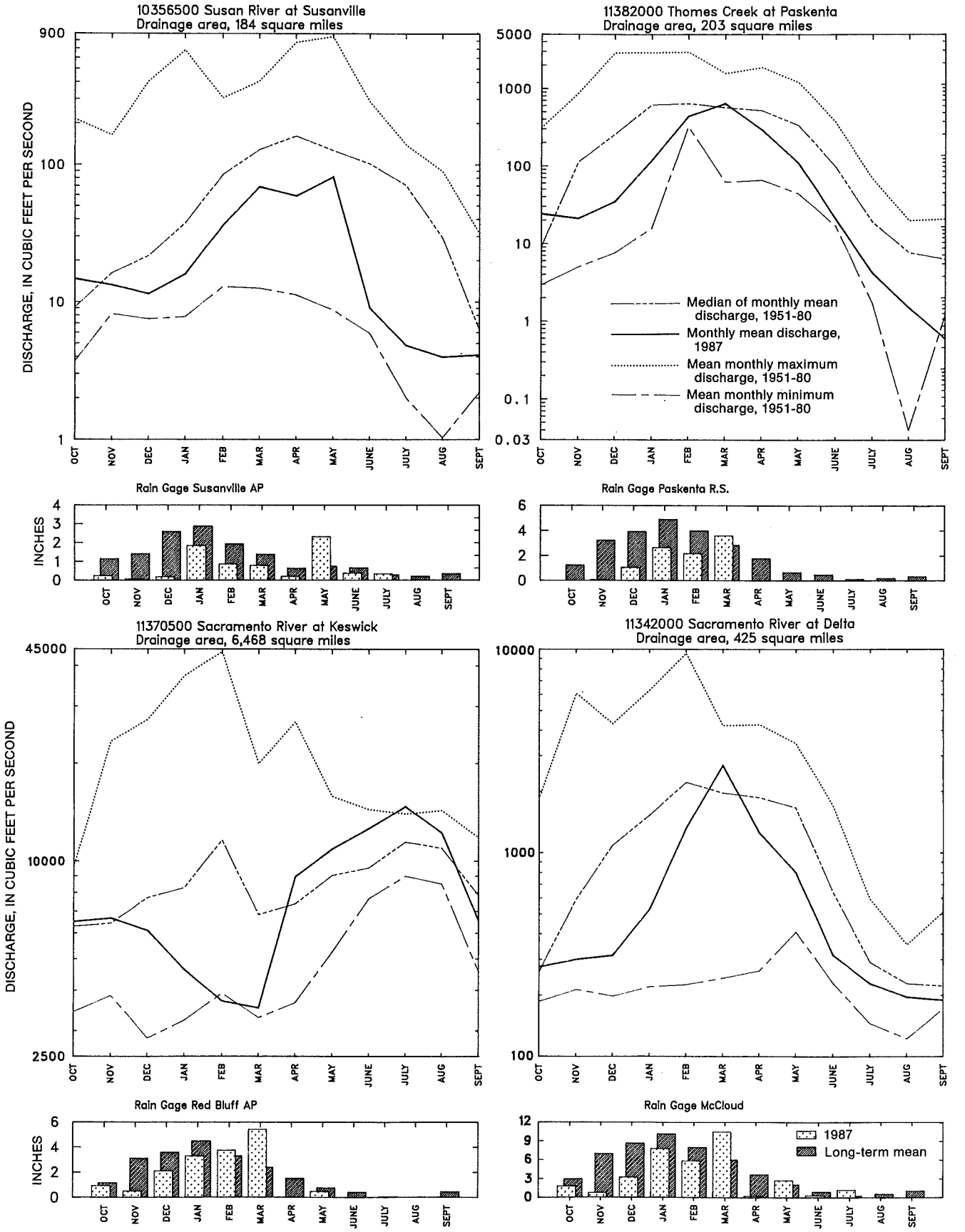

Figure 2. - Comparison of discharge during water year 1987 with long-term discharge statistics and rainfall of four representative gaging stations.

Water Quality

Water samples collected at the three NASQAN stations reported in this volume were analyzed for water-quality constituents. Water quality at these stations changed slightly from the previous year. Median dissolved-solids concentrations increased slightly. The monthly dissolved-solids concentrations during water year 1987 are compared with long-term mean dissolved-solids concentrations at two selected stations in figure 3. There were no chemical-constituent concentrations that exceeded water-quality criteria recommended by the U.S. Environmental Protection Agency.

The largest densities of fecal-coliform and fecal-streptococci bacteria were found in waters sampled from the Sacramento River near Freeport (93 and K38 colonies per 100 milliliter, respectively). These bacterial densities were substantially lower than in 1986.

K Results based on colony count outside the acceptable range (non-ideal colony count).

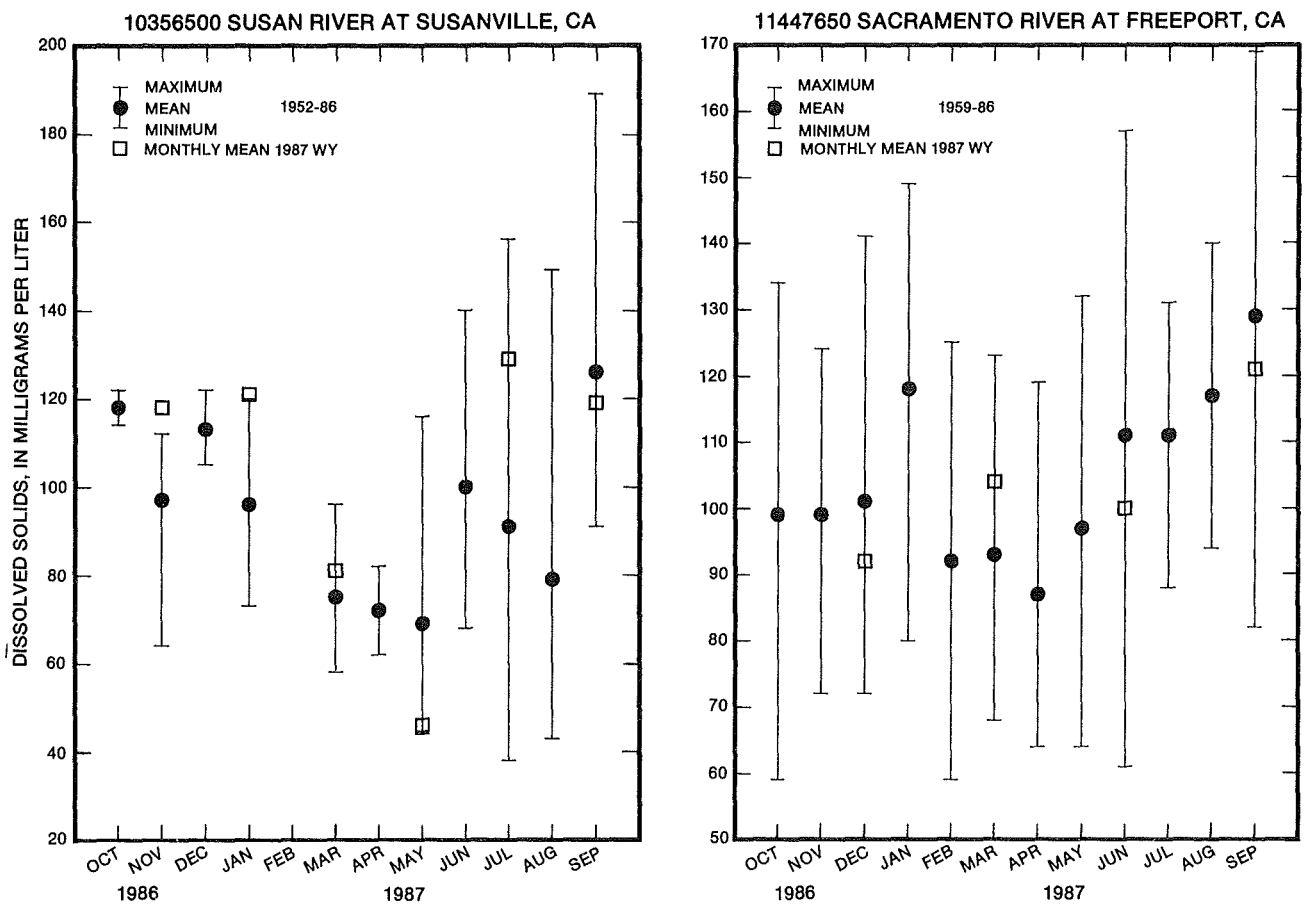

FIGURE 3.--Comparison of monthly mean dissolved-solids concentrations during water year 1987 with long-term dissolved-solids concentrations of two selected stations.

Sediment

Suspended-sediment discharge and concentration 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 central California resulted in significant differences in sediment-discharge rates and concentrations at the sampled streams.

Sediment discharge was significantly below normal during the 1987 water year, as indicated by comparison with the 1968-86 mean sediment discharge at the two long-term daily stations. Annual sediment discharge was 18 percent of the mean for the Feather River near Gridley and 29 percent for the Sacramento River at Freeport.

Annual sediment discharge at the two daily stations ranged from 20,300 tons for the Feather River near Gridley to 690,000 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 watersheds 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 1987 water year that began October 1, 1986, and ended September 30, 1987. 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 locations of the stations where the data were collected are shown in figures 5 through 24. 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 11465350, which appears just to the left of the station name, includes the two-digit part number "11" plus the six-digit downstream-order number "465350." 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. 4).

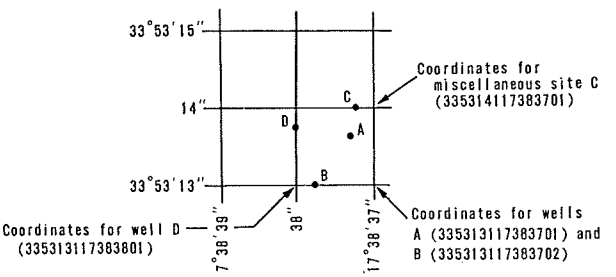

Figure 4.--System for numbering miscellaneous sites (latitude and longitude).

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 and crest-stage partial-record stations for which data are given in this report are shown, by county, in figures 5 through 24.

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 relationship 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 relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. 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 relationships, 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 having 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. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

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 observed 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 ft^3/s, to the nearest tenth between 1.0 and 10 ft^3/s, to whole numbers between 10 and 1,000 ft^3/s, and to three significant figures for more than 1,000 ft^3/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 observed 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 a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be 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 5 through 24.

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 p. 20 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 District office whose address is given on the back of the title page of this report.

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 record, 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 ot 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.

Remark Codes

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

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the 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

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 a variety of 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 °C ± 0.5 °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:

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

From cell volume, total algal biomass expressed as biovolume ($\pi m^3/mL$) 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:

$$\bar{d} = \sum_{i=1}^{s} \frac{n_i}{n} \log 2 \frac{n_i}{n},$$

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

$$I = I_o e^{-\lambda L},$$

where I_o 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

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

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, ug/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, ug/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:

Classification	Size (mm)	Method of analysis
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 [mg C/(m^2.time)] for periphyton and macrophytes and [mg C/(m^3.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 that 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 [mg O_2/(m^2.time)] for periphyton and macrophytes and [mg O_2/(m^3.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 the dissolved-solids content 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 emersed 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."

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, 1987, is called the "1987 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-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.

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-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-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-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. Lium, 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: UGSG--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.

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. Shaffrannek, 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 reported in this volume have been discontinued as of the 1987 water year. Daily streamflow or stage records were collected and published for the period of record shown for each station.

Station No.	Station name	Drainage area (mi^2)	Period of record
11341400	Sacramento River near Mt Shasta	135	1960-87
11407900	Middle Yuba River below Jackson Meadows Dam near Sierra City	38.3	1965-87
11413100	North Yuba River above Slate Creek, near Strawberry Valley	351	1968-87

DISCONTINUED WATER-QUALITY STATIONS

The following water-quality station in California has been discontinued as of the 1987 water year. Continuous daily records of water temperature were collected and published for the period of record shown.

Station No.	Station name	Drainage area (mi^2)	Type of record	Period of record
11341400	Sacramento River near Mt Shasta	135	T	1966-87

Type of record: T (water temperature)

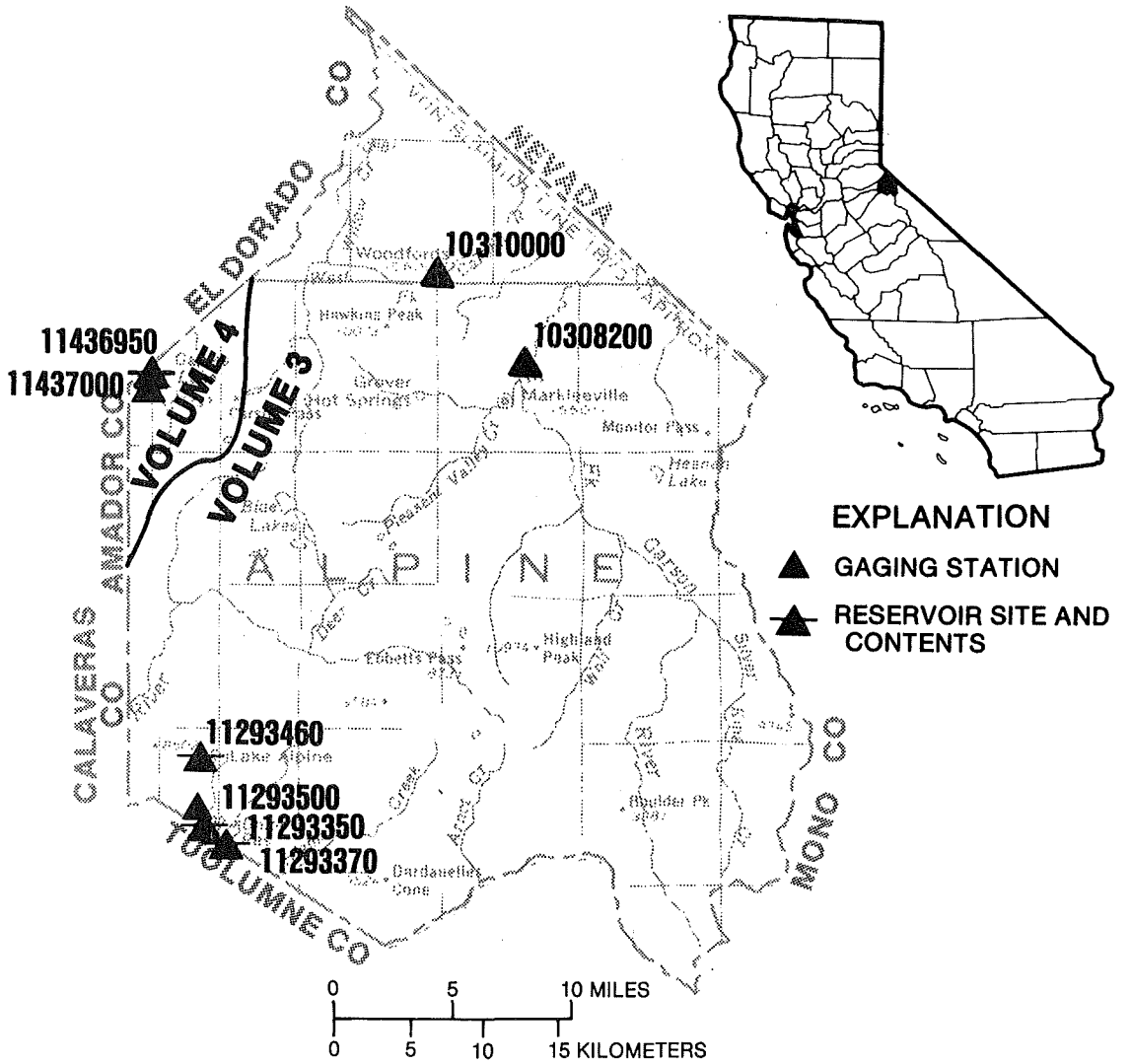

FIGURE 5.--Location of discharge stations in Alpine County.
(Note: Records for stations 10308200, 10310000, and 11293350 through 11293500 published in volume 3)

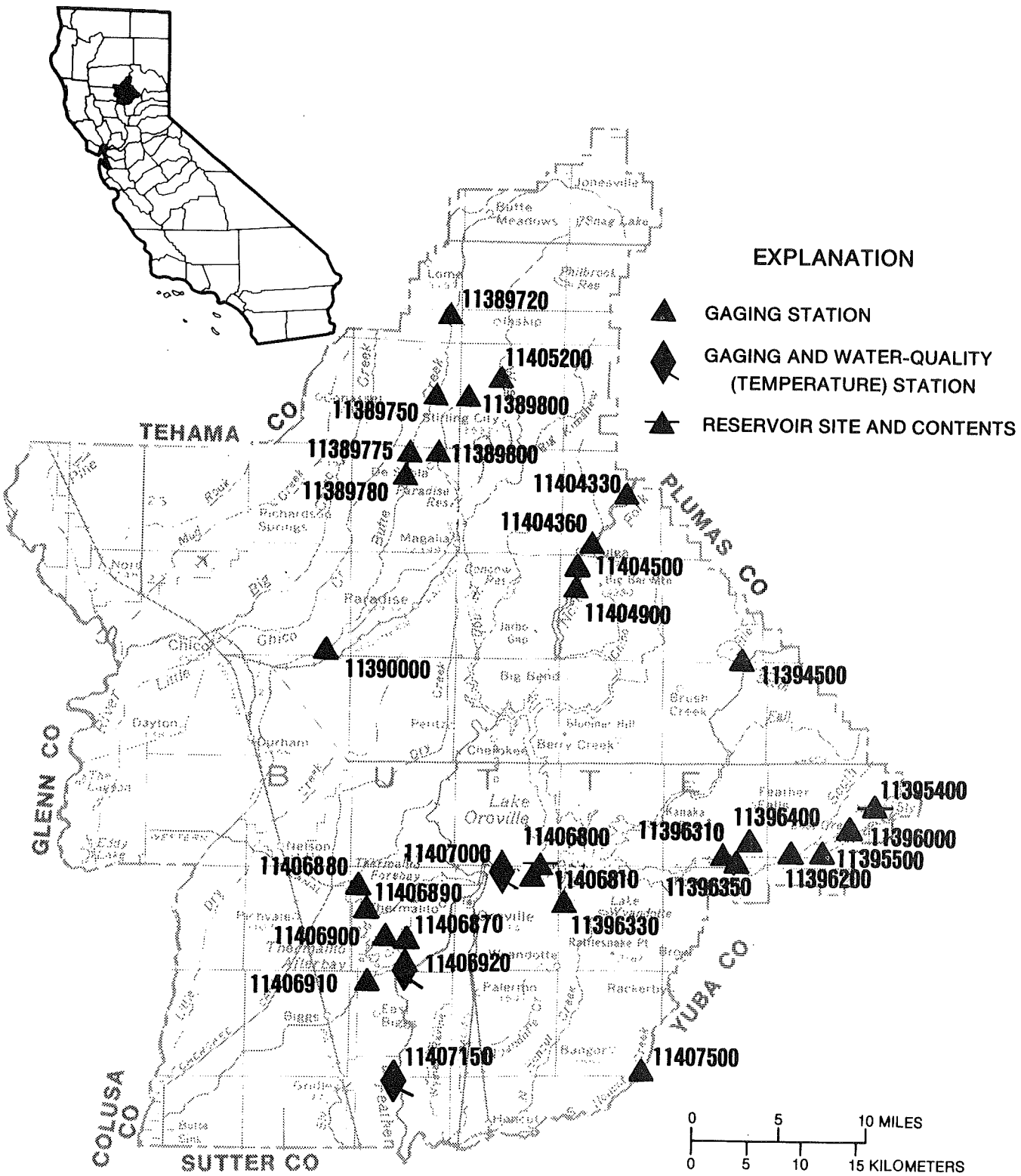

FIGURE 6.--Location of discharge and water-quality stations in Butte County.

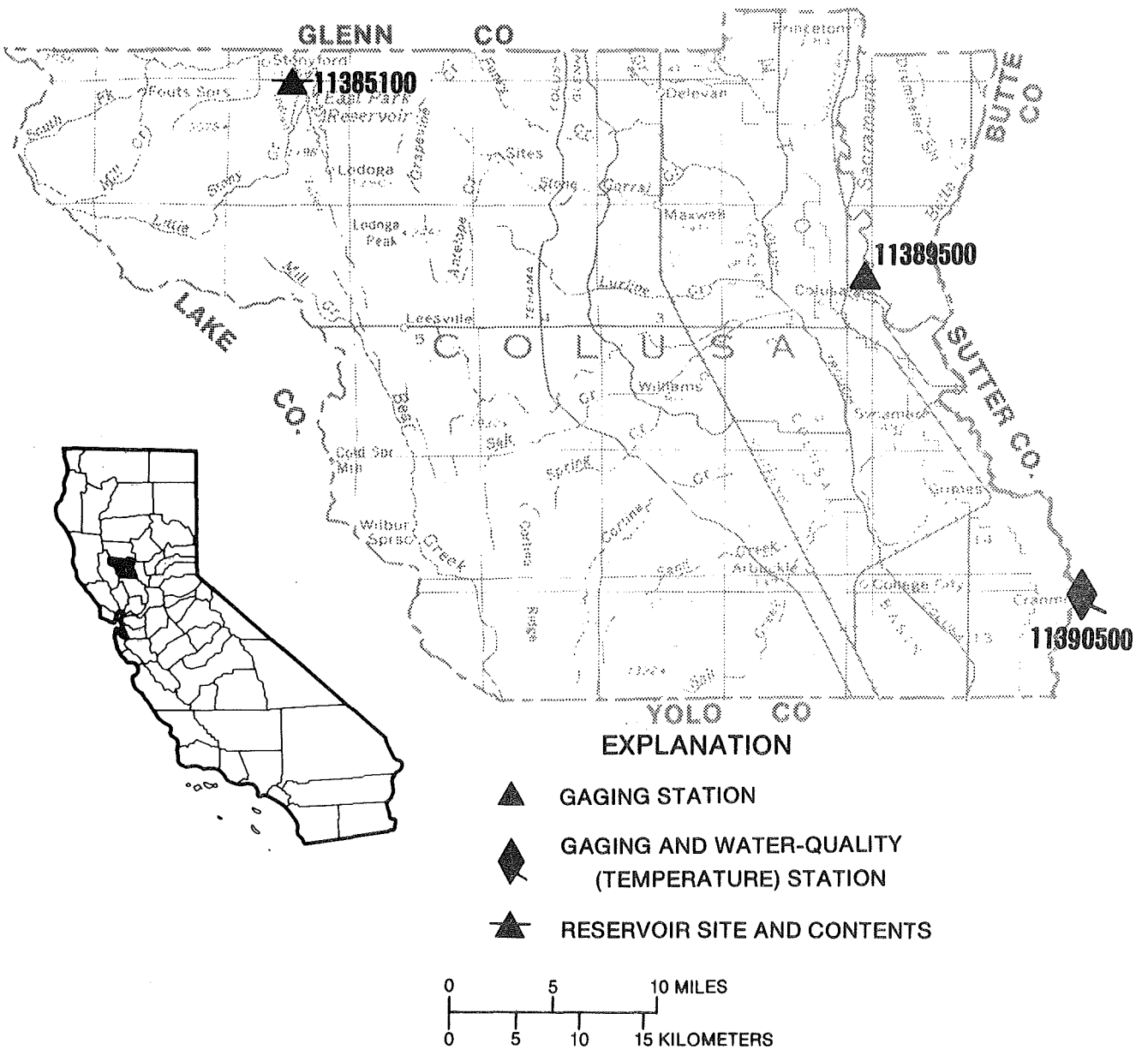

FIGURE 7.--Location of discharge and water-quality stations in Colusa County.

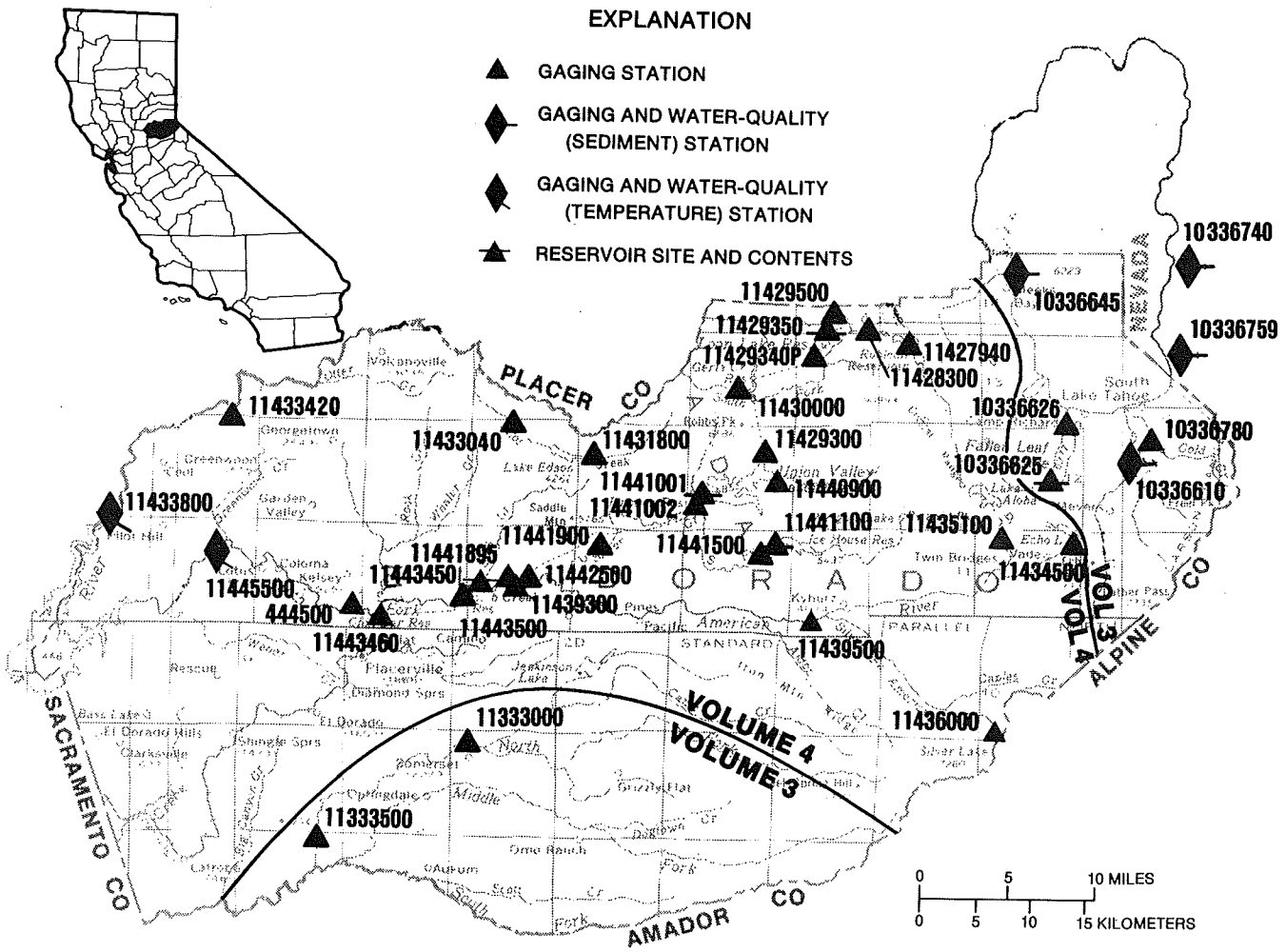

FIGURE 8.--Location of discharge and water-quality stations in El Dorado County.
(Note: Records for stations 10336600 through 11333500 published in volume 3)

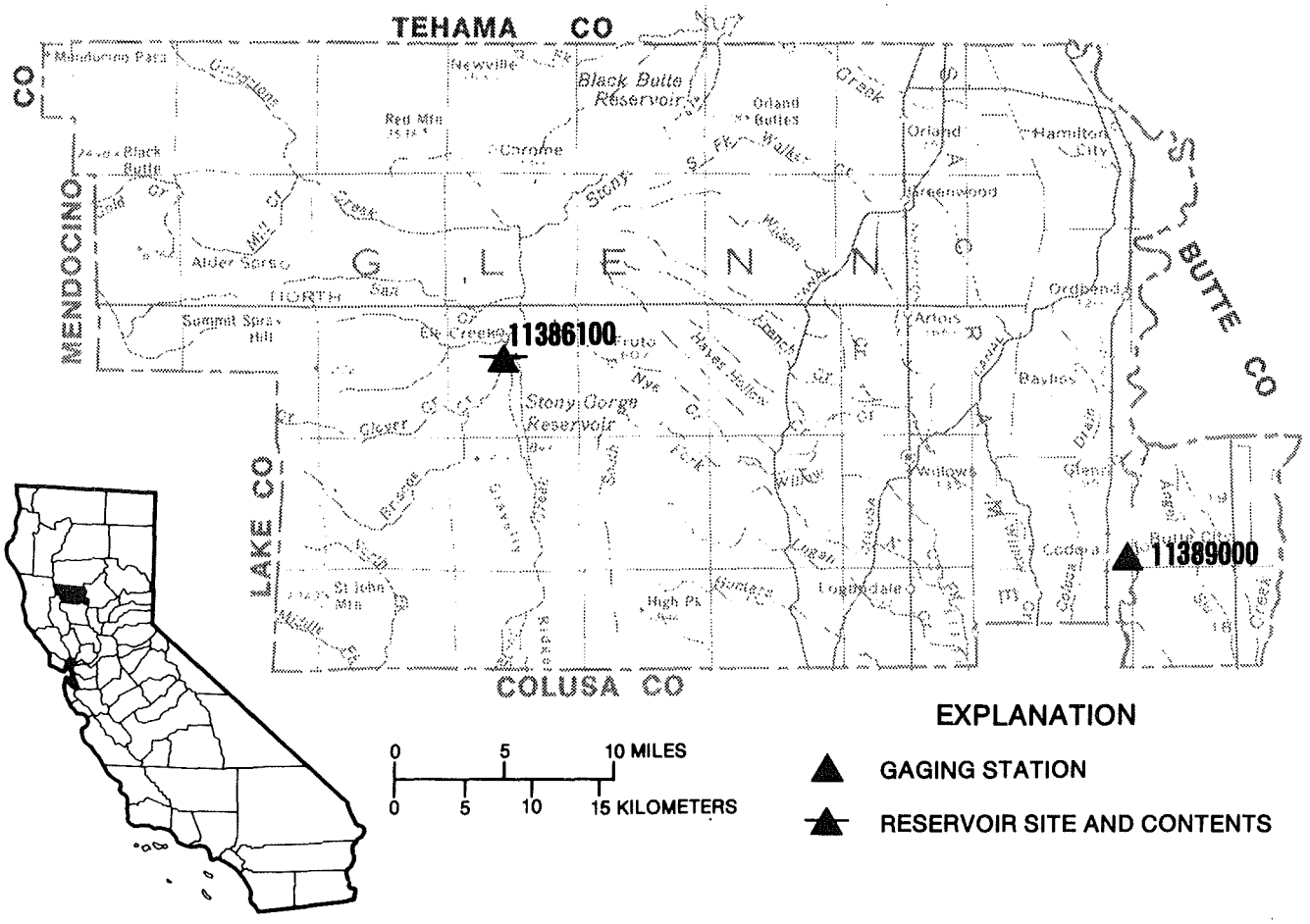

FIGURE 9.--Location of discharge and water-quality stations in Glenn County.

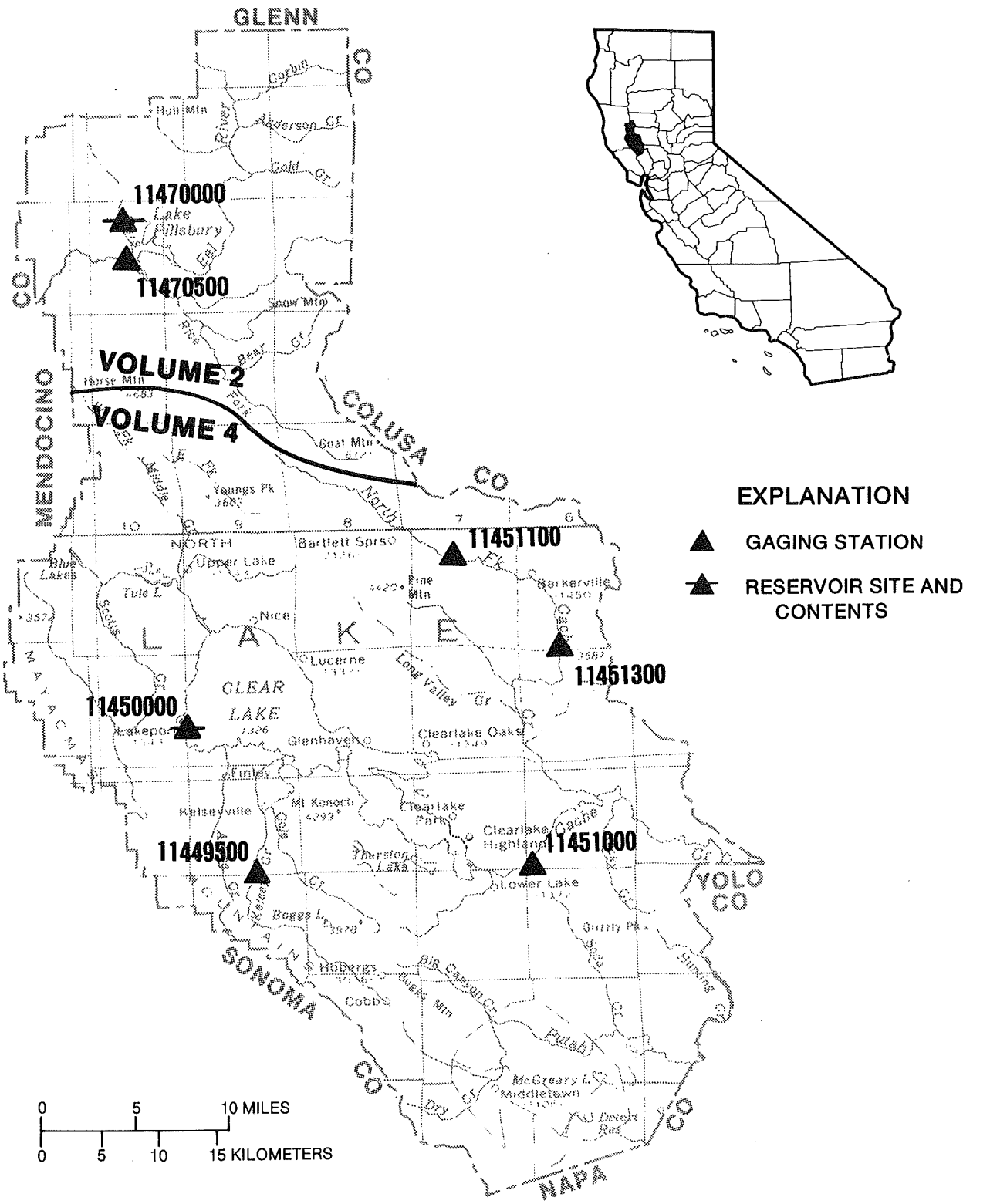

FIGURE 10.--Location of discharge stations in Lake County.
(Note: Records for stations 11470000 and 11470500 published in volume 2)

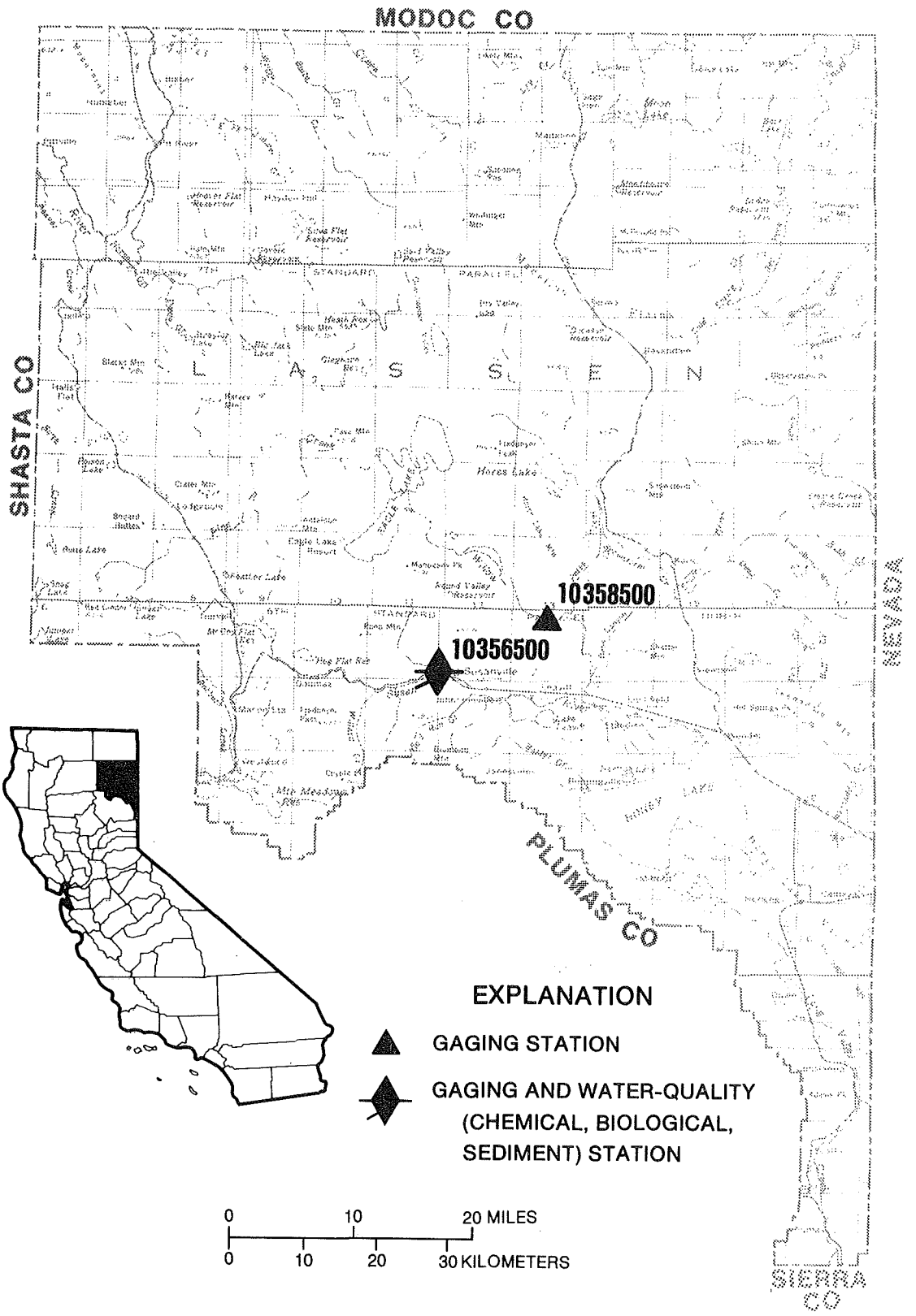

FIGURE 11.--Location of discharge and water-quality stations in Lassen County.

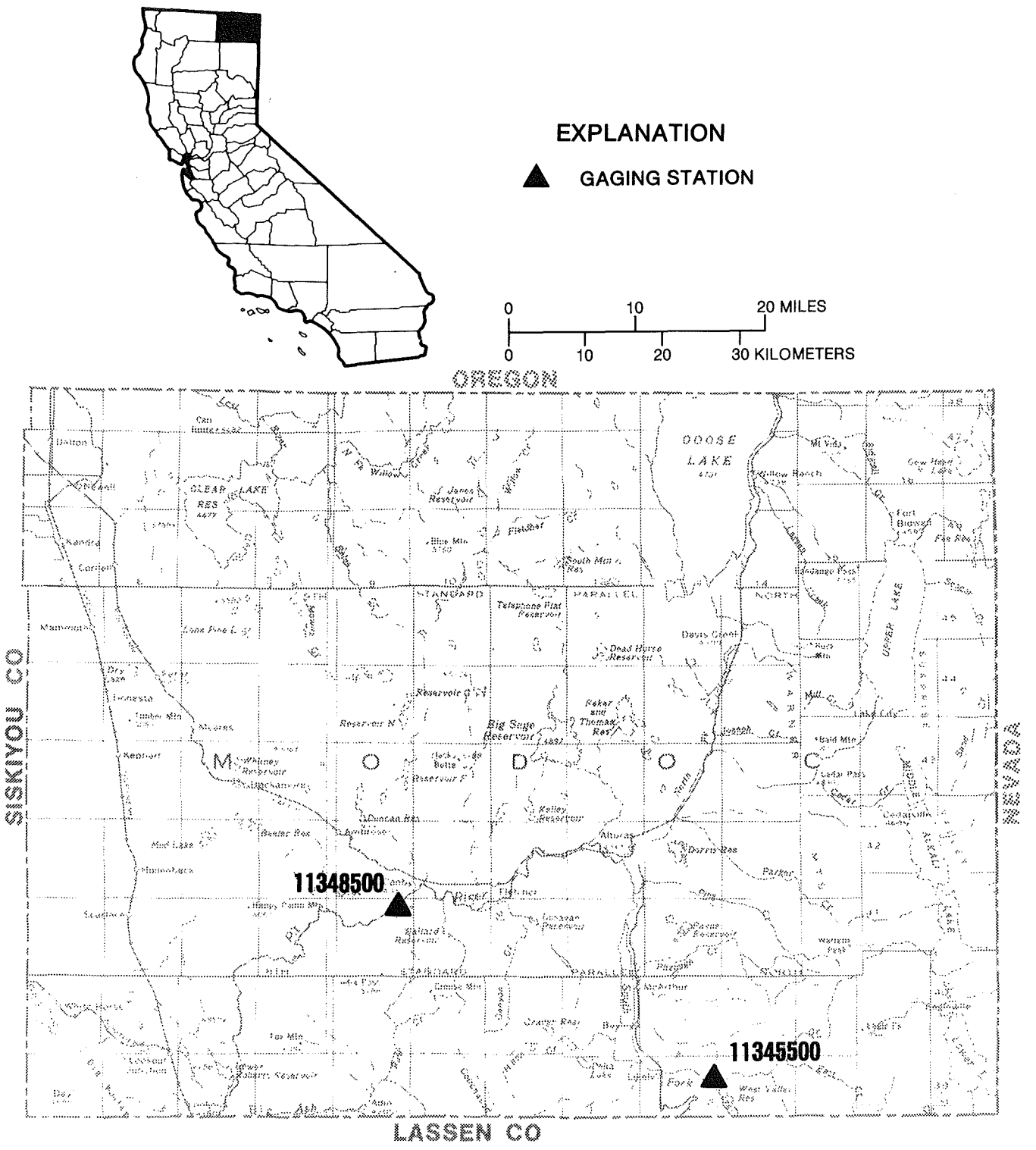

FIGURE 12.--Location of discharge stations in Modoc County.

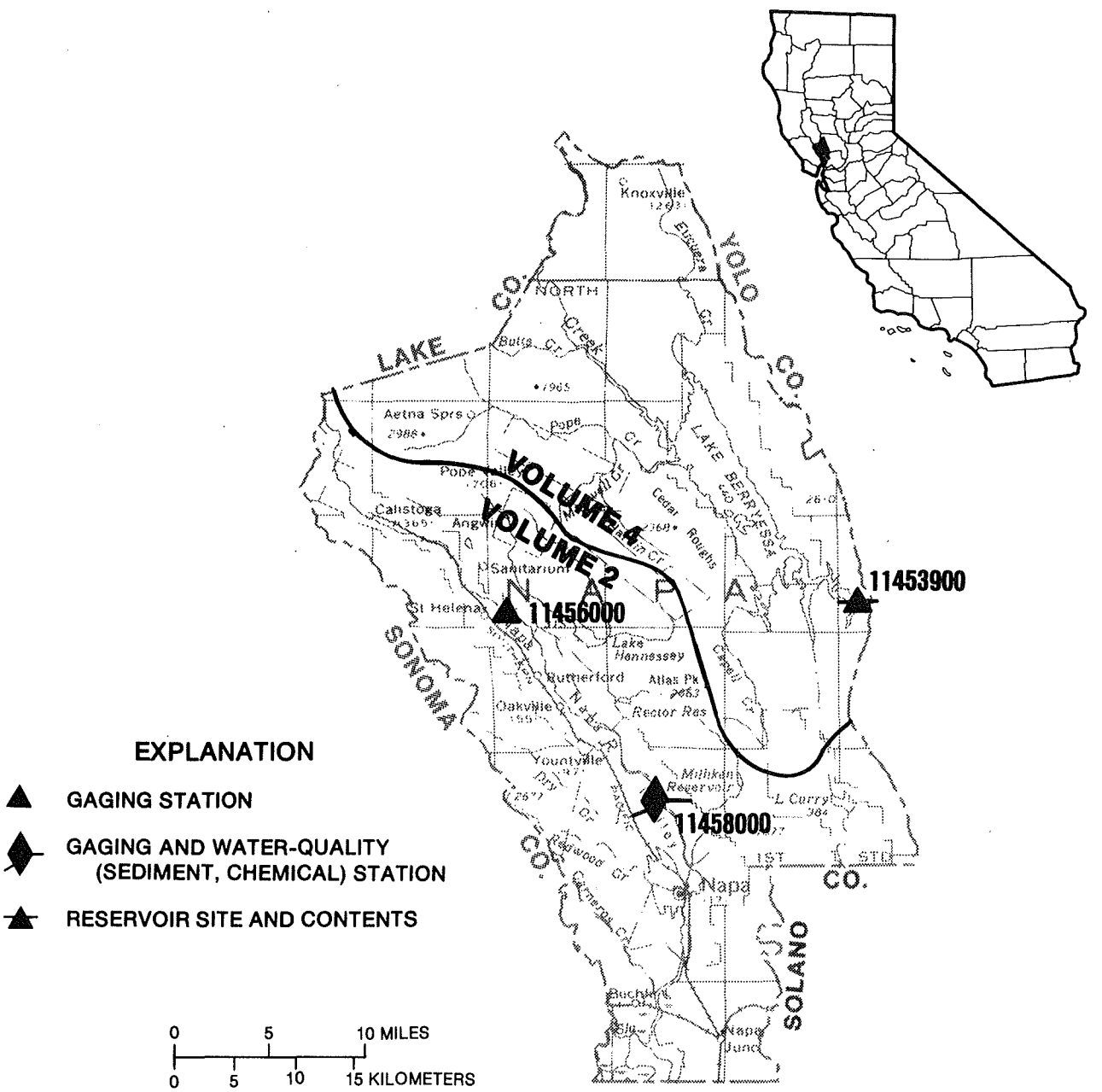

FIGURE 13.--Location of discharge and water-quality stations in Napa County.
(Note: Records for stations 11456000 and 11458000 published in volume 2)

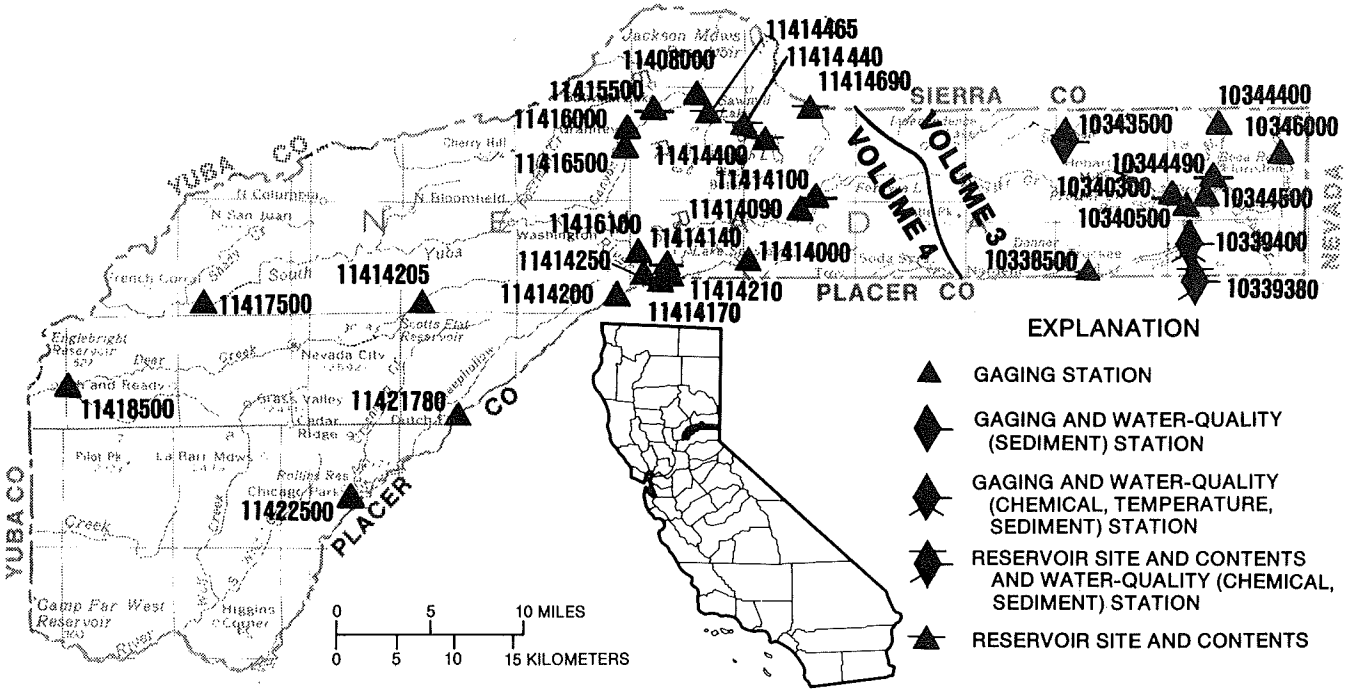

FIGURE 14.--Location of discharge and water-quality stations in Nevada County.
(Note: Records for stations 10338500 through 10346000 published in volume 3)

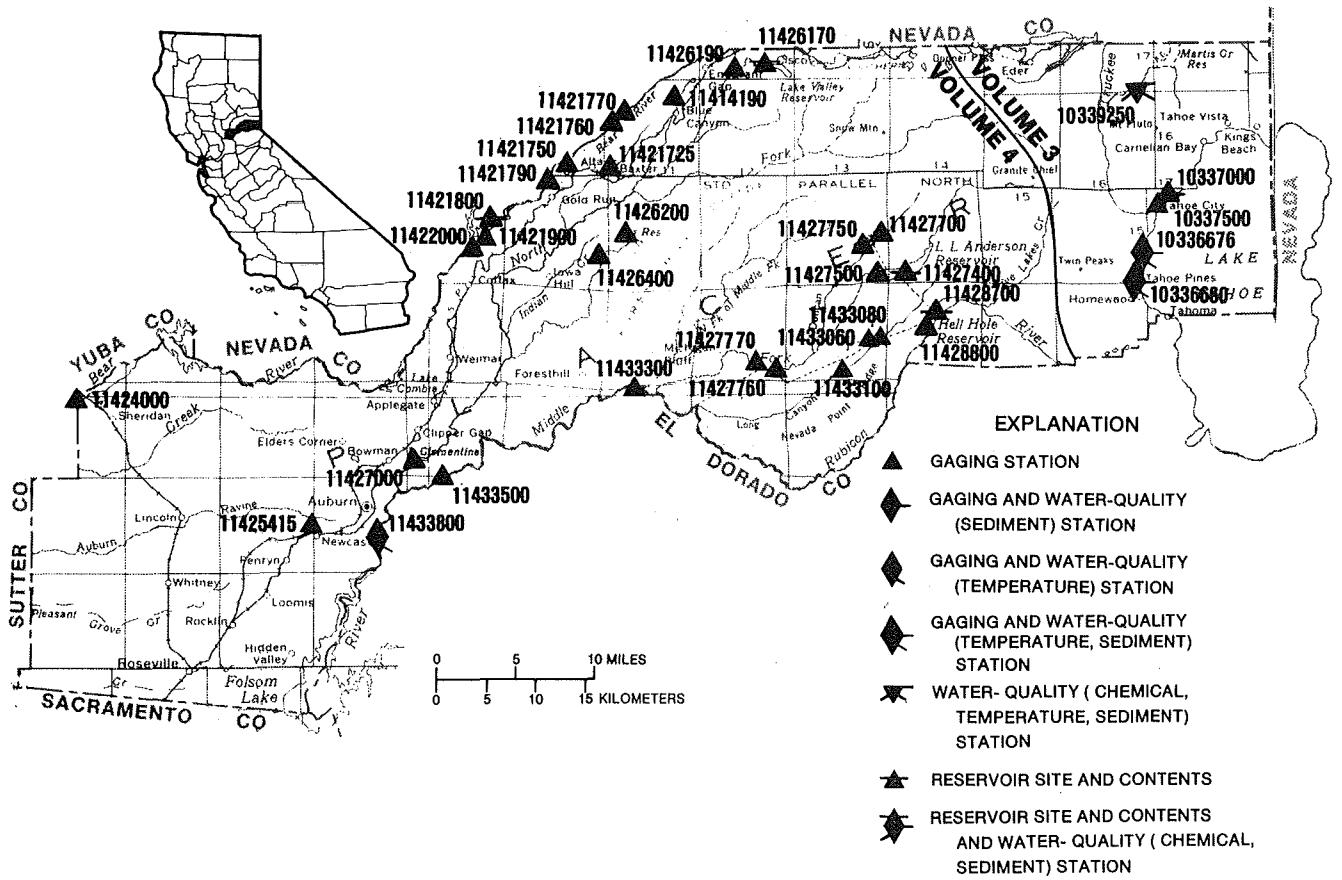

FIGURE 15.--Location of discharge and water-quality stations in Placer County.
(Note: Records for stations 10336660 through 10339250 published in volume 3)

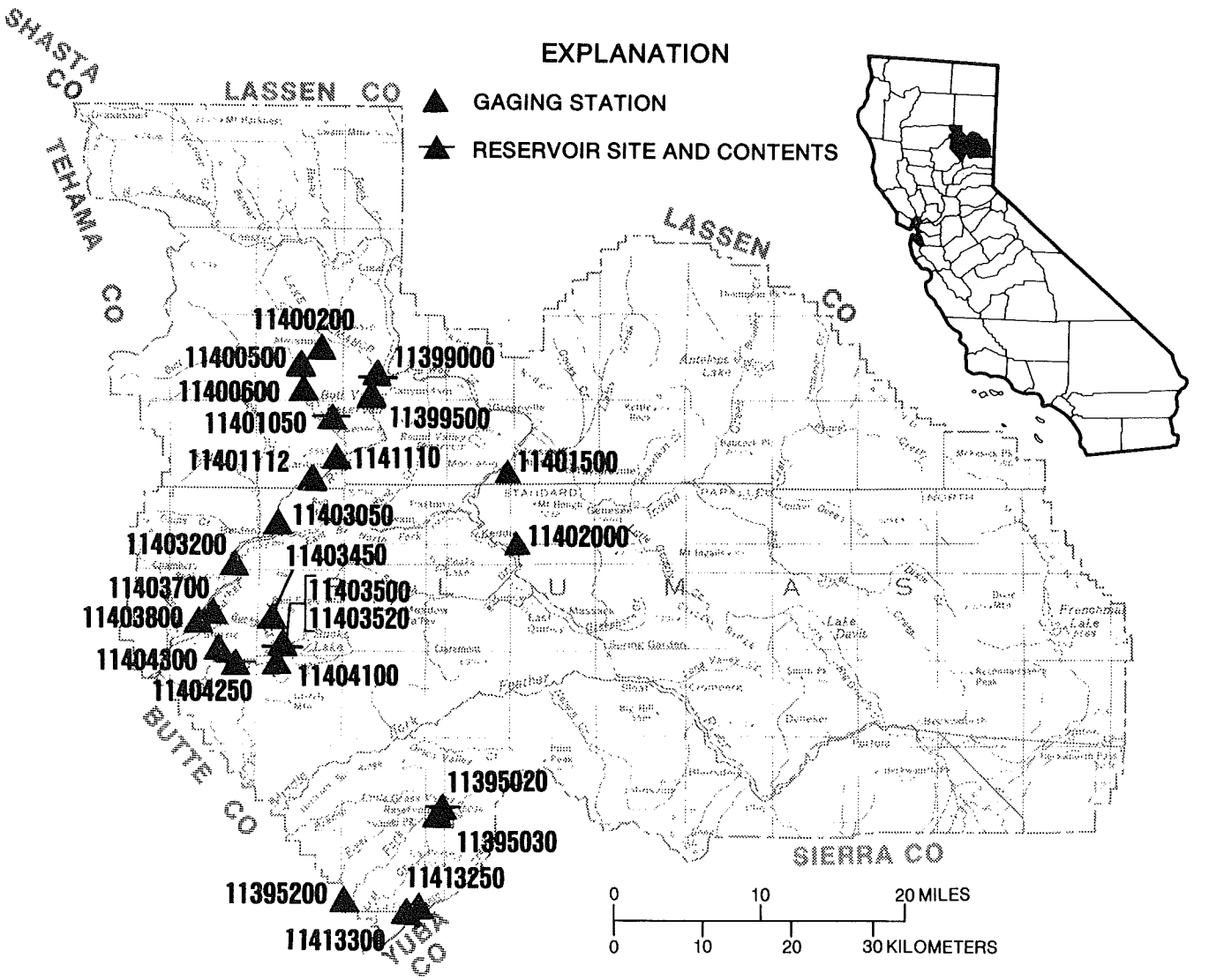

FIGURE 16.--Location of discharge stations in Plumas County.

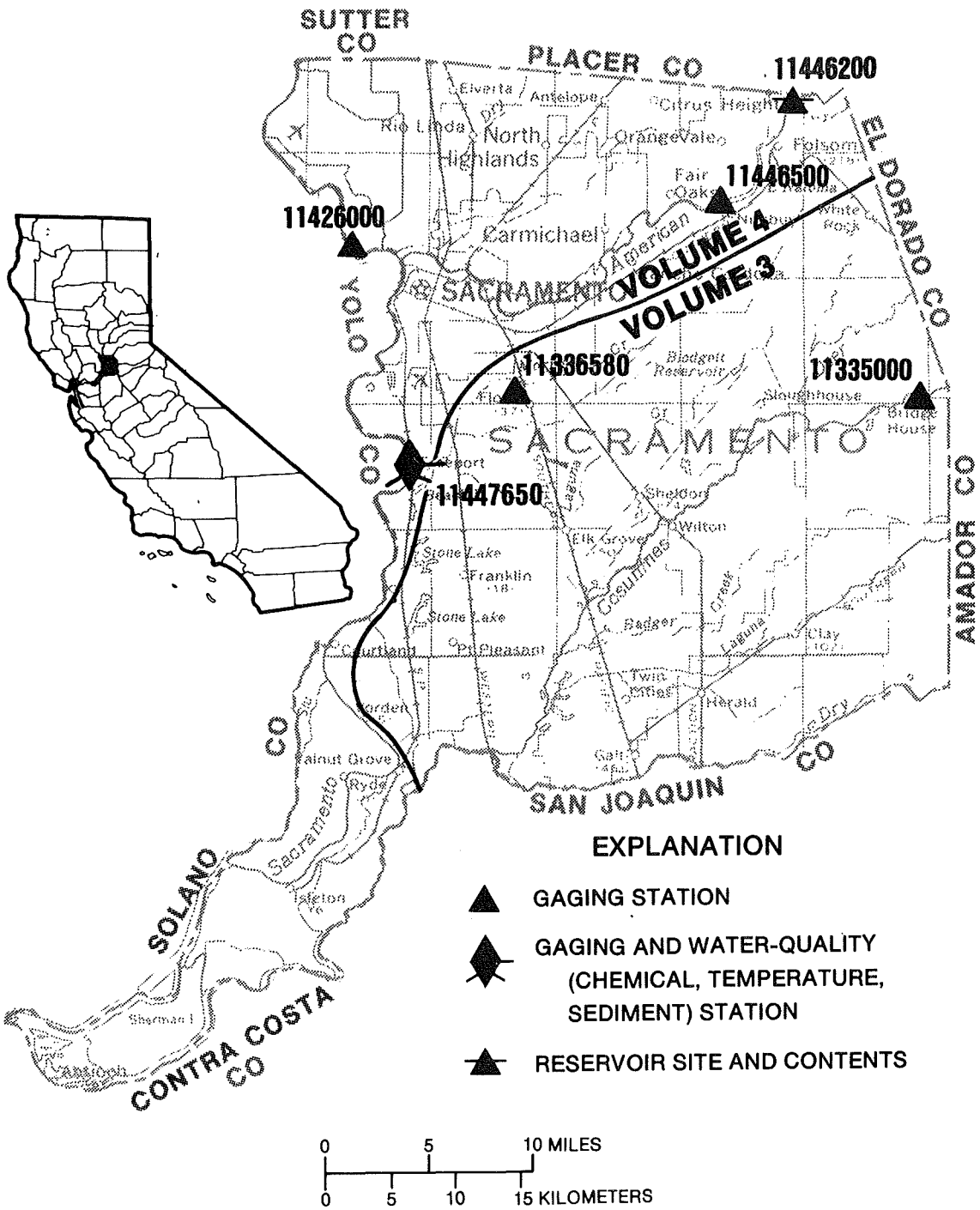

FIGURE 17.--Location of discharge and water-quality stations in Sacramento County (Note: Records for 11335000 and 11336580 published in volume 3).

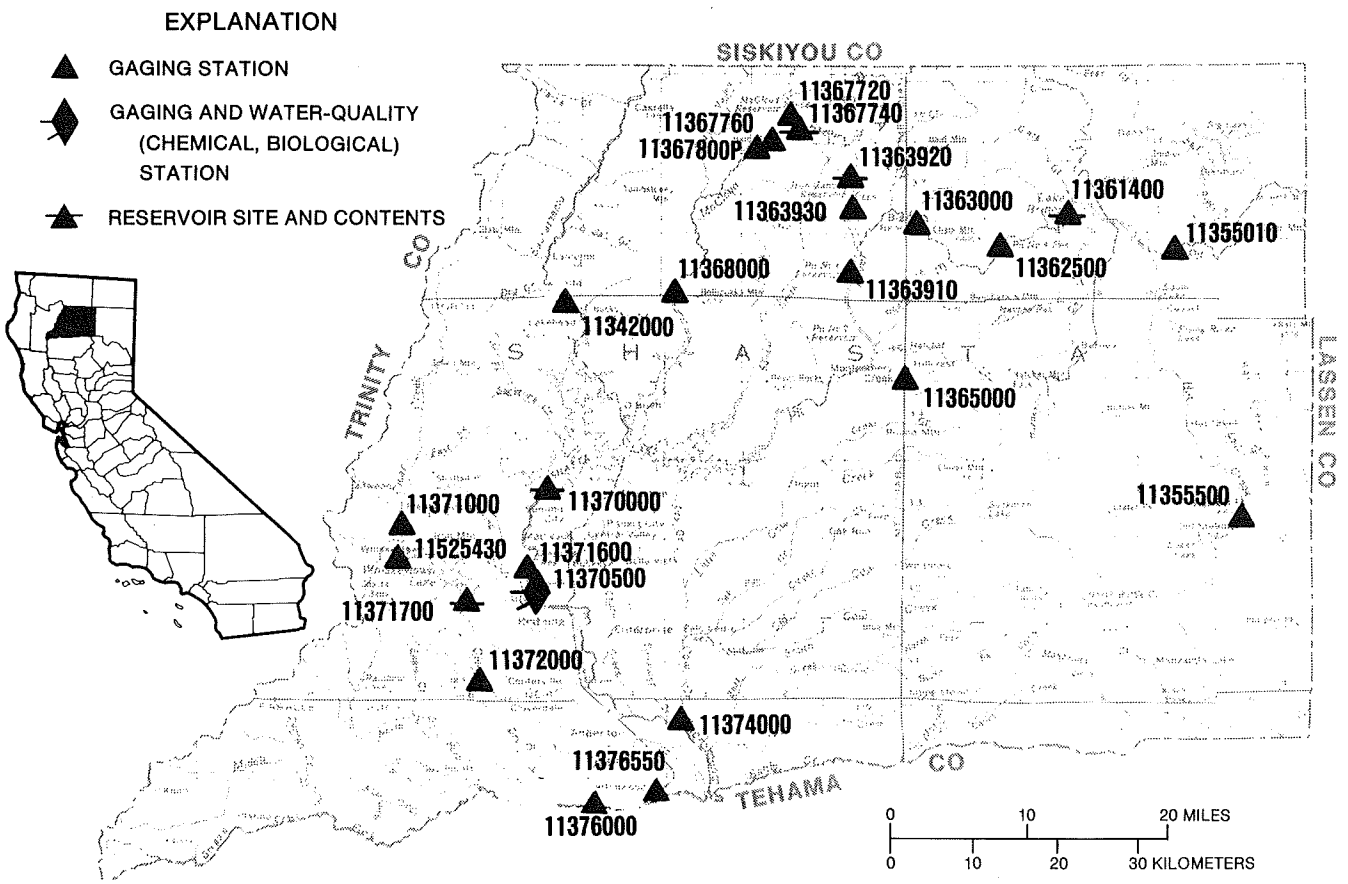

FIGURE 18.--Location of discharge and water-quality stations in Shasta County.

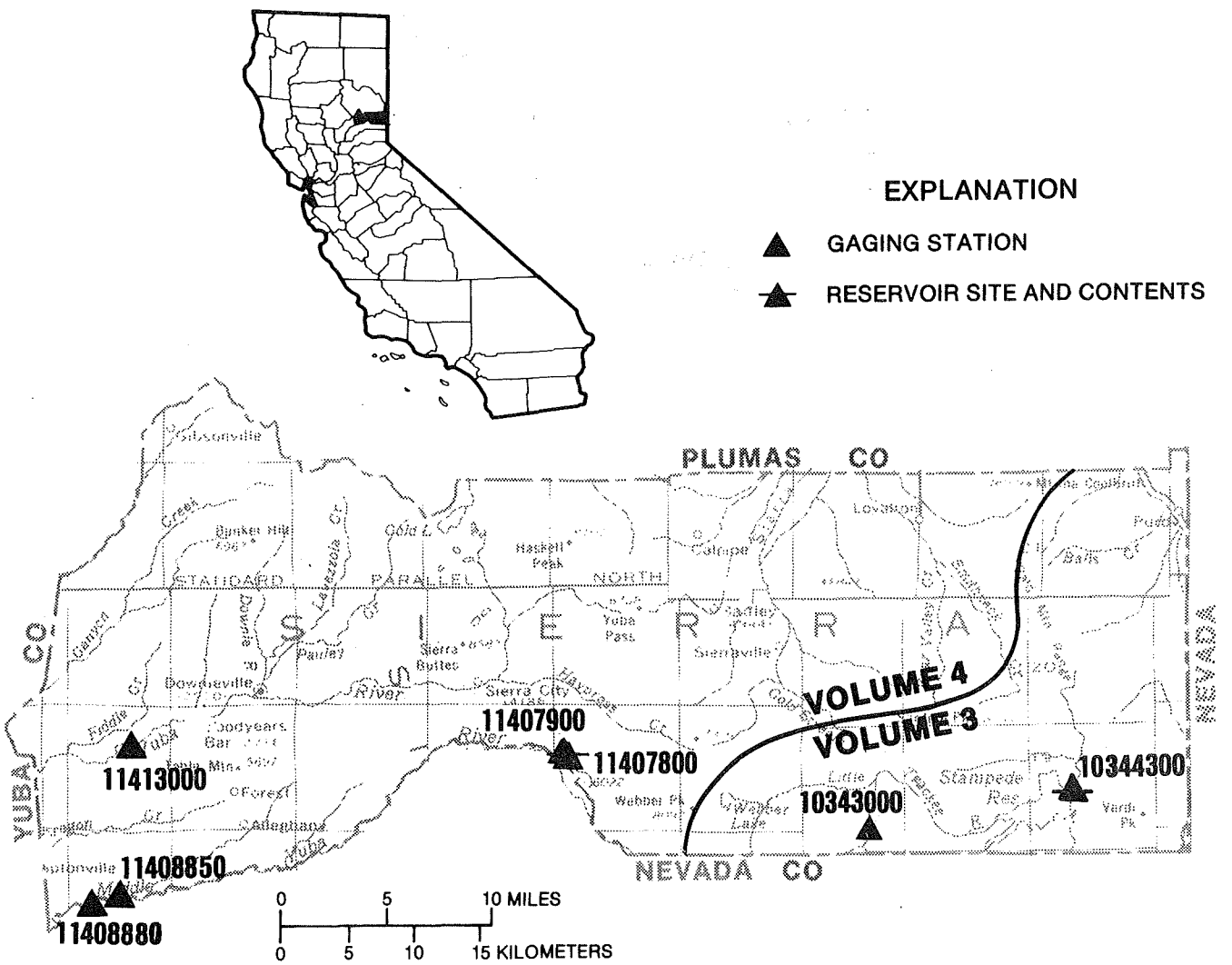

FIGURE 19.--Location of discharge stations in Sierra County.
(Note: Records for stations 10343000 and 10343000 published in volume 3).

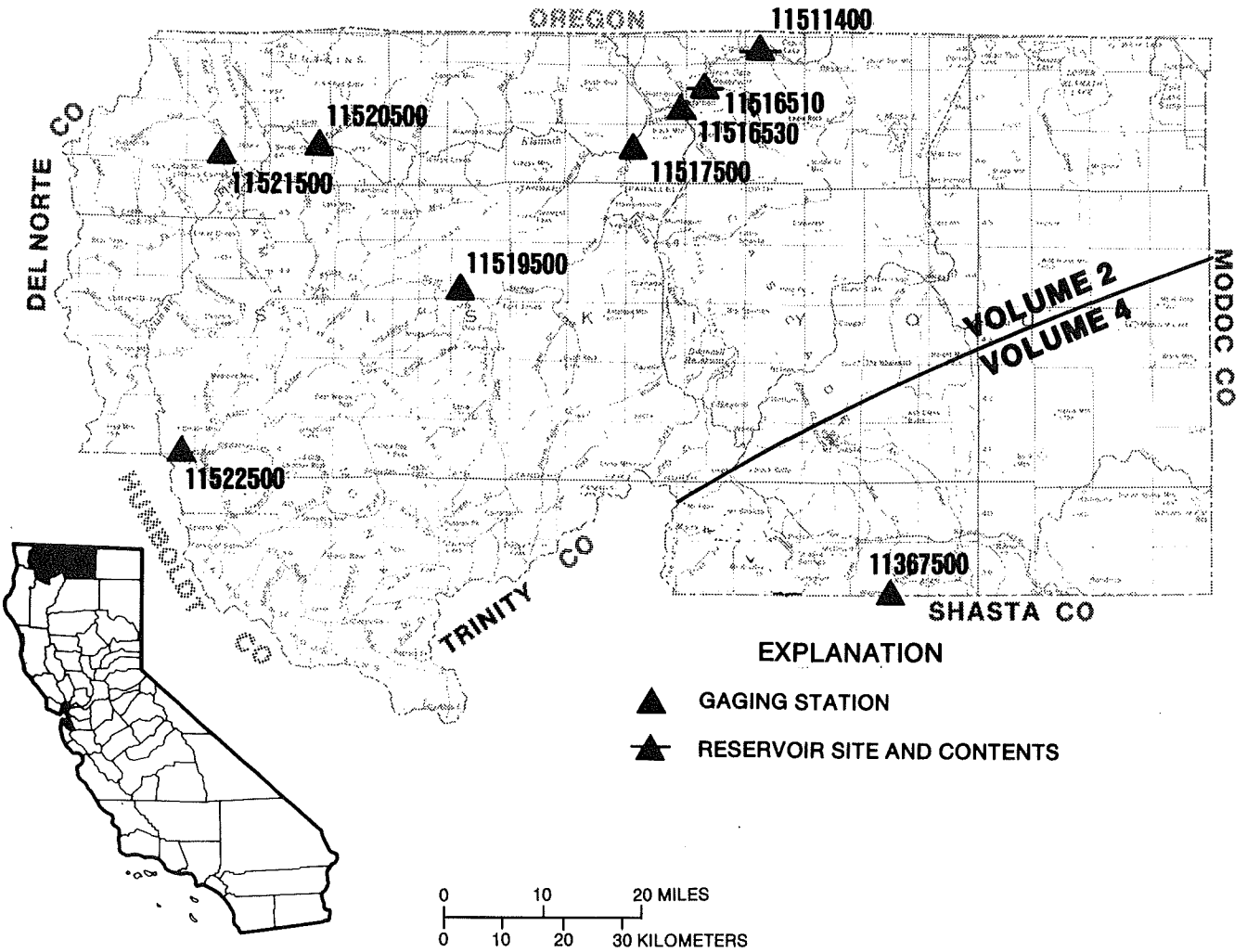

FIGURE 20.--Location of discharge and water-quality stations in Siskiyou County. (Note: Records for stations 11511400 through 11522500 published in volume 2).

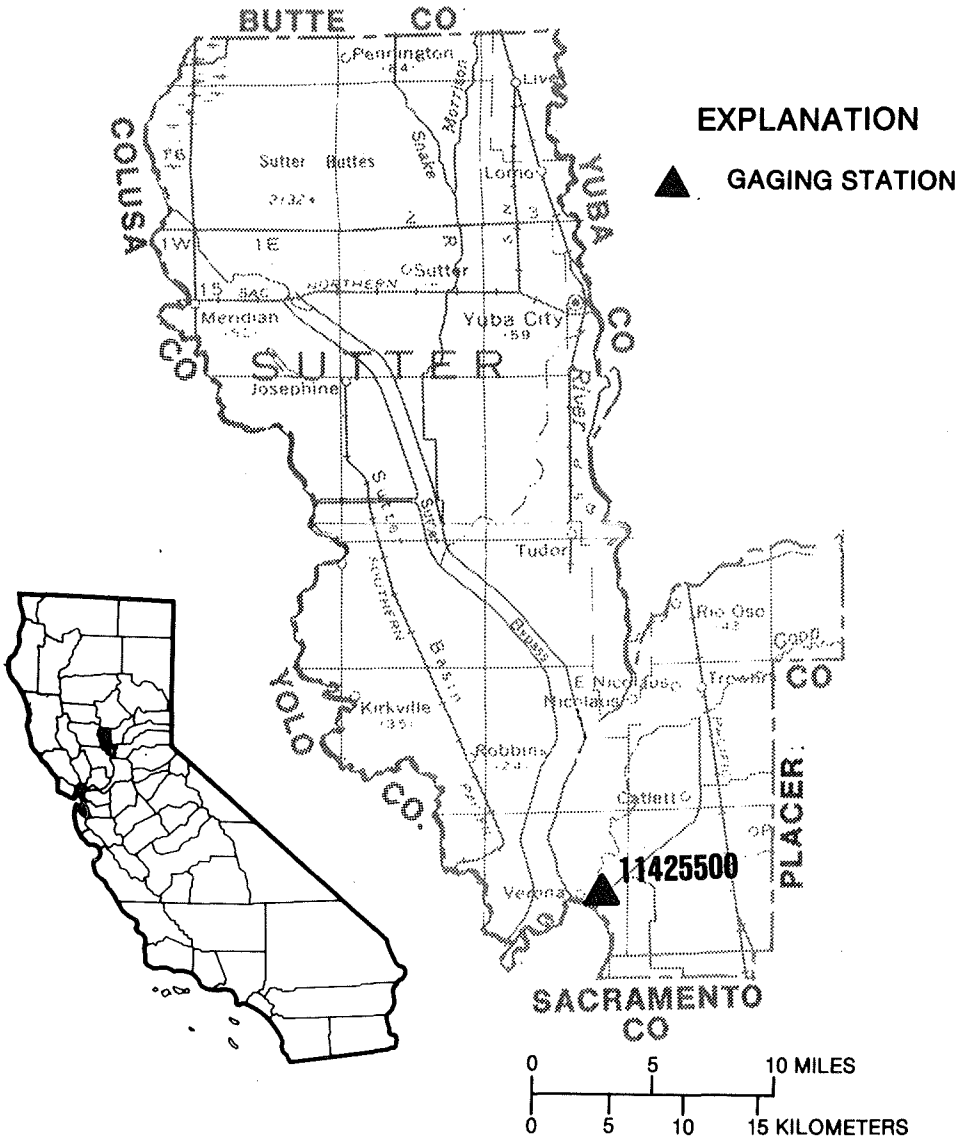

FIGURE 21.--Location of discharge stations in Sutter County.

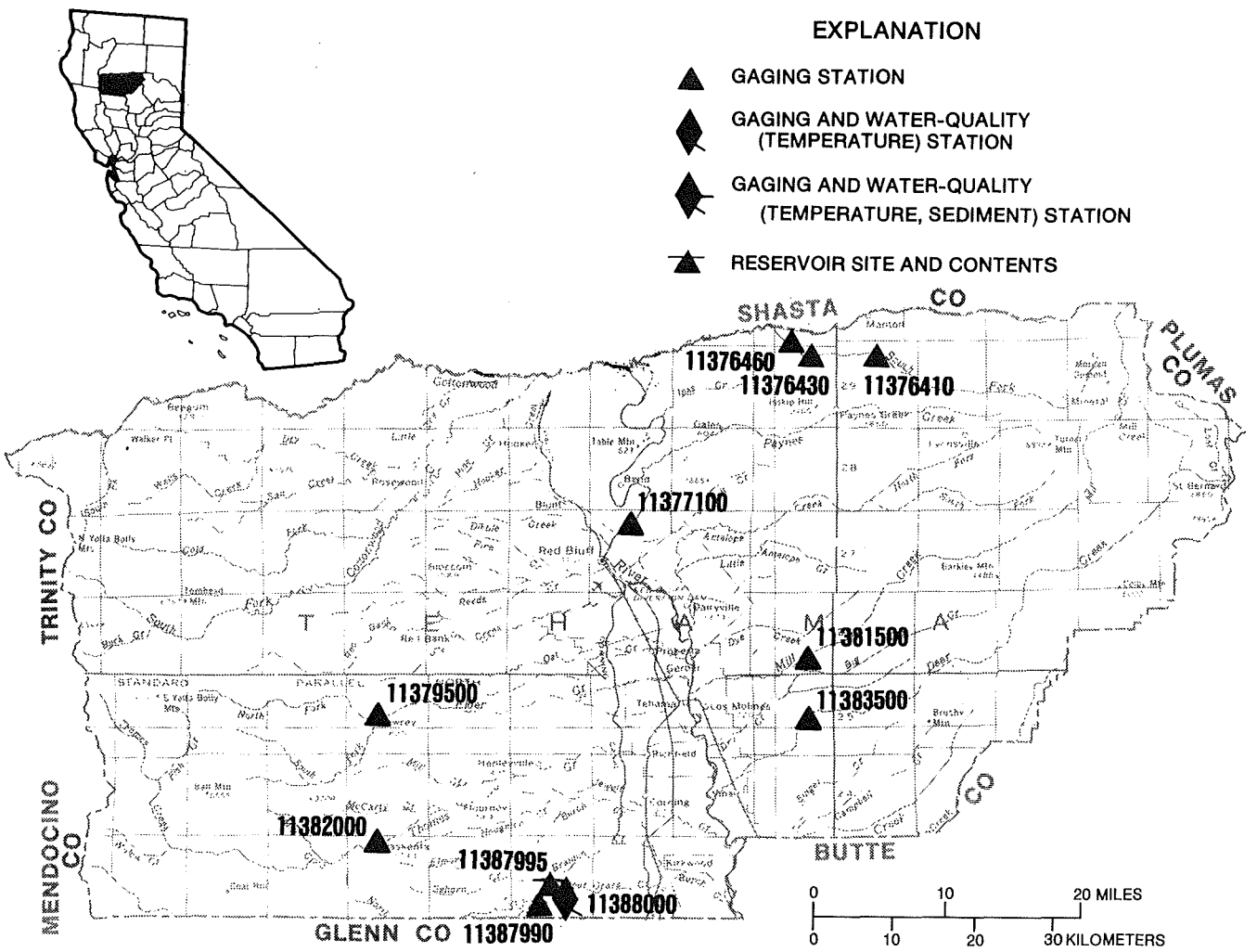

FIGURE 22.--Location of discharge and water-quality stations in Tehama County.

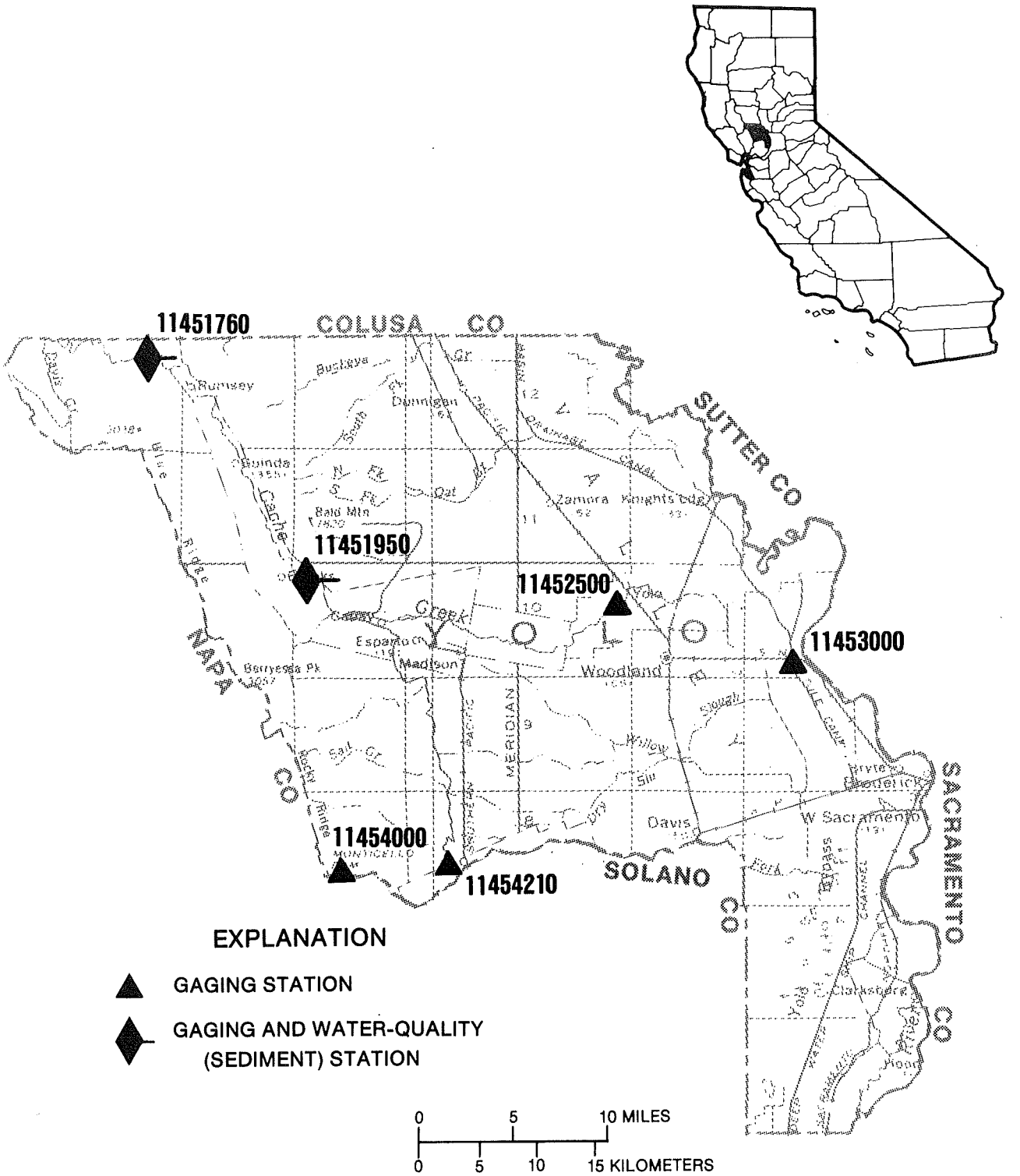

FIGURE 23.--Location of discharge stations in Yolo County.

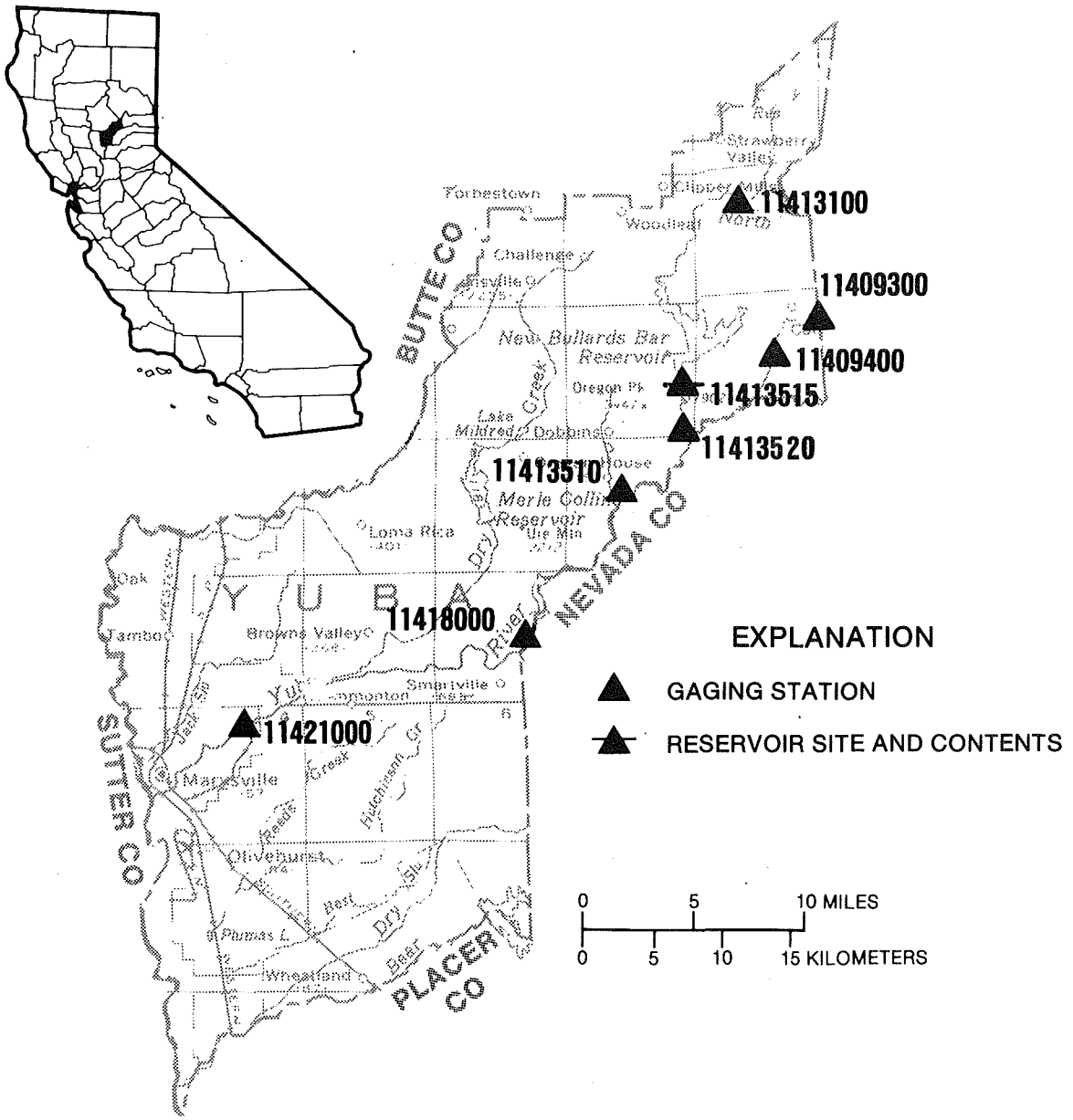

FIGURE 24.--Location of discharge stations in Yuba County.

THE GREAT BASIN

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 mi^2.

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 4,225.72 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.

REMARKS.--Estimated daily discharges for the following ice-affected periods: Nov. 30 to Dec. 4, Dec. 7-12, 15-18, Dec. 22 to Jan. 21. Incomplete communication June 7 to Sept. 30. Records good except for those periods with ice affect and incomplete communication, 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 above station.

AVERAGE DISCHARGE.--43 years (water years 1901, 1904-5, 1918-20, 1951-87), 96.6 ft^3/s, 70,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,850 ft^3/s, Jan. 24, 1970, gage height, 8.89 ft, in gage well, 10.4 ft, from floodmarks, from rating curve extended above 1,000 ft^3/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, 667 ft^3/s, Mar. 12, gage height, 3.96 ft; minimum daily, 1.2 ft^3/s, Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	15	7.0	12	21	22	52	50	15	4.6	4.0	2.9
2	18	14	6.0	13	21	24	57	47	14	4.5	4.3	1.3
3	17	14	8.0	13	21	24	68	44	13	4.4	4.4	3.4
4	15	14	13	13	21	33	62	41	13	4.4	4.3	3.8
5	14	14	16	14	20	64	60	88	12	4.3	4.5	3.7
6	14	13	15	13	20	92	61	112	11	4.1	4.5	3.7
7	14	13	13	11	21	77	62	108	13	4.0	4.5	3.7
8	14	13	8.0	9.2	21	68	63	107	13	3.9	4.7	3.5
9	14	13	7.6	10	21	59	64	111	13	3.8	4.7	3.5
10	13	13	7.0	11	25	54	64	107	11	3.8	4.7	4.7
11	13	13	7.1	10	50	54	72	102	10	3.8	4.7	4.7
12	13	13	13	12	41	228	64	99	10	3.8	5.0	4.8
13	13	13	15	11	208	258	59	96	8.3	3.8	5.2	5.0
14	13	13	15	10	83	132	59	94	7.5	3.7	5.1	4.9
15	13	13	12	8.0	56	96	59	92	7.6	3.7	5.7	4.7
16	13	13	9.0	7.0	42	76	58	103	7.9	3.9	5.9	4.3
17	13	13	8.0	8.0	38	69	57	112	7.6	5.4	3.8	4.1
18	14	13	14	9.4	34	82	56	96	6.9	8.4	3.4	4.7
19	14	13	15	13	29	67	48	91	6.9	7.8	3.2	4.3
20	14	13	15	15	30	57	45	90	6.6	6.4	3.3	3.7
21	13	15	14	22	27	55	58	87	6.9	6.0	3.4	3.7
22	13	14	13	16	26	51	58	87	7.0	5.9	3.6	3.5
23	13	14	12	16	26	51	57	86	6.9	5.7	2.7	3.3
24	13	14	12	17	21	46	61	81	6.7	5.6	4.2	3.1
25	13	13	12	31	23	45	61	80	6.5	4.9	5.6	3.0
26	13	13	12	27	22	45	59	81	6.5	4.6	3.7	4.2
27	13	13	11	26	23	44	59	78	6.6	4.5	2.5	6.3
28	13	13	11	44	22	42	58	70	5.9	4.5	2.8	5.7
29	14	13	12	28	---	41	57	42	5.1	4.5	1.2	5.8
30	18	9.0	10	23	---	42	59	25	4.9	4.4	1.3	4.6
31	16	---	11	20	---	47	---	20	---	4.5	1.4	---
TOTAL	438	397.0	353.7	492.6	1013	2145	1777	2527	270.3	147.6	122.3	122.6
MEAN	14.1	13.2	11.4	15.9	36.2	69.2	59.2	81.5	9.01	4.76	3.95	4.09
MAX	20	15	16	44	208	258	72	112	15	8.4	5.9	6.3
MIN	13	9.0	6.0	7.0	20	22	45	20	4.9	3.7	1.2	1.3
AC-FT	869	787	702	977	2010	4250	3520	5010	536	293	243	243

CAL YR 1986	TOTAL	51725.6	MEAN 142	MAX 3690	MIN 6.0	AC-FT	102600
WTR YR 1987	TOTAL	9806.1	MEAN 26.9	MAX 258	MIN 1.2	AC-FT	19450

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.--Strontium dissolved exceeded the maximum historical data of 120 ug/L, Sept. 16, 1987.
Chemical data was affected by release flows from McCoy Flat Reservoir during May.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
NOV												
19...	1200	13	155	8.2	7.0	655	0.60	11.2	107	K1	K4	74
JAN												
21...	1325	16	155	8.1	0.0	660	0.40	13.2	104	--	K1	76
MAR												
25...	1305	44	113	8.1	5.5	655	2.0	11.5	106	<1	K2	52
MAY												
20...	1000	91	55	8.1	12.0	650	0.70	8.9	97	58	62	28
JUL												
15...	1250	3.7	193	8.5	23.5	655	0.90	8.9	123	K17	29	93
SEP												
16...	1045	4.4	181	8.4	9.5	655	0.50	9.8	100	K12	<1	86

DATE	HARD-NESS NONCARB WH WAT TOT FLD 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)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER WHOLE IT-FLD (MG/L)	CAR-BONATE WATER WHOLE IT-FLD (MG/L)	ALKA-LINITY, CARBON-ATE IT-FLD (MG/L CACO3)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)
NOV												
19...	0	16	8.2	5.5	14	0.3	2.0	--	--	--	H85	2.0
JAN												
21...	0	16	8.8	5.9	14	0.3	2.1	107	--	88	86	2.1
MAR												
25...	0	12	5.3	4.6	16	0.3	1.2	80	--	66	65	3.0
MAY												
20...	0	6.1	3.1	2.3	15	0.2	0.70	39	--	32	33	5.0
JUL												
15...	0	19	11	7.0	14	0.3	2.4	126	5	111	110	2.9
SEP												
16...	0	18	9.9	6.8	14	0.3	2.8	98	12	100	99	1.8

DATE	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)	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												
19...	0.90	<0.10	33	118	120	0.16	<0.010	<0.100	<0.010	<0.010	0.50	0.030
JAN												
21...	1.2	<0.10	36	121	120	0.16	<0.010	0.170	0.040	<0.010	0.30	0.060
MAR												
25...	0.70	<0.10	26	81	92	0.11	<0.010	<0.100	<0.010	0.020	0.30	0.020
MAY												
20...	1.0	<0.10	14	46	52	0.06	<0.010	<0.100	0.040	<0.010	0.60	0.030
JUL												
15...	7.1	<0.10	36	129	150	0.18	<0.010	<0.100	0.050	0.030	0.70	0.040
SEP												
16...	1.6	0.10	34	119	130	0.16	<0.010	<0.100	0.010	<0.010	0.20	0.030

See footnotes at end of table.

HONEY LAKE BASIN

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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											
19...	0.030	0.030	<10	<1	19	<0.5	<1	<1	<3	1	54
JAN											
21...	0.050	0.050	10	<1	19	<0.5	<1	<1	<3	1	36
MAR											
25...	0.030	0.020	--	--	--	--	--	--	--	--	--
MAY											
20...	0.010	0.010	20	<1	9	<0.5	<1	<1	<3	<1	56
JUL											
15...	0.030	<0.010	--	--	--	--	--	--	--	--	--
SEP											
16...	0.030	0.020	<10	<1	25	<0.5	<1	<1	<3	2	46

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											
19...	<5	<4	18	<0.1	<10	2	<1	<1	120	<6	4
JAN											
21...	<5	4	17	<0.1	<10	3	<1	<1	120	<6	10
MAR											
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
20...	<5	<4	5	<0.1	<10	1	<1	<1	39	<6	5
JUL											
15...	--	--	--	--	--	--	--	--	--	--	--
SEP											
16...	<5	<4	26	<0.1	<10	2	<1	<1	140	<6	9

K Results based on colony count outside the acceptable range (nonideal colony count).
< Actual value is known to be less than the value shown.
H USGS lab value.

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	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 OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	SEDI-MENT, SUS-PENDED (MG/L)
MAR									
25...*	1240	5.00	113	8.1	5.5	655	11.5	106	6
25...*	1245	9.00	112	8.1	5.5	655	11.6	107	3
25...*	1250	14.0	113	8.1	5.5	655	11.5	106	3
25...*	1255	21.0	113	8.1	5.5	655	11.5	106	3
25...*	1300	30.0	112	8.1	5.5	655	11.5	106	1
JUL									
15...*	1100	2.00	190	8.4	20.0	655	8.7	112	7
15...*	1105	5.00	192	8.4	19.5	655	8.8	112	5
15...*	1110	8.00	195	8.4	19.5	655	8.9	113	5
15...*	1115	11.0	195	8.4	19.5	655	8.9	113	6
15...*	1120	14.0	196	8.4	19.5	655	8.8	112	--

* Instantaneous streamflow at the time of the cross-sectional measurements: Mar. 25, 44 ft^3/s; July 15, 3.7 ft^3/s.

10356500 SUSAN RIVER AT SUSANVILLE, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	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
NOV						
19...	1205	13	7.0	4	0.14	--
JAN						
21...	1330	16	0.0	3	0.13	--
MAR						
25...	1230	44	5.5	3	0.36	--
MAY						
20...	0830	91	12.0	13	3.2	64
JUL						
15...	1240	3.7	23.5	6	0.06	--
SEP						
16...	1025	4.4	9.5	5	0.06	--

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 mi^2, 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.--Estimated daily discharges for the following ice-affected period: Jan. 15-18. Records excellent including period of ice effect. Diversions for irrigation of 5,200 acres above station. Some flow at times enters Willow Creek from Eagle Lake through a pipe in a concrete plug in an abandoned tunnel.

AVERAGE DISCHARGE.--37 years, 35.2 ft^3/s, 25,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,210 ft^3/s, Feb. 18, 1986, gage height, 6.25 ft, from rating curve extended above 600 ft^3/s; minimum daily, 5.0 ft^3/s, Aug. 29-31, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 13	1515	*82	*3.07				

Minimum daily, 5.0 ft^3/s, Aug. 29-31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	34	30	30	34	28	29	20	12	8.6	10	5.2
2	29	34	31	32	34	25	25	22	11	8.3	9.4	5.2
3	29	35	31	31	35	31	16	22	11	8.1	8.2	5.5
4	28	34	31	33	34	32	16	23	11	7.9	7.8	5.5
5	28	34	32	32	34	32	20	21	10	7.9	6.6	5.6
6	28	34	32	30	34	31	24	20	10	7.9	6.0	5.6
7	28	34	31	29	34	30	26	20	10	8.1	5.9	5.7
8	25	34	31	29	34	30	27	19	10	8.1	5.7	5.8
9	27	34	31	28	34	31	26	23	9.9	8.1	5.8	6.0
10	28	34	31	28	34	30	25	25	9.6	8.9	5.8	6.0
11	28	34	31	26	35	29	25	23	9.6	10	5.6	6.1
12	27	34	31	29	35	39	23	21	9.2	10	5.6	6.6
13	28	35	31	28	49	76	23	20	9.0	10	5.5	6.3
14	28	34	31	29	52	62	23	19	9.1	10	6.5	6.1
15	29	34	31	28	47	50	20	18	9.0	10	6.0	5.9
16	29	34	31	26	41	43	17	20	9.3	9.6	5.5	5.7
17	30	34	30	28	38	39	15	25	9.3	10	5.3	5.7
18	31	35	28	30	36	38	14	27	9.5	11	5.3	5.6
19	31	35	28	31	34	38	14	25	9.6	10	5.4	5.7
20	32	34	28	31	34	36	13	22	9.6	10	5.3	5.7
21	32	35	28	30	34	36	12	22	9.5	10	5.2	6.2
22	32	35	28	31	34	37	13	22	9.5	9.9	5.2	5.6
23	32	34	28	31	33	36	13	18	9.5	8.2	5.1	5.5
24	33	34	28	32	33	35	14	16	9.2	7.7	5.1	5.3
25	33	34	28	33	33	34	15	20	9.2	7.4	5.1	5.7
26	33	34	28	35	33	33	17	21	9.3	7.7	5.1	5.9
27	33	33	28	34	33	32	18	17	9.4	10	5.1	5.8
28	33	30	28	38	34	32	17	14	9.2	10	5.2	6.0
29	33	30	30	36	---	32	18	13	9.1	10	5.0	6.5
30	34	30	29	34	---	31	20	12	8.9	10	5.0	8.2
31	34	---	28	33	---	29	---	12	---	10	5.0	---
TOTAL	935	1013	922	955	1009	1117	578	622	290.5	283.4	183.3	176.2
MEAN	30.2	33.8	29.7	30.8	36.0	36.0	19.3	20.1	9.68	9.14	5.91	5.87
MAX	34	35	32	38	52	76	29	27	12	11	10	8.2
MIN	25	30	28	26	33	25	12	12	8.9	7.4	5.0	5.2
AC-FT	1850	2010	1830	1890	2000	2220	1150	1230	576	562	364	349

CAL YR 1986	TOTAL	19715.6	MEAN 54.0	MAX 1090	MIN 8.1	AC-FT	39110
WTR YR 1987	TOTAL	8084.4	MEAN 22.1	MAX 76	MIN 5.0	AC-FT	16040

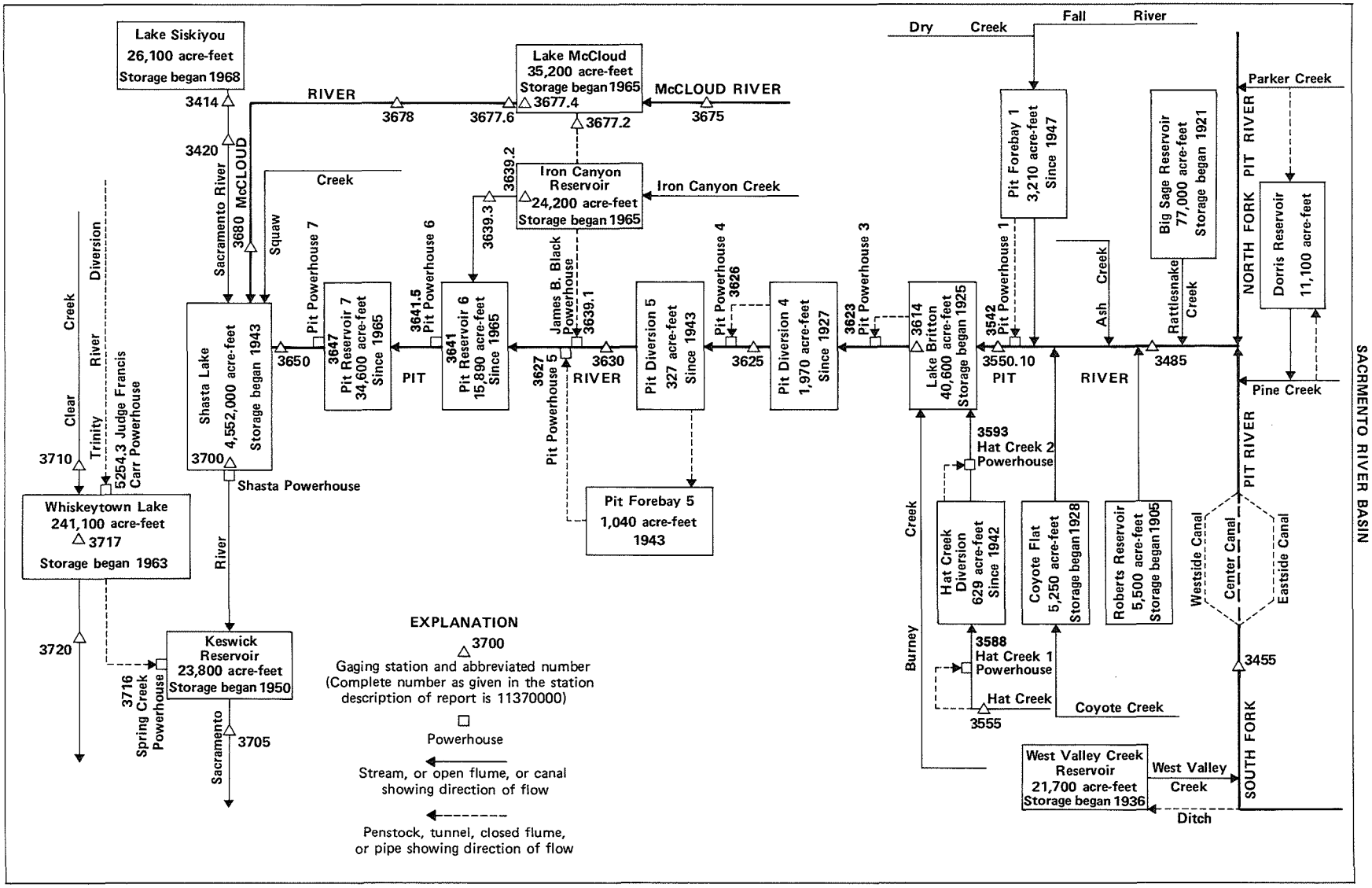

FIGURE 25.--Schematic diagram showing diversions and storage in Pit and McCloud River basins.

SACRAMENTO RIVER BASIN

11341400 SACRAMENTO RIVER NEAR MT SHASTA, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	7.5	5.5	9.5	9.0	12.5	9.0	13.0	8.5	12.5	8.0	13.0	9.5
2	7.0	6.0	9.5	8.5	13.0	9.0	13.0	8.0	12.5	8.0	12.0	9.5
3	7.5	6.5	10.5	9.0	13.0	9.0	13.0	8.0	13.0	8.5	12.0	9.0
4	8.0	6.5	10.5	9.0	13.0	9.5	12.5	8.0	13.0	8.0	12.5	9.0
5	7.5	6.0	11.0	9.5	13.0	9.0	12.5	8.0	13.0	8.5	12.0	9.0
6	7.5	6.5	10.5	9.5	12.5	9.0	13.0	8.0	12.5	7.5	12.0	9.5
7	8.0	6.5	11.0	10.0	11.0	9.5	13.0	8.0	13.0	8.0	12.0	9.5
8	9.0	7.0	11.5	10.0	13.0	9.5	13.0	8.5	12.5	8.0	11.5	9.5
9	8.0	7.0	12.0	10.0	13.0	9.5	12.5	8.5	13.0	8.5	12.0	9.5
10	8.0	7.0	12.5	10.5	13.5	9.5	13.0	8.0	12.5	8.5	13.0	9.5
11	8.5	7.0	12.0	10.5	13.5	9.5	13.0	8.5	12.5	8.0	12.5	9.5
12	8.0	7.0	12.5	11.0	13.5	9.0	13.0	8.0	12.5	8.0	12.5	9.5
13	8.0	7.0	13.0	11.0	13.5	9.5	13.0	8.5	12.5	8.0	12.5	10.0
14	8.0	7.0	12.5	11.0	12.0	9.5	13.0	8.0	12.5	8.5	13.0	10.0
15	8.5	7.0	13.0	11.5	12.0	9.5	12.5	8.0	12.5	8.0	12.5	10.0
16	8.5	7.5	12.5	11.0	12.0	9.0	11.5	8.5	12.5	8.0	12.5	9.5
17	8.5	7.5	12.5	11.0	12.5	9.5	9.0	8.0	13.0	8.0	13.0	9.5
18	9.0	8.0	12.5	11.0	13.5	9.0	10.0	8.5	13.0	8.5	13.0	9.5
19	9.0	7.5	12.5	10.5	13.5	9.0	12.0	8.0	13.0	8.5	13.5	10.0
20	11.0	7.0	12.5	9.5	13.0	9.5	11.5	8.0	13.0	8.5	13.5	10.0
21	9.5	7.5	12.0	9.5	12.0	9.0	9.5	8.0	13.0	8.0	13.5	10.0
22	9.0	8.0	12.5	10.5	13.5	9.0	10.0	8.0	12.5	8.5	13.5	10.0
23	9.0	8.0	12.5	9.5	13.5	9.0	12.5	8.0	12.5	7.5	13.0	10.0
24	9.5	8.0	12.5	10.0	14.0	9.0	12.5	8.0	13.0	9.0	13.5	10.5
25	9.5	8.0	12.0	9.5	14.0	9.5	12.5	8.0	13.0	9.0	13.5	10.0
26	9.5	8.5	12.5	9.0	14.0	9.5	12.5	8.0	13.0	9.0	13.0	11.0
27	10.0	9.0	12.0	9.5	14.0	9.5	12.5	8.0	12.5	9.0	13.5	10.0
28	10.0	9.5	12.5	9.5	14.0	9.5	12.5	8.0	13.0	9.0	13.5	10.0
29	10.0	9.0	12.5	10.0	14.5	9.5	12.5	8.0	13.0	9.0	13.5	10.5
30	9.5	9.0	12.0	10.0	14.5	9.0	13.0	8.0	13.0	9.5	14.0	10.5
31	---	---	12.5	9.5	---	---	12.5	8.0	13.0	9.0	---	---
MONTH	11.0	5.5	13.0	8.5	14.5	9.0	13.0	8.0	13.0	7.5	14.0	9.0

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 Lamoine, and 29 mi downstream from Lake Siskiyou.

DRAINAGE AREA.--425 mi^2.

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 excellent. Some regulation by Lake Siskiyou, capacity, 26,100 acre-ft, since December 1968. Some minor diversions for irrigation above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--43 years, 1,187 ft^3/s, 860,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,800 ft^3/s, Jan. 16, 1974, gage height, 27.20 ft in gage well, 28.7 ft from floodmarks, from rating curve extended above 19,000 ft^3/s on basis of slope-area measurements at gage height 19.50 ft, and of peak flow; minimum daily, 117 ft^3/s, Aug. 5, 6, 12-15, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	0400	10,100	10.72	Mar. 12	1830	13,100	11.62
Mar. 5	1400	*13,800	*11.82				

Minimum daily, 179 ft^3/s, Sept. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	278	353	317	642	694	585	1150	2010	410	241	212	187
2	297	322	315	578	902	590	1200	1430	384	240	211	188
3	419	316	297	794	883	2240	1390	1140	366	238	207	186
4	421	256	316	714	771	2020	1290	1030	357	235	203	180
5	406	235	393	540	667	10100	1220	1040	352	233	202	179
6	240	231	376	508	644	6840	1130	1110	348	231	199	192
7	282	235	265	444	643	3560	1150	1130	353	228	200	193
8	316	304	243	396	633	2560	1230	1080	367	226	200	194
9	255	322	231	376	622	2090	1310	1050	362	222	201	199
10	295	327	227	353	787	1890	1360	947	381	220	200	196
11	228	258	290	347	1960	2190	1420	913	356	218	197	192
12	223	244	381	342	2550	8260	1200	845	333	218	194	193
13	232	226	263	342	6690	6810	1170	781	319	218	196	194
14	225	229	291	322	2790	5120	1220	773	309	214	198	195
15	222	222	298	314	2400	4030	1240	738	311	213	201	194
16	223	222	255	301	2050	3050	1380	729	315	218	198	193
17	246	221	264	299	1750	2470	1450	797	310	220	194	192
18	241	231	298	300	1380	2080	1350	678	304	257	193	192
19	231	378	374	293	1300	1790	1160	635	295	252	192	191
20	227	425	378	291	1110	1580	980	563	288	238	193	190
21	226	455	322	290	1020	1520	1070	514	284	237	193	188
22	217	475	395	284	782	1390	1180	633	280	246	193	185
23	221	438	398	327	737	1500	1210	538	276	243	191	185
24	249	428	341	386	672	1390	1200	520	267	232	191	188
25	239	400	320	622	669	1250	1190	491	257	227	190	187
26	235	292	320	904	634	1200	1190	476	252	223	189	187
27	314	216	300	919	619	1150	1210	469	262	220	190	186
28	259	217	299	1480	591	1110	1290	454	254	217	191	186
29	295	230	302	957	---	1060	1290	441	249	214	189	185
30	390	279	292	941	---	1030	1800	438	245	213	187	183
31	396	---	373	801	---	1030	---	432	---	210	186	---
TOTAL	8548	8987	9734	16407	36950	83485	37630	24825	9446	7062	6081	5680
MEAN	276	300	314	529	1320	2693	1254	801	315	228	196	189
MAX	421	475	398	1480	6690	10100	1800	2010	410	257	212	199
MIN	217	216	227	284	591	585	980	432	245	210	186	179
AC-FT	16950	17830	19310	32540	73290	165600	74640	49240	18740	14010	12060	11270

CAL YR 1986	TOTAL	485007	MEAN	1329	MAX	25000	MIN 191	AC-FT	962000
WTR YR 1987	TOTAL	254835	MEAN	698	MAX	10100	MIN 179	AC-FT	505500

SACRAMENTO RIVER BASIN

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 mi^2.

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.

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.--Estimated daily discharges for the following ice-affected periods: Nov. 21 to Jan. 21, Feb. 3-7, 10, 11, 18, 21, 24-27 and Mar. 20, 22, 23. Records good except those for the winter period, which are fair. 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 above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--59 years, 82.0 ft^3/s, 59,410 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 300 ft^3/s, May 26, gage height, 3.67 ft; minimum daily, 3.1 ft^3/s, Aug. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	35	7.4	5.9	17	17	16	164	75	161	143	11
2	44	34	7.2	5.7	16	17	38	150	77	158	157	16
3	42	33	8.8	5.4	15	17	65	141	65	157	154	20
4	41	33	9.1	5.3	16	18	63	180	62	163	161	20
5	42	32	9.4	5.1	16	19	58	213	89	156	182	19
6	41	32	9.8	4.7	16	20	59	207	112	130	185	20
7	39	34	9.0	4.3	16	20	61	210	128	111	184	19
8	38	34	8.4	3.9	17	20	67	209	138	109	185	19
9	37	35	7.8	4.5	17	18	57	206	116	122	183	20
10	36	37	7.0	4.9	15	17	52	208	108	151	179	20
11	36	35	8.6	4.7	17	18	59	204	106	147	177	20
12	35	35	8.1	4.6	18	19	53	182	101	145	173	20
13	35	35	7.8	4.5	22	29	54	106	96	145	171	20
14	34	33	7.9	4.0	20	25	63	76	93	141	178	20
15	34	26	8.0	3.7	19	25	83	76	102	137	185	20
16	34	28	7.7	3.2	18	26	93	84	106	137	182	19
17	35	29	7.1	3.4	16	24	111	138	106	150	179	18
18	40	21	6.6	4.3	15	23	103	135	96	153	172	19
19	37	9.2	6.6	5.1	14	20	82	111	93	131	168	21
20	36	8.6	6.5	7.0	17	19	76	95	91	94	165	23
21	35	8.4	6.3	19	14	18	85	89	94	85	159	27
22	34	8.3	5.9	26	15	18	100	87	102	91	149	26
23	34	8.2	6.9	27	15	18	90	78	118	81	70	26
24	35	8.0	6.4	28	14	18	66	82	118	76	7.0	26
25	35	7.7	5.9	32	14	15	79	101	117	86	5.5	26
26	35	7.1	6.0	34	15	15	95	235	114	94	3.6	26
27	34	8.6	6.3	33	16	13	104	161	139	86	3.5	26
28	35	9.2	5.8	23	17	13	96	106	162	95	3.1	26
29	35	8.4	5.2	19	---	13	123	82	161	105	3.7	26
30	36	7.6	5.1	18	---	13	177	69	163	106	7.4	26
31	36	---	5.5	17	---	14	---	62	---	105	10	---
TOTAL	1148	680.3	224.1	370.2	457	579	2328	4247	3248	3808	3884.8	645
MEAN	37.0	22.7	7.23	11.9	16.3	18.7	77.6	137	108	123	125	21.5
MAX	48	37	9.8	34	22	29	177	235	163	163	185	27
MIN	34	7.1	5.1	3.2	14	13	16	62	62	76	3.1	11
AC-FT	2280	1350	445	734	906	1150	4620	8420	6440	7550	7710	1280

CAL YR 1986 TOTAL 39556.9 MEAN 108 MAX 409 MIN 2.2 AC-FT 78460
WTR YR 1987 TOTAL 21619.4 MEAN 59.2 MAX 235 MIN 3.1 AC-FT 42880

SACRAMENTO RIVER BASIN

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 mi^2, 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.--Estimated daily discharges for the following ice-affected period: Jan. 9-21. Records good except those for period of ice effect, which are fair. Low flow regulated by many small reservoirs, total capacity about 144,000 acre-ft. Diversions for irrigation of about 39,000 acres above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--57 years (water years 1905, 1932-87), 253 ft^3/s, 183,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 13,000 ft^3/s, Mar. 8, 1904, gage height, 15.0 ft, site and datum then in use; minimum discharge, 0.1 ft^3/s, Apr. 29, Aug. 5, Sept. 18, 1934, Aug. 18-21, 1935.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 14	0045	*677	*4.10				

Minimum daily, 14 ft^3/s, July 5 and Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	83	77	94	112	101	106	74	187	30	41	31
2	128	84	76	102	108	97	102	129	165	26	42	39
3	117	82	119	150	106	98	107	134	101	22	34	38
4	100	83	107	147	111	104	129	103	80	18	25	29
5	82	82	96	131	116	100	146	84	66	14	27	28
6	77	92	103	110	114	100	127	79	54	15	21	31
7	82	81	93	101	115	104	123	48	47	41	14	42
8	80	78	90	78	122	104	118	35	57	61	19	53
9	80	75	81	82	119	102	106	42	77	41	21	53
10	66	93	72	77	117	102	122	36	113	27	22	44
11	60	87	86	73	127	108	126	26	130	21	24	37
12	60	83	89	70	130	186	145	33	106	18	23	34
13	61	83	79	68	330	451	135	38	100	19	28	31
14	65	83	82	69	484	626	116	59	83	54	33	27
15	70	83	83	66	356	469	93	61	68	52	46	24
16	77	92	81	64	242	428	99	85	49	41	45	22
17	83	91	72	68	207	357	99	98	48	74	45	20
18	74	81	78	70	170	278	66	82	53	137	40	19
19	63	81	75	72	138	285	77	106	58	120	31	20
20	58	86	80	73	118	261	94	102	51	101	24	21
21	62	89	80	74	106	223	85	63	48	131	22	22
22	74	86	80	73	100	196	43	86	47	121	21	22
23	71	87	84	76	98	178	60	107	35	109	18	21
24	69	83	80	81	89	168	60	88	32	93	17	20
25	69	79	96	93	78	155	60	70	33	81	18	19
26	68	72	91	109	91	138	66	103	33	69	20	25
27	75	92	95	153	95	128	51	296	34	58	22	26
28	133	95	99	211	102	117	39	438	36	47	22	21
29	94	86	94	184	---	108	40	257	46	37	24	17
30	86	80	86	139	---	103	39	174	37	37	28	16
31	82	---	84	119	---	102	---	179	---	39	30	---
TOTAL	2507	2532	2688	3077	4201	6077	2779	3315	2074	1754	847	852
MEAN	80.9	84.4	86.7	99.3	150	196	92.6	107	69.1	56.6	27.3	28.4
MAX	141	95	119	211	484	626	146	438	187	137	46	53
MIN	58	72	72	64	78	97	39	26	32	14	14	16
AC-FT	4970	5020	5330	6100	8330	12050	5510	6580	4110	3480	1680	1690

CAL YR 1986	TOTAL	179046.4	MEAN 491	MAX 8580	MIN 5.1	AC-FT 355100			
WTR YR 1987	TOTAL	32703.0	MEAN 89.6	MAX 626	MIN 14	AC-FT 64870			

SACRAMENTO RIVER BASIN

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 September 1987. Unpublished records for water years 1973-86 available in files of 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.--Water is diverted from Fall River (station 11354100) 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 PUBLISHED RECORD.--Maximum daily discharge, 2,100 ft^3/s, Mar. 14, 15, 1987; minimum daily, 431 ft^3/s, Mar. 2, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1300	1320	1330	1280	650	1340	1400	1270	1220	1150	1090	1100
2	1270	1350	1270	1280	1350	431	1340	1410	1230	1120	1080	1110
3	1280	1320	1290	1360	1220	491	1350	1280	1170	1110	1190	1150
4	1500	1170	1230	1380	1390	1210	1390	1230	1210	1110	1150	1170
5	1320	1320	1300	1360	1230	1200	1360	1290	1210	1080	1150	1100
6	1300	1260	1300	1310	1270	1430	1390	1210	1150	1150	1130	1220
7	1410	1270	1300	1270	1300	1650	1380	1240	1150	1110	1130	1220
8	1250	1270	1240	1300	1190	1440	1380	1280	1250	1170	1150	1220
9	1360	1350	1270	1220	1290	1370	1340	1020	1120	1190	1170	1220
10	1290	1300	1250	1270	1310	1260	1420	1380	1180	1160	1140	1220
11	1350	1280	1280	1290	1130	1260	1440	1260	1140	1160	1160	1280
12	1300	1280	1260	1290	1480	1320	1300	1260	1190	1140	1130	945
13	1260	1260	1260	1240	1370	2070	1300	1200	1150	1150	1110	1380
14	1320	1260	1250	1260	1690	2100	1440	1290	1240	1060	1260	1150
15	1280	1230	1280	1310	1630	2100	1580	1310	1170	1150	1110	1180
16	1320	1340	1230	1260	1500	1750	1540	1550	1190	1110	1140	1170
17	1320	1280	1220	1240	1450	1520	1520	1210	1210	1150	1150	1130
18	1320	1250	1300	1260	1490	1530	1410	1340	1160	1220	1140	1260
19	1060	1290	1320	1270	1420	1570	1370	1300	1140	1190	1140	1090
20	1520	1300	1330	1230	1280	1530	1320	1180	1110	1170	1150	1160
21	1390	1280	1230	1250	1230	1490	1350	1160	1250	1200	1130	1200
22	1280	1310	1250	1280	1250	1450	1300	1180	1160	1190	1140	1170
23	1300	1290	1310	1230	1480	1400	1260	1250	1180	1170	1070	1170
24	1320	1190	1300	1310	1190	1590	1310	999	1110	1180	1210	1180
25	1250	1350	1240	1280	1320	1380	1260	1310	1220	1170	1160	1080
26	1360	1280	1240	1280	1290	1390	1270	1220	1170	1140	1140	1300
27	1300	1300	1270	1230	1310	1440	1380	1240	1190	1170	1140	1150
28	1340	1290	1250	1420	1280	1440	1310	1270	1160	1170	1150	1220
29	1240	1280	1260	1320	---	1500	1250	1170	1160	1140	1100	1190
30	1390	1230	1350	1210	---	1320	1200	1140	1170	1150	1180	1190
31	1350	---	1280	1250	---	1390	---	1230	---	1160	1180	---
TOTAL	40850	38500	39490	39740	36990	44362	40860	38679	35360	35690	35470	35325
MEAN	1317	1283	1273	1281	1321	1431	1362	1247	1178	1151	1144	1177
MAX	1520	1350	1350	1420	1690	2100	1580	1550	1250	1220	1260	1380
MIN	1060	1170	1220	1210	650	431	1200	999	1110	1060	1070	945
AC-FT	81030	76360	78330	78820	73370	87990	81050	76720	70140	70790	70350	70070

CAL YR 1986 TOTAL 511662 MEAN 1401 MAX 2210 MIN 992 AC-FT 1015000
WTR YR 1987 TOTAL 461316 MEAN 1263 MAX 2100 MIN 431 AC-FT 915000

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 mi^2, 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 above station for irrigation.

AVERAGE DISCHARGE.--12 years, 2,023 ft^3/s, 1,466,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft^3/s, Feb. 20, 1986, gage height, 17.03 ft; minimum daily, 819 ft^3/s, Feb. 1, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of January 1974 reached a stage of 14.8 ft, from floodmarks on right bank, discharge 22,600 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 13	0600	*4,410	*8.45				

Minimum daily, 966 ft^3/s, Sept. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1680	1580	1610	1570	1050	1680	1730	1470	1640	1250	1210	1170
2	1640	1620	1540	1610	1820	1040	1680	1580	1480	1220	1200	1180
3	1640	1580	1560	1770	1660	1760	1690	1440	1430	1230	1320	1260
4	1830	1570	1490	1860	1890	1520	1710	1400	1430	1230	1260	1220
5	1610	1610	1590	1860	1680	1530	1610	1480	1420	1200	1250	1130
6	1560	1530	1610	1760	1720	1930	1590	1320	1330	1270	1260	1230
7	1700	1560	1590	1680	1780	2010	1570	1400	1320	1220	1240	1240
8	1540	1560	1560	1590	1620	1780	1870	1430	1380	1260	1270	1240
9	1610	1650	1560	1500	1750	1620	1690	1210	1250	1290	1270	1240
10	1550	1590	1530	1520	1730	1530	1750	1510	1320	1240	1230	1240
11	1550	1570	1530	1550	1510	1660	1770	1430	1280	1240	1260	1340
12	1550	1560	1490	1540	1920	2200	1600	1340	1330	1210	1230	966
13	1530	1540	1510	1500	1950	4050	1490	1370	1290	1240	1190	1490
14	1550	1540	1510	1490	2750	4210	1680	1450	1390	1150	1360	1260
15	1540	1510	1540	1560	3090	4270	1830	1490	1300	1220	1180	1290
16	1550	1610	1500	1450	2730	3700	1640	1720	1290	1190	1230	1290
17	1560	1520	1490	1450	2260	2950	1710	1430	1320	1260	1230	1260
18	1580	1500	1550	1490	2210	2670	1620	1460	1280	1330	1240	1270
19	1300	1570	1550	1540	2000	2470	1450	1470	1240	1350	1240	1270
20	1750	1550	1590	1450	1830	2380	1470	1330	1240	1270	1250	1220
21	1660	1550	1490	1500	1700	2240	1520	1270	1420	1330	1210	1290
22	1560	1590	1520	1500	1640	2170	1510	1310	1300	1310	1210	1260
23	1620	1590	1610	1440	1750	2090	1480	1270	1300	1300	1140	1240
24	1600	1480	1550	1570	1470	2290	1530	1260	1240	1310	1310	1260
25	1630	1600	1500	1540	1660	2000	1470	1470	1340	1290	1240	1160
26	1630	1560	1520	1540	1630	1960	1470	1360	1290	1230	1230	1400
27	1590	1580	1550	1500	1570	1920	1480	1390	1310	1290	1240	1220
28	1630	1580	1530	1810	1620	1880	1500	1450	1260	1280	1220	1290
29	1540	1570	1550	1800	---	1880	1360	1350	1280	1260	1180	1300
30	1690	1500	1630	1750	---	1680	1340	1380	1270	1310	1270	1240
31	1660	---	1570	1740	---	1780	---	1630	---	1310	1260	---
TOTAL	49630	46920	47920	49430	51990	68850	47810	43870	39970	39090	38430	37466
MEAN	1601	1564	1546	1595	1857	2221	1594	1415	1332	1261	1240	1249
MAX	1830	1650	1630	1860	3090	4270	1870	1720	1640	1350	1360	1490
MIN	1300	1480	1490	1440	1050	1040	1340	1210	1240	1150	1140	966
AC-FT	98440	93070	95050	98040	103100	136600	94830	87020	79280	77530	76230	74310

CAL YR 1986 TOTAL 992340 MEAN 2719 MAX 28800 MIN 1280 AC-FT 1968000
WTR YR 1987 TOTAL 561376 MEAN 1538 MAX 4270 MIN 966 AC-FT 1113000

SACRAMENTO RIVER BASIN

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 mi^2, hydrologic drainage boundary uncertain owing to 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.--Estimated daily discharges: Feb. 24 to Mar. 12. Records good. Diversions for irrigation of 260 acres above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--60 years (water years 1927-29, 1931-87), 143 ft^3/s, 103,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,320 ft^3/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 ft^3/s on basis of slope-area measurement of peak flow; minimum, 67 ft^3/s, Sept. 7, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 16	2215	*243	*3.19				

Minimum daily, 129 ft^3/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	171	162	166	160	152	158	184	169	155	138	141
2	174	169	164	161	160	152	160	174	167	155	138	141
3	173	170	165	163	160	153	161	172	167	155	138	141
4	172	169	166	158	159	154	159	180	167	155	138	141
5	172	168	166	162	161	155	159	189	167	155	137	141
6	172	168	166	161	159	165	159	200	164	154	137	141
7	172	168	163	157	160	160	159	209	165	153	136	141
8	172	168	161	155	159	158	161	216	163	153	134	135
9	172	168	159	155	159	155	162	219	162	153	141	131
10	171	167	160	156	160	155	165	217	163	147	146	131
11	171	167	162	157	166	160	168	210	162	144	146	131
12	171	167	163	158	162	180	166	212	161	143	146	132
13	171	167	165	158	176	176	166	213	161	143	146	131
14	171	167	164	157	166	170	168	213	158	143	146	132
15	171	167	162	156	164	166	171	217	158	143	145	131
16	170	167	161	155	160	164	173	234	158	143	144	131
17	174	167	160	154	161	163	176	228	156	148	149	130
18	171	167	164	153	161	165	180	213	155	148	149	136
19	171	166	162	155	158	161	171	203	154	143	144	140
20	170	167	161	156	160	160	169	195	150	150	141	140
21	170	169	160	156	160	163	172	193	150	154	141	140
22	170	166	166	156	159	161	177	190	149	154	141	140
23	169	165	163	158	158	160	181	188	148	153	140	140
24	170	165	161	160	155	159	183	187	147	152	140	140
25	169	165	160	162	151	159	181	184	144	152	139	140
26	169	165	165	160	152	158	179	180	146	151	138	140
27	169	165	158	163	152	156	187	179	146	151	138	139
28	168	166	158	162	151	157	196	177	144	150	133	134
29	174	165	164	162	---	157	198	177	142	149	138	130
30	184	160	158	161	---	157	198	177	147	143	141	129
31	173	---	165	159	---	157	---	174	---	139	140	---
TOTAL	5321	5006	5034	4912	4469	4968	5163	6104	4690	4631	4368	4090
MEAN	172	167	162	158	160	160	172	197	156	149	141	136
MAX	184	171	166	166	176	180	198	234	169	155	149	141
MIN	168	160	158	153	151	152	158	172	142	139	133	129
AC-FT	10550	9930	9980	9740	8860	9850	10240	12110	9300	9190	8660	8110

CAL YR 1986 TOTAL 66571 MEAN 182 MAX 552 MIN 139 AC-FT 132000
WTR YR 1987 TOTAL 58756 MEAN 161 MAX 234 MIN 129 AC-FT 116500

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 September 1987. Unpublished records for water years 1981-85 available in files of the U.S. Geological Survey. Fragmentary records for water years 1921-80 in file of the Pacific Gas & Electric Co.

REMARKS.--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 PUBLISHED RECORD.--Maximum daily discharge, 453 ft^3/s, Oct. 20, 1986; no flow Mar. 17-19, 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	441	430	407	407	396	396	407	303	326	303	292	303
2	441	430	407	418	396	407	350	315	315	303	292	303
3	441	430	418	418	407	396	407	326	303	303	292	303
4	441	430	407	430	407	396	396	338	326	315	292	303
5	418	430	407	418	396	407	384	303	315	315	292	303
6	441	430	418	418	407	407	373	315	326	315	292	303
7	441	430	418	418	407	396	350	326	326	303	303	303
8	418	430	418	418	407	407	361	315	338	315	292	303
9	407	396	407	407	407	396	361	326	315	303	303	303
10	407	418	407	407	407	396	338	338	326	315	315	292
11	418	418	407	396	407	407	338	350	326	303	315	315
12	418	430	418	396	407	407	350	338	326	315	315	315
13	418	418	418	396	396	430	373	326	315	292	303	315
14	430	418	418	396	418	441	373	315	326	303	303	315
15	430	418	396	396	418	441	361	326	326	292	303	303
16	430	418	407	396	418	210	338	350	315	303	303	303
17	441	418	407	396	407	0	315	373	315	303	303	303
18	430	418	407	396	407	0	303	384	315	315	280	315
19	441	430	418	396	407	0	303	384	303	326	303	315
20	453	418	418	396	407	174	326	384	303	338	292	315
21	441	418	407	407	396	430	326	384	303	338	280	303
22	430	430	407	407	396	418	326	373	303	338	292	303
23	430	430	407	396	407	396	326	350	303	326	303	315
24	430	430	407	407	396	396	338	350	303	326	303	303
25	441	418	407	407	396	396	338	338	303	326	303	315
26	441	418	407	407	396	384	326	338	315	326	303	303
27	430	418	407	407	384	396	315	326	303	338	303	303
28	430	418	407	418	396	384	303	338	303	315	315	315
29	430	430	407	407	---	384	303	338	303	303	315	315
30	441	418	407	407	---	396	303	326	303	303	315	315
31	441	---	407	407	---	384	---	326	---	292	315	---
TOTAL	13390	12686	12705	12596	11296	10878	10311	10522	9428	9711	9332	9223
MEAN	431	422	409	406	403	350	343	339	314	313	301	307
MAX	453	430	418	430	418	441	407	384	338	338	315	315
MIN	407	396	396	396	384	0	303	303	303	292	280	292
AC-FT	26560	25160	25200	24980	22410	21580	20450	20870	18700	19260	18510	18290
a	36780	34480	34930	34360	30970	30020	29290	30000	27360	28020	27080	26460

CAL YR 1986 TOTAL 143675.00 MEAN 393 MAX 521 MIN 0 AC-FT 285000
WTR YR 1987 TOTAL 132078.00 MEAN 361 MAX 453 MIN 0 AC-FT 262000

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

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 mi^2. PERIOD OF RECORD, October 1965 to current year (month-end contents only). 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.

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, 40,626 acre-ft, Oct. 1, elevation, 2,757.00 ft; minimum, 26,804 acre-ft, July 30, elevation, 2,744.65 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 mi^2. 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.

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, 21,562 acre-ft, June 14, and 16, elevation, 2,659.50 ft; minimum, 3,660 acre-ft, Mar. 21, elevation, 2,596.70 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 mi^2. 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.

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, 31,667 acre-ft, July 1, 2, 5, elevation, 2,672.90 ft; minimum, 16,847 acre-ft, Nov. 23, Jan. 17, elevation, 2,636.30 ft.

SACRAMENTO RIVER BASIN

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

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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.....	2575.30	41008	--	2633.30	11559	--	2643.70	19383	--
Oct. 31.....	2747.10	29242	-11766	2617.30	7310	-4249	2638.20	17477	-1906
Nov. 30.....	2746.85	28986	-256	2622.60	8589	+1279	2638.70	17645	+168
Dec. 31.....	2747.65	29811	+825	2616.80	7196	-1393	2637.40	17210	-435
CAL YR 1986..	--	--	-2516	--	--	+22	--	--	+526
Jan. 31.....	2748.40	30599	+788	2623.20	8742	+1546	2642.40	18921	+1711
Feb. 29.....	2748.60	30811	+212	2614.90	6777	-1965	2639.90	18052	-869
Mar. 31.....	2747.80	29967	-844	2614.00	6585	-192	2655.60	23947	+5895
Apr. 30.....	2751.50	34005	+4038	2634.10	11804	+5219	2655.90	24070	+123
May 31.....	2750.85	33271	-734	2648.70	16899	+5095	2664.70	27849	+3779
June 30.....	2752.30	34923	+1652	2658.60	21143	+4244	2672.80	31619	+3770
July 31.....	2746.00	28128	-6795	2635.10	12114	-9029	2660.50	26004	-5615
Aug. 31.....	2754.90	38012	+9884	2633.70	11681	-433	2647.90	20925	-5079
Sept. 30.....	2749.75	32053	-5959	2621.50	8313	-3368	2639.90	18052	-2873
WTR YR 1987..	--	--	-8955	--	--	-3246	--	--	-1331

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 mi^2, 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.
REMARKS.--No estimated daily discharges. Low flow completely regulated by small reservoirs and powerplants, total usable reservoir capacity, 253,000 acre-ft. Many diversions above 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 ft^3/s, 1,819,000 acre-ft/yr, prior to diversion; 33 years (water years 1955-87), 3,063 ft^3/s, 2,219,000 acre-ft/yr, adjusted for diversion to Pit No. 4 powerplant; unadjusted for same period, 515 ft^3/s, 373,100 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,700 ft^3/s, Feb. 20, 1986, gage height, 18.70 ft; minimum daily, prior to diversion to Pit No. 4 powerplant in 1955, 234 ft^3/s, Sept. 13, 1953. Minimum daily, since diversion to Pit No. 4 powerplant, 22 ft^3/s, Dec. 2-4, 1969.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,470 ft^3/s, Mar. 14, gage height, 6.97 ft; minimum daily, 57 ft^3/s, Feb. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	134	1040	81	65	61	163	160	161	164	165	188	167
2	128	1030	79	66	61	158	158	159	165	177	176	167
3	132	824	82	66	57	158	160	160	165	163	153	171
4	132	574	79	65	60	166	162	160	162	165	87	174
5	130	809	80	67	60	165	161	158	162	167	89	182
6	128	800	79	65	60	165	160	163	161	164	119	177
7	129	518	77	66	60	164	161	165	161	171	162	169
8	129	584	79	66	61	162	164	164	169	170	158	168
9	128	586	81	66	61	163	159	160	179	164	157	175
10	129	587	76	67	61	165	160	166	174	162	160	171
11	130	585	71	67	60	164	160	172	172	161	161	174
12	131	591	64	65	63	167	157	170	167	164	165	175
13	131	596	63	64	70	159	158	164	165	164	165	172
14	130	570	63	64	64	1120	160	166	163	166	162	172
15	129	556	63	65	90	2300	160	167	163	166	163	169
16	131	562	64	65	241	1710	159	164	162	169	161	168
17	130	555	63	63	67	879	158	166	163	167	165	170
18	129	556	67	65	60	312	160	167	163	165	161	170
19	135	547	66	64	62	160	159	169	164	166	161	169
20	542	538	65	66	61	161	159	163	162	163	162	175
21	652	621	63	61	62	160	159	165	161	166	164	177
22	737	681	64	62	61	158	159	164	165	164	163	96
23	724	676	64	61	149	160	161	164	165	165	163	93
24	739	555	65	60	163	158	161	163	164	165	164	123
25	723	126	68	61	159	159	159	165	164	165	162	168
26	720	112	66	62	160	160	160	165	165	165	162	171
27	895	112	64	64	165	161	163	165	164	164	164	168
28	1030	105	67	62	163	158	161	163	164	165	165	169
29	894	106	67	60	---	158	161	167	168	165	166	171
30	1030	105	65	59	---	164	160	165	166	162	168	169
31	1040	---	65	58	---	163	---	164	---	178	167	---
TOTAL	12201	16207	2160	1977	2522	10520	4799	5094	4952	5143	4883	4940
MEAN	393	540	69.6	63.7	90.0	339	159	164	165	165	157	164
MAX	1040	1040	82	67	241	2300	164	172	179	178	188	182
MIN	128	105	63	58	57	158	157	158	161	161	87	93
AC-FT	24200	32150	4280	3920	5000	20870	9520	10100	9820	10200	9690	9800
MEAN a	2875	2693	2623	2684	3034	3631	2592	2360	2178	2194	1870	2183
AC-FT a	176800	160200	161300	165000	168500	223300	154200	145100	129600	134900	115000	129900
b	167400	147400	150200	154200	153300	187100	141200	138600	124600	121000	98290	114600
c	152600	128100	157000	161100	163500	202400	144700	135000	119800	124700	105300	120100

CAL YR 1986 TOTAL 419380 MEAN 1148 MAX 31100 MIN 61 AC-FT 831800 MEAN a 4116 AC-FT a 2980000
WTR YR 1987 TOTAL 75398 MEAN 206 MAX 2300 MIN 57 AC-FT 149600 MEAN a 2574 AC-FT a 1864000

a Adjusted for diversions to Pit No. 4 powerplant.
b Discharge, in acre-feet, for Pit No. 3 powerplant, provided by Pacific Gas & Electric Co.
c Diversion, in acre-feet, to Pit No. 4 powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2, 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, but at datum 7.69 ft higher.

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 above station; diversion to Pit No. 5 powerplant 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 ft^3/s, 2,122,000 acre-ft/yr; 44 years (water years 1944-87), 582 ft^3/s, 421,700 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,000 ft^3/s, Jan. 25, 1970, gage height, 18.17 ft in gage well, 19.0 ft from floodmarks, from rating curve extended above 17,000 ft^3/s; maximum gage height, 18.70 ft, Feb. 20, 1986; minimum daily, 692 ft^3/s, July 9, 1925; since diversion to Pit No. 5 powerplant, minimum daily, 34 ft^3/s, Mar. 29, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,950 ft^3/s, Mar. 14, gage height, 9.43 ft; minimum daily, 71 ft^3/s, Dec. 3, 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2770	107	75	92	90	140	201	159	129	140	322	150
2	281	96	72	84	100	148	200	154	128	152	300	153
3	143	86	71	111	101	170	204	149	128	143	233	141
4	140	83	71	110	96	156	205	146	128	146	179	146
5	135	94	83	94	93	283	198	149	129	140	170	147
6	137	86	79	86	98	289	197	146	129	146	160	140
7	136	82	75	80	97	233	195	148	126	154	151	149
8	129	83	72	82	93	215	195	148	128	146	150	156
9	129	88	75	82	93	207	186	142	132	145	162	157
10	130	90	74	79	108	211	186	138	135	147	157	145
11	126	90	74	80	144	313	187	139	131	143	150	154
12	128	90	76	80	156	686	182	141	130	136	142	143
13	130	89	74	76	376	1220	180	137	129	144	150	142
14	137	91	72	78	226	1930	180	134	126	146	147	124
15	135	91	72	75	463	3250	179	133	123	146	147	89
16	134	91	73	72	780	2620	183	139	128	146	140	90
17	141	90	72	74	337	1760	177	136	128	158	153	109
18	134	87	78	73	149	1090	173	134	127	143	153	154
19	130	82	79	75	134	732	170	136	127	145	145	131
20	129	85	75	77	126	342	171	133	122	145	155	137
21	198	87	72	75	119	280	165	130	121	159	154	139
22	120	87	79	72	115	263	171	131	125	152	137	142
23	117	87	78	76	130	268	170	133	126	146	143	135
24	118	89	78	78	152	247	167	135	128	145	151	141
25	120	89	77	97	151	236	160	136	126	145	152	153
26	119	89	76	99	150	229	154	137	127	132	156	143
27	128	89	72	104	140	224	148	133	116	149	158	146
28	132	88	72	127	136	219	154	133	122	152	150	151
29	145	85	72	105	---	214	152	131	119	152	141	154
30	137	82	74	103	---	206	156	130	137	155	143	149
31	130	---	79	92	---	203	---	128	---	163	152	---
TOTAL	6918	2653	2321	2688	4953	18584	5346	4298	3810	4561	5103	4210
MEAN	223	88.4	74.8	86.7	176	599	178	138	127	147	164	140
MAX	2770	107	83	127	780	3250	205	159	137	163	322	157
MIN	117	82	71	72	90	140	148	128	116	132	137	89
AC-FT	13720	5260	4600	5330	9820	36860	10600	8530	7560	9050	10120	8350

CAL YR 1986	TOTAL	506963	MEAN	1388	MAX	36500	MIN 66	AC-FT	1006000
WTR YR 1987	TOTAL	65445	MEAN	179	MAX	3250	MIN 71	AC-FT	129800

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 a tunnel to Iron Canyon Reservoir (station 11363920), then into Pit River via the penstock for James B. Black powerplant. Records are combined flow of diversion from McCloud River at McCloud Dam plus Iron Canyon Creek.

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

AVERAGE DISCHARGE.--21 years (water years 1967-87), 971 ft^3/s, 703,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,420 ft^3/s, July 15, 1966; no flow several days during most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1930	632	595	821	1070	915	1010	847	210	621	386	688
2	1480	550	1050	868	1050	1470	828	695	542	1070	639	635
3	367	1180	729	746	832	1130	1410	386	568	681	824	548
4	926	724	787	693	830	493	725	232	605	3.9	812	574
5	642	806	717	752	699	616	588	1060	6.7	669	717	507
6	827	666	738	677	948	1260	518	888	0	1120	563	704
7	143	413	758	572	637	1370	1260	1040	0	1450	751	592
8	741	305	518	807	904	1250	1170	549	428	538	677	854
9	875	561	618	696	658	1010	657	317	1040	611	632	1010
10	425	676	824	731	883	1230	625	416	737	916	763	611
11	449	1150	531	874	150	1490	869	929	854	563	1200	1080
12	735	789	663	523	946	717	885	427	605	489	764	446
13	979	765	620	716	409	1470	862	1020	19	751	749	453
14	981	756	600	684	1590	1400	930	936	166	888	922	638
15	760	555	691	744	1900	1350	861	461	603	1260	755	719
16	614	863	581	958	1580	1440	967	0	522	1060	446	562
17	647	663	679	359	1230	1180	717	152	884	712	733	757
18	587	847	479	391	1070	1390	543	712	466	665	654	710
19	622	735	641	467	1180	1060	659	882	945	535	552	606
20	835	597	744	394	1030	1470	766	934	162	940	909	584
21	676	933	715	805	602	1390	1120	700	579	1260	586	605
22	689	554	662	662	1150	1200	699	600	822	1180	524	510
23	677	522	761	753	747	1120	652	462	662	886	486	656
24	796	175	702	599	1040	1690	1080	512	884	968	887	730
25	656	470	717	358	1260	1940	833	939	789	493	580	722
26	724	721	591	744	274	820	921	563	361	448	792	358
27	558	463	625	775	751	1290	834	658	265	1150	686	481
28	547	499	841	569	508	947	915	851	527	1280	753	514
29	607	886	720	463	---	1030	500	704	1010	1100	487	1200
30	777	443	691	668	---	1160	257	774	421	875	349	833
31	795	---	661	771	---	570	---	201	---	929	683	---
TOTAL	23067	19899	21249	20640	25928	36868	24661	19847	15682.7	26111.9	21261	19887
MEAN	744	663	685	665	926	1189	822	640	522	842	685	662
MAX	1930	1180	1050	958	1900	1940	1410	1060	1040	1450	1200	1200
MIN	143	175	479	358	150	493	257	0	0	3.9	349	358
AC-FT	45750	39470	42150	40940	51430	73130	48920	39370	31110	51790	42170	39450
a	173200	163500	166900	173200	177800	219900	159400	149800	134700	139000	118200	135000

CAL YR 1986 TOTAL 344704.00 MEAN 944 MAX 1930 MIN 0 AC-FT 683700
WTR YR 1987 TOTAL 275101.60 MEAN 753 MAX 1940 MIN 0 AC-FT 545700

a Discharge, in acre-feet, for Pit No. 5 powerplant, provided by Pacific Gas & 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 mi^2.

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 Dam. There is interbasin diversion from Lake McCloud (station 11367790) to Iron Canyon Reservoir (station 11363920) and then into a tunnel to James B. Black powerplant on the Pit River (station 11363910). 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, 5.74 ft^3/s, 4,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 650 ft^3/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, 4.7 ft^3/s, Mar. 12, July 15, gage height, 1.51 ft; minimum daily, 2.9 ft^3/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	3.5	3.5	3.4	3.5	3.6	3.6	3.6	3.3	3.3	3.3	3.2
2	3.5	3.5	3.5	3.4	3.4	3.6	3.6	3.6	3.3	3.3	3.3	3.2
3	3.5	3.5	3.5	3.4	3.5	3.6	3.6	3.6	3.3	3.3	3.3	3.2
4	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.6	3.3	3.3	3.2	3.2
5	3.5	3.5	3.5	3.4	3.5	3.6	3.6	3.6	3.3	3.3	3.3	3.3
6	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.6	3.3	3.3	3.3	3.3
7	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.6	3.3	3.3	3.3	3.3
8	3.5	3.5	3.4	3.5	3.4	3.6	3.6	3.6	3.3	3.3	3.3	3.2
9	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.6	3.3	3.3	3.3	3.2
10	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.6	3.3	3.3	3.4	3.1
11	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.5	3.3	3.3	3.3	3.1
12	3.5	3.5	3.4	3.4	3.5	3.6	3.6	3.3	3.3	3.3	3.2	3.1
13	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.3	3.3	3.3	3.2	3.1
14	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.3	3.3	3.3	3.2	3.1
15	3.6	3.5	3.4	3.4	3.4	3.6	3.6	3.3	3.3	3.7	3.2	3.1
16	3.6	3.5	3.4	3.4	3.4	3.6	3.2	3.3	3.0	3.6	3.2	3.1
17	3.5	3.5	3.4	3.4	3.5	3.6	3.6	3.3	3.3	3.3	3.2	3.1
18	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.3	3.3	3.3	3.2	3.1
19	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.3	3.3	3.3	3.2	3.1
20	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.3	3.3	3.3	3.2	3.0
21	3.5	3.5	3.4	3.4	3.5	3.6	3.6	3.3	3.3	3.3	3.2	3.0
22	3.5	3.2	3.4	3.4	3.4	3.6	3.6	3.3	3.3	3.3	3.2	3.0
23	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.3	3.3	3.3	3.2	3.1
24	3.5	3.5	3.4	3.4	3.5	3.6	3.6	3.3	3.3	3.3	3.2	3.1
25	3.5	3.5	3.4	3.4	3.4	3.6	3.6	3.3	3.3	3.3	3.2	3.0
26	3.5	3.5	3.4	3.4	3.5	3.6	3.6	3.3	3.3	3.3	3.2	3.1
27	3.5	3.5	3.4	3.5	3.5	3.6	3.6	3.3	3.3	3.3	3.2	3.1
28	3.5	3.5	3.4	3.4	3.5	3.6	3.6	3.3	3.3	3.3	3.1	3.1
29	3.5	3.5	3.4	3.4	---	3.6	3.6	3.3	3.3	3.3	3.1	3.0
30	3.5	3.5	3.5	3.5	---	3.6	3.6	3.3	3.3	3.3	3.2	2.9
31	3.5	---	3.4	3.4	---	3.6	---	3.3	---	3.3	3.2	---
TOTAL	108.7	104.7	105.9	105.7	96.2	111.6	107.6	105.5	98.7	103.0	100.1	93.5
MEAN	3.50	3.49	3.41	3.40	3.43	3.60	3.58	3.40	3.29	3.32	3.22	3.11
MAX	3.6	3.5	3.5	3.5	3.5	3.6	3.6	3.6	3.3	3.7	3.4	3.3
MIN	3.5	3.2	3.4	3.4	3.4	3.6	3.2	3.3	3.0	3.3	3.1	2.9
AC-FT	216	208	210	210	191	221	213	209	196	204	199	185

CAL YR 1986 TOTAL 1320.2 MEAN 3.61 MAX 8.3 MIN 3.1 AC-FT 2620
WTR YR 1987 TOTAL 1241.2 MEAN 3.40 MAX 3.7 MIN 2.9 AC-FT 2460

SACRAMENTO RIVER BASIN

11365000 PIT RIVER NEAR MONTGOMERY CREEK, CA

LOCATION.--Lat 40°50'36", long 122°00'58", 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 0.9 mi downstream from Pit No. 7 Dam and powerplant, 1.5 mi upstream from Potem Creek, and 4.1 mi west of town of Montgomery Creek.
DRAINAGE AREA.--4,952 mi^2, 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 0.9 mi upstream at different datum. Feb. 17, 1963, to May 21, 1965, at site 1.7 mi upstream at different datum. May 21, 1965, to June 20, 1981, at site 1.0 mi downstream at datum 1,036.00 ft above NGVD of 1929.
REMARKS.--Estimated daily discharges: Oct. 27 to Dec. 9, Jan. 1-9, and Mar. 19 to May 20 (backwater from Shasta Lake). 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 ft^3/s, 2,721,000 acre-ft/yr; 22 years (water years 1966-87), 5,191 ft^3/s, 3,761,000 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 73,000 ft^3/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 ft^3/s, July 12, 27, 1975, result of construction work below Pit No. 7 powerplant.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19,300 ft^3/s, Mar. 12, gage height, 66.93 ft; minimum daily, 376 ft^3/s, Feb. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2540	3690	3980	3620	4280	2570	3650	4860	3410	3120	3900	3770
2	5420	4260	4620	4850	4510	6660	3090	2810	3340	4670	457	3580
3	6320	4210	3510	4830	3830	5760	4250	3700	2670	2980	452	2360
4	2970	3650	2880	5370	4440	2410	7450	2720	3510	1760	2800	3790
5	4780	2790	3040	4150	4050	8040	5010	4380	3110	2690	4690	2030
6	4440	2570	3940	3930	5020	5490	3930	3100	2440	3900	3600	2220
7	5650	3160	3220	3410	4980	5080	3180	3550	1700	4840	4140	1520
8	8030	2290	2730	3840	3730	4790	3760	3890	3040	2340	5810	3990
9	4500	3160	2790	3490	3600	5570	3410	1780	4820	3650	1760	4400
10	3810	2900	4030	2760	4180	5740	3590	2090	2930	2880	4930	2670
11	1540	4670	3510	4910	4170	7760	3580	4240	3150	807	3820	4860
12	2360	2580	2820	3030	4310	10700	3400	3810	3540	1230	2070	1940
13	906	4160	4180	2810	8430	12100	4320	4890	2180	3640	421	787
14	3380	2910	2620	3760	8640	12100	5050	2010	2710	3490	445	3980
15	3320	2210	4110	3800	8440	11200	5030	2710	2330	3670	1530	3810
16	3130	4240	3910	4660	7380	10600	4880	3060	3240	4620	1000	3810
17	2910	4210	2930	2460	6040	9340	3740	3490	4240	4520	2620	4630
18	3120	2870	3240	2360	6210	8610	3140	2330	2930	4460	3690	5540
19	2720	2870	3970	3070	6100	7010	2720	3310	3740	2690	4120	1420
20	3680	3830	3010	3660	7980	8240	4350	3410	1680	501	3190	1660
21	3420	3090	2490	4550	8140	6880	3970	3880	2870	4810	3490	2690
22	3910	3200	3140	3020	7460	5620	3490	2500	3090	5580	921	3490
23	4190	2430	4250	3470	4900	5600	3960	3530	3560	4020	885	2950
24	3800	2330	4590	2870	3440	5410	4940	3730	3600	3490	4230	3370
25	3940	3980	4200	1490	3500	6850	3280	3340	4000	1940	3610	4150
26	3300	4060	3700	4850	3630	7670	2790	2680	2870	1710	3560	1210
27	2600	3130	1860	5500	3270	6420	4160	2760	1010	4490	3430	2060
28	2800	3910	3430	4200	376	5950	3080	3220	851	4460	3700	2640
29	3820	3150	2940	5040	---	6360	1940	3460	3640	4790	2120	5130
30	3970	2820	4480	4270	---	4090	2750	3680	3200	4410	814	3630
31	4300	---	3910	2920	---	4400	---	2480	---	5330	3930	---
TOTAL	115576	99330	108030	116950	145036	215020	115890	101400	89401	107488	86135	94087
MEAN	3728	3311	3484	3772	5179	6936	3863	3270	2980	3467	2778	3136
MAX	8030	4670	4620	5500	8640	12100	7450	4890	4820	5580	5810	5540
MIN	906	2210	1860	1490	376	2410	1940	1780	851	501	421	787
AC-FT	229200	197000	214300	232000	287700	426500	229900	201100	177300	213200	170800	186600
a	14455	13128	14991	15487	12168	9778	14940	14104	15147	15500	15199	14940
b	224300	197600	205000	220600	252300	354100	222900	199700	166800	198300	168300	179000
c	33399	33816	33723	33630	32305	31811	33677	33584	33677	29714	33445	33078

CAL YR 1986 TOTAL 2253960 MEAN 6175 MAX 49000 MIN 71 AC-FT 4471000
WTR YR 1987 TOTAL 1394343 MEAN 3820 MAX 12100 MIN 376 AC-FT 2766000

a Contents, in acre-feet, at end of month for Pit No. 6 Reservoir, provided by Pacific Gas & Electric Co.
b Discharge, in acre-feet, for Pit No. 6 powerplant, provided by Pacific Gas & Electric Co.
c Contents, in acre-feet, at end of month for Pit No. 7 Reservoir, 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 mi^2.

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 above 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.--56 years, 933 ft^3/s, 676,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,800 ft^3/s, Dec. 21, 1955, gage heights, 9.42 ft, in gage well, 10.7 ft from floodmarks, from rating curve extended above 8,800 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 524 ft^3/s, Nov. 23, 24, 1932.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 6	0145	1,950	2.93	Mar. 13	0130	*2,480	*3.45

Minimum daily, 680 ft^3/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	789	770	753	748	741	747	847	912	736	713	702	707
2	789	770	753	743	747	751	853	875	734	713	702	707
3	789	770	753	749	743	807	867	844	730	713	702	705
4	786	770	753	747	740	885	872	829	730	713	700	704
5	782	768	756	742	736	1270	862	820	730	713	696	699
6	782	764	753	742	736	1670	859	814	728	713	696	696
7	782	764	753	741	736	1210	854	808	727	713	696	691
8	782	764	753	744	736	1060	854	805	730	713	696	691
9	782	764	750	737	737	992	858	799	728	710	696	691
10	782	764	747	736	746	965	860	793	726	707	696	691
11	780	764	747	736	808	963	871	786	724	707	696	688
12	776	764	747	736	833	1550	864	782	724	707	696	685
13	776	764	747	731	1230	2050	855	777	724	707	696	685
14	776	764	747	729	1060	1540	853	772	722	707	696	685
15	776	758	747	731	930	1320	850	769	719	707	696	685
16	776	758	747	729	861	1170	852	767	719	707	696	688
17	776	758	747	732	827	1090	858	764	719	709	695	696
18	775	758	747	730	808	1060	858	762	719	711	692	699
19	775	758	748	730	794	1010	843	758	719	708	691	702
20	774	760	747	730	784	970	835	756	719	707	691	702
21	772	759	747	729	777	949	828	753	719	709	691	699
22	771	758	748	730	771	923	827	753	719	707	691	696
23	771	758	747	732	767	912	830	750	719	707	691	696
24	771	758	745	736	762	893	827	747	716	707	691	692
25	770	758	741	744	757	880	827	747	713	707	692	688
26	771	753	742	741	753	870	824	747	713	707	698	685
27	773	753	741	746	753	862	820	747	713	705	702	685
28	770	754	741	758	748	855	822	742	713	702	702	685
29	775	753	741	748	---	848	820	741	713	702	702	683
30	775	753	741	747	---	843	840	741	713	702	707	680
31	770	---	743	742	---	845	---	739	---	702	707	---
TOTAL	24094	22831	23172	22896	22421	32760	25390	24199	21658	21955	21601	20786
MEAN	777	761	747	738	800	1056	846	780	721	708	696	692
MAX	789	770	756	758	1230	2050	872	912	736	713	707	707
MIN	770	753	741	729	736	747	820	739	713	702	691	680
AC-FT	47790	45290	45960	45410	44470	64980	50360	48000	42960	43550	42850	41230

CAL YR 1986 TOTAL 363950 MEAN 997 MAX 6490 MIN 730 AC-FT 721900
WTR YR 1987 TOTAL 283763 MEAN 777 MAX 2050 MIN 680 AC-FT 562800

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 Lake McCloud and Iron Canyon Reservoir used to compute record.

REMARKS.--No estimated daily discharges. Water is diverted from Lake McCloud (station 11367740) to Iron Canyon Reservoir (station 11363920) and then 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.--21 years (water years 1967-87), 951 ft^3/s, 689,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,890 ft^3/s several days during May and June 1967; no flow several days in 1965-68, 1971, 1978.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	696	649	591	723	705	797	991	745	546	550	694	553
2	834	615	658	745	747	892	938	732	553	592	671	549
3	736	694	658	748	748	927	932	664	544	594	673	540
4	755	681	670	745	747	863	894	675	548	535	675	536
5	728	687	672	747	728	960	889	712	491	550	664	520
6	736	672	679	734	751	1060	882	719	442	588	642	542
7	639	611	687	686	726	1110	903	718	397	657	638	538
8	654	552	656	726	736	1130	894	696	405	634	636	572
9	686	549	645	715	715	1110	857	655	493	619	617	616
10	639	577	672	718	731	1120	848	630	524	640	621	596
11	611	679	643	741	659	1160	864	663	550	629	663	654
12	635	688	645	679	721	1190	836	693	552	612	669	608
13	686	688	640	675	744	1260	841	718	496	613	660	570
14	734	689	630	672	885	1280	838	684	466	629	674	568
15	757	651	638	707	1040	1290	853	659	481	685	670	574
16	706	687	632	747	1120	1300	832	588	486	704	628	557
17	694	672	647	661	1120	1290	826	544	528	689	626	572
18	682	712	642	619	1090	1300	807	557	521	675	620	582
19	670	679	640	600	1090	1250	757	604	556	652	599	574
20	660	660	667	573	1050	1280	779	622	517	664	622	564
21	684	718	672	617	966	1290	800	633	524	706	601	557
22	679	667	675	625	972	1260	791	620	548	735	578	535
23	672	636	691	645	983	1220	796	604	550	730	557	544
24	687	565	691	640	960	1180	818	588	575	735	591	559
25	677	554	689	597	956	1200	793	622	590	700	580	570
26	681	589	672	622	877	1170	783	608	563	665	597	524
27	658	573	663	654	817	1150	812	610	535	696	595	508
28	638	558	701	645	767	1110	786	626	533	742	605	506
29	630	617	686	622	---	1090	727	620	567	760	576	612
30	656	587	682	631	---	1030	693	635	548	752	533	632
31	677	---	672	646	---	992	---	586	---	753	547	---
TOTAL	21277	19156	20506	20905	24151	35261	25060	20030	15629	20485	19322	16932
MEAN	686	638	661	674	862	1137	835	646	520	660	623	564
MAX	834	718	701	748	1120	1300	991	745	590	760	694	654
MIN	611	549	591	573	659	797	693	544	397	535	533	506
AC-FT	42200	38000	40670	41470	47900	69940	49710	39730	31000	40630	38330	33580

CAL YR 1986 TOTAL 332646 MEAN 911 MAX 1420 MIN 456 AC-FT 659800
WTR YR 1987 TOTAL 258714 MEAN 708 MAX 1300 MIN 397 AC-FT 513200

SACRAMENTO RIVER BASIN

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 mi^2.

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 April 7, 1972, at datum 3.00 ft higher.

REMARKS.--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. Prior to water year 1974, flow was computed up to 400 ft^3/s. During water years 1975-81, because of channel changes, flow was computed up to 200 ft^3/s. Currently, because of maximum required release, flow is computed to 210 ft^3/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, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	202	202	206	139	121	134	108	124	186	195	198	---
2	202	204	206	135	123	133	108	134	186	195	198	---
3	202	204	206	126	123	111	109	135	187	197	198	---
4	203	204	205	121	123	89	109	137	188	200	198	---
5	204	204	206	130	123	73	109	140	189	200	197	---
6	204	206	205	134	126	70	110	143	189	200	197	---
7	204	206	204	140	125	61	113	143	189	200	197	---
8	204	206	204	141	125	59	113	143	191	200	197	---
9	204	206	205	144	124	57	114	143	191	200	197	---
10	204	206	205	145	114	57	116	144	191	199	197	---
11	204	206	204	145	75	57	116	146	191	199	196	---
12	204	206	204	145	57	70	119	147	192	199	196	---
13	204	206	205	145	70	74	122	147	192	199	195	---
14	204	206	204	146	61	71	123	148	193	198	195	---
15	204	206	204	148	59	66	126	153	193	198	195	---
16	203	206	170	151	57	63	127	183	193	198	195	---
17	203	204	165	149	58	62	127	183	194	198	197	---
18	202	204	165	149	74	61	127	183	195	197	197	210
19	202	205	164	150	92	59	128	184	195	197	197	210
20	202	205	159	149	93	58	131	184	195	196	197	210
21	203	204	162	149	101	60	133	184	195	196	197	210
22	204	204	155	149	107	64	134	183	195	195	197	---
23	204	204	156	150	113	68	137	186	195	195	196	---
24	203	204	156	150	113	77	137	186	195	195	196	---
25	203	204	156	142	115	85	137	186	195	196	196	---
26	204	205	156	139	119	88	138	186	195	202	196	---
27	204	205	158	130	123	90	140	186	195	202	196	---
28	204	206	156	86	126	93	140	186	195	201	195	---
29	203	206	157	105	---	98	141	186	195	201	200	---
30	201	206	156	114	---	102	137	186	195	200	206	---
31	202	---	157	119	---	104	---	186	---	199	---	---
TOTAL	6300	6150	5621	4265	2840	2414	3729	5085	5770	6147	---	---
MEAN	203	205	181	137	101	77.8	124	164	192	198	---	---
MAX	204	206	206	151	126	134	141	186	195	202	---	---
MIN	201	202	155	86	57	57	108	124	186	195	---	---
AC-FT	12500	12200	11150	8460	5630	4790	7400	10090	11440	12190	---	---

SACRAMENTO RIVER BASIN

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 mi^2.
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 discharge. Flow regulated by Lake McCloud 3.9 mi upstream (station 11367740) 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.
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.--23 years (water years 1965-87), 342 ft^3/s, 247,800 acre-ft/yr, unadjusted. 22 years (water years 1966-87), 1,240 ft^3/s, 898,400 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 ft^3/s, Dec. 22, 1964, gage height, 9.43 ft, from rating curve extended above 2,500 ft^3/s; minimum daily, 86 ft^3/s, Oct. 1-26, 1964. Since completion of McCloud Dam, maximum discharge, 26,400 ft^3/s, Jan. 16, 1974, gage height, 13.68 ft in gage well, 15.38 ft from floodmarks, from rating curve extended above 8,000 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 41 ft^3/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 ft^3/s, from rating curve extended above 2,500 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,000 ft^3/s, Mar. 12, gage height, 3.25 ft; minimum daily, 159 ft^3/s, Jan. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	218	216	216	166	160	174	188	191	215	216	217	232
2	218	216	216	159	170	176	188	188	215	216	216	230
3	216	216	216	172	170	206	191	184	215	217	216	230
4	216	216	217	160	166	189	188	182	216	219	216	230
5	218	216	225	160	161	533	184	184	216	219	216	230
6	218	218	222	160	162	552	184	185	216	219	215	230
7	218	218	218	161	162	335	185	184	217	219	215	230
8	218	218	218	160	162	253	184	183	217	218	214	230
9	218	218	218	162	163	214	183	183	218	218	214	230
10	218	218	218	161	169	200	184	183	219	218	214	230
11	217	218	218	160	205	222	183	184	217	218	214	230
12	217	218	217	160	231	686	183	184	217	217	213	230
13	217	218	217	160	648	742	184	183	217	217	213	230
14	216	218	217	161	348	575	183	183	217	216	213	230
15	216	217	216	162	248	454	185	189	218	216	213	230
16	216	216	184	164	201	351	185	218	218	216	214	229
17	218	216	176	164	170	291	184	217	218	218	216	228
18	217	216	179	164	165	256	183	216	218	219	216	228
19	216	216	183	163	172	228	182	216	218	217	216	229
20	216	217	177	162	163	208	183	216	218	216	216	231
21	216	218	177	163	166	198	184	217	218	217	215	230
22	216	216	174	163	165	187	183	216	218	216	216	230
23	216	216	173	165	168	186	186	217	218	215	215	230
24	217	216	172	167	164	184	184	217	217	213	215	230
25	216	216	170	173	163	186	183	218	217	215	215	230
26	216	216	171	176	163	185	182	217	216	220	215	230
27	218	216	173	179	165	182	183	217	216	220	215	230
28	216	216	170	164	166	182	183	216	216	219	215	230
29	220	217	171	160	---	182	183	216	216	218	218	229
30	219	216	169	163	---	184	203	216	216	218	226	228
31	216	---	173	161	---	184	---	216	---	218	232	---
TOTAL	6728	6503	6061	5075	5516	8885	5548	6236	6508	6738	6694	6894
MEAN	217	216	195	163	197	286	184	201	216	217	215	229
MAX	220	218	225	179	648	742	203	218	219	220	232	232
MIN	216	216	169	159	160	174	182	182	215	213	213	228
AC-FT	13340	12900	12020	10070	10940	17620	11000	12370	12910	13360	13280	13670
MEAN a	872	858	850	866	1044	1520	1022	909	801	787	757	746
AC-FT a	53630	51070	52260	53250	57970	93460	60830	55880	47680	48380	46530	44380

CAL YR 1986 TOTAL 130991 MEAN 358 MAX 9110 MIN 163 AC-FT 259800 MEAN a 1271 AC-FT a 920100
WTR YR 1987 TOTAL 77386 MEAN 212 MAX 742 MIN 159 AC-FT 153500 MEAN a 919 AC-FT a 665300

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

SACRAMENTO RIVER BASIN

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 Lamoine.

DRAINAGE AREA.--604 mi^2.

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 ft^3/s, 1,230,000 acre-ft/yr prior to storage and interbasin diversion to Pit River; 22 years (water years 1966-87), 800 ft^3/s, 579,600 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,330 ft^3/s, Mar. 12, gage height, 15.27 ft; minimum daily, 247 ft^3/s, several days during January and August.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	305	301	288	390	459	385	530	539	326	277	261	261
2	302	297	288	378	522	390	518	425	319	277	259	262
3	299	295	284	536	540	637	518	396	316	276	259	263
4	297	293	286	537	498	609	500	379	315	280	257	264
5	297	290	343	428	447	2890	483	368	315	279	255	264
6	297	289	334	386	420	3220	467	361	313	278	255	267
7	297	290	308	346	405	1800	460	354	318	275	253	267
8	295	290	300	319	394	1280	449	349	322	275	254	267
9	295	288	297	301	387	1000	441	346	316	272	254	270
10	293	288	294	290	441	870	438	342	321	273	253	268
11	292	288	293	281	719	930	434	337	313	271	252	267
12	290	288	293	274	907	3050	424	333	308	270	251	267
13	291	288	297	268	3510	3900	418	328	304	269	251	267
14	292	288	299	263	1860	3120	410	326	304	266	252	267
15	291	288	293	260	1420	2650	407	325	305	264	253	267
16	291	288	272	255	1140	1920	405	355	306	263	252	263
17	313	288	251	256	893	1490	403	376	305	271	253	264
18	303	288	267	254	735	1240	397	363	301	294	252	263
19	294	288	306	251	645	1060	390	357	296	287	251	263
20	293	292	317	248	575	917	386	352	295	279	251	267
21	292	306	280	247	539	855	382	353	295	279	251	267
22	292	290	308	247	500	768	375	368	292	282	251	264
23	292	288	309	260	477	789	374	350	290	275	251	263
24	300	289	287	295	452	729	363	347	288	271	251	264
25	298	290	270	395	429	693	359	345	284	268	247	265
26	293	288	266	477	412	661	353	342	283	274	247	263
27	317	288	265	486	398	626	349	338	283	273	247	263
28	299	290	255	774	388	600	348	333	281	270	247	263
29	326	295	259	594	---	577	345	330	282	269	249	259
30	343	288	256	553	---	558	469	328	280	267	256	263
31	310	---	283	502	---	541	---	330	---	263	262	---
TOTAL	9289	8717	8948	11351	20512	40755	12595	11075	9076	8487	7837	7942
MEAN	299	290	288	366	732	1314	419	357	302	273	252	264
MAX	343	306	343	774	3510	3900	530	539	326	294	262	270
MIN	290	288	251	247	387	385	345	325	280	263	247	259
AC-FT	18420	17290	17750	22510	40690	80840	24980	21970	18000	16830	15540	15750

CAL YR 1986 TOTAL 330247 MEAN 904 MAX 18700 MIN 251 AC-FT 655000
WTR YR 1987 TOTAL 156584 MEAN 428 MAX 3900 MIN 247 AC-FT 310600

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 mi^2, 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 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 herein 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.

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, 4,212,069 acre-ft, Apr. 8, elevation, 1,055.31 ft; minimum, 2,078,509 acre-ft, Sept. 8, elevation, 961.81 ft.

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

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		

CONTENTS, IN ACRE-FEET AT 2400 HOURS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3201590	3162894	3065993	2976348	3050836	3408655	4188541	4028047	3659117	3136898	2603667	2107150
2	3198747	3161956	3062547	2977698	3060250	3419529	4191087	4015396	3645676	3123131	2580720	2102530
3	3199931	3161956	3058872	2985358	3067142	3435606	4194202	4003588	3630711	3105478	2556988	2097920
4	3195192	3161487	3052669	2991237	3075646	3443805	4204108	3990723	3618619	3084653	2538903	2094740
5	3191165	3160784	3049693	2992594	3080265	3508264	4209508	3979776	3604758	3065763	2523577	2090678
6	3189278	3158438	3047179	2995986	3086039	3553751	4210931	3966425	3587610	3048550	2508527	2085555
7	3188335	3156797	3041923	2996891	3091812	3581227	4210931	3953347	3569005	3034838	2490746	2079914
8	3193297	3151871	3035523	2997569	3095277	3599638	4212069	3943586	3552737	3014573	2477219	2078509
9	3191876	3146007	3030038	2998248	3098282	3614761	4211500	3927046	3539813	2998925	2457427	2080792
10	3188572	3142264	3027076	2997342	3105710	3630711	4210077	3910583	3522133	2980623	2442464	2080440
11	3179611	3141098	3024121	2999830	3112906	3656533	4206666	3898979	3506007	2957469	2426386	2083788
12	3173243	3137365	3020029	2999378	3135965	3724796	4203254	3883134	3488441	2935555	2407642	2082905
13	3165006	3136198	3016846	2998021	3193770	3794707	4200709	3870253	3470192	2918414	2386462	2080967
14	3161252	3131298	3012073	2998248	3229153	3855284	4198443	3850740	3451006	2901577	2365413	2082022
15	3161019	3124531	3009118	2998473	3259510	3901946	4195331	3837415	3432134	2885240	2345260	2084671
16	3161252	3120565	3006162	3000509	3282838	3936536	4195048	3827309	3413597	2869615	2322938	2087144
17	3161487	3117780	3001865	2998021	3300183	3964247	4193069	3817470	3399310	2854498	2305499	2092974
18	3161487	3111744	3000282	2995308	3312965	3988534	4184297	3805825	3379168	2839003	2290785	2100220
19	3156797	3109191	3000735	2994629	3324593	4007421	4169613	3796561	3362531	2821161	2275009	2099333
20	3156797	3107566	2998473	2993951	3341581	4027771	4157221	3787559	3341337	2797330	2258747	2097920
21	3157500	3103156	2993951	2995308	3359108	4046251	4146241	3779610	3321928	2780082	2243860	2097920
22	3158438	3099442	2992368	2994402	3375009	4061448	4132788	3768748	3303798	2766765	2224069	2100398
23	3160549	3094352	2991237	2995759	3385047	4077269	4120457	3760303	3288857	2751367	2204033	2102530
24	3161487	3089041	2990332	2998925	3392915	4091991	4110681	3751603	3274173	2734108	2189948	2103952
25	3163833	3086270	2989428	3000056	3399310	4108171	4097011	3742643	3259270	2713539	2173939	2105906
26	3161019	3084885	2987618	3005709	3403492	4125780	4082265	3732925	3242512	2691605	2162892	2103596
27	3158438	3080034	2981973	3015482	3409397	4140075	4070605	3724009	3218433	2677949	2150970	2102176
28	3158438	3077725	2978374	3022757	3408163	4151872	4057029	3711691	3193060	2663525	2141083	2101642
29	3160549	3074723	2975224	3032324	---	4164824	4044042	3700989	3173243	2648110	2132112	2105728
30	3161956	3068290	2974548	3041923	---	4172710	4035750	3688721	3151636	2632337	2121746	2108216
31	3162426	---	2973198	3045350	---	4182034	---	3673649	---	2619930	2110704	---
MAX	3201590	3162894	3065993	3045350	3409397	4182034	4212069	4028047	3659117	3136898	2603667	2108216
MIN	3156797	3068290	2973198	2976348	3050836	3408655	4035750	3673649	3151636	2619930	2110704	2078509
a	1014.77	1010.72	1006.54	1009.72	1024.98	1054.25	1049.01	1035.47	1014.31	990.16	963.63	963.49
b	-48574	-94136	-95092	+72152	+362813	+773871	-146284	-362101	-522013	-531706	-509226	-2488
c	5200	3700	1780	1490	2420	4110	10680	11960	12920	14550	13100	8220

CAL YR 1986 MAX 4251000 MIN 2425000 b + 551198
WTR YR 1987 MAX 4212069 MIN 2078509 b -1102784
a Elevation, in feet NGVD, at end of month.
b Change in contents, in acre-feet.
c Evaporation, in acre-feet; not reviewed by U.S. Geological Survey.

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 mi^2, 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 Dam (station 11370000) beginning Dec. 30, 1943, and Keswick Reservoir, capacity, 4,170 acre-ft. No diversion for irrigation 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 diagram of Pit and McCloud River basins.
AVERAGE DISCHARGE.--25 years (water years 1939-63), 8,376 ft^3/s, 6,064,000 acre-ft/yr, adjusted for change in contents and evaporation from Shasta Lake prior to transbasin diversion to Keswick Reservoir; 24 years (water years 1964-87), 9,002 ft^3/s, 6,522,000 acre-ft/yr, including adjustment for transbasin diversion; unadjusted flow for period of record, 9,414 ft^3/s, 6,820,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 186,000 ft^3/s, Feb. 23, 1940, gage height, 47.2 ft, site and datum then in use, from rating curve extended above 75,000 ft^3/s on basis of peak discharge at Kennet plus 4,000 ft^3/s estimated inflow; minimum observed, 2,730 ft^3/s, Aug. 22, 1939. Since regulation by Shasta Dam in 1943, maximum discharge, 81,400 ft^3/s, Apr. 1, 1974, gage height, 31.92 ft; maximum gage height, 32.22 ft, Jan. 24, 1970; minimum discharge, 154 ft^3/s, May 15, 1948.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,700 ft^3/s, July 16, gage height, 16.69 ft; minimum daily, 3,380 ft^3/s, Feb. 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8450	6020	6470	5990	3890	3410	3470	11900	11000	14100	14600	8850
2	8510	6110	6550	5910	3920	3410	4650	11900	10900	14800	14900	8850
3	7480	6060	6560	5930	3970	3410	5590	11900	11000	14700	14500	8080
4	7270	5800	6580	6010	3880	3420	5720	11900	11000	14600	14900	8070
5	7300	5740	6590	5930	3910	3790	5620	11900	11100	14700	15000	8020
6	7300	5770	6590	4840	3920	3690	5890	11900	11900	14700	14100	7880
7	7310	5770	6560	4450	3890	3550	5950	11400	12000	14800	13200	7850
8	7400	6870	6590	4470	3900	3520	5940	11500	12000	14800	13300	7840
9	7360	7000	6570	4430	3910	3470	6100	12300	12800	14700	13000	7310
10	7400	6990	6580	4490	3910	3460	7230	12400	12900	14700	12900	7340
11	7400	7000	5930	4570	3920	3470	8050	12300	12900	14900	12400	6950
12	6460	7020	5980	4470	4120	3780	8110	13500	13000	14800	12400	6410
13	6240	6960	5970	4440	4190	3960	8100	13600	13000	14700	12400	6330
14	6190	7020	5910	4470	3640	3760	8110	13700	13000	14700	12300	6360
15	5690	6990	5950	4480	3740	3750	8900	11800	13000	14900	12300	6110
16	5700	7050	5790	4470	3610	3600	8070	10100	13100	14900	12400	5770
17	5880	7040	5700	4480	3510	3520	6900	10100	13000	14900	12500	5300
18	5730	7100	5740	4500	3490	3490	10600	10100	13100	14800	12400	5350
19	5720	7130	5780	4440	3450	3480	11900	9690	13100	14900	12100	5330
20	5680	7100	5730	4400	3470	3460	11800	8990	13100	14900	12000	5340
21	5700	6870	5730	4440	3460	3460	11900	9010	13100	14700	12100	5240
22	5750	6760	5880	4450	3420	3440	12400	9000	13100	14700	11900	5170
23	5620	6750	6000	4450	3440	3410	12400	8950	12100	14700	11800	5260
24	5850	6780	5910	4410	3430	3410	12400	9040	12100	15000	11800	6210
25	5980	6810	5920	4300	3380	3430	12300	9040	12100	14500	12400	5890
26	5960	6740	5980	4270	3380	3430	12300	9010	12200	14700	9790	5830
27	5990	6780	5930	4280	3410	3390	12300	9030	14000	14400	9250	5840
28	6080	6760	5970	4240	3410	3400	12300	10500	14200	14900	9360	5970
29	6110	6760	6020	3900	---	3460	11900	10500	14200	14900	9380	5880
30	6110	6790	5940	3910	---	3460	11900	10500	14200	14700	8870	5780
31	6110	---	5950	3910	---	3450	---	10500	---	14700	8750	---
TOTAL	201730	200340	189350	143730	103570	109140	268800	337960	378200	456900	379000	196410
MEAN	6507	6678	6108	4636	3699	3521	8960	10900	12610	14740	12230	6547
MAX	8510	7130	6590	6010	4190	3960	12400	13700	14200	15000	15000	8850
MIN	5620	5740	5700	3900	3380	3390	3470	8950	10900	14100	8750	5170
AC-FT	400100	397400	375600	285100	205400	216500	533200	670300	750200	906300	751700	389600
MEAN a	4492	4206	4453	5760	9617	15390	6677	5036	3773	3739	3197	3298
AC-FT a	276200	250300	273800	354200	534100	946100	397300	309600	224500	229900	196600	196200

CAL YR 1986 TOTAL 4124360 MEAN 11300 MAX 73700 MIN 3420 AC-FT 8181000 MEAN a10760 AC-FT a7790000
WTR YR 1987 TOTAL 2965130 MEAN 8124 MAX 15000 MIN 3380 AC-FT 5881000 MEAN a5786 AC-FT a4189000

a Adjusted for change in contents and evaporation from Shasta Lake and transbasin diversion into Keswick Reservoir. Adjustments provided by U.S. Bureau of Reclamation. Evaporation adjustments not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

WATER-QUALITY RECORDS

LOCATION.--Samples collected 2.1 mi downstream from gaging station.

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.--No values exceeded the historical maximum-minimum data.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)
NOV												
18...	0855	7150	116	7.3	12.0	745	2.4	8.7	83	K7	K3	49
JAN												
20...	0930	4530	121	7.4	9.5	760	5.2	10.5	92	--	K11	56
MAR												
24...	0900	3390	116	7.4	8.5	755	1.2	10.7	92	<1	K9	44
MAY												
19...	0920	9480	114	7.9	9.5	745	2.2	11.0	99	K2	K1	48
JUL												
14...	1100	15400	106	7.9	10.5	745	1.1	10.0	92	K16	K10	46
SEP												
15...	0845	6250	105	7.8	11.0	750	0.70	9.6	88	K3	K1	45

DATE	HARD-NESS NONCARB WH WAT TOT FLD 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)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER WHOLE IT-FLD (MG/L)	ALKA-LINITY, CARBON-ATE IT-FLD (MG/L CACO3)	ALKA-LINITY WH WAT TOTAL FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
NOV												
18...	0	11	5.2	6.8	23	0.4	1.5	69	56	56	5.2	2.1
JAN												
20...	0	14	5.2	7.3	21	0.4	1.7	70	58	57	6.2	2.4
MAR												
24...	0	9.4	5.1	6.7	24	0.4	1.4	67	55	56	7.2	2.2
MAY												
19...	0	11	5.0	6.9	23	0.4	1.4	67	55	56	5.0	2.0
JUL												
14...	0	10	5.1	6.4	23	0.4	1.0	70	58	56	4.4	2.3
SEP												
15...	0	8.2	6.0	4.6	18	0.3	1.0	60	49	50	4.0	1.5

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											
18...	<0.10	25	94	91	0.13	<0.010	0.100	<0.010	<0.010	0.20	0.040
JAN											
20...	<0.10	26	95	97	0.13	<0.010	0.100	0.040	<0.010	0.20	0.030
MAR											
24...	<0.10	24	75	90	0.10	<0.010	<0.100	<0.010	<0.010	<0.20	0.010
MAY											
19...	<0.10	25	81	90	0.11	<0.010	<0.100	0.010	<0.010	0.20	0.030
JUL											
14...	0.20	23	85	86	0.12	<0.010	<0.100	0.050	0.020	0.40	0.020
SEP											
15...	0.10	19	62	75	0.08	<0.010	<0.100	0.020	<0.010	<0.20	0.020

See footnotes at end of table.

11370500 SACRAMENTO RIVER AT KESWICK, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
NOV											
18...	0.030	0.030	40	2	15	<0.5	<1	1	<3	3	54
JAN											
20...	0.030	0.020	40	2	14	1	1	<1	<3	4	62
MAR											
24...	0.020	0.020	--	--	--	--	--	--	--	--	--
MAY											
19...	0.030	0.030	30	2	14	<0.5	<1	<1	<3	4	19
JUL											
14...	0.020	<0.010	--	--	--	--	--	--	--	--	--
SEP											
15...	0.020	0.010	20	<1	10	<0.5	<1	<1	<3	4	26

DATE	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
NOV											
18...	<5	4	4	<0.1	<10	3	<1	<1	54	<6	33
JAN											
20...	<5	7	10	<0.1	<10	<1	<1	<1	61	<6	87
MAR											
24...	--	--	--	--	--	--	--	--	--	--	--
MAY											
19...	<5	6	3	<0.1	<10	3	<1	<1	56	<6	31
JUL											
14...	--	--	--	--	--	--	--	--	--	--	--
SEP											
15...	<5	<4	3	0.1	<10	1	<1	<1	38	<6	15

K Results based on colony count outside the acceptable range (non-ideal colony count).
< Actual value is known to be less than the value shown.

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	SEDIMENT, SUSPENDED (MG/L)
MAR									
20...*	1115	35.0	114	7.3	9.0	750	11.7	103	3
20...*	1120	90.0	115	7.4	9.0	750	11.7	103	2
20...*	1125	160	113	7.3	9.0	750	11.7	103	3
20...*	1130	210	115	7.4	9.0	750	11.7	103	1
20...*	1135	280	115	7.4	9.0	750	11.7	103	1
JUL									
14...*	0945	45.0	108	7.8	10.5	745	10.0	92	2
14...*	0950	125	106	7.8	10.5	745	10.0	92	3
14...*	0955	215	106	7.8	10.5	745	10.0	92	2
14...*	1000	300	102	7.9	10.5	745	10.0	92	3
14...*	1005	410	102	7.8	10.5	745	10.0	92	1

*Instantaneous streamflow at time of the cross-sectional measurements:
Mar. 20, 3,450 ft^3/s; July 14, 15,400 ft^3/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE WATER (DEG C)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)
NOV					
18...	0900	7150	12.0	6	116
JAN					
20...	0935	4530	9.5	5	61
MAR					
20...	1140	3450	9.0	2	19
24...	0905	3390	8.5	2	18
MAY					
19...	0925	9480	9.5	3	77
JUL					
14...	1015	15400	10.5	2	83
SEP					
15...	0830	6250	11.0	3	51

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 mi^2.

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.--Estimated daily discharges: Dec. 5-8 and July 1-6. Records good. No large diversion above station. See schematic diagram of Pit and McCloud River basins.

AVERAGE DISCHARGE.--37 years, 220 ft^3/s, 159,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,600 ft^3/s, Jan. 16, 1974, gage height, 14.99 ft, from rating curve extended above 5,200 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 1.5 ft^3/s, July 19-22, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 5	1300	*2,080	*6.98				

Minimum daily, 5.0 ft^3/s, Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	27	22	91	116	84	158	101	36	10	7.7	5.2
2	23	24	22	100	150	84	172	85	33	13	7.3	5.3
3	23	23	22	132	178	166	196	79	31	15	6.8	5.3
4	23	22	32	119	143	222	170	75	28	13	6.5	5.3
5	23	21	29	87	122	1440	156	70	27	12	6.4	5.3
6	22	21	28	81	109	1080	148	67	27	13	6.2	5.5
7	21	21	27	77	106	619	143	64	27	11	6.2	5.6
8	20	22	27	61	103	445	137	63	30	11	6.1	6.2
9	20	22	27	56	100	347	134	62	27	10	6.1	6.4
10	20	23	27	51	109	284	132	59	25	9.6	5.9	6.3
11	19	23	27	47	217	284	130	56	24	9.4	6.0	5.9
12	19	22	25	46	225	778	122	55	23	9.4	6.0	5.9
13	19	22	25	44	870	987	118	54	22	9.4	5.9	5.9
14	19	22	26	40	549	748	113	51	20	9.0	6.1	6.2
15	19	22	26	37	519	643	110	50	21	8.7	6.7	6.6
16	19	22	26	32	399	531	107	50	22	8.4	6.8	6.6
17	23	22	26	35	293	435	105	53	22	8.6	6.5	6.1
18	27	22	26	37	225	380	102	50	21	11	6.2	5.8
19	24	22	42	35	181	328	99	48	20	12	6.0	5.7
20	23	22	52	31	154	284	96	45	19	11	6.1	5.7
21	22	23	40	30	139	271	93	45	19	9.7	6.2	5.5
22	22	23	45	30	125	246	90	46	18	9.8	6.4	5.3
23	22	23	59	36	116	268	89	44	17	10	6.3	5.0
24	23	23	57	59	109	262	86	42	15	9.8	6.1	5.2
25	23	22	40	75	102	243	83	43	15	9.4	6.0	5.5
26	24	22	37	94	94	227	81	46	13	8.7	5.7	5.7
27	32	22	36	106	90	215	78	44	12	8.4	5.5	5.9
28	29	21	33	168	85	198	77	42	12	8.4	5.5	5.5
29	28	23	31	125	---	187	75	40	11	8.2	5.4	5.4
30	35	23	31	137	---	174	90	39	12	8.0	5.4	5.2
31	31	---	36	135	---	164	---	39	---	8.0	5.3	---
TOTAL	721	672	1009	2234	5728	12624	3490	1707	649	312.9	191.3	171.0
MEAN	23.3	22.4	32.5	72.1	205	407	116	55.1	21.6	10.1	6.17	5.70
MAX	35	27	59	168	870	1440	196	101	36	15	7.7	6.6
MIN	19	21	22	30	85	84	75	39	11	8.0	5.3	5.0
AC-FT	1430	1330	2000	4430	11360	25040	6920	3390	1290	621	379	339

CAL YR 1986 TOTAL 90758.3 MEAN 249 MAX 4540 MIN 8.2 AC-FT 180000
WTR YR 1987 TOTAL 29509.2 MEAN 80.8 MAX 1440 MIN 5.0 AC-FT 58530

KLAMATH RIVER BASIN

11525430 JUDGE FRANCIS CARR POWERPLANT NEAR FRENCH GULCH, CA

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.

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

GAGE.--Recorded powerplant output.

REMARKS.--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.

AVERAGE DISCHARGE.--24 years, 1,513 ft^3/s, 1,096,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,910 ft^3/s, Feb. 11, 1970; no flow many days in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	762	890	0	0	0	0	0	0	0	3350	2454	2820
2	960	0	0	0	0	0	0	0	0	2523	2878	2926
3	816	617	0	0	0	0	0	0	0	2336	2958	3564
4	788	741	0	0	0	0	233	0	813	2503	2878	3350
5	0	782	0	0	0	0	768	91	801	2572	2892	3260
6	873	811	0	0	0	0	789	38	0	2736	2770	3260
7	798	862	0	0	0	0	737	479	0	2711	925	3180
8	816	704	0	0	0	0	1403	29	0	2675	0	3180
9	934	0	0	0	0	0	633	0	718	3073	0	3700
10	959	811	334	0	0	0	842	0	0	2448	971	3700
11	877	747	334	0	0	752	714	449	793	2770	0	3700
12	0	662	334	344	0	301	683	229	0	2611	857	3068
13	741	798	329	0	0	254	652	836	814	2916	0	3038
14	860	640	0	0	0	0	705	151	0	2517	1214	3097
15	1668	621	0	0	0	0	705	809	813	2468	0	3332
16	1843	0	0	126	0	0	610	805	0	2613	0	3405
17	1250	648	0	0	0	0	514	0	810	2613	901	3314
18	1302	1149	439	0	0	0	456	0	0	1931	713	2996
19	0	1158	465	0	0	0	0	0	811	2840	0	3187
20	1421	1148	445	0	861	0	201	0	0	2931	887	3189
21	1518	1174	0	236	1453	0	366	0	0	2416	0	3084
22	1522	1284	0	244	1513	0	334	0	823	2336	871	3055
23	1545	0	0	254	1473	0	303	0	0	2550	0	3026
24	1543	960	0	131	1493	0	307	0	799	2605	959	3154
25	1555	1149	0	0	1006	0	204	0	0	2716	0	3154
26	0	1036	502	0	0	517	0	0	802	2656	859	3118
27	1536	0	502	0	969	0	199	0	0	2551	0	3153
28	1482	1036	0	17	0	0	174	0	0	2551	872	3084
29	1397	975	502	0	---	0	0	0	790	2542	2755	3154
30	1455	0	414	0	---	0	299	0	0	2523	2820	3084
31	771	---	0	0	---	0	---	0	---	2506	0	---
TOTAL	31992	21403	4600	1352	8768	1824	12831	3916	9587	81089	32434	96332
MEAN	1032	713	148	43.6	313	58.8	427	126	319	2615	1046	3211
MAX	1843	1284	502	344	1513	752	1403	836	823	3350	2958	3700
MIN	0	0	0	0	0	0	0	0	0	1931	0	2820
AC-FT	63460	42450	9120	2680	17390	3620	25450	7770	19020	160800	64330	191100

CAL YR 1986 TOTAL 370797.00 MEAN 1015 MAX 3700 MIN 0 AC-FT 735500
WTR YR 1987 TOTAL 306128.00 MEAN 838 MAX 3700 MIN 0 AC-FT 607200

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.--Water is released from Whiskeytown Lake (station 11371700) through a tunnel to powerplant and then into Keswick Reservoir. See schematic diagram of Pit and McCloud River basins.

COOPERATION.--Records were provided by U.S. Bureau of Reclamation.

AVERAGE DISCHARGE.--23 years (water years 1965-87), 1,892 ft^3/s, 1,371,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,800 ft^3/s, May 2, 1983; no flow for many days in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1018	1297	0	50	0	0	157	0	0	3137	2367	2690
2	825	486	0	0	0	0	0	0	0	2645	2731	2882
3	864	1089	0	294	526	0	0	0	50	2810	2806	3264
4	868	1249	0	0	1035	526	0	361	494	2465	2687	3171
5	0	1278	0	309	0	1507	0	94	592	2546	2612	3240
6	904	1415	0	404	0	3019	0	43	0	2472	2825	3214
7	838	1438	0	202	0	3269	0	50	0	2447	423	3176
8	952	1215	0	0	0	574	0	0	0	2373	416	3527
9	894	501	0	0	279	470	0	323	815	3045	390	4190
10	976	1392	199	0	282	290	0	0	0	2609	474	4144
11	940	1409	197	0	0	948	0	766	796	2786	256	4179
12	0	1189	204	0	0	1671	0	38	0	2508	344	3640
13	964	1415	150	0	1051	2481	0	887	780	2508	450	3640
14	880	628	0	0	2626	2026	0	234	0	2509	295	3640
15	2114	690	0	0	593	977	0	790	787	2649	291	3640
16	2101	0	0	0	983	297	0	796	0	2568	282	3490
17	1704	591	0	0	988	602	0	0	940	2612	487	3664
18	1847	829	359	0	0	587	0	0	0	2601	855	3924
19	0	1427	353	0	0	609	0	0	658	2464	145	3108
20	2064	1427	464	0	1129	477	0	0	234	2600	292	2775
21	2110	419	0	0	1553	419	0	0	0	2578	336	3053
22	2023	1178	0	0	1499	597	0	150	408	2072	342	3188
23	2067	0	0	0	1499	209	0	0	320	2560	340	3493
24	2067	1311	150	0	1706	371	0	0	299	2618	356	3014
25	2067	1453	0	0	1243	204	0	0	0	2580	340	2944
26	0	1283	493	0	440	698	0	0	365	2518	316	3025
27	1546	0	511	376	983	290	0	481	0	2798	278	3065
28	1578	957	0	0	0	308	0	0	0	2765	323	3104
29	2560	1004	508	206	---	301	0	289	819	2493	2724	3141
30	2312	0	481	204	---	349	0	0	0	2493	2806	3147
31	1349	---	200	252	---	304	---	0	---	2465	154	---
TOTAL	40432	28570	4269	2297	18415	24380	157	5302	8357	80294	29743	100372
MEAN	1304	952	137	74.0	657	786	5.23	171	278	2590	959	3345
MAX	2560	1453	511	404	2626	3269	157	887	940	3137	2825	4190
MIN	0	0	0	0	0	0	0	0	0	2072	145	2690
AC-FT	80200	56670	8470	4560	36530	48360	311	10520	16580	159300	59000	199100

CAL YR 1986 TOTAL 520221.00 MEAN 1425 MAX 4320 MIN 0 AC-FT 1032000
WTR YR 1987 TOTAL 342588.00 MEAN 938 MAX 4190 MIN 0 AC-FT 679500

SACRAMENTO RIVER BASIN

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 mi^2.

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 herein 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.

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, 239,431 acre-ft, May 8, elevation, 1,209.48 ft; minimum, 203,187 acre-ft, Dec. 9, elevation, 1,197.65 ft.

Capacity table (elevation, in feet NGVD, 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

CONTENTS, IN ACRE-FEET AT 2400 HOURS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	233834	217838	203800	204592	207304	205564	205093	238791	237514	237991	237164	237895
2	234055	216804	203683	204769	207927	205859	205653	238919	237482	237768	237323	237959
3	234055	215804	203566	204857	207304	206772	206153	238983	237450	236751	237450	238407
4	233897	214869	203508	205181	205505	206654	207067	238407	238055	236751	237641	238695
5	233834	213873	203479	204680	205682	210993	209145	238439	238503	236687	238023	238631
6	233770	212700	203450	204209	205829	208640	211203	238471	238471	237132	237768	238759
7	233739	211592	203333	203888	206242	204680	213179	239335	238439	237514	238599	238855
8	233455	210544	203274	203888	206094	204769	216349	239431	238343	237895	237641	238087
9	233581	209472	203187	203888	205682	204887	217929	238855	238151	237863	236687	237132
10	233550	208343	203333	203888	205387	205240	219971	238855	238119	237418	237450	236211
11	233518	207096	203537	203917	205888	206036	221687	238375	238055	237704	236783	235289
12	233455	205977	203771	204592	208135	206919	223750	238727	238023	237800	237641	234181
13	233234	204798	204121	204592	209412	205741	225015	238791	238087	238407	236592	233140
14	233203	204798	204063	204533	205888	204297	226721	238663	237959	238343	238119	232193
15	232414	204651	204005	204474	206536	204327	227903	238791	238023	237895	237418	231720
16	231374	204592	203917	204651	205623	205270	229433	238855	237959	237800	236687	231437
17	230529	204651	203829	204592	204356	205329	230717	238855	237641	237768	237545	230811
18	229527	205270	204063	204563	204887	205270	231751	238919	237545	236846	237164	229026
19	229464	204769	204474	204474	205299	204975	231941	238919	237768	237450	236719	229057
20	228120	204297	204474	204415	205211	204916	232477	238919	237196	237959	237704	229840
21	227033	205741	204474	204857	205446	205063	233329	238951	237005	237577	236846	230091
22	226100	205888	204563	205299	205800	204621	234149	238951	237704	238023	237863	229871
23	225076	205859	204563	205947	206124	205093	234908	238951	236910	238023	237037	229057
24	224243	205329	204268	206772	206065	205152	235639	238919	237736	238151	237991	229308
25	223287	204769	204151	206978	205859	205387	236179	238919	237577	238343	237132	229433
26	223318	204180	204180	207126	205093	205505	236274	238951	238375	238343	238087	229683
27	223410	204063	204151	206772	205329	205505	236846	238087	238215	237736	237355	229902
28	223318	204151	204063	207185	205446	205446	237260	238055	238023	237323	238343	229902
29	221227	204151	204121	207067	---	205358	237355	237514	237895	237228	238215	230091
30	219727	203975	203975	207244	---	205152	238599	237545	237736	237228	238247	229997
31	218628	---	203975	207067	---	205004	---	237482	---	237101	237800	---
MAX	234055	217838	204563	207244	209412	210993	238599	239431	238503	238407	238599	238855
MIN	218628	203975	203187	203888	204356	204297	205093	237482	236910	236687	236592	229026
a	1202.82	1197.92	1197.92	1198.97	1198.42	1198.27	1209.22	1208.87	1208.95	1208.75	1208.97	1206.50
b	-15672	-14653	0	+3092	-1621	-442	+33595	-1117	+254	-635	+699	-7803
c	520	280	105	6.0	165	319	902	1200	1540	1640	1690	1020

CAL YR 1986 MAX 239500 MIN 202400 b -1625
WTR YR 1987 MAX 239431 MIN 203187 b -4303

a Elevation, in feet NGVD, at end of month.
b Change in contents, in acre-feet.
c Evaporation, in acre-feet; 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 mi^2.

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.--Estimated daily discharge: Jan. 16. 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 diagram of Pit and McCloud River basins.
AVERAGE DISCHARGE.--22 years (water years 1941-62) prior to storage and diversions, 413 ft^3/s, 299,200 acre-ft/yr; 25 years (water years 1963-87), 535 ft^3/s, 387,600 acre-ft/yr, adjusted for change in contents, evaporation, and transbasin diversions to and from Whiskeytown Lake; unadjusted flow for same period, 181 ft^3/s, 131,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,500 ft^3/s, Dec. 21, 1955, gage height, 13.75 ft; minimum daily, 8.6 ft^3/s, Sept. 4, 6, 7, 1950. Since completion of Whiskeytown Dam in 1963, maximum discharge, 19,200 ft^3/s, Mar. 3, 1983, gage height, 12.73 ft, from rating curve extended above 12,000 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 30 ft^3/s, Oct. 10, 11, 1977.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,840 ft^3/s, Feb. 13, gage height, 7.04 ft; minimum daily, 45 ft^3/s, July 9, 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	117	110	85	79	71	76	67	49	49	53	53
2	54	117	110	72	111	73	75	65	53	49	53	53
3	54	115	110	102	100	83	75	63	53	49	53	53
4	54	118	110	74	84	79	73	60	53	48	53	53
5	54	118	110	67	78	445	72	59	53	48	53	54
6	54	118	108	71	75	225	71	58	53	47	52	54
7	54	117	108	66	73	140	70	58	53	47	53	54
8	54	117	108	61	72	117	69	60	54	48	53	54
9	54	116	107	58	71	105	68	58	52	45	53	51
10	54	115	106	58	73	103	67	57	53	45	53	46
11	54	115	106	58	78	113	67	57	53	46	53	46
12	55	115	108	58	274	715	66	57	53	46	53	46
13	55	115	108	56	746	348	66	58	53	46	53	46
14	55	115	108	56	166	385	64	58	53	46	53	46
15	55	115	108	55	221	268	65	60	53	46	53	46
16	55	114	108	55	147	168	64	57	53	47	53	46
17	55	113	108	55	129	134	64	56	55	58	53	46
18	55	113	110	55	97	115	64	56	53	54	52	46
19	54	113	114	55	90	105	64	56	53	55	53	46
20	54	114	112	54	85	96	63	56	53	53	53	46
21	53	114	110	54	83	101	62	55	53	53	53	46
22	54	113	114	54	81	91	61	55	53	53	53	46
23	55	111	112	57	79	125	61	55	53	53	53	49
24	56	111	110	120	78	112	61	55	52	53	53	54
25	56	111	109	97	73	102	60	57	51	53	53	53
26	55	111	109	86	73	95	60	52	52	53	53	53
27	56	111	108	81	73	88	59	49	51	53	53	53
28	56	112	108	89	72	85	59	54	51	53	53	53
29	57	111	109	81	---	82	58	53	49	53	53	53
30	57	110	108	103	---	80	73	49	49	53	53	52
31	80	---	92	87	---	78	---	49	---	54	53	---
TOTAL	1722	3425	3366	2180	3461	4927	1977	1759	1572	1556	1641	1497
MEAN	55.5	114	109	70.3	124	159	65.9	56.7	52.4	50.2	52.9	49.9
MAX	80	118	114	120	746	715	76	67	55	58	53	54
MIN	53	110	92	54	71	71	58	49	49	45	52	46
AC-FT	3420	6790	6680	4320	6860	9770	3920	3490	3120	3090	3250	2970
MEAN a	81.3	112	100	151	442	885	223	103	41.5	41.0	4.99	70.8
AC-FT a	5000	6640	6140	9300	24540	54390	13280	6230	2470	2520	307	4210

CAL YR 1986 TOTAL 52185 MEAN 143 MAX 2710 MIN 47 AC-FT 103500 MEAN a 550 AC-FT a 398300
WTR YR 1987 TOTAL 29083 MEAN 79.7 MAX 746 MIN 45 AC-FT 57690 MEAN a 187 AC-FT a 135100

a Adjusted for change in contents in 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; evaporation adjustments not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

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 September 1987 (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.--Estimated daily discharge: Sept. 30. This station records fishwater release only. The release requirements are 2 ft^3/s during dry years and 4 ft^3/s during normal years; therefore flow is computed to 5 ft^3/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, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	3.5	4.4	---	4.8	4.5	4.5	4.5	2.2	2.2	2.2	3.2
2	4.5	4.0	4.4	4.4	4.7	4.5	4.5	4.5	2.2	2.2	2.2	3.1
3	4.4	4.4	4.5	4.9	4.4	4.6	4.5	4.4	2.2	2.2	2.2	3.2
4	4.5	4.5	---	4.9	4.4	4.4	4.5	4.4	2.2	2.2	2.3	3.2
5	4.4	4.5	4.4	4.6	4.4	4.6	4.5	4.4	2.2	2.2	2.3	3.2
6	4.4	4.4	4.4	4.4	4.5	4.5	4.5	4.5	2.2	2.2	2.3	3.2
7	4.5	4.4	4.4	4.4	4.4	4.5	4.5	4.2	2.2	2.2	2.3	3.2
8	4.4	4.4	4.4	4.4	4.4	4.4	4.5	3.9	2.2	2.2	2.3	3.2
9	4.5	4.4	4.4	4.4	4.4	4.4	4.5	3.9	2.2	2.2	2.3	3.2
10	4.4	4.4	4.5	4.4	4.5	4.5	4.5	3.9	2.2	2.2	2.3	3.2
11	4.4	4.5	4.4	4.4	4.5	4.5	4.5	3.9	2.2	2.2	2.3	3.2
12	4.5	4.4	4.4	4.5	4.6	4.6	4.4	3.7	2.2	2.2	2.3	3.2
13	4.4	4.4	4.4	4.4	4.5	4.5	4.5	4.0	2.2	2.2	2.3	3.2
14	4.4	4.4	4.4	4.4	4.5	4.5	4.5	3.1	2.2	2.2	2.3	3.2
15	4.4	4.5	4.4	4.4	4.5	4.5	4.5	2.2	2.2	2.2	2.3	3.1
16	4.4	4.5	4.4	4.5	4.5	4.5	4.5	2.0	2.2	2.2	2.3	3.2
17	---	4.5	4.4	4.4	4.4	4.5	4.5	1.9	2.2	2.2	2.3	3.2
18	---	4.5	4.4	4.5	4.4	4.5	4.5	2.2	2.2	2.2	2.3	3.2
19	4.4	4.4	4.4	4.4	4.4	4.5	4.4	2.2	2.2	2.2	2.3	3.2
20	4.4	4.4	4.4	4.4	4.4	4.5	---	2.2	2.2	2.2	2.3	3.2
21	4.5	4.4	4.4	4.4	4.4	4.5	---	2.2	2.2	2.2	2.8	3.2
22	4.4	4.4	4.4	4.5	4.4	4.4	---	2.2	2.2	2.2	3.2	3.2
23	4.5	4.4	4.4	4.5	4.5	4.5	4.5	2.2	2.2	2.2	3.2	3.2
24	4.4	4.5	4.4	4.5	4.5	4.4	4.5	2.2	2.2	2.2	3.2	3.2
25	4.4	4.4	4.4	4.4	4.4	4.5	4.5	2.2	2.2	2.2	3.2	3.2
26	4.4	4.4	4.5	4.4	4.4	4.5	4.5	2.2	2.2	2.2	3.2	3.2
27	4.4	4.5	4.4	---	4.4	4.5	4.5	2.2	2.2	2.2	3.2	3.2
28	4.4	4.5	4.5	---	4.4	4.5	4.5	2.2	2.2	2.2	3.2	3.2
29	---	4.4	4.5	4.8	---	4.5	4.5	2.2	2.2	2.2	3.2	3.3
30	---	4.4	4.5	4.8	---	4.5	4.5	2.2	2.2	2.2	3.2	3.2
31	4.3	---	4.5	4.8	---	4.5	---	2.2	---	2.2	3.2	---
TOTAL	---	131.7	---	---	125.0	139.3	---	94.2	66.0	68.2	80.5	95.9
MEAN	---	4.39	---	---	4.46	4.49	---	3.03	2.20	2.20	2.59	3.19
MAX	---	4.5	---	---	4.8	4.6	---	4.5	2.2	2.2	3.2	3.3
MIN	---	3.5	---	---	4.4	4.4	---	1.9	2.2	2.2	2.2	3.1
AC-FT	---	261	---	---	248	276	---	187	131	135	160	190

SACRAMENTO RIVER BASIN

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 left bank 3.6 mi upstream of Kilarc Powerplant and 6.9 mi northeast of Whitmore.

PERIOD OF RECORD.--October 1986 to September 1987 (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. Elevation of gage is 3,840 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1-12, 22, 24-26, 28-30, Nov. 1-3, 27-30, Dec. 2, 4, 11, 13, 14, 18, 20, 21, 23, 25, 27, 28, Jan. 1-3, 5, 7, 10, 11, 13-15, 31 and Feb. 1. This station records fishwater release only. The release requirement is 2 ft^3/s during dry or normal years. Flow is computed to 5 ft^3/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, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	2.4	2.4	2.5	2.5	2.4	3.2	3.2	2.7	2.4	2.4	2.3
2	2.4	2.4	2.4	2.6	2.6	2.5	3.2	3.2	2.6	2.4	2.3	2.3
3	2.4	2.4	2.4	2.7	2.4	3.6	3.3	3.1	2.6	2.5	2.3	2.3
4	2.4	2.4	2.4	2.7	2.2	3.3	3.3	3.1	2.5	2.5	2.3	2.4
5	2.4	2.4	2.4	2.6	2.2	3.2	3.2	3.1	2.5	2.5	2.3	2.4
6	2.4	2.4	2.8	2.4	2.4	2.5	3.3	3.1	2.4	2.4	2.4	2.4
7	2.4	2.4	2.5	2.4	2.4	2.7	3.3	3.0	2.5	2.4	2.4	2.4
8	2.4	2.2	2.4	2.4	2.5	2.6	3.3	3.0	2.5	2.4	2.4	2.4
9	2.4	2.2	2.4	2.4	2.5	2.6	3.3	3.0	2.4	2.4	2.4	2.4
10	2.4	2.2	2.3	2.4	2.5	2.6	3.3	2.9	2.4	2.4	2.4	2.4
11	2.4	2.2	2.4	2.5	3.3	2.6	3.3	2.9	2.4	2.4	2.4	2.4
12	2.4	2.2	2.4	2.5	2.6	2.1	3.3	2.8	2.4	2.4	2.4	2.4
13	---	2.4	2.4	2.5	2.8	2.9	3.3	2.7	2.4	2.3	2.4	2.4
14	---	2.4	2.4	2.4	2.5	3.3	3.3	2.7	2.4	2.3	2.4	2.4
15	---	2.4	2.4	2.4	2.5	3.4	3.3	2.7	2.5	2.4	2.4	2.4
16	---	2.4	2.4	2.4	2.5	3.4	3.2	3.3	2.4	2.4	2.4	2.3
17	---	2.4	2.3	2.2	2.6	3.3	3.2	3.0	2.4	2.9	2.3	2.3
18	---	2.4	2.4	2.2	2.5	3.3	3.2	2.9	2.4	3.0	2.3	2.3
19	---	2.4	2.4	2.2	2.7	3.2	3.2	2.8	2.4	2.7	2.3	2.4
20	---	2.4	2.4	2.4	2.7	3.2	3.2	2.7	2.4	2.5	2.3	2.4
21	---	2.4	2.4	2.4	2.7	3.2	3.2	2.8	2.4	2.6	2.3	2.4
22	2.4	2.4	2.4	2.4	2.7	3.2	3.2	2.8	2.3	2.6	2.3	2.3
23	2.4	2.4	2.4	2.6	2.7	3.2	3.2	2.9	2.3	2.5	2.3	2.3
24	2.4	2.4	2.4	2.7	2.6	3.2	3.2	2.9	2.4	2.4	2.3	2.4
25	2.5	2.5	2.4	3.1	2.4	3.2	3.2	2.9	2.4	2.4	2.3	2.4
26	2.5	2.5	2.4	3.2	2.4	3.2	3.2	2.9	2.4	2.4	2.3	2.4
27	2.6	2.5	2.4	2.9	2.4	3.2	3.2	2.8	---	2.4	2.4	2.4
28	2.5	2.5	2.4	2.7	2.4	3.2	3.3	2.8	2.4	2.4	2.4	2.4
29	2.5	2.4	2.4	2.5	---	3.2	3.2	2.8	2.4	2.4	2.3	---
30	2.4	2.4	2.5	2.4	---	3.2	3.2	2.7	2.4	2.3	2.4	---
31	2.4	---	2.5	2.5	---	3.3	---	2.7	---	2.4	2.3	---
TOTAL	---	71.4	74.9	78.2	71.2	94.0	97.3	90.2	---	76.4	72.8	---
MEAN	---	2.38	2.41	2.52	2.54	3.03	3.24	2.90	---	2.46	2.34	---
MAX	---	2.5	2.8	3.2	3.3	3.6	3.3	3.3	---	3.0	2.4	---
MIN	---	2.2	2.3	2.2	2.2	2.1	3.2	2.7	---	2.3	2.3	---
AC-FT	---	142	149	155	141	186	193	179	---	152	144	---

NOTE: During the periods Oct. 13-21, June 27, and Sept. 29-30, the canal was out of service, and all flow remained in the natural channel.

SACRAMENTO RIVER BASIN

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 mi^2 .

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.--Estimated daily discharges: Aug. 22 to Sept. 1. Records good. Numerous small diversions above station for irrigation.

AVERAGE DISCHARGE.--38 years, 701 ft^3/s, 507,709 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,700 ft^3/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 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 12	2400	*23,500	*14.57				

Minimum daily, 7.8 ft^3/s, Aug. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	135	106	536	564	234	480	230	65	26	16	12
2	113	129	106	623	1850	231	465	253	62	24	16	11
3	107	121	108	1980	1410	314	460	221	61	25	15	15
4	106	121	108	4060	690	319	444	195	56	19	16	16
5	106	120	151	818	504	3750	419	180	52	20	14	17
6	100	113	175	457	415	2440	397	156	50	24	11	16
7	92	113	149	343	357	1160	386	150	49	26	12	16
8	100	113	130	272	319	818	377	144	57	22	12	17
9	97	112	118	227	300	678	370	151	54	22	11	18
10	96	114	114	205	366	687	369	153	45	19	7.8	19
11	92	110	112	191	1320	3320	403	136	42	20	9.9	20
12	85	110	111	183	3080	11700	375	129	41	18	11	22
13	82	110	111	173	8450	8260	363	121	39	17	8.9	22
14	88	108	124	163	2280	4470	345	111	35	12	12	21
15	79	109	126	157	3640	3150	347	105	34	17	13	20
16	80	107	113	138	1460	1860	339	103	36	9.8	12	23
17	103	107	112	144	916	1380	322	121	30	11	9.2	22
18	150	104	117	150	684	1180	318	100	33	25	13	22
19	113	109	149	145	555	1010	289	98	35	38	14	21
20	106	112	185	139	476	849	273	88	31	32	17	17
21	106	153	148	135	425	1190	257	85	32	25	15	17
22	107	142	152	135	381	1010	250	92	35	20	15	18
23	101	117	206	161	347	1930	234	87	34	28	16	16
24	106	110	157	1880	326	1260	214	86	31	26	15	19
25	116	109	139	1880	298	933	209	90	27	22	14	18
26	112	111	132	853	274	778	207	90	25	23	15	18
27	121	106	134	746	259	672	210	91	25	19	15	20
28	133	106	125	2470	247	607	205	89	24	18	17	20
29	125	114	122	753	---	558	211	89	26	18	20	21
30	205	114	123	2010	---	520	216	83	30	18	21	19
31	166	---	132	912	---	496	---	75	---	12	18	---
TOTAL	3411	3459	4095	23039	32193	57764	9754	3902	1196	655.8	431.8	553
MEAN	110	115	132	743	1150	1863	325	126	39.9	21.2	13.9	18.4
MAX	205	153	206	4060	8450	11700	480	253	65	38	21	23
MIN	79	104	106	135	247	231	205	75	24	9.8	7.8	11
AC-FT	6770	6860	8120	45700	63850	114600	19350	7740	2370	1300	856	1100

CAL YR 1986	TOTAL	303562.0	MEAN	832	MAX	21400	MIN	30	AC-FT 602100
WTR YR 1987	TOTAL	140453.6	MEAN	385	MAX	11700	MIN	7.8	AC-FT 278600

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 mi^2.

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.--Estimated daily discharges: Nov. 14 to Dec. 30. Records good. Small diversions for irrigation above station. At times during irrigation season, Cottonwood Creek receives water above station from Sacramento River by way of Anderson-Cottonwood Irrigation District Canal.

AVERAGE DISCHARGE.--47 years, 886 ft^3/s, 641,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,000 ft^3/s, Mar. 1, 1983, gage height, 21.59 ft from rating curve extended above 34,000 ft^3/s on basis of runoff comparisons with upstream stations then in use; minimum, 15 ft^3/s several days during September 1945.
EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 12	2145	*9,310	*11.01				

Minimum daily, 25 ft^3/s, July 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142	97	71	110	378	333	553	375	184	48	33	58
2	139	95	71	308	433	320	546	360	168	54	36	49
3	139	85	72	433	1130	402	663	338	138	57	36	45
4	115	77	75	670	814	922	599	326	121	55	35	43
5	101	73	82	469	588	2540	549	288	124	50	38	41
6	102	68	89	333	481	2640	517	271	125	50	42	41
7	101	67	82	290	423	1620	515	269	124	50	37	37
8	101	67	80	215	387	1200	481	274	117	46	30	41
9	100	67	75	177	364	1010	456	285	137	38	30	50
10	90	67	72	155	362	883	456	281	144	42	40	54
11	102	65	73	142	406	899	454	274	129	38	44	60
12	104	65	74	134	573	2980	454	254	98	40	38	70
13	96	65	77	131	2930	5220	455	225	87	41	32	59
14	93	67	80	130	2440	2900	437	229	78	32	32	55
15	104	69	83	122	2320	2380	432	245	82	28	33	53
16	117	70	80	112	1660	1780	432	279	76	27	32	60
17	117	72	83	99	1220	1440	423	283	74	25	35	44
18	121	72	89	86	990	1260	415	234	73	32	47	39
19	121	72	96	86	828	1130	412	207	74	36	45	48
20	119	73	90	86	693	1030	396	211	76	35	37	41
21	112	75	98	86	612	1020	365	218	74	37	41	49
22	121	74	108	80	559	1030	349	218	75	41	44	63
23	105	72	93	79	502	1010	344	220	73	41	38	63
24	106	71	90	228	461	994	344	198	73	31	37	51
25	136	70	87	571	433	828	337	181	66	32	40	57
26	163	70	82	413	402	744	336	191	51	33	38	65
27	170	72	82	375	371	691	340	205	52	33	38	52
28	165	74	83	391	350	648	353	217	48	34	48	46
29	154	75	86	498	---	607	351	222	49	40	59	53
30	119	72	90	482	---	576	351	206	53	44	43	53
31	97	---	97	449	---	554	---	189	---	38	42	---
TOTAL	3672	2178	2590	7940	23110	41591	13115	7773	2843	1228	1200	1540
MEAN	118	72.6	83.5	256	825	1342	437	251	94.8	39.6	38.7	51.3
MAX	170	97	108	670	2930	5220	663	375	184	57	59	70
MIN	90	65	71	79	350	320	336	181	48	25	30	37
AC-FT	7280	4320	5140	15750	45840	82500	26010	15420	5640	2440	2380	3050

CAL YR 1986 TOTAL 407843 MEAN 1117 MAX 38100 MIN 42 AC-FT 809000
WTR YR 1987 TOTAL 108780 MEAN 298 MAX 5220 MIN 25 AC-FT 215800

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.

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.

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.

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.

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.

MONTHLY DISCHARGE, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Date	Volta No. 1	Volta No. 2	South	Inskip	Coleman
Oct. 31	5840	3940	5330	6980	14830
Nov. 30	5560	5800	8910	7520	14100
Dec. 31	5350	5670	10880	13760	17540
Jan. 31	5290	5700	11330	14870	19430
Feb. 28	5260	5720	11120	14530	19200
Mar. 30	7120	7260	12540	16290	21840
Apr. 30	6770	7170	12270	16210	21070
May 31	4590	6160	12570	16370	17700
June 30	4930	5230	10280	13540	16620
July 31	4140	4310	8940	11920	14860
Aug. 31	3660	3770	8120	3340	13480
Sept. 30	3310	3450	7320	2180	12710

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.

SACRAMENTO RIVER BASIN

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 18020006, on right bank 4.2 mi east of Shingletown and 5.5 mi northeast of Manton.

PERIOD OF RECORD.--October 1986 to September 1987 (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.--Estimated daily discharges: Oct. 4, 26, 29, Nov. 1, 9, 23, 30, Dec. 6, 17, 19, 23, 31, Jan. 3, and July 3. This station records fishwater release only. The release requirement is 3 ft^3/s at all times; therefore flow is computed to 4 ft^3/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, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	3.2	3.2	3.3	3.3	3.3	3.4	3.3	3.3	3.2	3.3	3.5
2	3.2	3.2	3.3	3.3	3.3	3.2	3.5	3.2	3.3	3.3	3.3	3.5
3	3.2	3.2	3.2	3.2	3.3	3.2	3.5	3.3	3.3	3.3	3.3	3.5
4	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.2	3.3	3.2	3.3	3.5
5	3.2	3.2	3.2	3.2	3.2	3.6	3.4	3.2	3.3	3.2	3.3	3.5
6	3.2	3.2	3.3	3.2	3.3	3.3	3.3	3.4	3.3	3.2	3.3	3.5
7	3.2	3.4	3.2	3.1	3.2	3.1	3.4	3.3	3.3	3.2	3.3	3.5
8	3.2	3.2	3.1	3.1	3.2	3.1	3.4	3.3	3.3	3.3	3.3	3.6
9	3.2	3.2	3.2	3.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.5
10	3.2	3.2	3.2	3.2	3.3	3.4	3.3	3.3	3.3	3.2	3.3	3.5
11	3.2	3.2	3.2	3.1	3.2	3.4	3.4	3.3	3.3	3.2	3.3	3.5
12	3.2	3.2	3.2	3.1	3.3	3.5	3.3	3.3	3.2	3.2	3.3	3.4
13	3.2	3.2	3.2	3.1	3.2	---	3.3	3.2	3.2	3.2	3.3	3.4
14	3.2	3.2	3.2	3.1	3.2	---	3.4	3.2	3.2	3.2	3.3	3.4
15	3.2	3.2	3.3	3.0	3.2	3.4	3.4	3.2	3.2	3.2	3.3	3.4
16	3.2	3.2	3.2	3.1	3.3	3.3	3.4	3.3	3.2	3.2	3.3	3.4
17	3.2	3.3	3.2	3.1	3.3	3.3	3.4	3.1	3.2	3.2	3.3	3.5
18	3.2	3.2	3.2	3.2	3.2	3.3	3.4	3.1	3.2	3.3	3.4	3.5
19	3.2	3.2	3.2	3.1	3.3	3.1	3.3	3.2	3.2	3.2	3.5	3.5
20	3.2	3.2	3.2	3.1	3.2	---	3.2	3.5	3.2	3.2	3.5	3.5
21	3.2	3.3	3.2	3.2	3.2	3.8	3.2	3.6	3.2	3.3	3.5	3.5
22	3.2	3.2	3.3	3.2	3.1	3.8	3.2	3.3	3.2	3.2	3.5	3.5
23	3.2	3.2	3.2	3.2	3.1	3.6	3.2	3.3	3.2	3.2	3.5	3.6
24	3.2	3.3	3.2	3.2	3.1	3.4	3.2	3.2	3.2	3.2	3.5	3.5
25	3.2	3.2	3.2	3.1	3.3	3.3	3.2	3.2	3.2	3.2	3.5	3.5
26	3.2	3.3	3.2	3.2	3.3	3.2	3.3	3.6	3.2	3.2	3.5	3.5
27	3.3	3.2	3.2	3.2	3.3	3.1	3.3	3.6	3.1	3.2	3.5	3.5
28	3.2	3.2	3.1	3.3	3.3	3.1	3.4	3.4	3.1	3.2	3.4	3.6
29	3.2	3.2	3.1	3.2	---	3.3	3.3	3.3	3.1	3.2	3.4	3.6
30	3.2	3.2	3.2	3.3	---	3.3	3.2	3.3	3.1	3.2	3.5	3.5
31	3.2	---	3.2	3.2	---	3.4	---	3.3	---	3.3	3.5	---
TOTAL	99.3	96.6	99.3	98.2	90.7	---	99.9	102.3	96.7	99.9	104.8	104.9
MEAN	3.20	3.22	3.20	3.16	3.23	---	3.33	3.30	3.22	3.22	3.38	3.49
MAX	3.3	3.4	3.3	3.3	3.3	---	3.5	3.6	3.3	3.3	3.5	3.6
MIN	3.2	3.2	3.1	3.0	3.1	---	3.2	3.1	3.1	3.2	3.3	3.4
AC-FT	197	192	197	195	180	---	198	203	192	198	208	208

NOTE: Oct. 1 to Mar. 18, discharges from ditch tender log. Recorder installed Mar. 19. Mar. 13, 14, 20, flows above rated flows.

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 18020006, on right bank 7.5 mi southwest of Shingletown and 5.7 mi southwest of Manton.

PERIOD OF RECORD.--October 1986 to September 1987 (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 Alaskan steel fishladder. Elevation of gage is 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 5 ft^3/s at all times; therefore flow is computed to 8.5 ft^3/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, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	5.0		---	---	5.9		---	5.4	5.3	5.2	7.8
2	6.2	5.0		---	---	6.0		---	5.4	5.3	5.2	8.1
3	5.9	---		---	---	6.1		6.9	5.3	5.3	5.9	8.3
4	6.0	---		---	---	6.7		6.5	5.4	5.3	5.6	7.0
5	5.9	---		---	---	---		6.7	5.4	5.3	5.3	7.1
6	6.9	---		6.4	---	---		---	5.3	5.6	5.3	7.0
7	5.0	---		6.4	---	6.4		---	5.5	5.7	5.5	6.9
8	5.8	---		5.4	6.1	6.8		---	5.4	6.1	5.3	7.0
9	6.2	---		5.5	5.4	---		---	5.4	6.3	5.2	7.5
10	5.9	---		5.3	5.5	6.8		---	5.4	5.9	5.8	7.0
11	5.4	---		5.3	---	---		---	5.8	5.8	6.2	7.6
12	5.2	---		5.2	---	---		---	5.4	5.7	5.8	7.5
13	5.1	---		5.6	---	---		---	5.5	5.3	5.3	7.4
14	6.2	---		5.2	5.8	---		---	5.5	5.3	6.0	7.2
15	6.5	---		5.3	---	---		---	5.6	5.8	5.8	7.4
16	6.8	---		5.2	6.8	---		---	5.7	5.3	5.5	7.3
17	---	---		5.4	---	---		---	5.6	5.6	5.8	7.7
18	---	---		5.4	---	---		---	5.0	6.4	5.5	7.6
19	---	---		5.4	---	---		6.7	4.3	5.8	5.6	7.5
20	---	---		5.4	---	---		6.5	5.0	6.1	6.7	7.7
21	---	---		5.7	6.9	---		6.2	5.1	6.2	6.3	7.5
22	---	---		5.3	6.7	---		6.2	5.0	5.8	5.6	7.5
23	---	---		5.9	6.4	---		6.0	6.0	5.3	5.5	6.9
24	---	---		---	6.2	---		5.7	5.8	6.0	5.8	7.9
25	---	---		---	6.0	---		5.5	5.5	5.8	5.5	7.4
26	---	---		6.7	6.0	---		5.8	5.7	5.5	5.1	7.5
27	---	---		6.4	6.1	---		6.0	5.0	5.8	6.5	7.3
28	---	---		---	5.9	---		5.4	5.7	5.2	6.8	7.8
29	---	---		---	---	---		5.3	5.3	5.1	5.8	7.7
30	---	---		---	---	---		5.3	5.4	5.1	8.3	7.9
31	---	---		---	---	---		5.3	---	5.1	6.9	---
TOTAL	---	---		---	---	---		---	161.8	174.1	180.6	224.0
MEAN	---	---		---	---	---		---	5.39	5.62	5.83	7.47
MAX	---	---		---	---	---		---	6.0	6.4	8.3	8.3
MIN	---	---		---	---	---		---	4.3	5.1	5.1	6.9
AC-FT	---	---		---	---	---		---	321	345	358	444

NOTE: Many days during October through May, flows above rated flow.

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: July 30 to Aug. 27. Records fair. Some regulation at low flows by five small powerplants, several small reservoirs, and Coleman Fish Hatchery. Coleman Fish Hatchery diverts from 50 to 90 ft^3/s and pumps ground water for temperature control which is returned above the station. At times, 10 ft^3/s diverted above station for irrigation.

AVERAGE DISCHARGE.--26 years, 527 ft^3/s, 381,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,300 ft^3/s, Jan. 24, 1970, gage height, 14.75 ft, from rating curve extended above 4,200 ft^3/s on basis of slope-area measurement of peak flow; minimum since 1961, 52 ft^3/s, Aug. 8, 1962. Prior to 1961, minimum not determined; minimum gage height, 1.20 ft, June 25, 1949, site and datum then in use.
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 ft^3/s by slope-area measurement.
EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 12	2345	*4,750	*6.43				

Minimum daily, 207 ft^3/s, Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	376	383	367	548	422	366	460	409	286	250	223	210
2	371	381	347	568	812	370	464	405	277	251	222	210
3	367	369	321	1150	735	386	469	372	276	248	221	214
4	365	369	324	774	504	413	467	356	277	247	221	209
5	361	360	364	484	437	1140	453	358	279	248	221	209
6	343	358	348	417	404	1080	448	367	274	248	222	213
7	389	355	335	381	388	666	445	374	275	255	222	213
8	387	356	328	357	378	563	445	384	276	260	222	213
9	369	350	327	345	372	552	447	385	271	265	222	213
10	360	346	323	338	385	519	452	393	268	261	222	212
11	360	349	322	335	550	727	486	377	267	261	222	212
12	352	347	322	331	755	2760	471	366	265	261	221	215
13	350	343	320	332	1370	2280	452	368	262	259	220	216
14	353	351	328	327	799	1220	449	359	259	257	220	217
15	354	339	322	325	1050	960	449	388	259	255	221	217
16	359	334	317	318	648	778	446	395	259	254	221	217
17	356	334	317	322	549	678	441	420	259	253	222	217
18	370	327	352	322	496	698	442	403	258	258	219	217
19	355	325	361	322	462	619	433	382	258	260	218	217
20	343	328	371	317	434	577	407	355	259	256	216	217
21	351	373	375	316	419	631	393	331	259	254	214	217
22	341	351	379	318	408	610	395	332	254	255	212	217
23	335	336	387	339	399	620	401	326	254	250	211	217
24	338	329	375	492	390	588	402	319	257	246	210	221
25	334	329	363	559	381	536	399	315	255	242	210	221
26	337	345	356	410	375	515	399	325	254	243	211	221
27	341	381	354	475	373	495	404	326	252	236	213	221
28	333	381	345	980	370	478	420	303	253	232	216	221
29	361	383	342	510	---	466	428	299	252	226	209	221
30	449	375	339	643	---	457	419	292	250	226	208	218
31	378	---	342	495	---	458	---	292	---	226	207	---
TOTAL	11138	10587	10673	14150	15065	23206	13086	11076	7904	7743	6739	6473
MEAN	359	353	344	456	538	749	436	357	263	250	217	216
MAX	449	383	387	1150	1370	2760	486	420	286	265	223	221
MIN	333	325	317	316	370	366	393	292	250	226	207	209
AC-FT	22090	21000	21170	28070	29880	46030	25960	21970	15680	15360	13370	12840

CAL YR 1986 TOTAL 230710 MEAN 632 MAX 6700 MIN 293 AC-FT 457600
WTR YR 1987 TOTAL 137840 MEAN 378 MAX 2760 MIN 207 AC-FT 273400

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 mi^2, 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.--Estimated daily discharges: Feb. 2-20 and Mar. 26 to Apr. 2. Records good. Flow completely regulated by Shasta Lake (station 11370000) 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.

AVERAGE DISCHARGE.--71 years (water years 1892-1962), prior to transbasin diversion from Trinity River, 11,400 ft^3/s, 8,259,000 acre-ft/yr; 25 years (water years 1963-87), 13,650 ft^3/s, 9,889,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 291,000 ft^3/s, Feb. 28, 1940, gage height, 38.9 ft, site and datum then in use, from rating curve extended above 170,000 ft^3/s on basis of velocity-area studies; minimum (water years 1892-1987), 2,000 ft^3/s, Mar. 29, 1944. Since regulation by Shasta Dam in 1943, maximum discharge, 157,000 ft^3/s, Jan. 24, 1970, gage height, 36.60 ft; minimum, 2,000 ft^3/s, Mar. 29, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 51,600 ft^3/s, Mar. 13, gage height, 18.43 ft; minimum daily, 4,250 ft^3/s, Mar. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8710	6820	7190	7300	5690	4270	5200	12700	10900	14500	14600	9010
2	8760	6890	7110	8140	8200	4250	5500	12600	11100	14800	15200	9020
3	8230	6740	7090	11000	9900	4410	6870	12600	11100	15200	14900	8600
4	7600	6360	7150	14500	7500	4930	7020	12500	11100	14900	14800	8160
5	7510	6270	7240	8700	6400	14700	7000	12400	11100	15200	15200	8220
6	7460	6230	7210	7120	5800	14200	7130	12400	11700	15000	14600	8110
7	7370	6250	7180	5930	5400	7980	7220	12000	12100	15200	13600	8000
8	7490	6790	7180	5680	5300	6470	7120	11900	12100	15300	13200	7980
9	7440	7330	7140	5550	5200	5880	6930	12500	12600	15000	13100	7620
10	7470	7380	7150	5410	5250	5520	7670	12800	13000	15000	12900	7440
11	7520	7350	6760	5400	6250	8970	8660	12800	12900	15300	12500	7240
12	7070	7410	6610	5420	9000	23300	8960	13600	13100	15200	12300	6810
13	6840	7430	6590	5250	23000	31700	8900	14100	13100	15200	12300	6600
14	6830	7470	6580	5210	12500	16700	8840	14100	13200	15300	12300	6550
15	6520	7450	6610	5210	14500	14300	9400	13300	13200	15300	12200	6490
16	6480	7430	6540	5140	9300	9780	9380	10800	13200	15200	12200	6130
17	6520	7430	6370	5120	7200	8140	7580	10400	13300	15200	12400	5860
18	6640	7540	6440	5130	6300	7420	10600	10300	13200	15000	12400	5700
19	6530	7570	6530	5080	5850	6850	12400	10000	13200	15400	11900	5720
20	6450	7650	6520	5020	5300	6400	12600	9310	13300	15200	11900	5700
21	6360	7500	6460	5000	5060	7010	12500	9030	13200	15200	11900	5670
22	6420	7320	6560	4990	4900	7140	12900	8990	13300	14900	11700	5560
23	6330	7330	6780	5060	4760	7810	13000	8940	12500	15000	11700	5570
24	6420	7280	6670	7130	4650	7310	13000	8980	12200	15100	11600	6080
25	6610	7350	6610	9110	4500	6320	12900	9000	12200	14900	12000	6150
26	6630	7310	6620	6610	4410	6050	12900	9000	12300	15000	10900	6060
27	6670	7310	6640	6040	4340	5920	13000	9030	13600	14800	9520	6060
28	6650	7290	6590	10300	4300	5550	13000	9960	14400	14800	9580	6090
29	6800	7360	6650	6370	---	5460	12700	10700	14600	15000	9700	6100
30	7090	7320	6640	8500	---	5400	12600	10600	14500	14700	9380	6070
31	6950	---	6630	6740	---	5300	---	10600	---	14800	8970	---
TOTAL	218370	215160	210040	207160	200760	275440	293480	347940	381300	466600	381450	204370
MEAN	7044	7172	6775	6683	7170	8885	9783	11220	12710	15050	12300	6812
MAX	8760	7650	7240	14500	23000	31700	13000	14100	14600	15400	15200	9020
MIN	6330	6230	6370	4990	4300	4250	5200	8940	10900	14500	8970	5560
AC-FT	433100	426800	416600	410900	398200	546300	582100	690100	756300	925500	756600	405400

CAL YR 1986 TOTAL 5324230 MEAN 14590 MAX 108000 MIN 5060 AC-FT 10560000
WTR YR 1987 TOTAL 3402070 MEAN 9321 MAX 31700 MIN 4250 AC-FT 6748000

SACRAMENTO RIVER BASIN

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 mi^2.

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 elevation 5.13 ft lower.

REMARKS.--No estimated daily discharges. Records good. No regulation or large diversion above station.

AVERAGE DISCHARGE.--39 years, 104 ft^3/s, 75,350 acre-ft/yr .

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,700 ft^3/s, Feb. 28, 1983, gage height, 12.10 ft, present site and datum, from rating curve extended above 5,200 ft^3/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 1,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	0015	*1,530	*5.70	Mar. 5	0745	1,500	5.66

No flow Aug. 8-10, 31 and Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	7.1	6.7	19	17	22	48	30	8.3	2.0	.33	0
2	5.0	6.7	6.7	23	57	23	51	27	7.2	2.0	.17	.02
3	5.0	6.4	6.7	36	53	42	69	25	6.5	2.0	.08	.03
4	4.8	6.2	6.8	30	32	56	55	23	6.0	1.9	.11	.08
5	4.5	6.1	7.7	17	25	760	51	21	5.8	1.8	.08	.11
6	4.4	6.1	8.4	13	21	253	49	20	5.7	1.5	.01	.15
7	4.4	6.1	7.6	11	20	138	48	18	5.6	1.3	.01	.13
8	4.5	6.2	7.2	10	19	101	49	17	6.0	.89	0	.36
9	4.6	6.3	7.0	9.7	18	81	52	17	6.6	.46	0	.35
10	4.6	6.3	6.9	9.4	25	97	55	15	14	.58	0	.30
11	4.3	6.2	6.7	9.4	31	86	58	14	7.5	.61	.03	.32
12	4.2	6.1	6.8	9.4	165	538	52	14	6.1	.61	.07	.26
13	4.4	6.1	7.1	9.3	528	390	48	13	5.1	.59	.04	.40
14	4.5	6.3	7.6	8.9	136	238	47	12	4.7	.50	.13	.48
15	4.6	6.4	7.6	8.7	182	170	46	12	5.3	.34	.29	.50
16	4.6	6.5	7.6	9.1	91	129	47	13	5.9	.18	.28	.37
17	5.1	6.7	7.4	8.2	65	106	49	12	5.7	.29	.20	.36
18	5.8	6.7	8.3	8.7	52	93	46	12	5.4	.85	.18	.32
19	5.6	6.7	9.0	8.5	44	82	42	11	4.9	1.0	.14	.32
20	5.5	6.7	8.9	8.0	38	73	38	11	4.8	.87	.19	.29
21	5.6	7.0	8.2	8.0	35	77	36	11	4.6	.87	.25	.27
22	5.5	6.9	9.2	8.2	33	67	36	16	4.8	1.0	.25	.22
23	5.6	6.8	10	11	30	75	36	13	4.2	.96	.24	.13
24	7.1	6.7	8.6	41	28	68	36	12	3.6	.91	.25	.29
25	7.4	6.6	8.2	24	26	61	34	12	3.0	.85	.18	.42
26	6.9	6.5	7.9	22	25	58	33	12	2.3	.79	.05	.40
27	6.6	6.6	7.6	21	24	54	32	13	2.2	.70	.09	.32
28	6.5	6.8	7.6	29	23	51	32	12	2.2	.55	.08	.29
29	6.5	7.0	8.0	23	---	48	31	11	2.2	.51	.04	.17
30	8.0	6.8	8.7	21	---	47	30	10	2.2	.52	.04	.21
31	7.9	---	11	19	---	47	---	9.2	---	.43	0	---
TOTAL	169.4	195.6	243.7	493.5	1843	4131	1336	468.2	158.4	28.36	3.81	7.87
MEAN	5.46	6.52	7.86	15.9	65.8	133	44.5	15.1	5.28	.91	.12	.26
MAX	8.0	7.1	11	41	528	760	69	30	14	2.0	.33	.50
MIN	4.2	6.1	6.7	8.0	17	22	30	9.2	2.2	.18	0	0
AC-FT	336	388	483	979	3660	8190	2650	929	314	56	7.6	16

CAL YR 1986 TOTAL 55148.20 MEAN 151 MAX 5820 MIN 1.3 AC-FT 109400
WTR YR 1987 TOTAL 9078.84 MEAN 24.9 MAX 760 MIN 0 AC-FT 18010

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--September 1909 to August 1913 (fragmentary), October 1928 to current year.
CHEMICAL DATA: Water years 1953-79 (at mouth 11381620).
WATER TEMPERATURE: Water years 1977-79 (at Sherwood Bridge 11381595).
SEDIMENT DATA: Water years 1977-79 (at Sherwood Bridge 11381595).

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 above station.

AVERAGE DISCHARGE.--59 years (water years 1929-87), 307 ft^3/s, 222,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (water years 1929-87): Maximum discharge, 36,400 ft^3/s, Dec. 11, 1937, gage height, 23.4 ft, from floodmarks, from rating curve extended above 14,000 ft^3/s on basis of step-backwater computation and slope-area measurement of peak flow; minimum, 49 ft^3/s, Dec. 13, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 12	2400	*7,110	*10.38				

Minimum daily, 84 ft^3/s, Sept. 4, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	141	133	114	234	180	161	251	336	170	106	99	87
2	135	128	112	213	515	161	268	304	165	105	95	85
3	131	126	112	676	425	174	276	274	162	105	95	85
4	129	126	113	279	244	187	267	269	162	105	93	84
5	131	124	144	187	196	1030	256	293	163	103	90	85
6	131	124	131	158	173	1100	252	344	153	99	89	85
7	129	122	126	144	164	561	250	356	149	97	88	87
8	127	122	123	134	158	413	256	400	149	97	88	87
9	125	122	121	129	154	349	264	396	145	97	87	86
10	123	122	116	126	159	302	277	387	143	95	87	85
11	122	120	116	124	290	352	310	370	142	95	87	85
12	121	120	116	122	391	3010	312	371	139	95	87	85
13	121	120	116	124	1300	2550	286	366	137	95	88	85
14	121	120	126	122	649	1370	281	357	135	94	88	86
15	119	120	123	120	956	972	289	353	135	92	90	86
16	120	119	121	114	462	633	298	396	134	90	89	85
17	123	118	117	118	342	494	312	379	132	93	88	85
18	131	118	122	120	280	471	310	327	130	118	87	85
19	125	120	125	120	247	405	286	283	125	122	87	85
20	124	120	128	118	224	368	255	257	121	111	87	86
21	122	145	120	118	210	373	247	232	121	107	87	86
22	122	128	133	118	199	363	260	223	120	109	87	85
23	121	123	130	124	191	386	276	207	118	109	87	85
24	121	121	123	139	184	363	277	199	116	107	87	85
25	122	120	120	144	176	308	280	193	113	103	86	87
26	122	120	118	145	170	281	290	195	111	101	85	87
27	122	119	118	163	165	265	314	190	110	101	85	86
28	125	118	116	560	162	250	375	182	109	103	85	85
29	124	122	117	243	---	240	358	176	110	101	85	85
30	209	119	118	280	---	233	353	172	108	101	85	84
31	148	---	123	216	---	237	---	170	---	101	86	---
TOTAL	3987	3679	3758	5732	8966	18362	8586	8957	4027	3157	2734	2564
MEAN	129	123	121	185	320	592	286	289	134	102	88.2	85.5
MAX	209	145	144	676	1300	3010	375	400	170	122	99	87
MIN	119	118	112	114	154	161	247	170	108	90	85	84
AC-FT	7910	7300	7450	11370	17780	36420	17030	17770	7990	6260	5420	5090

CAL YR 1986 TOTAL 143917 MEAN 394 MAX 8440 MIN 109 AC-FT 285500
WTR YR 1987 TOTAL 74509 MEAN 204 MAX 3010 MIN 84 AC-FT 147800

SACRAMENTO RIVER BASIN

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 1.2 mi downstream from Digger Creek and 1.0 mi downstream from highway bridge at Paskenta.
DRAINAGE AREA.--203 mi^2.

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, 81-83.
REVISED RECORDS.--WSP 1345: 1923, 1924-28(M), 1938, 1940(M). WDR CA-78-4: Drainage area. WDR CA-79-4(M). WDR CA-81-4(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.--Estimated daily discharges: Apr. 16-22 and May 2-18. Records fair. No storage or large diversions above station.

AVERAGE DISCHARGE.--67 years, 297 ft^3/s, 215,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,800 ft^3/s, Dec. 22, 1964, gage height, 12.7 ft, from floodmarks, present site and datum, from rating curve extended above 6,000 ft^3/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 2,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage-height (ft)
Feb. 13	0445	*4,720	*6.94	Mar. 12	2045	4,270	6.77

Minimum daily, 0.05 ft^3/s, Sept. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	56	16	173	146	227	358	230	45	6.1	2.8	.33
2	32	40	15	239	554	243	389	200	39	6.0	2.6	.08
3	42	32	15	287	581	671	414	175	33	5.5	2.3	.13
4	30	29	15	232	315	666	365	168	32	5.6	2.5	.58
5	26	27	17	140	246	1470	344	160	30	5.8	2.4	.70
6	23	23	30	105	218	964	336	152	28	5.3	2.1	.45
7	22	20	28	90	222	619	315	144	27	3.5	2.0	.85
8	19	19	25	75	216	501	305	131	37	4.2	1.9	.99
9	19	19	21	71	211	439	336	130	40	4.4	1.9	.92
10	14	17	22	63	270	415	357	122	37	4.2	1.7	.60
11	13	17	21	70	356	411	373	111	32	3.7	1.7	1.0
12	11	16	20	80	375	2420	327	110	24	3.9	1.7	1.1
13	9.8	16	20	89	2520	2070	287	107	19	4.4	1.6	1.1
14	8.7	15	31	77	1030	1270	288	100	16	3.7	1.6	1.0
15	9.2	14	41	77	714	889	293	97	17	3.4	1.6	.93
16	8.3	14	34	62	522	669	260	110	17	3.4	1.6	1.2
17	9.5	15	30	71	436	559	278	102	17	3.8	1.5	.78
18	12	15	31	61	395	554	265	98	16	3.8	1.5	.89
19	11	14	33	51	371	497	248	97	15	3.6	1.3	.70
20	9.1	15	38	44	373	448	240	101	13	3.2	1.3	.69
21	10	16	34	38	359	444	230	97	14	5.1	1.4	.52
22	12	30	37	37	348	398	248	97	13	4.2	1.5	.15
23	11	24	58	49	306	412	252	87	11	3.0	1.4	.13
24	13	21	53	73	283	386	226	71	10	4.0	.81	.16
25	22	20	45	73	266	360	222	54	9.4	4.3	.89	.41
26	19	19	41	244	251	350	230	57	8.4	4.4	1.0	.48
27	16	18	41	209	239	341	248	61	7.6	4.3	.79	.50
28	19	18	40	271	232	326	288	58	8.0	3.9	.35	.42
29	19	17	50	191	---	313	260	52	7.7	3.8	.68	.09
30	143	17	87	169	---	317	226	50	6.5	3.6	.53	.05
31	89	---	83	153	---	331	---	49	---	3.2	.38	---
TOTAL	739.6	633	1072	3664	12355	19980	8808	3378	629.6	131.3	47.33	17.93
MEAN	23.9	21.1	34.6	118	441	645	294	109	21.0	4.24	1.53	.60
MAX	143	56	87	287	2520	2420	414	230	45	6.1	2.8	1.2
MIN	8.3	14	15	37	146	227	222	49	6.5	3.0	.35	.05
AC-FT	1470	1260	2130	7270	24510	39630	17470	6700	1250	260	94	36

CAL YR 1986 TOTAL 173613.90 MEAN 476 MAX 25500 MIN 1.7 AC-FT 344400
WTR YR 1987 TOTAL 51455.76 MEAN 141 MAX 2520 MIN .05 AC-FT 102100

SACRAMENTO RIVER BASIN

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 diversion dam and 7.9 mi northeast of Vina.

DRAINAGE AREA.--208 mi^2.

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.
WATER TEMPERATURE: Water year 1977 (at Red Bridge, station 11383600).
SEDIMENT DATA: Water year 1977 (at Red Bridge, station 11383600).

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 excellent. No storage or large diversions above station.

AVERAGE DISCHARGE.--69 years (water years 1912-15, 1921-37, 1940-87), 323 ft^3/s, 234,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,800 ft^3/s, Dec. 10, 1937, gage height, 19.2 ft, present datum, from floodmarks, from rating curve extended above 9,200 ft^3/s on basis of velocity-area studies; minimum, 43 ft^3/s, Dec. 13, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 5	1515	3,030	7.47	Mar. 12	2300	*6,720	*10.08

Minimum daily, 75 ft^3/s, several days during August.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	129	126	118	165	184	155	293	193	110	87	77	77
2	126	121	118	202	427	155	300	192	107	87	77	77
3	124	119	119	616	399	165	304	172	104	86	76	76
4	123	119	120	292	250	176	297	162	104	86	76	76
5	121	119	148	191	203	1540	286	156	102	87	76	76
6	119	118	139	162	183	1300	280	150	101	85	76	76
7	119	117	130	147	172	649	276	147	101	84	75	77
8	119	119	124	137	166	478	275	152	103	84	75	77
9	119	118	121	131	160	393	275	153	101	84	75	77
10	119	119	119	129	159	347	278	150	99	83	75	77
11	117	119	118	127	238	448	323	139	98	84	75	77
12	116	117	118	126	385	3530	301	134	97	83	76	78
13	116	117	119	127	1630	3190	276	131	96	83	76	78
14	117	118	127	123	721	1720	264	128	95	82	77	78
15	117	119	127	121	1010	1200	257	126	95	82	77	78
16	117	117	121	116	516	832	251	127	97	81	77	78
17	118	118	119	119	370	662	246	132	97	82	76	77
18	129	119	124	120	302	648	245	126	95	91	76	77
19	123	120	127	119	260	549	237	123	94	88	76	77
20	120	121	129	117	233	468	218	121	93	84	76	77
21	119	139	122	116	215	494	208	119	93	83	76	77
22	119	138	134	116	202	434	205	124	92	83	76	77
23	119	124	134	126	192	458	201	120	91	82	76	77
24	119	121	126	143	183	415	197	117	91	81	76	77
25	119	121	123	147	173	373	192	116	89	81	76	78
26	119	119	121	143	166	350	187	120	88	80	76	78
27	118	119	120	158	160	326	182	122	88	80	76	78
28	121	118	118	404	157	308	180	118	88	79	76	78
29	121	125	119	236	---	295	178	115	88	78	75	77
30	169	121	122	260	---	285	182	113	88	78	76	76
31	138	---	126	214	---	285	---	111	---	78	77	---
TOTAL	3789	3625	3850	5450	9416	22628	7394	4209	2885	2576	2356	2314
MEAN	122	121	124	176	336	730	246	136	96.2	83.1	76.0	77.1
MAX	169	139	148	616	1630	3530	323	193	110	91	77	78
MIN	116	117	118	116	157	155	178	111	88	78	75	76
AC-FT	7520	7190	7640	10810	18680	44880	14670	8350	5720	5110	4670	4590

CAL YR 1986 TOTAL 170437 MEAN 467 MAX 11800 MIN 108 AC-FT 338100
WTR YR 1987 TOTAL 70492 MEAN 193 MAX 3530 MIN 75 AC-FT 139800

SACRAMENTO RIVER BASIN

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 mi^2. 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).

Reservoir is formed by a concrete arch-type dam. Storage began in 1910. Capacity, 48,211 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, not reviewed by U.S. Geological Survey.

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, 50,860 acre-ft, Apr. 18-21, elevation, 1,199.66 ft; minimum, 17,980 acre-ft, Sept. 30, elevation, 1,175.68 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 mi^2. 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).

Reservoir is formed by slab and buttress-type dam. Storage began in 1928. Capacity, 50,383 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, not reviewed by U.S. Geological Survey.

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, 50,070 acre-ft, Apr. 8, elevation, 840.76 ft; minimum, 11,380 acre-ft, Aug. 7, elevation, 798.23 ft.

MONTHEND ELEVATION NGVD AND CONTENTS, AT 0800, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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.....	1,185.54	28,960	-3,170	819.76	26,920	-2,790
Oct. 31.....	1,183.94	26,940	-2,020	820.77	27,850	+930
Nov. 30.....	1,184.26	27,340	+400	818.79	26,040	-1,810
Dec. 31.....	1,185.00	28,260	+920	817.48	24,890	-1,150
CAL YR 1986	--	--	+5,400	--	--	+2,030
Jan. 31.....	1,187.80	31,970	+3,710	818.08	25,410	+520
Feb. 28.....	1,193.64	40,620	+8,650	827.05	34,040	+8,630
Mar. 31.....	1,198.30	48,430	+7,810	840.45	49,670	+15,630
Apr. 30.....	1,199.58	50,710	+2,280	834.15	41,920	-7,750
May 31.....	1,195.08	42,940	-7,770	830.72	38,000	-3,920
June 30.....	1,188.98	33,610	-9,330	820.26	27,380	-10,620
July 31.....	1,184.58	27,740	-5,870	800.07	12,400	-14,980
Aug. 31.....	1,177.68	19,940	-7,800	804.56	15,130	+2,730
Sept. 30.....	1,175.68	17,980	-1,960	800.85	12,850	-2,280
WTR YR 1987	--	--	-10,980	--	--	-14,070

SACRAMENTO RIVER BASIN

11387990 SOUTH DIVERSION CANAL NEAR ORLAND, CA

LOCATION.--Lat 39°48'36", long 122°19'45", in SW 1/4 NE 1/4 sec.32, T.23 N., R.4 W., Tehama County, Hydrologic Unit 18020103, on left bank canal 0.4 mi downstream from Black Butte Dam and 8.2 mi northwest of Orland.

PERIOD OF RECORD.--July 1955 to current year. Prior to October 1961, published as an adjustment to Snow Creek at Black Butte damsite, near Orland.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 372.64 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 23, 1956, at site 0.5 mi upstream at different datum. Oct. 23, 1956, to Sept. 30, 1960, at present site and datum. Oct. 1, 1960, to Sept. 30, 1961, at datum 1.00 ft lower.

REMARKS.--No estimated daily discharges. Records good. Canal diverts from Black Butte Lake at right end of Black Butte Dam; water is used for irrigation. A pump with a capacity of 6 ft^3/s diverted water at times above station and was included in the canal record prior to Mar. 1, 1970. Total diverted during the current year was 725 acre-ft.

COOPERATION.--Records provided by U.S. Army Corps of Engineers; 11 discharge measurements were made, and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--32 years, 98.8 ft^3/s, 71,580 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 320 ft^3/s, May 8, 1969; no flow at times most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	.70	25	1.5	2.4	26	0	132	123	230	146	151
2	127	.10	50	1.4	1.8	26	0	104	157	217	155	150
3	118	.10	51	1.3	1.5	26	0	84	211	183	188	143
4	80	0	39	1.1	1.2	26	58	75	231	138	212	118
5	79	0	9.2	12	1.1	11	81	90	230	128	219	102
6	116	67	1.3	26	1.1	.10	101	164	235	126	200	108
7	164	113	1.5	25	1.1	0	75	195	237	147	172	98
8	174	72	1.5	24	1.1	0	119	217	191	191	159	136
9	125	80	1.5	24	1.1	0	173	244	157	204	146	165
10	63	72	1.6	24	1.1	0	210	225	138	210	124	183
11	1.4	73	1.6	24	1.1	0	221	173	142	211	127	200
12	1.0	59	1.6	36	1.3	.40	202	176	143	222	153	192
13	71	52	1.6	51	1.4	.90	194	182	150	207	182	139
14	87	23	1.5	50	1.2	.80	190	177	169	175	179	129
15	82	.20	1.5	50	1.4	.10	161	151	201	169	183	145
16	86	.20	15	50	1.0	0	136	117	229	184	179	122
17	49	23	31	50	1.0	0	85	92	246	163	184	124
18	1.6	45	10	51	1.0	0	73	64	255	143	171	133
19	1.6	39	.20	50	1.0	0	61	80	226	115	168	116
20	41	32	.70	61	1.0	0	94	157	195	151	172	75
21	72	43	1.0	83	1.0	0	140	213	170	170	143	107
22	59	55	1.0	89	1.0	0	193	227	147	181	97	175
23	76	44	.90	72	.50	0	207	246	146	191	105	194
24	50	22	.80	65	0	0	218	212	138	220	121	161
25	.70	4.4	1.0	20	0	0	193	155	163	202	140	130
26	5.5	1.4	21	.80	0	0	182	159	181	163	174	115
27	.60	2.1	18	.80	8.6	0	181	166	185	162	197	104
28	.40	2.1	8.3	.80	26	0	173	138	194	157	215	111
29	0	2.1	38	1.7	---	0	163	134	202	152	183	118
30	.60	2.1	51	2.3	---	0	139	110	225	153	149	101
31	1.3	---	23	2.3	---	0	---	89	---	154	139	---
TOTAL	1815.70	929.50	410.30	951.00	62.00	117.30	4023	4748	5617	5419	5082	4045
MEAN	58.6	31.0	13.2	30.7	2.21	3.78	134	153	187	175	164	135
MAX	174	113	51	89	26	26	221	246	255	230	219	200
MIN	0	0	.20	.80	0	0	0	64	123	115	97	75
AC-FT	3600	1840	814	1890	123	233	7980	9420	11140	10750	10080	8020

CAL YR 1986 TOTAL 32062.10 MEAN 87.8 MAX 270 MIN 0 AC-FT 63600
WTR YR 1987 TOTAL 33219.80 MEAN 91.0 MAX 255 MIN 0 AC-FT 65890

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 mi^2.
PERIOD OF RECORD.--October 1963 to current year. 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. 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 herein represent total contents at 2400 hours.
COOPERATION.--Records were provided by U.S. Army Corps of Engineers.
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, 67,842 acre-ft, May 2, elevation, 452.74 ft; minimum, 15,425 acre-ft, Dec. 17, elevation, 425.46 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Based on survey by U.S. 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

CONTENTS, IN ACRE-FEET AT 2400 HOURS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27678	18303	16109	17297	20699	34162	65402	67727	65374	62470	59567	43574
2	26977	18315	15912	17979	21137	34273	66077	67842	65514	62279	59514	42990
3	26256	18351	15770	18582	21935	34496	66445	67698	65486	62089	59329	42368
4	25687	18400	15694	19212	22363	34833	66558	67584	65374	62034	59065	41858
5	25141	18267	15727	19614	22684	37506	66615	67383	65262	62062	58724	41436
6	24484	17872	15716	19805	22909	39043	66615	66984	65121	62116	58435	41038
7	23695	17448	15716	19882	23136	39878	66558	66558	64954	62089	58148	40663
8	22881	17043	15716	19920	23321	40497	66473	66501	64898	61871	57602	40228
9	22197	16656	15673	19946	23479	41038	66501	66445	64870	61682	57007	39694
10	21567	16353	15673	19946	23796	41520	65992	66360	64870	61547	56493	39084
11	20845	16320	15651	19946	24102	41985	65402	66303	64870	61385	55931	38440
12	20139	16353	15619	19920	24618	44141	64954	66303	64898	61196	55322	37822
13	19438	16376	15586	19831	26866	47300	64480	66247	64898	61007	54642	37309
14	18951	16555	15565	19741	28523	49178	64036	66247	64870	60874	54117	36859
15	18643	16735	15543	19652	29856	50432	64036	66303	64814	60766	53619	36317
16	18339	16747	15511	19576	30710	51369	64286	66360	64619	60579	52854	35817
17	18243	16758	15425	19475	31318	52120	64563	66417	64424	60525	52242	35627
18	18424	16815	15436	19400	31792	52805	64954	66615	64147	60498	51634	35513
19	18655	16860	15468	19249	32164	53421	65402	66785	63953	60579	51007	35494
20	18766	16747	15479	19137	32503	54516	65767	66757	63842	60579	50337	35589
21	18741	16656	15500	18938	32773	55855	66077	66558	63815	60525	49767	35646
22	18680	16532	15565	18938	33026	56930	66445	66332	63787	60498	49272	35210
23	18570	16431	15651	19037	33262	58148	66956	66021	63759	60391	48780	34646
24	18448	16353	15781	19287	33481	59171	67098	65767	63704	60258	48291	34180
25	18075	16331	15956	19438	33664	60338	67183	65599	63594	60152	47760	33756
26	17979	16309	16131	19602	33848	61223	67212	65458	63429	60098	47163	33299
27	18051	16297	16287	19792	33995	62062	67326	65318	63209	60018	46548	32863
28	18087	16276	16476	20023	34088	62716	67441	65402	63044	59912	45871	32414
29	18147	16198	16611	20242	---	63429	67526	65486	62880	59806	45223	31951
30	18183	16209	16724	20437	---	64092	67612	65486	62716	59752	44669	31493
31	18231	---	16952	20568	---	64787	---	65514	---	59646	44141	---
MAX	27678	18400	16952	20568	34088	64787	67612	67842	65514	62470	59567	43574
MIN	17979	16198	15425	17297	20699	34162	64036	65318	62716	59646	44141	31493
a	427.93	426.18	426.84	429.79	438.38	451.66	452.66	451.92	450.91	449.77	443.36	436.94
b	-10111	-2022	+743	+3616	+13520	+30699	+2825	-2098	-2798	-3070	-15505	-12648
c	771	481	178	199	367	622	1316	1801	2468	2338	2185	1311

CAL YR 1986 MAX 160198 MIN 15425 b - 21228
WTR YR 1987 MAX 67842 MIN 15425 b + 3151

a Elevation, in feet NGVD, at end of month.
b Change in contents, in acre-feet.
c Evaporation, in acre-feet; not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1955 to current year. 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 366.02 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 good. Many diversions above 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 above station.
COOPERATION.--Daily discharges were provided by U.S. Army Corps of Engineers; 12 discharge measurements were made, and records were reviewed by the U.S. Geological survey.
AVERAGE DISCHARGE.--32 years, 672 ft^3/s, 486,900 acre-ft/yr, adjusted for diversions to South Diversion Canal since 1956, Wackerman Ranch since 1979, and for change in contents in and evaporation from Black Butte Lake since 1964; unadjusted for same period, 558 ft^3/s, 404,300 acre-ft.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,300 ft^3/s, Feb. 24, 1958, gage height, 11.82 ft, site and datum then in use, from rating curve extended above 7,500 ft^3/s on basis of slope-area measurement of peak flow; no flow many days in 1956, 1957, 1962. Since completion of Black Butte Dam in 1964, maximum discharge, 23,300 ft^3/s, Feb. 18, 1986, gage height, 11.40 ft; no flow at times most years.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 320 ft^3/s, Oct. 13, gage height, 4.02 ft; no flow several days in October and November.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	202	0	35	25	25	20	20	107	106	132	121	110
2	194	0	52	22	24	21	20	90	81	140	114	122
3	194	0	31	21	20	21	21	86	82	132	111	125
4	186	0	22	21	20	21	19	87	105	125	115	119
5	180	44	24	18	20	24	19	83	111	113	122	86
6	184	115	27	16	20	22	24	90	116	98	119	74
7	192	97	27	19	20	21	60	119	119	106	105	74
8	195	111	26	19	20	22	98	121	127	114	112	71
9	189	100	27	20	20	24	122	113	135	115	122	81
10	222	90	27	20	20	21	146	112	138	113	121	89
11	310	71	26	20	20	21	150	144	135	113	117	92
12	314	69	27	19	22	22	146	140	127	116	121	97
13	247	72	26	19	21	22	141	133	112	129	119	90
14	148	41	26	19	21	22	142	120	104	128	104	77
15	75	27	26	20	22	22	139	116	101	125	89	90
16	65	27	26	19	21	22	124	126	113	125	82	104
17	54	33	24	19	21	22	109	96	127	109	88	110
18	32	55	26	19	21	22	98	82	128	102	105	115
19	32	47	27	19	22	22	77	71	122	103	113	105
20	41	52	26	29	22	21	96	59	112	90	119	93
21	54	35	28	41	20	21	95	91	96	82	117	81
22	64	29	29	41	19	20	96	107	106	90	115	70
23	72	28	29	26	20	20	99	104	117	91	112	64
24	105	26	29	22	20	20	100	118	119	88	102	60
25	188	29	25	19	20	21	129	133	122	83	94	63
26	63	29	17	18	20	21	141	132	129	95	100	65
27	.10	28	17	18	22	20	133	130	138	107	87	89
28	0	28	23	18	22	20	117	118	138	120	98	88
29	0	28	19	21	---	20	118	106	119	125	106	86
30	0	28	15	24	---	20	124	115	118	117	104	98
31	0	---	19	25	---	20	---	121	---	116	106	---
TOTAL	3802.10	1339	808	676	585	658	2923	3370	3503	3442	3360	2688
MEAN	122	44.6	26.0	21.8	20.8	21.2	97.4	108	116	111	108	89.6
MAX	314	115	52	41	25	24	150	144	138	140	122	125
MIN	0	0	15	16	19	20	19	59	81	82	82	60
AC-FT	7540	2660	1600	1340	1160	1310	5800	6680	6950	6830	6660	5330

CAL YR 1986	TOTAL	344959.10	MEAN	945	MAX	22900	MIN	0	AC-FT	684200	MEAN a	1024	AC-FT a	741700
WTR YR 1987	TOTAL	27154.10	MEAN	74.3	MAX	314	MIN	0	AC-FT	53860	MEAN a	190	AC-FT a	137700

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; evaporation adjustments not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

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.--Temperature recorder since June 1969.

REMARKS.--Interruptions in record were due to battery failure Oct. 1, 2 and Oct. 4 to Nov. 7.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded, 31.5 °C, Aug. 15, 1977; minimum recorded, 3.5 °C, Jan. 3, 4, Feb. 2, Dec. 9, 1972, Jan. 10, 1974, Dec. 21, 1978, Dec. 12, 1985.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded, 26.0 °C, several days during August and September; minimum recorded, 4.0 °C, Jan. 16.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	---	---	---	---	11.5	9.5	8.0	8.0	7.5	7.0	12.0	8.5
2	---	---	---	---	11.5	10.0	8.5	7.5	7.5	7.5	10.0	9.0
3	17.5	16.0	---	---	11.5	10.0	8.5	8.0	10.0	7.0	11.5	9.5
4	---	---	---	---	10.5	10.0	8.5	8.0	10.0	7.0	10.5	9.0
5	---	---	---	---	11.5	10.5	9.0	7.0	10.0	7.0	11.0	10.0
6	---	---	---	---	11.5	10.0	8.5	7.5	10.5	7.0	13.5	10.0
7	---	---	---	---	11.0	9.0	8.5	6.0	10.5	7.5	12.5	9.0
8	---	---	14.5	13.0	11.0	9.0	8.0	6.0	9.0	7.5	12.0	10.5
9	---	---	14.5	13.5	11.0	9.0	9.0	7.0	9.0	8.0	12.5	10.0
10	---	---	14.5	13.0	10.5	8.5	9.0	6.5	9.5	8.5	11.5	10.0
11	---	---	14.5	13.0	9.5	8.5	7.5	7.0	10.0	8.0	12.0	10.5
12	---	---	14.5	13.0	10.0	9.0	8.0	6.5	9.5	8.0	12.0	11.0
13	---	---	14.5	13.0	9.0	8.5	8.0	5.5	11.5	9.5	14.0	10.0
14	---	---	14.0	13.0	11.0	8.5	8.0	5.5	10.5	8.5	12.0	11.0
15	---	---	14.5	12.5	10.0	9.0	6.5	4.5	11.5	9.5	13.5	9.0
16	---	---	14.5	12.0	10.5	8.5	6.0	4.0	11.0	8.0	14.0	9.5
17	---	---	14.5	12.0	9.5	8.0	7.5	5.0	12.0	8.0	14.0	10.0
18	---	---	14.0	12.5	9.5	8.5	7.0	5.5	11.5	8.0	14.0	10.0
19	---	---	14.0	13.0	9.0	8.5	7.5	4.5	11.5	8.5	14.5	10.0
20	---	---	14.0	12.5	10.0	8.0	7.5	4.5	12.0	8.5	13.5	10.0
21	---	---	14.0	12.5	9.0	8.0	7.0	5.0	10.5	8.5	12.5	10.5
22	---	---	13.5	12.0	9.5	8.5	6.5	5.5	11.5	8.0	14.0	9.5
23	---	---	14.0	12.0	10.0	8.0	7.0	5.5	10.5	8.0	13.5	10.5
24	---	---	13.5	11.5	9.0	8.0	6.5	6.0	10.5	7.0	15.0	9.5
25	---	---	13.0	11.0	9.5	7.5	7.0	6.0	11.5	7.5	15.0	10.5
26	---	---	12.5	11.5	10.0	8.0	8.0	6.5	11.5	7.5	15.5	10.5
27	---	---	12.5	11.0	8.5	7.0	8.0	6.0	11.5	8.0	14.5	10.0
28	---	---	11.5	10.5	8.5	8.0	8.0	6.5	12.0	8.0	15.5	10.0
29	---	---	12.0	10.5	8.5	8.0	9.0	6.5	---	---	16.0	10.5
30	---	---	12.0	9.5	8.5	7.0	8.5	6.5	---	---	16.5	11.0
31	---	---	---	---	8.0	7.5	8.5	6.5	---	---	16.0	11.5
MONTH	---	---	---	---	11.5	7.0	9.0	4.0	12.0	7.0	16.5	8.5

SACRAMENTO RIVER BASIN

11388000 STONY CREEK BELOW BLACK BUTTE DAM, NEAR ORLAND, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.5	11.5	17.0	14.5	19.5	16.5	23.5	21.0	25.5	23.5	26.0	24.0
2	16.0	11.5	17.5	14.5	20.0	16.5	23.5	21.5	25.5	23.5	25.5	24.0
3	16.0	11.5	17.5	14.5	20.0	17.5	23.5	21.0	25.5	23.5	25.5	24.0
4	16.0	11.0	18.0	14.5	20.5	18.0	23.5	21.5	25.5	24.0	25.5	23.5
5	16.0	11.5	18.5	15.0	20.0	18.0	24.0	22.0	25.5	24.0	25.5	23.5
6	16.0	11.5	19.0	15.5	21.0	18.5	24.0	21.5	26.0	24.0	25.5	23.5
7	14.5	11.5	18.0	15.5	21.0	18.5	23.5	22.0	26.0	24.0	25.5	23.5
8	14.5	12.0	18.0	15.5	21.5	19.5	24.0	22.0	26.0	23.5	25.5	23.5
9	14.0	12.0	17.0	16.0	21.5	19.5	24.0	22.0	26.0	24.0	25.0	23.0
10	13.5	12.0	18.5	15.5	22.0	19.5	24.5	22.5	26.0	23.5	25.0	23.0
11	14.0	12.0	18.5	16.0	22.5	19.5	25.0	22.5	26.0	23.5	25.0	23.0
12	14.0	12.0	18.5	16.0	22.0	20.0	24.5	22.5	25.5	23.5	24.5	23.0
13	14.5	12.0	18.5	16.0	22.0	20.0	25.0	22.5	26.0	23.5	24.5	23.0
14	14.5	12.5	19.0	16.5	23.0	20.0	25.0	23.0	25.5	23.5	24.0	22.5
15	14.5	12.5	19.0	16.5	22.5	20.0	25.0	22.5	25.5	23.5	23.5	22.0
16	15.5	12.5	19.0	16.5	22.5	20.0	25.0	22.5	26.0	23.5	23.5	21.0
17	14.0	12.5	19.0	15.5	22.0	20.0	24.0	22.0	26.0	23.5	23.0	21.0
18	15.0	12.5	19.0	15.5	22.5	20.5	25.0	22.5	25.5	23.5	23.0	21.5
19	15.5	11.5	19.5	15.5	22.5	20.5	25.5	22.5	25.5	23.5	23.0	21.5
20	15.5	12.5	19.0	16.0	22.5	20.5	25.0	23.0	26.0	23.5	23.0	21.0
21	16.0	13.0	19.5	15.5	23.0	20.5	25.0	22.5	25.5	23.5	23.0	21.0
22	16.0	13.5	19.0	16.5	22.5	20.0	25.0	23.0	25.5	23.5	23.0	21.0
23	16.0	13.5	19.0	15.5	22.5	20.5	25.5	23.0	25.5	23.5	23.0	21.0
24	16.5	13.5	18.5	15.0	22.5	20.5	25.0	23.0	25.5	23.5	23.0	21.0
25	16.0	14.0	18.5	16.0	23.0	21.0	25.0	23.0	26.0	23.5	23.0	21.0
26	16.5	14.5	18.0	16.0	23.0	21.0	25.5	23.0	26.0	23.5	22.5	21.0
27	17.5	14.5	18.5	16.5	23.0	21.0	25.5	23.0	26.0	23.5	23.0	21.0
28	17.0	14.5	19.0	16.0	23.0	21.5	25.5	23.0	26.0	23.5	22.5	21.0
29	17.0	14.5	19.0	16.5	23.5	21.5	25.0	23.0	25.5	24.0	22.5	21.0
30	16.5	14.5	19.0	16.5	23.5	21.5	25.5	23.0	26.0	24.0	23.0	21.0
31	---	---	18.5	16.5	---	---	25.0	23.0	26.0	24.0	---	---
MONTH	17.5	11.0	19.5	14.5	23.5	16.5	25.5	21.0	26.0	23.5	26.0	21.0

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 mi^2.

PERIOD OF RECORD.--April 1921 to September 1938 (low-water periods only), October 1938 to current year. 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.--Estimated daily discharges: Apr. 28 to June 16 and Sept. 22-30. 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 ft^3/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.

AVERAGE DISCHARGE.--49 years (water years 1939-87), 13,580 ft^3/s, 9,839,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1940-87), 170,000 ft^3/s, Feb. 7, 1942, gage height, 96.87 ft, from rating curve extended above 101,000 ft^3/s; minimum recorded, 1,050 ft^3/s, July 15, 25, 26, 1931, gage height, 67.49 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53,600 ft^3/s, Mar. 13, gage height, 84.42 ft; minimum daily, 4,830 ft^3/s, Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8440	6640	7860	7500	8850	5540	7090	9580	8100	9990	10700	6430
2	8370	6530	8000	8880	7860	5490	6960	9500	8180	10200	10500	6490
3	8320	6580	7870	9850	15500	5550	7160	9420	8050	10400	11000	6530
4	8030	6520	7880	15900	12900	5890	8490	9400	7950	10800	10600	6350
5	7460	6240	8070	15800	9930	8330	8530	9060	7600	10700	10500	6070
6	7290	6070	8160	10800	8310	34000	7540	8850	7580	11000	10800	6270
7	7250	6000	8090	8810	7430	20500	7690	8800	8100	10900	10300	6240
8	7040	6040	8040	7350	6960	13100	7830	8650	8350	10800	9600	6170
9	6980	6430	8060	6810	6600	10600	7580	8750	8400	10800	9270	6240
10	7040	7080	8010	6490	6400	9440	7300	9200	8550	10500	9220	6070
11	7040	7200	7970	6280	6510	8750	7720	9550	9000	10500	9050	6000
12	7200	7230	7610	6230	8310	14900	8390	9650	8950	10700	8710	6010
13	6900	7250	7360	6230	20600	47000	8650	9850	8950	10900	8570	5830
14	6570	7280	7330	6080	31700	38500	8370	10800	9000	10800	8460	5610
15	6330	7310	7300	6010	20300	32500	8030	10600	9150	10800	8500	5570
16	6050	7350	7280	5990	22100	22500	8220	10400	9000	10700	8460	5590
17	6020	7370	7220	5920	13800	16400	8020	10100	8970	10700	8560	5370
18	6130	7660	7070	5880	10700	13700	6680	8500	9030	10700	8750	5170
19	6260	7510	7140	5900	9170	12300	8520	7900	9030	10600	8790	5000
20	6050	7500	7240	5840	8150	11200	10100	7750	8960	11000	8510	5030
21	5950	7610	7200	5790	7490	10600	10300	7550	9010	10900	8480	5010
22	5900	7550	7210	5770	7010	12700	10100	7000	9190	10800	8460	4990
23	5920	7360	7300	5820	6670	11400	10300	6780	9160	10600	8270	4880
24	5940	7300	7490	5760	6370	12300	10300	6600	8490	10700	8350	4830
25	5960	7210	7400	6810	6170	11100	10200	6600	8350	10800	8270	5010
26	6230	7240	7310	9270	5960	9830	10000	6600	8090	10700	8600	5410
27	6310	7730	7290	7620	5780	9060	10000	6580	8120	10900	7840	5350
28	6290	7840	7310	8890	5620	8270	9950	6700	9240	10700	6770	5400
29	6300	7880	7250	12400	---	7730	9820	7300	10000	10700	6740	5460
30	6460	7860	7290	8640	---	7430	9600	7850	10200	10800	6840	5440
31	6820	---	7350	11300	---	7240	---	8000	---	10600	6690	---
TOTAL	208850	213370	233960	246620	293150	443850	259440	263870	260750	331690	274160	169820
MEAN	6737	7112	7547	7955	10470	14320	8648	8512	8692	10700	8844	5661
MAX	8440	7880	8160	15900	31700	47000	10300	10800	10200	11000	11000	6530
MIN	5900	6000	7070	5760	5620	5490	6680	6580	7580	9990	6690	4830
AC-FT	414300	423200	464100	489200	581500	880400	514600	523400	517200	657900	543800	336800

CAL YR 1986 TOTAL 5810810 MEAN 15920 MAX 142000 MIN 3830 AC-FT 11530000
WTR YR 1987 TOTAL 3199530 MEAN 8766 MAX 47000 MIN 4830 AC-FT 6346000

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--April 1921 to October 1939 (low-water periods only), June 1940 to current year.
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.--Estimated daily discharges: Oct. 20-24 and Feb. 14 to Mar. 26. 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 ft^3/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.

AVERAGE DISCHARGE.--47 years (water years 1941-87), 11,270 ft^3/s, 8,491,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1941-87), 51,800 ft^3/s, Mar. 4, 1983, gage height, 68.50 ft; maximum gage height, 69.20 ft, Feb. 18, 1942; minimum recorded, 820 ft^3/s, July 25, 26, 1931, gage height, 34.79 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 36,300 ft^3/s, Mar. 14, gage height, 62.64 ft; minimum daily, 4,710 ft^3/s, Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8820	7520	8200	8020	9810	5820	7630	8800	7610	9620	10400	6200
2	8670	7220	8330	8460	7980	5810	7470	8850	7660	9630	10400	6150
3	8650	7150	8250	9920	11200	5810	7400	8890	7670	9770	10600	6170
4	8550	7080	8260	12100	13900	6700	8340	8760	7430	10300	10600	6140
5	7980	6840	8350	14800	10700	9500	8720	8440	7170	10200	10200	5780
6	7750	6640	8500	12000	9130	14000	8120	8240	7010	10400	10500	5910
7	7760	6460	8500	9530	8040	24000	7690	8260	7310	10400	10300	6010
8	7630	6410	8450	8010	7480	14500	7990	8160	7900	10300	9730	5990
9	7510	6640	8460	7180	7090	11200	7780	8090	8040	10400	9300	5990
10	7540	7490	8440	6770	6810	9780	7500	8450	8070	10200	9220	6030
11	7530	7780	8410	6510	6730	8800	7600	8950	8420	10200	9080	5850
12	7610	7780	8290	6410	7690	11800	8140	9040	8410	10300	8810	5890
13	7600	7780	7970	6370	12300	17000	8550	9330	8450	10400	8530	5760
14	7170	7810	7930	6260	17800	34600	8410	10200	8550	10400	8470	5560
15	6960	7870	7910	6180	22200	29500	8120	10200	8630	10400	8420	5520
16	6720	7990	7880	6120	15100	24500	8050	9800	8730	10400	8420	5540
17	6490	7910	7850	6070	16200	17900	8190	8300	8710	10300	8450	5350
18	6510	8030	7740	6010	11300	13800	7330	7590	8690	10300	8640	5170
19	6720	7920	7710	5990	9600	12000	7460	7510	8690	10300	8710	4950
20	6460	7900	7770	5970	8600	10900	9220	7310	8680	10500	8490	4920
21	6400	7970	7820	5890	8000	10500	9740	6990	8670	10600	8430	4890
22	6250	8010	7810	5860	7500	12200	9560	6490	8760	10600	8330	4870
23	6220	7910	7870	5890	7150	11900	9480	6420	8850	10400	8380	4760
24	6380	7740	8030	5970	6800	12000	9530	6300	8520	10400	8330	4710
25	6420	7700	8070	5800	6420	11100	9500	6250	8070	10500	8280	4890
26	6600	7640	7960	8790	6200	10200	9340	6340	7930	10600	8390	5290
27	6850	7900	7910	8040	6000	9750	9180	6220	7840	10500	8340	5230
28	6910	8150	7940	7420	5960	9020	9180	6240	8340	10500	6670	5280
29	6840	8220	7910	11500	---	8450	9060	6500	9350	10400	6450	5340
30	7030	8210	7900	9420	---	8050	8920	7380	9620	10500	6510	5320
31	7360	---	7950	9650	---	7820	---	7550	---	10500	6480	---
TOTAL	223890	227670	250370	242910	273690	398910	253200	245850	247780	320220	271860	165460
MEAN	7222	7589	8076	7836	9775	12870	8440	7931	8259	10330	8770	5515
MAX	8820	8220	8500	14800	22200	34600	9740	10200	9620	10600	10600	6200
MIN	6220	6410	7710	5800	5960	5810	7330	6220	7010	9620	6450	4710
AC-FT	444100	451600	496600	481800	542900	791200	502200	487600	491500	635200	539200	328200

CAL YR 1986 TOTAL 4403830 MEAN 12070 MAX 49600 MIN 3850 AC-FT 8735000
WTR YR 1987 TOTAL 3121810 MEAN 8553 MAX 34600 MIN 4710 AC-FT 6192000

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 mi^2.

PERIOD OF RECORD.--January 1986 to February 1986 and June 1986 to current year.

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

REMARKS.--No estimated daily discharges. No records computed above 50 ft^3/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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	18	18	31	19	18		---	12	10	10	10
2	19	18	18	22	---	19		---	12	10	10	10
3	19	18	18	---	---	24		48	12	10	10	10
4	19	18	18	---	21	25		41	12	10	10	10
5	19	18	20	18	20	---		36	12	10	10	10
6	19	18	18	22	20	---		33	12	10	10	10
7	19	18	18	20	20	---		31	12	10	10	10
8	19	18	18	19	19	---		28	11	10	10	10
9	19	18	18	19	19	---		---	10	10	10	10
10	18	18	18	19	20	---		33	10	10	10	10
11	19	18	18	19	---	---		23	10	10	10	10
12	21	18	18	19	---	---		18	10	10	10	10
13	21	---	18	19	---	---		15	10	10	10	10
14	21	17	18	19	---	---		13	10	10	10	10
15	19	18	18	19	---	---		12	10	10	10	10
16	18	18	18	19	---	---		13	10	10	10	10
17	19	18	18	19	---	---		11	10	10	10	10
18	19	18	18	19	---	---		11	10	10	10	10
19	19	17	18	19	---	---		11	11	10	10	10
20	19	18	18	19	45	---		11	11	10	10	10
21	18	20	18	19	36	---		12	11	11	10	10
22	18	18	19	19	29	---		12	11	11	10	10
23	18	18	18	19	26	---		12	---	11	10	10
24	18	---	18	19	22	---		12	12	10	10	10
25	18	19	18	19	20	---		12	9.9	10	10	10
26	18	22	18	19	19	---		13	9.9	10	10	10
27	18	20	18	---	18	---		13	9.8	10	10	10
28	18	19	18	---	18	---		13	10	10	10	---
29	---	19	18	22	---	---		13	10	10	10	---
30	21	19	18	21	---	---		13	10	10	10	---
31	18	---	19	20	---	---		13	---	10	10	---
TOTAL	---	---	562	---	---	---		---	---	313	310	---
MEAN	---	---	18.1	---	---	---		---	---	10.1	10.0	---
MAX	---	---	20	---	---	---		---	---	11	10	---
MIN	---	---	18	---	---	---		---	---	10	10	---
AC-FT	---	---	1110	---	---	---		---	---	621	615	---

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--November 1985 to February 1986 and June 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,130 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 80 ft^3/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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	35	31	---	43	46		---	14	16	12	15
2	---	31	31	---	---	47		---	13	15	13	14
3	---	31	31	---	---	60		---	13	16	15	14
4	---	31	31	---	50	59		---	13	16	15	14
5	---	30	35	40	42	---		---	13	16	15	14
6	---	---	31	41	41	---		71	13	16	15	14
7	---	31	32	41	42	---		---	13	16	14	14
8	---	31	33	41	41	---		---	13	17	14	14
9	---	31	33	40	42	---		---	13	16	14	14
10	---	31	33	42	43	---		---	13	14	13	14
11	---	31	33	43	---	---		72	13	13	13	14
12	---	31	33	43	---	---		67	13	13	13	14
13	---	31	33	43	---	---		63	13	13	13	15
14	---	31	38	43	---	---		60	13	13	13	15
15	---	31	43	42	---	---		52	13	13	13	14
16	---	33	42	43	---	---		50	13	13	13	14
17	---	35	42	45	---	---		43	12	13	13	13
18	44	33	43	44	---	---		32	12	14	13	13
19	45	31	43	44	---	---		28	12	13	15	13
20	43	31	43	44	---	---		34	12	13	15	13
21	43	33	42	44	---	---		24	12	13	15	13
22	43	32	42	44	---	---		24	12	13	15	13
23	43	33	41	45	---	---		15	12	13	15	13
24	43	33	41	47	---	---		17	12	13	15	13
25	42	33	42	47	---	---		17	12	13	15	13
26	42	33	42	45	---	---		17	12	13	15	13
27	43	33	42	43	44	---		16	15	13	15	13
28	42	33	42	---	45	---		15	16	12	15	13
29	---	33	42	53	---	---		15	15	12	15	13
30	---	33	42	49	---	---		14	15	16	15	13
31	40	---	44	44	---	---		14	---	17	15	---
TOTAL	---	---	1176	---	---	---		---	390	437	439	409
MEAN	---	---	37.9	---	---	---		---	13.0	14.1	14.2	13.6
MAX	---	---	44	---	---	---		---	16	17	15	15
MIN	---	---	31	---	---	---		---	12	12	12	13
AC-FT	---	---	2330	---	---	---		---	774	867	871	811
a	3600	5350	4570	6720	9250	11090	10970	10720	7030	7020	6090	2850

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 September 1987.

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.--Estimated daily discharges: Feb. 6 to May 7. Canal diverts from right bank of West Branch Feather River, in sec.16, T.24 N., R.4 E., flows through Toadtown powerplant 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 118 ft^3/s, Apr. 13; no flow Sept. 9-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	84	29	31	55	65	115	112	54	30	58	39
2	42	80	29	39	56	65	115	112	50	29	57	39
3	39	79	29	78	56	83	115	115	48	29	57	37
4	37	78	29	50	56	83	116	115	47	28	56	10
5	37	75	45	94	55	104	111	115	46	28	56	8.1
6	36	65	35	59	43	114	111	114	46	27	55	11
7	35	33	32	46	43	114	111	115	47	27	49	10
8	34	32	30	41	44	99	112	110	45	27	49	.02
9	33	32	30	37	42	104	112	110	43	29	49	0
10	32	31	29	35	51	99	112	107	41	52	49	0
11	32	31	29	34	93	107	115	110	41	52	48	0
12	32	30	29	34	95	61	115	114	40	52	45	0
13	32	30	30	33	86	80	118	107	40	51	41	0
14	31	30	35	33	111	113	115	102	39	50	41	0
15	31	30	31	34	94	92	112	100	39	51	40	0
16	32	29	30	32	109	110	112	98	40	62	40	0
17	34	29	29	32	109	110	112	93	39	67	40	0
18	46	29	31	29	105	91	112	86	38	71	40	0
19	88	30	32	29	107	106	112	83	37	66	43	0
20	89	29	33	57	102	103	111	90	37	64	43	0
21	99	41	31	57	94	106	110	82	35	64	43	0
22	93	33	31	57	93	104	112	79	34	64	42	0
23	85	31	34	58	86	103	112	73	33	59	42	2.6
24	84	30	31	59	78	103	114	69	32	61	42	10
25	83	30	30	59	70	111	114	67	32	62	41	9.6
26	83	29	30	57	69	114	114	70	32	61	41	9.3
27	84	29	30	56	68	114	114	68	31	60	40	9.0
28	83	29	29	58	66	114	114	65	30	59	40	7.3
29	90	32	29	56	---	114	115	62	29	60	40	7.3
30	101	30	30	55	---	114	115	59	30	60	40	6.7
31	89	---	30	55	---	114	---	58	---	58	40	---
TOTAL	1791	1200	961	1484	2136	3114	3398	2860	1175	1560	1407	215.92
MEAN	57.8	40.0	31.0	47.9	76.3	100	113	92.3	39.2	50.3	45.4	7.20
MAX	101	84	45	94	111	114	118	115	54	71	58	39
MIN	31	29	29	29	42	61	110	58	29	27	40	0
AC-FT	3550	2380	1910	2940	4240	6180	6740	5670	2330	3090	2790	428
a	6650	5330	5010	6240	8250	10640	10540	9840	5630	5960	5330	2370

WTR YR 1987 TOTAL 21301.92 MEAN 58.4 MAX 118 MIN 0 AC-FT 42250 AC-FT a 81790

a Discharge, in acre-feet, at De Sabla powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2.
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 above 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.
AVERAGE DISCHARGE (unadjusted).--57 years, 415 ft^3/s, 300,700 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,000 ft^3/s, Feb. 17, 1986, gage height, 17.52 ft, present datum, from rating curve extended above 6,100 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 10 ft^3/s, Nov. 29, 1952.
EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	0530	3,140	6.41	Mar. 12	2145	*6,440	*8.72

Minimum daily, 60 ft^3/s, Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148	185	122	215	210	212	417	334	171	103	118	102
2	145	183	122	289	277	212	409	321	163	99	114	104
3	139	172	120	554	385	230	409	301	155	99	115	104
4	136	170	121	379	275	244	400	293	153	100	113	81
5	131	167	196	230	230	1300	388	286	149	100	110	72
6	131	161	151	185	210	1390	380	254	146	102	110	74
7	129	131	134	167	199	763	375	269	153	95	105	76
8	130	124	126	155	192	589	377	272	149	97	106	77
9	127	123	124	147	186	493	373	275	145	93	107	66
10	127	123	122	142	191	441	376	285	140	112	108	65
11	124	122	122	139	319	637	396	271	137	117	105	65
12	121	123	119	136	417	2830	387	262	137	116	107	66
13	122	121	120	138	2010	2690	374	257	130	117	104	66
14	123	123	132	134	808	1480	371	247	127	114	102	64
15	123	122	124	130	863	1220	369	242	127	111	101	65
16	123	120	124	119	611	946	364	231	130	120	102	65
17	118	122	120	137	473	797	365	225	131	127	101	65
18	138	119	128	131	408	754	370	218	125	146	101	65
19	172	123	135	128	364	673	359	209	123	141	101	64
20	181	121	141	125	336	606	342	216	121	132	100	65
21	182	146	131	124	309	631	334	207	118	129	104	62
22	180	135	142	125	289	578	331	207	118	131	106	61
23	180	125	144	140	272	608	325	197	116	129	106	60
24	177	123	131	199	255	579	322	189	117	119	108	62
25	174	123	127	213	251	538	320	186	111	126	106	63
26	174	120	127	189	235	518	318	189	108	123	105	71
27	178	121	124	176	223	490	318	193	105	121	104	73
28	177	121	122	357	219	464	314	189	104	119	104	68
29	178	134	125	269	---	444	315	181	104	118	104	90
30	246	123	126	258	---	429	325	175	103	118	106	71
31	199	---	135	238	---	421	---	174	---	118	104	---
TOTAL	4733	4026	4037	6068	11017	24207	10823	7355	3916	3592	3287	2152
MEAN	153	134	130	196	393	781	361	237	131	116	106	71.7
MAX	246	185	196	554	2010	2830	417	334	171	146	118	104
MIN	118	119	119	119	186	212	314	174	103	93	100	60
AC-FT	9390	7990	8010	12040	21850	48010	21470	14590	7770	7120	6520	4270
a	3550	2380	1910	2940	4240	6180	6740	5670	2330	3090	2790	428

CAL YR 1986 TOTAL 206567 MEAN 566 MAX 14100 MIN 70 AC-FT 409700
WTR YR 1987 TOTAL 85213 MEAN 233 MAX 2830 MIN 60 AC-FT 169000

a Diversion, in acre-feet, to Toadtown Canal from West Branch Feather River, provided by Pacific Gas & Electric Co.

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1931 to September 1938 (low-water periods only), October 1938 to current year. 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.--Estimated daily discharge: Mar. 13. 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 ft^3/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.

AVERAGE DISCHARGE.--49 years (water years 1939-87), 10,310 ft^3/s, 7,470,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1939-87), 32,700 ft^3/s, Feb. 20, 1986, gage height, 52.50 ft; maximum gage height, 52.75 ft, Mar. 1, 1940; minimum discharge, 100 ft^3/s, Aug. 1, 1931, gage height, 14.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26,100 ft^3/s, Mar. 14, gage height, 47.32 ft; minimum daily, 4,620 ft^3/s, Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8930	6510	7360	7340	10700	6410	7940	7590	6680	8130	9220	5920
2	8660	6390	7380	7560	9100	6260	7660	7490	6640	8110	9230	5740
3	8540	6290	7530	8960	9590	6130	7500	7660	6660	8240	9260	5810
4	8500	6290	7490	10500	14100	6190	7890	7640	6320	8670	9480	5800
5	8070	6210	7540	14500	12400	6830	8710	7240	6040	8840	9080	5510
6	7670	5980	7750	13800	10500	14100	8520	6850	5750	8930	9100	5440
7	7580	5780	7820	11100	9070	23900	7570	6720	5850	9050	9220	5940
8	7460	5710	7840	9270	8260	18800	7730	6740	6430	8970	8790	6200
9	7280	5750	7820	8000	7750	13900	7710	6640	6690	8990	8240	6230
10	7220	6300	7820	7320	7370	11500	7340	6870	6660	8930	8020	6330
11	7230	6770	7760	6980	7150	10400	7160	7530	7010	8810	7910	6270
12	7280	6880	7680	6800	7380	10200	7450	7880	7100	8900	7730	6340
13	7330	6890	7390	6770	9480	18500	7920	8010	7010	9110	7420	6290
14	7000	6920	7260	6750	21500	25900	8020	8880	7040	9100	7330	6110
15	6630	6960	7210	6690	23000	25400	7660	9270	7150	9090	7250	6000
16	6380	7030	7190	6610	21400	24800	7380	9240	7220	9070	7260	5990
17	6060	7050	7210	6560	18900	21100	7490	8330	7180	9040	7270	5870
18	5990	7120	7140	6470	14200	16900	7050	7050	7120	9020	7390	5520
19	6100	7240	7080	6410	11700	14700	6340	6760	7150	9100	7540	5310
20	6120	7150	7120	6360	10300	13300	7990	6590	7170	9150	7500	5150
21	5980	7170	7170	6180	9260	12300	8830	6340	7160	9300	7370	5020
22	5880	7250	7170	5980	8600	12200	8770	5840	7280	9290	7310	4750
23	5820	7200	7260	6150	8060	13100	8550	5590	7350	9180	7420	4710
24	5750	7040	7350	6300	7620	12400	8700	5500	7190	9140	7490	4620
25	5710	6980	7450	6190	7310	12900	8660	5330	6540	9230	7510	4740
26	5820	6900	7380	8000	7040	11800	8540	5340	6420	9350	7470	5180
27	6040	6970	7320	8930	6800	10800	8320	5150	6270	9230	7700	5300
28	6120	7300	7310	8030	6580	10000	8230	5040	6390	9310	6780	5320
29	6090	7440	7300	10200	---	9290	8110	5130	7460	9170	6170	5410
30	6110	7440	7260	10900	---	8670	7820	6050	7980	9280	6100	5420
31	6270	---	7310	9570	---	8230	---	6560	---	9340	6150	---
TOTAL	211620	202910	229670	251180	305120	416910	237560	212850	204910	279070	241710	168240
MEAN	6826	6764	7409	8103	10900	13450	7919	6866	6830	9002	7797	5608
MAX	8930	7440	7840	14500	23000	25900	8830	9270	7980	9350	9480	6340
MIN	5710	5710	7080	5980	6580	6130	6340	5040	5750	8110	6100	4620
AC-FT	419700	402500	455600	498200	605200	826900	471200	422200	406400	553500	479400	333700

CAL YR 1986 TOTAL 3669270 MEAN 10050 MAX 32600 MIN 4290 AC-FT 7278000
WTR YR 1987 TOTAL 2961750 MEAN 8114 MAX 25900 MIN 4620 AC-FT 5875000

SACRAMENTO RIVER BASIN

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1966 to current year.

INSTRUMENTATION.--Temperature recorder since October 1966.

REMARKS.--Interruptions in record due to battery failure, Jan. 20 to Feb. 11 and June 27 to July 22.

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, 22.5 °C, Aug. 30; minimum recorded, 7.0 °C, Jan. 17-19.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	16.0	15.0	14.5	11.0	10.5	9.0	9.0	---	---	10.5	10.0
2	16.0	16.0	14.5	14.5	10.5	10.5	9.0	9.0	---	---	11.0	10.5
3	16.0	16.0	14.5	14.5	10.5	10.5	9.0	9.0	---	---	11.5	11.0
4	16.0	16.0	14.5	14.5	10.5	10.5	9.0	9.0	---	---	11.5	11.5
5	16.5	16.0	14.5	14.5	10.5	10.5	9.0	9.0	---	---	11.5	11.5
6	17.0	16.5	14.5	14.5	11.0	10.5	9.0	9.0	---	---	11.5	11.5
7	17.5	17.0	14.0	13.5	11.0	11.0	9.0	8.5	---	---	11.5	11.5
8	17.5	17.0	13.5	13.0	11.0	11.0	8.5	8.5	---	---	12.0	11.5
9	18.0	17.5	13.0	13.0	11.0	11.0	8.5	8.5	---	---	12.0	11.0
10	18.0	18.0	13.0	13.0	11.0	10.5	8.5	8.5	---	---	11.5	11.5
11	18.0	18.0	13.0	13.0	10.5	10.0	8.5	8.5	11.5	11.0	11.5	11.5
12	18.0	18.0	13.0	13.0	10.0	10.0	8.5	8.5	11.5	11.0	11.5	11.5
13	18.0	17.5	13.0	13.0	10.0	9.5	8.5	8.0	11.5	11.5	11.5	11.0
14	17.5	17.0	13.0	13.0	9.5	9.5	8.0	7.5	11.5	10.5	11.0	10.5
15	17.0	17.0	13.0	13.0	9.5	9.5	7.5	7.5	10.5	10.5	10.5	10.0
16	17.0	16.5	13.0	12.5	9.5	9.5	7.5	7.5	10.5	9.5	10.0	10.0
17	16.5	16.0	12.5	12.5	9.5	9.5	7.5	7.0	10.0	9.5	11.0	10.0
18	16.0	16.0	12.5	12.5	9.5	9.5	7.0	7.0	10.5	9.5	12.0	10.5
19	16.0	15.5	12.5	12.5	9.5	9.5	7.0	7.0	10.0	9.5	12.0	11.0
20	15.5	15.5	12.5	12.5	9.5	9.5	---	---	10.0	9.5	11.5	11.5
21	15.5	15.5	12.5	12.5	9.5	9.5	---	---	10.0	9.5	11.5	11.0
22	15.5	15.5	12.5	12.5	9.5	9.5	---	---	10.0	9.5	11.0	10.5
23	15.5	15.5	12.5	12.5	9.5	9.5	---	---	10.0	9.5	10.5	10.5
24	15.5	15.5	12.5	12.5	9.5	9.5	---	---	9.5	9.0	11.0	10.0
25	15.5	15.5	12.5	12.5	9.5	9.5	---	---	9.0	8.5	12.0	11.0
26	15.5	15.5	12.5	12.0	9.5	9.5	---	---	9.5	8.5	13.0	12.0
27	16.0	15.5	12.0	11.5	9.5	9.5	---	---	9.5	9.0	13.5	13.0
28	16.0	16.0	11.5	11.0	9.5	9.5	---	---	10.0	9.5	13.5	13.0
29	16.0	16.0	11.0	11.0	9.5	9.5	---	---	---	---	14.0	13.0
30	16.0	16.0	11.0	11.0	9.5	9.5	---	---	---	---	14.5	13.5
31	15.5	15.0	---	---	9.5	9.0	---	---	---	---	15.5	14.5
MONTH	18.0	15.0	15.0	11.0	11.0	9.0	---	---	---	---	15.5	10.0

SACRAMENTO RIVER BASIN

11390500 SACRAMENTO RIVER BELOW WILKINS SLOUGH, NEAR GRIMES, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.5	15.0	16.5	15.5	18.5	18.0	---	---	20.0	18.5	22.0	21.5
2	16.5	16.0	16.0	15.0	18.5	18.0	---	---	20.0	18.5	22.0	21.5
3	16.5	16.0	16.0	15.0	19.0	18.0	---	---	20.5	19.0	22.0	21.5
4	16.5	16.0	17.0	15.0	19.5	19.0	---	---	20.0	19.0	21.5	21.0
5	16.5	15.5	18.0	16.5	19.5	19.5	---	---	20.5	19.0	21.0	20.0
6	16.5	16.0	18.5	17.5	19.5	19.5	---	---	21.0	19.5	20.0	20.0
7	17.0	16.0	19.0	18.0	20.0	19.5	---	---	20.5	19.5	20.0	19.5
8	17.0	16.0	19.0	18.0	20.0	19.5	---	---	20.5	19.0	19.5	19.0
9	17.0	16.5	18.5	18.0	20.0	19.5	---	---	20.5	19.5	20.0	19.5
10	17.0	16.5	18.5	18.0	20.0	19.5	---	---	20.5	19.5	20.0	19.5
11	17.0	16.5	18.5	18.0	20.0	19.5	---	---	20.5	19.5	19.5	19.5
12	16.5	15.5	18.5	17.5	20.0	19.0	---	---	20.5	19.0	19.5	19.0
13	15.5	15.0	19.0	18.0	20.0	19.5	---	---	20.0	19.5	19.5	19.0
14	16.0	15.0	19.5	18.0	20.0	19.0	---	---	20.0	19.0	19.5	19.0
15	16.5	16.0	19.5	18.0	19.5	18.5	---	---	19.5	18.5	20.0	19.0
16	17.5	16.5	19.0	18.0	19.0	18.0	---	---	20.0	19.0	20.0	19.5
17	17.0	16.5	19.0	18.0	18.5	18.0	---	---	20.5	20.0	20.0	19.5
18	16.5	16.0	19.0	18.0	18.5	18.0	---	---	21.0	20.0	20.0	19.5
19	16.0	15.0	19.0	18.5	19.0	18.0	---	---	20.5	20.0	20.5	20.0
20	15.0	14.5	19.0	18.5	19.0	18.0	---	---	20.5	19.5	20.5	20.0
21	15.5	14.5	18.5	18.5	19.0	18.0	---	---	20.5	19.5	21.0	20.5
22	16.0	14.5	18.5	18.0	19.0	18.0	---	---	20.5	20.0	21.0	20.5
23	16.0	15.0	19.0	18.0	19.0	18.5	18.0	17.0	20.5	20.0	20.5	20.5
24	16.0	14.5	18.5	18.0	19.5	18.5	18.5	17.0	20.5	20.0	20.5	20.0
25	16.5	15.0	18.0	17.5	20.0	19.0	19.0	17.5	21.0	20.5	20.5	20.0
26	17.0	15.5	18.0	17.0	20.0	19.5	19.0	17.5	21.0	20.5	20.5	20.0
27	17.5	16.0	18.0	17.5	---	---	19.0	18.0	21.0	20.5	20.5	20.0
28	17.5	16.5	18.5	17.5	---	---	19.5	18.0	21.5	21.0	20.0	19.5
29	17.0	16.0	19.0	18.0	---	---	19.5	18.0	22.0	21.5	20.0	19.5
30	17.0	16.0	19.0	18.0	---	---	19.5	18.0	22.5	21.5	20.5	20.0
31	---	---	18.5	18.0	---	---	19.5	18.0	22.0	21.5	---	---
MONTH	17.5	14.5	19.5	15.0	---	---	---	---	22.5	18.5	22.0	19.0

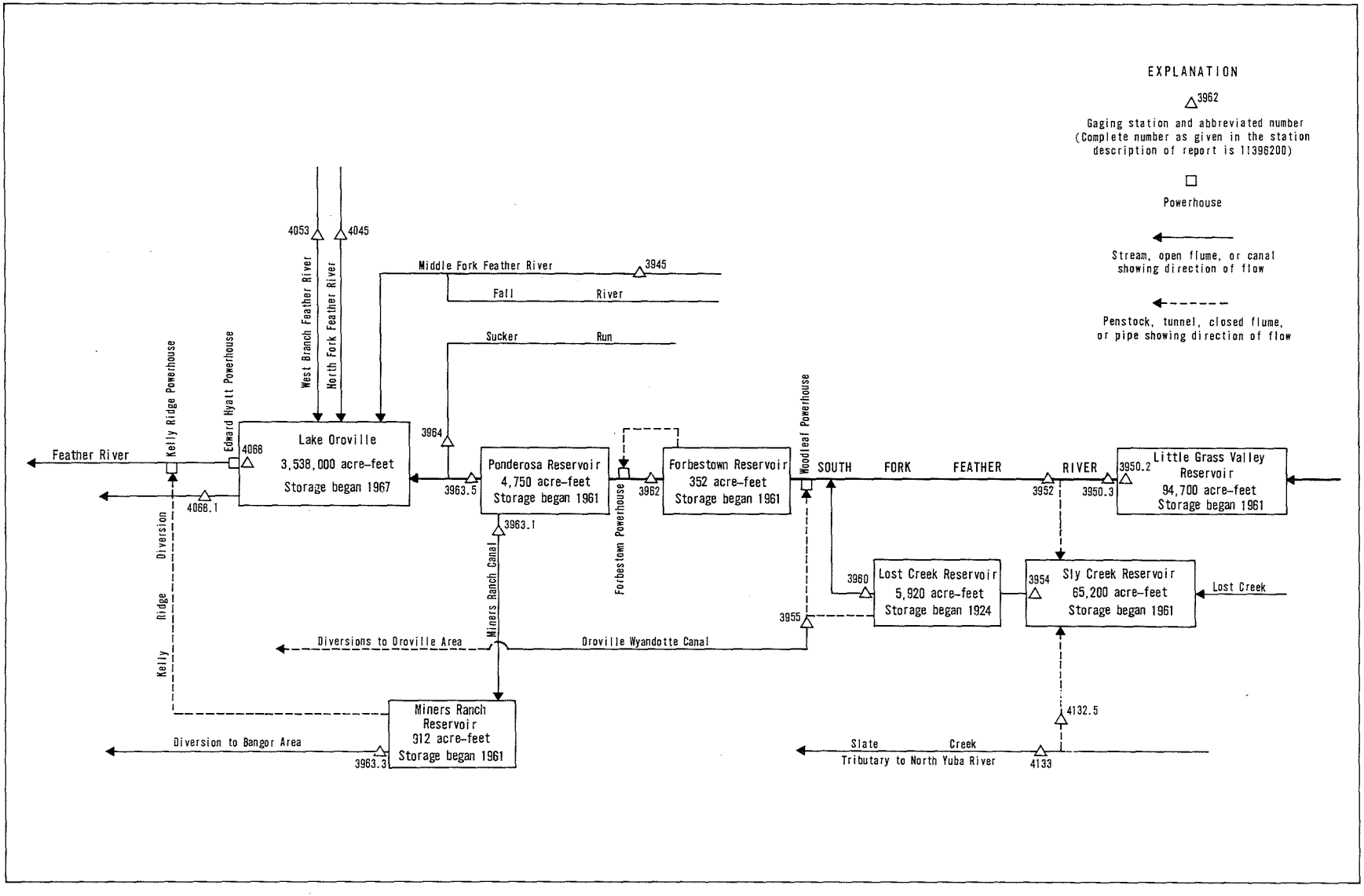

FIGURE 26.--Schematic diagram showing diversions and storage in South Fork Feather River basin.

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 mi^2.

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, 93,000 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. Records, including extremes, represent contents at 2400 hours. See schematic diagram of South Fork Feather River basin.

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, on many days in 1977, elevation, 4,994.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 76,200 acre-ft, May 10-28, elevation, 5,035.0 ft; minimum, 48,800 acre-ft, many days in December, elevation, 5,013.8 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Pacific Gas & Electric Co., from 1963 survey)

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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61000	56300	49100	49000	49700	56300	69000	75300	76000	72800	68400	63900
2	60800	56100	48800	49000	49900	56400	69200	75300	76000	72700	68200	63800
3	60700	55900	48800	49400	49900	56400	69300	75600	76000	72500	68100	63700
4	60600	55800	48800	49400	49900	56700	69600	75600	76000	72400	68000	63600
5	60300	55700	48900	49400	49900	57800	69800	75700	75900	72200	67800	63600
6	60200	55500	48900	49400	49900	58600	70100	75700	75900	72100	67600	63400
7	60000	55300	48800	49400	49900	59300	70300	75900	75900	72000	67500	63400
8	59900	55200	48800	49400	50000	59800	70500	76000	75900	71800	67300	63300
9	59800	55100	48800	49400	50000	60200	70800	76000	75700	71700	67200	63200
10	59700	54800	48800	49400	50200	60700	71100	76200	75700	71500	67100	63000
11	59400	54700	48800	49400	50400	61100	71400	76200	75700	71400	66900	62900
12	59300	54600	48800	49200	51100	62500	71700	76200	75600	71200	66800	62600
13	59100	54400	48800	49200	53100	63400	72000	76200	75500	71100	66500	62500
14	59000	54300	48800	49200	53800	64200	72200	76200	75200	70900	66400	62400
15	58900	54200	48800	49200	54400	64700	72500	76200	75000	70800	66300	62300
16	58600	53900	48800	49200	54600	65200	72800	76200	74900	70600	66200	62100
17	58500	53800	48800	49200	55000	65800	73000	76200	74900	70500	66000	62000
18	58400	53700	48800	49200	55200	66200	73300	76200	74700	70300	65900	61900
19	58100	53600	48800	49200	55300	66500	73400	76200	74600	70200	65800	61700
20	58000	53400	48900	49200	55400	66800	73600	76200	74400	70100	65600	61600
21	57800	53400	48900	49200	55500	67100	73700	76200	74300	69900	65500	61500
22	57700	53100	48900	49100	55700	67300	73900	76200	74100	69800	65400	61200
23	57400	53000	48900	49200	55800	67600	74000	76200	74000	69600	65200	61100
24	57300	52900	48900	49400	55900	67800	74100	76200	73900	69500	65000	61000
25	57200	52400	48900	49400	55900	68000	74300	76200	73900	69300	64900	60800
26	57100	52000	48900	49400	56000	68100	74400	76200	73600	69200	64700	60700
27	56900	51400	48900	49600	56100	68200	74600	76200	73600	69000	64600	60600
28	56700	50800	48800	49700	56100	68400	74700	76200	73400	68900	64500	60400
29	56800	50300	48800	49700	---	68500	74900	76000	73300	68800	64300	60300
30	56700	49700	48800	49700	---	68600	75000	76000	73100	68600	64200	60200
31	56400	---	48900	49700	---	68900	---	76000	---	68500	64100	---
MAX	61000	56300	49100	49700	56100	68900	75000	76200	76000	72800	68400	63900
MIN	56400	49700	48800	49000	49700	56300	69000	75300	73100	68500	64100	60200
a	5020.4	5014.6	5013.9	5014.6	5020.2	5030.0	5034.2	5034.9	5032.9	5029.7	5026.3	5023.3
b	-4700	-6700	-800	+800	+6400	+12800	+6100	+1000	-2900	-4600	-4400	-3900

CAL YR 1986 MAX 64000 MIN 18800 b +3100
WTR YR 1987 MAX 76200 MIN 48800 b -900

a Elevation, in feet NGVD, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 mi^2.

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. Records good. Flow regulated by Little Grass Valley Reservoir (station 11395020) beginning in October 1961. No diversion above station. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE (adjusted for change in contents in Little Grass Valley Reservoir).--33 years, 101 ft^3/s, 73,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,780 ft^3/s, Feb. 18, 1986, gage height, 14.78 ft; minimum, 0.2 ft^3/s, Oct. 28-31, Nov. 2, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 303 ft^3/s, Nov. 26, 27, gage height, 9.22 ft; minimum daily, 9.4 ft^3/s, Feb. 8, 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	72	289	10	9.6	9.8	20	20	19	54	54	55
2	74	72	135	10	9.6	9.8	20	20	19	54	54	55
3	74	72	10	10	9.6	9.8	20	20	19	54	55	41
4	74	72	11	10	9.6	9.9	20	20	19	54	54	20
5	74	72	11	10	9.7	15	20	20	19	53	55	20
6	74	72	11	10	9.7	15	20	20	19	53	55	20
7	74	72	11	10	9.7	12	20	20	19	54	55	20
8	74	72	11	10	9.4	12	21	20	19	54	55	38
9	74	72	10	10	9.4	12	21	20	19	54	55	55
10	74	72	10	10	9.7	11	21	20	19	54	55	55
11	74	72	10	10	11	12	21	20	40	54	55	55
12	73	72	10	9.9	13	18	21	19	54	54	55	55
13	73	72	10	10	29	15	21	19	54	54	55	55
14	73	72	10	10	13	13	21	20	54	54	55	55
15	73	72	10	10	12	12	21	20	54	54	55	55
16	73	72	10	9.9	11	12	21	19	54	54	55	55
17	73	72	10	9.8	11	12	21	19	54	53	55	55
18	73	72	10	9.8	11	12	21	19	54	53	55	55
19	73	72	10	9.8	10	12	20	19	54	53	55	55
20	73	72	10	9.8	10	11	20	19	54	54	55	55
21	73	72	10	9.8	10	11	20	20	54	53	55	55
22	72	72	10	9.8	10	11	20	19	54	53	55	55
23	72	72	10	9.8	10	11	20	19	54	53	55	55
24	72	72	10	9.8	10	11	20	19	54	54	55	55
25	73	208	10	9.9	10	11	20	19	54	54	55	54
26	72	297	10	9.9	10	11	20	19	54	53	55	54
27	72	297	10	9.9	10	11	20	19	54	54	55	54
28	73	293	10	10	10	11	20	19	54	54	55	54
29	73	291	10	10	---	11	20	19	54	55	55	54
30	73	290	10	10	---	10	20	19	54	54	55	54
31	72	---	10	9.6	---	14	---	19	---	54	55	---
TOTAL	2269	3404	719	307.5	307.0	368.3	611	603	1256	1666	1702	1473
MEAN	73.2	113	23.2	9.92	11.0	11.9	20.4	19.5	41.9	53.7	54.9	49.1
MAX	75	297	289	10	29	18	21	20	54	55	55	55
MIN	72	72	10	9.6	9.4	9.8	20	19	19	53	54	20
AC-FT	4500	6750	1430	610	609	731	1210	1200	2490	3300	3380	2920

CAL YR 1986	TOTAL	53647.4	MEAN	147	MAX	5200	MIN	5.8	AC-FT	106400	MEAN	a 151	AC-FT	a 109500
WTR YR 1987	TOTAL	14685.8	MEAN	40.2	MAX	297	MIN	9.4	AC-FT	29130	MEAN	a 39.0	AC-FT	a 28230

a Adjusted for change in contents in Little Grass Valley Reservoir.

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Jan. 16 and Apr. 16 to May 8. Records good except for period of no gage-height record, Apr. 16 to May 8, and day with ice effect, Jan. 16, which are fair. Flow regulated by Little Grass Valley Reservoir (station 11395020). South Fork diversion tunnel, maximum capacity, about 600 ft^3/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).--27 years, 159 ft^3/s, 115,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,870 ft^3/s, Feb. 17, 1986, gage height, 14.92 ft, from rating curve extended above 40 ft^3/s on basis of computation of peak flow over diversion dam from floodmark; minimum daily, 0.3 ft^3/s, Dec. 25, 1962, to Jan. 2, 1963, Mar. 1-3, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 329 ft^3/s, Feb. 13, gage height, 6.80 ft; minimum daily, 5.3 ft^3/s, many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	12	5.7	5.4	5.4	5.4	5.6	9.1	11	11	11	11
2	12	12	5.7	5.4	5.5	5.4	5.6	14	11	11	11	11
3	12	12	5.4	5.5	5.6	5.4	5.6	14	11	11	11	11
4	12	12	5.4	5.4	5.5	5.4	5.6	14	11	11	11	11
5	12	12	5.5	5.4	5.5	5.7	5.6	16	11	11	11	10
6	12	8.7	5.4	5.4	5.5	5.7	5.6	16	11	11	11	10
7	12	5.7	5.4	5.4	5.6	5.7	5.6	16	11	11	11	10
8	12	5.7	5.4	5.4	5.6	5.7	5.6	14	11	11	11	10
9	12	5.7	5.3	5.4	5.6	5.6	5.5	12	11	11	11	11
10	12	5.7	5.3	5.3	5.6	5.6	5.6	12	11	11	11	11
11	12	5.7	5.3	5.3	5.7	5.6	5.6	11	11	11	11	11
12	12	5.6	5.3	5.3	5.7	5.7	5.6	11	11	11	11	11
13	12	5.6	5.3	5.4	94	5.9	5.6	11	11	11	11	11
14	12	5.6	5.4	5.4	5.8	5.8	5.5	11	11	11	11	11
15	12	5.6	5.3	5.4	5.8	5.7	5.6	11	11	11	11	11
16	12	5.6	5.3	5.4	5.6	5.7	5.6	11	11	11	11	11
17	12	5.6	5.3	5.4	5.6	5.7	5.6	11	12	11	11	11
18	12	5.6	5.4	5.4	5.6	5.7	5.6	11	11	11	11	11
19	12	5.6	5.4	5.4	5.6	5.6	5.6	11	11	11	11	11
20	12	5.6	5.3	5.4	5.6	5.6	5.6	11	11	11	11	11
21	12	5.6	5.3	5.4	5.6	5.6	5.6	11	11	11	11	11
22	12	5.6	5.3	5.4	5.6	5.6	5.6	11	11	11	11	11
23	12	5.6	5.3	5.4	5.5	5.6	5.6	11	11	11	11	11
24	12	5.6	5.3	5.4	5.4	5.6	5.6	11	11	11	11	11
25	12	5.6	5.3	5.4	5.4	5.6	5.6	11	11	11	11	11
26	12	5.7	5.3	5.4	5.4	5.6	5.6	11	11	11	11	11
27	12	5.7	5.3	5.5	5.4	5.6	5.6	11	11	11	11	11
28	12	5.7	5.3	5.6	5.4	5.6	5.6	11	11	11	11	11
29	12	5.7	5.3	5.6	---	5.6	5.6	11	11	11	11	11
30	12	5.7	5.3	5.5	---	5.6	5.6	11	11	11	11	11
31	12	---	5.3	5.4	---	5.6	---	11	---	11	11	---
TOTAL	371	204.1	166.1	167.8	244.1	174.2	167.8	368.1	331	341	341	326
MEAN	12.0	6.80	5.36	5.41	8.72	5.62	5.59	11.9	11.0	11.0	11.0	10.9
MAX	12	12	5.7	5.6	94	5.9	5.6	16	12	11	11	11
MIN	11	5.6	5.3	5.3	5.4	5.4	5.5	9.1	11	11	11	10
AC-FT	736	405	329	333	484	346	333	730	657	676	676	647
MEAN a	79.2	116	31.7	22.1	76.5	100	49.2	31.4	51.3	63.6	62.9	56.0
AC-FT a	4870	6920	1950	1360	4250	6150	2930	1930	3050	3910	3870	3330
b	4130	6510	1620	1030	3770	5800	2600	1200	2390	3230	3190	2680

CAL YR 1986	TOTAL	43660.0	MEAN	120	MAX	7970	MIN	5.0	AC-FT	86600	MEAN a	222	AC-FT a	160800
WTR YR 1987	TOTAL	3202.2	MEAN	8.77	MAX	94	MIN	5.3	AC-FT	6350	MEAN a	61.5	AC-FT a	44500

a Adjusted for diversion to South Fork tunnel.
b Diversion, in acre-feet, from South Fork Feather River to South Fork diversion tunnel.

SACRAMENTO RIVER BASIN

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 mi^2.

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). Records, including extremes, show contents at 2400 hours. See schematic diagram of South Fork Feather River basin. Reservoir completely drained Sept. 12 to Oct. 17, 1981, for powerplant construction.

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.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 63,800 acre-ft, Apr. 19, 20, elevation, 3,527.9 ft; minimum, 21,500 acre-ft, Dec. 24, elevation, 3,436.2 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Pacific Gas & Electric Co., from 1946 survey)

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

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41900	48300	27600	22300	26700	42400	61300	63100	63100	60000	53400	42200
2	42100	48400	27500	22500	27000	42700	61400	63000	62800	59600	53000	41900
3	42400	48600	27100	22900	27200	42900	61600	62800	62700	59500	52700	41400
4	42700	48800	27200	23100	27400	42900	61800	62700	62500	59700	52300	41200
5	42900	48700	27300	23300	27600	44400	62000	62400	62400	59600	52000	40500
6	43100	48000	27000	23400	27800	46600	61900	62200	62500	59400	51500	40100
7	43300	47000	26700	23600	28000	48000	62300	61900	62600	59100	51300	39700
8	43600	46100	26300	23700	28200	49300	62800	61800	62500	58800	51100	39200
9	43800	45200	25900	23800	28400	50200	63000	61900	62400	58400	51000	38900
10	44000	44300	25700	23900	28900	51100	63000	62200	62200	58100	50600	38500
11	44200	43400	25300	24000	29700	52200	62800	62100	61900	58200	50200	38200
12	44400	42400	24800	24100	31000	53600	62900	62100	61900	58300	49500	38100
13	44600	41500	24500	24200	34000	54800	63300	62000	62100	58300	49000	38200
14	44800	40800	24400	24200	35700	55800	63400	61700	62100	57900	48600	38000
15	45100	39900	24300	24300	37300	56500	63400	61400	62200	57500	48400	37600
16	45200	38900	23800	24400	38200	57100	63400	61400	62100	56900	48100	37100
17	45400	37800	23400	24500	39100	57700	63500	61500	61800	56400	47700	37100
18	45600	36900	23100	24600	39400	58700	63700	61600	61500	56400	47300	37100
19	45800	35900	22600	24600	39400	59700	63800	61600	61000	56600	46800	37300
20	46000	34900	22400	24700	39700	60200	63800	61800	61000	56400	46600	37400
21	46200	34000	22200	24800	40200	60300	63700	62000	61000	56200	46300	37500
22	46400	33000	21900	24800	40600	60100	63600	62200	61000	55800	46000	37600
23	46400	32100	21600	24900	41000	59800	63500	62300	61000	55600	45600	37700
24	46600	31200	21500	25100	41300	59600	63400	62400	60900	55200	45200	37800
25	46800	30500	21600	25200	41600	59300	63400	62500	60600	54900	44800	37400
26	46900	30000	21700	25300	41600	59400	63400	62600	60300	55100	44500	36700
27	47100	29500	21700	25600	41900	59500	63300	62800	60400	55100	44200	36300
28	47300	29000	21800	25900	42100	59700	63100	62900	60500	55000	43800	35900
29	47500	28500	21900	26100	---	60200	63000	63000	60300	54700	43300	35800
30	47800	28000	21900	26400	---	60600	63000	63100	60300	54200	42800	35900
31	48000	---	22000	26600	---	61100	---	63200	---	53700	42500	---
MAX	48000	48800	27600	26600	42100	61100	63800	63200	63100	60000	53400	42200
MIN	41900	28000	21500	22300	26700	42400	61300	61400	60300	53700	42500	35800
a	3499.7	3454.4	3437.6	3450.8	3487.8	3523.4	3526.5	3526.9	3522.0	3510.5	3488.6	3474.1
b	+6400	-20000	-6000	+4600	+15500	+19000	+1900	+200	-2900	-6600	-11200	-6600

CAL YR 1986 MAX 64000 MIN 18800 b +3300
WTR YR 1987 MAX 63800 MIN 21500 b -5700

a Elevation, in feet NGVD, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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.--Estimated daily discharges: July 10-30. Records good. 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 ft^3/s, 15,200 ac-ft/yr; 25 years (water years 1963-87), 8.34 ft^3/s, 6,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 43 ft^3/s, Aug. 9 to Sept. 9, 1937, Aug. 13-15, 1977; no flow at times in many years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	6.1	7.9	2.8	.62	.61	.45	4.7	14	19	19	19
2	6.8	6.1	6.6	2.8	.62	.60	.51	4.7	14	19	19	18
3	7.5	6.1	6.6	2.7	.62	.61	.55	4.6	15	19	19	18
4	8.0	6.1	6.6	2.8	.62	.58	.55	4.6	15	19	19	18
5	7.9	6.1	6.5	2.4	.64	.60	.61	4.5	15	19	19	19
6	7.9	6.3	6.7	2.0	.62	.60	.58	6.3	15	19	20	19
7	7.9	6.0	6.7	2.0	.62	.61	.54	10	15	19	21	19
8	7.8	6.5	6.9	2.1	.61	.62	.55	13	15	19	21	19
9	7.8	6.7	6.3	2.0	.62	.61	.55	13	15	19	21	18
10	7.9	6.7	5.6	2.2	.63	.61	.55	13	15	19	21	18
11	7.8	6.7	5.7	2.2	.67	.61	.56	13	15	19	21	18
12	7.7	6.6	5.6	2.2	.63	.60	.57	15	15	19	21	18
13	7.6	6.7	5.0	2.3	.67	.58	.57	15	15	19	21	18
14	7.5	6.7	4.4	2.2	.68	.56	.61	18	15	19	21	18
15	7.6	6.6	4.1	2.3	.69	.52	1.9	20	15	19	21	18
16	7.0	6.7	3.8	1.5	.65	.44	2.7	20	15	19	21	18
17	6.0	7.4	4.1	1.2	.62	.41	2.6	20	16	19	21	18
18	6.1	9.0	3.5	2.6	.63	.43	3.9	20	16	19	21	18
19	6.1	9.0	3.0	3.4	.64	.41	4.5	20	15	19	21	18
20	6.0	9.1	3.4	3.5	.63	.50	4.4	16	15	19	21	17
21	5.9	9.1	3.9	3.6	.63	.55	4.4	14	15	19	21	18
22	5.9	9.1	3.9	3.6	.62	.49	4.4	14	15	19	21	18
23	6.0	9.0	3.5	3.6	.62	.48	4.4	14	15	19	21	18
24	6.0	9.0	2.9	2.2	.62	.49	4.4	14	17	19	20	18
25	5.9	9.0	2.8	1.2	.60	.54	4.4	14	17	19	20	18
26	5.9	9.0	2.8	1.4	.61	.58	4.5	14	18	19	20	18
27	5.9	9.0	2.9	1.4	.62	.57	4.5	14	18	19	20	18
28	6.0	9.0	2.8	.90	.59	.58	4.6	13	18	19	20	18
29	5.9	9.0	2.8	.62	---	.53	4.6	14	18	19	20	18
30	6.0	9.0	2.9	.62	---	.53	4.7	14	19	19	20	19
31	6.0	---	2.8	.62	---	.47	---	14	---	19	20	---
TOTAL	211.0	227.4	143.0	66.96	17.64	16.92	72.65	408.4	470	589	632	545
MEAN	6.81	7.58	4.61	2.16	.63	.55	2.42	13.2	15.7	19.0	20.4	18.2
MAX	8.0	9.1	7.9	3.6	.69	.62	4.7	20	19	19	21	19
MIN	5.9	6.0	2.8	.62	.59	.41	.45	4.5	14	19	19	17
AC-FT	419	451	284	133	35	34	144	810	932	1170	1250	1080

CAL YR 1986 TOTAL 2371.51 MEAN 6.50 MAX 18 MIN 0 AC-FT 4700
WTR YR 1987 TOTAL 3399.97 MEAN 9.32 MAX 21 MIN .41 AC-FT 6740

SACRAMENTO RIVER BASIN

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 mi^2.

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 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.--Estimated daily discharges: Nov. 30 to Dec. 16, June 15-19. Records fair prior to June 19, good thereafter. 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 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, or spill from Lost Creek Reservoir to Lost Creek. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--27 years (water years 1928-41, 1949-61, prior to regulation by Sly Creek Reservoir), 73.0 ft^3/s, 52,850 acre-ft/yr; 26 years (water years 1962-87), 25.1 ft^3/s, 18,180 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft^3/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, 25 ft^3/s, June 21, gage height, 5.28 ft; minimum daily, 1.10 ft^3/s, many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	2.3	1.2	1.9	2.1	2.1	2.2	4.8	1.6	6.0	5.4	5.6
2	2.3	2.3	1.2	1.6	2.2	2.1	2.2	4.6	1.6	6.0	5.3	5.3
3	2.3	2.2	1.2	2.6	2.1	2.1	2.2	4.6	1.6	6.3	5.6	5.3
4	2.3	2.2	1.2	2.1	2.1	2.1	2.2	4.6	1.6	5.3	5.8	5.3
5	2.2	2.2	1.2	2.1	2.1	2.8	2.2	4.6	1.5	5.4	5.4	5.3
6	2.3	1.5	1.2	2.1	2.0	2.7	2.2	4.6	1.5	5.5	5.7	5.4
7	2.4	1.1	1.2	2.1	2.0	2.4	2.3	4.9	1.5	5.2	6.0	5.2
8	2.3	2.5	1.2	2.1	2.0	2.3	2.2	5.5	1.6	5.3	5.4	5.2
9	2.4	2.5	1.1	2.1	2.0	2.2	2.2	5.5	1.7	5.2	5.2	5.2
10	2.5	2.5	1.1	2.0	2.0	2.2	2.2	5.5	1.6	5.3	5.2	5.2
11	2.5	2.5	1.1	2.0	2.2	2.2	2.2	5.5	1.6	5.4	5.2	5.3
12	2.5	2.5	1.1	2.0	2.7	2.7	2.2	5.5	5.3	5.3	5.4	5.2
13	2.5	2.0	1.1	2.0	4.0	2.7	2.3	5.4	11	5.2	5.5	5.2
14	2.5	1.3	1.1	2.0	2.5	2.7	2.2	5.5	11	5.2	5.9	5.2
15	2.5	1.3	1.1	2.0	2.6	2.6	2.2	5.5	11	5.2	5.7	5.2
16	2.5	1.2	1.1	2.0	2.4	2.5	2.2	5.5	8.0	5.2	5.5	5.2
17	2.5	1.2	1.1	2.0	2.3	2.4	2.2	5.5	5.7	5.3	5.6	5.4
18	2.4	1.2	1.1	2.0	2.2	2.4	2.2	5.5	3.6	5.3	5.5	5.4
19	2.3	1.3	1.1	2.0	2.2	2.4	2.2	5.5	5.4	5.4	6.1	5.2
20	2.3	1.2	1.1	2.0	2.2	2.4	2.2	3.0	18	5.6	5.5	5.2
21	2.3	1.4	1.1	2.0	2.2	2.4	2.2	1.4	21	6.2	5.6	5.2
22	2.2	1.2	1.1	2.0	2.2	2.4	2.2	1.6	11	5.6	5.3	5.2
23	2.2	1.3	1.1	2.1	2.2	2.4	2.2	1.6	7.0	5.2	5.3	5.2
24	2.2	1.2	1.3	2.1	2.2	2.4	2.2	1.6	6.5	5.2	5.4	5.2
25	2.2	1.2	1.6	2.1	2.2	2.4	2.2	1.6	5.6	5.5	5.6	5.2
26	2.2	1.2	1.6	2.1	2.2	2.4	2.2	1.6	6.3	5.8	5.4	5.2
27	2.2	1.2	1.6	2.1	2.2	2.3	2.2	1.6	5.9	5.6	5.3	5.2
28	2.2	1.2	1.5	2.2	2.1	2.3	2.2	1.6	5.6	5.5	5.2	5.2
29	2.3	1.2	1.5	2.1	---	2.3	2.2	1.6	6.7	5.2	5.4	5.4
30	2.3	1.2	1.5	2.1	---	2.3	3.7	1.6	6.8	5.4	5.5	5.2
31	2.3	---	1.5	2.1	---	2.3	---	1.6	---	5.6	5.4	---
TOTAL	72.5	49.3	38.2	63.7	63.4	73.9	67.7	119.0	178.8	169.4	170.3	157.7
MEAN	2.34	1.64	1.23	2.05	2.26	2.38	2.26	3.84	5.96	5.46	5.49	5.26
MAX	2.5	2.5	1.6	2.6	4.0	2.8	3.7	5.5	21	6.3	6.1	5.6
MIN	2.2	1.1	1.1	1.6	2.0	2.1	2.2	1.4	1.5	5.2	5.2	5.2
AC-FT	144	98	76	126	126	147	134	236	355	336	338	313
a	6.5	28320	10350	823	3060	13160	12250	6260	5680	9400	14310	9330

CAL YR 1986 TOTAL 20059.78 MEAN 55.0 MAX 3300 MIN .44 AC-FT 39790
WTR YR 1987 TOTAL 1223.90 MEAN 3.35 MAX 21 MIN 1.1 AC-FT 2430

a Diversion, in acre-feet, to Woodleaf powerplant, provided by Oroville-Wyandotte Irrigation District; not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--July 1962 to current year. Records for Forbestown powerplant from February 1963 to September 1966 in files of 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.--Estimated daily discharges: Oct. 9-21 and May 16-19. Records good. 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 above station. Tunnel 600 ft above 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.--25 years, 69.5 ft^3/s, 50,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,400 ft^3/s, Feb. 17, 1986, gage height, 16.07 ft, from rating curve extended above 5,400 ft^3/s on basis of flow-over-dam measurement of peak flow; minimum daily, 0.6 ft^3/s, Apr. 4, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 218 ft^3/s, Feb. 13, gage height, 5.74 ft; minimum daily, 5.1 ft^3/s, Nov. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	25	5.7	6.5	5.3	5.7	5.7	9.4	11	11	11	11
2	26	25	5.7	6.1	5.4	5.7	5.8	14	11	11	11	11
3	26	24	5.6	6.3	5.4	5.7	5.8	14	11	11	11	11
4	25	24	5.8	5.6	5.6	5.7	5.9	14	11	11	11	11
5	25	23	5.8	5.4	5.8	6.0	5.8	14	11	11	11	11
6	25	8.4	5.8	5.4	5.8	6.1	5.8	14	11	11	11	11
7	25	5.1	5.8	5.7	5.8	5.8	5.8	14	11	11	11	11
8	25	5.8	5.8	5.6	5.8	5.7	5.7	14	11	11	11	11
9	25	5.9	5.8	5.4	5.8	5.8	5.8	14	11	11	11	11
10	25	6.0	5.8	5.3	5.9	5.8	5.8	14	11	11	11	11
11	25	5.8	5.8	5.5	6.1	5.8	5.8	14	11	11	11	11
12	25	6.0	5.8	5.4	6.1	5.9	5.8	14	11	11	11	11
13	25	6.0	5.8	5.4	62	42	6.1	14	11	11	11	11
14	25	5.9	5.8	5.4	5.4	43	6.3	14	11	11	11	11
15	25	6.0	5.8	5.5	5.5	5.8	5.9	14	11	11	11	11
16	25	5.9	5.9	5.4	5.3	5.8	5.9	14	11	11	11	11
17	25	5.8	5.9	5.3	5.3	5.7	6.0	14	11	11	11	11
18	25	5.8	6.0	5.3	5.4	5.8	6.0	14	11	11	11	11
19	25	5.9	6.0	5.3	5.8	5.8	6.0	14	11	11	11	11
20	25	5.9	6.0	5.2	5.8	5.8	5.9	11	11	11	11	11
21	25	5.9	6.0	5.2	5.7	5.7	5.9	11	11	11	11	11
22	25	5.8	6.0	5.3	5.8	5.7	6.0	11	11	11	11	11
23	25	5.8	6.0	5.3	5.7	5.7	6.0	11	11	11	11	11
24	28	5.8	6.1	5.3	5.7	5.7	6.0	11	11	11	11	11
25	24	5.8	6.2	5.3	5.7	5.7	6.0	11	11	11	11	11
26	24	5.7	6.2	5.3	5.7	5.8	6.0	11	11	11	11	11
27	25	5.7	6.1	5.3	5.7	5.8	6.0	11	11	11	11	11
28	25	5.8	6.0	5.4	5.7	5.8	6.0	11	11	11	11	11
29	27	5.8	6.1	5.3	---	5.8	5.9	11	11	11	11	11
30	35	5.7	6.4	5.2	---	5.7	5.9	11	11	11	11	11
31	26	---	6.3	5.3	---	5.7	---	11	---	11	11	---
TOTAL	793	269.0	183.8	169.2	215.0	252.5	177.3	393.4	330	341	341	330
MEAN	25.6	8.97	5.93	5.46	7.68	8.15	5.91	12.7	11.0	11.0	11.0	11.0
MAX	35	25	6.4	6.5	62	43	6.3	14	11	11	11	11
MIN	24	5.1	5.6	5.2	5.3	5.7	5.7	9.4	11	11	11	11
AC-FT	1570	534	365	336	426	501	352	780	655	676	676	655
a	0	29640	10240	933	5010	16570	13400	6100	5480	9240	14310	9200

CAL YR 1986 TOTAL 81989.5 MEAN 225 MAX 13900 MIN 5.1 AC-FT 162600
WTR YR 1987 TOTAL 3795.2 MEAN 10.4 MAX 62 MIN 5.1 AC-FT 7530

a Diversion, in acre-feet, to Forbestown powerplant, provided by Oroville-Wyandotte Irrigation District; not reviewed by U.S. Geological Survey.

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.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 975 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 10-21. Records good except those for period of estimated record, which are fair. 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.--25 years, 205 ft^3/s, 148,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 314 ft^3/s, May 13, 1984; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	122	266	93	68	0	261	284	98	229	248	269
2	0	196	266	181	68	165	263	284	140	231	248	270
3	6.7	150	266	236	68	259	266	285	140	190	249	270
4	14	106	265	117	68	259	266	286	140	62	248	268
5	30	83	243	92	68	247	268	288	140	61	247	269
6	30	218	259	95	68	270	268	289	42	199	243	268
7	30	272	255	99	68	270	269	289	0	264	246	268
8	30	272	259	32	45	139	268	211	126	264	250	271
9	30	272	253	0	0	177	274	91	196	263	248	258
10	30	273	245	21	26	263	278	93	194	214	246	271
11	30	272	259	35	130	216	278	214	193	58	246	268
12	30	272	258	34	199	116	278	291	92	57	246	264
13	30	273	246	34	234	270	278	289	38	190	247	208
14	30	272	245	34	256	270	277	296	0	261	247	32
15	30	273	243	34	258	270	279	194	159	261	247	14
16	30	273	248	173	259	270	278	0	191	259	246	20
17	30	273	259	37	246	265	279	147	191	174	246	0
18	30	272	252	0	220	260	279	237	189	65	246	0
19	30	271	257	0	238	255	278	35	99	64	246	102
20	30	270	245	81	256	237	278	0	0	184	247	101
21	30	270	248	37	146	260	278	97	41	241	246	0
22	30	270	230	0	0	262	278	0	175	244	246	0
23	29	270	249	0	0	262	280	7.2	239	245	247	0
24	29	270	98	0	41	262	283	115	238	173	247	116
25	29	271	0	0	201	262	283	0	239	63	256	238
26	29	272	87	0	274	262	283	0	238	61	269	251
27	29	273	0	38	264	263	286	93	64	129	269	254
28	29	274	0	185	78	264	287	35	0	242	270	255
29	29	271	9.1	191	---	262	266	0	165	245	269	253
30	30	266	20	34	---	261	285	0	220	247	269	215
31	30	---	71	69	---	261	---	133	---	248	270	---
TOTAL	823.7	7392	6101.1	1982	3847	7359	8272	4583.2	3987	5688	7795	5273
MEAN	26.6	246	197	63.9	137	237	276	148	133	183	251	176
MAX	30	274	266	236	274	270	287	296	239	264	270	271
MIN	0	83	0	0	0	0	261	0	0	57	243	0
AC-FT	1630	14660	12100	3930	7630	14600	16410	9090	7910	11280	15460	10460
a	350	25180	21830	2780	6880	13590	14540	7040	5140	9710	14100	8390

CAL YR 1986 TOTAL 81183.80 MEAN 222 MAX 297 MIN 0 AC-FT 161000
WTR YR 1987 TOTAL 63103.00 MEAN 173 MAX 296 MIN 0 AC-FT 125200

a Diversion, in acre-feet, to Kelly Ridge powerplant, provided by Oroville-Wyandotte Irrigation District; not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

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. Records good. 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.--24 years, 14.2 ft^3/s, 10,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 65 ft^3/s, Aug. 17-20, 1963; no flow for several days in 1965, 1969.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	8.9	7.2	6.9	4.7	2.8	3.3	16	18	19	20	20
2	8.5	8.7	7.2	6.8	4.2	2.8	3.3	16	17	20	20	20
3	8.2	8.6	7.0	6.9	3.5	2.8	3.7	16	18	20	20	20
4	8.5	8.3	7.0	6.7	3.5	2.8	4.3	16	19	19	21	21
5	9.0	8.6	7.0	6.8	3.5	2.8	4.4	16	19	19	21	21
6	9.2	9.5	6.7	7.0	3.4	2.7	4.4	16	21	20	21	21
7	9.3	9.6	7.0	7.0	3.3	2.7	5.6	17	20	20	20	21
8	9.1	9.6	7.1	7.0	3.3	2.8	6.4	17	20	20	21	21
9	8.8	8.6	7.3	6.9	3.3	2.8	8.6	16	20	20	21	21
10	8.6	7.8	7.3	6.7	3.3	2.8	9.4	17	20	21	21	20
11	8.8	7.8	7.2	6.8	3.3	2.8	9.2	17	20	21	21	20
12	9.0	7.8	7.5	7.0	3.5	2.8	9.3	17	20	21	21	20
13	9.1	8.4	6.7	7.0	3.3	2.8	9.3	17	20	20	21	20
14	9.0	9.0	6.4	6.6	3.4	2.8	9.3	17	19	20	21	21
15	9.2	9.0	6.4	6.7	3.5	2.8	9.3	17	20	20	21	20
16	8.7	9.0	6.4	6.7	3.3	2.8	9.4	17	20	20	20	20
17	8.8	9.0	6.6	6.7	3.0	2.8	9.6	17	19	20	20	20
18	8.4	8.9	6.7	6.7	3.2	2.8	9.3	18	19	20	20	20
19	8.2	8.8	6.7	6.5	3.7	2.8	9.0	17	20	20	20	20
20	8.4	8.7	6.7	6.5	3.3	2.6	9.0	17	19	20	20	23
21	8.3	8.7	6.7	6.8	3.2	2.6	10	17	18	20	20	22
22	8.2	8.7	6.5	7.3	3.0	2.7	12	18	19	20	20	21
23	8.4	8.9	6.4	6.4	3.0	3.0	13	17	21	20	20	20
24	8.8	9.0	6.7	5.6	2.8	3.3	13	17	19	21	21	20
25	9.0	9.0	6.7	5.6	2.8	3.2	13	18	20	22	20	21
26	9.0	9.0	6.8	5.6	2.7	3.2	15	17	19	21	20	20
27	9.0	9.3	7.0	5.5	2.7	3.1	16	17	19	21	20	20
28	8.9	9.3	7.0	5.8	2.8	3.0	16	17	19	20	20	20
29	8.7	7.8	7.0	5.3	---	3.0	16	17	19	20	20	18
30	8.9	7.0	7.0	4.9	---	3.2	16	17	19	20	20	18
31	9.0	---	7.0	4.9	---	3.2	---	17	---	20	20	---
TOTAL	271.7	261.3	212.9	199.6	92.5	89.1	286.1	523	580	625	632	610
MEAN	8.76	8.71	6.87	6.44	3.30	2.87	9.54	16.9	19.3	20.2	20.4	20.3
MAX	9.3	9.6	7.5	7.3	4.7	3.3	16	18	21	22	21	23
MIN	8.2	7.0	6.4	4.9	2.7	2.6	3.3	16	17	19	20	18
AC-FT	539	518	422	396	183	177	567	1040	1150	1240	1250	1210

CAL YR 1986 TOTAL 4089.2 MEAN 11.2 MAX 22 MIN 2.4 AC-FT 8110
WTR YR 1987 TOTAL 4383.2 MEAN 12.0 MAX 23 MIN 2.6 AC-FT 8690

SACRAMENTO RIVER BASIN

11396350 SOUTH FORK FEATHER RIVER AT PONDEROSA DAM, CA

LOCATION.--Lat 39°32'52", long 121°18'11", in NW 1/4 SE 1/4 sec.33, T.20 N., R.6 E., Butte County, Hydrologic Unit 18020123, at entrance to Miners Ranch Canal on the left end of Ponderosa Dam, 2,800 ft upstream from Sucker Run, and 2.6 mi northwest of Forbestown.

DRAINAGE AREA.--108 mi^2.

PERIOD OF RECORD.--July 1962 to current year.

GAGE.--Water-stage recorder, high level sluice gate, and concrete spillway of Ponderosa Dam. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Oroville-Wyandotte Irrigation District). Prior to Oct. 1, 1967, at site 1,800 ft downstream at different datum.

REMARKS.--Estimated daily discharges: Sept. 25-30. Records good. Records are combined flow through sluice gate and flow over spillway. There was no flow through sluice gate during 1987 water year. Flow regulated by several reservoirs and diversions. Water is imported from North Yuba River basin through Slate Creek tunnel (station 11413250). Miners Ranch Canal (station 11396310) diverts at Ponderosa Dam for power development and irrigation; diversion began in October 1962. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE (adjusted for diversion to Miners Ranch Canal).--25 years, 467 ft^3/s, 338,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft^3/s, Feb. 17, 1986; no flow for several months most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 939 ft^3/s, Feb. 13; no flow many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	205		0	0						0
2		0	0		0	0						0
3		0	0		0	0						0
4		0	0		0	0						0
5		0	0		0	0						0
6		29	0		0	0						0
7		338	0		0	0						0
8		356	0		0	0						0
9		325	0		0	0						0
10		303	0		0	0						0
11		355	0		0	0						0
12		331	0		0	9.6						0
13		359	0		478	476						0
14		262	0		350	527						0
15		355	0		10	444						160
16		360	0		.01	290						302
17		360	0		0	.14						63
18		362	0		0	0						108
19		313	0		0	0						256
20		366	0		0	0						0
21		371	0		0	45						0
22		371	0		0	368						1.7
23		368	0		0	385						92
24		367	0		0	385						204
25		365	0		0	380						0
26		364	0		0	192						0
27		316	0		0	0						0
28		366	0		0	0						0
29		371	0		---	0						0
30		373	0		---	0						0
31		---	0		---	0	---		---			---
TOTAL	0	8406	205	0	838.01	3501.74	0	0	0	0	0	1186.7
MEAN	0	280	6.61	0	29.9	113	0	0	0	0	0	39.6
MAX	0	373	205	0	478	527	0	0	0	0	0	302
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	0	16670	407	0	1660	6950	0	0	0	0	0	2350
MEAN a	27	527	203	64	167	350	276	148	133	183	251	216
AC-FT a	1630	31330	12510	3930	9290	21550	16410	9090	7910	11280	15460	12850

CAL YR 1986	TOTAL	151480.04	MEAN	415	MAX	15900	MIN	0	AC-FT	300500	MEAN a	638	AC-FT a	461600
WTR YR 1987	TOTAL	14137.45	MEAN	38.7	MAX	527	MIN	0	AC-FT	28040	MEAN a	212	AC-FT a	153300

a Adjusted for diversion to Miners Ranch Canal.

SACRAMENTO RIVER BASIN

11396400 SUCKER RUN NEAR FORBESTOWN, CA

LOCATION.--Lat 39°33'12", long 121°18'04", in NW 1/4 NE 1/4 sec.33, T.20 N., R.6 E., Butte County, Hydrologic Unit 18020123, on left bank at upstream side of road bridge, 0.7 mi upstream from confluence with South Fork Feather River, and 2.8 mi northwest of Forbestown.

DRAINAGE AREA.--18.7 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 960 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 19, 1986, at datum 1.35 ft higher.

REMARKS.--No estimated daily discharges. Records good. See schematic diagram of South Fork Feather River basin.

AVERAGE DISCHARGE.--22 years, 27.4 ft^3/s, 19,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,600 ft^3/s, Apr. 11, 1982, gage height, 9.90 ft, from floodmarks, from rating curve extended above 750 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 0.40 ft^3/s, Oct. 7, 1966.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 7.4 ft from floodmarks, discharge, 2,190 ft^3/s from rating curve extended above 600 ft^3/s on basis of computation of peak flow over rock control.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	0530	*305	*4.42				

Minimum daily, 2.2 ft^3/s, Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	7.2	6.9	14	11	13	18	12	7.4	4.5	3.1	2.4
2	7.1	7.0	6.9	15	23	13	17	11	7.0	4.4	3.0	2.5
3	6.9	6.9	6.8	52	21	13	17	10	6.8	4.4	2.9	2.5
4	6.7	6.8	6.8	26	13	13	17	9.8	6.5	4.4	2.8	2.4
5	6.6	6.8	12	17	11	58	16	9.4	6.3	4.3	2.8	2.4
6	6.7	6.6	8.1	15	10	79	16	9.1	6.4	4.3	2.8	2.6
7	6.7	6.7	7.4	14	9.6	35	15	9.1	6.6	4.2	2.7	2.6
8	6.7	6.8	7.2	13	9.1	27	15	9.4	6.2	4.1	2.6	2.7
9	6.6	6.8	7.0	12	8.8	23	14	11	6.1	4.1	2.6	2.6
10	6.6	6.8	7.0	12	9.1	21	14	10	5.9	3.9	2.6	2.4
11	6.4	6.7	6.9	12	19	24	14	9.1	5.7	3.8	2.6	2.5
12	6.3	6.7	6.9	12	25	65	14	8.9	5.6	3.8	2.7	2.5
13	6.4	6.7	7.1	12	183	88	13	8.7	5.5	3.7	2.7	2.6
14	6.5	6.7	7.7	11	52	60	13	8.6	5.4	3.6	2.7	2.6
15	6.5	6.8	7.2	11	70	56	12	8.3	5.5	3.4	2.7	2.6
16	6.5	6.7	7.0	11	41	42	12	8.3	5.7	3.3	2.6	2.5
17	6.6	6.7	6.9	11	30	34	12	8.4	5.6	3.6	2.6	2.3
18	6.8	6.8	8.9	11	25	32	12	8.3	5.3	4.3	2.6	2.3
19	6.6	6.9	8.6	11	22	29	12	8.2	5.2	4.1	2.6	2.3
20	6.5	6.9	8.2	11	19	27	11	8.2	5.3	3.8	2.7	2.3
21	6.5	8.2	7.5	11	18	29	11	8.3	5.3	3.7	2.7	2.3
22	6.5	7.1	9.0	11	17	27	11	8.3	5.3	3.9	2.6	2.2
23	6.5	6.9	8.3	13	16	34	11	8.0	4.9	3.7	2.5	2.3
24	6.6	6.9	7.6	20	15	32	11	7.9	4.8	3.5	2.6	2.3
25	6.5	6.8	7.4	20	15	29	10	8.1	4.7	3.4	2.6	2.4
26	6.5	6.6	7.2	16	14	26	10	8.6	4.6	3.4	2.6	2.5
27	6.9	6.6	7.2	15	14	24	10	8.7	4.6	3.3	2.5	2.4
28	6.8	6.8	7.0	22	14	22	10	8.1	4.5	3.3	2.5	2.4
29	7.5	8.1	7.1	15	---	21	10	7.7	4.6	3.3	2.4	2.3
30	12	7.2	7.0	13	---	20	12	7.6	4.4	3.2	2.4	2.3
31	7.7	---	7.6	12	---	19	---	7.5	---	3.1	2.3	---
TOTAL	213.0	207.2	234.4	471	734.6	1035	390	274.6	167.7	117.8	82.1	73.0
MEAN	6.87	6.91	7.56	15.2	26.2	33.4	13.0	8.86	5.59	3.80	2.65	2.43
MAX	12	8.2	12	52	183	88	18	12	7.4	4.5	3.1	2.7
MIN	6.3	6.6	6.8	11	8.8	13	10	7.5	4.4	3.1	2.3	2.2
AC-FT	422	411	465	934	1460	2050	774	545	333	234	163	145

CAL YR 1986	TOTAL	11797.8	MEAN 32.3	MAX 1380	MIN 3.2	AC-FT	23400
WTR YR 1987	TOTAL	4000.4	MEAN 11.0	MAX 183	MIN 2.2	AC-FT	7930

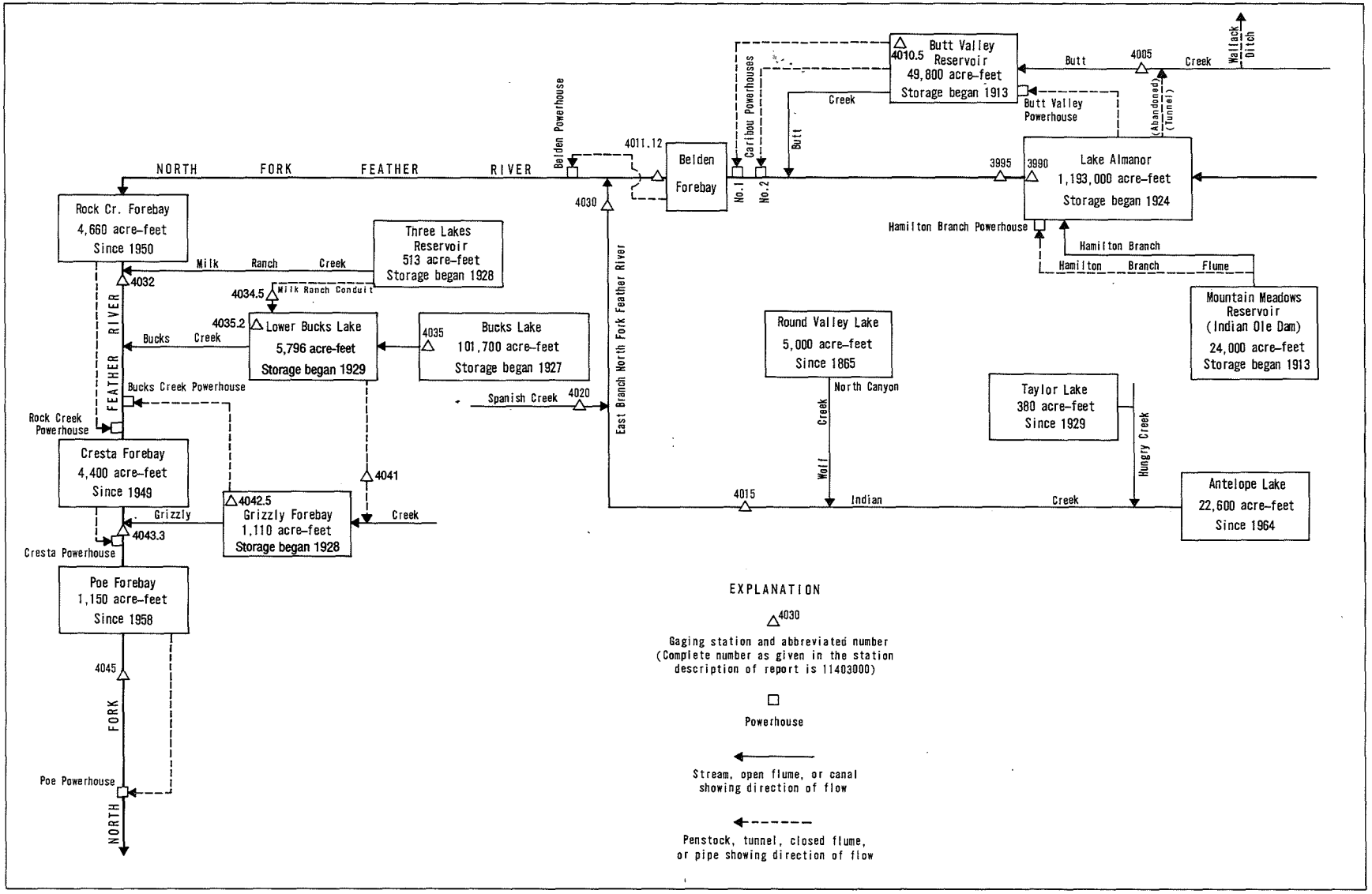

FIGURE 27.--Schematic diagram showing diversions and storage in North Fork Feather River basin.

SACRAMENTO 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 Canyondam.
DRAINAGE AREA.--491 mi^2.
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. Capacity, 1,183,835 acre-ft between gage heights 4,495.5 ft, upper storage limit, and 4,422 ft, bottom of lowest outlet, of which 8,948 acre-ft is not available for release. 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 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, 1,004,440 acre-ft, Sept. 13, gage height, 4,488.78 ft; minimum, 704,080 acre-ft, Dec. 12, gage height, 4,476.40 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	839100	762430	709070	721820	758700	805080	864100	913690	962310	984560	991520	1000560
2	836690	759400	708610	723190	761960	805310	865070	915690	963830	985080	992290	1000820
3	835730	756840	707030	724790	763130	806980	866540	918430	965110	985080	992030	1000820
4	832600	754510	706350	727990	763590	810320	868250	919680	966640	985330	992550	1001340
5	829470	754280	707250	730280	765230	811990	869470	921180	967910	986100	991520	1001590
6	826830	754510	706800	731430	765930	812940	870450	923190	969190	986360	992550	1001850
7	825870	751960	707250	731430	767330	815330	872160	925690	969950	986620	992550	1002110
8	824190	750570	706570	732120	768260	818200	873630	927450	971230	987130	992290	1002630
9	822990	751030	706350	733500	769670	819630	875100	930210	972000	987910	992810	1003150
10	820110	748490	704990	733500	770840	820590	876080	932220	973020	988160	993060	1003410
11	817240	745710	704310	734880	773420	821790	878540	934230	973530	988680	993320	1003670
12	813660	742940	704080	735800	775530	824190	880260	935740	974550	989200	994610	1003930
13	811030	740630	704990	736950	781400	830190	881980	938010	975320	989710	994610	1004440
14	808650	737870	706120	737640	783760	834280	882720	939520	975830	990480	993580	1002370
15	804360	737180	705670	738330	784700	835730	884190	941540	975580	990740	993840	1000820
16	801510	736720	705670	738330	789190	842480	886900	944060	976350	990740	994350	997710
17	799370	735340	705670	740170	789430	844660	888630	946080	976600	991260	994870	994610
18	796050	732810	705890	740400	791790	846350	890360	947090	977370	991260	995900	993060
19	793210	730280	706120	742020	793680	847810	891590	948100	978140	992140	995900	988940
20	790370	727990	708160	742480	794160	849020	893080	949120	978650	992030	995900	986620
21	787540	726850	708390	742710	795820	850720	894810	950630	978650	992290	995900	983790
22	784700	724560	708840	744550	797240	851930	896040	952410	979170	992810	996160	981220
23	781880	722270	711570	745020	798420	853870	898020	953420	980190	993320	996420	978910
24	780460	718390	712470	747330	798900	855570	899760	953930	980960	993580	997200	976350
25	778820	715430	713160	749180	800800	857280	901740	955450	981480	993840	997710	972250
26	776700	712470	714070	749640	801270	858980	903480	956970	981990	994100	998230	969190
27	774590	713840	715200	751960	802700	858980	904970	957220	982500	993580	998750	966380
28	772010	713840	716110	754280	803890	859710	907460	958750	983530	992550	999010	963320
29	770370	712250	716800	755440	---	860200	909700	960530	984050	991770	999520	960780
30	767560	710880	717940	755440	---	861900	911440	960530	984300	991520	999780	957480
31	764990	---	719530	758000	---	862880	---	962310	---	991000	1000040	---
MAX	839100	762430	719530	758000	803890	862880	911440	962310	984300	994100	1000040	1004440
MIN	764990	710880	704080	721820	758700	805080	864100	913690	962310	984560	991520	957480
a	4479.05	4476.70	4477.08	4478.75	4480.70	4483.15	4485.12	4487.14	4488.00	4488.26	4488.61	4486.95
b	-76050	-54110	+8650	+38470	+45890	+58990	+48560	+50870	+21990	+6700	+9040	-42560

CAL YR 1986 MAX 1103890 MIN 662230 b +58190
WTR YR 1987 MAX 1004440 MIN 704080 b +116440
a Gage height, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 mi^2.
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).
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 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).--82 years, 917 ft^3/s, 664,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,000 ft^3/s, Mar. 19, 1907, before construction of dam, gage height, 16.2 ft, at former site, from rating curve extended above 3,700 ft^3/s; no flow at times during 1914, 1919, 1923.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41 ft^3/s, Mar. 12, gage height, 2.56 ft; minimum daily, 36 ft^3/s, on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	36	36	37	37	37	38	39	37	37	37	38
2	37	36	36	36	37	37	38	39	37	37	37	38
3	37	36	36	36	37	37	39	39	37	37	37	38
4	37	36	36	36	36	37	39	39	37	37	37	38
5	37	36	36	36	36	38	39	38	37	37	37	38
6	37	36	36	36	36	38	39	36	37	37	38	38
7	37	36	37	36	36	37	39	36	37	37	38	38
8	37	36	36	36	36	37	39	36	37	37	38	38
9	37	36	36	36	37	37	39	36	37	37	38	38
10	37	36	37	36	37	37	39	36	37	37	38	38
11	37	36	36	36	37	38	39	36	37	38	38	38
12	37	36	36	36	38	39	39	36	37	37	38	38
13	37	36	36	36	37	39	39	36	37	38	38	38
14	37	36	36	36	37	38	39	36	37	38	38	38
15	37	36	36	36	37	38	39	36	37	37	38	38
16	37	36	36	36	37	38	39	36	37	37	38	38
17	37	36	36	36	37	38	39	36	37	37	38	38
18	37	36	36	37	37	38	39	36	37	37	38	38
19	37	36	36	37	37	38	39	36	37	37	38	38
20	37	36	36	37	37	38	39	36	37	37	38	38
21	37	36	36	36	37	38	39	36	37	37	38	38
22	36	36	36	36	37	38	39	36	37	37	38	37
23	36	36	36	36	37	39	39	36	37	37	38	37
24	36	36	36	36	37	39	39	36	37	37	38	37
25	36	36	36	36	37	38	39	36	37	38	38	37
26	36	36	36	36	37	38	39	36	37	37	38	37
27	36	36	36	36	37	38	39	37	37	37	38	37
28	36	36	36	36	37	38	39	37	37	37	38	37
29	36	36	37	36	---	39	39	37	37	37	38	37
30	36	36	37	36	---	39	39	37	37	37	38	37
31	36	---	37	36	---	39	---	37	---	37	38	---
TOTAL	1137	1080	1121	1120	1032	1177	1168	1135	1110	1151	1173	1131
MEAN	36.7	36.0	36.2	36.1	36.9	38.0	38.9	36.6	37.0	37.1	37.8	37.7
MAX	37	36	37	37	38	39	39	39	37	38	38	38
MIN	36	36	36	36	36	37	38	36	37	37	37	37
AC-FT	2260	2140	2220	2220	2050	2330	2320	2250	2200	2280	2330	2240
a	206400	163800	43150	0	0	0	0	0	0	9760	4300	110700

CAL YR 1986 TOTAL 13537 MEAN 37.1 MAX 47 MIN 35 AC-FT 26850 MEAN a 1296 AC-FT a 938500
WTR YR 1987 TOTAL 13535 MEAN 37.1 MAX 39 MIN 36 AC-FT 26850 MEAN a 743 AC-FT a 538100

a Diversion, in acre-feet, to Butt Valley powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2.

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.

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.--Estimated daily discharges: Jan. 11-26. 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 ft^3/s during each irrigation season into Yellow Creek basin. There is some inflow 500 ft upstream that is the leakage from the abandoned Almanor-Butt Creek tunnel at Outlet (station 11400200) that 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 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).--51 years (records for station 11400000 Butt Creek above Almanor-Butt Creek tunnel near Prattville used for water years 1937-64), 84.6 ft^3/s, 61,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,870 ft^3/s, Feb. 17, 1986, gage height, 5.90 ft, from rating curve extended above 1,400 ft^3/s; minimum daily, 26 ft^3/s, several days during May and June 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,000 ft^3/s, Mar. 12, gage height, 2.96 ft; minimum daily, 33 ft^3/s, Jan. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	55	52	55	53	56	111	96	51	41	40	39
2	60	55	52	55	54	58	116	89	50	41	40	39
3	60	54	52	50	55	68	120	84	45	42	40	39
4	59	53	53	61	52	77	108	81	44	40	40	39
5	58	53	60	55	52	246	107	80	44	41	40	39
6	58	53	58	53	52	234	106	79	44	39	40	39
7	58	53	54	48	52	142	108	76	46	40	40	39
8	58	53	52	52	52	123	112	73	47	40	40	39
9	57	53	52	56	53	108	115	79	43	40	39	39
10	56	53	51	58	56	103	121	73	43	40	39	39
11	56	53	52	64	89	120	153	69	42	40	39	39
12	56	53	51	58	87	492	129	66	40	40	39	41
13	56	53	53	48	210	398	117	65	42	40	39	42
14	56	53	56	43	108	206	116	63	42	40	39	42
15	56	53	53	39	82	170	115	61	42	40	39	42
16	56	52	51	33	69	146	114	64	42	40	40	42
17	59	52	51	38	66	133	112	64	42	42	39	42
18	60	52	52	42	64	136	111	60	42	44	39	42
19	57	53	52	48	62	120	100	59	43	44	39	42
20	56	53	52	51	60	110	94	56	43	43	39	40
21	56	62	51	52	58	102	93	56	43	42	39	40
22	55	55	52	52	57	98	95	57	42	42	39	40
23	55	53	52	52	57	96	93	56	40	42	39	40
24	55	53	51	53	54	94	93	54	40	42	39	40
25	55	52	50	53	57	88	92	53	42	42	39	40
26	55	52	51	53	55	86	91	53	41	42	39	40
27	55	52	50	55	55	86	93	53	41	40	39	40
28	55	52	49	71	55	84	95	53	40	40	39	40
29	59	54	51	60	---	82	95	53	40	40	39	40
30	66	52	51	56	---	88	100	53	40	40	39	40
31	57	---	52	54	---	100	---	52	---	40	39	---
TOTAL	1776	1599	1619	1618	1876	4250	3225	2030	1286	1269	1218	1204
MEAN	57.3	53.3	52.2	52.2	67.0	137	108	65.5	42.9	40.9	39.3	40.1
MAX	66	62	60	71	210	492	153	96	51	44	40	42
MIN	55	52	49	33	52	56	91	52	40	39	39	39
AC-FT	3520	3170	3210	3210	3720	8430	6400	4030	2550	2520	2420	2390
a	519	506	524	570	502	560	540	547	535	566	552	526

CAL YR 1986 TOTAL 47626 MEAN 130 MAX 2830 MIN 46 AC-FT 94470 a 6220
WTR YR 1987 TOTAL 22970 MEAN 62.9 MAX 492 MIN 33 AC-FT 45560 a 6450

a Inflow, in acre-feet, from Almanor-Butt Creek tunnel at Outlet, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 Canyondam.
DRAINAGE AREA.--83.5 mi^2.
PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1983-85 available in files of 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 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 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, 52,667 acre-ft, Feb. 18, 19, 1986, elevation, 4,133.80 ft; minimum, 30,747 acre-ft, Mar. 20, 1987, elevation, 4,119.40 ft.

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 44,399 acre-ft, Aug. 5, elevation, 4128.60 ft; minimum, 30,747 acre-ft, Mar. 20, elevation, 4119.40 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41239	42233	40781	43080	35847	33360	33739	40552	39946	39116	42079	43003
2	40781	41544	39946	43234	35847	33360	34027	40857	40022	39040	42156	42849
3	38068	41315	40781	43621	35919	32447	34316	41010	40173	38516	43311	42926
4	38068	41772	40097	43854	35847	32375	34533	41010	40097	38591	43311	42772
5	40399	40324	40097	44010	35919	33324	34875	40857	39946	38741	44399	42695
6	40022	38367	41086	42618	35993	33739	35117	40857	40022	38815	44321	42618
7	37471	39493	40705	42541	36141	34099	35336	40781	40022	38741	44243	42541
8	35847	41620	40781	41696	36289	34460	35628	41010	39871	38516	44088	42541
9	33955	40552	41239	41391	36510	34752	35919	41315	40022	38591	44088	42695
10	34027	40173	41162	41239	36658	35117	36141	41544	39871	38516	44010	42772
11	34388	41086	41010	41162	36805	35555	36510	41544	40022	38516	43932	42849
12	35701	41467	41010	40173	36953	37248	36732	41467	39644	38516	43777	42926
13	36584	42233	40173	39946	37620	38441	37027	40399	39720	38516	43854	42541
14	37620	42618	40022	39569	38217	39040	37322	40467	39795	38441	43699	43234
15	38292	41696	40705	39116	38516	39493	37545	40628	39795	38441	43621	42387
16	38143	39871	40705	38516	38741	38741	37844	40781	39720	38292	43777	42541
17	38591	39569	39946	38591	38890	36658	38143	40781	39644	38143	43621	42849
18	38815	39871	40857	38471	38890	34898	38367	40552	39569	37994	43699	43080
19	39569	40781	40857	37695	38890	32804	38591	40628	39493	38143	43465	42695
20	39871	41467	41086	36510	38591	30747	38815	40552	39418	38143	43465	42618
21	40781	41086	41162	35847	38441	30958	39040	40552	39493	38068	43311	42695
22	41391	41086	41467	35555	38292	31310	39267	40022	39342	37994	43234	42772
23	42002	41239	41620	35044	37620	31522	39493	40097	39493	37994	43234	42772
24	41162	41010	41772	35336	35701	31806	39720	40173	39116	37844	43157	42772
25	40324	41010	41849	35555	34244	32020	39946	40428	38890	37919	43234	42695
26	39644	40993	42002	35336	33162	32305	40248	40324	38815	37769	43157	42772
27	39569	40097	42156	35263	33017	32519	40022	39946	38965	38741	43003	43080
28	39946	40552	42310	35482	33162	32732	40173	39720	39040	39569	43157	43157
29	40324	41162	42464	35628	---	32946	40399	39871	39116	40705	43003	42849
30	41315	40857	42541	35555	---	33162	40476	39946	39191	41544	43003	42695
31	41544	---	42695	35774	---	33450	---	40097	---	42156	42926	---
MAX	42002	42618	42695	44010	38890	39493	40476	41544	40173	42156	44399	43234
MIN	33955	38367	39946	35044	33017	30747	33739	39720	38815	37769	42079	42387
a	4126.75	4126.30	4127.50	4122.90	4121.10	4121.30	4126.05	4125.80	4125.20	4127.15	4127.65	4127.50
b	-689	-687	+1838	-6921	-2612	+288	+7026	-379	-906	+2965	+770	-231
c	111600	85720	25700	11670	8750	11690	545	5050	4810	5920	5330	56970

CAL YR 1986 MAX 52667 MIN 33955 b +1533 c 838000
WTR YR 1987 MAX 44399 MIN 30747 b +462 c 333700
a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.
c Diversion, in acre-feet, to Caribou powerplants, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2.

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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (adjusted for diversion to Belden powerplant).--18 years, 1,152 ft^3/s, 834,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,230 ft^3/s, Sept. 30, 1987, gage height, 8.96 ft; minimum daily, 2.3 ft^3/s, Oct. 25, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,230 ft^3/s, Sept. 30, gage height, 8.96 ft; minimum daily, 23 ft^3/s, Nov. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	61	24	76	62	60	97	144	144	143	141	141
2	61	61	24	85	63	60	97	143	145	144	141	142
3	61	61	41	94	63	60	97	142	141	146	141	142
4	61	61	61	103	62	61	97	144	142	142	141	141
5	61	61	61	102	62	62	97	144	143	142	142	142
6	61	61	61	60	62	62	79	145	143	143	142	142
7	61	61	60	60	62	62	64	146	142	142	142	142
8	61	60	60	61	62	62	64	145	143	144	142	90
9	61	60	61	61	61	62	65	145	143	143	142	60
10	61	60	61	60	61	62	65	142	143	143	143	62
11	61	61	63	61	62	62	66	142	143	145	142	65
12	61	61	60	61	63	63	67	144	143	143	144	65
13	61	62	60	60	64	62	67	575	144	142	142	66
14	61	61	60	60	63	62	68	144	142	142	141	632
15	61	60	61	61	65	62	84	142	142	142	141	1960
16	61	60	60	61	64	62	97	144	142	141	142	1960
17	61	39	61	61	62	63	89	145	142	143	143	1830
18	61	25	60	61	62	62	92	145	142	142	142	1870
19	61	24	61	60	62	63	89	145	144	141	142	1970
20	61	24	61	60	62	63	86	143	144	142	142	2010
21	61	24	61	60	62	67	89	143	144	141	143	2010
22	61	24	61	60	62	67	80	144	144	142	143	1950
23	61	24	60	60	62	96	80	143	144	142	142	2030
24	61	24	60	61	62	96	129	143	144	142	141	2020
25	61	24	61	61	62	97	143	142	147	142	143	2010
26	61	24	61	60	61	97	143	142	144	140	142	1980
27	61	24	61	62	61	97	143	142	144	143	143	1990
28	61	23	60	63	60	97	143	147	142	142	143	2000
29	62	24	61	62	---	96	143	144	144	142	142	2110
30	61	24	66	63	---	97	142	143	143	144	142	2300
31	61	---	71	62	---	96	---	143	---	142	142	---
TOTAL	1891	1323	1804	2042	1741	2240	2862	4885	4297	4417	4404	34032
MEAN	61.0	44.1	58.2	65.9	62.2	72.3	95.4	158	143	142	142	1134
MAX	62	62	71	103	65	97	143	575	147	146	144	2300
MIN	60	23	24	60	60	60	64	142	141	140	141	60
AC-FT	3750	2620	3580	4050	3450	4440	5680	9690	8520	8760	8740	67500
a	112500	88860	27450	13590	12000	21480	0	0	0	0	0	415

CAL YR 1986 TOTAL 35794 MEAN 98.1 MAX 1490 MIN 23 AC-FT 71000 MEAN a 1187 AC-FT a 859600
WTR YR 1987 TOTAL 65938 MEAN 181 MAX 2300 MIN 23 AC-FT 130800 MEAN a 382 AC-FT a 276300

a Diversion, in acre-feet, to Belden powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Jan. 2 to Feb. 3. Records good except estimated discharges, which are fair. 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 Genessee Valleys. See schematic diagram of North Fork Feather River basin.

AVERAGE DISCHARGE.--66 years (water years 1907-9, 1912-17, 1931-87), 559 ft^3/s, 405,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,200 ft^3/s, Feb. 18, 1986, gage height, 20.80 ft, from rating curve extended above 20,400 ft^3/s; minimum daily, 0.90 ft^3/s, July 28, 29, 1977.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	1800	1,590	6.00	Mar. 13	0215	*1,850	*6.34

Minimum daily, 7.8 ft^3/s, Aug. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114	110	100	135	150	188	295	199	65	22	15	13
2	108	107	99	215	180	186	321	191	55	23	16	14
3	100	105	102	315	200	190	338	171	46	23	13	12
4	95	103	102	240	212	214	330	155	41	21	12	11
5	95	102	125	175	192	405	306	139	37	26	9.7	10
6	97	103	117	140	179	747	292	131	36	24	9.5	10
7	97	101	112	125	174	599	288	130	31	21	7.8	8.9
8	96	101	107	108	174	497	293	127	28	19	11	12
9	94	100	101	100	173	430	292	134	30	14	13	11
10	93	100	98	95	176	366	287	172	26	17	14	11
11	90	101	94	93	313	361	299	139	29	14	11	13
12	84	102	97	93	383	643	292	121	25	17	9.8	11
13	76	104	99	100	1340	1560	255	103	27	16	11	11
14	85	103	103	85	1040	1150	241	93	30	16	14	9.2
15	86	105	102	81	809	878	237	89	30	16	13	14
16	87	105	104	80	605	682	233	89	29	15	14	16
17	91	104	102	89	471	594	219	88	25	18	16	17
18	100	104	107	86	387	619	221	90	26	29	15	17
19	96	106	113	81	316	620	219	91	23	29	13	17
20	96	104	110	80	283	528	206	87	24	25	13	13
21	97	120	107	80	253	486	191	78	28	23	13	17
22	98	121	113	83	239	428	183	78	24	21	8.3	17
23	96	117	116	88	230	400	172	81	21	20	10	15
24	94	109	110	95	218	381	149	72	22	22	9.3	14
25	90	105	104	105	209	339	146	73	26	19	11	15
26	92	103	107	102	191	314	152	83	27	19	13	15
27	91	102	108	140	195	304	158	89	27	17	15	17
28	89	101	101	280	193	291	162	91	25	14	13	17
29	95	108	105	210	---	273	171	84	25	15	11	18
30	131	104	107	168	---	262	186	72	21	13	14	14
31	119	---	110	140	---	268	---	69	---	12	16	---
TOTAL	2972	3160	3282	4007	9485	15203	7134	3409	909	600	384.4	410.1
MEAN	95.9	105	106	129	339	490	238	110	30.3	19.4	12.4	13.7
MAX	131	121	125	315	1340	1560	338	199	65	29	16	18
MIN	76	100	94	80	150	186	146	69	21	12	7.8	8.9
AC-FT	5890	6270	6510	7950	18810	30160	14150	6760	1800	1190	762	813

CAL YR 1986 TOTAL 321669.0 MEAN 881 MAX 33000 MIN 28 AC-FT 638000
WTR YR 1987 TOTAL 50955.5 MEAN 140 MAX 1560 MIN 7.8 AC-FT 101100

SACRAMENTO RIVER BASIN

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 Keddie.

DRAINAGE AREA.--184 mi^2.

PERIOD OF RECORD.--October 1933 to current year. Prior to October 1953 published as "at Keddie." 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 excellent. 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.--54 years, 275 ft^3/s, 199,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft^3/s, Feb. 17, 1986, gage height, 14.88 ft, from rating curve extended above 5,200 ft^3/s on basis of slope-area measurement of peak flow; minimum, 3.8 ft^3/s, Aug. 12, 1934.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	0515	*3,070	*6.52	Mar. 12	2400	2,720	6.21

Minimum daily, 11 ft^3/s, Aug. 27, 28, 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	64	54	103	100	114	177	144	43	25	20	13
2	69	60	54	147	131	113	188	129	40	24	18	14
3	65	60	54	256	152	115	203	117	40	20	17	14
4	63	58	54	199	137	128	191	109	40	21	17	18
5	60	58	81	143	120	438	181	105	43	23	17	21
6	57	56	75	117	112	706	178	102	38	24	17	19
7	58	56	66	102	107	400	180	98	38	22	17	18
8	57	56	61	90	105	326	182	97	38	21	14	20
9	56	55	59	83	103	281	189	97	37	18	13	18
10	54	55	57	76	111	245	194	102	36	17	15	17
11	52	55	57	72	311	275	208	91	36	18	15	17
12	51	54	58	71	344	761	201	80	35	18	16	18
13	51	54	57	76	2150	1420	181	65	32	22	16	16
14	51	54	59	66	768	668	179	65	31	18	17	21
15	50	53	58	63	524	500	179	63	30	20	15	18
16	49	53	57	59	376	389	170	58	36	17	16	18
17	55	53	55	69	289	330	169	59	32	19	19	19
18	65	53	60	65	244	352	173	62	28	25	17	21
19	58	52	67	63	212	323	158	61	25	27	17	23
20	55	52	65	62	189	285	144	57	25	25	17	21
21	54	62	61	60	172	263	136	60	29	22	17	22
22	52	59	66	63	160	239	136	59	30	22	17	22
23	50	55	68	64	153	228	131	54	28	22	18	21
24	52	55	63	73	144	214	126	53	27	20	19	19
25	53	56	61	79	135	201	127	53	26	16	19	18
26	53	53	60	81	125	192	129	58	28	18	16	21
27	52	53	59	79	121	185	134	57	31	18	11	18
28	53	52	57	213	116	178	136	56	28	18	11	16
29	55	58	58	148	---	170	134	52	28	18	12	18
30	96	56	58	122	---	165	140	50	27	15	13	19
31	73	---	62	107	---	168	---	48	---	18	11	---
TOTAL	1794	1670	1881	3071	7711	10372	4954	2361	985	631	494	558
MEAN	57.9	55.7	60.7	99.1	275	335	165	76.2	32.8	20.4	15.9	18.6
MAX	96	64	81	256	2150	1420	208	144	43	27	20	23
MIN	49	52	54	59	100	113	126	48	25	15	11	13
AC-FT	3560	3310	3730	6090	15290	20570	9830	4680	1950	1250	980	1110

CAL YR 1986 TOTAL 150678 MEAN 413 MAX 14200 MIN 24 AC-FT 298900
WTR YR 1987 TOTAL 36482 MEAN 100 MAX 2150 MIN 11 AC-FT 72360

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 mi^2.

PERIOD OF RECORD.--October 1985 to February 1986 and October 1986 to current year. Unpublished records for water years 1982-85 available in files of 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.--Estimated daily discharges: Oct. 1 to Dec. 12. Low and medium flow regulated by Rock Creek Dam 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 79,400 ft^3/s, Feb. 19, 1986, gage height, unknown, on basis of slope-area measurement of peak discharge; minimum daily, 51 ft^3/s, Sept. 1, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,130 ft^3/s, Mar. 13, gage height, 13.16 ft; minimum daily, 51 ft^3/s, Sept. 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	206	67	63	61	61	70	64	58	55	55	53	51
2	206	64	63	60	63	70	63	58	56	55	53	52
3	206	66	63	65	63	70	63	58	56	55	53	53
4	206	65	64	64	63	69	64	56	56	55	53	53
5	206	64	65	62	63	74	63	54	56	55	53	53
6	206	64	64	62	62	152	63	54	55	55	53	53
7	204	64	63	64	62	73	63	55	55	55	53	53
8	204	64	62	64	61	72	63	56	55	55	53	53
9	204	64	62	63	61	71	64	55	55	55	53	53
10	204	64	62	62	55	70	64	55	55	56	53	53
11	204	64	61	60	63	67	64	55	55	55	53	53
12	206	64	62	62	66	1100	63	55	56	55	53	53
13	206	67	62	60	2680	3170	63	55	56	57	53	53
14	204	67	62	59	507	536	64	55	56	57	53	53
15	204	66	62	60	81	81	64	55	56	58	53	53
16	204	66	62	59	78	77	64	55	56	58	53	53
17	204	66	62	58	75	76	64	55	56	58	53	53
18	206	61	62	59	74	74	63	55	56	60	53	53
19	206	61	62	58	73	72	63	55	56	59	53	53
20	206	62	62	57	72	72	62	55	56	56	53	53
21	206	63	62	60	71	71	62	55	56	54	53	53
22	206	63	62	60	71	71	61	55	56	54	53	53
23	102	63	60	60	70	71	62	55	56	54	53	53
24	102	63	59	62	70	70	61	55	56	54	53	53
25	102	63	59	60	70	70	60	55	56	54	53	53
26	102	64	60	60	70	68	60	55	56	54	53	53
27	102	64	60	61	70	67	59	55	56	54	53	53
28	103	64	59	63	70	67	58	55	56	53	53	53
29	103	63	60	61	---	67	58	55	56	53	53	56
30	103	63	60	61	---	65	58	55	55	53	53	53
31	102	---	59	61	---	65	---	55	---	53	53	---
TOTAL	5435	1923	1910	1888	4945	6868	1867	1714	1672	1714	1643	1590
MEAN	175	64.1	61.6	60.9	177	222	62.2	55.3	55.7	55.3	53.0	53.0
MAX	206	67	65	65	2680	3170	64	58	56	60	53	56
MIN	102	61	59	57	55	65	58	54	55	53	53	51
AC-FT	10780	3810	3790	3740	9810	13620	3700	3400	3320	3400	3260	3150
a	122900	105000	48490	41910	64940	99900	51660	36930	19850	17970	15040	63450

WTR YR 1987 TOTAL 33169 MEAN 90.9 MAX 3170 MIN 51 AC-FT 65790 MEAN a 950 AC-FT a 688100

a Diversion, in acre-feet, to Rock Creek powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 September 1987. Unpublished records for water years 1981-84 available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder in 3-ft steel pipe. Elevation of gage is 5,080 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Oct. 1 to Dec. 10. Conduit diverts from channel below Three Lakes Reservoir, capacity 513 acre-ft, and from eleven additional diversions along the conduit. Water is used for power at Bucks Creek powerplant (station 11403800). See schematic diagram of North Fork Feather River basin.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 46 ft^3/s, Mar. 12; minimum daily, 0.26 ft^3/s, Sept. 23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	4.6	2.9	3.3	2.6	5.8	16	30	5.8	12	.69	.31
2	3.4	4.2	2.9	3.6	2.4	5.8	17	28	5.6	12	.66	.31
3	3.4	3.9	2.9	3.8	2.4	6.7	19	29	5.4	12	.57	.31
4	3.4	3.7	2.9	4.3	2.5	7.4	16	31	5.3	11	.58	.31
5	3.4	3.5	2.8	3.9	2.7	38	17	32	5.1	11	.56	.31
6	3.4	3.4	2.8	3.5	2.9	28	17	31	4.9	11	.54	.31
7	3.4	3.2	2.8	3.4	3.3	16	20	31	4.7	11	.55	.31
8	3.4	3.2	2.8	3.1	3.3	14	26	30	4.6	10	.50	.31
9	3.4	3.1	2.6	3.0	3.3	12	31	26	4.4	10	.50	.31
10	3.4	3.1	2.6	2.9	5.7	12	34	24	4.2	10	.53	.34
11	3.4	3.1	2.6	2.9	12	13	42	29	4.1	9.7	.50	.37
12	3.4	3.1	2.5	2.8	18	46	33	31	3.9	9.3	.50	.37
13	3.4	2.9	2.6	2.8	43	28	32	28	3.7	8.8	.49	.37
14	3.4	2.8	3.2	2.3	14	21	34	27	3.5	8.3	.48	.37
15	3.4	2.8	3.0	1.6	11	19	33	24	3.4	7.9	.52	.37
16	3.4	2.8	2.7	1.6	9.6	17	34	20	3.2	7.0	.50	.37
17	3.5	2.8	2.6	1.6	8.8	17	35	19	3.1	1.5	.49	.37
18	3.7	2.9	2.7	1.6	8.4	18	35	18	2.9	1.1	.48	.35
19	3.9	2.9	2.9	1.6	7.8	15	28	20	2.8	.98	.52	.30
20	3.9	2.9	2.9	1.5	7.8	14	27	19	2.8	.90	.50	.30
21	3.9	2.9	2.8	1.5	7.5	13	32	19	2.8	.93	.54	.31
22	3.9	2.9	2.9	1.6	7.2	12	33	16	2.8	.93	.50	.30
23	3.9	2.9	2.9	1.6	6.9	12	33	13	9.5	.93	.46	.26
24	3.9	2.9	2.8	1.6	6.5	12	34	12	15	.93	.43	.26
25	3.9	2.9	2.7	2.6	6.1	12	34	12	14	.86	.43	.30
26	3.7	2.9	2.7	2.7	5.9	12	37	12	14	.86	.43	.31
27	3.7	2.9	2.6	3.1	5.8	12	42	11	13	.79	.42	.31
28	3.7	2.9	2.5	3.6	5.7	12	40	11	13	.79	.37	.31
29	4.1	2.9	2.5	2.7	---	12	38	7.4	13	.72	.37	.31
30	5.8	2.9	2.4	2.5	---	12	36	6.2	13	.72	.37	.36
31	5.1	---	2.7	2.3	---	14	---	6.0	---	.66	.35	---
TOTAL	115.0	93.9	85.2	80.9	223.1	488.7	905	652.6	193.5	174.60	15.33	9.70
MEAN	3.71	3.13	2.75	2.61	7.97	15.8	30.2	21.1	6.45	5.63	.49	.32
MAX	5.8	4.6	3.2	4.3	43	46	42	32	15	12	.69	.37
MIN	3.4	2.8	2.4	1.5	2.4	5.8	16	6.0	2.8	.66	.35	.26
AC-FT	228	186	169	160	443	969	1800	1290	384	346	30	19

WTR YR 1987 TOTAL 3037.53 MEAN 8.32 MAX 46 MIN .26 AC-FT 6020

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 mi^2.
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 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 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, 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 (at 2400) FOR CURRENT YEAR.--Maximum contents, 84,107 acre-ft, June 23 to July 12, elevation, 5,144.9 ft; minimum, 52,545 acre-ft, Dec. 24, elevation, 5,125.0 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79381	75237	61839	53276	55483	60304	70840	79213	83427	84107	79213	67167
2	79381	74745	61377	53276	55632	60457	71001	79548	83427	84107	78880	66686
3	79381	74416	60917	53422	55781	60610	71163	79883	83767	84107	78547	66210
4	79548	73926	60610	53714	55781	60764	71487	80051	83767	84107	78547	65738
5	79213	73437	60304	53861	55930	61994	71649	80386	83767	84107	77548	65424
6	78880	72947	59845	53861	55930	62304	71973	80554	83767	84107	76876	64794
7	78361	72459	59389	53861	56079	62922	72135	80721	83767	84107	76390	64481
8	77881	71973	58934	53861	56079	63233	72459	80889	83767	84107	76390	64325
9	77548	71487	58478	54007	56079	63389	72784	81227	83767	84107	76390	64013
10	77217	71163	58177	54007	56228	63545	73110	81395	83767	84107	76225	63545
11	77217	70679	57726	54007	56675	64013	73437	81564	83767	84107	75730	63077
12	77052	70357	57274	54155	57274	65266	73600	81733	83937	84107	75237	62613
13	76556	69714	56824	54155	58630	66527	74089	81902	83937	83937	74580	62149
14	76225	69232	56377	54155	59086	67003	74252	81902	83937	83767	74252	61530
15	75894	68753	56079	54155	59238	67320	74580	82071	83937	83427	74252	61070
16	75566	68434	55632	54155	59086	67637	74909	82239	83937	83257	74252	60764
17	75730	67955	55188	54452	59238	67795	75237	82408	83937	82917	73926	60150
18	75730	67637	54893	54450	59238	68114	75566	82239	83937	82917	73600	59693
19	75894	67161	54450	54450	59389	68114	75894	82408	83937	82917	72947	59238
20	75894	66686	54007	54450	59541	68434	76059	82577	83937	82917	72459	58782
21	75894	66210	53568	54450	59693	68753	76390	82577	83937	82408	71973	58328
22	75894	65895	53276	54450	59845	68913	76721	82747	83937	82071	71487	57876
23	75894	65424	52837	54450	59845	69232	76886	82747	84107	81733	71325	57425
24	75894	64794	52545	54745	59845	69392	77217	82747	84107	81227	71001	56973
25	75894	64481	52691	54745	59997	69553	77548	82917	84107	81227	70679	56377
26	76059	64013	52691	54893	60150	69714	77715	82917	84107	81227	70197	55781
27	76059	63701	52691	54893	60150	69875	78048	82917	84107	81227	69714	55632
28	76059	63077	52837	55188	60304	70036	78381	83087	84107	80721	69073	55040
29	76390	62304	52837	55335	---	70797	78714	83257	84107	80218	68594	54597
30	76225	61994	52837	55335	---	70357	78880	83257	84107	79883	68114	54155
31	75730	---	52984	55335	---	70518	---	83257	---	79548	67795	---
MAX	79548	75237	61839	55335	60304	70797	78880	83257	84107	84107	79213	67167
MIN	75566	61994	52545	53276	55483	60304	70840	79213	83427	79548	67795	54155
a	5139.9	5131.3	5125.3	5126.9	5130.2	5136.7	5141.8	5144.4	5144.9	5142.2	5135.0	5126.1
b	-3818	-13736	-9010	+2351	+4969	+10214	+8382	+4377	+850	-4559	-11753	-13640

CAL YR 1986 MAX 105420 MIN 42751 b +10366
WTR YR 1987 MAX 84107 MIN 52545 b -25393
a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 mi^2.
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 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 Milk Ranch Conduit and release from Bucks Lake (station 11403500). Most of the water is diverted through Buck Creek tunnel (station 11404100) and discharges into Grizzly Creek for power development downstream. 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 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, 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 (at 2400) FOR CURRENT YEAR.--Maximum contents, 5,721 acre-ft, Feb. 16, elevation, 5,021.1 ft; minimum, 648 acre-ft, Oct. 28, elevation, 4,970.4 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	5,040	8,524

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3218	2051	4488	4735	4986	5012	4986	5440	5427	5348	4464	4392
2	3143	2537	4525	4735	4986	5037	5025	5493	5440	5375	4464	4260
3	2656	2788	4537	4772	4986	5050	5076	5547	5440	5388	4452	4177
4	2162	2891	4488	4772	4986	5076	5114	5613	5454	5414	4476	4177
5	2115	2995	4464	4785	4986	5205	5153	5587	5454	5427	4501	4319
6	2088	3080	4428	4785	4999	5309	5192	5520	5454	5309	4416	4501
7	2125	3261	4392	4797	4999	5348	5244	5427	5467	5063	4537	4440
8	2088	3337	4355	4797	4999	5388	5296	5361	5467	4835	4525	4212
9	2097	3424	4307	4797	4999	5388	5361	5414	5480	4574	4525	3920
10	1862	3502	4272	4797	4999	5296	5440	5467	5480	4476	4404	3805
11	1369	3579	4236	4797	5101	5166	5533	5454	5493	4501	4404	3714
12	1207	3647	4212	4797	5166	5231	5600	5348	5493	4513	4428	3748
13	1253	3703	4248	4797	5533	5335	5560	5244	5507	4488	4440	3782
14	1268	3771	4272	4860	5493	5414	5480	5153	5507	4501	4440	3748
15	1268	3828	4296	4860	5192	5467	5388	5076	5507	4488	4440	3613
16	804	3883	4307	4860	5721	5427	5309	5114	5507	4488	4440	3568
17	898	3931	4331	4860	5192	5322	5244	5153	5507	4549	4367	3602
18	765	3978	4355	4860	5205	5218	5322	5089	5507	4562	4343	3624
19	734	4024	4379	4860	4986	5101	5375	5140	5507	4562	4307	3647
20	690	4071	4392	4860	4898	4986	5348	5179	5507	4464	4272	3669
21	727	4130	4404	4860	4910	4860	5257	5205	5507	4440	4236	3703
22	727	4165	4428	4860	4923	4747	5166	5244	5520	4440	4488	3714
23	727	4200	4537	4872	4948	4697	5076	5257	5533	4416	4392	3737
24	727	4224	4685	4898	4961	4735	5012	5283	5560	4537	4319	3748
25	727	4200	4685	4898	4961	4760	5089	5309	5388	4537	4319	3771
26	727	4212	4685	4910	4961	4797	5166	5322	5244	4537	4248	3782
27	727	4272	4685	4948	4961	4822	5244	5348	5270	4404	4212	3794
28	648	4331	4685	4974	4986	4878	5322	5361	5283	4440	4165	3805
29	772	4392	4697	4974	---	4885	5401	5388	5309	4501	4307	3771
30	1096	4440	4697	4974	---	4910	5480	5401	5322	4440	4428	3737
31	1580	---	4710	4986	---	4948	---	5414	---	4416	4440	---
MAX	3218	4440	4710	4986	5721	5467	5600	5613	5560	5427	4537	4501
MIN	648	2051	4212	4735	4898	4697	4986	5076	5244	4404	4165	3568
a	4983.3	5011.1	5013.3	5015.5	5015.5	5015.2	5019.3	5018.8	5018.1	5010.9	5011.1	5005.1
b	-1426	+2860	+270	+276	0	-38	+532	-66	-92	-906	+24	-703

CAL YR 1986 MAX 6091 MIN 648 b +87
WTR YR 1987 MAX 5721 MIN 648 b +731
a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 472 ft^3/s, Mar. 9, 10, 1986; minimum daily, 0.55 ft^3/s, many days December 1986 to June 1987.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	.82	247	.55	.55	.55	.55	53	.55	.64	142	273
2	36	.82	255	.55	.55	.55	.55	.62	.55	.64	109	271
3	264	111	276	.55	.55	.55	.55	.55	.55	.64	201	269
4	255	192	296	.55	.55	.55	.55	.55	.55	.64	216	217
5	247	196	299	.55	.55	.61	.55	47	.55	.64	189	150
6	228	200	302	.55	.55	.63	.55	67	.55	72	206	131
7	258	201	307	.55	.55	.55	.55	67	.55	129	173	114
8	288	201	306	.55	.55	.55	.55	50	.55	125	.64	233
9	266	203	307	.55	.55	45	.55	.64	.55	123	.64	286
10	284	204	307	.55	.55	68	.55	.58	.55	59	143	281
11	256	204	306	.55	.55	68	.55	41	.55	.64	215	262
12	188	205	296	.55	.56	39	.55	67	.55	.64	214	198
13	209	207	273	.55	.63	.64	58	66	.55	78	214	199
14	208	208	276	.55	50	.64	74	66	.55	124	176	242
15	226	209	277	.55	131	.64	74	45	.55	124	.64	297
16	229	214	278	.55	143	40	74	.64	.55	124	.64	236
17	96	218	277	.55	127	72	56	.56	.55	79	136	198
18	41	222	278	.55	124	72	.64	44	.55	.64	236	199
19	19	229	279	.55	122	73	.59	.64	.55	.64	234	200
20	22	235	279	.55	42	74	49	.64	.55	101	233	201
21	13	238	280	.55	.59	73	72	.64	.55	176	234	201
22	8.9	240	280	.55	.55	73	72	.57	.55	184	87	202
23	7.1	242	208	.55	.55	30	72	.55	.55	192	83	202
24	8.4	259	45	.55	.55	.55	53	.55	.55	122	208	203
25	7.7	276	.61	.55	.55	.55	.56	.55	98	.64	228	204
26	5.6	264	.55	.55	.55	.55	.55	.55	85	.64	256	204
27	4.4	238	.55	.55	.55	.55	.55	.55	.64	94	253	205
28	3.8	240	.55	.55	.55	.55	.55	.55	.64	198	233	211
29	2.6	243	.55	.55	---	.55	.55	.55	.64	192	159	216
30	.82	246	.55	.55	---	.55	.55	.55	.64	189	160	217
31	.82	---	.55	.55	---	.55	---	.55	---	175	239	---
TOTAL	3684.94	6146.64	6537.91	17.05	750.68	737.86	665.14	624.58	198.76	2667.04	5179.56	6522
MEAN	119	205	211	.55	26.8	23.8	22.2	20.1	6.63	86.0	167	217
MAX	288	276	307	.55	143	74	74	67	98	198	256	297
MIN	.82	.82	.55	.55	.55	.55	.55	.55	.55	.64	.64	114
AC-FT	7310	12190	12970	34	1490	1460	1320	1240	394	5290	10270	12940

CAL YR 1986 TOTAL 67445.46 MEAN 185 MAX 472 MIN .55 AC-FT 133800
WTR YR 1987 TOTAL 33732.16 MEAN 92.4 MAX 307 MIN .55 AC-FT 66910

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--October 1986 to September 1987. Unpublished records for water years 1981-86 available in files of 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 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 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 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 CURRENT YEAR.--Maximum contents, 1,169 acre-ft, Mar. 5, elevation, 4,317.5 ft; minimum, 736 acre-ft, Oct. 18, elevation, 4,305.0 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	818	1020	967	946	1075	824	956	984	988	942	946	1024
2	861	1046	925	991	871	881	928	956	925	956	935	1020
3	844	995	1020	977	911	824	898	960	908	974	974	1013
4	871	974	949	1013	942	854	974	874	932	984	1002	963
5	877	988	884	960	977	1169	981	844	963	995	956	984
6	874	911	939	988	1013	999	981	864	932	911	942	1046
7	874	1013	1049	1017	1042	818	953	867	960	960	995	967
8	939	1017	1017	974	1042	821	932	904	991	932	963	977
9	847	908	995	999	1075	815	851	988	999	898	967	911
10	925	918	974	1024	1002	844	894	915	967	932	953	1031
11	991	988	960	1046	946	981	881	898	991	946	1020	918
12	894	974	981	977	1114	1112	894	867	911	960	932	898
13	867	939	956	999	1112	1013	932	874	932	960	956	877
14	891	984	921	974	844	799	949	911	953	974	974	942
15	904	949	908	991	837	864	956	1031	974	891	981	1020
16	967	1002	967	1013	847	808	932	925	999	884	988	932
17	789	1006	956	1035	891	891	918	967	974	854	925	925
18	736	877	939	1053	918	891	981	918	995	871	991	900
19	792	1017	1009	939	991	904	995	904	1013	884	974	904
20	841	960	932	956	942	904	932	960	1031	953	932	939
21	877	974	891	977	864	887	925	1009	1046	981	999	925
22	911	1009	898	999	915	974	935	887	981	891	949	932
23	939	945	1013	1024	904	995	925	925	1002	967	942	918
24	967	953	942	1046	977	925	925	967	984	974	946	956
25	993	915	918	1075	1049	841	981	1002	939	967	1017	904
26	1017	904	939	1013	963	967	1017	981	1017	977	970	925
27	1031	925	960	970	928	874	960	932	1027	904	956	898
28	981	974	977	1009	908	988	935	881	1046	949	988	932
29	1071	960	999	1009	---	1017	949	918	1053	995	935	939
30	946	960	1017	1009	---	967	1013	953	1031	945	942	970
31	988	---	1042	1042	---	925	---	984	---	974	1006	---
MAX	1071	1046	1049	1075	1114	1169	1017	1031	1053	995	1020	1046
MIN	736	877	884	939	837	799	851	844	908	854	925	877
a	4312.6	4311.8	4314.1	4314.1	4310.3	4310.8	4313.3	4312.5	4313.8	4312.2	4313.1	4312.1
b	+221	-28	+82	0	-134	+17	+88	-29	+47	-57	+32	-36

CAL YR 1986 b +103
WTR YR 1987 MAX 1169 MIN 736 b +203
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 mi^2.

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1976-85 available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 4,320 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Jan. 12-14, Feb. 18-20, Sept. 23-30. 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,870 ft^3/s, Feb. 17, 1986, gage height, 9.54 ft, from rating curve extended above 260 ft^3/s on basis of computation of spill over dam of peak flow; minimum daily, 2.0 ft^3/s, many days during April and May 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 964 ft^3/s, Feb. 13, gage height, 5.55 ft; minimum daily, 2.0 ft^3/s, many days during April and May.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	3.3	2.1	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.1
2	4.5	2.1	2.1	2.2	2.3	2.2	2.2	2.0	2.1	2.1	2.2	2.2
3	4.5	2.1	2.1	2.4	2.2	2.2	2.2	2.0	2.1	2.1	2.2	2.3
4	4.5	2.1	2.2	2.3	2.2	2.2	2.2	2.0	2.1	2.1	2.2	2.2
5	4.5	2.1	2.2	2.2	2.2	102	2.2	2.0	2.1	2.1	2.2	2.1
6	4.5	2.1	2.1	2.2	2.2	60	2.2	2.0	2.1	2.2	2.1	2.2
7	4.5	2.1	2.1	2.2	2.2	2.7	2.2	2.0	2.1	2.1	2.2	2.2
8	4.5	2.1	2.1	2.1	2.2	2.5	2.1	2.0	2.1	2.2	2.1	2.2
9	4.5	2.1	2.1	2.1	2.3	2.4	2.1	2.0	2.1	2.2	2.1	2.1
10	4.6	2.1	2.1	2.1	2.3	2.5	2.1	2.0	2.1	2.2	2.1	2.1
11	4.6	2.1	2.1	2.1	2.5	2.5	2.1	2.0	2.1	2.1	2.1	2.1
12	4.6	2.1	2.1	2.1	2.9	224	2.1	2.0	2.2	2.1	2.1	2.1
13	4.5	2.1	2.1	2.1	413	60	2.1	2.0	2.1	2.1	2.1	2.1
14	4.5	2.1	2.1	2.1	3.1	2.4	2.1	2.0	2.1	2.2	2.1	2.1
15	4.5	2.1	2.1	2.1	2.6	2.3	2.1	2.0	2.1	2.1	2.1	2.1
16	4.5	2.1	2.1	2.1	2.3	2.3	2.1	2.0	2.1	2.1	2.1	2.1
17	4.5	2.1	2.1	2.1	2.3	2.4	2.1	2.0	2.1	2.2	2.1	2.1
18	4.4	2.1	2.2	2.1	2.3	2.3	2.1	2.0	2.1	2.1	2.1	2.1
19	4.4	2.1	2.1	2.2	2.3	2.3	2.1	2.0	2.1	2.1	2.1	2.1
20	4.4	2.1	2.1	2.1	2.3	2.4	2.1	2.0	2.2	2.1	2.1	2.1
21	4.5	2.1	2.1	2.2	2.3	2.3	2.1	2.1	2.2	2.2	2.1	2.1
22	4.5	2.1	2.1	2.2	2.2	2.3	2.1	2.0	2.2	2.1	2.1	2.1
23	4.5	2.1	2.1	2.2	2.2	2.4	2.1	2.0	2.1	2.1	2.1	2.1
24	4.5	2.1	2.1	2.2	2.2	2.3	2.0	2.0	2.2	2.2	2.1	2.1
25	4.6	2.1	2.1	2.2	2.2	2.3	2.0	2.1	2.1	2.1	2.1	2.1
26	4.6	2.1	2.1	2.2	2.3	2.3	2.0	2.1	2.2	2.1	2.1	2.1
27	4.6	2.1	2.1	2.3	2.2	2.3	2.0	2.1	2.2	2.1	2.1	2.1
28	4.6	2.1	2.1	2.2	2.2	2.3	2.0	2.1	2.2	2.2	2.1	2.1
29	4.6	2.1	2.1	2.2	---	2.3	2.0	2.1	2.2	2.2	2.1	2.1
30	4.6	2.1	2.1	2.2	---	2.3	2.1	2.1	2.2	2.2	2.1	2.1
31	4.6	---	2.2	2.2	---	2.2	---	2.1	---	2.2	2.1	---
TOTAL	140.2	64.2	65.5	67.5	475.7	509.1	63.1	62.9	64.0	66.3	65.7	63.7
MEAN	4.52	2.14	2.11	2.18	17.0	16.4	2.10	2.03	2.13	2.14	2.12	2.12
MAX	4.6	3.3	2.2	2.4	413	224	2.2	2.1	2.2	2.2	2.2	2.3
MIN	4.4	2.1	2.1	2.1	2.2	2.2	2.0	2.0	2.1	2.1	2.1	2.1
AC-FT	278	127	130	134	944	1010	125	125	127	132	130	126
a	7210	11280	10440	1200	5070	8480	6310	3630	1290	5870	10470	12690

CAL YR 1986 TOTAL 18441.7 MEAN 50.5 MAX 3250 MIN 2.1 AC-FT 36580 MEAN a 200 AC-FT a 144600
WTR YR 1987 TOTAL 1707.9 MEAN 4.68 MAX 413 MIN 2.0 AC-FT 3390 MEAN a 116 AC-FT a 83940

a Diversion, in acre-feet, to Bucks Creek powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--October 1985 to February 1986, October 1986 to current year. Unpublished records for water years 1982-85 available in files of 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.--Estimated daily discharges: Oct. 1 to Dec. 22. 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 86,000 ft^3/s, Feb. 19, 1986, gage height, unknown, on 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 ft^3/s, Oct. 1, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,170 ft^3/s, Mar. 13, gage height, 11.19 ft; minimum daily, 50 ft^3/s Oct. 24-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164	62	59	88	78	87	129	94	66	66	58	62
2	164	60	59	83	103	85	128	88	66	65	58	67
3	164	59	59	180	104	90	124	85	66	64	58	61
4	162	59	67	107	88	88	122	83	66	60	58	60
5	161	59	77	80	81	453	120	83	66	60	59	59
6	161	59	67	80	80	1050	117	87	66	60	58	59
7	161	59	61	78	80	190	116	87	65	59	60	59
8	159	59	57	70	81	168	114	87	65	58	61	59
9	157	59	57	69	80	154	111	87	66	58	61	59
10	157	59	58	68	87	152	111	87	66	58	61	59
11	157	59	57	66	154	187	111	88	65	58	62	59
12	155	59	58	66	238	3100	109	81	66	58	61	59
13	155	58	58	67	5510	4880	106	72	66	58	61	58
14	155	58	59	65	1350	1310	105	72	66	58	61	58
15	155	58	59	62	305	380	104	72	67	60	60	59
16	155	57	58	59	188	243	104	71	67	64	60	58
17	157	57	58	60	161	217	105	71	66	61	60	58
18	157	59	59	61	146	208	106	69	66	58	60	59
19	157	59	59	62	135	185	102	68	67	56	60	59
20	157	62	59	61	128	171	100	68	68	57	60	59
21	155	65	62	60	119	168	97	68	67	59	60	59
22	154	63	64	59	115	157	96	67	66	58	60	59
23	94	59	63	64	106	161	95	66	65	60	60	59
24	50	58	60	69	99	149	92	65	66	59	60	59
25	50	58	59	73	96	143	91	65	66	59	59	59
26	50	57	59	71	92	139	90	65	67	58	59	59
27	50	57	59	75	92	134	89	65	67	58	55	59
28	54	57	59	120	89	128	89	66	67	58	56	58
29	59	58	60	85	---	125	87	67	67	58	58	58
30	61	59	60	87	---	122	95	66	67	58	56	58
31	63	---	60	81	---	123	---	66	---	58	51	---
TOTAL	4010	1771	1870	2376	9985	14947	3165	2326	1987	1839	1831	1777
MEAN	129	59.0	60.3	76.6	357	482	106	75.0	66.2	59.3	59.1	59.2
MAX	164	65	77	180	5510	4880	129	94	68	66	62	67
MIN	50	57	57	59	78	85	87	65	65	56	51	58
AC-FT	7950	3510	3710	4710	19810	29650	6280	4610	3940	3650	3630	3520
a	139200	124600	66430	53680	85380	135500	80190	52360	25440	26140	26540	81610

WTR YR 1987 TOTAL 47884 MEAN 131 MAX 5510 MIN 50 AC-FT 94980 MEAN a 1239 AC-FT a 897100

a Diversion, in acre-feet, to Cresta powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2.

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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (adjusted for diversion to Poe powerplant).--77 years, 3,006 ft^3/s, 2,178,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,900 ft^3/s, Feb. 19, 1986, gage height, 39.86 ft, from rating curve extended above 32,000 ft^3/s on basis of slope area measurement of peak discharge; minimum daily, 5.4 ft^3/s, Sept. 18, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,080 ft^3/s, Mar. 12, gage height, 14.56 ft; minimum daily, 48 ft^3/s, Aug. 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	59	61	95	76	73	105	60	56	55	53	82
2	53	58	65	84	96	72	79	56	55	59	56	60
3	57	64	64	146	96	73	87	55	56	59	58	69
4	56	118	65	92	87	71	84	55	58	58	56	74
5	54	67	75	77	85	209	84	55	55	57	55	73
6	56	63	63	78	53	1200	82	54	54	56	58	72
7	56	62	62	76	75	137	81	56	57	58	55	73
8	85	57	66	75	57	130	80	55	55	58	54	72
9	93	62	68	74	68	123	80	54	55	59	55	72
10	92	65	68	73	81	120	80	55	55	59	57	72
11	90	60	67	72	92	118	80	55	56	58	57	73
12	88	63	69	72	120	2900	79	55	55	57	56	72
13	94	63	71	72	5940	5280	78	54	55	57	56	69
14	90	63	70	71	1540	1430	79	55	57	59	56	69
15	89	61	68	72	310	337	79	56	56	57	56	67
16	89	61	69	74	130	148	78	55	55	56	55	66
17	94	62	70	72	110	136	77	57	55	56	55	64
18	93	64	73	71	98	133	77	55	54	55	55	67
19	94	61	74	73	92	123	77	57	54	55	55	67
20	90	62	73	72	89	118	76	54	55	55	55	66
21	92	61	72	72	85	119	74	54	55	55	55	64
22	91	62	75	71	85	116	74	56	55	55	55	55
23	76	64	73	72	82	119	74	55	56	54	55	56
24	61	62	70	80	68	114	73	55	53	57	54	56
25	64	61	68	78	77	112	73	55	54	56	54	58
26	63	64	72	80	76	111	73	56	56	55	53	59
27	64	64	71	80	75	107	73	56	58	57	52	59
28	62	62	71	91	73	108	73	55	56	55	53	58
29	67	63	69	82	---	106	66	53	55	56	54	58
30	69	60	68	82	---	105	61	55	54	57	55	60
31	64	---	71	78	---	116	---	55	---	56	48	---
TOTAL	2339	1918	2141	2457	9916	14164	2336	1713	1660	1756	1701	1982
MEAN	75.5	63.9	69.1	79.3	354	457	77.9	55.3	55.3	56.6	54.9	66.1
MAX	94	118	75	146	5940	5280	105	60	58	59	58	82
MIN	53	57	61	71	53	71	61	53	53	54	48	55
AC-FT	4640	3800	4250	4870	19670	28090	4630	3400	3290	3480	3370	3930
a	143900	125200	65750	55320	92180	146200	85610	55560	27050	26890	27830	83630

CAL YR 1986 TOTAl 605298 MEAN 1658 MAX 81000 MIN 53 AC-FT 1201000 MEAN a 2453 AC-FT a 1776000
WTR YR 1987 TOTAl 44083 MEAN 121 MAX 5940 MIN 48 AC-FT 87440 MEAN a 1292 AC-FT a 935100
a Diversion, in acre-feet, to Poe powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 3,210 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. No records computed above 50 ft^3/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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	17	17	19	17	16	---	---	11	11	11	19
2	17	17	17	19	17	16	---	---	11	11	11	19
3	17	17	17	20	17	17	---	37	11	11	11	18
4	17	16	17	19	17	17	---	37	11	11	11	18
5	17	16	18	18	17	---	48	41	11	11	11	19
6	17	16	18	18	17	---	47	42	11	11	15	19
7	17	17	17	17	17	---	---	37	11	11	18	19
8	16	17	17	17	17	---	---	34	11	11	18	26
9	17	17	17	17	17	---	---	---	11	11	18	32
10	17	17	17	17	18	---	---	41	11	11	18	33
11	17	17	17	17	---	---	---	26	11	11	18	34
12	17	17	17	17	---	---	---	16	11	11	18	35
13	17	17	18	17	---	---	---	18	11	11	18	35
14	17	17	18	17	---	---	---	15	11	11	18	35
15	17	17	17	17	---	---	---	12	11	11	18	35
16	17	17	17	21	---	---	---	11	11	11	18	35
17	17	17	17	17	39	---	---	11	11	11	18	33
18	18	17	18	17	24	---	---	11	11	11	18	32
19	17	17	18	18	18	---	38	12	11	11	18	32
20	16	17	17	18	17	---	32	12	11	11	18	32
21	17	18	17	18	17	---	36	11	11	11	19	32
22	17	18	18	18	16	---	37	11	11	11	19	32
23	17	18	17	18	16	---	34	11	11	14	19	32
24	17	18	17	19	16	---	30	11	11	13	19	32
25	17	17	17	19	16	---	28	12	11	10	19	23
26	17	17	17	19	17	---	34	12	11	11	19	17
27	17	17	17	18	16	---	---	12	11	11	19	17
28	17	17	17	18	16	---	---	12	11	11	19	17
29	---	18	17	18	---	48	33	11	11	11	19	19
30	---	17	17	17	---	---	---	11	11	11	19	20
31	17	---	18	17	---	---	---	11	---	11	19	---
TOTAL	---	512	535	556	---	---	---	---	330	345	531	801
MEAN	---	17.1	17.3	17.9	---	---	---	---	11.0	11.1	17.1	26.7
MAX	---	18	18	21	---	---	---	---	11	14	19	35
MIN	---	16	17	17	---	---	---	---	11	10	11	17
AC-FT	---	1020	1060	1100	---	---	---	---	655	684	1050	1590

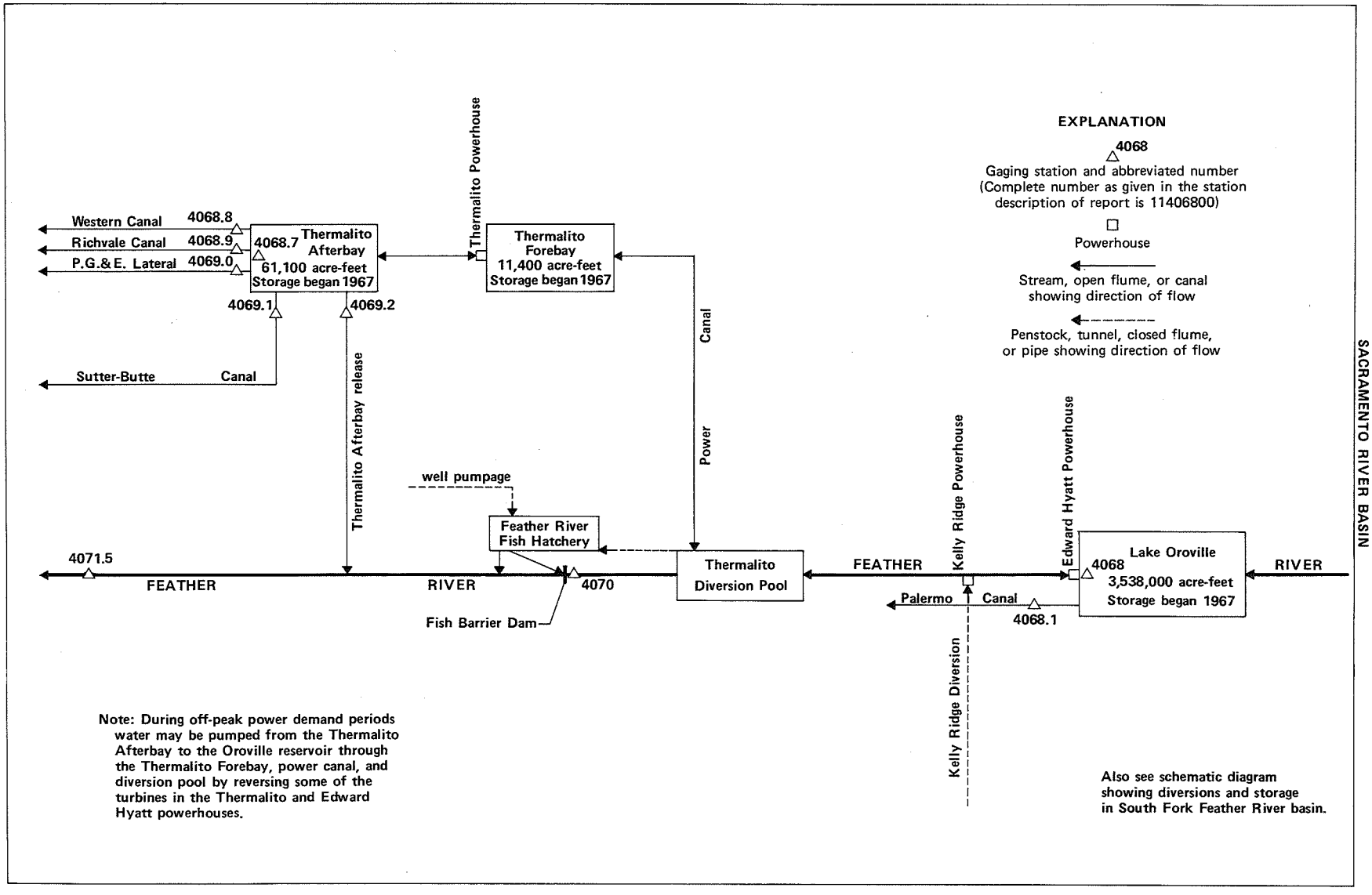

FIGURE 28.--Schematic diagram showing diversions and storage for Feather River at Lake Oroville.

SACRAMENTO RIVER BASIN

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 mi^2.
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 ft^3/s during a 2-hour period Feb. 17, 1986.
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. 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, 3,139,397 acre-ft, Apr. 13, gage height, 873.72 ft; minimum, 1,977,804 acre-ft, Sept. 25, gage height, 780.34 ft.

Capacity table (gage height, in feet NGVD, and contents, in acre-feet)
(Abstracted from table dated Sept. 21, 1967, California Department of Water Resources)

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		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2651738	2595427	2605730	2569730	2587940	2753731	3084456	3068579	2917927	2648259	2288292	2043694
2	2645297	2601783	2603565	2571244	2586546	2748574	3089331	3069864	2906644	2638095	2287362	2032872
3	2635398	2596951	2598985	2580342	2588702	2751086	3094642	3074437	2896213	2628856	2277961	2025289
4	2635784	2594665	2595554	2588954	2590223	2750425	3101398	3064583	2887451	2623605	2265584	2019855
5	2640280	2594284	2591111	2583253	2588828	2761014	3108308	3055464	2879798	2622454	2255670	2018365
6	2635527	2593776	2591999	2577307	2589208	2785344	3112777	3044801	2881300	2607259	2245671	2022304
7	2631036	2593141	2594284	2569730	2591491	2801111	3117250	3033882	2882666	2590349	2237993	2026997
8	2625269	2592760	2591872	2567587	2594792	2817077	3120138	3025816	2873251	2574022	2238336	2018046
9	2614784	2597206	2590603	2565822	2595554	2826766	3120861	3030059	2858556	2559653	2241199	2009442
10	2610191	2590603	2590476	2568469	2596189	2831755	3124330	3034165	2844457	2543586	2230903	2002027
11	2611211	2587687	2586672	2572885	2599621	2836209	3131132	3022707	2832834	2542960	2217909	1996110
12	2613891	2582113	2582620	2570361	2606622	2866985	3138814	3009590	2818958	2543461	2205195	1996426
13	2611467	2580469	2580848	2570613	2656383	2908431	3139397	2998339	2819362	2526468	2192757	2000335
14	2609171	2576169	2583759	2571875	2681768	2935602	3139104	2990340	2819900	2511168	2181044	1994843
15	2605221	2577939	2580342	2569352	2701689	2957245	3133739	2984036	2804058	2494327	2179021	1993261
16	2599240	2584139	2577560	2564688	2714504	2970201	3130407	2986977	2790949	2476336	2179021	1989362
17	2595935	2585026	2576801	2566326	2722764	2981517	3130407	2989079	2778548	2457458	2166240	1986942
18	2598858	2585279	2574906	2573390	2726309	2994688	3132435	2981937	2764329	2456847	2151730	1982737
19	2603693	2586166	2573516	2570109	2727886	3007197	3138814	2977322	2750160	2457580	2137843	1985154
20	2599367	2588954	2574906	2570235	2731305	3009308	3133739	2972573	2749500	2441966	2123798	1989678
21	2596443	2589335	2576928	2567208	2736306	3019742	3128091	2967969	2750821	2423153	2111247	1985469
22	2595681	2596952	2577054	2560785	2741974	3029918	3126933	2960028	2736965	2407583	2110698	1984313
23	2593776	2605093	2577304	2562673	2744877	3038416	3120572	2962255	2727360	2390523	2113116	1983998
24	2595172	2602165	2577307	2567083	2743953	3046505	3111046	2964763	2715945	2370925	2101376	1980427
25	2598731	2599748	2578824	2575917	2739864	3046505	3108884	2965878	2704170	2366162	2090119	1977804
26	2604457	2600384	2578571	2576296	2740523	3049063	3113065	2956688	2691911	2366638	2082928	1981896
27	2602038	2603183	2579836	2572759	2741974	3055179	3106723	2945854	2685016	2348477	2075212	1987784
28	2598604	2604202	2581734	2576801	2743689	3061304	3098665	2938370	2682937	2331709	2065245	1982212
29	2594157	2602038	2573769	2580974	---	3068008	3087179	2925927	2674629	2313618	2062758	1979272
30	2593776	2607386	2564310	2581354	---	3072007	3077869	2926065	2661938	2300406	2061894	1978538
31	2593776	---	2564058	2584139	---	3078012	---	2928412	---	2290153	2052510	---
MAX	2651738	2607386	2605730	2588954	2744877	3078012	3139397	3074437	2917927	2648259	2288292	2043694
MIN	2593776	2576169	2564058	2560785	2586546	2748574	3077869	2925927	2661938	2290153	2052510	1977804
a	833.56	834.63	831.21	832.80	845.14	869.46	869.45	858.82	838.88	808.59	787.37	780.41
b	-67128	+13610	-43328	+20081	+159550	+334323	-143	-149457	-266474	-371785	-237643	-73972
c	4588	3069	858	961	1558	2620	5437	7101	8716	8416	8127	5737

CAL YR 1986 MAX 3326353 MIN 2096125 b +466184
WTR YR 1987 MAX 3139397 MIN 1977804 b -682366

a Gage height, in feet, at end of month.
b Change in contents, in acre-feet.
c Evaporation, in acre-feet; not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

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 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 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.--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.

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, 11.2 ft^3/s, 8,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 28 ft^3/s, several days during July to September 1967; no flow at times in some years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	9.5	4.2	4.2	4.2	4.5	4.3	17	19	20	20	20
2	6.3	6.7	4.2	4.2	4.2	4.5	4.4	17	21	20	20	20
3	6.3	5.1	4.2	4.2	4.2	4.5	4.4	18	20	20	20	20
4	6.4	5.6	4.2	4.2	4.2	4.5	4.4	18	20	20	20	20
5	6.4	5.7	4.2	4.2	4.2	4.6	4.4	18	20	20	20	20
6	8.9	5.4	4.2	4.2	4.2	4.6	4.4	16	20	20	20	20
7	14	5.4	4.2	4.2	4.2	4.6	4.4	16	20	20	20	20
8	15	5.5	4.2	4.2	4.2	4.5	5.9	16	20	20	20	20
9	17	5.5	4.2	4.2	4.2	4.5	7.3	16	20	20	20	20
10	19	5.5	4.2	4.2	4.2	4.5	7.4	16	20	20	20	20
11	19	5.5	4.2	4.2	4.2	4.6	7.4	16	20	20	20	20
12	19	5.5	4.2	4.2	4.3	4.6	7.4	17	20	20	20	20
13	18	4.4	4.2	4.2	4.3	4.6	8.4	19	20	20	20	20
14	18	6.1	4.2	4.2	4.3	4.6	10	19	20	20	20	19
15	18	7.3	4.2	4.2	4.3	4.7	11	19	20	20	20	18
16	18	7.3	4.2	4.2	4.3	4.7	12	19	20	20	20	18
17	16	7.9	4.2	4.2	4.3	4.7	13	20	20	20	20	18
18	15	8.2	4.2	4.2	4.3	4.8	13	20	20	20	20	18
19	15	8.3	4.2	4.2	4.3	4.6	13	20	20	20	20	18
20	15	8.3	4.2	4.2	4.3	4.4	15	20	20	20	20	18
21	14	8.3	4.2	4.2	4.3	4.4	17	20	20	20	20	18
22	14	8.4	4.2	4.2	4.3	4.4	17	21	20	20	20	18
23	14	8.1	4.2	4.2	4.3	4.4	17	21	20	20	20	18
24	14	8.0	4.2	4.2	4.3	4.3	17	21	20	20	20	18
25	14	8.0	4.2	4.2	4.3	4.4	17	21	20	20	20	18
26	14	8.0	4.2	4.2	4.3	4.3	17	20	20	20	20	18
27	14	8.0	4.2	4.2	4.3	4.3	17	20	20	20	20	18
28	14	8.0	4.2	4.2	4.4	4.4	17	20	20	20	20	18
29	14	5.4	4.2	4.2	---	4.3	17	20	20	20	20	18
30	14	4.2	4.2	4.2	---	4.3	17	20	20	20	20	18
31	12	---	4.2	4.2	---	4.3	---	20	---	20	20	---
TOTAL	429.1	203.1	130.2	130.2	119.4	139.4	331.5	581	600	620	620	567
MEAN	13.8	6.77	4.20	4.20	4.26	4.49	11.0	18.7	20.0	20.0	20.0	18.9
MAX	19	9.5	4.2	4.2	4.4	4.8	17	21	21	20	20	20
MIN	6.3	4.2	4.2	4.2	4.2	4.3	4.3	16	19	20	20	18
AC-FT	851	403	258	258	237	276	658	1150	1190	1230	1230	1120

CAL YR 1986 TOTAL 4018.2 MEAN 11.0 MAX 22 MIN 2.1 AC-FT 7970
WTR YR 1987 TOTAL 4470.9 MEAN 12.2 MAX 21 MIN 4.2 AC-FT 8870

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. Contents based on capacity table in use since Oct. 10, 1968.
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 ft^3/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 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, 55,034 acre-ft, Dec. 5, gage height, 136.03 ft; minimum, 16,521 acre-ft, Oct. 12, gage height, 124.57 ft.

Capacity table (gage height, in feet NGVD, and contents, in acre-feet)
(Abstracted from table dated Oct. 10, 1968, California Department of Water Resources)

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

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24470	26889	40442	31293	30251	26191	27968	35451	29865	34724	45736	33629
2	27689	22551	42614	30542	34346	32920	28031	28249	35451	36185	37247	42349
3	32853	26889	45658	29801	34106	32518	28531	19879	39083	35382	38070	44143
4	28846	29417	48791	24998	34346	35069	27042	22946	40887	30770	42294	43951
5	18778	29290	55034	30316	35940	41484	25621	26191	41297	21882	43414	35922
6	18675	30090	53180	38070	36115	39156	25087	32518	33392	25771	44684	31523
7	19220	31754	48711	45658	34175	35382	25146	36927	24470	30380	43605	21882
8	21689	30090	49356	48150	31919	26615	26828	39412	24616	34827	35208	25562
9	25831	31984	49720	49154	30251	24529	30835	30380	29353	37104	23259	30380
10	26131	32752	49154	46839	30705	25621	31064	21387	33528	40887	24529	34004
11	21965	37318	51809	40109	30542	27380	26889	25413	35208	29801	28312	37318
12	16521	43605	54610	42994	33460	28688	22748	35451	39412	18675	35752	34175
13	16738	46405	54821	42274	33325	29290	23458	41559	29801	21956	36750	29641
14	18908	51726	50371	41073	30542	27319	25831	44956	19641	25146	39266	31391
15	22946	51355	52389	41934	27042	24880	32052	46208	23202	29577	33629	34004
16	29131	46957	53264	45384	23717	25711	35451	39417	26403	36150	24208	38322
17	32752	46405	53473	43759	23259	26464	34175	32987	29131	41671	28406	41148
18	30090	47234	52763	34827	25711	26403	29801	33867	34243	30251	34827	45463
19	25087	47592	52472	38503	28406	26737	22355	35069	38573	18908	40553	43605
20	27689	46484	48510	38322	28846	34243	24121	39382	29865	21497	46286	40812
21	30090	46839	44143	40701	27380	32752	27689	35870	21882	28909	50086	44143
22	30025	42198	42198	45384	24880	30478	25562	38938	24998	32987	41409	46011
23	30880	36608	39339	44491	24734	30542	27380	32920	28657	37568	32151	46129
24	29194	39852	37675	42085	26951	29417	32518	25771	33156	44956	35870	47910
25	24734	44220	33392	31589	33867	36361	29577	19404	36856	38430	38684	49802
26	19456	45384	30770	33460	35695	38322	19325	22021	41222	26464	39778	45463
27	20012	41222	27319	36998	36361	37104	19959	29194	39668	34175	40109	40887
28	22021	40294	24470	35069	34827	34724	21772	31820	30542	41671	42994	45306
29	26464	41484	30154	33867	---	32385	27968	40036	30187	48791	38430	47671
30	27104	37247	36927	35069	---	31227	32285	32920	33088	52597	32920	48872
31	28187	---	35208	32618	---	29194	---	25711	---	53557	35451	---
MAX	32853	51726	55034	49154	36361	41484	35451	46208	41297	53557	50086	49802
MIN	16521	22551	24470	24998	23259	24529	19325	19404	19641	18675	23259	21882
a	128.77	131.48	130.90	130.14	130.79	129.09	130.04	127.96	130.28	135.68	130.97	134.54
b	+8914	+9060	-2039	-2590	+2209	-5633	+3091	-6574	+7377	+20469	-18106	+13421
c	1127	1096	338	455	456	937	1201	1812	2202	2240	2238	1654

CAL YR 1986 MAX 55034 MIN 15890 b + 7021
WTR YR 1987 MAX 55034 MIN 16521 b +29599

a Gage-height, in feet, at end of month.
b Change in contents, in acre-feet.
c Evaporation, in acre-feet; not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

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.--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.--19 years, 315 ft^3/s, 228,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,200 ft^3/s, May 12, 1981, May 6, 7, 1984; no flow at times each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	124	293	360	293			0	860	574	783	762	400
2	123	292	342	293			0	854	573	783	761	420
3	134	293	342	120			0	927	619	783	751	369
4	143	293	342	0			0	999	709	783	742	350
5	143	292	342	0			0	1020	724	774	743	307
6	143	293	339	0			0	1020	723	757	743	255
7	142	293	339	0			0	1080	722	743	743	235
8	157	293	310	0			0	1120	736	743	741	222
9	169	292	293	0			0	1090	750	756	743	198
10	169	279	292	0			0	1020	764	763	733	178
11	169	268	294	0			0	905	765	762	718	159
12	168	268	293	0			0	797	758	763	710	128
13	169	268	292	0			0	747	744	767	704	106
14	169	269	289	0			0	702	771	763	695	98
15	184	269	289	0			0	701	838	787	691	84
16	208	267	292	0			24	669	874	803	691	76
17	234	319	292	0			52	617	833	791	683	76
18	244	381	292	0			55	572	820	783	672	89
19	243	392	291	0			54	552	855	783	662	96
20	244	391	286	0			54	551	864	772	638	96
21	243	392	288	0			59	554	856	763	625	148
22	272	392	293	0			182	580	849	763	609	198
23	293	391	292	0			346	568	853	763	593	197
24	293	392	292	0			412	547	837	771	590	197
25	292	392	292	0			580	548	829	782	567	200
26	291	392	293	0			740	537	828	783	537	197
27	292	392	293	0			803	512	827	784	518	197
28	293	396	293	0			883	500	818	780	510	171
29	293	399	294	0	---		921	526	803	768	509	149
30	293	396	294	0	---		922	548	794	763	503	147
31	293	---	293	0	---		---	556	---	763	495	---
TOTAL	6627	9939	9428	706	0	0	6087	22779	23310	23925	20382	5743
MEAN	213	331	304	22.7	0	0	202	734	777	771	657	191
MAX	293	399	360	293	0	0	922	1120	874	803	762	420
MIN	123	267	286	0	0	0	0	500	573	743	495	76
AC-FT	13140	19710	18700	1400	0	0	12070	45180	46240	47460	40430	11390

CAL YR 1986 TOTAL 121150.00 MEAN 331 MAX 1150 MIN 0 AC-FT 240300
WTR YR 1987 TOTAL 128926.00 MEAN 353 MAX 1120 MIN 0 AC-FT 255700

SACRAMENTO RIVER BASIN

11406890 RICHVALE 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 right bank 500 ft downstream from axis of Thermalito Afterbay Dam and 7.3 mi west of Oroville.

PERIOD OF RECORD.--April 1968 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.--Canal diverts from Thermalito Afterbay; water is used for irrigation. The canal is part of the Oroville project. 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.--19 years, 116 ft^3/s, 84,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 511 ft^3/s, May 16, 1974; no flow for several months each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	95	65	65			0	311	174	304	289	208
2	0	96	66	63			0	339	175	301	289	184
3	0	75	65	63			0	349	195	304	289	180
4	0	64	62	64			0	332	238	303	289	172
5	0	63	63	65			0	323	253	303	289	166
6	0	62	65	19			0	356	275	303	289	135
7	0	64	64	0			0	344	284	292	289	120
8	0	61	63	0			0	355	285	274	288	121
9	0	58	63	0			0	365	285	274	288	103
10	0	59	63	0			0	342	285	275	289	97
11	0	64	62	0			0	333	285	274	282	97
12	0	65	63	0			0	333	285	274	280	73
13	0	61	64	0			0	333	284	274	279	67
14	0	64	64	0			0	334	284	285	279	67
15	0	60	62	0			0	333	299	299	279	55
16	0	65	62	0			0	281	304	299	279	50
17	0	65	63	0			0	223	304	294	279	17
18	0	64	62	0			52	163	333	289	280	1.1
19	0	64	63	0			54	143	344	289	264	1.2
20	54	65	63	0			67	142	322	289	254	1.8
21	99	65	64	0			99	142	286	289	254	3.0
22	142	63	64	0			147	142	274	289	253	0
23	151	61	64	0			205	142	274	289	254	0
24	120	66	64	0			230	142	275	289	254	0
25	97	66	65	0			245	142	275	289	253	0
26	81	64	64	0			255	154	275	288	253	0
27	73	64	63	0			234	169	275	289	239	0
28	73	64	64	0			261	174	274	289	229	0
29	66	64	65	0	---		294	188	274	289	229	0
30	78	65	67	0	---		294	194	295	289	229	0
31	95	---	66	0	---		---	179	---	289	217	---
TOTAL	1129	1976	1977	339	0	0	2437	7802	8270	8977	8307	1919.1
MEAN	36.4	65.8	63.7	10.9	0	0	81.2	251	275	289	267	63.9
MAX	151	96	67	65	0	0	294	365	344	304	289	208
MIN	0	58	62	0	0	0	0	142	174	274	217	0
AC-FT	2240	3920	3920	672	0	0	4830	15480	16400	17810	16480	3810

CAL YR 1986 TOTAL 46854.00 MEAN 128 MAX 373 MIN 0 AC-FT 92930
WTR YR 1987 TOTAL 43133.10 MEAN 118 MAX 365 MIN 0 AC-FT 85550

SACRAMENTO RIVER BASIN

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.--Flow regulated at outlet works from Thermalito Afterbay; water is used for irrigation.

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.--19 years, 4.88 ft^3/s, 3,540 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 46 ft^3/s, Apr. 24, 1977, May 16, 1978; no flow for several months each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		0	23	1.0			0	32	13	13	13	1.1
2		0	23	1.0			0	33	14	13	13	1.1
3		0	20	1.0			0	27	14	14	13	1.1
4		0	9.9	.90			0	25	14	14	14	.50
5		0	2.6	.90			0	23	14	14	14	0
6		0	2.6	.40			0	15	13	14	14	0
7		0	2.6	0			0	11	12	15	14	.50
8		0	1.7	0			0	11	14	14	14	1.0
9		0	1.0	0			0	7.7	15	14	14	1.1
10		0	1.0	0			0	3.1	15	14	14	.40
11		0	1.0	0			0	2.4	16	14	14	0
12		0	1.1	0			0	2.3	17	14	14	0
13		0	1.1	0			0	2.2	16	14	14	0
14		0	1.1	0			0	2.2	15	14	14	0
15		0	1.1	0			0	2.2	15	14	12	0
16		0	1.1	0			0	2.0	14	14	11	0
17		0	1.1	0			0	3.5	12	15	11	0
18		0	1.1	0			0	7.4	12	15	11	0
19		0	1.0	0			0	13	14	14	11	0
20		0	.80	0			0	15	15	14	11	0
21		0	.90	0			0	13	14	13	9.9	0
22		0	1.0	0			0	12	14	14	8.6	0
23		0	1.0	0			0	12	14	14	7.7	0
24		0	.90	0			0	11	14	14	6.7	0
25		0	.90	0			15	11	14	13	6.4	0
26		0	.90	0			28	12	14	13	4.5	0
27		0	.90	0			30	12	14	13	1.7	0
28		15	.90	0			36	14	14	13	1.1	0
29		23	1.0	0	---		36	14	13	13	1.1	0
30		23	1.0	0	---		27	13	13	13	1.1	.80
31		---	1.0	0	---		---	12	---	13	1.0	---
TOTAL	0	61	108.30	5.20	0	0	172	376.0	422	427	309.8	7.60
MEAN	0	2.03	3.49	.16	0	0	5.73	12.1	14.0	13.7	9.99	.25
MAX	0	23	23	1.0	0	0	36	33	17	15	14	1.1
MIN	0	0	.80	0	0	0	0	2.0	12	13	1.0	0
AC-FT	0	121	215	10	0	0	341	746	837	847	614	15

CAL YR 1986 TOTAL 1834.13 MEAN 5.02 MAX 30 MIN 0 AC-FT 3640
WTR YR 1987 TOTAL 1888.90 MEAN 5.17 MAX 36 MIN 0 AC-FT 3750

SACRAMENTO RIVER BASIN

11406910 SUTTER-BUTTE CANAL AT INTAKE, NEAR OROVILLE, CA

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.--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.--19 years, 647 ft^3/s, 468,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,110 ft^3/s, Apr. 22-24, 1968; no flow for several months each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	303	2.9					0	1710	1370	1560	1430	1160
2	318	0					0	1710	1390	1560	1430	1140
3	321	0					0	1760	1430	1550	1430	1160
4	310	0					0	1750	1480	1540	1460	1160
5	304	0					0	1750	1490	1490	1480	1110
6	319	0					0	1820	1510	1480	1470	1050
7	383	0					0	1820	1530	1500	1440	1020
8	403	0					175	1810	1520	1500	1440	1000
9	411	0					242	1780	1530	1500	1470	926
10	411	0					330	1720	1520	1500	1480	874
11	427	0					400	1620	1550	1490	1480	870
12	435	0					408	1610	1580	1490	1470	853
13	428	0					499	1620	1580	1500	1450	846
14	420	0					585	1590	1580	1500	1420	838
15	421	0					645	1500	1560	1490	1400	762
16	408	0					763	1420	1530	1490	1360	726
17	402	0					792	1410	1530	1470	1350	698
18	387	0					846	1400	1540	1450	1320	683
19	376	0					843	1350	1570	1450	1320	656
20	379	0					843	1350	1550	1460	1320	622
21	379	0					907	1360	1540	1450	1310	614
22	378	0					1050	1360	1560	1460	1310	565
23	380	0					1190	1350	1550	1440	1290	543
24	387	0					1260	1320	1540	1470	1290	534
25	383	0					1460	1330	1570	1440	1290	493
26	377	0					1560	1340	1590	1420	1270	467
27	362	0					1610	1310	1610	1420	1250	467
28	355	0					1670	1330	1620	1430	1220	462
29	355	0			---		1670	1340	1610	1440	1180	451
30	346	0			---		1700	1360	1580	1430	1170	452
31	214	---			---		---	1360	---	1420	1160	---
TOTAL	11482	2.9	0	0	0	0	21448	47260	46110	45790	42160	23202
MEAN	370	.096	0	0	0	0	714	1524	1537	1477	1360	773
MAX	435	2.9	0	0	0	0	1700	1820	1620	1560	1480	1160
MIN	214	0	0	0	0	0	0	1310	1370	1420	1160	451
AC-FT	22770	5.8	0	0	0	0	42540	93740	91460	90820	83620	46020

CAL YR 1986 TOTAL 226697.90 MEAN 621 MAX 1730 MIN 0 AC-FT 449700
WTR YR 1987 TOTAL 237454.90 MEAN 650 MAX 1820 MIN 0 AC-FT 471000

SACRAMENTO RIVER BASIN

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.--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.--19 years, 4,258 ft^3/s, 3,085,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,600 ft^3/s, Jan. 28, 1970, gage height, 23.30 ft, previous datum; no flow for many days in 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,720 ft^3/s, Oct. 6, gage height, 4.57 ft; minimum daily, 699 ft^3/s, Sept. 12, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4550	1980	1970	1280	1290	1300	1120	2310	1590	2580	1880	1800
2	4610	1980	1990	1290	1310	1330	942	2280	1590	2320	1870	1690
3	4620	1990	1990	1300	1310	1310	816	2270	1600	2320	1890	1490
4	4570	2000	1990	1280	1310	1320	806	2000	1590	2290	1900	1400
5	4570	2000	1990	1300	1320	1320	820	1700	1600	2290	2030	1380
6	4620	2000	1990	1300	1300	1320	802	1630	1590	2810	2200	1360
7	4630	1990	1960	1300	1300	1300	807	1510	2080	3530	2180	1370
8	4640	1970	1990	1300	1300	1300	810	1500	2370	3620	2160	1400
9	4640	1960	1990	1320	1300	1310	820	1490	2610	3520	2150	1200
10	4610	1990	1990	1310	1310	1320	1330	1490	2610	3480	2180	1010
11	3540	1990	1990	1290	1310	1320	1770	1510	2610	3280	2180	778
12	3030	2000	1990	1310	1310	1320	1800	1410	2610	3270	2190	699
13	2570	2000	1980	1290	1310	1330	1810	1230	2590	3500	2180	736
14	1980	2000	1960	1290	1290	1300	1830	1140	2580	3620	2190	699
15	1970	1990	1970	1310	1290	1300	2310	1120	2600	3580	2160	707
16	1970	1980	1990	1300	1300	1300	2320	1120	2600	3330	2160	709
17	1970	1970	1990	1300	1300	1310	2830	1100	2590	3320	2190	751
18	1970	2000	1990	1290	1330	1310	2810	1110	2120	3270	2190	801
19	1950	2000	1980	1300	1320	1310	2780	1120	1900	3280	2190	789
20	1990	2000	1980	1310	1320	1320	2810	1130	1610	3310	2190	798
21	1990	1990	1960	1310	1320	1320	2820	1120	1390	3430	2190	808
22	2000	1990	1950	1300	1300	1300	2810	1120	1440	3300	2170	808
23	1980	1960	1950	1300	1300	1300	2820	1100	1220	3310	2160	1290
24	1970	1980	1790	1290	1310	1300	2820	1100	1220	3310	2180	1780
25	1960	2000	1580	1290	1320	1320	2800	1100	1420	2990	2000	1800
26	1930	2000	1390	1320	1320	1310	2780	1110	1510	3050	1810	1780
27	1970	1980	1280	1320	1310	1300	2820	1120	1480	3090	1800	1790
28	1970	1960	1280	1290	1300	1300	2820	1120	2330	2870	1810	1810
29	2000	1970	1300	1290	---	1300	2320	1120	2590	2690	1780	1810
30	1980	1980	1310	1300	---	1300	2310	1580	2580	2580	1780	1810
31	1990	---	1290	1300	---	1320	---	1570	---	2080	1810	---
TOTAL	90740	59600	56750	40280	36610	40620	59263	43330	60220	95220	63750	37053
MEAN	2927	1986	1830	1299	1307	1310	1975	1397	2007	3071	2056	1235
MAX	4640	2000	1990	1320	1330	1330	2830	2310	2610	3620	2200	1810
MIN	1930	1960	1280	1280	1290	1300	802	1100	1220	2080	1780	699
AC-FT	180000	118200	112600	79900	72620	80570	117500	85950	119400	188900	126400	73490

CAL YR 1986 TOTAL 1452964 MEAN 3980 MAX 18300 MIN 768 AC-FT 2882000
WTR YR 1987 TOTAL 683436 MEAN 1872 MAX 4640 MIN 699 AC-FT 1356000

NOTE.--Peak gage height for Feb. 18, 1986, was 9.60 ft; maximum gage height for Feb. 18, 1986, was 15.20 ft, backwater from Feather River; omitted in WDR-86-4.

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 TEMPERATURES: Maximum recorded, 25.5 °C, June 7; minimum recorded, 5.0 °C, Jan. 19-21.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.0	14.5	13.5	13.0	11.0	10.0	8.0	7.0	8.5	8.5	10.0	9.5
2	15.0	14.0	13.0	13.0	10.5	10.0	8.0	7.0	8.5	8.5	10.5	10.0
3	14.5	14.0	13.5	13.0	10.5	10.5	8.0	8.0	9.0	8.5	10.5	10.0
4	15.0	14.0	13.5	13.0	10.5	10.5	8.5	8.0	9.5	9.0	10.5	10.5
5	16.0	14.5	14.0	13.0	10.5	10.5	8.5	8.5	10.5	9.0	11.0	10.5
6	16.0	15.0	13.5	13.0	10.5	10.5	8.5	8.5	10.0	9.5	13.0	11.0
7	16.0	15.5	13.0	12.0	10.5	10.5	8.5	8.0	10.5	9.5	13.5	11.5
8	16.0	15.5	12.0	11.5	10.5	10.5	8.0	8.0	10.5	10.0	13.0	11.5
9	15.5	14.5	12.0	11.5	10.5	10.0	8.0	8.0	10.5	10.5	14.0	13.0
10	14.5	14.0	11.5	11.0	10.0	10.0	8.0	8.0	11.0	10.5	13.0	12.0
11	14.5	13.5	12.0	11.5	10.0	10.0	8.0	7.0	11.5	10.5	12.0	12.0
12	15.0	14.0	12.0	11.5	10.0	9.5	7.0	6.5	11.5	11.0	12.0	12.0
13	15.0	14.5	11.5	11.5	9.5	9.5	6.5	6.5	11.5	11.0	13.0	12.0
14	15.5	14.5	11.5	11.5	9.5	9.5	6.5	6.0	11.5	11.5	13.0	12.0
15	15.0	14.5	12.0	11.5	9.5	9.0	6.0	5.5	12.0	11.5	13.0	11.5
16	14.5	14.5	13.0	11.5	9.5	9.0	5.5	5.5	12.0	11.5	13.0	12.0
17	14.5	14.0	13.0	12.0	9.5	9.0	5.5	5.5	12.0	11.5	13.0	13.0
18	14.0	13.5	13.0	12.0	9.5	9.0	5.5	5.5	11.5	11.5	13.5	13.0
19	15.0	13.5	13.0	12.0	9.0	9.0	5.5	5.0	11.5	11.0	13.5	13.0
20	14.5	14.0	13.0	13.0	9.0	9.0	5.0	5.0	11.0	10.5	13.5	13.0
21	14.5	14.0	13.0	13.0	9.0	9.0	5.5	5.0	11.0	10.5	13.0	12.0
22	15.0	14.0	13.0	12.0	9.0	9.0	5.5	5.5	10.5	9.5	13.5	11.5
23	14.5	14.5	12.0	12.0	9.0	9.0	5.5	5.5	10.0	9.5	12.0	12.0
24	14.5	14.5	12.0	12.0	9.0	8.5	5.5	5.5	9.5	9.5	12.0	11.5
25	15.0	14.5	12.0	12.0	8.5	8.5	6.0	5.5	9.5	9.5	13.0	11.5
26	15.5	14.5	12.0	11.5	8.5	8.5	8.0	6.0	10.5	9.0	15.0	12.0
27	16.0	15.5	11.5	11.5	8.5	8.0	7.0	6.5	10.0	9.5	14.0	13.0
28	15.5	15.0	11.5	11.5	8.0	8.0	8.0	7.0	10.0	9.5	13.5	13.0
29	15.0	14.5	11.5	11.0	8.0	8.0	8.0	7.0	---	---	14.5	13.5
30	14.5	14.0	11.0	11.0	8.0	8.0	8.0	8.0	---	---	15.0	13.5
31	14.5	13.5	---	---	8.0	8.0	8.5	8.0	---	---	15.5	14.0
MONTH	16.0	13.5	14.0	11.0	11.0	8.0	8.5	5.0	12.0	8.5	15.5	9.5

SACRAMENTO RIVER BASIN

11406920 THERMALITO AFTERBAY RELEASE TO FEATHER RIVER NEAR OROVILLE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.5	14.0	15.5	15.0	21.0	19.5	21.0	20.5	19.0	18.5	22.0	21.0
2	15.0	14.5	18.0	15.0	21.5	19.0	22.0	19.5	21.5	18.5	22.0	21.0
3	15.5	14.5	18.0	15.5	20.5	19.0	20.0	19.5	23.0	20.5	21.0	20.0
4	18.0	15.0	19.5	16.5	19.5	18.5	21.0	19.5	21.5	20.5	21.5	19.5
5	16.5	15.5	20.0	17.0	20.0	19.0	23.0	20.0	22.0	20.5	20.5	19.0
6	19.0	16.0	19.0	17.0	20.5	19.0	23.5	20.5	22.0	20.5	19.5	18.5
7	18.0	16.5	18.0	17.0	25.5	20.0	23.0	20.5	21.0	20.0	22.0	19.5
8	20.5	17.0	18.0	16.5	25.0	21.5	21.5	20.0	21.0	20.0	22.0	20.0
9	19.5	18.5	23.0	16.5	22.0	21.5	21.0	19.5	23.5	19.5	20.5	19.5
10	19.5	18.5	24.5	19.5	23.5	21.0	20.0	19.5	22.0	20.0	20.5	19.5
11	19.0	18.5	22.0	20.5	21.0	20.5	21.0	20.0	23.5	21.0	19.5	18.5
12	18.5	16.5	23.0	20.5	23.0	20.0	24.0	21.0	22.0	20.0	18.5	18.5
13	18.5	16.5	21.5	19.5	24.0	20.0	24.0	21.5	20.0	19.0	18.5	18.0
14	19.5	16.5	19.5	18.0	22.0	21.0	24.0	22.0	19.0	18.5	20.0	18.5
15	19.5	17.0	18.0	16.0	21.0	19.5	23.0	21.0	20.5	18.5	19.0	18.5
16	18.5	17.0	17.0	15.5	21.0	20.0	21.5	20.5	21.5	19.0	20.5	18.5
17	16.5	16.0	19.0	16.5	20.5	19.5	20.5	19.0	21.5	20.0	18.5	18.0
18	16.0	15.5	21.0	18.5	21.0	19.0	19.5	19.0	20.0	19.5	18.5	17.0
19	16.0	14.5	20.0	19.0	20.5	19.0	21.0	19.0	19.5	19.0	17.0	16.5
20	16.0	14.5	21.5	19.0	20.5	19.0	20.5	18.5	19.0	18.5	16.5	16.0
21	17.0	15.0	20.5	20.0	23.5	19.5	19.5	18.5	18.5	18.0	16.5	16.0
22	17.0	15.5	21.5	20.0	23.5	21.5	19.5	17.0	18.5	18.0	16.5	15.5
23	16.0	15.5	19.5	18.5	24.0	21.0	18.5	18.0	20.5	18.0	16.0	15.5
24	16.5	15.5	20.5	18.5	23.5	21.5	19.0	17.0	21.5	19.5	16.5	15.5
25	17.0	15.5	20.5	20.0	23.5	21.5	19.5	17.0	21.0	19.5	16.5	15.0
26	19.5	15.5	20.0	19.5	22.0	21.0	19.5	18.0	20.5	19.5	20.5	16.5
27	18.5	17.0	20.0	19.0	21.0	19.5	20.5	19.0	21.5	19.5	19.0	18.5
28	18.0	16.5	21.0	18.5	22.0	19.5	20.5	19.0	21.0	20.5	19.0	18.0
29	16.5	16.0	19.0	18.0	23.0	21.5	19.5	18.5	21.5	20.5	18.5	18.0
30	16.0	15.5	19.0	18.0	22.0	21.0	19.5	18.5	21.5	20.5	18.0	17.0
31	---	---	22.0	18.5	---	---	19.0	18.5	24.0	20.5	---	---
MONTH	20.5	14.0	24.5	15.0	25.5	18.5	24.0	17.0	24.0	18.0	22.0	15.0

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 mi^2.

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.--Flow completely regulated by Lake Oroville (station 11406800) beginning Apr. 14, 1967, and Thermalito diversion pool (station 11406825), capacity 13,500 acre-ft. Diversions above station for power and irrigation. Feather River Fish Hatchery diverts up to 120 ft^3/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 diagrams 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.--66 years (water years 1902-67) prior to storage and diversions, 5,836 ft^3/s, 4,225,000 acre-ft/yr; 20 years (water years 1968-87), 6,508 ft^3/s, 4,715,000 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 1,084 ft^3/s, 785,400 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge observed, 230,000 ft^3/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; minimum daily, 89 ft^3/s, Sept. 19, 1972.
Combined flow (since completion of Oroville Dam): Maximum discharge, 134,000 ft^3/s, Feb. 18, 1986; maximum stage, 23.22 ft; minimum daily, 222 ft^3/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, 680 ft^3/s, June 24; minimum daily, 306 ft^3/s, May 25 and June 7.
Combined flow: Maximum daily discharge, 794 ft^3/s, June 24; minimum daily, 411 ft^3/s, Oct. 5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	431	424	438	430	420	446	426	420	431	542	735	452
2	423	431	442	428	428	444	429	422	434	730	740	453
3	426	437	435	421	445	439	425	416	433	726	738	443
4	421	445	439	418	448	437	452	425	435	724	747	448
5	411	436	443	420	447	451	459	428	436	726	532	442
6	417	444	434	427	446	452	447	426	424	726	429	443
7	427	445	435	423	441	445	448	423	412	716	426	441
8	424	438	432	417	432	443	448	430	426	430	429	444
9	428	434	436	435	427	431	444	433	439	525	433	494
10	429	426	439	449	426	426	434	420	440	471	460	458
11	428	425	440	451	423	434	435	430	443	735	450	524
12	428	424	445	435	430	436	431	444	442	723	446	544
13	425	421	436	416	428	429	429	435	437	691	443	504
14	429	420	434	442	418	426	437	436	421	480	445	527
15	429	415	430	435	420	427	436	442	436	452	447	580
16	431	416	433	438	413	422	434	437	445	681	457	588
17	432	415	438	435	421	430	428	423	463	685	458	495
18	426	418	439	427	448	445	424	437	516	717	459	455
19	415	418	433	429	446	446	420	445	667	721	457	453
20	437	416	431	428	425	445	424	443	600	722	452	465
21	448	416	429	425	438	445	422	440	754	630	445	471
22	442	413	423	431	432	440	417	447	719	710	440	495
23	443	419	425	427	430	442	421	439	679	730	439	463
24	438	433	426	420	434	441	432	426	794	731	442	443
25	436	439	423	419	446	435	428	421	492	532	445	449
26	430	437	418	437	447	427	423	437	465	432	444	459
27	431	436	426	448	447	425	429	445	441	498	446	461
28	437	436	425	451	446	427	428	443	439	574	447	487
29	434	442	424	447	---	423	429	437	436	458	439	473
30	432	443	427	429	---	421	426	426	546	504	444	449
31	423	---	432	424	---	424	---	429	---	764	451	---
TOTAL	13311	12862	13410	13362	12152	13504	12965	13405	14945	19486	15065	14303
MEAN	429	428	432	431	434	435	432	432	498	628	485	476
MAX	448	445	445	451	448	452	459	447	794	764	747	588
MIN	411	413	418	416	413	421	417	416	412	430	426	441
AC-FT	26400	25510	26600	26500	24100	26790	25720	26590	29640	38650	29880	28370
MEAN a	3142	3290	1939	2081	4718	7153	3598	2001	1016	767	902	1891
AC-FT a	193200	195800	119200	127900	262000	439800	214100	123100	60480	47160	55460	112500

CAL YR 1986 TOTAL 1101272 MEAN 3017 MAX 132000 MIN 396 AC-FT 2184000 MEAN a 8872 AC-FT a 6423000
WTR YR 1987 TOTAL 168770 MEAN 462 MAX 794 MIN 411 AC-FT 334800 MEAN a 2695 AC-FT a 1951000
a Adjusted for diversions in and out of, change in contents in, and unreviewed evaporation from Lake Oroville, Thermalito diversion pool, Thermalito Forebay, and Thermalito Afterbay.

SACRAMENTO RIVER BASIN

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.--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 1969-87): Maximum recorded, 20.0°C, several days in 1977; minimum recorded, 6.5°C, many days in 1971-73, 1974-75, and 1979.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded, 16.5°C, July 14, 15 and Aug. 3; minimum recorded, 8.5°C, Jan. 19.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	13.0	13.0	11.5	11.5	11.0	11.0	10.0	10.0	---	---	9.5	9.0
2	13.0	12.0	11.5	11.5	11.0	11.0	10.0	10.0	9.0	9.0	9.5	9.5
3	12.0	12.0	12.0	11.0	11.0	11.0	10.0	10.0	9.0	9.0	9.5	9.5
4	13.0	12.0	12.0	11.5	11.0	11.0	10.0	10.0	9.0	9.0	9.5	9.0
5	13.5	13.0	12.0	11.5	11.0	11.0	10.0	10.0	9.0	9.0	9.5	9.0
6	13.0	11.0	11.5	11.5	11.0	11.0	10.0	10.0	9.0	9.0	9.0	9.0
7	11.5	11.0	11.5	11.5	11.0	11.0	10.0	10.0	9.0	9.0	9.5	9.0
8	11.0	10.5	11.5	11.5	11.0	11.0	10.0	10.0	9.5	9.0	10.0	9.0
9	11.0	10.5	11.5	11.5	11.0	11.0	10.0	9.5	9.5	9.0	10.5	10.0
10	11.0	11.0	12.0	11.5	11.0	10.5	9.5	9.5	9.5	9.5	10.5	10.0
11	11.5	11.0	12.0	12.0	10.5	10.5	9.5	9.5	9.5	9.5	10.0	9.5
12	11.0	11.0	12.0	11.5	10.5	10.5	9.5	9.0	9.5	9.5	9.5	9.5
13	11.5	11.0	12.0	11.5	10.5	10.5	9.5	9.0	9.5	9.5	10.0	9.0
14	11.0	10.5	12.0	12.0	10.5	10.5	9.5	9.0	9.5	9.5	10.0	9.5
15	11.0	11.0	12.0	11.5	10.5	10.5	9.5	9.0	10.0	9.5	10.0	9.5
16	11.5	11.0	11.5	11.5	10.5	10.5	9.0	9.0	10.0	10.0	10.0	9.5
17	11.5	11.5	12.0	11.5	10.5	10.5	9.0	9.0	10.0	9.5	10.0	9.5
18	11.5	11.0	12.0	11.5	10.5	10.5	9.0	9.0	10.0	9.5	10.0	9.5
19	11.5	11.0	11.5	11.5	10.5	10.5	9.0	8.5	9.5	9.0	10.0	9.5
20	11.5	11.0	11.5	11.5	10.5	10.5	9.0	9.0	9.5	9.0	10.0	9.0
21	11.5	11.0	11.5	11.5	10.5	10.5	9.0	9.0	9.5	9.5	9.5	9.5
22	11.5	11.0	11.5	11.5	10.5	10.5	9.0	9.0	9.5	9.0	9.5	9.0
23	11.5	11.0	11.5	11.5	10.5	10.0	9.0	9.0	9.5	9.0	10.0	9.5
24	11.5	11.0	11.5	11.5	10.5	10.0	9.0	9.0	9.5	9.0	10.0	9.5
25	11.5	11.0	11.5	11.5	10.0	10.0	9.0	9.0	9.0	9.0	9.5	9.0
26	11.5	11.0	11.5	11.5	10.0	10.0	9.0	9.0	9.0	9.0	9.5	9.5
27	11.5	11.5	11.5	11.5	10.0	10.0	9.0	9.0	9.0	9.0	10.0	9.5
28	11.5	11.5	11.5	11.5	10.0	10.0	9.0	9.0	9.0	9.0	10.0	9.5
29	11.5	11.5	11.5	11.5	10.0	10.0	9.0	9.0	---	---	10.0	9.5
30	11.5	11.0	11.5	11.0	10.0	10.0	9.0	9.0	---	---	11.0	9.5
31	11.5	11.5	---	---	10.0	10.0	9.0	9.0	---	---	10.5	9.5
MONTH	13.5	10.5	12.0	11.0	11.0	10.0	10.0	8.5	---	---	11.0	9.0

SACRAMENTO RIVER BASIN

11407000 FEATHER RIVER AT OROVILLE, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	10.5	9.5	11.0	10.5	14.0	13.0	14.5	14.0	15.5	15.0	11.5	10.0
2	10.5	9.5	11.5	11.0	14.0	13.5	14.5	14.0	15.5	15.0	10.5	9.5
3	11.0	9.5	12.0	11.0	14.0	14.0	14.5	14.0	16.5	13.0	10.0	9.5
4	11.0	10.0	13.0	11.5	14.0	14.0	14.5	14.0	13.5	11.5	10.0	9.5
5	10.5	10.0	13.0	13.0	14.0	13.5	14.5	14.0	13.0	12.0	10.0	10.0
6	11.0	10.0	13.0	13.0	14.5	14.0	15.0	14.0	13.5	13.0	11.0	10.0
7	11.0	10.0	13.0	13.0	14.5	14.0	15.5	15.0	13.5	12.0	12.0	10.5
8	11.0	10.0	13.5	13.0	15.5	14.0	15.5	15.0	13.0	12.0	13.0	10.5
9	11.0	10.0	13.0	11.5	14.5	14.5	15.5	15.0	13.5	12.0	10.5	10.0
10	11.5	11.0	12.0	11.5	15.0	14.5	15.5	15.0	14.0	12.0	10.0	10.0
11	11.5	11.0	13.0	11.5	15.0	14.5	15.5	15.5	14.0	13.0	10.0	10.0
12	12.0	11.0	12.0	11.5	15.0	14.5	15.5	15.0	14.0	13.5	10.0	10.0
13	11.5	11.0	12.0	11.5	15.0	15.0	16.0	15.0	14.0	13.5	10.5	10.0
14	11.5	11.0	13.0	12.0	15.0	15.0	16.5	16.0	14.0	13.5	11.0	10.0
15	11.5	11.0	13.0	12.0	16.0	14.5	16.5	15.0	14.0	14.0	10.5	10.5
16	12.0	11.0	12.0	12.0	15.5	14.5	15.0	14.5	14.5	13.5	10.5	10.0
17	12.0	11.5	13.0	12.0	15.5	14.5	15.0	13.5	14.5	13.5	10.5	10.0
18	11.5	11.5	14.0	12.0	15.0	15.0	15.0	14.5	14.5	14.0	10.5	10.0
19	12.0	11.0	13.5	12.0	15.5	15.0	15.5	14.5	14.5	14.0	11.0	10.0
20	12.0	11.0	13.0	12.0	15.5	15.5	15.5	14.5	14.5	14.5	11.0	10.0
21	12.0	11.5	13.0	12.0	15.5	15.0	15.0	14.0	15.0	14.5	11.5	10.0
22	12.0	11.5	13.0	12.0	16.0	15.0	14.5	13.0	14.5	14.5	11.0	10.5
23	12.0	11.5	13.0	12.0	15.5	14.5	14.5	14.0	15.0	14.5	11.0	10.5
24	11.5	11.5	13.5	12.0	14.5	14.0	14.5	14.0	15.5	14.5	11.0	10.5
25	12.0	11.5	14.0	13.0	14.5	13.0	14.5	14.0	15.0	14.5	11.0	10.5
26	12.0	11.5	14.0	13.0	14.0	13.5	14.5	14.0	15.0	14.5	12.0	11.0
27	13.0	11.5	13.5	13.0	13.5	13.5	15.0	13.0	15.0	15.0	11.5	11.0
28	13.0	12.0	13.5	13.0	13.5	13.5	14.5	14.0	15.5	15.0	12.0	11.0
29	12.0	12.0	13.5	12.0	14.0	13.5	15.0	14.5	15.5	15.0	12.0	11.5
30	12.0	11.0	13.5	13.5	14.0	13.0	15.0	14.0	15.5	15.0	12.0	11.0
31	---	---	13.5	13.5	---	---	15.0	15.0	16.0	11.0	---	---
MONTH	13.0	9.5	14.0	10.5	16.0	13.0	16.5	13.0	16.5	11.0	13.0	9.5

SACRAMENTO RIVER BASIN

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 mi^2.

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-66-2: 1965. 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.--Estimated daily discharge: Jan. 8-13. 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 diagram showing diversions and storage from Feather River at Lake Oroville.

AVERAGE DISCHARGE.--23 years, 5,279 ft^3/s, 3,825,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 151,000 ft^3/s, Dec. 23, 1964, gage height, 100.43 ft, present datum; minimum daily, 117 ft^3/s, June 27, 1966. Since completion of Oroville Dam in 1967, maximum discharge, 150,000 ft^3/s, Feb. 19, 1986, gage height, 100.06 ft; minimum daily, 366 ft^3/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, 5,120 ft^3/s, Oct. 7, gage height, 77.25 ft; minimum daily, 1,060 ft^3/s, Sept. 13, 14, and 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4870	2340	2420	1670	1640	1680	1540	2640	1820	3090	2520	2040
2	4890	2340	2430	1660	1710	1700	1350	2610	1840	3000	2500	1980
3	4920	2390	2440	1640	1720	1690	1220	2590	1860	3010	2510	1770
4	4920	2420	2420	1640	1700	1690	1180	2390	1860	2990	2530	1610
5	4890	2420	2460	1630	1700	1770	1220	1970	1850	2990	2560	1570
6	4920	2410	2430	1650	1690	1760	1180	1930	1860	3450	2550	1540
7	4980	2400	2390	1620	1660	1700	1170	1770	2260	4070	2530	1560
8	5050	2400	2390	1640	1660	1700	1160	1750	2600	4120	2500	1610
9	5050	2400	2410	1680	1660	1680	1160	1740	2990	4140	2460	1530
10	5050	2390	2410	1680	1670	1680	1560	1730	3010	4130	2490	1310
11	4150	2410	2400	1660	1680	1700	1990	1730	3040	4040	2510	1130
12	3580	2420	2400	1670	1710	1750	2110	1700	3020	4020	2510	1080
13	3100	2420	2400	1630	1780	1780	2140	1510	3040	4120	2530	1060
14	2490	2420	2380	1640	1680	1750	2160	1400	2990	4140	2510	1060
15	2350	2410	2330	1630	1710	1720	2590	1370	2980	4120	2490	1070
16	2370	2410	2360	1640	1670	1710	2680	1370	2990	4030	2480	1140
17	2400	2380	2410	1640	1660	1730	3160	1330	2990	3960	2510	1080
18	2390	2430	2400	1650	1680	1720	3180	1330	2530	3980	2520	1070
19	2310	2430	2400	1610	1710	1710	3130	1360	2390	3950	2500	1080
20	2340	2420	2360	1640	1680	1720	3190	1370	2170	3960	2520	1060
21	2400	2410	2340	1640	1690	1760	3200	1360	2000	3970	2500	1100
22	2400	2400	2350	1640	1680	1710	3200	1360	2010	3880	2480	1100
23	2400	2370	2350	1670	1660	1740	3200	1350	1860	3910	2440	1440
24	2400	2380	2200	1670	1660	1710	3190	1340	1800	3920	2470	1900
25	2370	2400	1980	1640	1680	1710	3170	1330	1880	3520	2290	2040
26	2330	2400	1770	1650	1690	1720	3150	1340	1860	3390	2090	2040
27	2330	2400	1650	1690	1690	1690	3170	1350	1820	3440	2050	2060
28	2370	2400	1610	1690	1680	1680	3180	1360	2540	3400	2070	2060
29	2380	2400	1600	1660	---	1670	2740	1370	3010	3080	2030	2060
30	2390	2400	1600	1670	---	1670	2660	1740	3080	2990	2020	2040
31	2350	---	1610	1660	---	1690	---	1820	---	2760	2040	---
TOTAL	103140	72020	69100	51200	47200	53090	69930	51310	71950	113570	74710	45190
MEAN	3327	2401	2229	1652	1686	1713	2331	1655	2398	3664	2410	1506
MAX	5050	2430	2460	1690	1780	1780	3200	2640	3080	4140	2560	2060
MIN	2310	2340	1600	1610	1640	1670	1160	1330	1800	2760	2020	1060
AC-FT	204600	142900	137100	101600	93620	105300	138700	101800	142700	225300	148200	89630

CAL YR 1986	TOTAL	2549930	MEAN	6986	MAX	146000	MIN	1080	AC-FT	5058000
WTR YR 1987	TOTAL	822410	MEAN	2253	MAX	5050	MIN	1060	AC-FT	1631000

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, 1 mg/L, most years.
SEDIMENT LOAD: Maximum daily, 527,000 tons, Dec. 23, 1964; minimum daily, 1.4 tons, Oct. 27, 1966.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 22 mg/L, Apr. 15-17, June 4; minimum daily mean, 2 mg/L, Feb. 10.
SEDIMENT LOAD: Maximum daily, 188 tons, Apr. 17; minimum daily, 9.0 tons, Feb. 10.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	11.5	8.0	---	---	---	---	---	---	---	---
2	---	16.0	---	---	10.5	9.5	---	---	---	---	22.0	---
3	---	---	10.0	10.0	---	---	---	---	---	19.5	---	22.0
4	---	14.5	---	---	11.0	11.5	---	---	21.5	---	---	---
5	---	---	12.0	9.0	---	---	---	---	---	---	23.0	---
6	18.5	13.0	---	---	12.0	---	---	21.0	---	21.5	---	19.0
7	---	---	11.0	8.0	10.0	---	16.0	---	22.5	---	---	---
8	17.5	13.5	---	---	---	---	19.0	20.5	23.0	---	---	20.0
9	---	---	11.0	9.0	12.0	---	---	---	24.0	---	23.5	---
10	17.0	---	---	---	11.5	10.5	18.5	---	---	21.0	---	20.0
11	---	10.0	9.0	6.0	---	11.5	---	---	---	---	23.0	---
12	16.0	---	---	---	11.0	---	---	24.0	20.5	---	---	17.5
13	---	13.0	8.0	8.0	---	13.5	---	---	25.0	---	---	---
14	12.5	---	---	---	11.5	---	---	---	18.5	---	19.5	19.5
15	---	13.5	8.0	7.0	---	---	19.5	20.5	---	---	---	---
16	15.5	---	---	---	11.5	14.5	---	---	---	---	22.5	---
17	---	13.5	10.0	9.0	---	---	---	---	20.0	18.5	---	20.0
18	16.0	13.5	---	---	12.5	---	---	---	---	---	---	---
19	---	14.0	9.0	8.0	---	---	---	20.0	---	---	20.0	---
20	16.0	13.5	---	---	12.0	9.0	15.5	---	---	19.5	---	17.5
21	---	---	9.0	8.5	---	---	---	---	21.0	17.5	---	---
22	---	14.0	---	---	12.0	---	---	22.5	---	---	---	---
23	12.5	---	11.0	8.0	---	---	16.0	---	---	---	20.5	---
24	---	13.5	---	---	10.0	15.0	---	---	---	19.0	---	18.0
25	16.5	---	8.0	11.0	---	---	---	---	---	---	---	---
26	17.0	---	---	---	11.0	---	23.5	19.0	---	22.0	---	---
27	---	12.0	7.0	10.0	---	---	---	---	---	---	---	---
28	14.0	---	---	---	12.5	---	18.0	---	---	---	---	19.5
29	---	11.0	7.5	9.5	---	---	---	---	22.5	20.0	21.0	---
30	15.0	---	---	---	---	14.5	16.0	19.5	---	---	---	---
31	---	---	8.0	9.5	---	---	---	---	---	20.0	24.0	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

SACRAMENTO RIVER BASIN

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER			NOVEMBER			DECEMBER		
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)
1	4870	8	105	2340	9	57	2420	6	39
2	4890	9	119	2340	10	63	2430	5	33
3	4920	10	133	2390	9	58	2440	4	26
4	4920	11	146	2420	8	52	2420	4	26
5	4890	11	145	2420	8	52	2460	4	27
6	4920	12	159	2410	7	46	2430	6	39
7	4980	12	161	2400	7	45	2390	8	52
8	5050	12	164	2400	6	39	2390	8	52
9	5050	12	164	2400	6	39	2410	8	52
10	5050	11	150	2390	7	45	2410	8	52
11	4150	11	123	2410	8	52	2400	8	52
12	3580	10	97	2420	6	39	2400	7	45
13	3100	9	75	2420	4	26	2400	6	39
14	2490	8	54	2420	4	26	2380	6	39
15	2350	7	44	2410	4	26	2330	5	31
16	2370	6	38	2410	4	26	2360	5	32
17	2400	6	39	2380	4	26	2410	4	26
18	2390	7	45	2430	3	20	2400	6	39
19	2310	7	44	2430	4	26	2400	7	45
20	2340	8	51	2420	5	33	2360	5	32
21	2400	8	52	2410	4	26	2340	4	25
22	2400	9	58	2400	4	26	2350	5	32
23	2400	9	58	2370	4	26	2350	6	38
24	2400	7	45	2380	5	32	2200	6	36
25	2370	6	38	2400	5	32	1980	7	37
26	2330	6	38	2400	6	39	1770	6	29
27	2330	7	44	2400	6	39	1650	6	27
28	2370	8	51	2400	6	39	1610	6	26
29	2380	8	51	2400	6	39	1600	6	26
30	2390	8	52	2400	6	39	1600	5	22
31	2350	8	51	---	---	---	1610	4	17
TOTAL	103140	---	2594	72020	---	1133	69100	---	1093

DAY	JANUARY			FEBRUARY			MARCH		
1	1670	6	27	1640	8	35	1680	10	45
2	1660	7	31	1710	8	37	1700	11	50
3	1640	8	35	1720	7	33	1690	11	50
4	1640	6	27	1700	7	32	1690	11	50
5	1630	5	22	1700	8	37	1770	11	53
6	1650	5	22	1690	6	27	1760	11	52
7	1620	5	22	1660	6	27	1700	12	55
8	1640	5	22	1660	6	27	1700	12	55
9	1680	5	23	1660	5	22	1680	12	54
10	1680	6	27	1670	2	9.0	1680	12	54
11	1660	4	18	1680	5	23	1700	12	55
12	1670	4	18	1710	7	32	1750	13	61
13	1630	4	18	1780	6	29	1780	13	62
14	1640	4	18	1680	6	27	1750	13	61
15	1630	4	18	1710	7	32	1720	13	60
16	1640	5	22	1670	8	36	1710	13	60
17	1640	5	22	1660	7	31	1730	14	65
18	1650	5	22	1680	7	32	1720	14	65
19	1610	5	22	1710	8	37	1710	14	65
20	1640	5	22	1680	9	41	1720	14	65
21	1640	6	27	1690	9	41	1760	14	67
22	1640	6	27	1680	9	41	1710	14	65
23	1670	5	23	1660	9	40	1740	15	70
24	1670	5	23	1660	9	40	1710	15	69
25	1640	5	22	1680	10	45	1710	15	69
26	1650	6	27	1690	10	46	1720	15	70
27	1690	5	23	1690	10	46	1690	15	68
28	1690	7	32	1680	10	45	1680	16	73
29	1660	9	40	---	---	---	1670	16	72
30	1670	8	36	---	---	---	1670	16	72
31	1660	8	36	---	---	---	1690	16	73
TOTAL	51200	---	774	47200	---	950.0	53090	---	1905

SACRAMENTO RIVER BASIN

11407150 FEATHER RIVER NEAR GRIDLEY, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL			MAY			JUNE		
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)
1	1540	15	62	2640	10	71	1820	18	88
2	1350	14	51	2610	10	70	1840	20	99
3	1220	13	43	2590	9	63	1860	21	105
4	1180	12	38	2390	9	58	1860	22	110
5	1220	11	36	1970	8	43	1850	18	90
6	1180	10	32	1930	8	42	1860	14	70
7	1170	9	28	1770	8	38	2260	12	73
8	1160	10	31	1750	10	47	2600	12	84
9	1160	12	38	1740	12	56	2990	15	121
10	1560	15	63	1730	14	65	3010	13	106
11	1990	17	91	1730	15	70	3040	12	98
12	2110	18	103	1700	16	73	3020	11	90
13	2140	19	110	1510	15	61	3040	11	90
14	2160	21	122	1400	14	53	2990	12	97
15	2590	22	154	1370	13	48	2980	10	80
16	2680	22	159	1370	11	41	2990	7	57
17	3160	22	188	1330	9	32	2990	4	32
18	3180	21	180	1330	7	25	2530	6	41
19	3130	21	177	1360	6	22	2390	8	52
20	3190	21	181	1370	6	22	2170	10	59
21	3200	17	147	1360	7	26	2000	11	59
22	3200	15	130	1360	7	26	2010	11	60
23	3200	13	112	1350	8	29	1860	11	55
24	3190	12	103	1340	10	36	1800	11	53
25	3170	12	103	1330	12	43	1880	12	61
26	3150	11	94	1340	14	51	1860	12	60
27	3170	14	120	1350	14	51	1820	12	59
28	3180	16	137	1360	14	51	2540	13	89
29	2740	14	104	1370	14	52	3010	13	106
30	2660	12	86	1740	14	66	3080	13	108
31	---	---	---	1820	16	79	---	---	---
TOTAL	69930	---	3023	51310	---	1510	71950	---	2352
DAY		JULY			AUGUST			SEPTEMBER	
1	3090	12	100	2520	8	54	2040	7	39
2	3000	11	89	2500	9	61	1980	6	32
3	3010	10	81	2510	8	54	1770	6	29
4	2990	10	81	2530	7	48	1610	7	30
5	2990	9	73	2560	6	41	1570	8	34
6	3450	9	84	2550	7	48	1540	9	37
7	4070	9	99	2530	8	55	1560	8	34
8	4120	8	89	2500	9	61	1610	8	35
9	4140	8	89	2460	10	66	1530	7	29
10	4130	8	89	2490	7	47	1310	7	25
11	4040	8	87	2510	4	27	1130	5	15
12	4020	8	87	2510	8	54	1080	4	12
13	4120	9	100	2530	12	82	1060	4	11
14	4140	9	101	2510	14	95	1060	5	14
15	4120	10	111	2490	9	61	1070	5	14
16	4030	10	109	2480	4	27	1140	6	18
17	3960	10	107	2510	4	27	1080	6	17
18	3980	8	86	2520	5	34	1070	6	17
19	3950	6	64	2500	6	40	1080	5	15
20	3960	6	64	2520	6	41	1060	4	11
21	3970	11	118	2500	7	47	1100	4	12
22	3880	10	105	2480	7	47	1100	5	15
23	3910	10	106	2440	8	53	1440	6	23
24	3920	10	106	2470	8	53	1900	6	31
25	3520	9	86	2290	7	43	2040	6	33
26	3390	9	82	2090	6	34	2040	6	33
27	3440	10	93	2050	5	28	2060	6	33
28	3400	11	101	2070	5	28	2060	6	33
29	3080	12	100	2030	4	22	2060	6	33
30	2990	9	73	2020	6	33	2040	6	33
31	2760	6	45	2040	8	44	---	---	---
TOTAL	113570	---	2805	74710	---	1455	45190	---	747
YEAR	822410		20341.0						

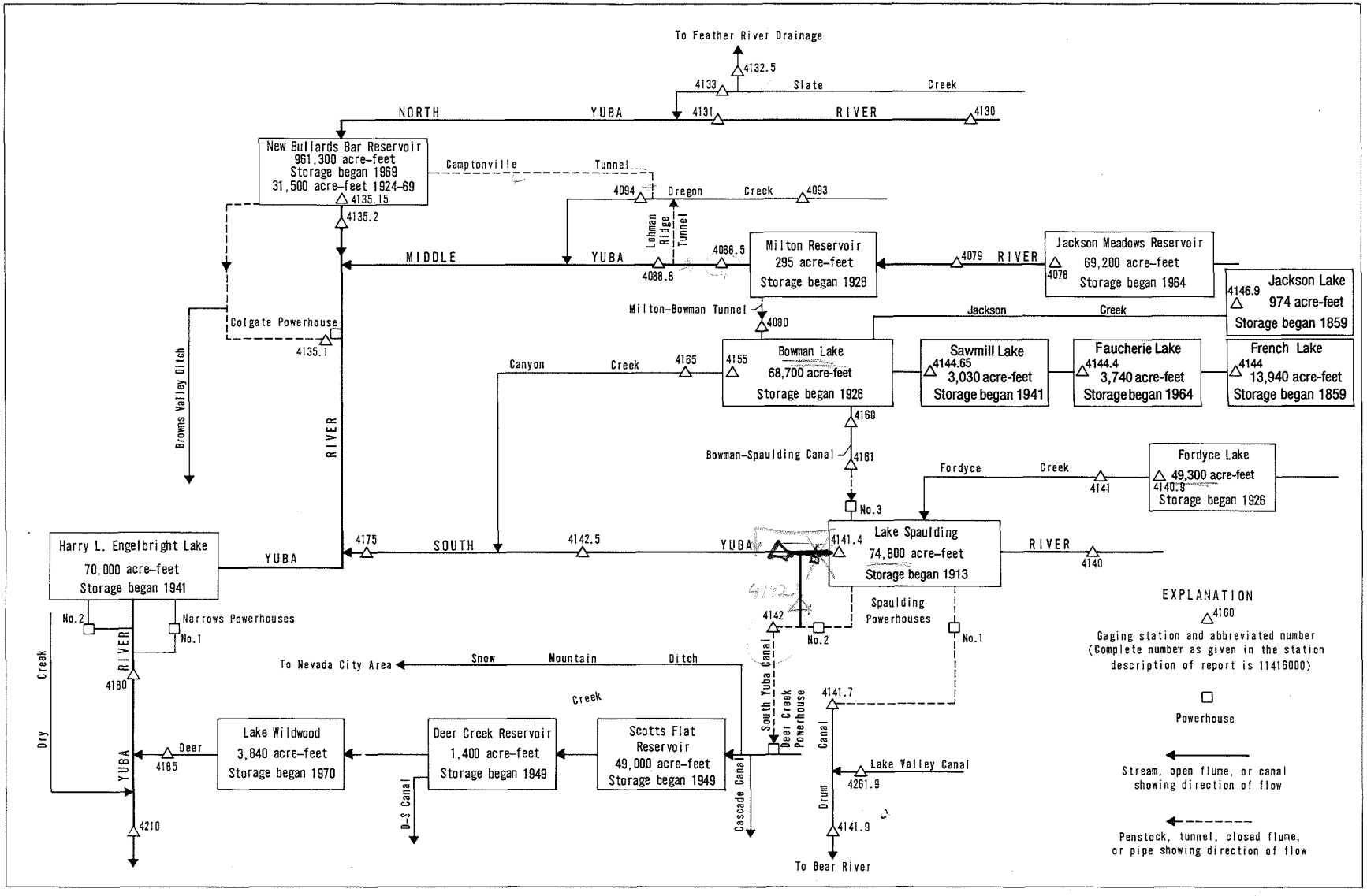

FIGURE 29.--Schematic diagram showing diversions and storage in Yuba River basin.

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 mi^2.

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, 48,900 acre-ft, Oct. 1, elevation, 6,015.4 ft; minimum, 20,300 acre-ft, Sept. 30, elevation, 5,978.8 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48600	41900	35800	30000	27700	28800	31600	40300	41800	34300	27600	23700
2	48300	41700	35600	29900	27700	28800	31600	40500	41600	34000	27400	23700
3	48200	41500	35400	30000	27600	28800	31700	40800	41400	33700	27200	23700
4	48000	41300	35200	29900	27600	28900	31700	41000	41100	33400	27000	23700
5	47800	41100	35000	29800	27500	29100	31700	41300	40900	33200	26800	23600
6	47600	41000	34700	29700	27500	29300	31700	41600	40700	32900	26600	23600
7	47400	40700	34600	29700	27500	29500	31900	41800	40400	32700	26400	23600
8	47200	40500	34400	29600	27500	29600	32000	42100	40200	32400	26200	23600
9	47000	40300	34100	29500	27500	29700	32200	42500	40000	32200	26000	23500
10	46800	40100	34000	29400	27500	29800	32500	42800	39700	32000	25800	23500
11	46600	39900	33800	29300	27600	29900	32800	43100	39500	31800	25600	23500
12	46400	39700	33500	29200	27700	30100	33100	43400	39200	31600	25400	23500
13	46200	39500	33300	29200	28100	30200	33400	43500	39000	31400	25200	23500
14	46000	39200	33200	29100	28200	30400	33700	43700	38700	31200	25000	23400
15	45700	39000	32900	29000	28400	30400	34100	43800	38400	31000	24800	23200
16	45500	38800	32700	28900	28500	30500	34500	43800	38200	30800	24600	23000
17	45300	38600	32500	28800	28500	30600	34900	43900	37900	30600	24400	22800
18	45100	38400	32300	28700	28600	30700	35200	43900	37700	30400	24300	22600
19	44900	38200	32200	28700	28600	30800	35400	43900	37400	30200	24300	22400
20	44700	38000	32000	28500	28600	30900	35600	43900	37100	30000	24100	22200
21	44500	37800	31800	28500	28600	30900	35900	43800	36900	29800	24000	22000
22	44200	37600	31600	28400	28700	31000	36200	43700	36600	29600	24000	21800
23	44000	37400	31400	28300	28700	31100	36500	43500	36400	29400	24000	21600
24	43800	37200	31200	28300	28700	31100	36900	43300	36100	29200	24000	21400
25	43600	37000	31000	28200	28700	31200	37300	43100	35900	29000	24000	21300
26	43400	36800	30800	28100	28800	31200	37800	43000	35600	28800	23900	21000
27	43100	36600	30600	28100	28800	31300	38400	42800	35300	28600	23900	20800
28	42900	36400	30400	28100	28800	31300	38900	42600	35100	28400	23900	20700
29	42700	36200	30200	28000	---	31400	39400	42400	34800	28200	23800	20500
30	42500	36000	30100	27900	---	31400	40000	42200	34500	28000	23800	20300
31	42200	---	30000	27800	---	31500	---	42000	---	27800	23800	---
MAX	48600	41900	35800	30000	28800	31500	40000	43900	41800	34300	27600	23700
MIN	42200	36000	30000	27800	27500	28800	31600	40300	34500	27800	23800	20300
a	6008.0	6000.8	5993.2	5990.3	5991.6	5995.2	6005.5	6007.9	5999.0	5990.2	5984.4	5978.8
b	-6700	-6200	-6000	-2200	+1000	+2700	+8500	+2000	-7500	-6700	-4000	-3500

CAL YR 1986 b +2200
WTR YR 1987 b -28600
a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

11407900 MIDDLE YUBA RIVER BELOW JACKSON MEADOWS DAM, NEAR SIERRA CITY, CA

LOCATION.--Lat 39°30'58", long 120°33'37", in SE 1/4 NW 1/4 sec.18, T.19 N., R.13 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 0.6 mi downstream from Jackson Meadows Dam, and 5.2 mi southeast of Sierra City.

DRAINAGE AREA.--38.3 mi^2.

PERIOD OF RECORD.--October 1964 to September 1987 (discontinued). If record for Milton-Bowman tunnel outlet near Graniteville is added to record published as Middle Yuba River at Milton, a record equivalent to this site can be obtained for the period 1928-64.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 5,717.20 ft above National Geodetic Vertical Datum of 1929 (levels by Nevada Irrigation District). Prior to Aug. 12, 1982, at site 160 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Jackson Meadows Reservoir (station 11407800) since November 1964. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE (adjusted for change in contents in Jackson Meadows Reservoir).--23 years, 117 ft^3/s, 84,770 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,660 ft^3/s, Dec. 20, 1981, gage height, 9.61 ft, from rating curve extended above 400 ft^3/s on basis of computation of flow over Milton Dam, adjusted for diversion and inflow; maximum gage height, 17.57 ft, Mar. 8, 1986; no flow on many days in 1976-77.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known since at least 1925, 10,000 ft^3/s, Jan. 31, 1963, gage height, 10.57 ft from floodmarks, by computation of flow over Milton Dam, adjusted for diversion and inflow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 146 ft^3/s, May 19-21, gage height, 13.43 ft; minimum daily, 6.0 ft^3/s, Aug. 28-31, Sept. 4-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	105	102	45	48	11	39	81	142	134	94	6.2
2	113	105	102	45	48	11	76	81	142	133	94	6.5
3	113	105	102	44	48	11	76	81	142	130	94	6.2
4	113	105	102	44	48	11	76	81	142	129	94	6.0
5	113	105	101	44	29	21	76	81	142	129	94	6.0
6	113	105	101	44	9.5	19	76	81	142	129	94	6.0
7	113	104	101	44	9.5	18	77	81	142	129	93	6.0
8	113	104	101	44	9.5	17	77	81	141	113	92	6.0
9	113	104	101	44	9.5	16	77	83	140	98	92	6.0
10	113	104	101	44	9.8	14	77	82	140	98	92	6.0
11	112	104	101	46	12	14	77	82	140	98	92	6.0
12	112	104	101	46	13	16	77	82	140	98	92	6.0
13	112	104	101	46	30	19	77	82	140	98	92	6.0
14	112	104	101	46	17	16	77	82	140	98	92	40
15	112	104	101	46	15	14	78	82	139	98	92	90
16	112	104	101	46	13	14	78	82	138	98	92	90
17	110	104	101	46	13	14	78	81	136	97	92	90
18	110	104	101	46	13	16	78	81	136	95	92	90
19	110	104	101	46	13	14	78	110	136	95	45	90
20	110	104	101	46	11	13	78	146	136	95	7.2	90
21	110	104	101	47	11	13	78	144	136	95	7.2	90
22	110	104	101	47	11	13	78	144	136	95	7.2	91
23	110	104	100	47	11	13	78	144	136	95	6.8	91
24	110	103	100	47	11	13	78	144	136	95	6.5	90
25	110	102	99	47	11	13	78	144	134	95	6.5	90
26	110	102	98	47	11	13	78	144	134	95	6.5	90
27	109	102	98	47	11	13	79	144	134	95	6.1	86
28	109	102	98	48	11	13	80	144	134	95	6.0	86
29	109	102	98	48	---	13	81	144	134	95	6.0	86
30	107	102	71	48	---	13	81	144	134	94	6.0	85
31	106	---	45	48	---	14	---	143	---	94	6.0	---
TOTAL	3442	3113	3033	1423	506.8	443	2292	3306	4144	3235	1792.0	1543.9
MEAN	111	104	97.8	45.9	18.1	14.3	76.4	107	138	104	57.8	51.5
MAX	113	105	102	48	48	21	81	146	142	134	94	91
MIN	106	102	45	44	9.5	11	39	81	134	94	6.0	6.0
AC-FT	6830	6170	6020	2820	1010	879	4550	6560	8220	6420	3550	3060

CAL YR 1986 TOTAL 59401.1 MEAN 163 MAX 2910 MIN 7.2 AC-FT 117800 MEAN a 166 AC-FT a 120000
WTR YR 1987 TOTAL 28273.7 MEAN 77.5 MAX 146 MIN 6.0 AC-FT 56080 MEAN a 38.0 AC-FT a 27480

a Adjusted for change in contents in Jackson Meadows Reservoir.

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 Middle Yuba River, 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.--59 years, 74.4 ft^3/s, 53,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 492 ft^3/s, Feb. 11, 1941; minimum daily, 0.4 ft^3/s, Oct. 7, 1944.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	110	107	107	45	43	12	29	88	141	133	93	6.2
2	110	108	106	44	44	12	77	84	140	133	93	6.3
3	110	107	104	46	43	12	79	82	139	133	93	6.1
4	109	107	106	43	42	12	78	81	140	132	92	6.0
5	109	107	107	43	34	26	79	80	139	132	92	6.0
6	110	107	106	43	11	28	80	80	139	132	91	6.0
7	109	107	105	43	9.8	23	81	80	140	132	91	6.0
8	109	107	105	43	9.7	22	82	80	138	121	91	6.0
9	110	107	105	43	9.7	20	84	84	138	100	91	5.9
10	109	107	105	43	9.9	19	86	82	138	99	90	5.9
11	108	107	105	43	13	20	88	80	138	99	91	5.8
12	108	107	105	43	13	21	87	79	137	99	91	5.9
13	108	108	105	43	52	26	85	78	137	98	90	6.0
14	108	107	105	43	26	22	87	78	137	98	90	16
15	109	107	104	43	20	20	88	77	138	98	90	81
16	109	107	104	42	16	18	87	77	137	98	90	88
17	109	107	104	42	15	18	87	77	137	99	89	88
18	109	107	104	42	14	21	86	77	141	100	89	88
19	109	107	105	42	13	19	82	98	136	100	63	88
20	108	107	104	42	13	17	81	149	136	100	10	88
21	108	109	104	42	13	17	82	146	136	97	7.6	87
22	108	107	104	42	12	16	83	145	135	98	6.9	87
23	108	107	103	42	12	16	83	144	135	97	6.7	87
24	108	107	103	43	12	16	83	144	135	96	6.6	87
25	108	107	103	43	12	16	83	144	134	96	6.4	87
26	108	106	102	43	12	16	84	145	134	95	6.3	87
27	108	106	102	44	12	16	85	144	134	95	6.3	86
28	108	106	102	46	12	16	84	143	134	95	6.1	92
29	109	107	102	43	---	15	84	143	133	94	6.2	85
30	110	107	83	43	---	16	90	142	133	94	6.2	84
31	108	---	44	43	---	17	---	142	---	93	6.2	---
TOTAL	3371	3211	3153	1335	548.1	565	2454	3273	4109	3286	1781.5	1484.1
MEAN	109	107	102	43.1	19.6	18.2	81.8	106	137	106	57.5	49.5
MAX	110	109	107	46	52	28	90	149	141	133	93	92
MIN	108	106	44	42	9.7	12	29	77	133	93	6.1	5.8
AC-FT	6690	6370	6250	2650	1090	1120	4870	6490	8150	6520	3530	2940

CAL YR 1986 TOTAL 35386.4 MEAN 96.9 MAX 370 MIN 4.3 AC-FT 70190
WTR YR 1987 TOTAL 28570.7 MEAN 78.3 MAX 149 MIN 5.8 AC-FT 56670

SACRAMENTO RIVER BASIN

11408850 MIDDLE YUBA RIVER NEAR CAMPTONVILLE, CA

LOCATION.--Lat 39°25'01", long 120°57'06", in SW 1/4 SE 1/4 sec.15, T.18 N., R.9 E., Sierra County, Hydrologic Unit 18020125, Tahoe National Forest, on right bank 0.6 mi downstream from Kanaka Creek, and 5.8 mi southeast of Camptonville.

DRAINAGE AREA.--136 mi^2.

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,170 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Apr. 27 to May 20. Records good, except those for period of estimated record, which are fair. Natural flow of stream affected by Jackson Meadows Reservoir since November 1964 (station 11407800), Milton-Bowman tunnel (station 11408000) which diverts above station to Bowman Lake (station 11415500), and other small diversions above station. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--20 years, 346 ft^3/s, 250,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,600 ft^3/s, Feb. 17, 1986, gage height, 17.90 ft, from crest-stage gage, from rating curve extended above 8,000 ft^3/s; minimum daily, 11 ft^3/s, July 29, Aug. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,560 ft^3/s, Feb. 13, gage height, 9.48 ft; minimum daily, 21 ft^3/s, on many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	39	37	80	70	98	196	167	66	31	26	22
2	51	38	36	100	107	96	204	156	62	31	26	22
3	49	37	36	191	128	96	214	144	58	30	24	22
4	47	37	35	120	98	96	204	148	56	30	24	21
5	45	36	50	77	83	246	197	150	54	30	24	21
6	46	36	45	61	77	429	196	140	52	31	23	21
7	47	36	39	53	75	318	202	146	52	31	23	22
8	45	35	37	48	74	281	210	158	51	31	23	21
9	44	35	36	45	71	271	221	174	48	30	23	21
10	43	35	35	44	72	238	236	159	46	30	23	21
11	42	35	34	43	186	280	256	147	44	30	22	21
12	41	35	34	43	216	475	254	133	43	30	23	21
13	40	35	35	42	1690	925	233	122	41	29	22	21
14	40	35	37	40	601	556	239	113	40	28	22	22
15	39	35	37	37	439	444	245	105	39	27	22	22
16	39	35	35	37	329	364	246	99	41	27	22	22
17	39	35	35	49	257	317	245	94	39	30	23	22
18	40	35	36	43	216	329	245	90	38	37	22	22
19	39	36	40	38	187	303	212	106	37	35	22	22
20	39	36	48	37	166	264	192	133	36	31	22	22
21	38	44	40	37	150	250	187	115	36	30	23	21
22	38	42	44	37	138	227	196	105	35	30	23	21
23	38	37	45	40	131	237	197	94	35	29	22	21
24	38	36	40	62	124	227	199	87	34	28	22	21
25	37	36	38	76	116	216	200	84	34	28	22	21
26	37	35	37	75	109	208	202	84	32	27	22	21
27	36	35	36	70	105	204	215	85	32	27	21	22
28	37	34	36	194	100	196	202	81	32	26	21	21
29	38	41	35	121	---	187	191	76	32	25	21	21
30	55	39	35	91	---	183	188	72	32	25	22	21
31	46	---	36	78	---	188	---	68	---	25	22	---
TOTAL	1307	1095	1179	2109	6115	8749	6424	3635	1277	909	702	642
MEAN	42.2	36.5	38.0	68.0	218	282	214	117	42.6	29.3	22.6	21.4
MAX	55	44	50	194	1690	925	256	174	66	37	26	22
MIN	36	34	34	37	70	96	187	68	32	25	21	21
AC-FT	2590	2170	2340	4180	12130	17350	12740	7210	2530	1800	1390	1270

CAL YR 1986	TOTAL	163711	MEAN 449	MAX	16800	MIN 33	AC-FT	324700
WTR YR 1987	TOTAL	34143	MEAN 93.5	MAX	1690	MIN 21	AC-FT	67720

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Oct. 1 to May 6. Records good except those for period of estimated daily record, Mar. 10 to May 6, which are fair, and period of estimated daily record, Oct. 1 to Mar. 6, which are poor. Natural flow of stream affected by Jackson Meadows Reservoir since November 1964 (station 11407800), Milton-Bowman tunnel (station 11408000) which diverts above station to Bowman Lake (station 11415500), and Lohman Ridge tunnel since October 1968 which diverts 400 ft upstream to Oregon Creek and then to New Bullards Bar Reservoir via Camptonville tunnel. Other small diversions above station. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--19 years, 145 ft^3/s, 105,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,600 ft^3/s, Feb. 17, 1986, gage height, 27.4 ft, from floodmark, present datum, from rating curve extended above 8,600 ft^3/s on basis of theoretical rating of Our House Dam spillway; minimum daily, 2.1 ft^3/s, Jan. 10, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,050 ft^3/s, Feb. 13, gage height, 15.69 ft, from floodmark; minimum daily, 5.2 ft^3/s, Dec. 14, 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	50	39	7.1	7.1	30	34	53	55	29	23	20
2	40	44	38	7.1	11	30	34	52	55	29	23	21
3	39	41	37	7.1	23	40	35	53	54	29	23	21
4	39	39	37	7.1	23	43	35	54	53	29	23	20
5	39	39	44	7.1	23	56	35	54	51	28	23	19
6	41	39	54	7.1	23	58	35	54	48	28	22	19
7	44	39	47	7.1	23	110	36	55	48	27	21	20
8	43	39	44	7.1	23	60	34	55	48	27	22	21
9	43	39	42	7.1	23	56	38	56	47	27	22	21
10	43	39	41	7.1	23	32	42	55	45	27	22	21
11	43	39	39	7.1	23	54	47	55	44	26	22	21
12	43	39	36	7.1	24	109	51	54	42	26	21	21
13	43	39	21	7.1	1000	239	52	55	41	26	21	21
14	43	39	5.2	7.1	54	34	54	55	40	26	21	21
15	43	39	5.2	7.1	22	32	54	55	39	25	22	21
16	43	39	7.1	7.1	22	33	52	55	42	24	22	22
17	42	39	7.1	7.1	22	32	52	55	41	25	22	22
18	42	39	7.1	7.1	22	32	53	55	39	30	22	21
19	42	39	7.1	7.1	22	32	54	57	38	34	22	21
20	41	39	7.1	7.1	22	33	53	56	38	30	21	21
21	41	40	7.1	7.1	22	33	53	56	36	28	21	21
22	41	43	7.1	7.1	22	33	53	56	36	27	21	21
23	40	48	7.1	7.1	22	33	52	55	35	27	21	21
24	40	42	7.1	7.1	22	32	53	56	34	27	21	21
25	40	39	7.1	7.1	22	34	53	55	33	27	21	21
26	40	38	7.1	7.1	30	34	53	55	33	25	21	21
27	40	37	7.1	7.1	32	34	54	55	32	24	20	21
28	40	37	7.1	7.1	30	34	54	55	31	24	20	21
29	40	40	7.1	7.1	---	34	54	55	31	24	20	21
30	49	43	7.1	7.1	---	34	53	55	30	24	20	20
31	57	---	7.1	7.1	---	34	---	55	---	23	20	---
TOTAL	1304	1205	643.0	220.1	1637.1	1514	1412	1701	1239	832	666	624
MEAN	42.1	40.2	20.7	7.10	58.5	48.8	47.1	54.9	41.3	26.8	21.5	20.8
MAX	57	50	54	7.1	1000	239	54	57	55	34	23	22
MIN	39	37	5.2	7.1	7.1	30	34	52	30	23	20	19
AC-FT	2590	2390	1280	437	3250	3000	2800	3370	2460	1650	1320	1240

CAL YR 1986	TOTAL	98179.3	MEAN 269	MAX 17000	MIN 5.2	AC-FT	194700	a	153300
WTR YR 1987	TOTAL	12997.2	MEAN 35.6	MAX 1000	MIN 5.2	AC-FT	25780	a	46720

a Lohman Ridge tunnel diversion, in acre-feet, to Oregon Creek. Flow through diversion is computed from upstream and downstream flow records adjusted for runoff from ungaged drainage area. Records poor.

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 mi^2.

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.--Estimated daily discharges: Jan. 1-5, Jan. 25 to Mar. 23, June 17 to July 4, and July 14 to Sept. 1. Records good except those for periods of estimated record, June 17 to July 4, and July 14 to Sept. 1, which are fair, and for Jan. 25 to Mar. 23, which is poor. No regulation or diversion above station. Swimmers often build dams on control during summer months. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--20 years, 71.7 ft^3/s, 51,950 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,550 ft^3/s, Feb. 17, 1986, gage height, 11.56 ft, from rating curve extended above 1,600 ft^3/s; minimum daily, 0.53 ft^3/s, Aug. 14-16, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	Unknown	*603	*5.96				

Minimum daily, 0.82 ft^3/s, Aug. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	4.2	3.7	20	18	25	42	18	5.8	2.2	1.1	.88
2	4.4	3.8	3.6	24	25	25	41	15	5.4	2.1	1.1	.97
3	4.1	3.6	3.5	50	36	25	41	13	5.0	2.0	1.1	.96
4	3.9	3.5	3.5	30	26	32	40	12	4.8	2.0	1.1	.90
5	3.7	3.4	7.8	20	22	80	39	11	4.6	1.9	1.1	.85
6	3.5	3.3	7.0	13	20	120	37	11	4.5	1.9	1.1	.84
7	3.5	3.1	5.2	11	19	82	36	10	4.7	1.8	1.1	.86
8	3.4	3.2	4.5	8.8	18	74	34	10	4.4	1.7	1.1	.91
9	3.4	3.2	4.2	7.7	18	66	33	15	4.1	1.6	1.1	.95
10	3.3	3.2	3.9	7.0	30	62	32	12	3.9	1.5	1.1	.95
11	3.2	3.1	3.7	6.7	48	92	31	10	3.6	1.5	1.1	.93
12	3.1	3.1	3.7	6.3	98	226	30	9.6	3.4	1.5	1.1	.95
13	3.2	3.1	3.7	6.1	450	184	28	9.0	3.3	1.5	1.1	1.0
14	3.3	3.0	4.4	5.7	170	136	26	8.6	3.2	1.4	1.0	1.1
15	3.3	3.0	4.1	4.7	115	120	24	8.2	3.2	1.4	1.0	1.1
16	3.2	3.0	3.8	3.9	84	100	23	7.8	3.5	1.4	.99	1.1
17	3.3	3.1	3.6	6.1	68	94	22	7.7	3.4	1.4	.82	1.1
18	3.5	3.1	4.3	5.5	56	87	22	7.5	3.4	1.4	.88	1.0
19	3.3	3.5	5.2	5.1	46	82	21	7.4	3.3	1.4	.99	1.0
20	3.3	3.5	6.5	4.8	44	77	19	8.6	3.3	1.4	.88	.97
21	3.3	6.2	5.4	4.6	39	74	18	10	3.2	1.3	.88	.94
22	3.1	5.2	6.1	4.7	36	71	17	8.4	3.1	1.3	.95	.91
23	3.1	4.0	6.6	5.5	33	68	16	7.6	3.0	1.3	.95	.88
24	3.1	3.7	5.6	9.4	31	65	16	7.2	2.9	1.3	.85	.88
25	3.1	3.5	5.1	9.0	29	63	15	7.1	2.8	1.3	.85	.92
26	3.0	3.4	4.8	11	28	60	14	7.6	2.7	1.3	.95	.97
27	3.0	3.4	4.5	22	27	56	13	7.7	2.6	1.2	.99	.97
28	3.1	3.3	4.2	50	26	53	13	7.1	2.5	1.2	.95	.95
29	3.5	4.5	4.1	26	---	49	13	6.6	2.4	1.2	.99	.95
30	11	4.1	3.9	22	---	46	18	6.2	2.3	1.2	.99	.94
31	5.5	---	4.1	19	---	44	---	6.0	---	1.1	.92	---
TOTAL	115.6	107.3	144.3	429.6	1660	2438	774	292.9	108.3	46.7	31.13	28.63
MEAN	3.73	3.58	4.65	13.9	59.3	78.6	25.8	9.45	3.61	1.51	1.00	.95
MAX	11	6.2	7.8	50	450	226	42	18	5.8	2.2	1.1	1.1
MIN	3.0	3.0	3.5	3.9	18	25	13	6.0	2.3	1.1	.82	.84
AC-FT	229	213	286	852	3290	4840	1540	581	215	93	62	57

CAL YR 1986	TOTAL	30082.20	MEAN 82.4	MAX 3200	MIN 1.4	AC-FT	59670
WTR YR 1987	TOTAL	6176.46	MEAN 16.9	MAX 450	MIN .82	AC-FT	12250

SACRAMENTO RIVER BASIN

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 mi^2.

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). July 24, 1973, to Sept. 30, 1986, at site on right bank. Prior to July 24, 1973, at site 470 ft downstream at datum 8.40 ft lower.

REMARKS.--Estimated daily discharges: Oct. 1-14. Records good except those for period of estimated record, which are fair. Camptonville tunnel, maximum capacity, about 1,000 ft^3/s, 520 ft upstream, diverts to New Bullards Bar Reservoir (station 11413515); diversion began October 1968. See schematic diagram showing diversions and storage in Yuba River basin.

AVERAGE DISCHARGE.--19 years, 34.4 ft^3/s, 24,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,400 ft^3/s, Feb. 17, 1986, gage height, 11.24 ft, datum then in use, from rating curve extended above 50 ft^3/s based on flow-over-dam computation; minimum daily, 0.34 ft^3/s, Sept. 18, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 338 ft^3/s, Jan. 28, gage height, 6.37 ft, from rating curve extended above 20 ft^3/s based on flow-over-dam computation; minimum daily, 1.8 ft^3/s, Sept. 5-7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	6.6	6.0	12	107	11	9.7	13	9.1	3.1	2.4	1.9
2	12	6.1	5.8	14	155	11	9.6	13	8.4	3.1	2.3	2.0
3	13	5.9	5.6	16	206	10	9.4	13	6.6	3.0	2.3	2.0
4	13	5.7	5.6	16	144	9.6	9.3	13	6.1	3.0	2.1	1.9
5	13	5.6	9.2	15	67	11	9.0	13	5.6	3.0	2.1	1.8
6	13	5.5	10	14	11	12	9.2	13	5.5	2.9	2.0	1.8
7	13	5.4	8.2	13	11	12	9.4	13	5.7	2.9	2.0	1.8
8	13	5.4	6.8	13	11	12	9.4	13	5.6	2.8	1.9	1.9
9	13	5.4	6.4	14	11	11	9.4	13	5.4	2.8	1.9	2.0
10	13	5.5	6.0	17	11	11	9.6	13	5.1	2.7	1.9	2.0
11	9.0	5.5	5.8	18	13	11	9.7	13	4.9	2.6	1.9	2.0
12	5.6	5.4	5.8	18	12	30	9.7	12	4.7	2.6	1.9	2.0
13	5.6	5.4	5.7	19	106	57	11	12	4.8	2.7	1.9	2.0
14	5.6	5.3	7.6	18	16	13	13	12	4.6	2.6	1.9	2.1
15	5.6	5.4	9.5	18	15	12	14	12	4.6	2.6	2.1	2.1
16	5.6	5.4	9.4	20	14	12	14	12	5.0	2.4	2.1	2.2
17	5.6	5.4	9.0	47	14	12	14	12	4.8	2.3	2.1	2.1
18	5.6	5.4	9.0	53	13	11	14	11	4.6	3.1	2.0	2.1
19	5.6	5.8	9.1	45	13	10	14	11	4.5	4.9	2.0	2.1
20	5.6	6.0	11	43	13	9.7	14	12	4.3	3.1	2.0	2.0
21	5.5	8.8	11	43	12	9.4	14	11	4.3	2.6	2.1	2.0
22	5.4	9.0	11	43	12	9.3	14	9.4	4.3	2.8	2.1	2.0
23	5.3	6.5	11	48	12	9.4	13	9.1	4.1	3.1	2.1	2.0
24	5.4	6.0	11	85	12	9.3	14	9.2	3.9	2.9	2.0	1.9
25	5.4	5.9	11	119	11	9.3	14	9.0	3.7	2.8	2.1	2.0
26	5.4	5.7	11	113	11	9.3	14	9.0	3.5	2.7	2.1	2.0
27	5.4	5.7	11	99	11	9.3	14	9.0	3.4	2.5	2.0	2.1
28	5.3	5.6	11	279	11	9.1	13	9.0	3.2	2.4	2.0	2.0
29	5.8	7.3	10	192	---	9.0	13	9.0	3.2	2.3	2.0	2.1
30	11	7.1	10	143	---	9.1	13	9.0	3.1	2.4	2.0	2.1
31	8.5	---	10	121	---	9.2	---	9.3	---	2.3	2.0	---
TOTAL	255.8	179.7	269.5	1728	1055	390.0	357.4	351.0	146.6	87.0	63.3	60.0
MEAN	8.25	5.99	8.69	55.7	37.7	12.6	11.9	11.3	4.89	2.81	2.04	2.00
MAX	13	9.0	11	279	206	57	14	13	9.1	4.9	2.4	2.2
MIN	5.3	5.3	5.6	12	11	9.0	9.0	9.0	3.1	2.3	1.9	1.8
AC-FT	507	356	535	3430	2090	774	709	696	291	173	126	119

CAL YR 1986	TOTAL 22059.0	MEAN 60.4	MAX 5340	MIN 2.9	AC-FT 43750	a185000		
WTR YR 1987	TOTAL 4943.3	MEAN 13.5	MAX 279	MIN 1.8	AC-FT 9810	a52410		

a Camptonville tunnel diversion, in acre-feet, to New Bullards Bar Reservoir. Flow through diversion is computed from upstream and downstream flow records adjusted for runoff from ungaged drainage area. Records poor.

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Feb. 11 to Mar. 4 and Mar. 12, 13. Records good except those for periods of estimated record, which are fair. Several small diversions above station for irrigation and mining. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--57 years, 769 ft^3/s, 557,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft^3/s, Feb. 1, 1963, gage height, 25.8 ft, from floodmarks, from rating curve extended above 8,500 ft^3/s on basis of one float measurement at 17,900 ft^3/s and slope-area measurements at gage heights 19.15 and 23.8 ft; minimum daily, 60 ft^3/s, Sept. 7-14, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 12	Unknown	*5,390	*9.72				

Minimum daily, 91 ft^3/s, Sept. 22, 23, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	287	182	146	203	206	310	568	930	254	146	115	99
2	262	172	146	229	243	306	625	756	242	144	114	99
3	248	166	145	359	267	400	672	722	232	143	111	97
4	244	161	145	263	241	700	602	718	227	142	110	95
5	273	158	177	211	224	909	602	724	221	141	109	95
6	310	156	160	189	223	1070	618	725	215	139	107	97
7	280	155	151	173	229	814	668	706	225	138	106	98
8	258	156	146	161	228	728	720	702	219	134	105	98
9	243	154	144	157	223	659	780	800	208	133	105	96
10	230	154	141	156	236	607	859	751	203	131	105	95
11	218	153	141	156	685	685	987	697	198	130	104	96
12	206	151	142	153	3370	991	946	650	193	130	105	96
13	198	150	142	152	1540	1930	859	603	187	129	104	97
14	194	149	152	147	1230	1160	924	557	183	126	104	98
15	189	147	147	142	1060	980	979	519	187	125	104	98
16	184	147	141	127	837	842	1000	485	193	123	105	97
17	183	147	139	156	680	754	999	450	185	130	103	96
18	188	146	147	150	605	821	980	413	179	175	103	94
19	184	150	157	143	530	734	779	390	176	160	102	94
20	179	150	159	138	485	655	702	473	173	143	103	93
21	174	187	147	140	435	626	732	398	170	137	103	92
22	171	168	159	140	420	576	815	362	169	136	102	91
23	169	156	155	146	400	575	823	332	164	135	101	91
24	169	151	146	170	378	537	847	314	161	131	101	92
25	168	149	145	207	363	516	874	304	157	128	100	92
26	165	145	144	212	347	509	915	319	154	126	98	93
27	165	145	142	210	333	504	1010	317	156	123	97	92
28	164	144	138	409	322	486	1020	297	153	121	97	93
29	175	157	139	280	---	471	987	283	149	119	97	93
30	290	146	136	238	---	476	1070	272	146	118	98	91
31	205	---	143	214	---	514	---	262	---	116	99	---
TOTAL	6573	4652	4562	5931	16340	21845	24962	16231	5679	4152	3217	2848
MEAN	212	155	147	191	584	705	832	524	189	134	104	94.9
MAX	310	187	177	409	3370	1930	1070	930	254	175	115	99
MIN	164	144	136	127	206	306	568	262	146	116	97	91
AC-FT	13040	9230	9050	11760	32410	43330	49510	32190	11260	8240	6380	5650

CAL YR 1986 TOTAL 378069 MEAN 1036 MAX 20700 MIN 136 AC-FT 749900
WTR YR 1987 TOTAL 116992 MEAN 321 MAX 3370 MIN 91 AC-FT 232100

SACRAMENTO RIVER BASIN

11413100 NORTH YUBA RIVER ABOVE SLATE CREEK, NEAR STRAWBERRY VALLEY, CA.

LOCATION.--Lat 39°31'29", long 121°05'26", in NE 1/4 SW 1/4 sec.9, T.19 N., R.8 E., Yuba County, Hydrologic Unit 18020125, Tahoe National Forest, on left bank 500 ft upstream from Slate Creek and 2.8 mi southeast of Strawberry Valley.

DRAINAGE AREA.--351 mi^2.

PERIOD OF RECORD.--June 1968 to September 1987 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,953.44 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Estimated daily discharges: Oct. 1-14, Oct. 29 to Nov. 4. Records good except those for periods of estimated record, which are fair. Several small diversions above station for irrigation and mining. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--19 years, 1,246 ft^3/s, 902,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,500 ft^3/s, Feb. 17, 1986, gage height, 26.90 ft, from crest-stage gage; minimum daily, 71 ft^3/s, Sept. 7-15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 29.8 ft, from floodmarks, discharge, 63,400 ft^3/s, from slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	0845	*9,610	*12.23	Mar. 12	2400	5,050	10.18

Minimum daily, 104 ft^3/s, Sept. 23-25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	415	290	184	303	339	490	921	1240	335	167	131	114
2	395	240	182	435	398	488	989	994	318	165	128	114
3	365	218	181	712	481	484	1050	936	305	163	126	113
4	370	206	180	528	430	507	963	909	293	162	126	111
5	425	203	252	364	389	1480	940	910	284	160	124	109
6	475	199	227	308	372	2300	941	912	272	159	124	110
7	430	197	202	274	377	1590	994	890	278	158	123	112
8	390	196	192	247	376	1350	1060	876	285	155	122	112
9	355	196	184	233	368	1210	1130	1020	261	152	121	112
10	330	193	179	228	381	1080	1220	983	249	151	121	109
11	305	193	176	228	1110	1240	1380	879	241	148	121	109
12	285	193	173	225	1260	1930	1350	818	233	146	121	109
13	270	190	176	223	6890	3510	1200	758	226	146	120	109
14	255	190	191	212	2810	2330	1260	704	222	145	119	110
15	243	190	192	202	2010	1890	1330	660	218	140	120	112
16	237	187	180	176	1540	1570	1360	619	228	139	122	112
17	234	187	175	245	1220	1390	1340	583	223	139	121	110
18	237	185	187	226	1030	1470	1340	541	216	184	119	109
19	234	190	208	209	896	1310	1070	507	211	193	118	107
20	230	194	222	200	800	1160	957	622	204	167	119	107
21	224	246	198	198	735	1120	963	547	199	158	119	106
22	221	230	209	199	682	1010	1050	504	199	154	118	105
23	215	203	216	212	646	1010	1060	456	195	153	117	104
24	214	194	196	254	608	945	1080	427	190	151	117	104
25	214	190	190	325	569	910	1110	413	186	146	117	104
26	212	185	185	353	535	893	1140	424	181	144	114	106
27	211	181	184	326	519	881	1270	432	182	142	112	106
28	211	179	179	678	501	844	1300	403	180	138	112	105
29	305	203	174	499	---	816	1230	381	175	136	112	107
30	540	192	174	416	---	807	1370	365	170	133	112	107
31	355	---	177	362	---	849	---	349	---	131	113	---
TOTAL	9402	6040	5925	9600	28272	38864	34368	21062	6959	4725	3709	3264
MEAN	303	201	191	310	1010	1254	1146	679	232	152	120	109
MAX	540	290	252	712	6890	3510	1380	1240	335	193	131	114
MIN	211	179	173	176	339	484	921	349	170	131	112	104
AC-FT	18650	11980	11750	19040	56080	77090	68170	41780	13800	9370	7360	6470

CAL YR 1986 TOTAL 585500 MEAN 1604 MAX 44300 MIN 162 AC-FT 1161000
WTR YR 1987 TOTAL 172190 MEAN 472 MAX 6890 MIN 104 AC-FT 341500

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 Feney 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 U.S. Geological Survey. Monthly diversion used to adjust Slate Creek below diversion dam near Strawberry Valley since February 1962.

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

REMARKS.--No estimated daily discharges. Records good. 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.

AVERAGE DISCHARGE.--21 years, 94.5 ft^3/s, 68,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 863 ft^3/s, Apr. 6, 1963; no flow many days in each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	14	4.5	32	42	70	182	141	23	4.0		
2	32	12	4.7	49	43	71	194	108	20	3.7		
3	27	9.9	4.5	55	48	76	210	98	19	3.7		
4	24	8.7	4.1	50	46	89	187	88	18	3.7		
5	25	7.9	17	36	46	533	179	79	18	3.7		
6	25	7.4	15	29	49	754	178	75	17	3.7		
7	23	6.8	10	24	54	509	181	70	18	3.7		
8	20	6.3	7.4	19	56	411	188	83	17	3.7		
9	18	6.2	6.2	18	54	340	201	127	15	3.7		
10	17	6.0	5.2	17	72	293	209	98	15	3.7		
11	15	5.6	5.4	18	341	381	232	78	14	3.7		
12	14	5.2	5.5	19	384	551	209	68	12	3.7		
13	13	4.6	6.2	18	401	811	182	61	10	1.3		
14	12	4.3	11	15	471	741	182	54	9.4	0		
15	9.7	4.2	10	8.0	428	501	181	49	9.4	0		
16	7.5	4.2	7.6	8.6	299	396	173	46	10	0		
17	7.8	4.2	5.8	17	237	347	163	43	9.6	0		
18	9.5	4.1	11	17	201	382	163	39	8.8	0		
19	7.4	6.0	13	13	170	307	136	39	8.2	0		
20	6.8	5.4	14	12	147	266	121	50	7.5	0		
21	6.1	13	9.8	12	129	245	114	46	7.1	0		
22	5.7	8.2	13	12	114	215	114	42	6.8	0		
23	5.1	6.1	12	14	105	208	108	35	6.3	0		
24	4.9	5.1	9.8	15	94	187	104	32	5.8	0		
25	4.5	4.7	9.4	27	85	179	100	30	5.1	0		
26	4.3	4.3	10	40	78	175	98	33	4.7	0		
27	5.0	4.0	8.2	41	73	169	112	32	4.4	0		
28	5.2	4.0	6.5	117	70	159	105	30	4.2	0		
29	8.4	6.0	9.1	70	---	152	98	28	4.1	0		
30	42	4.5	5.7	55	---	152	135	26	4.0	0		
31	16	---	11	44	---	164	---	24	---	0		---
TOTAL	459.9	192.9	272.6	921.6	4337	9834	4739	1852	331.4	46.0	0	0
MEAN	14.8	6.43	8.79	29.7	155	317	158	59.7	11.0	1.48	0	0
MAX	42	14	17	117	471	811	232	141	23	4.0	0	0
MIN	4.3	4.0	4.1	8.0	42	70	98	24	4.0	0	0	0
AC-FT	912	383	541	1830	8600	19510	9400	3670	657	91	0	0

CAL YR 1986 TOTAL 42760.13 MEAN 117 MAX 838 MIN 0 AC-FT 84810
WTR YR 1987 TOTAL 22986.40 MEAN 63.0 MAX 811 MIN 0 AC-FT 45590

SACRAMENTO RIVER BASIN

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 Feney Ravine, and 4.5 mi northeast of town of Strawberry Valley.

DRAINAGE AREA.--49.4 mi^2.

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.--Estimated daily discharges: Oct. 1-15, Apr. 6 to May 1. Records good. Slate Creek tunnel (station 11413250) diverts at diversion dam, 300 ft upstream, up to 900 ft^3/s from Slate Creek Reservoir, capacity, 223 acre-ft, 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).--27 years, 214 ft^3/s, 155,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Creek only: Maximum discharge, 13,600 ft^3/s, Feb. 17, 1986, gage height, 16.89 ft, from rating curve extended above 5,500 ft^3/s on basis of computed flow over dam at gage heights 12.75, 15.90, and 16.89 ft; minimum, 0.3 ft^3/s, Mar. 4, 5, 1962.
Combined flow: Maximum discharge, 13,900 ft^3/s, Dec. 22, 1964; minimum daily, 2.3 ft^3/s, Nov. 23, 1961.

EXTREMES FOR CURRENT YEAR.--Creek only: Maximum discharge, 3,200 ft^3/s, Feb. 13, gage height, 10.60 ft; minimum daily, 5.8 ft^3/s, Sept. 22, 24, 25.
Combined flow: Maximum discharge, 3,440 ft^3/s, Feb. 13; minimum daily, 5.8 ft^3/s, Sept. 22, 24, 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	10	11	12	11	11	11	11	11	12	9.3	6.2
2	12	10	11	12	11	11	11	12	12	12	8.9	6.3
3	12	10	11	12	11	11	11	12	12	12	8.8	6.2
4	12	10	11	12	11	11	11	12	12	12	8.7	6.0
5	12	10	12	12	11	200	11	12	11	12	8.4	6.1
6	12	10	12	12	11	110	11	12	11	12	8.2	6.3
7	12	10	12	12	11	11	11	12	11	12	8.1	6.4
8	12	11	12	12	11	11	11	12	11	12	8.0	6.5
9	12	11	12	12	11	11	12	12	11	12	7.9	6.3
10	12	11	12	12	11	11	12	12	11	12	7.8	6.2
11	12	11	12	12	12	11	12	12	11	12	7.6	6.2
12	12	11	12	12	91	254	12	12	12	12	7.6	6.2
13	12	11	12	12	1860	378	11	12	12	11	7.6	6.4
14	12	11	12	12	250	37	11	12	12	11	7.5	6.5
15	12	11	12	12	18	12	11	12	12	11	7.5	6.6
16	12	11	12	12	17	12	11	12	12	10	7.5	6.4
17	12	11	12	12	14	12	11	12	12	11	7.4	6.3
18	12	11	12	12	11	12	11	12	12	17	7.1	6.1
19	12	11	12	12	11	11	11	12	12	15	6.9	6.0
20	12	11	12	12	11	11	11	12	12	13	7.1	5.9
21	12	11	12	11	11	11	11	12	12	12	7.2	5.9
22	12	11	12	11	11	11	11	12	12	12	6.9	5.8
23	12	11	12	11	11	11	11	12	12	12	6.8	5.9
24	12	11	12	11	11	11	11	12	12	11	6.8	5.8
25	12	11	12	11	11	11	11	12	12	11	6.7	5.8
26	12	11	12	11	11	11	11	11	12	11	6.3	6.0
27	12	11	12	11	11	11	12	11	12	10	6.6	6.0
28	12	11	12	12	11	11	11	11	12	10	6.4	5.9
29	12	11	12	11	---	11	10	11	12	9.8	6.2	5.9
30	12	11	12	11	---	11	9.5	11	12	9.6	6.4	5.9
31	11	---	12	11	---	11	---	11	---	9.4	6.3	---
TOTAL	371	323	368	362	2493	1269	332.5	365	352	360.8	230.5	184.0
MEAN	12.0	10.8	11.9	11.7	89.0	40.9	11.1	11.8	11.7	11.6	7.44	6.13
MAX	12	11	12	12	1860	378	12	12	12	17	9.3	6.6
MIN	11	10	11	11	11	11	9.5	11	11	9.4	6.2	5.8
AC-FT	736	641	730	718	4940	2520	660	724	698	716	457	365
MEAN a	26.8	17.1	20.7	41.5	244	358	169	71.4	22.9	13.1	7.43	6.13
AC-FT a	1650	1020	1270	2550	13540	22030	10060	4390	1360	807	457	365

CAL YR 1986	TOTAL	64834.8	MEAN	178	MAX	10500	MIN	9.0	AC-FT	128600	MEAN a	295	AC-FT a	213450
WTR YR 1987	TOTAL	7010.8	MEAN	19.2	MAX	1860	MIN	5.8	AC-FT	13910	MEAN a	82.2	AC-FT a	59500

a Adjusted for diversion to Slate Creek tunnel.

SACRAMENTO RIVER BASIN

11413510 NEW COLGATE POWERPLANT NEAR FRENCH CORRAL, CA

LOCATION.--Lat 39°19'51", long 121°11'23", in NE 1/4 SE 1/4 sec.16, T.17 N., R.7 E., Yuba County, Hydrologic Unit 18020125, at powerplant on right bank of Yuba River, 0.3 mi upstream from Dobbins Creek, and 2.3 mi northwest of French Corral.

PERIOD OF RECORD.--October 1966 to current year. Prior to October 1969, published as "Colgate powerplant."

GAGE.--Recorded output from powerplant turbines.

REMARKS.--Water is diverted from North Yuba River at New Bullards Bar Dam (station 11413515). Colgate powerplant was rebuilt during the 1970 water year with an increased capacity. Browns Valley ditch diverted up to 10 ft^3/s at times from the head of the penstock for use in irrigation. This diversion was discontinued Oct. 31, 1973. 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.

AVERAGE DISCHARGE.--21 years, 1,425 ft^3/s, 1,032,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,200 ft^3/s, June 2, 1971; no flow for several days in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1060	814	911	824	.00	457	45	1080	1340	960	1710	719
2	774	756	661	799	494	570	.00	1050	855	774	1100	1110
3	1460	570	605	438	280	530	6.6	796	544	1100	2140	684
4	1350	512	512	842	188	115	5.0	776	423	973	1550	861
5	942	998	617	809	64	409	.00	1720	915	664	1900	872
6	1080	735	646	988	458	262	.00	1060	766	1460	1830	846
7	1620	802	519	635	422	161	34	1050	722	1200	1630	967
8	1950	822	460	355	352	51	648	436	1100	151	1900	1130
9	1460	718	710	544	629	.00	1150	865	1410	482	1640	691
10	2070	84	723	1510	530	.00	1270	584	1130	1250	1940	708
11	1880	979	664	1400	280	.00	465	1140	822	150	1780	1210
12	1820	1350	805	890	223	51	491	1280	1380	231	1430	556
13	1490	725	262	928	260	289	384	867	654	1110	1430	678
14	2150	735	798	779	263	222	902	1210	882	620	1780	369
15	1400	741	561	1150	243	193	227	231	850	642	1340	595
16	792	933	922	907	297	261	358	411	1010	591	1290	518
17	638	664	444	123	413	229	632	856	1020	758	1390	906
18	270	796	476	690	240	182	397	942	864	639	2010	727
19	515	767	453	344	294	154	583	1830	1370	574	1260	166
20	932	976	697	839	372	153	950	51	779	772	1320	736
21	561	580	681	631	399	22	804	221	1190	558	1600	446
22	777	743	397	813	423	330	984	929	706	583	1370	483
23	656	792	389	178	265	173	703	274	1440	700	1550	835
24	815	662	820	482	1050	309	1440	607	750	1340	1210	593
25	506	861	474	200	2.0	173	188	1160	1310	22	1320	988
26	495	816	592	378	354	147	1080	685	511	829	1330	320
27	479	797	276	444	214	325	1070	369	1180	533	1990	208
28	601	697	711	247	435	172	598	1040	1000	747	1280	201
29	615	455	433	238	---	544	1140	801	1060	1110	1250	603
30	679	945	1050	215	---	319	1070	743	516	1430	1170	486
31	424	---	297	164	---	164	---	500	---	2010	871	---
TOTAL	32261	22825	18566	19784	9444.00	6967.00	17624.60	25564	28499	24963	47311	20212
MEAN	1041	761	599	638	337	225	587	825	950	805	1526	674
MAX	2150	1350	1050	1510	1050	570	1440	1830	1440	2010	2140	1210
MIN	270	84	262	123	.00	.00	.00	51	423	22	871	166
AC-FT	63990	45270	36830	39240	18730	13820	34960	50710	56530	49510	93840	40090

CAL YR 1986 TOTAL 527044.00 MEAN 1444 MAX 3530 MIN 0 AC-FT 1045400
WTR YR 1987 TOTAL 276035.56 MEAN 756 MAX 2150 MIN 0 AC-FT 547500

SACRAMENTO RIVER BASIN

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 mi^2.
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, 817,623 acre-ft, May 10, elevation, 1,923 36 ft; minimum, 601,612 acre-ft, Jan. 22, elevation, 1,868.10.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Yuba County Water Agency, from 1969 survey)

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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	703817	662834	633585	615746	606502	671320	770552	814961	809440	770552	730124	647070
2	703114	661858	632855	615567	607035	671509	773037	815261	808373	769311	728208	645038
3	701087	661295	632125	618008	607639	671509	775528	815862	808075	767658	724306	643968
4	699142	660733	631579	618008	608351	672532	777815	816335	807947	766050	721526	642493
5	698131	659459	631543	617541	609241	676445	779940	815046	806753	765184	718477	640986
6	696812	658525	630668	616499	609419	682668	782195	815475	805958	762715	714921	639552
7	694602	657439	630195	615997	609846	685812	784578	814789	805220	760661	711732	637975
8	691626	656356	629795	616033	609953	689466	785877	816077	803689	760661	708277	635887
9	689428	655238	628850	615746	609953	692708	786254	816721	801566	760005	705458	634753
10	686158	655461	627542	613418	610168	695532	786799	817623	799996	757997	701983	633585
11	683089	654082	627035	611345	612703	699064	788940	816550	799022	757997	698753	631397
12	680143	651999	625947	610417	616212	704989	791253	816730	796906	757833	696269	630450
13	677740	651071	626056	609277	639259	716579	793275	816936	795976	755951	693712	629286
14	674164	650143	625078	608280	647920	723511	794371	816077	794878	755093	690468	628778
15	672040	649179	624535	606573	653673	728847	796906	817022	793739	754113	688002	627905
16	671055	647920	623125	605295	657363	733086	799234	817580	792305	753297	685735	627035
17	670374	647070	622945	605543	660058	736576	801141	817022	790580	752075	683281	625404
18	670298	645960	622584	604727	662308	740120	803264	816506	789654	751097	679559	624209
19	669806	645075	622367	604656	664337	743390	804753	813932	787554	750446	677321	624065
20	668937	643747	621681	603380	665579	745980	805093	815132	786380	749226	674924	622692
21	668747	643368	620888	602744	666522	749226	805731	815948	784578	748455	671888	622078
22	668106	642494	620851	601612	667426	751382	806242	815261	783616	747602	669692	621320
23	667728	641610	620815	601895	668483	754113	807307	815733	781526	746628	666899	619915
24	666861	640618	619807	602036	668106	756156	807094	815561	780316	744360	664714	618727
25	666409	639442	619231	602496	669504	758283	809056	814104	778190	744562	662346	617289
26	665918	638341	618655	602460	670033	760456	809569	813675	777732	743147	659983	616857
27	665579	637242	618727	602673	670828	762181	810295	813932	775819	742339	656282	616451
28	664940	636509	617829	603912	671207	764031	812048	812818	774282	741329	654046	616248
29	664412	636216	617469	604585	---	765060	812647	812133	772622	739354	651776	615405
30	663961	634972	615854	605188	---	766833	813975	811363	771794	736777	649661	614599
31	663923	---	615854	605649	---	768401	---	811235	---	733286	648216	---
MAX	703817	662834	633585	618008	671207	768401	813975	817623	809440	770552	730124	647070
MIN	663923	634972	615854	601612	606502	671320	770552	811235	771794	733286	648216	614599
a	1885.19	1877.38	1872.10	1869.24	1887.12	1911.68	1922.51	1921.87	1912.50	1903.05	1880.98	1871.76
b	-41848	-28951	-19118	-10205	+65558	+97194	+45574	-2740	-39441	-38508	-85070	-33617

CAL YR 1986 MAX 963412 MIN 534153 b +82488
WTR YR 1987 MAX 817623 MIN 601612 b -91172

a Elevation, in feet NGVD, 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 (REVISED).--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 mi^2.

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.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by New Bullards Bar Reservoir since 1969 (station 11413515). New Colgate Powerplant (station 11413510) diverts from New Bullards Bar Dam 0.2 mi upstream. Water is diverted out of basin through Slate Creek tunnel (station 11413250). See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE (since construction of New Bullards Bar Dam, unadjusted).--18 years (water years 1970-87), 259 ft^3/s, 187,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,200 ft^3/s, Jan. 22, 1970, gage height, 35.29 ft, at auxiliary gage, from rating curve extended above 40,000 ft^3/s on basis of computation of flow over old Colgate Dam; minimum daily, 0.42 ft^3/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 ft^3/s, at auxiliary gage, from computation of flow over old Colgate Dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9.7 ft^3/s, Aug. 13, gage height, 7.03 ft; minimum daily, 6.2 ft^3/s, Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	6.4	7.3	7.5	6.7	6.4	6.9	7.1	6.9	6.8	7.5	7.5
2	6.7	6.4	6.7	7.5	7.2	6.4	6.9	7.1	6.9	6.7	7.5	7.5
3	6.7	6.6	6.7	7.6	6.7	6.4	6.9	7.1	6.9	6.7	7.5	7.5
4	6.6	6.7	6.7	6.9	6.4	6.4	6.9	6.9	7.1	6.7	7.5	7.5
5	6.6	6.8	7.0	6.9	6.4	7.3	6.9	6.9	7.0	6.8	7.5	7.5
6	6.4	6.6	6.7	6.7	6.4	7.2	6.9	6.9	6.9	7.8	7.5	7.5
7	6.7	6.7	6.7	6.7	6.4	6.7	6.9	6.9	6.9	6.7	7.5	7.5
8	6.7	6.7	6.7	6.7	6.4	6.7	6.9	6.9	6.9	6.7	7.5	7.5
9	6.7	6.7	6.7	6.7	6.4	6.7	6.9	7.5	6.9	7.0	7.5	7.5
10	6.7	6.7	6.6	6.7	6.6	6.7	6.9	7.3	6.9	6.7	7.5	7.5
11	6.7	6.7	6.6	6.7	6.9	6.8	6.9	6.9	6.9	6.7	7.5	7.5
12	6.6	6.7	6.6	6.7	7.1	7.4	6.9	6.9	6.9	6.7	7.6	7.5
13	6.5	6.7	6.6	6.7	8.0	7.4	6.9	6.9	6.9	6.7	8.2	7.5
14	6.7	6.7	6.6	6.7	6.9	7.3	6.9	6.9	6.9	6.7	7.5	7.5
15	6.7	6.7	6.6	6.7	7.2	7.1	6.9	7.3	6.9	6.7	7.5	7.5
16	6.9	6.7	6.9	6.7	6.9	6.9	6.9	7.1	6.9	6.7	7.5	7.5
17	6.8	6.7	6.7	6.7	6.9	6.7	6.9	6.9	6.9	6.7	7.5	7.5
18	6.7	6.7	6.7	6.7	6.7	6.7	6.9	6.9	6.9	6.7	7.4	7.5
19	6.7	6.7	6.8	6.7	6.4	6.7	6.9	6.9	6.9	6.6	7.4	7.5
20	6.7	6.7	6.7	6.7	6.4	6.7	6.9	6.9	6.9	6.6	7.5	7.5
21	6.7	6.7	6.7	6.7	6.4	6.8	6.9	6.9	6.9	6.9	7.5	7.5
22	6.8	6.7	6.7	6.7	6.4	6.7	6.9	6.9	6.9	6.9	7.5	7.5
23	6.9	6.7	6.7	6.8	6.4	7.1	6.9	6.9	6.9	6.7	7.5	7.5
24	6.8	6.7	6.7	7.1	6.4	6.9	6.9	6.9	6.9	6.7	7.5	7.5
25	6.7	6.7	6.7	6.9	6.4	6.9	6.9	6.9	6.9	6.7	7.5	7.5
26	6.7	6.5	6.7	7.7	6.4	6.9	6.9	6.9	6.9	6.7	7.5	7.5
27	6.7	6.7	6.7	8.3	6.4	6.9	6.9	6.9	6.9	6.7	7.5	7.5
28	6.7	6.7	6.7	7.5	6.4	6.9	6.9	6.9	6.9	6.7	7.5	7.5
29	6.8	7.1	6.7	6.9	---	6.9	6.9	6.9	6.9	7.0	7.5	7.5
30	6.7	8.0	6.5	6.9	---	6.9	7.1	6.9	6.9	7.5	7.5	7.4
31	6.4	---	6.5	6.7	---	6.9	---	6.9	---	7.5	7.5	---
TOTAL	206.9	201.8	207.9	215.1	186.2	212.4	207.2	216.1	207.3	211.4	233.1	224.9
MEAN	6.67	6.73	6.71	6.94	6.65	6.85	6.91	6.97	6.91	6.82	7.52	7.50
MAX	6.9	8.0	7.3	8.3	8.0	7.4	7.1	7.5	7.1	7.8	8.2	7.5
MIN	6.2	6.4	6.5	6.7	6.4	6.4	6.9	6.9	6.9	6.6	7.4	7.4
AC-FT	410	400	412	427	369	421	411	429	411	419	462	446

CAL YR 1986	TOTAL	324645.4	MEAN	889	MAX	48200	MIN	6.2	AC-FT	644000
WTR YR 1987	TOTAL	2530.3	MEAN	6.93	MAX	8.3	MIN	6.2	AC-FT	5020

SACRAMENTO RIVER BASIN

11414000 SOUTH YUBA RIVER NEAR CISCO, CA

LOCATION.--Lat 39°19'12", long 120°33'38", in SE 1/4 SW 1/4 sec.19, T.17 N., R.13 E., Nevada County, Hydrologic Unit 18020125, on right bank 0.7 mi downstream from Rattlesnake Creek, 1.3 mi west of Cisco Grove, and 1.5 mi northwest of Cisco.

DRAINAGE AREA.--51.8 mi^2.

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 5,520 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1945, water-stage recorder at site 200 ft upstream at same datum.

REMARKS.--Estimated daily discharges: Nov. 29, 30, Dec. 1-10, 12-16, 18-20, 22-28, 30-31, Jan. 2-7, 11-18, 31, Feb. 4, 7, 8, 25-26, Mar. 17-21. Records excellent except for estimated daily discharges, which are good. Low flow regulated by several small lakes operated by Pacific Gas & Electric Co.

AVERAGE DISCHARGE.--45 years, 204 ft^3/s, 147,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft^3/s, Jan. 31, 1963, gage height, 19.6 ft from floodmarks in gage house, 20.6 ft from outside floodmarks, from rating curve extended above 5,000 ft^3/s on basis of slope-area measurement at gage height 15.8 ft; minimum daily, 0.1 ft^3/s, Nov. 5-7, 1954.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 27	2045	*1,230	*5.92				

Minimum daily, 5.1 ft^3/s, July 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	68	26	7.6	11	20	61	266	462	53	5.7	5.7	6.7
2	59	24	7.6	10	21	61	331	310	46	5.5	5.6	6.6
3	56	22	7.6	10	21	61	342	365	41	5.1	6.6	6.5
4	57	21	7.7	10	22	74	228	464	37	5.7	7.5	5.8
5	91	24	7.8	11	24	423	238	508	34	9.6	7.5	6.0
6	103	20	7.8	11	25	429	309	482	30	11	7.2	6.1
7	83	12	7.9	11	26	275	402	412	29	9.0	7.1	6.1
8	72	9.2	7.9	11	28	216	459	393	30	7.2	7.1	6.0
9	65	7.9	7.9	11	30	180	556	512	25	6.1	7.0	8.7
10	57	7.4	7.9	11	37	163	616	449	22	6.0	7.0	11
11	50	7.0	8.0	11	98	147	684	465	19	6.2	6.8	11
12	41	8.1	8.0	11	124	166	550	376	17	7.0	6.7	11
13	36	8.1	8.0	11	710	192	530	314	15	7.0	6.7	11
14	33	7.7	8.0	11	282	145	641	276	14	7.0	6.7	10
15	31	7.6	8.0	11	149	122	668	240	14	7.3	6.7	10
16	31	7.4	8.0	11	106	108	672	206	17	6.8	6.4	10
17	31	7.4	8.0	11	87	100	662	172	15	6.6	6.2	10
18	34	7.2	8.1	11	77	98	520	141	13	7.7	5.8	9.8
19	35	7.5	8.2	11	69	96	300	119	12	7.8	5.5	9.8
20	33	7.8	8.3	11	66	94	297	133	10	7.3	5.7	9.6
21	31	13	8.4	11	60	90	482	140	9.4	7.2	5.8	9.4
22	29	12	8.4	11	56	90	603	113	8.7	7.2	6.1	9.3
23	28	10	8.5	11	55	90	612	94	7.9	7.0	5.9	9.2
24	27	9.4	8.6	12	52	84	632	85	7.2	6.9	6.1	9.1
25	27	8.9	8.7	16	48	84	664	76	6.3	6.7	6.1	8.9
26	26	8.5	8.8	19	46	96	762	85	5.9	6.6	5.9	8.9
27	26	7.9	9.0	25	45	114	866	94	5.6	6.5	5.9	8.7
28	26	7.6	9.0	34	57	111	744	81	6.7	6.4	5.8	8.7
29	26	7.6	9.1	25	---	112	744	70	6.5	6.2	5.7	8.8
30	27	7.6	9.1	22	---	132	721	64	6.1	6.0	5.9	8.5
31	28	---	9.1	21	---	196	---	57	---	6.0	6.3	---
TOTAL	1367	341.8	255.0	424	2441	4410	16101	7758	563.3	214.3	197.0	261.2
MEAN	44.1	11.4	8.23	13.7	87.2	142	537	250	18.8	6.91	6.35	8.71
MAX	103	26	9.1	34	710	429	866	512	53	11	7.5	11
MIN	26	7.0	7.6	10	20	61	228	57	5.6	5.1	5.5	5.8
AC-FT	2710	678	506	841	4840	8750	31940	15390	1120	425	391	518

CAL YR 1986 TOTAL 109206.7 MEAN 299 MAX 5600 MIN 4.8 AC-FT 216600
WTR YR 1987 TOTAL 34333.6 MEAN 94.1 MAX 866 MIN 5.1 AC-FT 68100

SACRAMENTO RIVER BASIN

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 mi^2.
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 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 November 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 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, gage height, 114.60 ft; minimum, 250 acre-ft, Oct. 31 to Nov. 7, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 37,199 acre-ft, June 1, gage height, 96.80 ft; minimum, 3,233 acre-ft, Sept. 28, gage height, 22.63 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6429	7699	7373	7098	7092	8330	10900	27567	37199	20392	6849	6087
2	6482	7676	7348	7101	7117	8376	11126	27916	37146	19740	6822	6060
3	6541	7670	7357	7104	7114	8392	11375	28326	37199	19089	6816	6054
4	6598	7673	7363	7107	7114	8422	11524	28930	36830	18372	6777	6010
5	6748	7664	7323	7110	7095	8714	11717	29633	36384	17707	6753	5989
6	6877	7642	7298	7113	7089	8954	11933	30329	35946	17027	6726	5969
7	6992	7642	7329	7116	7120	9111	12134	30922	35491	16368	6699	5987
8	7089	7620	7292	7118	7129	9232	12330	31513	35033	15717	6714	5963
9	7160	7629	7264	7120	7135	9329	12531	32188	34538	15046	6666	5913
10	7203	7598	7249	7121	7123	9420	12733	32782	34103	14425	6625	5810
11	7286	7579	7237	7123	7227	9494	12930	33431	33443	13761	6598	5705
12	7332	7560	7227	7114	7336	9608	13132	34046	32770	13127	6574	5630
13	7323	7551	7218	7108	7673	9697	13332	34551	32120	12481	6565	5506
14	7379	7557	7209	7089	7835	9787	15876	35026	31562	11865	6518	5394
15	7416	7541	7194	7080	7944	9845	16526	35427	30854	11308	6491	5298
16	7413	7529	7175	7068	8021	9892	17207	35764	30214	10767	6467	5162
17	7485	7519	7163	7037	8082	9921	17895	36018	29602	10265	6447	5041
18	7516	7488	7151	7001	8108	10048	18422	36161	28900	9765	6420	4905
19	7532	7482	7148	6992	8150	10110	18697	36397	28237	9245	6397	4773
20	7522	7475	7137	6980	8189	10154	18969	36534	27562	8745	6352	4636
21	7601	7472	7132	6971	8222	10195	19473	36639	26916	8215	6329	4469
22	7591	7513	7132	6955	8245	10235	20143	36751	26259	7727	6303	4308
23	7604	7454	7129	6934	8274	10280	20827	36810	26259	7246	6288	4145
24	7613	7460	7111	7001	8297	10317	21558	36817	24946	7053	6270	3973
25	7591	7454	7102	6974	8304	10343	22370	36955	24280	7031	6238	3778
26	7620	7463	7102	6974	8294	10332	23272	37028	23665	7007	6209	3572
27	7642	7407	7083	7056	8290	10428	24347	37080	22981	6977	6227	3307
28	7654	7404	7086	7089	8300	10469	25281	37087	22338	6952	6182	3233
29	7683	7429	7089	7071	---	10495	26282	37127	21670	6931	6144	3238
30	7661	7407	7092	7089	---	10582	27173	37087	21096	6907	6149	3241
31	7686	---	7095	7071	---	10706	---	37100	---	6880	6126	---
MAX	7686	7699	7373	7123	8304	10706	27173	37127	37199	20392	6849	6087
MIN	6429	7404	7083	6934	7089	8330	10900	27567	21096	6880	6126	3233
a	38.45	37.56	36.55	36.47	40.36	47.19	80.69	96.65	69.81	35.84	33.30	22.66
b	+1307	-279	-312	-24	+1229	+2406	+16467	+9927	-16004	-14216	-754	-2885

CAL YR 1986 MAX 49580 MIN 4048 b +1572
WTR YR 1987 MAX 37199 MIN 3233 b -3138

a Gage height, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 mi^2.

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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--21 years, 138 ft^3/s, 99,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,660 ft^3/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 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 3.5 ft^3/s, Jan. 2-9, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 354 ft^3/s, June 11, 12, July 2, gage height, 3.60 ft; minimum daily, 5.3 ft^3/s, Sept. 29, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	12	12	12	11	15	30	38	311	11	12
2	11	11	12	12	12	11	15	30	38	330	11	12
3	10	11	12	12	12	12	15	30	38	341	11	12
4	11	11	12	12	12	12	15	30	172	337	11	11
5	10	11	12	12	12	16	15	30	256	333	11	11
6	10	11	12	12	12	14	16	30	255	329	11	11
7	11	11	12	12	12	13	16	31	255	326	11	11
8	11	11	12	12	12	13	17	32	254	321	11	11
9	11	11	12	12	12	13	17	33	252	326	11	11
10	11	11	12	12	12	13	18	33	251	328	11	98
11	11	11	12	12	12	13	18	33	310	323	11	158
12	11	11	12	12	12	13	18	34	344	318	11	157
13	11	11	12	12	15	13	19	35	341	313	11	156
14	11	11	12	12	12	13	20	35	339	309	11	156
15	11	11	12	12	12	13	20	35	336	273	11	155
16	11	11	12	12	12	13	21	36	334	251	11	154
17	11	11	12	12	12	13	21	36	332	248	11	153
18	11	11	12	12	12	14	21	36	330	246	11	153
19	11	11	12	12	12	13	21	36	329	243	11	151
20	11	11	12	12	11	13	21	37	326	240	12	150
21	11	11	12	12	11	13	22	37	323	236	12	149
22	11	11	12	12	11	13	22	37	319	233	12	148
23	11	11	12	12	11	13	23	37	316	228	12	147
24	11	11	12	12	11	13	23	37	314	90	12	146
25	11	11	12	12	11	13	24	37	323	11	12	144
26	11	11	12	12	11	14	25	37	327	11	12	143
27	11	11	12	12	11	14	26	37	323	11	12	142
28	11	11	12	12	11	14	27	37	321	11	12	70
29	11	11	12	12	---	14	28	37	317	11	12	5.3
30	11	12	12	12	---	14	29	37	314	11	12	5.3
31	11	---	12	12	---	15	---	37	---	11	12	---
TOTAL	338	331	372	372	330	409	608	1069	8327	6910	353	2842.6
MEAN	10.9	11.0	12.0	12.0	11.8	13.2	20.3	34.5	278	223	11.4	94.8
MAX	11	12	12	12	15	16	29	37	344	341	12	158
MIN	10	11	12	12	11	11	15	30	38	11	11	5.3
AC-FT	670	657	738	738	655	811	1210	2120	16520	13710	700	5640

CAL YR 1986 TOTAL 65324.9 MEAN 179 MAX 776 MIN 6.5 AC-FT 129600
WTR YR 1987 TOTAL 22261.6 MEAN 61.0 MAX 344 MIN 5.3 AC-FT 44160

SACRAMENTO RIVER BASIN

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 mi^2.
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 gage 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 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, 71,982 acre-ft, July 20, gage height, 200.96 ft; minimum, 35,501 acre-ft, Feb. 10, gage height, 137.89 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41147	53112	58821	40721	37541	38814	48765	69912	68498	69203	65475	50857
2	41804	53228	59079	40777	37369	38614	49932	69197	67803	68770	64951	50215
3	42413	53345	59060	40762	37276	38280	51256	68597	67223	68577	63879	49690
4	43064	53432	58277	40573	37025	38026	51996	68199	66771	69417	62803	49589
5	43868	53473	57378	40516	36644	39696	53066	68146	67059	70248	61724	49752
6	44684	53537	56438	40388	36366	41034	54152	68305	67836	70355	60624	50226
7	45431	53625	55548	40281	36264	42033	55506	68438	68611	69899	59676	50470
8	46136	53684	54623	40164	35983	42806	56992	68910	68823	69474	59368	50272
9	46824	53684	53625	40098	35650	43090	58717	70120	68544	69023	59312	49859
10	47351	53695	52648	40011	35501	43264	60537	71132	68272	69330	59024	49532
11	47781	53713	52094	39945	36094	43418	62588	71485	67968	70295	58576	49617
12	48225	53736	51085	39550	36702	43905	64276	71288	67690	71267	58161	50187
13	48731	53812	50074	39398	41364	44668	65819	70827	68577	71593	57663	50754
14	49218	53894	49061	39287	41944	45215	67295	70355	69417	71322	57245	50934
15	49679	53959	48019	39176	41721	45458	68491	70026	69738	70997	57203	50743
16	50396	54047	47596	39060	40993	45539	69170	70692	69450	70585	57191	50595
17	50857	54094	47147	38930	40516	45588	69484	71125	69156	70882	56703	50464
18	51325	54094	46141	38839	40475	45967	69631	71132	68770	71417	56013	50555
19	51812	54246	45151	38724	40337	46054	69631	70585	68770	71927	55334	51090
20	52625	54629	44144	38629	40250	46054	68140	70376	69604	71982	54659	51646
21	52376	55014	43133	38434	40301	46174	67789	70208	70389	71238	54041	51433
22	52446	55405	42314	38270	40358	46277	67789	69979	70080	70807	54035	50800
23	52556	55804	41887	38111	40174	46283	67796	70147	69517	70295	54029	50198
24	52671	56234	41778	37922	39854	46136	67849	70248	69050	70073	53543	49493
25	52776	56612	41685	37783	39494	45957	68001	70332	68604	70463	52770	49420
26	52828	56937	41586	37714	39136	45848	68338	69812	68464	70800	52008	49859
27	52903	57354	41493	37774	38774	45870	68963	69116	69263	70228	51330	50272
28	52950	57796	41374	37972	38764	46125	69330	68617	70046	69156	50629	50811
29	53025	58149	41276	38066	---	46386	69671	68312	70127	68093	50993	51153
30	53060	58479	41034	38031	---	46840	70073	68571	69678	67026	51233	51479
31	53095	---	40875	37873	---	47665	---	68863	---	66085	51245	---
MAX	53095	58479	59079	40777	41944	47665	70073	71485	70389	71982	65475	51646
MIN	41147	53112	40875	37714	35501	38026	48765	68146	66771	66085	50629	49420
a	171.02	180.05	148.70	142.75	144.54	161.44	198.14	196.33	197.55	192.11	167.81	168.22
b	+12651	+5384	-17604	-3002	+891	+8901	+22408	-1210	+815	-3593	-14840	+234
c	0	317	23790	7930	10370	9780	9060	27270	25230	26130	22760	14500
d	5930	4940	2810	3000	1750	2630	1970	3540	3390	3350	3310	3240

CAL YR 1986 MAX 74591 MIN 21639 b +19638 c 291400 d 71590
WTR YR 1987 MAX 71982 MIN 35501 b +11035 c 177100 d 39870

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.

SACRAMENTO RIVER BASIN

11414170 DRUM CANAL AT TUNNEL OUTLET, NEAR EMIGRANT GAP, CA

LOCATION.--Lat 39°19'03", long 120°39'08", in SE 1/4 SW 1/4 sec.20, T.17 N., R.12 E., Nevada County, Hydrologic Unit 18020125, Tahoe National Forest, 100 ft downstream from tunnel outlet, 1.0 mi downstream from Spaulding No. 1 powerplant, and 1.7 mi northeast of Emigrant Gap.

PERIOD OF RECORD.--October 1964 to current year. Prior to October 1972, published as "Drum Canal at intake."

GAGE.--Water-stage recorder. Elevation of gage is 4,880 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1968, in powerplant 0.7 mi upstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 1-28, May 8-12. Canal diverts from Spaulding No. 1 powerplant (station 11414154) at Lake Spaulding Dam. Water is used for irrigation and power in the Bear River basin. See schematic diagrams of Yuba River and Bear River basins.

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

AVERAGE DISCHARGE.--23 years, 537 ft^3/s, 389,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 860 ft^3/s, May 17, 1986; no flow for several days in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	42	60	186	192	108	11	818	428	745	273	465
2	11	28	112	186	213	246	11	816	505	744	239	463
3	11	7.6	283	224	231	299	11	816	482	594	501	462
4	10	21	606	223	237	299	11	819	499	108	499	316
5	0	41	687	193	236	289	11	667	245	107	500	113
6	0	28	683	192	235	260	11	530	12	518	502	115
7	0	2.9	678	192	235	105	11	487	12	749	441	116
8	0	20	714	192	235	106	11	485	323	747	116	370
9	0	43	766	191	251	243	9.8	195	497	746	117	466
10	0	43	762	191	266	288	7.9	193	556	353	398	459
11	0	43	544	191	194	287	7.9	603	668	20	495	360
12	111	43	769	344	264	285	7.9	697	688	20	497	117
13	48	18	773	191	209	247	7.9	694	109	390	500	118
14	13	2.9	768	190	466	168	185	692	109	641	446	365
15	12	2.9	763	187	555	214	343	511	461	640	255	463
16	12	2.9	329	193	664	242	618	112	694	639	256	461
17	11	29	698	207	471	280	795	112	693	277	494	460
18	11	44	771	192	240	281	805	304	692	203	595	356
19	10	44	766	191	242	289	808	414	523	204	593	109
20	10	44	770	195	227	259	810	395	115	519	596	113
21	40	44	778	194	122	214	816	502	115	692	570	515
22	32	40	697	188	122	158	819	448	557	690	262	704
23	30	22	479	185	248	236	819	206	746	688	262	698
24	14	13	296	225	289	284	820	206	744	434	512	692
25	24	22	282	204	288	294	807	206	743	21	604	390
26	51	71	282	183	288	293	806	538	576	21	598	109
27	39	16	281	184	287	251	814	632	114	305	589	109
28	42	16	281	184	116	107	817	501	114	494	556	17
29	42	44	234	178	---	106	818	378	494	491	104	0
30	42	48	187	183	---	101	818	111	747	495	105	0
31	42	---	186	185	---	13	---	112	---	433	373	---
TOTAL	680	886.2	16285	6144	7623	6852	12647.4	14200	13261	13728	12848	9501
MEAN	21.9	29.5	525	198	272	221	422	458	442	443	414	317
MAX	111	71	778	344	664	299	820	819	747	749	604	704
MIN	0	2.9	60	178	116	13	7.9	111	12	20	104	0
AC-FT	1350	1760	32300	12190	15120	13590	25090	28170	26300	27230	25480	18850

CAL YR 1986 TOTAL 188405.30 MEAN 516 MAX 860 MIN 0 AC-FT 373700
WTR YR 1987 TOTAL 114655.60 MEAN 314 MAX 820 MIN 0 AC-FT 227400

SACRAMENTO RIVER BASIN

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.--Estimated daily discharges: Oct. 1 to Jan. 31, Mar. 9 to Apr. 1, and Apr. 14 to May 31. 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 Nos. 1 and 2 powerplants (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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--23 years, 543 ft^3/s, 393,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 856 ft^3/s, May 8, 1982; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	48	69	219	206	110	34	836	400	751	278	479
2	11	34	132	220	233	246	38	828	519	751	214	478
3	11	15	313	257	258	325	39	825	496	644	519	477
4	10	28	638	258	264	327	33	826	514	114	517	349
5	0	47	720	226	263	345	29	673	286	113	518	104
6	0	34	717	225	263	321	30	535	0	477	520	104
7	0	9.0	713	224	264	117	34	492	0	753	484	104
8	0	28	749	224	263	126	35	490	282	751	111	343
9	0	49	800	223	259	270	38	202	506	750	111	474
10	0	49	794	223	252	320	43	204	554	420	378	468
11	0	49	576	223	189	314	43	610	653	45	508	391
12	111	49	806	376	254	315	39	702	693	45	509	107
13	48	24	810	223	271	283	36	698	127	354	516	104
14	13	10	806	222	514	199	198	696	101	642	475	325
15	12	10	786	219	587	240	354	514	415	640	237	460
16	12	10	335	241	696	263	635	114	693	640	238	459
17	11	35	727	259	519	302	810	113	692	301	466	458
18	11	50	804	220	243	314	817	306	692	178	600	377
19	10	50	800	195	244	313	817	416	561	179	600	90
20	10	50	803	199	234	278	818	397	106	479	602	96
21	40	50	812	198	114	232	824	509	105	700	598	457
22	32	46	731	192	113	177	828	503	503	700	247	691
23	30	28	511	189	249	255	827	210	738	700	246	688
24	14	19	330	229	318	300	827	210	738	498	486	685
25	24	28	315	208	317	306	814	210	751	50	608	424
26	51	77	314	199	316	306	813	542	629	50	604	100
27	39	22	313	200	316	265	821	636	117	295	596	95
28	49	22	313	196	135	120	824	504	116	519	595	25
29	49	50	266	199	---	118	824	381	454	515	104	0
30	49	54	219	198	---	116	834	114	752	515	101	0
31	48	---	218	200	---	32	---	115	---	479	352	---
TOTAL	707	1074.0	17240	6884	8154	7555	13156	14411	13193	14048	12938	9412
MEAN	22.8	35.8	556	222	291	244	439	465	440	453	417	314
MAX	111	77	812	376	696	345	834	836	752	753	608	691
MIN	0	9.0	69	189	113	32	29	113	0	45	101	0
AC-FT	1400	2130	34200	13650	16170	14990	26090	28580	26170	27860	25660	18670
a	0	222	8610	1100	1760	367	7660	6740	6870	7820	6470	4850
b	0	252	23700	12250	13460	13740	16780	20070	17570	17810	16690	11750
c	996	1530	871	747	535	538	782	1250	882	1570	1660	1360

CAL YR 1986 TOTAL 187581.0 MEAN 514 MAX 840 MIN 0 AC-FT 372100 a 111400 b 234900 c 10870
WTR YR 1987 TOTAL 118772.0 MEAN 325 MAX 836 MIN 0 AC-FT 235600 a 52470 b 164100 c 12720

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.

SACRAMENTO RIVER BASIN

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.--Estimated daily discharges: Mar. 30, 31, Apr. 1-6. 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 River and Bear River basins.

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

AVERAGE DISCHARGE.--23 years, 92.2 ft^3/s, 66,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 165 ft^3/s, Aug. 3, 1965; no flow Apr. 20-22, 1966, Apr. 6-11, 1971, and Apr. 5-21, 1986.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	91	90	65	54	62	1.0	61	66	62	55	64
2	116	91	89	66	54	63	1.0	61	67	62	68	64
3	111	90	89	67	54	63	1.0	60	65	62	68	64
4	108	89	90	68	53	63	1.3	60	65	61	68	64
5	107	89	91	67	53	58	1.3	60	65	62	67	62
6	103	89	90	67	53	59	5.2	62	65	64	67	62
7	94	88	90	68	53	63	14	64	64	63	67	63
8	95	88	65	68	53	63	13	64	66	62	68	65
9	67	89	49	67	52	63	17	63	67	61	35	65
10	108	90	49	67	53	63	43	65	67	60	9.9	65
11	106	90	49	68	40	63	57	67	66	62	13	65
12	107	90	50	69	54	57	58	67	65	63	51	64
13	106	91	50	67	38	52	58	65	62	64	74	62
14	106	93	50	67	47	60	58	65	64	63	75	62
15	108	93	50	66	65	62	59	66	65	62	75	62
16	107	94	50	66	52	61	59	68	65	62	77	62
17	105	92	50	66	51	61	58	69	65	62	73	67
18	105	91	49	66	51	61	58	69	65	61	67	66
19	101	91	49	66	51	60	58	70	64	62	64	65
20	82	92	48	65	51	62	59	70	62	63	63	66
21	100	93	48	65	51	62	59	72	63	62	63	64
22	105	93	48	66	51	60	59	73	66	61	64	63
23	105	92	46	66	51	61	59	72	67	61	65	63
24	105	94	50	67	53	60	59	72	68	61	64	62
25	105	94	54	67	61	60	59	71	68	62	63	62
26	105	94	55	66	61	60	59	71	66	62	64	64
27	106	95	55	67	62	60	59	66	65	62	64	68
28	106	95	55	64	62	61	60	65	66	61	63	67
29	106	95	55	54	---	60	60	64	68	61	64	66
30	107	94	54	54	---	4.7	60	63	62	61	64	66
31	101	---	53	54	---	1.5	---	64	---	61	64	---
TOTAL	3211	2750	1860	2026	1484	1769.2	1272.8	2049	1959	1918	1906.9	1924
MEAN	104	91.7	60.0	65.4	53.0	57.1	42.4	66.1	65.3	61.9	61.5	64.1
MAX	118	95	91	69	65	63	60	73	68	64	77	68
MIN	67	88	46	54	38	1.5	1.0	60	62	60	9.9	62
AC-FT	6370	5450	3690	4020	2940	3510	2520	4060	3890	3800	3780	3820
a	5620	4010	3150	3180	2440	3120	1570	3450	3440	3520	3300	3510

CAL YR 1986 TOTAL 26291.00 MEAN 72.0 MAX 147 MIN 0 AC-FT 52150 AC-FT a 29690
WTR YR 1987 TOTAL 24129.90 MEAN 66.1 MAX 118 MIN 1.0 AC-FT 47860 AC-FT a 40310

a Discharge, in acre-feet, to Deer Creek powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1965-85 in files of U.S. Geological Survey.

GAGE.--Water-stage recorder and steel-lipped rectangular weir with Parshall flume. Elevation of gage is 4,670 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Estimated daily discharges: Dec. 16-28. 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 194 ft^3/s, Apr. 14, June 8, 1986, gage height, 3.37 ft, from rating curve extended above 45 ft^3/s, on basis of weir formula; minimum daily, 0.09 ft^3/s, Nov. 5-7, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20 ft^3/s, Feb. 11, gage height, 1.94 ft; minimum daily, 1.3 ft^3/s, July 17, 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	4.4	1.6	2.5	1.8	1.7	2.7	1.6	2.0	1.6	1.9	1.5
2	1.7	4.9	1.6	2.0	1.9	1.7	2.7	1.5	2.0	1.7	1.9	1.5
3	1.7	4.8	1.6	1.8	2.0	1.7	2.8	1.5	1.9	1.7	1.9	1.5
4	1.7	4.8	1.5	1.6	2.0	1.8	2.8	1.6	1.7	1.7	2.0	1.5
5	1.7	5.0	1.6	1.5	2.2	1.8	2.9	1.8	1.6	1.5	2.0	1.6
6	1.6	4.9	1.5	1.5	2.3	1.8	2.9	1.7	1.5	1.7	2.0	1.7
7	2.1	4.8	1.5	1.5	4.1	1.9	2.9	1.7	1.5	1.7	2.0	1.7
8	3.1	4.8	1.5	1.4	5.6	4.1	3.0	1.8	1.6	1.7	1.8	1.6
9	2.9	5.0	1.9	1.7	6.5	3.0	2.9	1.8	1.7	1.8	1.8	1.5
10	3.8	5.0	1.8	1.9	6.2	2.3	2.3	1.7	1.7	1.7	1.8	1.5
11	3.4	5.0	1.6	1.9	12	1.9	2.1	1.8	1.7	1.6	1.7	1.5
12	3.0	5.0	1.7	2.0	3.0	1.8	2.0	1.8	1.7	1.6	1.7	1.5
13	3.0	3.8	1.7	1.9	2.8	2.2	1.6	1.8	1.6	1.6	1.9	1.5
14	2.9	2.1	1.7	1.9	2.8	2.1	1.6	1.7	1.7	1.6	2.0	1.5
15	2.9	1.9	1.7	1.7	2.6	1.9	1.6	1.7	1.9	1.6	1.9	1.5
16	2.9	1.9	1.7	1.7	2.3	1.8	1.7	1.7	1.9	1.6	1.7	1.5
17	2.9	1.9	1.7	1.7	2.0	2.3	1.8	1.9	1.8	1.3	1.5	1.5
18	3.2	1.9	1.7	1.7	1.6	2.1	1.8	1.7	1.7	1.3	1.5	1.6
19	4.0	1.8	1.7	1.7	1.5	1.8	1.8	1.7	1.7	1.4	1.5	1.6
20	4.2	1.7	1.7	1.7	1.5	3.6	1.7	2.0	1.5	1.7	1.5	1.6
21	4.1	1.8	1.8	1.7	1.5	2.5	1.7	2.4	1.5	1.7	1.7	1.7
22	4.1	1.7	1.8	1.7	1.5	2.1	1.6	1.9	1.7	1.5	1.8	1.7
23	4.2	1.7	1.8	1.7	1.8	1.9	1.6	1.6	1.8	1.8	1.6	1.7
24	4.3	1.7	1.8	2.0	1.9	1.9	1.6	1.6	1.7	2.0	1.5	1.7
25	4.3	1.7	1.8	2.3	1.8	1.8	1.6	1.6	1.7	1.9	1.5	1.6
26	4.3	1.7	1.8	1.9	1.7	1.7	1.6	1.8	1.8	1.9	1.5	1.6
27	4.5	1.6	1.9	2.7	1.7	1.7	1.5	1.8	1.7	2.0	1.5	1.6
28	4.5	1.6	1.9	2.5	1.7	3.4	1.5	1.7	1.7	2.1	1.5	1.6
29	4.6	1.7	1.9	1.9	---	5.3	1.5	1.7	1.7	2.1	1.4	1.6
30	4.7	1.6	1.9	1.8	---	2.0	1.8	1.7	1.6	2.0	1.5	1.6
31	4.2	---	1.9	1.8	---	1.9	---	1.8	---	2.0	1.5	---
TOTAL	102.3	92.2	53.3	57.3	80.3	69.5	61.6	54.1	51.3	53.1	53.0	47.3
MEAN	3.30	3.07	1.72	1.85	2.87	2.24	2.05	1.75	1.71	1.71	1.71	1.58
MAX	4.7	5.0	1.9	2.7	12	5.3	3.0	2.4	2.0	2.1	2.0	1.7
MIN	1.6	1.6	1.5	1.4	1.5	1.7	1.5	1.5	1.5	1.3	1.4	1.5
AC-FT	203	183	106	114	159	138	122	107	102	105	105	94

CAL YR 1986 TOTAL 15168.4 MEAN 41.6 MAX 166 MIN 1.2 AC-FT 30090
WTR YR 1987 TOTAL 775.3 MEAN 2.12 MAX 12 MIN 1.3 AC-FT 1540

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Oct. 14, 15, Apr. 16-23, Sept. 3-8. Flow regulated by Lake Spaulding (station 11414140) 0.8 mi upstream. See schematic diagram of Yuba and Bear River basins.

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

AVERAGE DISCHARGE.--21 years (water years 1967-87), 108 ft^3/s, 78,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft^3/s, Feb. 18, 1986, gage height, 19.95 ft, from rating curve extended above 8,800 ft^3/s on basis of spillway rating at Spaulding dam; minimum daily, 2.1 ft^3/s, on several days during July and September 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 269 ft^3/s, Feb. 13, gage height, 4.41 ft; minimum daily, 5.2 ft^3/s, Sept. 21.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	6.9	5.8	24	8.8	7.0	8.6	7.2	6.3	6.3	6.2	5.8
2	7.3	7.3	6.0	32	9.7	7.0	8.5	7.5	6.3	6.1	5.8	5.9
3	7.1	7.3	6.2	19	11	7.1	8.2	7.1	6.3	6.1	5.8	6.0
4	6.8	7.3	5.9	12	10	6.9	8.0	7.1	6.0	6.1	6.1	6.0
5	6.7	7.3	6.5	8.7	9.3	22	7.8	6.8	5.7	5.8	5.9	5.9
6	6.5	7.3	6.3	8.1	8.9	21	7.5	6.5	5.9	5.9	5.8	6.0
7	6.3	7.3	5.9	7.6	8.7	15	7.6	6.5	6.5	6.1	6.0	6.0
8	7.0	7.3	5.7	7.3	8.3	15	7.7	7.6	6.4	6.2	5.8	6.0
9	6.6	7.3	6.0	7.0	9.3	14	7.5	7.6	6.4	6.1	5.7	5.5
10	7.1	7.3	6.0	7.2	17	12	7.0	7.5	6.2	6.0	5.7	5.6
11	7.0	8.6	6.0	6.8	21	16	6.8	7.5	6.1	5.7	5.6	5.5
12	6.8	10	6.0	6.5	45	24	6.6	7.7	6.1	5.7	5.6	5.6
13	6.8	10	6.0	6.4	151	35	6.3	7.4	5.8	6.3	6.4	5.6
14	6.8	7.9	6.0	6.1	31	24	6.4	7.2	5.8	6.5	6.5	5.6
15	7.7	6.1	6.0	5.9	21	19	7.1	7.3	6.1	6.4	6.5	5.6
16	7.0	6.3	7.0	5.6	17	17	7.0	7.7	6.5	6.2	6.3	5.6
17	6.8	6.8	6.0	5.6	14	16	7.0	7.3	6.4	6.1	5.8	5.5
18	6.6	7.0	6.0	5.6	12	18	7.0	7.0	6.3	5.9	5.8	5.4
19	6.8	7.2	6.3	5.4	11	16	7.0	7.2	6.1	5.9	5.7	5.5
20	7.4	6.5	6.4	5.7	9.8	14	7.0	8.3	5.8	6.2	5.7	5.3
21	6.8	6.7	6.2	6.0	9.0	12	7.0	10	5.7	7.0	5.9	5.2
22	6.4	6.3	6.4	6.0	8.5	11	7.0	8.8	6.0	6.5	5.9	5.3
23	6.8	6.3	6.5	6.0	8.0	11	7.0	7.5	6.4	6.1	5.7	5.3
24	6.8	6.2	6.3	7.3	7.9	11	7.0	7.1	6.1	6.2	5.3	5.4
25	6.8	6.0	6.3	10	7.6	11	7.0	7.0	5.8	5.9	6.1	5.4
26	6.8	6.0	6.3	8.8	7.1	10	7.0	7.2	5.9	5.9	5.7	5.3
27	6.9	6.0	6.3	14	7.4	10	7.0	7.2	5.7	6.2	5.4	5.3
28	7.1	6.0	6.1	20	7.0	9.5	7.0	6.9	5.6	22	5.7	5.6
29	7.0	6.2	6.0	12	---	9.6	6.6	6.7	5.9	8.2	5.7	5.6
30	7.9	6.0	6.0	10	---	11	6.3	6.4	6.2	6.5	6.4	5.4
31	6.7	---	5.9	9.3	---	8.3	---	6.4	---	6.3	5.9	---
TOTAL	215.0	210.7	190.3	301.9	496.3	440.4	215.5	227.2	182.3	208.4	182.4	167.7
MEAN	6.94	7.02	6.14	9.74	17.7	14.2	7.18	7.33	6.08	6.72	5.88	5.59
MAX	7.9	10	7.0	32	151	35	8.6	10	6.5	22	6.5	6.0
MIN	6.3	6.0	5.7	5.4	7.0	6.9	6.3	6.4	5.6	5.7	5.3	5.2
AC-FT	426	418	377	599	984	874	427	451	362	413	362	333

CAL YR 1986	TOTAL	127435.7	MEAN	349	MAX	18000	MIN	5.6	AC-FT 252800
WTR YR 1987	TOTAL	3038.1	MEAN	8.32	MAX	151	MIN	5.2	AC-FT 6030

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 mi^2.

PERIOD OF RECORD.--October 1986 to September 1987. 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 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 herein represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram for Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to U.S. Geological Survey standards.

OBSERVED ELEVATIONS AND CONTENTS, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	ELEVATION (feet)	CONTENTS (acre-feet)	DATE	ELEVATION (feet)	CONTENTS (acre-feet)
May 19	6,630.28	5,740	July 22	6,625.60	4,765
28	6,631.30	5,971	29	6,625.06	4,658
June 3	6,631.40	5,993	Aug. 13	6,624.10	4,460
11	6,630.80	5,858	Sept. 2	6,622.80	4,199
18	6,629.80	5,636	10	6,622.35	4,108
24	6,628.91	5,451	16	6,622.05	4,048
30	6,628.00	5,263	23	6,621.66	3,970
July 9	6,626.50	4,952	28	6,621.40	3,917
15	6,626.04	4,856	30	6,621.30	3,897

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 mi^2.

PERIOD OF RECORD.--October 1986 to September 1987. Unpublished records for water years 1965-86 available in the files of 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 herein represent total contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram for Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of 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 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---			---	---	---	---	---	2327
2	---	---	---	---			---	---	---	---	2253	---
3	---	---	3980	---			---	---	3988	---	---	2315
4	---	3995	---	---			---	---	---	---	---	---
5	---	---	---	---			---	4022	---	---	2228	---
6	---	---	---	---			---	---	---	---	---	---
7	4010	---	---	---			---	---	---	3337	---	---
8	---	---	---	---			---	---	---	---	---	2327
9	---	---	3980	---			---	---	---	---	---	---
10	---	---	---	---			---	---	3995	---	---	---
11	---	---	---	---			---	---	---	---	2241	---
12	---	---	---	---			---	---	---	---	---	---
13	---	---	---	---			---	---	---	---	---	---
14	3995	---	---	3980			---	---	---	3041	---	---
15	---	---	---	---			---	---	---	---	---	2322
16	---	---	3980	---			---	---	3950	---	---	---
17	---	---	---	---			---	---	3920	---	---	---
18	---	3980	---	---			---	---	---	---	---	---
19	---	---	---	---			---	---	---	---	---	---
20	4004	---	---	---			---	4022	---	2754	---	---
21	---	---	---	---			---	---	---	---	---	---
22	---	---	---	---			---	---	---	---	---	2315
23	---	---	---	---			---	---	3733	---	---	---
24	---	4001	---	---			---	---	---	---	---	---
25	---	---	---	---			---	---	---	---	---	---
26	---	---	---	---			---	3997	---	---	2313	---
27	---	---	---	---			---	---	---	2433	2317	---
28	3995	---	---	---			4025	---	---	---	---	---
29	---	---	---	---			---	---	3562	---	---	2302
30	---	---	---	---			---	---	---	2290	---	---
31	3997	---	---	---			---	---	---	---	2327	---

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 mi^2.

PERIOD OF RECORD.--October 1986 to September 1987. Unpublished records for water years 1966-86 available in the files of 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 herein represent usable contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram for Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of 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	5,840	1,130
5,820	110	5,850	2,000
5,830	430	5,860	3,030
		5,863	3,375

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---			---	---	---	---	---	1174
2	---	---	---	---			---	---	---	---	2670	1174
3	---	---	2906	---			---	---	3032	---	---	---
4	---	3030	---	---			---	---	---	---	---	---
5	---	---	---	---			---	3065	---	3034	2659	---
6	---	---	---	---			---	---	---	---	---	---
7	3042	---	---	---			---	---	---	3030	---	1174
8	---	---	---	---			---	---	---	---	---	---
9	---	---	2876	---			---	---	---	---	---	---
10	---	---	---	---			---	---	3042	---	---	---
11	---	---	---	---			---	---	---	---	1878	---
12	---	---	---	---			---	---	---	---	---	---
13	---	---	---	---			---	---	---	---	---	---
14	2999	---	---	2927			---	---	---	2999	1313	---
15	---	---	---	---			---	---	---	---	---	1174
16	---	---	2855	---			---	---	3042	---	---	---
17	---	---	---	---			---	---	3034	---	---	---
18	---	2906	---	---			---	---	---	---	---	---
19	---	---	---	---			---	---	---	---	---	---
20	3030	---	---	---			---	3065	---	2968	---	---
21	---	---	---	---			---	---	---	---	---	---
22	---	---	---	---			---	---	---	---	---	1174
23	---	---	---	---			---	---	3032	---	---	---
24	---	2896	---	---			3076	---	---	---	---	---
25	---	---	---	---			---	---	---	---	---	---
26	---	---	---	---			---	3042	---	---	1295	---
27	---	---	---	---			---	---	---	2917	1265	---
28	3030	---	---	---			---	---	---	---	---	---
29	---	---	---	---			---	---	3030	---	---	1165
30	---	---	---	---			---	---	---	---	---	---
31	---	---	---	---			---	---	---	---	1165	---

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.12 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 mi^2.

PERIOD OF RECORD.--October 1986 to September 1987. Unpublished records for water years 1965-86 available in the files of U.S. Geological Survey.

GAGE.--Staff gage, observed approximately weekly during the summer 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 herein represent total contents. Released water is used for hydroelectric power and irrigation downstream. See schematic diagram for Yuba River basin.

COOPERATION.--Records were collected by Nevada Irrigation District, under general supervision of 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1003	---	---	---			---	---	---	---	---	---
2	---	---	---	---			---	---	---	---	---	715
3	---	---	---	---			---	---	1044	---	---	---
4	---	---	872	---			---	---	---	---	---	---
5	---	958	---	---			---	---	---	---	---	---
6	---	---	---	---			---	985	---	---	---	---
7	---	---	---	---			---	---	---	---	---	---
8	---	---	---	---			---	---	---	---	---	---
9	1026	---	---	---			619	---	---	930	---	---
10	---	---	849	---			---	---	---	---	---	693
11	---	---	---	---			---	---	1021	---	---	---
12	---	935	---	---			---	1040	---	---	---	---
13	---	---	---	---			---	---	---	---	799	---
14	---	---	---	785			---	---	---	---	---	---
15	1008	---	---	---			---	---	---	908	---	---
16	---	---	---	---			---	---	---	---	---	686
17	---	---	830	---			---	---	---	---	---	---
18	---	---	---	---			---	---	1008	---	---	---
19	---	---	---	---			---	---	---	---	---	---
20	---	917	---	---			---	---	---	---	---	---
21	---	---	---	---			---	---	---	---	---	---
22	---	---	---	---			---	---	---	890	---	---
23	---	---	---	---			---	---	---	---	---	656
24	---	---	---	---			---	---	981	---	---	---
25	---	---	---	---			---	---	---	---	---	---
26	---	899	---	---			---	---	---	---	739	---
27	---	---	---	---			---	1063	---	---	---	---
28	---	---	---	---			---	---	---	---	---	---
29	---	---	---	---			---	---	---	858	---	---
30	---	---	---	---			---	---	963	---	---	---
31	972	---	---	---			---	---	---	---	---	---

SACRAMENTO RIVER BASIN

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 mi^2.

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, 57,800 acre-ft, June 2, elevation, 5,550.0 ft; minimum, 27,300 acre-ft, Sept. 30, elevation, 5,505.6 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54800	49000	45100	35200	31300	34400	38800	52300	57700	53800	49100	40000
2	54400	49000	44800	35000	31300	34400	39200	52800	57700	53600	49300	39400
3	54100	49100	44400	35000	31300	34400	39500	53200	57700	53400	49600	38800
4	53800	49100	44000	34900	31300	34400	39800	53600	57700	53200	49800	38200
5	53400	49100	43700	34700	31400	35000	40100	54000	57700	53000	50100	37600
6	53200	49200	43300	34500	31300	35500	40400	54500	57700	52800	50400	37000
7	53000	49300	43000	34300	31300	35800	40800	54700	57700	52600	50700	36500
8	52700	49300	42600	34200	31300	36000	41100	54900	57700	52300	50800	35900
9	52500	49300	42200	34000	31300	36200	41600	55300	57700	52000	50600	35300
10	52200	49300	41800	33800	31300	36400	42100	55600	57600	51800	50400	34800
11	51800	49300	41400	33700	31500	36500	42700	55800	57400	51500	50100	34200
12	51500	49300	41000	33500	31700	36800	43200	56000	57100	51200	49800	33800
13	51200	49300	40600	33300	33400	37100	43700	56100	56900	50900	49500	33300
14	50800	49300	40300	33200	33900	37300	44200	56300	56700	50700	49200	32700
15	50500	49400	39900	33000	34100	37500	44700	56300	56500	50400	48900	32300
16	50200	49400	39500	32800	34200	37600	45300	56400	56300	50000	48500	32000
17	49800	49400	39200	32600	34200	37700	45800	56500	56100	49800	48100	31600
18	49500	49400	38900	32400	34300	37900	46200	56500	55900	49500	47700	31200
19	49200	49300	38500	32300	34300	38000	46600	56600	55700	49300	47300	30800
20	48900	49000	38200	32100	34400	38100	46800	56900	55500	49000	46700	30400
21	48700	48700	37800	32000	34400	38100	47200	57100	55400	48700	46100	30100
22	48800	48300	37400	31900	34400	38200	47600	57200	55600	48400	45500	29600
23	48800	48000	37100	31800	34400	38200	48100	57300	55400	48200	45000	29300
24	48800	47600	36800	31700	34400	38300	48500	57400	55200	47900	44400	29000
25	48800	47300	36600	31600	34400	38300	49000	57500	55100	47700	44000	28700
26	48800	46900	36300	31600	34400	38300	49400	57500	54900	47700	43400	28400
27	48800	46600	36000	31500	34400	38400	50000	57600	54700	47900	42800	28100
28	48800	46200	35700	31400	34400	38400	50500	57700	54500	48200	42300	27800
29	48900	45900	35500	31400	---	38500	51100	57700	54200	48400	41700	27500
30	48900	45500	35400	31300	---	38500	51800	57700	54000	48600	41100	27300
31	49000	---	35300	31300	---	38700	---	57700	---	48900	40600	---
MAX	54800	49400	45100	35200	34400	38700	51800	57700	57700	53800	50800	40000
MIN	48700	45500	35300	31300	31300	34400	38800	52300	54000	47700	40600	27300
a	5538.8	5534.0	5518.8	5512.3	5517.4	5524.0	5542.6	5549.9	5545.4	5538.7	5526.8	5505.6
b	-6200	-3500	-10200	-4000	+3100	+4300	+13100	+5900	-3700	-5100	-8300	-13300

CAL YR 1986 b +3600
WTR YR 1987 MAX 57800 MIN 27300 b -27900
a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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-Spaulding Canal at intake or Bowman-Spaulding 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 excellent except flows below 1 ft^3/s, which are fair. 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.--60 years, 161 ft^3/s, 116,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 345 ft^3/s, Sept. 5, 1986; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	279	109	312	132	43	42	46	24	165	258	.36	294
2	262	120	317	145	97	42	45	6.1	167	258	.36	310
3	281	100	300	131	95	42	45	5.8	168	258	.36	308
4	281	104	305	123	44	43	46	5.6	168	258	.36	310
5	280	102	306	144	44	49	46	16	168	257	.36	308
6	271	96	301	147	44	46	44	31	169	257	.28	307
7	276	90	289	140	44	45	43	71	169	258	.27	306
8	269	104	318	138	44	45	43	109	169	258	116	302
9	262	124	327	145	44	45	44	109	161	258	219	298
10	262	133	307	144	46	43	45	109	221	257	239	296
11	283	119	325	144	47	47	45	117	263	257	286	293
12	283	113	312	144	48	47	45	113	264	259	311	291
13	283	99	312	146	55	49	42	111	257	260	311	289
14	278	105	282	147	46	47	40	117	261	260	272	288
15	274	103	284	147	57	47	42	120	267	260	306	287
16	266	103	297	147	68	47	42	124	267	259	305	285
17	271	102	302	146	62	47	43	126	266	259	304	283
18	279	108	253	146	43	47	43	127	267	259	299	282
19	291	204	301	134	44	46	43	132	266	257	313	281
20	298	286	294	124	23	47	42	139	266	258	312	280
21	190	267	299	123	42	45	42	155	217	259	311	278
22	115	288	307	111	42	45	42	154	78	258	310	277
23	120	299	265	100	42	64	41	147	244	258	309	248
24	127	288	234	101	42	45	42	144	258	258	308	221
25	123	289	233	102	43	45	42	145	258	258	213	224
26	124	312	233	101	42	46	42	151	257	91	317	224
27	124	298	233	134	42	45	43	156	257	.36	310	219
28	112	289	234	153	44	45	43	156	262	.36	307	224
29	113	280	195	120	---	45	41	160	261	.36	306	224
30	102	290	144	99	---	45	41	164	259	.36	293	200
31	104	---	141	64	---	45	---	165	---	.36	309	---
TOTAL	6883	5324	8562	4022	1377	1428	1293	3409.5	6720	6548.80	6888.35	8237
MEAN	222	177	276	130	49.2	46.1	43.1	110	224	211	222	275
MAX	298	312	327	153	97	64	46	165	267	260	317	310
MIN	102	90	141	64	23	42	40	5.6	78	.36	.27	200
AC-FT	13650	10560	16980	7980	2730	2830	2560	6760	13330	12990	13660	16340

CAL YR 1986 TOTAL 65395.26 MEAN 179 MAX 345 MIN .02 AC-FT 129700
WTR YR 1987 TOTAL 60692.65 MEAN 166 MAX 327 MIN .27 AC-FT 120400

SACRAMENTO RIVER BASIN

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), which is shown as a line item below this table. See schematic diagram of Yuba River Basin.

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

AVERAGE DISCHARGE.--23 years, 226 ft^3/s, 163,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 335 ft^3/s, Dec. 25, 1983; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	297	107	285	121	0	50	87	98	168	249	0	261
2	298	108	291	139	69	49	90	76	166	249	0	298
3	298	112	291	153	145	49	94	69	166	250	0	290
4	304	107	285	144	72	48	96	65	166	250	0	288
5	306	106	291	143	0	82	96	60	165	249	0	287
6	303	105	290	145	40	124	96	60	165	249	0	285
7	299	101	288	148	116	118	99	84	165	249	0	285
8	295	98	287	138	23	105	99	135	165	249	0	285
9	292	103	297	165	1.5	91	104	144	139	249	132	283
10	264	111	293	159	45	85	108	146	203	249	232	282
11	304	115	293	153	79	81	121	145	261	249	246	281
12	300	114	294	151	75	85	131	145	257	249	274	280
13	295	111	294	150	171	116	129	143	256	250	281	279
14	292	108	289	150	158	122	119	139	251	251	277	277
15	279	107	278	146	111	114	116	140	252	251	264	277
16	271	106	283	144	100	94	119	141	255	251	282	275
17	270	105	285	148	102	88	121	142	256	251	285	275
18	274	104	271	148	88	88	121	142	256	252	282	276
19	283	182	267	157	63	112	119	137	255	252	287	275
20	286	288	283	143	63	100	113	154	255	251	291	275
21	223	277	285	115	55	93	104	163	241	250	291	274
22	111	267	290	116	55	88	99	178	98	249	290	273
23	110	281	284	114	55	88	99	171	199	248	289	267
24	115	279	253	114	55	80	98	162	239	248	287	221
25	119	278	244	114	50	75	96	160	245	247	244	217
26	121	283	242	114	51	76	95	159	246	214	248	224
27	122	289	242	118	51	78	96	166	248	46	280	225
28	122	284	241	164	49	79	96	169	250	0	285	222
29	115	282	200	155	---	79	102	165	251	0	286	224
30	109	277	122	121	---	80	84	166	250	0	285	220
31	107	---	124	72	---	83	---	168	---	0	279	---
TOTAL	7184	5195	8262	4262	1942.5	2700	3147	4192	6489	6501	6197	7981
MEAN	232	173	267	137	69.4	87.1	105	135	216	210	200	266
MAX	306	289	297	165	171	124	131	178	261	252	291	298
MIN	107	98	122	72	0	48	84	60	98	0	0	217
AC-FT	14250	10300	16390	8450	3850	5360	6240	8310	12870	12890	12290	15830
a	14140	10420	16600	8600	4270	5400	6230	8460	12980	13190	12270	15810

CAL YR 1986 TOTAL 80213.01 MEAN 220 MAX 334 MIN 0 AC-FT 159100 MEAN a 217 AC-FT a 157200
WTR YR 1987 TOTAL 64052.50 MEAN 175 MAX 306 MIN 0 AC-FT 127000 MEAN a 177 AC-FT a 128400

a Discharge, in acre-feet, through Spaulding No. 3 powerplant, provided by Pacific Gas & Electric Co.

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Jan. 15-17 and Mar. 3 to Apr. 8. Records good except those for Mar. 3 to Apr. 8, 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.--60 years, 35.9 ft^3/s, 26,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,970 ft^3/s, Mar. 8, 1986, gage height, 9.08 ft, from rating curve extended above 1,500 ft^3/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, 56 ft^3/s, Feb. 13, gage height, 3.63 ft, minimum daily, 3.8 ft^3/s, July 27 to Aug. 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	4.2	5.5	5.5	5.0	4.6	5.6	5.8	4.6	4.8	3.8	4.4
2	9.5	4.1	5.6	5.4	5.4	4.7	5.8	4.6	4.6	4.8	3.8	4.5
3	9.6	4.0	5.4	6.0	5.1	4.8	5.7	4.2	4.4	4.8	3.8	4.5
4	9.6	4.0	5.4	5.1	5.0	10	5.6	4.1	4.4	4.8	3.9	4.5
5	9.6	4.0	5.5	5.1	5.1	17	5.4	4.1	4.4	4.7	5.8	4.5
6	8.0	4.0	5.4	5.0	5.5	10	5.2	4.2	4.4	4.6	6.9	4.5
7	5.7	4.0	5.3	5.0	5.7	7.2	4.6	4.2	4.5	4.5	7.0	4.4
8	5.0	4.1	5.4	5.0	5.5	6.2	4.5	4.5	4.4	4.5	6.0	4.4
9	4.8	4.2	5.6	5.1	5.6	5.6	4.5	4.5	4.4	4.5	4.9	4.4
10	4.8	4.3	5.3	5.2	7.3	5.2	4.3	4.4	4.7	4.6	4.9	4.4
11	5.0	4.3	5.4	5.2	9.3	6.6	4.3	4.4	5.0	4.6	5.2	4.3
12	5.2	4.3	5.3	5.2	13	9.0	4.3	4.4	4.9	4.6	5.0	4.3
13	5.2	4.2	5.4	5.2	27	8.6	4.2	4.4	4.9	4.6	4.5	4.3
14	5.2	4.3	5.3	5.2	7.5	7.8	4.0	4.4	4.9	4.6	4.3	4.1
15	5.2	4.3	5.4	5.1	6.5	6.6	4.2	4.4	5.0	4.6	4.5	4.1
16	5.0	4.3	5.4	5.0	5.9	6.0	4.2	4.4	5.0	4.5	4.5	4.1
17	5.1	4.3	5.4	5.0	5.7	5.6	4.0	4.4	5.0	4.6	4.4	4.1
18	5.2	4.4	6.8	5.0	5.4	6.0	4.2	4.4	4.9	4.7	4.4	4.1
19	5.2	4.8	5.8	4.9	5.2	6.0	4.2	5.1	4.9	4.6	4.4	4.1
20	5.4	5.2	5.8	5.0	4.3	5.8	4.0	6.5	4.9	4.6	4.5	4.1
21	4.9	5.2	5.7	5.0	4.8	5.8	4.0	5.5	4.9	4.6	4.4	4.1
22	4.5	5.1	5.8	4.9	4.6	5.8	4.0	4.6	4.1	4.6	4.4	4.1
23	4.5	5.2	5.5	4.8	4.6	6.0	3.9	4.5	4.9	4.6	4.4	4.1
24	4.5	5.1	5.2	5.5	4.6	6.0	3.9	4.5	4.9	4.5	4.4	4.0
25	4.5	5.1	5.2	6.4	4.5	5.8	3.9	4.5	4.9	4.5	4.2	4.0
26	4.5	5.2	5.2	5.9	4.5	5.9	3.9	4.6	4.9	4.1	4.4	4.1
27	4.4	5.3	5.2	7.1	4.4	6.0	3.9	4.7	5.0	3.8	4.4	4.1
28	4.3	5.3	5.2	8.3	4.5	6.2	4.0	4.7	4.9	3.8	4.4	4.1
29	4.4	5.3	5.1	5.9	---	6.0	4.1	4.6	4.8	3.8	4.3	4.1
30	4.4	5.3	4.8	5.5	---	5.8	5.6	4.7	4.8	3.8	4.3	4.0
31	4.2	---	4.9	5.2	---	5.7	---	4.7	---	3.8	4.4	---
TOTAL	177.0	137.4	168.2	167.7	181.5	208.3	134.0	143.0	142.3	138.5	144.5	126.8
MEAN	5.71	4.58	5.43	5.41	6.48	6.72	4.47	4.61	4.74	4.47	4.66	4.23
MAX	9.6	5.3	6.8	8.3	27	17	5.8	6.5	5.0	4.8	7.0	4.5
MIN	4.2	4.0	4.8	4.8	4.3	4.6	3.9	4.1	4.1	3.8	3.8	4.0
AC-FT	351	273	334	333	360	413	266	284	282	275	287	252

CAL YR 1986 TOTAL 30934.5 MEAN 84.8 MAX 3120 MIN 4.0 AC-FT 61360
WTR YR 1987 TOTAL 1869.2 MEAN 5.12 MAX 27 MIN 3.8 AC-FT 3710

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 mi^2.

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.--Estimated daily discharges: Nov. 13-19, Nov. 23 to Jan. 15. Records fair. 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.--36 years, 471 ft^3/s, 341,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,600 ft^3/s, Dec. 22, 1964, gage height, 25.0 ft, from floodmarks, from rating curve extended above 23,000 ft^3/s on basis of slope-area measurement of peak flow; minimum, 1.0 ft^3/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, 3,910 ft^3/s, Feb. 13, gage height, 10.22 ft; minimum daily, 29 ft^3/s, Sept. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	96	72	68	128	131	128	215	166	64	40	38	34
2	91	68	66	205	206	125	213	136	61	40	38	34
3	87	113	65	350	290	123	210	119	58	40	37	34
4	84	69	73	260	184	122	202	108	56	39	36	34
5	82	67	86	182	153	358	187	100	53	39	36	33
6	80	66	77	120	138	726	181	95	52	39	35	33
7	78	65	71	98	129	403	178	92	54	39	36	34
8	72	65	67	89	126	308	176	88	54	39	37	34
9	70	65	65	81	121	316	175	104	52	40	36	34
10	69	65	64	77	119	265	176	101	50	40	36	33
11	68	63	67	75	282	314	176	95	49	38	32	33
12	67	64	66	73	325	599	175	88	49	38	32	32
13	66	65	63	70	2500	1380	165	84	48	38	33	33
14	66	66	66	66	890	784	162	79	48	39	34	34
15	66	66	66	62	730	670	158	75	47	37	35	34
16	66	66	64	57	521	515	154	73	53	37	35	34
17	72	65	63	77	379	430	150	71	53	36	36	33
18	80	64	67	82	301	408	149	68	51	39	36	33
19	74	64	82	76	252	391	149	67	50	44	35	32
20	69	63	75	73	216	333	139	77	49	42	34	32
21	70	70	72	73	189	321	134	98	48	40	35	32
22	70	75	80	74	176	299	130	87	47	41	36	31
23	68	72	75	81	167	336	124	83	47	42	35	31
24	69	69	71	103	158	329	120	75	45	41	35	31
25	68	66	66	137	150	295	117	71	44	40	35	31
26	67	64	64	133	141	277	114	73	43	40	34	31
27	66	62	64	119	136	264	110	82	42	39	34	31
28	66	66	63	369	131	245	107	78	41	41	34	30
29	67	74	62	251	---	227	106	73	40	43	34	29
30	83	71	63	174	---	217	122	69	40	47	34	31
31	84	---	83	147	---	218	---	66	---	41	34	---
TOTAL	2281	2050	2144	3962	9241	11726	4674	2741	1488	1238	1087	975
MEAN	73.6	68.3	69.2	128	330	378	156	88.4	49.6	39.9	35.1	32.5
MAX	96	113	86	369	2500	1380	215	166	64	47	38	34
MIN	66	62	62	57	119	122	106	66	40	36	32	29
AC-FT	4520	4070	4250	7860	18330	23260	9270	5440	2950	2460	2160	1930

CAL YR 1986 TOTAL 304883 MEAN 835 MAX 20600 MIN 45 AC-FT 604700
WTR YR 1987 TOTAL 43607 MEAN 119 MAX 2500 MIN 29 AC-FT 86490

SACRAMENTO RIVER BASIN

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 mi^2.

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 out of basin for power and irrigation above station up to 1,800 ft^3/s (see stations 11413250, 11414190, and 11414200). 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.--46 years, 2,548 ft^3/s, 1,846,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 171,000 ft^3/s, Dec. 22, 1964, gage height, 546.14 ft, site and datum then in use, no flow through powerplant, from rating curve extended above 25,000 ft^3/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, 3,350 ft^3/s, Feb. 13, gage height, 10.00 ft; minimum daily, 267 ft^3/s, Apr. 3-5.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1720	807	737	976	642	614	372	1070	813	926	1700	822
2	1430	810	709	1010	644	615	278	1090	808	890	1730	843
3	1350	810	709	1010	642	615	267	1100	805	855	1750	852
4	1240	813	709	1010	662	610	267	1100	856	832	1770	864
5	1250	816	709	1020	670	610	267	1100	888	824	1770	864
6	1230	816	709	1020	636	615	297	1080	914	827	1750	859
7	1490	816	709	1020	620	620	328	1080	914	829	1740	853
8	1760	831	709	1020	618	620	342	1030	926	788	1720	848
9	1860	864	705	1030	575	620	453	998	951	737	1710	844
10	1900	849	700	1050	624	620	604	1000	1010	721	1650	838
11	1930	830	697	1050	624	619	610	993	1050	721	1570	845
12	1940	833	697	1050	624	616	614	989	1020	721	1520	850
13	1940	837	697	1050	2110	1730	620	981	1030	721	1490	803
14	1940	837	697	1050	2820	2390	620	981	1040	712	1470	574
15	1900	837	697	1050	2160	1980	620	956	1030	692	1470	556
16	643	837	697	688	1630	1510	622	932	1030	685	1470	577
17	623	837	697	642	873	1220	701	886	1030	680	1470	587
18	615	837	665	630	616	707	758	858	1030	670	1460	589
19	620	855	629	632	626	606	726	825	1030	670	1450	604
20	620	849	629	632	624	615	719	817	1030	670	1440	615
21	616	818	629	634	624	615	858	816	1030	678	1440	615
22	607	816	629	634	617	615	944	814	1030	686	1430	593
23	600	816	629	634	607	615	937	810	1010	683	1410	592
24	600	816	624	634	616	617	943	838	989	678	1380	595
25	600	811	629	634	621	621	948	846	973	699	1360	588
26	622	810	629	638	623	620	986	832	959	736	1360	554
27	644	810	629	639	621	622	1030	816	958	726	1370	532
28	666	810	629	636	611	622	1030	816	964	725	1370	532
29	698	790	634	639	---	626	1310	816	962	1150	1350	547
30	686	765	634	640	---	620	1290	827	960	1270	1340	553
31	702	---	634	643	---	620	---	839	---	1460	1140	---
TOTAL	35042	24683	20836	25645	23980	24965	20361	28936	29040	24662	47050	20788
MEAN	1130	823	672	827	856	805	679	933	968	796	1518	693
MAX	1940	864	737	1050	2820	2390	1310	1100	1050	1460	1770	864
MIN	600	765	624	630	575	606	267	810	805	670	1140	532
AC-FT	69510	48960	41330	50870	47560	49520	40390	57390	57600	48920	93320	41230

CAL YR 1986 TOTAL 1329113 MEAN 3641 MAX 87200 MIN 600 AC-FT 2636000
WTR YR 1987 TOTAL 325988 MEAN 893 MAX 2820 MIN 267 AC-FT 646600

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--June 1935 to current year.

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 prior to May; fair thereafter. 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; 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.--52 years, 132 ft^3/s, 95,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft^3/s, Feb. 17, 1986, gage height, 14.05 ft, from rating curve extended above 5,200 ft^3/s; minimum daily, 0.06 ft^3/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 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,590 ft^3/s, Feb. 13, gage height, 8.09 ft; minimum daily, 1.2 ft^3/s, June 24-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	9.3	7.4	18	25	21	31	12	3.0	1.4	1.7	1.7
2	41	14	6.4	24	228	20	29	12	2.5	1.7	1.8	1.9
3	37	16	6.5	164	197	19	29	12	2.0	1.8	1.8	2.0
4	28	17	6.6	83	61	19	27	10	1.8	2.1	1.5	1.9
5	14	15	18	46	38	451	26	9.4	1.8	2.1	1.5	2.0
6	29	16	12	30	29	697	24	8.3	2.0	1.8	1.5	2.8
7	33	13	10	24	26	139	23	5.7	3.1	1.5	1.6	3.1
8	33	13	9.9	21	23	81	23	4.6	2.5	1.4	1.7	2.9
9	34	13	9.5	19	21	60	21	4.8	1.7	1.5	1.8	3.2
10	34	14	9.2	18	20	48	20	4.5	1.6	1.5	1.8	2.7
11	28	16	9.2	17	188	76	19	3.9	1.6	1.5	1.7	2.9
12	24	14	9.0	17	137	438	18	3.4	1.7	1.7	1.7	2.6
13	24	15	8.9	17	1340	606	17	3.9	1.8	1.7	1.7	3.2
14	26	13	9.1	15	226	359	18	4.3	2.0	1.5	1.9	2.6
15	26	8.6	8.5	19	334	300	15	4.6	1.6	1.4	2.0	2.5
16	263	7.9	8.0	12	149	138	11	4.8	1.4	1.4	2.1	2.9
17	383	9.6	7.8	13	82	93	11	4.4	1.4	1.5	2.0	2.4
18	374	9.4	8.4	13	59	75	12	4.2	1.4	1.6	1.8	2.2
19	159	2.8	9.7	14	46	67	15	4.9	1.3	1.9	1.8	2.5
20	23	2.2	14	12	38	57	14	5.5	1.3	1.9	1.8	2.6
21	24	2.0	10	13	35	75	13	5.4	1.4	1.9	1.9	2.4
22	27	3.6	11	13	31	69	11	5.4	1.5	1.9	2.0	2.0
23	135	4.8	11	20	29	139	11	5.5	1.3	1.9	2.0	1.9
24	23	5.0	9.8	38	28	116	7.9	4.7	1.2	1.9	2.1	2.0
25	11	4.1	9.2	61	26	73	7.4	4.0	1.2	1.9	1.8	1.9
26	11	3.5	9.0	34	22	58	7.1	3.6	1.2	1.9	1.8	2.3
27	11	3.6	8.7	28	22	49	6.0	4.0	1.2	1.8	1.7	2.6
28	11	3.6	8.4	193	21	43	5.4	4.6	1.5	1.5	1.8	2.4
29	12	11	8.2	69	---	40	5.2	4.2	1.6	1.6	1.8	2.2
30	60	8.1	8.0	38	---	36	9.0	4.4	1.3	1.6	2.0	2.2
31	13	---	8.3	29	---	33	---	3.4	---	1.6	2.0	---
TOTAL	1988	288.1	289.7	1132	3481	4495	486.0	176.4	50.9	52.4	56.1	72.5
MEAN	64.1	9.60	9.35	36.5	124	145	16.2	5.69	1.70	1.69	1.81	2.42
MAX	383	17	18	193	1340	697	31	12	3.1	2.1	2.1	3.2
MIN	11	2.0	6.4	12	20	19	5.2	3.4	1.2	1.4	1.5	1.7
AC-FT	3940	571	575	2250	6900	8920	964	350	101	104	111	144

CAL YR 1986	TOTAL	68756.4	MEAN 188	MAX 10200	MIN 2.0	AC-FT	136400
WTR YR 1987	TOTAL	12568.1	MEAN 34.4	MAX 1340	MIN 1.2	AC-FT	24930

SACRAMENTO RIVER BASIN

11421000 YUBA RIVER NEAR MARYSVILLE, CA

LOCATION.--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 mi^2.

PERIOD OF RECORD.--October 1940 to September 1943 (low-water periods only), October 1943 to current year. Published as "at Marysville" October 1940 to September 1957. 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.--Estimated daily discharges: Dec. 27-29, July 3-7, 24-26. Records good. Flow regulated by several reservoirs above station. Many diversions above station for power. Diversions for irrigation of about 13,000 acres between stations below Englebright Dam and near Marysville. See schematic diagram of Yuba River basin.

AVERAGE DISCHARGE.--44 years (water years 1944-87), 2,582 ft^3/s, 1,871,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (water years 1944, 1947-87), 180,000 ft^3/s, Dec. 22, 1964, gage height, 90.15 ft, from floodmarks, from rating curve extended above 91,000 ft^3/s on basis of U.S. Army Corps of Engineers flood-routing study; minimum recorded, 10 ft^3/s, July 2, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,290 ft^3/s, Feb. 13, gage height, 63.75 ft; minimum daily, 67 ft^3/s, July 25.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1840	523	594	628	697	698	647	346	388	309	1080	638
2	1370	554	551	817	890	697	416	326	391	265	1170	631
3	1320	562	545	976	1180	692	366	376	361	231	1130	623
4	1190	568	545	988	853	690	349	392	353	215	1130	630
5	1170	567	601	883	793	926	335	394	337	208	1140	637
6	1150	567	579	851	753	1910	320	416	354	208	1150	647
7	1270	557	560	836	707	1040	337	406	360	208	1140	646
8	1480	549	555	824	692	876	327	379	356	199	1130	634
9	1580	577	550	896	687	826	332	360	354	160	1140	635
10	1590	588	540	972	682	798	538	363	291	115	1110	647
11	1620	576	539	972	822	791	549	356	345	113	1060	651
12	1590	580	537	989	818	827	545	371	345	110	1030	657
13	1570	594	534	1020	3290	2270	540	382	287	112	1030	666
14	1570	600	534	1030	3360	2710	524	389	307	112	1020	499
15	1610	602	534	1030	2800	2620	453	385	309	104	1020	390
16	974	612	534	852	2180	1830	397	390	316	87	1020	402
17	893	616	534	693	1370	1590	379	416	314	87	1020	405
18	745	616	531	671	909	1120	492	389	317	77	1020	400
19	674	629	488	665	848	859	470	353	320	77	1030	406
20	466	647	485	661	804	829	423	332	341	76	1020	432
21	438	624	479	654	775	839	432	324	356	71	1010	437
22	425	619	478	654	757	845	506	328	355	88	1020	422
23	482	615	478	667	729	926	470	339	351	83	1040	410
24	439	616	470	696	726	964	433	346	341	80	1050	446
25	390	619	466	727	730	859	395	362	332	67	1030	439
26	380	622	465	703	728	812	372	336	316	95	1020	446
27	405	624	466	693	717	790	416	320	312	115	1020	414
28	407	627	461	839	713	772	363	336	310	103	1020	410
29	449	650	456	779	---	763	362	368	315	295	1020	408
30	488	613	452	730	---	751	654	375	321	598	1020	436
31	466	---	452	715	---	745	---	412	---	785	1020	---
TOTAL	30441	17913	15993	25111	31010	33665	13142	11367	10055	5453	32860	15544
MEAN	982	597	516	810	1108	1086	438	367	335	176	1060	518
MAX	1840	650	601	1030	3360	2710	654	416	391	785	1170	666
MIN	380	523	452	628	682	690	320	320	287	67	1010	390
AC-FT	60380	35530	31720	49810	61510	66770	26070	22550	19940	10820	65180	30830

CAL YR 1986 TOTAL 1375608 MEAN 3769 MAX 101000 MIN 307 AC-FT 2729000
WTR YR 1987 TOTAL 242554 MEAN 665 MAX 3360 MIN 67 AC-FT 481100

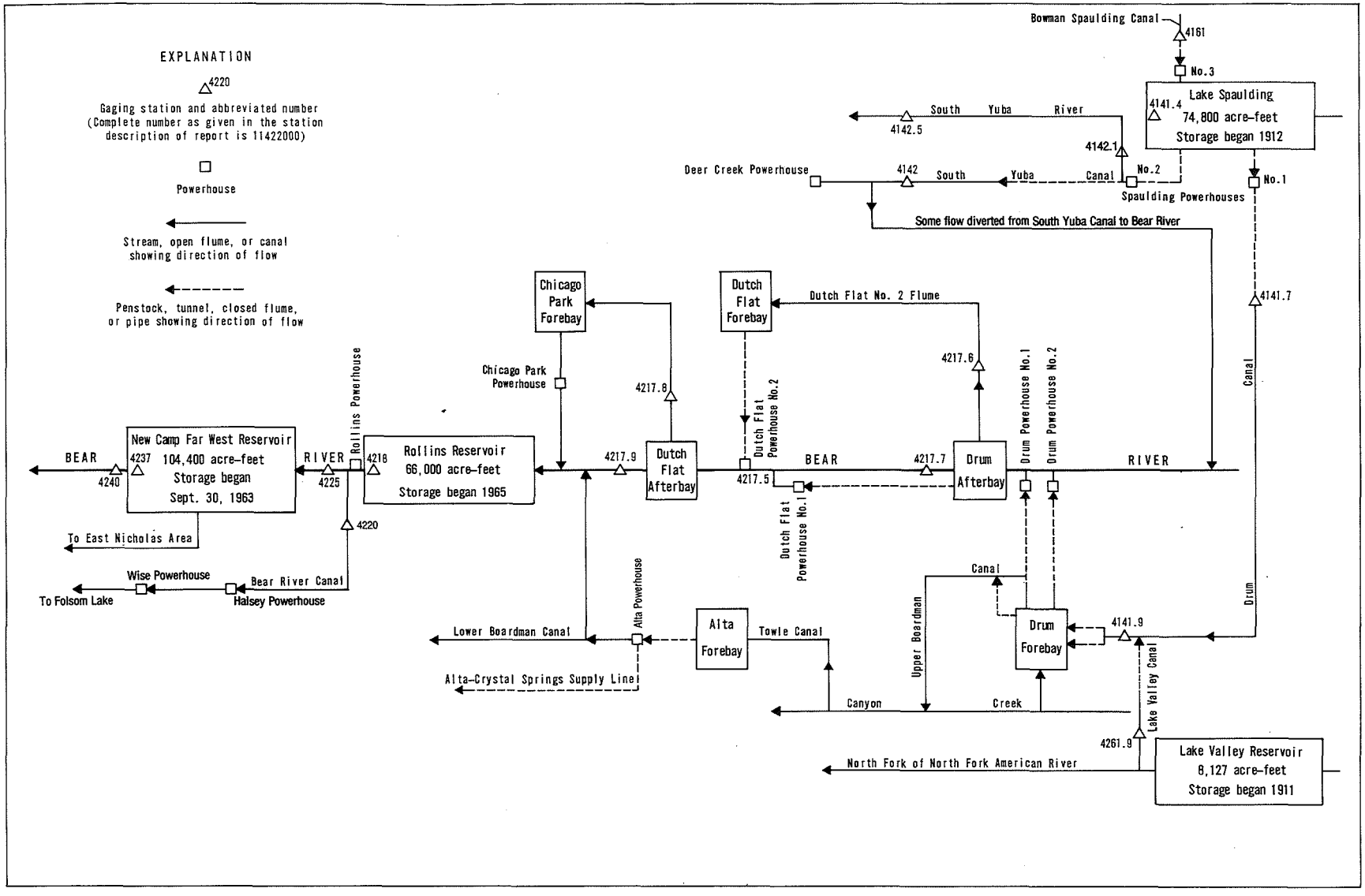

FIGURE 30.--Schematic diagram showing diversions and storage in Bear River basin.

SACRAMENTO RIVER BASIN

11421750 DUTCH FLAT NO. 1 POWERPLANT NEAR DUTCH FLAT, CA

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.

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

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 U.S. Geological Survey in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--23 years, 240 ft^3/s, 173,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 571 ft^3/s, Apr. 13, May 9, 1982, Nov. 17, 1983; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0	418	228	303	349	0	228	408	543	438	103	158
2	0	418	173	270	245	0	438	438	529	111	119	134
3	0	418	142	261	278	0	339	487	543	119	173	134
4	0	418	173	181	286	0	418	529	428	134	142	212
5	0	398	261	220	330	0	448	487	461	142	95	197
6	0	428	197	197	312	0	474	557	529	150	173	236
7	0	408	95	228	303	0	398	543	543	142	173	261
8	0	418	197	189	303	0	320	529	529	142	134	189
9	0	408	126	189	286	0	378	543	543	150	87	197
10	36	388	173	158	320	0	448	557	557	189	270	205
11	0	181	103	166	303	0	378	529	515	103	71	212
12	0	320	173	103	349	0	408	557	487	0	181	134
13	36	378	197	150	368	0	408	529	543	142	158	197
14	295	388	71	173	253	0	368	557	543	150	134	181
15	36	438	142	126	388	0	378	529	543	134	126	205
16	0	278	278	158	461	0	378	543	529	119	0	189
17	181	418	245	150	543	0	398	557	543	119	103	205
18	261	438	228	270	270	0	418	529	529	166	205	189
19	228	408	253	253	0	0	461	529	543	126	150	197
20	253	408	150	261	0	0	438	543	543	111	181	205
21	236	330	158	286	0	0	418	557	543	166	212	212
22	236	398	134	303	0	0	418	543	529	134	126	197
23	236	286	220	312	0	0	418	529	529	142	173	197
24	339	181	103	236	0	0	418	557	543	134	286	253
25	388	253	0	253	0	9.9	438	557	529	95	142	261
26	418	418	0	286	0	103	438	543	543	253	36	189
27	438	339	119	303	0	236	428	543	543	220	103	270
28	398	0	126	253	0	320	448	543	529	270	134	134
29	438	0	150	270	---	303	448	543	529	134	158	0
30	388	236	303	205	---	312	408	529	501	87	134	0
31	448	---	261	398	---	388	---	557	---	181	126	---
TOTAL	5289	10216	5179	7111	5947	1671.9	12202	16481	15841	4703	4408	5550
MEAN	171	341	167	229	212	53.9	407	532	528	152	142	185
MAX	448	438	303	398	543	388	474	557	557	438	286	270
MIN	0	0	0	103	0	0	228	408	428	0	0	0
AC-FT	10490	20260	10270	14100	11800	3320	24200	32690	31420	9330	8740	11010

CAL YR 1985 TOTAL 52541.70 MEAN 144 MAX 543 MIN 0 AC-FT 104200
WTR YR 1986 TOTAL 94598.90 MEAN 259 MAX 557 MIN 0 AC-FT 187600

SACRAMENTO RIVER BASIN

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.--Estimated daily discharges: Oct. 7 to Dec. 2. Records good except those for Oct. 1 to Dec. 4, which are poor. 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.--21 years, 342 ft^3/s, 247,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 626 ft^3/s, Sept. 29, 1983; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	6.4	11	29	11	115	2.7	539	336	510	6.3	154
2	4.5	6.4	6.4	114	11	309	2.6	551	307	532	254	281
3	2.9	6.4	203	236	11	330	2.6	555	131	546	377	280
4	6.5	6.4	450	183	11	328	3.9	553	142	549	306	20
5	4.0	6.4	512	145	11	380	6.0	539	13	550	324	8.5
6	5.4	6.4	512	25	11	385	38	380	7.2	549	297	8.5
7	6.4	6.4	512	14	11	159	23	347	6.8	380	304	8.3
8	6.4	6.4	535	14	11	198	5.4	304	136	345	9.6	224
9	6.4	6.4	581	14	11	348	5.9	17	272	377	6.9	261
10	6.4	6.4	588	14	104	244	6.0	13	267	19	316	250
11	6.4	6.4	444	14	95	128	6.0	323	340	13	278	226
12	6.4	6.4	595	238	13	66	6.0	401	298	248	200	8.0
13	6.4	6.4	592	151	394	202	6.0	363	14	413	166	6.1
14	6.4	6.4	584	218	482	145	6.0	448	8.1	346	262	218
15	6.4	6.4	591	29	306	299	6.0	363	288	444	12	217
16	6.4	6.4	262	84	439	7.6	299	18	384	449	7.4	233
17	6.4	6.4	567	54	398	2.8	579	18	418	31	324	213
18	6.4	6.4	593	26	278	2.9	573	78	500	18	379	220
19	6.4	6.4	592	74	237	4.4	573	250	566	37	324	7.3
20	6.4	6.4	592	27	307	6.2	573	368	564	294	330	6.4
21	6.4	6.4	593	16	105	65	570	353	565	285	365	281
22	6.4	6.4	593	16	171	44	568	372	564	350	20	418
23	6.4	6.4	510	16	339	9.2	572	22	562	397	9.5	415
24	6.4	6.4	199	16	382	9.2	572	6.0	564	82	347	401
25	6.4	6.4	146	16	303	9.2	566	6.0	566	6.0	373	152
26	6.4	6.4	210	16	353	10	555	332	565	6.0	393	6.0
27	6.4	6.4	57	33	335	9.2	567	404	548	235	330	5.2
28	6.4	6.4	28	16	189	9.2	567	330	560	416	303	5.6
29	6.4	6.4	29	11	---	9.2	545	249	560	333	12	5.9
30	6.4	6.4	29	11	---	9.2	520	9.3	542	317	16	3.1
31	6.4	---	29	11	---	6.6	---	6.3	---	17	227	---
TOTAL	193.3	192.0	11745.4	1881	5329	3849.9	8325.1	8517.6	10594.1	9094.0	6878.7	4542.9
MEAN	6.24	6.40	379	60.7	190	124	278	275	353	293	222	151
MAX	10	6.4	595	238	482	385	579	555	566	550	393	418
MIN	2.9	6.4	6.4	11	11	2.8	2.6	6.0	6.8	6.0	6.3	3.1
AC-FT	383	381	23300	3730	10570	7640	16510	16890	21010	18040	13640	9010

CAL YR 1986 TOTAL 70459.70 MEAN 193 MAX 595 MIN 0 AC-FT 139800
WTR YR 1987 TOTAL 71143.00 MEAN 195 MAX 595 MIN 2.6 AC-FT 141100

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 mi^2.

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.--No estimated daily discharges. 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--21 years, 22.3 ft^3/s, 16,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,530 ft^3/s, Apr. 11, 1982, gage height, 4.64 ft, from rating curve extended above 1,200 ft^3/s; minimum daily, 1.0 ft^3/s, Dec. 9, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 86 ft^3/s, Dec. 2, gage height, 1.58 ft; minimum daily, 4.7 ft^3/s, Mar. 13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	30	5.2	6.0	5.4	5.5	5.6	5.6	5.2	5.2	5.2
2	12	12	56	5.2	7.3	5.3	5.5	5.5	5.6	5.2	5.2	5.2
3	12	12	27	5.2	6.9	5.4	5.5	5.5	5.6	5.2	5.5	5.2
4	12	11	6.0	5.2	6.9	5.4	5.5	5.6	5.7	5.2	6.1	5.2
5	12	12	5.4	5.2	6.9	5.4	5.5	5.5	5.6	5.2	5.2	5.2
6	12	12	5.4	5.3	6.8	5.4	5.5	5.6	5.7	5.2	5.2	5.2
7	12	12	5.4	5.7	6.8	5.4	5.5	5.6	5.7	5.2	5.2	5.2
8	12	11	5.4	5.7	6.8	5.3	5.5	5.6	5.5	5.2	5.2	5.2
9	12	12	5.4	7.0	6.0	5.3	5.5	5.6	5.3	5.2	5.2	5.2
10	12	12	5.8	8.3	5.3	5.2	5.5	5.7	5.3	5.2	5.2	5.2
11	12	12	6.5	8.4	5.3	5.3	5.5	5.6	5.2	5.2	5.2	5.2
12	12	12	5.8	8.6	5.6	5.2	5.5	5.6	5.2	5.2	5.2	5.2
13	12	12	5.5	8.6	5.4	4.7	5.5	5.6	5.2	5.2	5.2	5.2
14	12	11	5.5	7.3	5.2	4.8	5.5	5.7	5.2	5.2	5.2	5.2
15	12	12	5.5	5.2	5.2	5.1	5.5	5.6	5.2	5.2	5.2	5.2
16	11	12	5.5	5.2	5.3	5.3	5.5	5.7	6.1	5.2	5.2	5.2
17	11	12	5.5	5.2	6.6	5.4	5.5	5.7	6.3	5.2	5.2	5.2
18	12	12	5.7	5.2	5.3	5.5	5.5	5.7	5.2	5.2	5.2	5.2
19	11	12	5.5	5.2	5.5	5.5	5.5	5.6	5.2	5.2	5.2	5.2
20	12	12	5.5	5.2	5.8	5.5	5.5	5.6	5.2	5.2	5.2	5.2
21	12	13	5.5	5.2	5.7	5.5	5.5	5.6	5.2	5.2	5.2	5.2
22	12	13	5.5	5.2	5.7	5.4	5.5	5.6	5.2	5.2	5.2	5.2
23	12	12	5.8	5.2	5.5	5.5	5.5	5.6	5.2	5.2	5.2	5.2
24	12	12	9.2	5.2	5.4	5.5	5.5	5.7	5.2	5.2	5.2	5.2
25	11	12	7.8	5.2	5.4	5.5	5.5	5.7	5.2	5.2	5.2	5.2
26	12	12	7.9	5.2	5.4	5.5	5.5	5.6	5.2	5.2	5.2	5.2
27	12	13	7.7	5.2	5.3	5.5	5.5	5.6	5.2	5.2	5.2	5.2
28	12	11	7.0	5.2	5.4	5.5	5.5	5.6	5.2	5.2	5.2	5.2
29	12	14	6.0	5.2	---	5.5	5.4	5.6	5.2	5.2	5.2	5.2
30	13	23	6.0	5.5	---	5.5	5.5	5.7	5.2	5.2	5.2	5.2
31	12	---	5.6	5.5	---	5.5	---	5.7	---	5.2	5.2	---
TOTAL	369	372	282.3	179.9	164.7	166.2	164.9	174.2	161.6	161.2	162.4	156.0
MEAN	11.9	12.4	9.11	5.80	5.88	5.36	5.50	5.62	5.39	5.20	5.24	5.20
MAX	13	23	56	8.6	7.3	5.5	5.5	5.7	6.3	5.2	6.1	5.2
MIN	11	11	5.4	5.2	5.2	4.7	5.4	5.5	5.2	5.2	5.2	5.2
AC-FT	732	738	560	357	327	330	327	346	321	320	322	309

CAL YR 1986	TOTAL	45115.4	MEAN 124	MAX 1930	MIN 5.4	AC-FT	89490
WTR YR 1987	TOTAL	2514.4	MEAN 6.89	MAX 56	MIN 4.7	AC-FT	4990

SACRAMENTO RIVER BASIN

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.--Estimated daily discharges: Oct. 1 to Dec. 2, Mar. 31 to Apr. 20, and Sept. 28-30. Records excellent except those for discharges below 70 ft^3/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.--21 years, 628 ft^3/s, 455,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,130 ft^3/s, Nov. 19, 1983; no flow several days in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			0	232	260	162	5.0	852	359	750	154	537
2			0	219	302	232	5.0	735	503	753	183	464
3			301	331	301	421	5.0	843	502	658	545	453
4			581	316	281	311	5.0	837	501	53	536	392
5			692	244	280	325	5.0	683	212	20	524	113
6			691	214	269	371	5.0	541	5.0	639	481	131
7			688	216	276	215	5.0	497	5.0	664	451	135
8			713	215	276	208	5.0	417	291	747	57	258
9			798	213	273	289	5.0	216	500	753	20	469
10			775	209	268	316	5.0	218	520	371	438	466
11			527	211	254	362	5.0	486	622	20	576	403
12			761	317	310	455	5.0	684	655	20	506	20
13			776	230	802	708	5.0	575	135	446	449	20
14			780	197	615	295	5.0	678	117	692	390	457
15			807	194	706	446	5.0	570	458	592	179	450
16			373	192	695	338	5.0	138	696	608	280	442
17			643	201	623	428	5.0	137	655	304	498	443
18			798	213	297	360	5.0	287	656	179	642	413
19			791	213	269	373	5.0	495	566	226	591	20
20			792	207	294	367	5.0	495	59	491	553	20
21			791	363	162	244	297	492	43	750	566	519
22			719	156	122	172	883	466	528	773	262	674
23			535	208	298	300	824	152	746	700	301	650
24			315	240	380	362	823	239	821	468	450	720
25			311	267	238	363	826	214	818	20	628	540
26			310	251	290	362	711	488	609	20	628	82
27			306	221	295	363	925	638	43	263	564	75
28			302	251	231	115	767	505	20	504	531	0
29			260	204	---	117	808	381	544	500	80	0
30			209	209	---	84	854	61	753	500	122	0
31		---	215	238	---	5.0	---	155	---	481	296	---
TOTAL	0	0	16560	7192	9667	9469.0	7818.0	14175	12942.0	13965	12481	9366
MEAN	0	0	534	232	345	305	261	457	431	450	403	312
MAX	0	0	807	363	802	708	925	852	821	773	642	720
MIN	0	0	0	156	122	5.0	5.0	61	5.0	20	20	0
AC-FT	0	0	32850	14270	19170	18780	15510	28120	25670	27700	24760	18580

CAL YR 1986 TOTAL 206444.0 MEAN 566 MAX 1050 MIN 0 AC-FT 409500
WTR YR 1987 TOTAL 113635.0 MEAN 311 MAX 925 MIN 0 AC-FT 225400

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 mi^2.

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 those above 20 ft^3/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.--21 years, 30.1 ft^3/s, 21,810 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,240 ft^3/s, Feb. 17, 1986; minimum daily, 0.08 ft^3/s, Mar. 8-19, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,120 ft^3/s, Apr. 17; minimum daily, 6.9 ft^3/s, Nov. 6-12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	9.0	7.1	7.1	7.2	7.2	52	11	12	12	12	11
2	67	18	7.2	7.2	7.1	7.3	9.2	11	12	12	12	11
3	29	29	7.3	7.2	7.1	7.2	40	11	12	12	12	11
4	17	21	7.3	7.1	7.1	7.1	55	11	12	12	11	11
5	17	12	7.3	7.1	7.1	7.2	28	11	12	12	11	11
6	14	6.9	7.3	7.1	7.1	7.3	24	11	12	12	11	11
7	12	6.9	7.3	7.1	7.2	7.3	24	11	12	12	11	11
8	12	6.9	7.3	7.1	7.1	7.3	29	11	12	12	12	11
9	12	6.9	7.3	7.1	7.1	7.1	42	11	12	12	12	11
10	11	6.9	7.1	7.1	7.1	7.3	29	11	12	12	12	11
11	11	6.9	7.2	7.1	7.1	7.3	46	11	12	12	11	11
12	11	6.9	7.3	7.2	7.1	7.3	40	11	12	12	11	12
13	11	7.0	7.3	7.1	7.2	7.3	33	12	12	12	11	12
14	11	7.1	7.3	7.2	7.2	7.3	184	12	12	12	12	12
15	11	7.1	7.3	7.2	7.2	7.3	351	12	12	12	12	11
16	11	7.1	7.1	7.2	7.2	7.1	574	12	12	12	12	11
17	11	7.1	7.1	7.2	7.2	7.1	920	12	12	12	12	11
18	11	7.1	7.1	7.3	7.1	7.1	873	12	12	12	11	11
19	11	7.1	7.1	7.3	7.2	7.1	855	11	12	12	11	12
20	11	7.1	7.1	7.3	7.1	7.1	857	11	12	12	11	12
21	11	7.1	7.1	7.2	7.1	7.2	696	11	12	11	11	11
22	11	7.1	7.1	7.1	7.1	7.3	7.3	11	12	11	11	11
23	11	7.1	7.2	7.1	7.2	7.3	7.3	12	12	11	11	11
24	11	7.1	7.2	7.1	7.2	7.3	7.3	12	12	11	11	11
25	11	7.1	7.2	7.1	7.1	7.3	7.3	12	11	11	11	11
26	11	7.1	7.2	7.1	7.2	7.3	7.2	11	11	11	11	11
27	11	7.1	7.1	7.2	7.3	7.2	7.3	11	12	11	11	11
28	11	7.1	7.1	7.2	7.3	7.3	7.2	11	12	11	11	14
29	11	7.1	7.1	7.2	---	7.3	7.3	11	12	11	12	20
30	11	7.1	7.1	7.3	---	33	8.8	12	12	11	11	47
31	11	---	7.1	7.3	---	99	---	12	---	11	11	---
TOTAL	477	265.0	222.9	222.2	200.3	341.8	5828.2	352	358	361	352	383
MEAN	15.4	8.83	7.19	7.17	7.15	11.0	194	11.4	11.9	11.6	11.4	12.8
MAX	67	29	7.3	7.3	7.3	99	920	12	12	12	12	47
MIN	11	6.9	7.1	7.1	7.1	7.1	7.2	11	11	11	11	11
AC-FT	946	526	442	441	397	678	11560	698	710	716	698	760

CAL YR 1986 TOTAL 16137.7 MEAN 44.2 MAX 3400 MIN 6.5 AC-FT 32010
WTR YR 1987 TOTAL 9363.4 MEAN 25.7 MAX 920 MIN 6.9 AC-FT 18570

SACRAMENTO RIVER BASIN

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 mi^2.
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) and is shown as a line item below this table. 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, 64,600 acre-ft, May 4, elevation, 2,169.3 ft; minimum, 28,800 acre-ft, Dec. 3, elevation, 2,111.6 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61900	32200	29000	51100	55600	53900	56200	64200	62700	62500	57500	52600
2	60900	32200	28900	51300	56000	53400	55500	64200	63100	63000	56800	52700
3	59800	32200	29400	52400	56300	53400	55000	64400	63500	63400	56800	52700
4	58800	32200	30500	53000	56000	53200	54300	64600	63900	62400	56900	52600
5	57600	31900	32000	53200	55800	53400	53700	64400	63700	61400	56900	51800
6	56500	31800	33600	53300	55500	53800	53200	64300	62900	61600	56800	51100
7	55400	31800	35000	53400	55200	53600	52900	64400	62200	61900	56600	50400
8	54300	31800	36400	53400	54900	53300	53000	64300	61900	62400	55900	49900
9	53200	31800	37900	53400	54500	53200	53100	63800	62100	62900	54800	50000
10	52100	31800	39000	53500	54200	53300	53000	63300	62200	62700	54400	50000
11	51000	31700	39500	53600	54100	53500	52800	63200	62500	61700	54600	50100
12	49900	31600	40500	53800	54100	54500	52600	63700	62900	60700	54500	49300
13	48800	31500	41600	53900	57500	56700	52400	63900	62100	60400	54400	48600
14	47700	31500	42700	53900	58600	57400	52400	64300	61300	60800	54100	48800
15	46600	31400	43800	53900	59400	58400	52700	64500	61100	61000	53400	48900
16	45500	31300	43900	53900	59700	58800	53300	63700	61600	61100	52900	49100
17	44400	31200	44700	53900	59700	59300	54100	63000	61900	60600	52900	49300
18	43300	31100	45700	53900	58900	59600	54800	62600	62300	59900	53200	49400
19	42300	30900	46800	54000	58100	59900	55500	62900	62600	59300	53400	48800
20	41100	30800	47900	54000	57400	60000	56200	63100	61800	59100	53600	48100
21	40100	30700	49000	54200	56700	59800	57200	63400	60900	59500	53800	48500
22	39000	30500	49900	53900	56100	59300	58000	63600	61100	60100	53400	49200
23	37900	30300	50400	53900	55800	59200	58700	63200	61600	60500	53000	49800
24	36900	30100	50600	54200	55700	59200	59400	62900	62300	60600	52900	50700
25	35800	30000	50600	54400	55300	59200	60100	62700	63000	59600	53200	51100
26	34700	29800	50700	54500	55100	59100	60700	62600	63300	58600	53600	50600
27	33600	29600	50700	54700	54800	59100	61600	63000	62500	58100	53900	50200
28	32500	29500	50700	55000	54400	58500	62200	63400	61500	58100	54100	49600
29	32400	29300	50800	55200	---	57900	62900	63600	61500	58200	53400	49100
30	32300	29200	50900	55300	---	57200	63700	63100	62000	58200	52800	48500
31	32200	---	50900	55500	---	56700	---	62700	---	58200	52400	---
MAX	61900	32200	50900	55500	59700	60000	63700	64600	63900	63400	57500	52700
MIN	32200	29200	28900	51100	54100	53200	52400	62600	60900	58100	52400	48100
a	2019.0	2012.5	2051.0	2057.5	2056.1	2059.2	2168.2	2166.9	2166.0	2161.1	2153.2	2147.4
b	-30700	-3000	+21700	+4600	-1100	+2300	+7000	-1000	-700	-3800	-5800	-3900
c	29710	0	13770	13530	28050	26830	23140	31150	28030	31690	28280	21990

CAL YR 1986 MAX 71700 MIN 28900 b +14300
WTR YR 1987 MAX 64600 MIN 28900 b -14400
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.

SACRAMENTO RIVER BASIN

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.--No estimated daily discharges. 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 collected by Pacific Gas & Electric Co., under general supervision of U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--64 years (water years 1913-53, 1965-87), 307 ft^3/s, 222,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 531 ft^3/s, Oct. 5, 6, 1980; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	456	0	85	199	192	420	374	454	253	437	409	302
2	456	0	87	199	192	419	369	456	258	438	412	315
3	456	0	81	107	289	418	356	457	259	432	414	332
4	456	0	67	122	437	418	356	457	275	429	414	333
5	456	195	38	199	435	366	340	457	298	431	423	332
6	456	79	39	200	434	352	314	456	326	434	435	343
7	456	0	40	200	432	394	122	453	324	436	435	353
8	456	0	60	200	431	393	29	454	344	436	437	353
9	456	0	176	200	429	373	29	417	378	436	441	341
10	456	15	277	200	427	318	108	454	387	436	447	330
11	456	42	289	200	426	319	150	454	398	434	449	304
12	456	36	296	200	404	312	150	455	410	429	450	289
13	456	35	301	200	221	321	151	456	411	431	446	291
14	455	35	303	200	302	322	151	457	410	436	426	281
15	455	45	303	200	421	321	151	458	411	436	415	272
16	453	49	304	200	420	320	273	458	411	435	407	260
17	436	47	304	200	419	321	452	458	410	432	400	254
18	453	53	306	201	422	321	452	393	411	435	392	254
19	453	64	308	200	447	334	452	307	379	436	378	254
20	453	76	303	201	454	401	452	312	362	436	371	253
21	452	88	300	281	452	450	453	299	362	427	374	257
22	452	86	302	302	449	449	455	312	363	399	374	259
23	450	86	303	200	448	449	456	275	398	392	374	253
24	449	85	302	197	449	449	455	254	413	393	375	249
25	452	85	302	197	446	449	456	255	413	392	376	245
26	453	84	302	196	422	449	456	390	422	392	347	233
27	453	84	303	191	421	449	457	406	434	395	335	204
28	451	84	303	192	420	448	455	260	436	402	336	268
29	80	85	256	193	---	449	456	241	435	407	335	215
30	0	85	198	193	---	420	457	241	436	404	339	264
31	0	---	198	192	---	373	---	240	---	404	341	---
TOTAL	12778	1623	7036	6162	11141	11997	9787	11896	11227	13092	12307	8493
MEAN	412	54.1	227	199	398	387	326	384	374	422	397	283
MAX	456	195	308	302	454	450	457	458	436	438	450	353
MIN	0	0	38	107	192	312	29	240	253	392	335	204
AC-FT	25350	3220	13960	12220	22100	23800	19410	23600	22270	25970	24410	16850
a	23660	0	12220	11790	21750	24170	18730	22190	20020	23210	22620	14510
b	23200	0	5090	7720	18000	23610	14250	15330	15560	18730	18070	12100

CAL YR 1986 TOTAL 129981.00 MEAN 356 MAX 473 MIN 0 AC-FT 257800 AC-FT a 239200 AC-FT b 187800
WTR YR 1987 TOTAL 117539.00 MEAN 322 MAX 458 MIN 0 AC-FT 233100 AC-FT a 214900 AC-FT b 171700

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.

SACRAMENTO RIVER BASIN

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 mi^2.

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. 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.--Estimated daily discharges: Mar. 19, 20. Records excellent. 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).--28 years (water years 1913, 1916, 1951-53, 1965-87), 406 ft^3/s, 294,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (prior to construction of Rollins Dam in 1964), 9,620 ft^3/s, Nov. 20, 1950, gage height, 21.40 ft, site and datum then in use, from rating curve extended above 3,600 ft^3/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 ft^3/s, Feb. 17, 1986, gage height, 20.62 ft, site and datum then in use, from rating curve extended above 11,600 ft^3/s; minimum daily, 0.5 ft^3/s, Nov. 17, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 368 ft^3/s, Feb. 15-18, gage height, 5.41 ft; minimum daily, 15 ft^3/s, several days in December, March, and April.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	53	22	19	17	16	16	188	99	97	93	107
2	90	29	22	19	19	16	16	315	100	97	92	108
3	89	29	22	23	18	16	15	316	100	96	92	109
4	91	26	21	17	18	16	16	318	73	95	93	108
5	93	22	21	18	17	18	15	319	60	95	93	108
6	91	23	21	19	17	19	15	183	60	95	93	109
7	90	20	21	18	17	17	17	57	60	96	94	108
8	91	20	21	18	17	16	17	56	61	96	93	104
9	91	20	22	18	17	16	17	54	85	96	94	97
10	94	22	23	18	17	15	17	59	101	95	94	96
11	94	25	22	18	18	16	16	59	102	95	93	95
12	93	23	22	18	19	22	16	59	102	96	92	93
13	92	23	23	18	28	20	26	61	102	95	92	94
14	90	23	23	18	64	19	42	62	102	94	90	94
15	90	23	23	18	249	18	43	63	98	92	89	92
16	85	23	23	18	362	16	54	62	97	91	89	91
17	81	23	23	18	361	16	62	61	97	92	89	92
18	85	22	23	18	353	16	58	59	97	92	89	91
19	85	22	23	18	319	16	60	79	96	91	89	92
20	82	22	23	18	201	21	62	100	96	92	89	93
21	81	22	23	19	41	27	60	101	96	90	89	81
22	80	22	23	19	17	26	60	102	96	90	88	69
23	80	22	19	18	17	28	61	102	97	90	88	69
24	78	22	15	18	17	25	61	100	97	91	88	69
25	84	22	15	18	16	24	61	100	98	89	88	69
26	84	22	15	18	16	23	61	103	97	90	89	69
27	81	22	15	18	16	22	61	100	96	90	88	67
28	80	22	15	19	16	19	61	97	96	91	88	69
29	85	22	17	17	---	17	60	99	97	91	87	71
30	82	22	18	17	---	16	60	98	97	91	96	84
31	90	---	18	17	---	16	---	99	---	91	107	---
TOTAL	2693	713	637	565	2304	588	1206	3631	2755	2882	2828	2698
MEAN	86.9	23.8	20.5	18.2	82.3	19.0	40.2	117	91.8	93.0	91.2	89.9
MAX	94	53	23	23	362	28	62	319	102	97	107	109
MIN	78	20	15	17	16	15	15	54	60	89	87	67
AC-FT	5340	1410	1260	1120	4570	1170	2390	7200	5460	5720	5610	5350

CAL YR 1986 TOTAL 188028 MEAN 515 MAX 19300 MIN 15 AC-FT 373000
WTR YR 1987 TOTAL 23500 MEAN 64.4 MAX 362 MIN 15 AC-FT 46610

SACRAMENTO RIVER BASIN

11424000 BEAR RIVER NEAR WHEATLAND, CA

LOCATION.--Lat 39°00'01", long 121°24'21", in SE 1/4 SW 1/4 sec.3, T.13 N., R.5 E., Placer County, Hydrologic Unit 18020108, on right bank 100 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 mi^2.

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.--Estimated daily discharges: May 24, June 14-24, July 2. Records fair. 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 diagram of Bear River basin.

AVERAGE DISCHARGE (prior to regulation by New Camp Far West Reservoir).--34 years (water years 1930-63), 417 ft^3/s, 301,900 acre-ft/year; 24 years (water years 1964-87), 439 ft^3/s, 318,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,000 ft^3/s, Feb. 17, 1986, gage height, 21.60 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 306 ft^3/s, Mar. 25, gage height, 4.81 ft; minimum daily, 3.2 ft^3/s, July 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	34	18	17	16	15	18	27	28	13	14	14
2	12	29	18	17	32	15	23	25	28	13	13	15
3	10	25	18	21	26	13	23	23	27	13	14	15
4	10	21	19	18	17	15	23	25	23	14	13	20
5	10	20	22	17	16	43	23	25	21	14	13	16
6	10	17	19	18	17	39	23	19	23	15	14	14
7	9.5	16	18	17	17	16	24	22	22	16	13	14
8	9.8	16	18	16	16	16	26	20	22	17	13	18
9	20	16	18	16	16	14	28	24	21	13	12	15
10	11	15	18	16	15	14	28	23	19	14	12	12
11	10	15	17	17	23	17	27	25	19	13	11	12
12	11	17	17	17	24	22	26	21	18	3.2	12	13
13	11	16	17	17	88	32	26	23	17	10	14	12
14	11	16	17	17	23	24	27	25	17	12	15	12
15	11	17	17	17	31	21	27	21	17	12	12	10
16	11	16	16	16	20	15	26	22	17	12	11	9.5
17	12	15	17	16	18	14	24	22	16	13	12	8.5
18	12	15	17	16	12	14	24	20	16	12	11	10
19	12	16	18	16	14	13	24	21	16	17	13	10
20	12	15	18	16	14	9.6	25	20	16	17	13	9.2
21	12	16	16	15	15	11	24	20	15	14	14	9.0
22	12	15	17	15	13	11	24	20	15	14	13	7.7
23	11	16	16	17	13	16	23	24	15	16	12	8.3
24	12	16	16	18	11	111	23	20	14	17	13	8.3
25	14	16	16	16	11	171	22	19	15	16	12	8.6
26	12	17	16	16	11	14	22	16	15	16	13	8.3
27	13	18	15	16	14	12	20	17	14	14	13	9.9
28	12	17	15	18	14	11	22	27	14	15	21	11
29	12	21	16	16	---	9.3	26	27	15	14	17	9.1
30	12	17	15	17	---	9.7	27	26	13	14	13	8.5
31	14	---	15	16	---	11	---	24	---	15	13	---
TOTAL	364.3	536	530	518	557	768.6	728	693	548	428.2	409	347.9
MEAN	11.8	17.9	17.1	16.7	19.9	24.8	24.3	22.4	18.3	13.8	13.2	11.6
MAX	20	34	22	21	88	171	28	27	28	17	21	20
MIN	9.5	15	15	15	11	9.3	18	16	13	3.2	11	7.7
AC-FT	723	1060	1050	1030	1100	1520	1440	1370	1090	849	811	690

CAL YR 1986	TOTAL	239811.6	MEAN 657	MAX 35900	MIN 9.0	AC-FT	475700
WTR YR 1987	TOTAL	6428.0	MEAN 17.6	MAX 171	MIN 3.2	AC-FT	12750

SACRAMENTO RIVER BASIN

11425500 SACRAMENTO RIVER AT VERONA, CA

LOCATION.--Lat 38°46'51", long 121°36'12", in SW 1/4 SE 1/4 sec.23, T.11 N., R.3 E., Sutter County, Hydrologic Unit 18020109, on left bank 0.8 mi southeast of Verona, 1 mi downstream from Feather River, 6.2 mi east of Knights Landing, and at mile 19.6 upstream from Sacramento.

DRAINAGE AREA.--21,251 mi^2.

PERIOD OF RECORD.--May 1926 to September 1929 (low-water periods only), October 1929 to current year.
CHEMICAL DATA: Water years 1952, 1969-70.
WATER TEMPERATURE: Water year 1980.
SEDIMENT DATA: Water year 1980.

REVISED RECORDS.--WDR CA-77-4: Drainage area.

GAGE.--Water-stage recorder. 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 developments, diversions for irrigation, return flow from irrigated areas, and bypassing for flood control. When discharge exceeds about 55,000 ft^3/s, flow begins over Fremont weir, 3.0 mi upstream on right bank, into Yolo Bypass (station 11453000).

AVERAGE DISCHARGE.--58 years (water years 1930-87), 19,330 ft^3/s, 14,000,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,900 ft^3/s, Feb. 20, 1986, gage height, 42.11 ft; minimum daily, 304 ft^3/s, July 23, 24, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 37,400 ft^3/s, Mar. 16, gage height, 24.35 ft; minimum daily, 7,780 ft^3/s, June 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18200	10300	11700	10800	14500	9640	11500	10700	9740	11700	13300	11200
2	16900	10500	11600	11200	14200	9470	11100	10300	9640	11600	13300	10800
3	16300	10400	11800	12200	15000	9350	10300	10300	9540	11400	13400	10700
4	16000	10400	11800	14400	18300	9290	9970	10500	9140	11600	13500	10600
5	15800	10400	11900	17200	18900	10200	10400	10200	8360	12000	13500	10600
6	15200	10200	12100	19300	16800	14400	11000	9430	7780	12100	13300	10300
7	14900	9940	12100	17900	14800	27200	10800	8550	7860	12400	13500	10500
8	14900	9780	12000	15500	13300	29000	9940	8180	8600	12800	13400	10800
9	15000	9620	12000	13400	12200	23500	9590	8180	9350	13000	13000	11000
10	15000	9790	11800	12100	11500	19200	9160	8860	9980	13100	12700	11100
11	14900	10400	11800	11400	11200	16600	9700	9680	10000	12900	12400	11000
12	14200	10700	11800	11000	11600	15200	10300	10800	10300	12700	12200	11000
13	13600	10800	11900	10800	14600	19000	10800	11000	10300	12900	12000	11000
14	13100	11100	11600	10800	25500	31600	10900	11100	10500	13000	11900	10700
15	12200	11100	11400	10700	32500	35900	11000	12100	10400	13000	11800	10300
16	11600	11100	11400	10600	32000	37300	10800	12300	10400	12900	11700	10000
17	10700	11100	11300	10400	29600	36300	10900	12300	10500	12600	12000	10000
18	10300	11100	11400	10300	24300	32000	11500	11100	10500	12600	12200	9660
19	10200	11400	11300	10100	19900	27600	10900	10200	10300	12700	12200	9200
20	10200	11300	11300	9760	17200	24600	11100	9800	10300	12800	12500	8720
21	9910	11300	11300	9590	15100	22300	12200	9580	10300	13100	12400	8380
22	9730	11200	11200	9410	13800	20100	12800	9270	10400	13200	12400	8220
23	9730	11200	11200	9650	12600	19500	12600	8830	10600	13300	12400	7910
24	9750	11100	11300	9950	11800	19800	12400	8620	10400	13400	12500	7860
25	9570	11000	11300	10100	11200	19700	12100	8340	9740	13600	12600	8160
26	9510	11000	11200	10800	10800	18700	12000	8210	9360	13400	12600	8480
27	9710	11000	11000	12700	10500	17000	11800	8360	9210	13400	12500	8700
28	9870	11200	10800	12600	10000	15500	11400	8200	8900	13300	12300	8860
29	10000	11600	10700	13300	---	14300	11200	8200	9770	13300	11500	9160
30	10100	11700	10700	15300	---	13300	10800	8390	11200	13200	11200	8990
31	10100	---	10800	14300	---	12100	---	9440	---	13400	11300	---
TOTAL	387180	323730	355500	377560	463700	629650	330960	301020	293370	396400	387500	293900
MEAN	12490	10790	11470	12180	16560	20310	11030	9710	9779	12790	12500	9797
MAX	18200	11700	12100	19300	32500	37300	12800	12300	11200	13600	13500	11200
MIN	9510	9620	10700	9410	10000	9290	9160	8180	7780	11400	11200	7860
AC-FT	768000	642100	705100	748900	919700	1249000	656500	597100	581900	786300	768600	583000

CAL YR 1986 TOTAL 7647490 MEAN 20950 MAX 92300 MIN 7520 AC-FT 15170000
WTR YR 1987 TOTAL 4540470 MEAN 12440 MAX 37300 MIN 7780 AC-FT 9006000

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 at mile 4.2 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.

COOPERATION.--Records provided by California Department of Water Resources; not reviewed by U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 128,000 ft^3/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 during year.

SACRAMENTO RIVER BASIN

11426170 LAKE VALLEY RESERVOIR NEAR CISCO, CA

LOCATION.--Lat 39°18'01", 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 3.1 mi west of Cisco.

DRAINAGE AREA.--4.54 mi^2.

PERIOD OF RECORD.--July to September 1987. Unpublished records for water years 1980-86 available in files of 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,238 acre-ft, July 17, gage height, 43.42 ft; minimum, 2,270 acre-ft, Sept. 29, 30, gage height, 32.98 ft.

Capacity table (gage height, in feet NGVD, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co. dated June 18, 1965)

8	41	25	1152
10	102	30	1830
12	189	40	3455
14	304	50	5810
17	476	59	8411
20	693		

RESERVOIR STORAGE (AC-FT), WATER YEAR JULY 1987 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										---	3719	2705
2										---	3680	2677
3										---	3643	2651
4										---	3608	2623
5										---	3571	2596
6										---	3530	2567
7										---	3494	2540
8										---	3450	2511
9										---	3413	2482
10										---	3373	2455
11										---	3332	2430
12										---	3293	2395
13										---	3250	2368
14										---	3216	2356
15										---	3181	2353
16										---	3154	2347
17										4238	3123	2343
18										4202	3094	2334
19										4173	3065	2334
20										4144	3033	2328
21										4107	3000	2321
22										4067	2973	2312
23										4035	2949	2310
24										3998	2920	2303
25										3969	2894	2292
26										3921	2861	2291
27										3898	2841	2284
28										3861	2813	2279
29										3824	2786	2270
30										3789	2760	2270
31										3751	2726	---
MAX										---	3719	2705
MIN										---	2726	2270
a										41.29	35.99	32.98
b										---	-1025	-456

a Gage height, in feet, of 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--23 years, 16.6 ft^3/s, 12,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 75 ft^3/s, Jan. 13, 1980; no flow many days in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	.10	9.2	33	4.1	15	23	18	1.2	18	14	13
2	.19	.14	20	34	4.1	7.0	25	12	.95	18	14	13
3	.19	.14	31	33	3.1	7.2	26	9.2	.79	18	14	13
4	.19	.14	32	35	1.4	9.1	20	7.3	.45	18	14	13
5	.19	.14	33	33	1.2	23	19	6.1	.19	18	13	13
6	.19	.14	35	33	1.3	23	20	5.0	.19	18	13	13
7	.19	.14	35	32	1.4	22	22	4.6	.19	18	13	13
8	.19	.14	36	32	1.3	27	23	4.9	.19	18	13	13
9	.19	.14	34	32	1.1	28	26	7.1	.19	18	13	13
10	.19	.14	33	32	9.7	22	27	11	.19	18	13	13
11	.19	.14	33	32	20	27	28	7.0	.19	18	13	15
12	.19	.14	38	32	19	30	23	5.2	.19	17	13	16
13	.19	.14	38	32	35	36	19	4.4	.19	17	13	10
14	.19	.14	38	32	11	31	18	3.7	.19	17	13	.26
15	.19	.14	23	32	13	26	16	3.1	.19	14	13	.26
16	.19	.14	6.2	48	15	21	19	2.5	.19	14	13	.26
17	.19	.14	30	52	12	22	16	1.4	.19	15	12	.26
18	.19	.14	33	28	11	33	12	1.5	.13	15	13	.26
19	.17	.14	35	3.8	9.7	24	9.3	1.8	.12	15	13	.59
20	.13	.14	34	3.8	9.2	19	7.8	4.6	.13	14	13	4.6
21	.09	.21	34	3.8	8.4	19	8.1	6.7	.14	14	13	11
22	.12	.19	34	3.8	7.8	20	8.6	6.7	.14	14	13	13
23	.13	.19	33	3.8	12	20	8.2	4.3	.14	14	13	12
24	.14	.19	34	4.0	18	17	7.6	3.7	3.1	14	13	11
25	.14	.19	33	4.4	19	13	7.4	3.7	17	14	13	9.4
26	.14	.19	33	4.3	16	14	7.4	4.0	18	14	13	7.9
27	.14	.19	33	4.8	16	15	7.8	3.5	18	14	13	3.3
28	.14	.19	32	7.8	16	14	7.2	3.1	18	14	13	.26
29	.14	.19	32	5.3	---	13	6.3	2.8	17	14	13	.26
30	.18	3.4	32	4.5	---	15	16	2.6	17	14	13	.26
31	.10	---	32	4.2	---	19	---	1.8	---	14	13	---
TOTAL	5.18	7.89	968.4	675.3	296.8	631.3	483.7	163.3	114.76	490	406	245.87
MEAN	.17	.26	31.2	21.8	10.6	20.4	16.1	5.27	3.83	15.8	13.1	8.20
MAX	.19	3.4	38	52	35	36	28	18	18	18	14	16
MIN	.09	.10	6.2	3.8	1.1	7.0	6.3	1.4	.12	14	12	.26
AC-FT	10	16	1920	1340	589	1250	959	324	228	972	805	488

CAL YR 1986 TOTAL 6643.98 MEAN 18.2 MAX 41 MIN .09 AC-FT 13180
WTR YR 1987 TOTAL 4488.50 MEAN 12.3 MAX 52 MIN .09 AC-FT 8900

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--October 1941 to current year.
CHEMICAL DATA: Water years 1977-80.
WATER TEMPERATURE: Water years 1959-83 (daily records).
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, combined capacity, 10,300 acre-ft above 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.

AVERAGE DISCHARGE.--46 years, 843 ft^3/s, 610,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,400 ft^3/s, Dec. 23, 1964, gage height, 11.87 ft, from rating curve extended above 24,000 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	1145	*6,590	*4.18				

Minimum daily, 26 ft^3/s, Sept. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	83	86	83	154	228	572	953	173	61	33	28
2	127	80	84	154	179	229	649	669	170	61	33	28
3	117	81	82	252	313	232	719	565	161	58	32	28
4	109	81	81	397	218	231	642	560	153	57	32	28
5	105	81	86	171	182	443	560	588	149	55	32	28
6	115	79	90	131	165	1790	576	612	149	54	31	28
7	139	78	84	116	160	1140	653	585	145	54	30	28
8	133	77	78	109	162	772	728	538	147	52	30	28
9	119	77	74	101	160	727	787	762	139	51	30	28
10	113	78	74	98	157	612	905	705	131	49	30	28
11	109	77	72	94	283	601	984	652	122	47	29	28
12	104	78	70	93	455	651	994	617	117	45	29	28
13	100	77	70	92	3980	2130	809	525	111	45	29	28
14	91	77	73	90	2140	1450	882	459	104	45	28	28
15	87	76	72	86	1320	1290	959	424	101	44	28	30
16	84	77	71	80	982	997	956	388	103	41	29	30
17	83	77	71	77	680	820	940	355	104	38	28	29
18	88	77	74	88	535	873	923	315	99	38	28	28
19	90	77	76	85	449	827	702	282	91	41	28	28
20	85	78	88	82	392	679	576	272	88	42	29	28
21	86	86	84	78	355	626	588	338	85	41	29	28
22	88	89	82	78	326	570	706	307	82	40	29	28
23	86	85	96	83	307	592	767	265	81	40	29	27
24	85	81	88	98	291	596	772	235	77	39	28	28
25	84	80	80	136	268	547	785	220	74	38	29	27
26	83	78	77	136	252	519	807	209	70	38	29	26
27	83	78	75	137	239	520	937	216	67	36	28	27
28	85	78	73	307	230	504	988	215	66	36	28	27
29	85	96	73	303	---	474	888	198	64	35	28	27
30	89	94	72	211	---	468	954	188	63	34	28	27
31	90	---	72	175	---	507	---	183	---	34	28	---
TOTAL	3064	2411	2428	4221	15334	22645	23708	13400	3286	1389	911	837
MEAN	98.8	80.4	78.3	136	548	730	790	432	110	44.8	29.4	27.9
MAX	139	96	96	397	3980	2130	994	953	173	61	33	30
MIN	83	76	70	77	154	228	560	183	63	34	28	26
AC-FT	6080	4780	4820	8370	30410	44920	47020	26580	6520	2760	1810	1660

CAL YR 1986 TOTAL 491350 MEAN 1346 MAX 45900 MIN 47 AC-FT 974600
WTR YR 1987 TOTAL 93634 MEAN 257 MAX 3980 MIN 26 AC-FT 185700

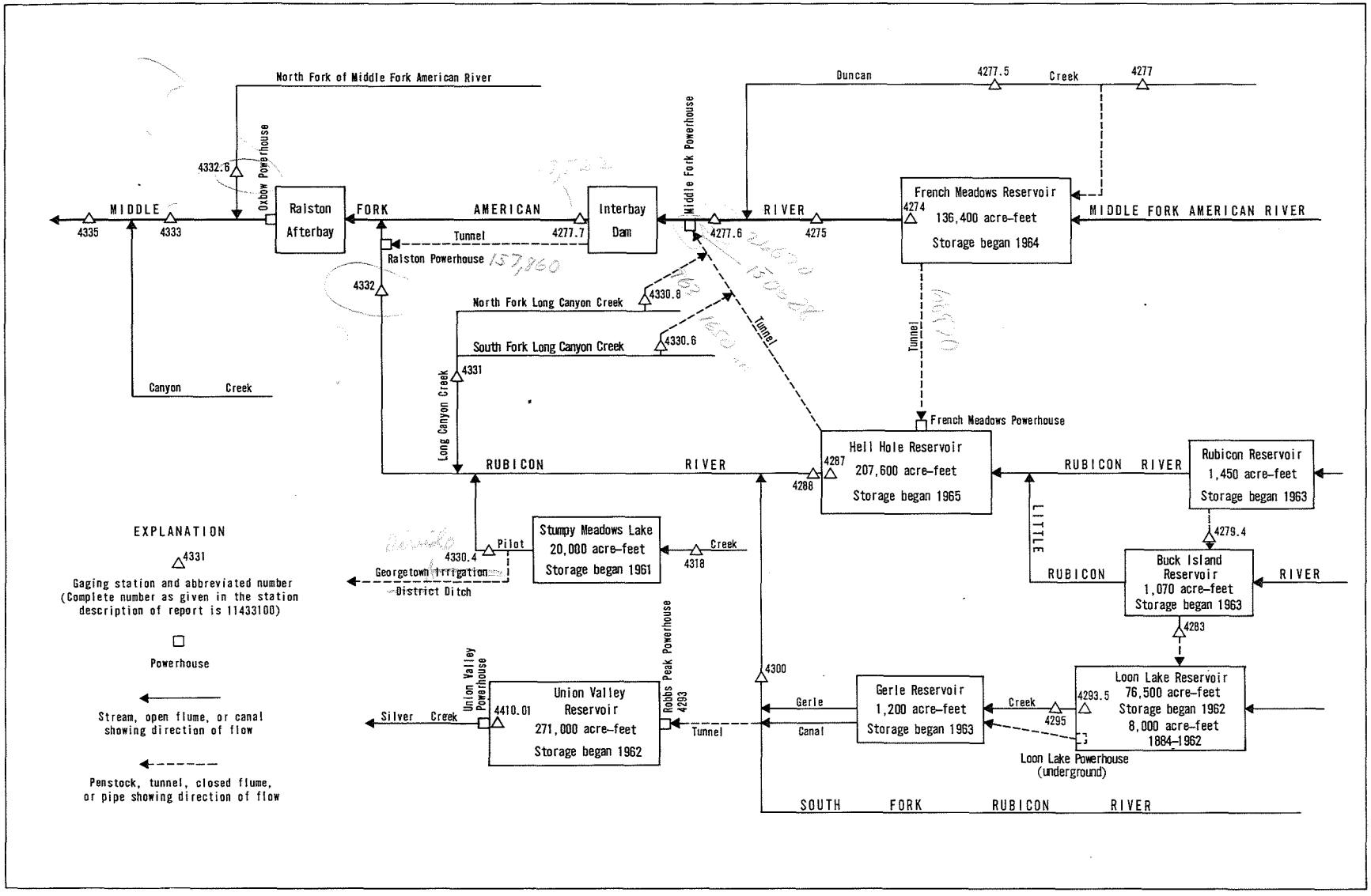

FIGURE 31.--Schematic diagram showing diversions and storage in Middle Fork American River and Rubicon River basins.

SACRAMENTO RIVER BASIN

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 mi^2.

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 ft^3/s diverted from Duncan Creek through a tunnel to reservoir. Water is released through a tunnel to French Meadows powerplant at Hell Hole Reservoir on the Rubicon River; releases began Dec. 13, 1965. Records, including extremes, represent total contents at 2400 hours. 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, 107,500 acre-ft, June 13-22, elevation, 5,241.2 ft; minimum, 59,300 acre-ft, Sept. 25-30, elevation 5,196.6 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Placer County Water Agency, from 1965 survey)

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		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81400	64400	61400	61600	62300	66600	76300	97000	106900	103700	90000	69600
2	80800	64400	61400	61600	62400	66700	76900	97500	106900	103000	89400	69000
3	80100	64100	61400	61800	62400	66700	77400	97900	107000	102600	88700	68200
4	79500	63400	61400	61800	62400	66800	77800	98500	107000	102600	88000	67800
5	79000	62700	61400	61800	62400	67700	78200	99000	107100	102600	87400	67800
6	78300	62000	61400	61800	62400	68400	78600	99500	107100	102100	86700	67700
7	77800	61600	61400	61800	62400	68800	79200	100000	107200	101400	86000	67700
8	77200	61600	61400	61800	62400	69200	79800	100500	107200	100800	85500	67200
9	76600	61500	61400	61800	62500	69600	80600	101300	107400	100200	84800	66600
10	76000	61500	61400	61800	62600	69900	81400	101900	107400	99700	84000	65800
11	75300	61500	61400	61800	62800	70200	82300	102500	107400	99700	83400	65500
12	74700	61500	61400	61800	63000	70800	83100	103000	107400	99700	82800	65400
13	74000	61500	61400	61800	64500	71300	83800	103400	107500	99200	82100	65400
14	73300	61500	61400	61800	65100	71800	84700	103800	107500	98600	81400	64900
15	72700	61500	61400	61800	65400	72100	85500	104000	107500	97900	80700	64300
16	72100	61500	61400	61800	65600	72300	86400	104400	107500	97200	80000	63600
17	71500	61500	61400	61800	65700	72700	87100	104700	107500	96900	79400	62900
18	70900	61500	61400	61800	65800	73100	87900	104900	107500	96800	78800	62400
19	70200	61500	61400	61800	65900	73400	88400	105000	107500	96800	78100	62400
20	69600	61500	61400	61800	66000	73600	88800	105400	107500	96300	77500	62400
21	68900	61500	61400	61800	66100	73800	89400	105600	107500	95700	76900	61900
22	68300	61500	61500	61800	66100	74000	90100	105800	107500	95000	76200	61200
23	67800	61500	61500	61800	66200	74200	90700	105900	107100	94300	75600	60500
24	67300	61500	61500	61900	66300	74400	91400	106000	106500	93800	74900	59800
25	67300	61500	61500	61900	66400	74600	92100	106100	105900	93800	74200	59300
26	67300	61400	61500	61900	66400	74800	92900	106200	105400	93700	73600	59300
27	66900	61400	61500	62100	66500	75000	93700	106400	105400	93400	73000	59300
28	66200	61400	61500	62200	66500	75200	94500	106500	105400	92700	72300	59300
29	65500	61400	61500	62200	---	75300	95400	106600	105000	92000	71700	59300
30	64800	61400	61500	62200	---	75600	96300	106600	104300	91400	71000	59300
31	64500	---	61500	62200	---	75900	---	106700	---	90700	70300	---
MAX	81400	64400	61500	62200	66500	75900	96300	106700	107500	103700	90000	69600
MIN	64500	61400	61400	61600	62300	66600	76300	97000	104300	90700	70300	59300
a	5201.1	5198.9	5199.0	5199.7	5204.2	5213.5	5231.9	5240.6	5238.6	5227.1	5208.0	5196.6
b	-17600	-3100	+100	+700	+4300	+9400	+20400	+10400	-2400	-13600	-20400	-11000

CAL YR 1986 b +2000
WTR YR 1987 b -22800
a Elevation, in feet NGVD, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 mi^2.
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.--Estimated daily discharges: Aug. 13-17. 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 to Hell Hole Reservoir 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 ft^3/s, 107,900 acre-ft/yr; 23 years (water years 1965-87), 22.3 ft^3/s, 16,160 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 ft^3/s, Jan. 31, 1963, gage height, 14.20 ft, from rating curve extended above 1,100 ft^3/s on basis of peak flow at former site; minimum, 0.3 ft^3/s, Oct. 4, 5, 21-25, 1960, Oct. 5, 6, 1961. Maximum discharge since construction of French Meadows Dam in 1964, 2,870 ft^3/s, Mar. 8, 1986, gage height, 10.4 ft, from floodmarks, from flow over spillway of French Meadows Reservoir; minimum daily, 0.8 ft^3/s, Oct. 22-25, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30 ft^3/s, Feb. 13, gage height, 5.25 ft; minimum daily, 8.1 ft^3/s, May 4.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.2	13	9.2	9.0	10	10	11	8.8	8.9	9.0	9.0	9.6
2	9.2	19	9.2	9.0	10	10	11	8.5	8.8	9.1	8.7	9.4
3	9.1	19	9.2	9.1	10	11	12	8.4	8.8	9.1	9.0	9.5
4	9.0	15	9.2	9.0	10	10	11	8.1	8.8	9.1	9.3	9.5
5	9.0	12	9.2	9.0	10	13	11	8.2	8.8	9.2	9.4	9.5
6	9.0	12	9.0	9.1	10	13	11	9.1	9.0	9.1	9.4	9.5
7	9.0	12	9.0	9.1	10	12	11	9.7	9.0	9.0	9.5	9.5
8	9.0	12	8.8	9.0	10	12	11	9.6	9.0	8.9	9.5	9.5
9	9.0	11	8.8	9.0	10	12	11	10	9.0	8.7	9.5	9.6
10	9.0	11	9.6	9.0	11	11	11	9.9	9.0	8.6	9.5	9.7
11	8.9	11	11	9.0	11	12	11	9.8	9.0	8.6	9.4	9.9
12	8.8	10	11	9.0	13	13	11	9.7	9.0	9.6	9.4	10
13	8.8	9.0	11	9.0	22	15	11	9.7	9.0	10	9.2	10
14	8.8	8.9	9.5	9.0	12	13	11	9.7	9.0	10	9.2	10
15	8.7	8.6	9.0	9.0	11	12	11	9.7	9.3	10	9.2	10
16	8.6	9.6	9.0	9.0	11	12	11	9.7	9.2	9.8	9.2	10
17	8.7	10	8.8	9.0	10	12	11	9.7	9.2	10	9.2	10
18	8.6	10	8.9	9.0	10	14	11	9.7	9.2	10	9.2	10
19	8.6	10	8.9	9.0	10	12	11	9.7	9.2	10	9.2	9.8
20	8.6	10	8.9	9.0	10	12	11	10	9.2	9.7	9.0	9.5
21	8.6	10	8.8	9.0	10	12	11	10	9.2	9.7	9.0	9.5
22	8.5	10	8.9	9.0	10	11	10	10	9.2	9.7	8.8	9.5
23	8.4	10	8.9	9.0	10	11	9.2	10	9.1	9.7	8.8	10
24	8.4	10	8.8	9.5	10	11	9.0	10	9.0	9.6	8.8	9.9
25	8.4	10	8.8	9.6	10	11	8.6	10	9.0	9.4	8.7	9.2
26	8.4	9.7	8.8	9.6	10	11	8.6	10	9.2	9.2	8.6	9.0
27	8.4	9.7	8.8	10	10	12	8.6	10	9.2	9.2	8.5	8.2
28	8.4	9.6	8.8	11	10	11	8.6	9.8	9.1	9.2	8.2	8.2
29	8.4	9.6	8.8	10	---	11	8.6	9.2	9.0	9.2	8.7	8.2
30	8.4	9.4	8.8	10	---	11	8.8	9.2	9.0	9.1	9.9	8.2
31	8.2	---	8.8	10	---	11	---	9.2	---	9.0	9.7	---
TOTAL	270.1	331.1	284.2	287.0	301	364	312.0	295.1	271.4	290.5	282.7	284.4
MEAN	8.71	11.0	9.17	9.26	10.8	11.7	10.4	9.52	9.05	9.37	9.12	9.48
MAX	9.2	19	11	11	22	15	12	10	9.3	10	9.9	10
MIN	8.2	8.6	8.8	9.0	10	10	8.6	8.1	8.8	8.6	8.2	8.2
AC-FT	536	657	564	569	597	722	619	585	538	576	561	564
a	18230	2660	0	0	0	0	0	0	3220	13770	20770	10220

CAL YR 1986 TOTAL 19414.4 MEAN 53.2 MAX 2380 MIN 8.2 AC-FT 38510
WTR YR 1987 TOTAL 3573.5 MEAN 9.79 MAX 22 MIN 8.1 AC-FT 7090

a Diversion, in acre-ft, from French Meadows Reservoir to Hell Hole Reservoir through French Meadows powerplant, provided by Placer County Water Agency; not reviewed by U.S. Geological Survey.

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Dec. 9-12, 16, 17, Dec. 30 to Jan. 6, and Jan. 26 to Feb. 3. Station is upstream from all diversion to French Meadows Reservoir. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--27 years, 38.6 ft^3/s, 27,970 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 ft^3/s, Dec. 22, 1964, gage height, 10.6 ft, from floodmarks, from rating curve extended above 400 ft^3/s on basis of computation of flow over diversion dam; minimum daily, 0.10 ft^3/s, several days during July and August 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s, and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	0600	*707	*8.05				

Minimum daily, 0.39 ft^3/s, Sept. 22-25, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	2.1	2.3	2.3	5.1	11	37	76	7.4	1.5	.69	.48
2	6.9	2.0	2.2	2.6	5.0	12	41	58	6.7	1.4	.64	.47
3	5.8	1.9	2.1	3.0	4.9	12	42	51	6.3	1.3	.63	.45
4	5.5	1.9	2.2	3.0	5.1	14	35	49	5.8	1.3	.59	.43
5	6.2	1.9	2.4	3.0	5.5	68	36	48	5.5	1.3	.57	.43
6	6.3	1.8	2.5	3.2	6.2	70	41	45	5.3	1.3	.55	.44
7	5.8	1.8	2.3	3.3	6.9	49	50	41	5.3	1.2	.54	.43
8	5.3	1.8	2.3	3.3	6.9	45	56	39	4.9	1.2	.54	.43
9	4.9	1.8	2.1	3.3	6.7	42	69	52	4.5	1.1	.52	.43
10	4.4	1.8	2.1	3.5	11	37	79	47	4.3	1.1	.49	.42
11	4.0	1.8	2.1	3.9	26	34	88	39	4.0	1.1	.49	.43
12	3.4	1.8	2.0	4.2	28	44	79	32	3.8	1.1	.49	.43
13	3.0	1.7	2.2	3.9	258	56	78	27	3.5	.97	.50	.43
14	2.9	1.7	2.4	3.6	64	41	87	23	3.3	.93	.52	.45
15	2.8	1.7	2.3	3.5	56	34	92	20	3.7	.93	.53	.46
16	2.6	1.7	2.2	3.4	35	31	92	18	3.6	.90	.54	.46
17	2.6	1.7	2.1	3.3	25	33	93	16	3.2	.86	.53	.45
18	3.0	1.7	2.2	3.3	21	39	81	14	2.8	1.1	.51	.43
19	2.9	2.3	2.5	3.3	19	31	63	13	2.6	1.2	.50	.43
20	2.8	2.1	2.7	3.2	16	27	58	18	2.5	1.1	.48	.41
21	2.6	3.4	2.9	3.0	15	25	62	17	2.3	.98	.50	.41
22	2.4	2.6	2.8	3.0	14	23	68	14	2.3	.98	.48	.39
23	2.4	2.4	2.9	3.0	14	22	70	12	2.0	.97	.48	.39
24	2.3	2.3	3.0	3.3	13	21	70	11	1.9	.92	.48	.39
25	2.3	2.2	3.4	9.7	13	21	71	11	1.8	.88	.46	.39
26	2.2	2.1	2.7	11	13	23	77	11	1.8	.87	.45	.40
27	2.1	2.0	2.7	9.8	11	23	87	11	1.7	.83	.44	.41
28	2.1	2.0	4.2	13	11	22	83	9.9	1.6	.79	.43	.41
29	2.1	2.2	2.4	7.0	---	23	80	9.2	1.5	.77	.43	.41
30	2.5	2.2	2.3	5.6	---	26	93	8.5	1.5	.76	.41	.39
31	2.3	---	2.3	4.7	---	31	---	7.9	---	.75	.48	---
TOTAL	115.1	60.4	76.8	139.2	715.3	990	2058	848.5	107.4	32.39	15.89	12.78
MEAN	3.71	2.01	2.48	4.49	25.5	31.9	68.6	27.4	3.58	1.04	.51	.43
MAX	8.7	3.4	4.2	13	258	70	93	76	7.4	1.5	.69	.48
MIN	2.1	1.7	2.0	2.3	4.9	11	35	7.9	1.5	.75	.41	.39
AC-FT	228	120	152	276	1420	1960	4080	1680	213	64	32	25

CAL YR 1986	TOTAL	21945.96	MEAN 60.1	MAX 2230	MIN .59	AC-FT	43530
WTR YR 1987	TOTAL	5171.76	MEAN 14.2	MAX 258	MIN .39	AC-FT	10260

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges for the following periods of ice effect: Dec. 31 to Jan. 6, Jan. 15-19, Feb. 24-26. Natural flow affected by transmountain diversion through Duncan Creek diversion tunnel to French Meadows Reservoir (station 11427400). Maximum design flow of tunnel is 400 ft^3/s. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--23 years, 14.8 ft^3/s, 10,720 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 ft^3/s, Dec. 22, 1964, gage height, 8.74 ft, in gage well, 10.0 ft, from floodmarks, from rating curve extended above 400 ft^3/s on basis of computation of peak flow over diversion dam; no flow at times in 1965-66.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 348 ft^3/s, Feb. 13, gage height, 3.78 ft; minimum daily, 0.30 ft^3/s, Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	2.3	2.1	2.6	6.1	12	12	8.6	6.8	1.7	.61	.45
2	7.0	2.1	2.1	2.6	6.2	13	14	8.3	6.2	1.6	.58	.44
3	6.1	2.1	2.1	2.8	5.9	13	14	8.2	5.8	1.5	.56	.39
4	5.8	2.5	2.1	3.0	5.9	13	11	8.6	5.4	1.5	.52	.37
5	6.3	2.4	2.4	3.1	6.3	20	11	8.9	5.1	1.5	.51	.39
6	6.3	2.1	2.4	3.4	7.2	21	12	8.8	4.9	1.4	.47	.39
7	5.7	2.2	2.3	3.6	7.9	19	15	8.8	4.9	1.3	.45	.39
8	5.3	2.2	2.1	3.9	7.8	19	16	8.8	4.5	1.2	.43	.41
9	5.1	2.1	2.1	4.5	7.5	18	16	9.0	4.3	1.1	.43	.37
10	4.7	2.0	2.0	5.1	13	17	16	8.9	4.1	1.1	.42	.38
11	4.1	2.0	2.1	5.8	33	17	16	9.0	3.8	1.0	.40	.38
12	3.7	2.0	2.0	5.9	34	18	16	7.9	3.6	1.0	.41	.39
13	3.3	2.0	2.1	4.6	164	19	16	6.5	3.4	.98	.40	.42
14	3.2	1.9	2.5	4.2	20	18	15	8.8	3.2	.91	.42	.44
15	3.0	1.9	2.2	3.8	17	17	15	12	3.5	.89	.43	.47
16	2.8	1.9	2.0	3.8	15	16	15	8.7	3.4	.83	.44	.45
17	2.8	1.9	2.0	3.7	15	16	14	8.7	3.2	.79	.42	.43
18	3.3	1.9	2.1	3.5	14	17	14	8.7	3.0	1.1	.39	.41
19	3.1	2.5	2.5	3.5	14	16	13	8.5	2.8	1.1	.38	.39
20	2.9	2.1	2.5	3.5	13	15	12	8.8	2.8	.99	.39	.37
21	2.7	3.5	2.4	3.6	13	15	12	8.7	2.7	.92	.43	.37
22	2.7	2.5	2.5	3.8	13	14	11	8.7	2.6	.96	.39	.37
23	2.6	2.3	2.6	3.6	13	14	9.0	8.3	2.5	.91	.39	.37
24	2.5	2.2	2.5	4.1	13	14	8.9	8.2	2.3	.86	.38	.39
25	2.4	2.1	2.5	11	13	14	8.7	8.2	2.2	.85	.37	.40
26	2.4	2.0	2.5	13	12	14	8.7	8.2	2.1	.80	.34	.41
27	2.3	2.0	2.4	11	12	8.3	8.7	8.2	2.0	.77	.34	.41
28	2.3	1.9	2.4	15	12	8.3	8.7	8.2	1.9	.72	.34	.41
29	2.2	2.3	2.4	8.1	---	8.4	8.6	8.2	1.8	.70	.30	.41
30	2.7	2.1	2.3	6.6	---	9.1	8.9	7.9	1.7	.67	.34	.40
31	2.4	---	2.3	5.7	---	10	---	7.7	---	.64	.45	---
TOTAL	119.0	65.0	70.5	162.4	513.8	463.1	376.2	265.0	106.5	32.29	13.13	12.07
MEAN	3.84	2.17	2.27	5.24	18.4	14.9	12.5	8.55	3.55	1.04	.42	.40
MAX	7.3	3.5	2.6	15	164	21	16	12	6.8	1.7	.61	.47
MIN	2.2	1.9	2.0	2.6	5.9	8.3	8.6	6.5	1.7	.64	.30	.37
AC-FT	236	129	140	322	1020	919	746	526	211	64	26	24

CAL YR 1986 TOTAL 11406.74 MEAN 31.3 MAX 2020 MIN .88 AC-FT 22630
WTR YR 1987 TOTAL 2198.99 MEAN 6.02 MAX 164 MIN .30 AC-FT 4360

SACRAMENTO RIVER BASIN

11427760 MIDDLE FORK AMERICAN RIVER ABOVE MIDDLE FORK POWERPLANT, NEAR FORESTHILL, CA

LOCATION.--Lat 39°01'31", long 120°35'40", in NW 1/4 NW 1/4 sec.36, T.14 N., R.12 E., Placer County, Hydrologic Unit 18020128, Tahoe National Forest, on right bank 300 ft upstream from Middle Fork powerplant, 3.7 mi upstream from Big Mosquito Creek, and 11 mi east of Foresthill.

DRAINAGE AREA.--87.8 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 2,540 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May. 15, 1980, at datum 5.00 ft higher. May 15, 1980, to Oct. 11, 1984, at datum 4.00 ft higher.

REMARKS.--No estimated daily discharges. Considerable regulation by French Meadows Reservoir (station 11427400) 11 mi upstream. Transbasin diversions from French Meadows Reservoir to Hell Hole Reservoir (station 11428700) through French Meadows 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.

AVERAGE DISCHARGE.--22 years, 107 ft^3/s, 77,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,860 ft^3/s, Jan. 13, 1980, gage height, 8.47 ft, datum then in use, from rating curve extended above 2,500 ft^3/s; minimum daily, 5.3 ft^3/s, Sept. 10, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 718 ft^3/s, Feb. 13, gage height, 7.56 ft; minimum daily, 11 ft^3/s, Aug. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	18	18	25	28	50	98	54	27	18	13	13
2	26	30	18	28	34	51	104	48	25	18	13	13
3	24	32	17	43	37	51	110	43	24	18	13	13
4	23	31	17	30	32	53	100	41	24	18	13	13
5	23	22	19	25	30	101	95	40	23	18	13	13
6	23	21	19	23	30	136	94	39	23	18	13	13
7	23	20	18	21	33	111	96	40	23	17	13	13
8	22	20	17	20	33	105	98	39	23	17	13	13
9	21	20	17	20	33	107	98	39	22	17	13	13
10	21	20	16	20	38	97	98	44	21	16	13	13
11	20	20	18	20	88	98	98	39	21	16	13	13
12	20	19	19	20	84	111	94	37	21	16	13	13
13	19	17	19	20	482	211	88	33	20	18	13	13
14	19	17	19	19	167	169	86	31	20	18	13	13
15	19	17	18	19	129	148	83	38	21	17	13	13
16	19	17	17	17	100	131	80	34	22	17	13	13
17	19	18	17	20	86	123	76	33	21	16	13	13
18	21	18	18	19	77	150	75	32	20	17	13	13
19	20	19	20	19	71	133	71	31	20	18	13	13
20	19	19	21	19	66	119	66	46	19	18	13	13
21	19	21	19	19	63	114	63	44	20	17	13	13
22	19	20	20	19	60	105	63	39	20	17	12	13
23	18	19	20	19	60	108	54	34	19	17	12	13
24	18	18	19	28	56	100	52	33	19	17	12	14
25	18	18	18	30	53	98	51	32	18	16	12	13
26	18	18	18	31	51	97	49	33	18	16	12	13
27	18	17	18	33	51	93	48	34	18	15	12	12
28	18	17	18	65	51	88	46	32	18	15	12	12
29	18	21	18	40	---	87	44	30	18	14	11	12
30	19	19	18	33	---	88	55	29	18	14	12	12
31	19	---	17	29	---	93	---	29	---	14	13	---
TOTAL	629	603	565	793	2123	3326	2333	1150	626	518	393	387
MEAN	20.3	20.1	18.2	25.6	75.8	107	77.8	37.1	20.9	16.7	12.7	12.9
MAX	26	32	21	65	482	211	110	54	27	18	13	14
MIN	18	17	16	17	28	50	44	29	18	14	11	12
AC-FT	1250	1200	1120	1570	4210	6600	4630	2280	1240	1030	780	768

CAL YR 1986	TOTAL	67979	MEAN 186	MAX	4750	MIN 15	AC-FT	134800
WTR YR 1987	TOTAL	13446	MEAN 36.8	MAX	482	MIN 11	AC-FT	26670

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--October 1965 to September 1985. October 1985 to current year operated as low-flow station only.

GAGE.--Staff gage and V-notch sharp-crested weir. Prior to February 1986, water-stage recorder at same site. Elevation of gage is 2,470 ft above National Geodetic Vertical Datum of 1929, from topographic map. Gage extensively damaged by flood of February 1986.

REMARKS.--Estimated daily discharges: Oct. 1 to Sept. 30. Flow regulated by French Meadows Reservoir (station 11427400) and after Aug. 22, 1966, by Interbay Reservoir, capacity, 130 acre-ft between normal operating limits of 2,502.0 and 2,526.0 ft. Water is diverted from Hell Hole Reservoir through a tunnel to Middle Fork powerplant (station 11428600) and re-diverted to Ralston powerplant. Beginning October 1985, only flows less than 35 ft^3/s were computed. Flows equivalent to those published prior to October 1985 can be obtained by combining flow through Middle Fork powerplant with flow for Middle Fork American River above Middle Fork powerplant (station 11427760).

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 ft^3/s, 47,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,900 ft^3/s, Jan. 13, 1980, gage height, 7.95 ft; minimum daily, 1.0 ft^3/s, Oct. 25-30, 1966; Jan. 19, 1967.

EXTREMES FOR CURRENT YEAR.--Minimum daily, 14 ft^3/s, Sept. 7, 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	21	28	24	24	24	24	24	24	21	21	16
2	27	--	26	24	24	24	24	24	25	21	21	16
3	26	24	25	25	24	24	24	24	24	20	21	16
4	34	29	24	25	24	24	24	24	24	20	21	16
5	33	25	29	24	24	24	24	24	24	20	21	15
6	28	33	29	24	24	24	24	24	24	20	21	15
7	31	28	28	24	24	24	24	24	24	19	20	14
8	30	25	28	24	24	24	24	24	24	20	20	15
9	29	30	27	25	24	24	24	24	24	20	21	16
10	30	25	26	25	24	24	24	24	24	21	23	15
11	27	27	24	24	24	24	24	24	24	21	21	16
12	24	31	31	24	25	24	24	24	24	20	21	16
13	22	28	31	24	24	24	24	24	24	20	21	15
14	21	28	30	24	24	24	24	24	24	21	24	15
15	22	26	30	23	24	24	24	24	24	21	23	15
16	--	33	27	23	24	24	24	24	24	21	22	15
17	21	28	24	21	25	24	24	24	24	21	22	15
18	24	25	26	21	24	24	24	24	24	21	18	15
19	22	30	24	21	24	24	24	24	24	21	19	14
20	21	28	33	21	24	24	24	24	24	21	19	15
21	20	31	33	21	24	24	24	24	24	21	16	15
22	20	30	33	21	24	24	24	24	24	21	16	15
23	21	28	24	21	24	24	24	24	24	21	15	15
24	20	26	24	24	24	24	24	24	24	21	15	15
25	20	--	24	24	24	24	24	24	22	21	15	15
26	20	34	21	24	24	25	24	24	21	21	15	15
27	20	32	21	24	24	24	24	24	22	21	15	15
28	20	32	21	24	24	24	24	24	21	21	15	15
29	20	29	21	24	---	24	24	24	21	21	15	15
30	21	28	20	24	---	24	24	24	20	21	16	15
31	23	---	20	24	---	24	---	24	---	20	16	---
TOTAL	---	---	812	725	674	745	720	744	704	640	589	455
MEAN	---	---	26.2	23.4	24.1	24.0	24.0	24.0	23.5	20.6	19.0	15.2
MAX	---	---	33	25	25	25	24	24	25	21	24	16
MIN	---	---	20	21	24	24	24	24	20	19	15	14
AC-FT	---	---	1610	1440	1340	1480	1430	1480	1400	1270	1170	902
a	10860	23220	8480	5130	6350	5480	2770	3250	12730	24610	30450	24530

a Diversion, in acre-feet, to Ralston powerplant, provided by Placer County Water Agency.
NOTE: Record Oct. 1 to Sept. 30 estimated by Placer County Water Agency based on once-daily staff-gage readings.

SACRAMENTO RIVER BASIN

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.--No estimated daily discharges. 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 for power development. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--24 years, 108 ft^3/s, 78,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,120 ft^3/s, Dec. 23, 1964; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	11			0	9.8	65	260	97	6.7	.09	.04
2	42	7.1			0	12	94	146	59	5.8	.09	.03
3	32	4.8			.12	12	115	147	1.0	4.6	.08	.03
4	30	3.5			1.0	18	77	212	37	3.4	.08	.03
5	47	2.5			5.4	76	70	264	104	2.3	.08	.03
6	80	1.8			9.8	120	85	292	106	1.5	.07	.03
7	72	1.1			12	86	119	266	101	.82	.07	.02
8	60	.67			13	58	142	272	95	.40	.07	.02
9	52	.33			12	42	166	330	79	.24	.07	.02
10	48	.10			15	34	199	324	68	.21	.07	.02
11	44	0			38	30	231	403	60	.21	.07	.01
12	31	0			45	37	225	426	55	.21	.06	0
13	22	0			158	53	197	338	51	.21	.05	0
14	17	0			115	40	253	283	49	.18	.05	0
15	15	0			58	31	287	269	53	.17	.05	0
16	13	0			38	25	294	254	45	.17	.05	24
17	11	0			30	25	313	247	32	.17	.05	18
18	9.2	0			25	39	290	181	26	.17	.05	5.9
19	7.7	0			20	35	153	144	23	.17	.04	2.1
20	6.4	0			16	28	116	126	23	.16	.03	.74
21	5.5	0			14	23	165	134	20	.17	.04	.17
22	4.9	0			12	19	249	116	18	.17	.04	.01
23	4.6	0			12	18	270	97	15	.15	.04	0
24	4.0	0			11	17	294	89	13	.13	.03	0
25	3.9	0			11	15	329	78	13	.13	.03	0
26	3.9	0			9.4	17	382	66	12	.13	.04	0
27	3.9	0			8.5	24	433	57	12	.13	.04	0
28	6.2	0			8.5	25	452	56	11	.12	.04	0
29	7.3	0			---	24	473	73	9.3	.10	.04	0
30	14	0			---	28	485	79	7.5	.10	.04	0
31	16	---			---	44	---	84	---	.10	.04	---
TOTAL	770.5	32.90	0	0	697.72	1064.8	7023	6113	1294.8	29.22	1.69	51.20
MEAN	24.9	1.10	0	0	24.9	34.3	234	197	43.2	.94	.055	1.71
MAX	80	11	0	0	158	120	485	426	106	6.7	.09	24
MIN	3.9	0	0	0	0	9.8	65	56	1.0	.10	.03	0
AC-FT	1530	65	0	0	1380	2110	13930	12130	2570	58	3.4	102

CAL YR 1986 TOTAL 53600.86 MEAN 147 MAX 990 MIN 0 AC-FT 106300
WTR YR 1987 TOTAL 17078.83 MEAN 46.8 MAX 485 MIN 0 AC-FT 33880

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.--24 years, 139 ft^3/s, 100,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,240 ft^3/s, Dec. 23, 1964; no flow at times in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	18	0	.36	3.2	11	62	427	102	6.5	.15	.11
2	71	14	0	.91	3.0	12	97	216	48	5.3	.15	.11
3	56	9.4	0	2.1	3.3	14	132	163	.16	4.3	.15	.11
4	48	6.8	0	5.9	3.1	16	115	225	1.5	3.3	.15	.11
5	60	5.1	0	5.5	2.9	53	93	309	50	2.5	.15	.11
6	100	3.9	0	4.4	3.7	149	100	364	98	1.9	.15	.11
7	107	2.9	0	3.3	6.3	135	127	350	101	1.3	.14	.11
8	91	2.2	0	2.4	11	97	165	325	96	.89	.14	.10
9	77	1.6	0	1.8	13	69	198	395	85	.52	.14	.10
10	69	1.1	0	1.4	17	50	248	416	73	.25	.14	.10
11	62	.81	0	1.2	37	42	302	473	64	.17	.14	.10
12	51	.56	0	1.0	59	42	312	521	58	.17	.14	.10
13	37	.38	0	1.0	195	64	257	454	53	.17	.14	.10
14	28	.24	0	.92	211	61	311	360	49	.17	.14	.09
15	22	.14	0	.92	116	48	368	336	49	.17	.14	.09
16	19	.10	0	.83	65	35	385	311	50	.17	.14	.09
17	17	.06	0	.65	44	30	402	307	41	.16	.13	.09
18	15	0	0	.52	34	40	413	239	32	.16	.13	.09
19	13	0	0	.47	28	48	239	178	27	.16	.13	.09
20	11	0	.08	.37	22	39	148	150	24	.16	.13	.08
21	9.2	0	.13	.30	19	31	167	158	22	.16	.13	.08
22	8.0	.02	.20	.25	17	26	284	142	20	.16	.13	.08
23	6.9	.04	.37	.22	17	24	346	120	17	.16	.13	8.3
24	6.1	.05	.50	.47	16	22	371	106	15	.16	.13	6.0
25	4.4	.04	.49	1.2	15	20	412	94	12	.16	.12	2.1
26	3.4	0	.44	2.0	13	19	476	84	11	.16	.12	.81
27	3.8	0	.39	2.5	12	22	543	75	11	.15	.12	.22
28	4.4	0	.33	5.7	11	27	595	69	10	.15	.12	.02
29	6.3	0	.27	5.9	---	27	583	74	9.3	.15	.12	0
30	10	0	.22	4.6	---	28	640	86	8.0	.15	.12	0
31	17	---	.18	3.8	---	38	---	92	---	.15	.12	---
TOTAL	1109.5	67.44	3.60	62.89	997.5	1339	8891	7619	1236.96	30.13	4.18	19.60
MEAN	35.8	2.25	.12	2.03	35.6	43.2	296	246	41.2	.97	.13	.65
MAX	107	18	.50	5.9	211	149	640	521	102	6.5	.15	8.3
MIN	3.4	0	0	.22	2.9	11	62	69	.16	.15	.12	0
AC-FT	2200	134	7.1	125	1980	2660	17640	15110	2450	60	8.3	39

CAL YR 1986 TOTAL 67285.54 MEAN 184 MAX 1150 MIN 0 AC-FT 133500
WTR YR 1987 TOTAL 21380.80 MEAN 58.6 MAX 640 MIN 0 AC-FT 42410

SACRAMENTO RIVER BASIN

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 mi^2.

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. Records, including extremes, represent total contents at 2400 hours. 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, 161,300 acre-ft, June 8, 9, elevation, 4,590.4 ft; minimum, 101,400 acre-ft, Jan. 24, 25, elevation, 4,524.0 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by Placer County Water Agency, from 1966 survey)

4,340	5,220	4,500	83,000
4,360	9,840	4,550	122,700
4,380	16,200	4,600	171,900
4,400	24,200	4,650	233,400
4,450	49,600		

CONTENTS, IN ACRE-FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126300	135100	113000	105400	102400	107600	119900	149300	161200	152100	139200	126800
2	126100	135000	112200	105500	102400	107700	120600	150100	160900	151900	139200	126900
3	125900	134600	111400	105500	102500	107800	121400	150600	161000	151600	138600	126400
4	125600	133800	110700	105300	102600	107800	121900	151300	161000	151000	137900	125600
5	125600	133100	110300	104900	102700	108400	122400	152100	161100	150900	137400	124600
6	125500	132300	110300	104200	102800	108800	123100	152600	161100	150300	136700	124500
7	125200	131300	110000	104100	102900	109500	123800	152800	161200	150000	136100	124400
8	125000	130300	109500	104100	102900	110000	124700	153500	161300	149700	136600	123700
9	124900	129500	109000	104100	103100	110400	125500	154300	161300	149400	137100	123100
10	124700	128400	108500	104000	103300	110800	126600	155300	161200	148900	136400	122500
11	124400	127500	108100	104000	103900	111300	127800	156200	161200	147900	135700	121800
12	124800	126400	107500	103700	104500	112000	128900	156800	160800	147800	135000	120700
13	125500	125400	107400	103600	107400	112900	129900	156800	160600	147300	134300	120600
14	126200	124300	107400	103700	107800	113600	131200	156700	160600	146900	133600	119700
15	126800	123400	106800	103400	108200	114000	132300	157200	159700	146700	133100	119200
16	127500	122500	106400	102900	108400	114100	133600	157600	158700	146300	133500	118600
17	128100	121600	106100	102900	108700	114600	134900	158000	157900	146200	133100	118100
18	128800	120700	105900	102900	109000	115200	135900	158300	157100	145500	132500	117200
19	129400	119800	105700	102700	109200	115600	136600	158600	156100	145500	131900	116100
20	130100	119000	105700	102500	109400	116100	137300	159100	155500	145000	131600	116000
21	130700	118200	105600	101900	109500	116300	138100	159400	155500	144700	130700	115400
22	131400	117600	105300	101700	109700	116600	139200	159700	154600	144300	130600	115300
23	131900	117600	105300	101500	109100	116900	140100	159900	154000	144000	131100	115100
24	132300	116800	105300	101400	108600	117200	141000	160100	153700	143600	130600	114900
25	132300	115900	105300	101400	108100	117500	142100	160300	153400	142700	129900	114200
26	132300	115100	105300	101600	107500	117700	143300	160500	153300	142700	129300	113900
27	132700	115000	105300	101800	107400	118100	144200	160700	153300	142000	128700	113800
28	133300	114600	105400	102000	107400	118400	145600	160800	153200	141300	128100	113200
29	134100	114000	105300	102100	---	118700	146900	160900	152700	140700	127600	112400
30	134700	113900	105300	102200	---	119000	148300	161100	152400	140100	127900	111700
31	135100	---	105300	102300	---	119300	---	161200	---	139500	127400	---
MAX	135100	135100	113000	105500	109700	119300	148300	161200	161300	152100	139200	126900
MIN	124400	113900	105300	101400	102400	107600	119900	149300	152400	139500	127400	111700
a	4564.0	4539.5	4529.0	4525.2	4531.6	4546.0	4577.8	4590.3	4581.9	4568.8	4555.4	4536.8
b	+8700	-21200	-8600	-3000	+5100	+11900	+29000	+12900	-8800	-12900	-12100	-15700

CAL YR 1986 b -9300
WTR YR 1987 b -14700

a Elevation, in feet NGVD, 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 mi^2.

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 American River powerplant. 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.--21 years, 31.6 ft^3/s, 22,890 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft^3/s, Mar. 8, 1986, including flow over spillway; no flow Aug. 25 to Sept. 11, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 38 ft^3/s, Feb. 13, gage height, 4.26 ft; minimum daily, 11 ft^3/s, Jan. 10-23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	22	22	12	13	13	14	15	20	21	21	21
2	20	22	22	13	13	13	14	14	20	21	21	21
3	20	22	22	13	13	13	15	14	20	21	21	21
4	20	22	22	13	13	13	14	14	20	21	21	21
5	20	22	22	13	13	15	14	14	20	21	21	21
6	20	22	22	13	13	16	14	14	20	21	21	21
7	20	22	22	13	14	15	14	14	21	21	21	21
8	20	22	22	13	13	14	15	14	21	21	21	21
9	20	22	22	12	13	14	15	14	21	21	21	21
10	20	22	22	11	13	14	15	14	21	20	21	21
11	20	22	22	11	14	14	15	14	21	20	21	21
12	20	22	22	11	16	15	15	14	21	20	21	21
13	20	22	22	11	26	17	15	14	21	20	21	21
14	20	22	22	11	15	16	15	16	22	20	21	21
15	21	22	17	11	15	15	15	21	22	20	21	21
16	22	22	12	11	14	15	16	20	22	20	21	21
17	21	22	12	11	14	15	16	20	22	20	21	21
18	21	21	12	11	14	16	15	20	22	21	22	21
19	22	22	12	11	14	15	15	21	22	21	22	21
20	22	22	12	11	14	15	15	21	22	21	22	21
21	22	22	12	11	14	15	15	21	22	21	21	21
22	22	22	12	11	14	15	15	21	22	21	21	21
23	21	22	13	11	14	15	15	20	22	21	21	21
24	22	22	13	12	13	15	15	20	22	21	21	21
25	22	22	13	13	13	16	15	20	21	21	21	21
26	22	22	13	12	13	14	15	20	21	21	21	21
27	22	22	13	12	14	14	15	20	21	21	21	20
28	22	22	12	14	13	14	15	20	21	21	21	20
29	22	22	12	13	---	14	15	20	21	21	21	20
30	22	22	12	13	---	14	15	20	21	21	21	20
31	22	---	12	13	---	14	---	20	---	21	21	---
TOTAL	650	659	522	371	395	453	446	544	635	643	654	626
MEAN	21.0	22.0	16.8	12.0	14.1	14.6	14.9	17.5	21.2	20.7	21.1	20.9
MAX	22	22	22	14	26	17	16	21	22	21	22	21
MIN	20	21	12	11	13	13	14	14	20	20	21	20
AC-FT	1290	1310	1040	736	783	899	885	1080	1260	1280	1300	1240
a	10800	23550	8900	4960	3810	1920	918	2530	13120	24890	30550	24740

CAL YR 1986 TOTAL 24126 MEAN 66.1 MAX 6650 MIN 12 AC-FT 47850
WTR YR 1987 TOTAL 6598 MEAN 18.1 MAX 26 MIN 11 AC-FT 13090

a Diversion, in acre-feet, from Hell Hole Reservoir to Middle Fork powerplant, provided by Placer County Water Agency.

SACRAMENTO RIVER BASIN

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.--25 years, 251 ft^3/s, 181,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,440 ft^3/s, Dec. 22-24, 1964; no flow many days in most years.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	167	118	126	12	40	8.0	311	152	202	1.0	135	1.0
2	110	9.0	122	1.0	78	70	334	92	146	1.0	30	78
3	105	103	159	2.0	89	67	339	93	134	1.0	108	83
4	114	115	16	36	44	31	141	188	126	1.0	112	83
5	1.0	175	75	1.0	75	200	174	168	94	1.0	119	1.0
6	110	110	13	1.0	58	296	248	147	1.0	1.0	160	1.0
7	375	112	1.0	47	65	192	275	151	1.0	44	101	1.0
8	300	122	78	1.0	1.0	213	325	125	156	68	1.0	85
9	309	1.0	128	94	110	272	351	83	139	1.0	1.0	89
10	361	162	148	1.0	92	325	347	152	114	1.0	107	104
11	1.0	127	126	1.0	132	284	304	239	135	71	69	95
12	1.0	154	131	131	175	325	274	182	183	3.0	80	1.0
13	150	145	18	127	492	341	285	130	98	72	27	1.0
14	141	139	1.0	106	299	177	318	132	1.0	54	138	95
15	101	142	142	119	128	277	288	106	138	75	1.0	133
16	69	1.0	133	113	159	255	319	72	191	63	1.0	83
17	150	150	142	1.0	139	100	289	38	137	76	67	76
18	13	147	148	1.0	117	245	220	95	117	158	78	5.0
19	1.0	139	136	120	70	137	101	49	122	1.0	2.0	1.0
20	58	140	43	109	95	124	208	90	1.0	42	3.0	1.0
21	106	153	2.0	114	83	94	219	88	1.0	148	1.0	157
22	147	129	106	123	64	92	226	136	119	99	1.0	75
23	80	1.0	160	130	75	88	237	73	118	147	1.0	59
24	97	144	9.0	14	141	92	229	1.0	120	103	1.0	75
25	120	122	2.0	26	109	92	124	55	88	1.0	92	114
26	19	127	170	153	104	73	143	90	120	1.0	47	1.0
27	87	1.0	148	109	81	130	312	100	1.0	212	64	1.0
28	259	1.0	14	114	84	118	213	122	1.0	1.0	31	1.0
29	141	1.0	197	1.0	---	99	145	90	1.0	2.0	1.0	86
30	186	43	172	32	---	90	244	1.0	1.0	1.0	1.0	63
31	131	---	190	1.0	---	169	---	58	---	3.0	1.0	---
TOTAL	4010.0	3033.0	3056.0	1841.0	3199.0	5076.0	7543	3298.0	2806.0	1453.0	1581.0	1649.0
MEAN	129	101	98.6	59.4	114	164	251	106	93.5	46.9	51.0	55.0
MAX	375	175	197	153	492	341	351	239	202	212	160	157
MIN	1.0	1.0	1.0	1.0	1.0	8.0	101	1.0	1.0	1.0	1.0	1.0
AC-FT	7950	6020	6060	3650	6350	10070	14960	6540	5570	2880	3140	3270

CAL YR 1986 TOTAL 125519.0 MEAN 344 MAX 1180 MIN 1.0 AC-FT 249000
WTR YR 1987 TOTAL 38545.0 MEAN 106 MAX 492 MIN 1.0 AC-FT 76450

SACRAMENTO RIVER BASIN

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 mi^2.

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.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 77,700 acre-ft, June 6, 1969, elevation, 6,411.1 ft; minimum since reservoir first filled, 3,690 acre-ft, Nov. 3, 1970, elevation, 6,330.3 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 66,600 acre-ft, May 31, elevation, 6,403.0 ft; minimum, 29,700 acre-ft, Feb. 9, 10, elevation, 6,371.3 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52600	45900	39400	33300	30400	31500	34100	53400	66300	63600	59200	55200
2	52500	45900	39000	33300	30200	31500	34300	53900	66200	63500	59100	55000
3	52400	45700	38600	33500	30200	31500	34500	54300	66000	63500	58900	54800
4	52300	45300	38600	33500	30100	31600	34800	54700	65700	63500	58600	54500
5	52300	45000	38500	33500	30000	31900	35100	55200	65600	63500	58300	54500
6	52300	44700	38500	33500	29900	32300	35200	55800	65800	63500	58000	54500
7	51800	44400	38500	33500	29800	32700	35400	56600	66100	63200	57700	54500
8	51300	44100	38300	33500	29800	33000	35700	57100	66100	63100	57700	54300
9	50800	44100	38000	33200	29700	32900	36200	58100	66000	63100	57700	54000
10	50100	43800	37600	33200	29700	32700	36700	59000	66000	63100	57500	53900
11	50300	43500	37400	33200	29800	32500	37500	59900	65800	62800	57300	53700
12	50300	43100	37100	32900	30000	32500	38400	60800	65600	62700	57100	53700
13	50100	42800	37100	32700	31000	32800	38900	61500	65400	62600	56900	53700
14	49900	42500	37100	32500	31600	33000	39600	62200	65600	62400	56700	53400
15	49600	42300	36800	32200	32000	32800	40300	62700	65400	62300	56700	53200
16	49500	42200	36600	32100	32000	32600	41100	63400	65200	62100	56700	52900
17	49200	41900	36300	32100	32000	32700	41800	64000	64900	61900	56400	52800
18	49200	41600	36000	32100	32000	32900	42800	64400	64800	61500	56200	52600
19	49200	41400	35700	31800	32100	33100	43400	64800	64600	61500	56200	52600
20	48900	41100	35700	31600	32000	33200	43500	65000	64600	61300	56200	52600
21	48700	40800	35700	31400	31900	33300	43800	65400	64600	61200	56000	52300
22	48400	40500	35500	31100	31900	33400	44200	65600	64400	60800	56000	52000
23	48200	40500	35200	30800	31900	33500	44800	65800	64300	60500	56000	51800
24	48000	40200	35200	30800	31800	33500	45600	66100	64000	60100	55900	51600
25	47700	40000	35200	30800	31700	33600	46500	66200	63900	60100	55900	51400
26	47700	39700	34800	30600	31600	33600	47600	66300	63600	60100	55800	51400
27	47400	39700	34500	30500	31600	33700	48600	66300	63600	59600	55500	51300
28	46900	39700	34500	30400	31500	33800	49600	66300	63600	59600	55500	51300
29	46600	39700	34000	30400	---	33800	50900	66300	63600	59600	55300	51300
30	46400	39700	33600	30400	---	33900	52500	66500	63600	59600	55300	51100
31	46200	---	33200	30400	---	34100	---	66600	---	59500	55300	---
MAX	52600	45900	39400	33500	32100	34100	52500	66600	66300	63600	59200	55200
MIN	46200	39700	33200	30400	29700	31500	34100	53400	63600	59500	55300	51100
a	6386.8	6381.0	6374.9	6372.0	6373.1	6375.8	6392.0	6403.0	6400.7	6397.5	6394.2	6390.9
b	-6600	-6500	-6500	-2800	+1100	+2600	+18400	+14100	-3000	-4100	-4200	-4200

CAL YR 1986 MAX 759000 MIN 33200 b -5300
WTR YR 1987 MAX 66600 MIN 29700 b -1700
a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 mi^2.

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 concrete 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.--Estimated daily discharges: Jan. 6-15, Aug. 30 to Sept. 3, Sept. 12-23. 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 ft^3/s, 94,910 acre-ft/yr; 16 years (water years 1972-87), 8.50 ft^3/s, 6,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,240 ft^3/s, unregulated, Feb. 1, 1963, gage height, 12.65 ft, from rating curve extended above 970 ft^3/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 ft^3/s, June 5, 1969, gage height, 9.03 ft; minimum daily, 3.6 ft^3/s, Sept. 27, 28, Nov. 3, 1977.
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 337 ft^3/s, Aug. 26, gage height, 5.62 ft; minimum daily, 8.0 ft^3/s, many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	8.6	8.6	8.6	8.6	8.6	9.6	8.6	8.3	8.9	8.6	8.3
2	8.3	8.6	8.6	8.6	8.6	8.6	9.7	8.6	8.3	8.9	8.6	8.3
3	8.1	8.6	8.6	8.7	8.6	8.7	9.3	8.6	8.3	8.9	8.6	8.3
4	8.0	8.6	8.6	8.6	8.6	8.7	9.4	8.4	8.3	8.9	8.6	8.3
5	8.0	8.6	8.6	8.6	8.6	11	9.5	8.3	8.3	8.9	8.6	8.0
6	8.0	8.6	8.6	8.6	8.6	9.8	9.8	8.3	8.3	8.9	8.5	8.0
7	8.0	8.6	8.6	8.6	8.6	9.3	10	8.4	8.3	8.9	8.3	8.0
8	8.0	8.6	8.6	8.6	8.6	9.3	10	8.5	8.3	8.9	8.3	8.0
9	8.2	8.6	8.6	8.6	8.8	9.2	10	9.7	8.3	8.9	8.3	8.0
10	8.6	8.6	8.6	8.6	9.5	9.0	10	9.1	8.3	8.9	8.3	8.0
11	8.6	8.6	8.6	8.6	9.1	9.0	9.9	8.9	8.3	8.6	8.5	8.2
12	8.6	8.6	8.6	8.6	8.9	9.4	9.2	8.8	8.2	8.6	8.6	8.3
13	8.6	8.6	8.6	8.6	14	9.1	9.5	8.8	8.1	8.6	8.4	8.6
14	8.6	8.6	8.6	8.6	9.0	8.9	9.5	8.6	8.0	8.6	8.6	8.6
15	8.6	8.6	8.6	8.6	8.9	8.9	9.3	8.6	8.0	8.6	8.6	8.6
16	8.6	8.6	8.6	8.6	8.9	8.9	9.2	8.6	8.0	8.5	8.6	8.6
17	8.6	8.6	8.5	8.6	8.8	9.0	9.2	8.6	8.0	8.3	8.6	8.6
18	8.6	8.6	8.5	8.6	8.6	9.0	8.9	8.6	8.0	8.5	8.8	8.6
19	8.6	8.6	8.5	8.6	8.6	8.9	8.9	8.6	8.0	8.9	9.5	8.6
20	8.6	8.5	8.4	8.6	8.6	8.9	8.9	8.9	8.0	9.0	8.6	8.6
21	8.6	8.8	8.3	8.6	8.6	8.9	9.0	8.8	8.0	9.0	8.9	8.6
22	8.6	8.6	8.4	8.6	8.6	8.9	9.0	8.6	8.0	9.5	8.9	8.6
23	8.9	8.6	8.3	8.6	8.6	8.9	8.9	8.6	8.0	8.6	9.2	8.6
24	8.9	8.6	8.3	8.6	8.6	8.9	8.9	8.6	8.0	8.6	9.0	8.6
25	8.9	8.8	8.3	8.8	8.6	8.9	8.9	8.6	8.0	8.4	8.6	8.6
26	8.9	8.6	8.3	8.6	8.6	8.9	9.0	8.6	8.4	8.4	13	8.6
27	8.9	8.6	8.3	8.6	8.6	8.9	9.2	8.6	9.2	8.4	8.3	8.6
28	8.7	8.6	8.3	8.6	8.6	8.9	9.1	8.3	9.2	8.3	8.3	8.8
29	8.6	8.7	8.4	8.6	---	8.9	8.9	8.0	9.2	8.3	8.3	8.6
30	8.6	8.6	8.6	8.5	---	9.1	9.2	8.3	9.1	8.3	8.3	8.6
31	8.6	---	8.6	8.6	---	9.3	---	8.3	---	11	8.3	---
TOTAL	263.7	258.4	263.6	266.8	249.3	280.7	279.9	266.8	248.7	272.0	270.6	252.7
MEAN	8.51	8.61	8.50	8.61	8.90	9.05	9.33	8.61	8.29	8.77	8.73	8.42
MAX	8.9	8.8	8.6	8.8	14	11	10	9.7	9.2	11	13	8.8
MIN	8.0	8.5	8.3	8.5	8.6	8.6	8.9	8.0	8.0	8.3	8.3	8.0
AC-FT	523	513	523	529	494	557	555	529	493	540	537	501
a	7970	5830	5780	3320	2130	1970	3670	2020	5160	2920	2970	2850

CAL YR 1986 TOTAL 3343.2 MEAN 9.16 MAX 31 MIN 8.0 AC-FT 6630 MEAN a 228 AC-FT a 164800
WTR YR 1987 TOTAL 3173.2 MEAN 8.69 MAX 14 MIN 8.0 AC-FT 6290 MEAN a 64.3 AC-FT a 46580

a Diversion, in acre-feet, to Loon Lake powerplant, provided by Sacramento Municipal Utility District.

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Jan. 16-18. Records excellent except those above 20 ft^3/s, which are good. 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 1,320 ft^3/s to Silver Creek basin began in October 1962. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE (unadjusted).--25 years (water years 1963-87), 24.8 ft^3/s, 17,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft^3/s, Jan. 31, 1963, gage height, 12.32 ft, from rating curve extended above 2,500 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.8 ft^3/s, Sept. 21, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 734 ft^3/s, Feb. 13, gage height, 5.46 ft; minimum daily, 4.8 ft^3/s, Sept. 18.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	8.3	5.5	6.6	5.7	6.4	6.0	6.0	5.5	5.3	5.7	6.0
2	13	6.0	5.4	6.2	5.8	6.4	6.0	5.8	5.8	5.4	5.5	6.1
3	13	5.9	5.5	7.1	5.9	6.7	6.3	5.8	6.3	5.5	5.4	5.9
4	13	6.0	5.5	6.6	5.7	6.7	5.8	5.6	6.2	5.5	6.0	5.4
5	13	6.3	5.8	6.1	5.7	10	5.7	5.4	6.0	5.6	5.4	5.2
6	13	6.1	5.7	6.1	5.7	11	5.5	5.4	6.4	5.8	5.3	5.1
7	14	6.6	5.5	5.9	5.8	8.9	5.5	5.4	6.9	6.1	5.7	5.1
8	13	6.6	5.5	5.3	5.8	9.2	5.4	5.4	7.3	6.4	5.5	5.2
9	13	6.7	5.5	5.5	6.0	8.9	5.5	5.7	6.7	6.3	5.4	5.3
10	13	6.7	5.5	5.5	6.5	8.5	6.0	5.6	6.1	5.9	5.4	5.3
11	13	5.9	5.5	5.4	8.4	9.0	6.0	5.5	5.5	5.7	5.1	5.2
12	13	5.1	5.5	5.4	12	11	5.7	5.3	5.4	5.5	5.2	5.1
13	13	5.5	5.5	5.4	94	14	5.5	5.2	6.2	5.5	5.2	5.1
14	13	5.5	5.5	5.3	13	11	5.5	5.2	6.0	5.6	5.7	5.2
15	12	5.5	5.5	5.3	9.8	9.7	5.4	5.3	6.4	5.6	5.4	5.6
16	12	5.5	5.5	5.3	8.4	9.2	5.4	5.3	5.9	5.5	5.3	5.1
17	12	5.5	5.5	5.3	8.0	9.0	6.0	5.2	6.0	5.5	5.4	5.0
18	12	5.5	6.0	5.3	7.9	10	6.1	5.2	5.8	5.7	5.7	4.8
19	12	5.5	6.2	5.4	7.6	8.4	5.9	5.2	5.5	5.6	5.9	5.4
20	12	5.5	5.8	5.3	7.3	7.0	5.9	7.2	5.3	5.6	5.8	5.5
21	13	6.0	5.6	5.3	7.1	6.7	5.7	5.9	5.2	5.7	5.8	5.5
22	12	5.5	5.8	5.3	6.9	6.4	5.7	5.7	5.7	5.0	5.9	5.7
23	12	5.5	5.8	5.4	7.0	6.5	5.7	5.7	6.1	5.5	6.0	5.8
24	12	5.5	5.6	6.1	6.8	6.2	5.7	5.5	5.8	5.7	6.0	6.4
25	12	5.4	5.5	5.9	6.7	6.2	5.5	5.6	5.6	6.3	6.0	7.9
26	11	5.4	5.6	5.7	6.5	6.2	5.5	5.9	5.5	6.4	5.1	5.7
27	11	5.4	5.6	6.0	6.4	6.2	5.6	5.7	5.3	6.3	5.6	5.6
28	12	5.4	5.5	6.8	6.4	6.0	5.5	5.7	5.3	5.5	5.6	5.7
29	12	5.8	5.5	5.9	---	5.9	5.5	5.6	5.3	5.4	5.1	5.7
30	11	5.5	5.5	5.8	---	5.9	6.6	5.5	5.3	5.4	5.7	5.1
31	11	---	5.6	5.7	---	5.9	---	5.6	---	5.4	5.9	---
TOTAL	384	175.6	173.5	178.2	288.8	249.1	172.1	173.1	176.3	176.2	172.7	165.7
MEAN	12.4	5.85	5.60	5.75	10.3	8.04	5.74	5.58	5.88	5.68	5.57	5.52
MAX	14	8.3	6.2	7.1	94	14	6.6	7.2	7.3	6.4	6.0	7.9
MIN	11	5.1	5.4	5.3	5.7	5.9	5.4	5.2	5.2	5.0	5.1	4.8
AC-FT	762	348	344	353	573	494	341	343	350	349	343	329

CAL YR 1986 TOTAL 22759.9 MEAN 62.4 MAX 5380 MIN 5.1 AC-FT 45140
WTR YR 1987 TOTAL 2485.3 MEAN 6.81 MAX 94 MIN 4.8 AC-FT 4930

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Nov. 29, Dec. 5-9, 18-29, 31, Jan. 1-31, Feb. 2-5, 26-28, Mar. 1-19. Records fair except those for estimated daily discharges, which are poor. No regulation or diversion upstream from station. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--27 years, 26.7 ft^3/s, 19,340 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,510 ft^3/s, Feb. 17, 1986, gage height, 7.15 ft, from rating curve extended above 540 ft^3/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 ft^3/s, Aug. 16, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 140 ft^3/s, and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	0530	*234	*3.17				

Minimum daily, 1.6 ft^3/s, Sept. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	6.0	6.0	6.4	7.6	13	19	12	6.9	3.8	2.3	2.0
2	7.4	5.9	6.0	6.3	7.6	14	19	11	6.7	3.6	2.2	2.1
3	7.3	5.8	6.0	6.2	7.6	14	20	10	6.5	3.6	2.1	1.9
4	7.1	5.8	5.9	6.1	7.7	23	19	9.6	6.3	3.7	2.1	1.8
5	6.9	5.8	5.9	6.2	7.7	94	18	9.3	6.3	3.6	2.0	1.8
6	6.8	5.7	5.9	6.0	7.8	74	17	8.9	6.4	3.4	1.9	1.9
7	6.7	5.8	5.8	5.9	7.8	58	17	8.5	6.5	3.3	1.9	1.9
8	6.6	6.0	5.8	5.8	7.8	50	16	8.5	6.2	3.2	1.9	1.9
9	6.5	6.0	5.8	5.7	8.0	40	16	9.2	5.8	3.1	1.9	1.8
10	6.5	6.0	5.8	5.6	9.6	34	16	12	5.7	3.0	1.9	1.8
11	6.3	5.9	5.8	5.6	19	30	15	11	5.6	3.1	1.8	1.9
12	6.3	5.8	5.7	5.5	24	32	15	9.4	5.5	3.1	1.9	1.9
13	6.4	5.7	5.7	5.4	161	34	15	8.7	5.3	3.0	1.9	2.0
14	6.4	5.7	5.8	5.3	53	29	14	8.4	5.3	2.8	1.9	2.1
15	6.3	5.7	5.7	5.3	32	26	13	8.2	6.0	2.8	2.1	2.1
16	6.3	5.7	5.7	5.3	23	25	13	8.0	5.8	2.6	2.1	2.0
17	6.4	5.7	5.7	5.3	19	24	12	7.9	5.5	2.6	1.9	1.9
18	6.6	5.7	5.7	5.4	17	24	12	7.7	5.3	3.2	1.8	1.8
19	6.4	5.9	5.7	5.4	15	23	12	7.9	5.0	3.2	1.8	1.8
20	6.4	5.8	5.8	5.5	14	23	12	11	4.9	3.0	1.9	1.8
21	6.4	7.0	5.8	5.6	13	22	11	12	4.9	2.9	2.0	1.7
22	6.4	6.2	5.8	5.7	12	21	11	9.7	4.8	3.2	1.9	1.6
23	6.2	6.0	5.8	6.0	12	21	11	8.5	4.6	2.9	1.9	1.7
24	6.2	5.8	5.8	6.5	11	20	11	7.9	4.4	2.8	1.9	1.8
25	6.2	5.7	5.8	6.9	11	20	10	7.9	4.2	2.7	1.8	1.8
26	6.2	5.7	5.8	7.3	11	19	10	8.1	4.1	2.6	1.8	1.8
27	6.2	5.7	5.8	7.6	10	19	10	8.0	4.1	2.5	1.8	1.8
28	6.2	5.7	5.8	7.9	12	19	9.8	7.7	4.0	2.4	1.7	1.8
29	6.2	5.8	5.8	7.8	---	19	9.7	7.5	4.0	2.4	1.7	1.8
30	6.4	6.0	5.9	7.7	---	18	13	7.3	3.8	2.4	1.8	1.7
31	6.2	---	5.9	7.6	---	19	---	7.1	---	2.3	1.9	---
TOTAL	202.3	176.0	180.2	190.8	548.2	901	416.5	278.9	160.4	92.8	59.5	55.7
MEAN	6.53	5.87	5.81	6.15	19.6	29.1	13.9	9.00	5.35	2.99	1.92	1.86
MAX	7.9	7.0	6.0	7.9	161	94	20	12	6.9	3.8	2.3	2.1
MIN	6.2	5.7	5.7	5.3	7.6	13	9.7	7.1	3.8	2.3	1.7	1.6
AC-FT	401	349	357	378	1090	1790	826	553	318	184	118	110

CAL YR 1986	TOTAL	18093.6	MEAN 49.6	MAX 2840	MIN 4.6	AC-FT	35890	
WTR YR 1987	TOTAL	3262.3	MEAN 8.94	MAX 161	MIN 1.6	AC-FT	6470	

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 mi^2.

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 ft^3/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.--26 years, 33.0 ft^3/s, 23,910 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,330 ft^3/s, Feb. 18, 1986, gage height, 10.86 ft, from rating curve extended above 970 ft^3/s on basis of slope-area measurement at gage height 10.06 ft; minimum daily, 0.20 ft^3/s, Sept. 24, Nov. 1-5, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft^3/s, Feb. 13, gage height, 3.95 ft; minimum daily, 1.5 ft^3/s, June 23, 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	3.7	3.6	4.7	3.8	4.3	4.7	4.9	1.9	1.9	3.4	2.7
2	4.3	3.7	3.6	4.7	4.5	4.1	4.7	4.6	1.8	2.6	3.4	2.7
3	4.3	3.6	3.6	8.4	4.9	4.1	4.8	4.5	1.8	3.4	3.3	2.6
4	4.0	3.6	3.6	5.8	4.2	4.1	4.6	4.4	1.8	3.4	3.3	2.6
5	3.9	3.6	3.9	4.5	3.9	6.7	4.5	4.4	1.7	3.3	3.3	2.6
6	3.9	3.6	3.7	4.2	3.8	6.1	4.5	4.3	1.8	3.3	3.4	2.6
7	3.9	3.6	3.6	4.0	3.8	4.9	4.4	4.3	1.8	3.2	3.2	2.6
8	3.9	3.7	3.6	3.9	3.8	4.9	4.4	4.3	1.7	3.2	3.1	2.6
9	3.8	3.7	3.6	3.8	3.8	4.7	4.3	4.3	1.7	3.1	3.1	2.5
10	3.8	3.7	3.5	3.8	3.8	4.3	4.3	4.4	1.7	3.4	3.0	2.4
11	3.8	3.7	3.5	3.8	5.2	4.5	4.2	4.1	1.7	3.7	3.0	2.4
12	3.8	3.7	3.5	3.8	5.4	6.8	4.3	4.0	1.7	3.7	3.0	2.5
13	3.8	3.7	3.6	3.8	20	10	4.3	4.0	1.6	3.6	2.9	2.5
14	3.8	3.6	3.6	3.8	8.6	7.0	4.2	3.9	1.6	3.6	2.9	2.5
15	3.8	3.7	3.6	3.7	8.3	6.8	4.2	3.9	1.9	3.5	2.9	2.4
16	3.8	3.6	3.6	3.6	6.8	6.3	4.1	3.9	1.8	3.5	2.8	2.4
17	3.8	3.6	3.6	3.7	5.9	6.0	4.1	3.9	1.7	3.5	2.8	2.4
18	3.8	3.6	3.7	3.7	5.6	6.3	4.2	3.9	1.7	3.5	2.8	2.4
19	3.8	3.7	3.8	3.6	5.3	5.8	4.1	3.9	1.6	3.5	2.8	2.4
20	3.8	3.6	3.8	3.8	5.1	5.5	4.0	4.3	1.6	3.5	2.8	2.4
21	3.8	4.1	3.8	3.7	5.0	5.4	4.1	4.2	1.6	3.5	2.8	2.3
22	3.8	3.8	4.0	3.7	4.8	5.5	4.2	4.0	1.6	3.5	2.8	2.3
23	3.8	3.7	4.0	3.8	4.9	5.9	4.4	3.9	1.5	3.4	2.8	2.3
24	3.7	3.6	3.8	4.8	4.7	5.8	4.4	3.9	1.5	3.4	2.8	2.3
25	3.7	3.6	3.8	4.5	4.7	5.5	4.3	3.9	1.9	3.4	2.7	2.3
26	3.7	3.6	3.8	4.1	4.5	5.4	4.3	4.1	2.3	3.4	2.7	2.3
27	3.6	3.6	3.8	4.1	4.5	5.4	4.3	4.0	2.2	3.3	2.7	2.3
28	3.6	3.6	3.6	5.3	4.5	5.2	4.3	4.0	2.1	3.4	2.7	2.3
29	3.6	3.9	3.6	4.4	---	5.0	4.4	3.0	2.1	3.4	2.6	2.3
30	3.8	3.7	3.6	4.3	---	4.8	5.5	1.9	2.0	3.4	2.6	2.3
31	3.7	---	3.6	4.0	---	4.8	---	1.9	---	3.3	2.6	---
TOTAL	119.1	110.2	114.0	131.8	154.1	171.9	131.1	123.0	53.4	103.8	91.0	73.2
MEAN	3.84	3.67	3.68	4.25	5.50	5.55	4.37	3.97	1.78	3.35	2.94	2.44
MAX	4.5	4.1	4.0	8.4	20	10	5.5	4.9	2.3	3.7	3.4	2.7
MIN	3.6	3.6	3.5	3.6	3.8	4.1	4.0	1.9	1.5	1.9	2.6	2.3
AC-FT	236	219	226	261	306	341	260	244	106	206	180	145

CAL YR 1986	TOTAL	23546.2	MEAN	64.5	MAX	4350	MIN	2.3	AC-FT	46700
WTR YR 1987	TOTAL	1376.6	MEAN	3.77	MAX	20	MIN	1.5	AC-FT	2730

SACRAMENTO RIVER BASIN

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.--22 years, 9.26 ft^3/s, 6,710 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 ft^3/s, Nov. 12, 1973; no flow for part of each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					0	.85	13	12				
2					0	1.0	14	8.7				
3					0	1.2	15	7.0				
4					0	1.8	12	6.4				
5					0	12	11	5.2				
6					0	20	11	4.6				
7					0	12	12	4.3				
8					0	11	12	4.1				
9					0	11	13	3.8				
10					0	9.1	13	4.1				
11					0	9.4	14	3.6				
12					0	17	13	2.9				
13					0	29	13	2.2				
14					0	17	14	1.8				
15					0	13	14	1.6				
16					5.1	11	14	1.2				
17					8.4	13	14	.85				
18					7.0	21	14	.70				
19					6.7	14	12	.55				
20					5.8	11	11	2.9				
21					5.4	10	10	2.8				
22					4.9	8.7	10	1.4				
23					3.5	8.7	10	.43				
24					1.6	8.4	10	.07				
25					1.2	8.4	9.4	0				
26					1.0	9.1	9.1	.07				
27					.70	10	9.1	.04				
28					.55	9.1	8.7	0				
29					---	9.1	8.4	0				
30					---	10	12	0				
31		---			---	12	---	0	---			---
TOTAL	0	0	0	0	51.85	338.85	355.7	83.31	0	0	0	0
MEAN	0	0	0	0	1.85	10.9	11.9	2.69	0	0	0	0
MAX	0	0	0	0	8.4	29	15	12	0	0	0	0
MIN	0	0	0	0	0	.85	8.4	0	0	0	0	0
AC-FT	0	0	0	0	103	672	706	165	0	0	0	0

CAL YR 1986 TOTAL 1820 MEAN 4.99 MAX 74 MIN 0 AC-FT 3610
WTR YR 1987 TOTAL 829.71 MEAN 2.27 MAX 29 MIN 0 AC-FT 1650

SACRAMENTO RIVER BASIN

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. No regulation or diversion above station. 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 on the Middle Fork American River. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--22 years, 3.62 ft^3/s, 2,620 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 ft^3/s, May. 25, 1983; no flow for part of each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	0	0	9.5	2.9				
2				0	0	0	9.5	1.9				
3				0	0	0	9.3	1.1				
4				0	0	0	7.3	.52				
5				0	0	0	6.8	.26				
6				0	0	0	7.5	.10				
7				0	0	0	7.9	0				
8				0	0	0	8.3	0				
9				0	0	5.4	8.9	0				
10				0	0	7.0	8.9	0				
11				0	0	6.0	9.3	0				
12				0	0	19	8.1	0				
13				0	0	19	7.1	0				
14				0	0	12	7.1	0				
15				0	0	8.9	6.8	0				
16				0	0	8.3	5.7	0				
17				0	0	11	5.5	0				
18				0	0	15	5.2	0				
19				0	2.1	9.3	4.2	0				
20				0	3.8	7.3	3.5	0				
21				0	1.6	6.2	3.2	0				
22				0	0	5.4	3.0	0				
23				0	0	5.4	2.6	0				
24				0	0	4.8	2.3	0				
25				0	0	5.5	2.1	0				
26				0	0	7.2	1.8	0				
27				0	0	7.3	1.7	0				
28				1.7	0	6.8	1.4	0				
29				1.1	---	6.6	1.2	0				
30				0	---	7.3	2.9	0				
31		---		0	---	8.5	---	0	---			---
TOTAL	0	0	0	2.8	7.5	199.2	168.6	6.78	0	0	0	0
MEAN	0	0	0	.090	.27	6.43	5.62	.22	0	0	0	0
MAX	0	0	0	1.7	3.8	19	9.5	2.9	0	0	0	0
MIN	0	0	0	0	0	0	1.2	0	0	0	0	0
AC-FT	0	0	0	5.6	15	395	334	13	0	0	0	0

CAL YR 1986 TOTAL 888.42 MEAN 2.43 MAX 41 MIN 0 AC-FT 1760
WTR YR 1987 TOTAL 384.88 MEAN 1.05 MAX 19 MIN 0 AC-FT 763

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Jan. 15, 16. 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 American River powerplant via tunnel from Hell Hole Reservoir (station 11428700). See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--21 years (water years 1967-87), 34.4 ft^3/s, 24,920 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 ft^3/s, Dec. 23, 1964, gage height, 11.20 ft, from rating curve extended above 300 ft^3/s on basis of slope-area measurements at gage heights 6.62 and 10.27 ft; minimum daily discharge, 0.08 ft^3/s, Sept. 27, 28, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 298 ft^3/s, Feb. 13, gage height, 5.02 ft; minimum daily, 0.51 ft^3/s, Sept. 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	2.6	2.1	4.0	5.3	12	19	11	6.3	2.1	1.0	.85
2	3.0	2.6	2.1	4.3	6.3	12	18	11	5.9	2.1	1.0	.79
3	2.7	2.5	2.2	5.1	7.4	12	19	10	5.6	2.0	1.0	.67
4	2.6	2.3	2.3	5.5	6.6	13	18	10	5.3	2.0	.92	.62
5	2.6	2.0	3.1	4.3	6.2	39	17	9.9	5.1	1.9	.89	.62
6	2.5	2.1	2.8	3.9	6.8	41	16	9.9	5.0	1.9	.85	.62
7	2.4	2.1	2.5	3.8	8.0	31	16	9.7	5.0	1.9	.82	.62
8	2.4	2.2	2.5	3.5	7.9	29	16	9.5	4.8	1.8	.80	.62
9	2.3	2.1	2.2	3.5	7.4	24	15	9.5	4.6	1.7	.85	.62
10	2.3	2.1	2.2	3.4	11	16	15	11	4.4	1.7	.85	.53
11	2.3	2.0	2.2	3.4	27	18	15	9.6	4.3	1.6	.78	.52
12	2.3	2.0	2.2	3.4	34	22	14	9.0	4.1	1.6	.75	.52
13	2.3	2.0	2.2	3.5	195	38	14	8.7	3.9	1.6	.72	.55
14	2.2	2.0	2.2	3.4	61	35	14	8.6	3.8	1.5	.72	.59
15	2.1	2.0	2.2	3.4	39	30	14	8.4	4.2	1.5	.72	.62
16	2.1	2.0	2.2	3.4	27	28	13	8.3	4.0	1.4	.72	.62
17	2.4	2.0	2.2	3.5	18	28	13	8.1	3.8	1.4	.72	.61
18	2.9	2.0	2.6	3.2	16	34	13	8.0	3.6	1.5	.72	.62
19	2.4	2.1	3.1	3.0	13	30	13	8.0	3.5	1.4	.70	.62
20	2.3	2.0	3.1	3.0	9.3	27	12	9.9	3.3	1.4	.72	.62
21	2.3	3.0	2.7	3.0	9.0	26	12	10	3.2	1.4	.72	.55
22	2.3	2.2	3.0	3.0	11	24	12	9.6	3.1	1.4	.64	.52
23	2.3	2.0	3.0	3.1	12	24	12	8.8	2.9	1.3	.63	.51
24	2.3	2.0	2.7	4.7	13	23	12	8.4	2.8	1.3	.67	.52
25	2.2	2.0	2.7	6.1	12	23	12	8.2	2.6	1.2	.63	.57
26	2.2	2.0	2.5	6.8	12	23	12	8.4	2.6	1.1	.62	.55
27	2.2	1.9	2.5	7.4	11	22	11	8.4	2.5	1.1	.62	.52
28	2.4	1.9	2.5	15	11	22	11	8.0	2.5	1.0	.62	.52
29	2.4	2.4	2.5	6.6	---	21	11	7.3	2.4	1.1	.59	.52
30	2.4	2.2	2.4	6.1	---	20	13	6.9	2.3	1.1	.57	.52
31	2.4	---	2.5	5.6	---	20	---	6.6	---	1.1	.79	---
TOTAL	74.7	64.3	77.2	141.9	603.2	767	422	278.7	117.4	47.1	23.35	17.75
MEAN	2.41	2.14	2.49	4.58	21.5	24.7	14.1	8.99	3.91	1.52	.75	.59
MAX	3.2	3.0	3.1	15	195	41	19	11	6.3	2.1	1.0	.85
MIN	2.1	1.9	2.1	3.0	5.3	12	11	6.6	2.3	1.0	.57	.51
AC-FT	148	128	153	281	1200	1520	837	553	233	93	46	35

CAL YR 1986 TOTAL 21815.91 MEAN 59.8 MAX 2640 MIN .82 AC-FT 43270
WTR YR 1987 TOTAL 2634.60 MEAN 7.22 MAX 195 MIN .51 AC-FT 5230

SACRAMENTO RIVER BASIN

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 mi^2.

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. Oct. 22, 1965, to Aug. 28, 1985, at site 400 ft downstream at different datum. Prior to Oct. 22, 1965, at site 3.2 mi downstream at different datum.

REMARKS.--Estimated daily discharges: Oct. 20, 21. 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 Ralston and Oxbow powerplants. Robbs Peak powerplant (station 11429300) and Georgetown Divide ditch, capacity about 60 ft^3/s, divert water out of basin above station. See schematic diagram of Middle Fork American and Rubicon River basins.

AVERAGE DISCHARGE.--29 years, 1,182 ft^3/s, 856,400 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 ft^3/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 ft^3/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 ft^3/s, Feb. 1, 1963, gage height, 38.00 ft, site and datum then in use; minimum, 35 ft^3/s, Oct. 10-20, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,580 ft^3/s, Feb. 13, gage height, 17.32 ft; minimum daily, 66 ft^3/s, Aug. 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	577	87	536	116	165	210	426	280	223	512	537	644
2	580	92	476	186	261	218	424	239	313	513	385	314
3	569	100	666	438	248	243	440	221	160	413	631	607
4	560	530	743	383	188	292	424	206	106	374	651	647
5	549	767	399	430	178	671	398	216	133	81	644	566
6	549	767	93	492	176	976	380	340	107	545	697	81
7	545	821	102	206	171	564	389	453	131	528	737	81
8	555	604	110	133	161	516	429	187	106	506	396	599
9	565	511	227	135	158	499	510	187	129	551	66	637
10	561	613	325	173	176	462	399	185	192	510	365	615
11	557	596	302	145	351	446	395	195	101	576	617	600
12	364	600	384	222	354	500	387	269	321	79	685	598
13	153	602	117	192	3480	1660	358	428	222	511	645	78
14	159	620	150	111	1520	1100	358	531	96	532	677	628
15	140	518	397	196	959	961	347	171	556	501	641	613
16	120	517	276	317	717	932	329	153	565	504	109	658
17	126	699	284	116	503	684	318	160	527	296	583	624
18	128	781	284	119	417	737	305	147	532	398	587	612
19	124	554	215	212	366	716	297	139	542	83	619	660
20	122	584	133	214	327	599	258	190	395	464	627	77
21	125	529	208	360	278	586	284	219	108	520	647	510
22	170	106	227	263	293	506	226	186	534	549	439	422
23	129	120	119	248	584	530	271	164	513	537	81	466
24	114	338	114	254	569	500	304	179	547	486	587	454
25	118	536	120	182	538	468	233	147	570	523	620	516
26	122	505	108	168	548	460	252	151	403	87	613	256
27	123	122	84	155	366	455	424	166	202	518	665	81
28	123	313	102	356	208	437	224	221	78	660	623	336
29	146	424	101	248	---	414	208	145	398	694	617	446
30	133	159	101	215	---	411	261	157	495	687	227	376
31	100	---	137	160	---	472	---	137	---	652	579	---
TOTAL	9006	14115	7640	7145	14260	18225	10258	6769	9305	14390	16597	13802
MEAN	291	471	246	230	509	588	342	218	310	464	535	460
MAX	580	821	743	492	3480	1660	510	531	570	694	737	660
MIN	100	87	84	111	158	210	208	137	78	79	66	77
AC-FT	17860	28000	15150	14170	28280	36150	20350	13430	18460	28540	32920	27380

CAL YR 1986 TOTAL 653228 MEAN 1790 MAX 46400 MIN 84 AC-FT 1296000
WTR YR 1987 TOTAL 141512 MEAN 388 MAX 3480 MIN 66 AC-FT 280700

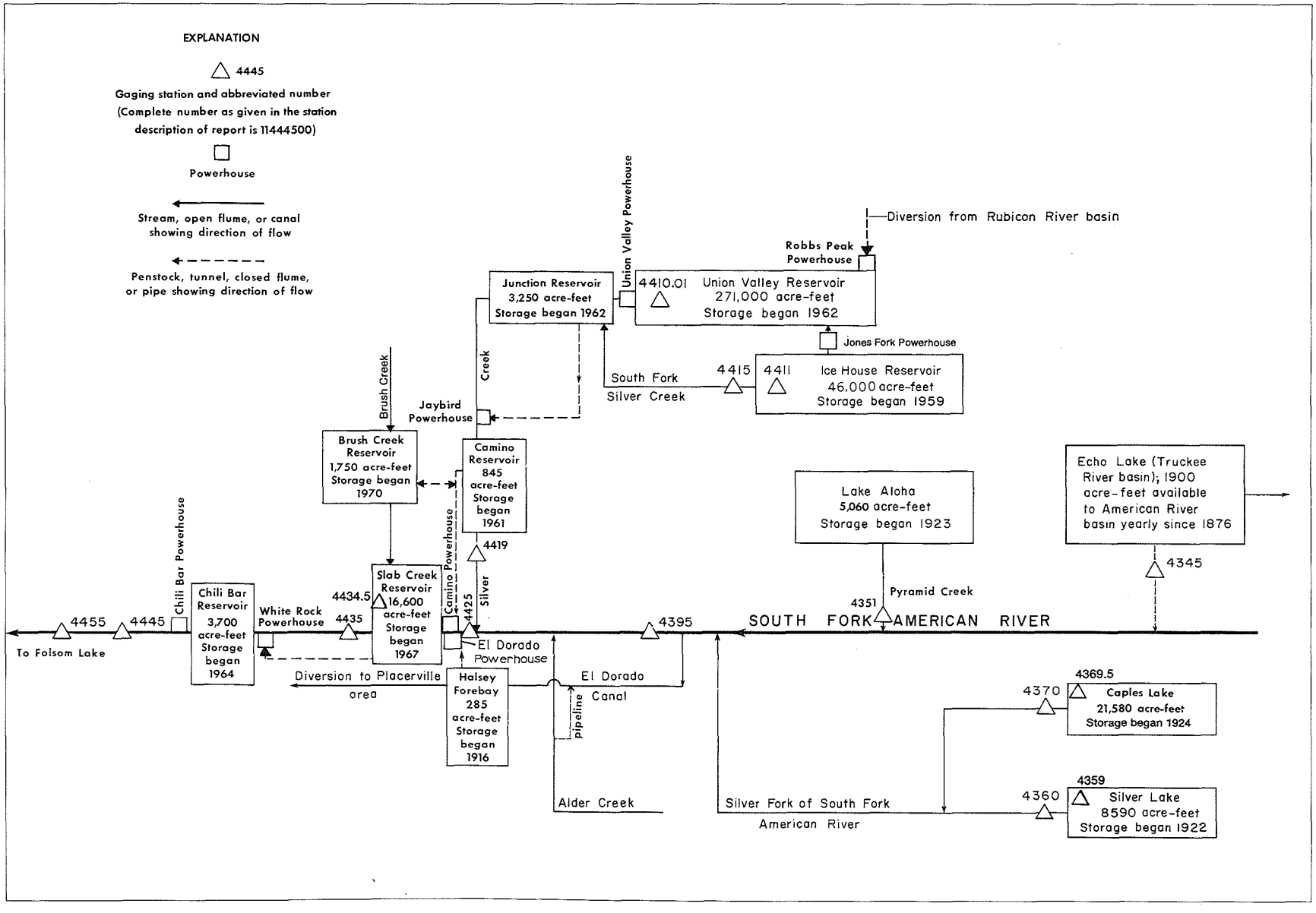

FIGURE 32.--Schematic diagram showing diversions and storage in South Fork American River basin.

SACRAMENTO 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.--Estimated daily discharges: June 10-15. 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.--64 years, 2.28 ft^3/s, 1,650 acre-ft/yr.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 33 ft^3/s Sept. 10, 11, 1980; no flow most of each year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	19	2.0						0			0
2	.04	18	1.9						0			0
3	.02	17	1.7						0			0
4	.01	16	1.0						0			0
5	.02	15	0						0			0
6	.01	13	0						0			0
7	0	12	0						0			0
8	0	11	0						0			24
9	1.7	10	0						0			31
10	26	9.3	0						2.8			30
11	25	8.5	0						5.4			30
12	17	7.8	0						5.3			29
13	9.1	6.0	0						5.3			10
14	8.9	3.7	0						6.5			0
15	8.7	3.1	0						1.8			0
16	10	4.5	0						.02			0
17	13	5.3	0						.02			0
18	24	4.8	0						.02			0
19	24	4.6	0						.02			0
20	24	4.3	0						.02			0
21	24	4.2	0						.02			0
22	24	3.9	0						.02			0
23	24	3.6	0						.02			0
24	23	3.4	0						.02			14
25	23	3.1	0						.02			27
26	22	2.8	0						.02			27
27	22	2.7	0						0			19
28	21	2.1	0						0			0
29	20	2.3	0		---				0			0
30	17	2.1	0		---				0			0
31	20	---	0		---		---		---			---
TOTAL	431.55	223.1	6.6	0	0	0	0	0	27.32	0	0	241
MEAN	13.9	7.44	.21	0	0	0	0	0	.91	0	0	8.03
MAX	26	19	2.0	0	0	0	0	0	6.5	0	0	31
MIN	0	2.1	0	0	0	0	0	0	0	0	0	0
AC-FT	856	443	13	0	0	0	0	0	54	0	0	478

CAL YR 1986 TOTAL 892.55 MEAN 2.45 MAX 26 MIN 0 AC-FT 1770
WTR YR 1987 TOTAL 929.57 MEAN 2.55 MAX 31 MIN 0 AC-FT 1840

SACRAMENTO RIVER BASIN

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 mi^2.

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.

REMARKS.--Estimated daily discharges: Dec. 21, 24, 25, 27-30, Jan. 3-17, 29, 31, Feb. 3, 4, 13, 14, 16-27, Mar. 20, 22, 27-29. Flow regulated by Lake Aloha, capacity, 5,060 acre-ft. Lake of the Woods, Ropi Lake, and Toem Lake (unknown capacities) also are regulated at times. See schematic diagram of South Fork American River basin.

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

AVERAGE DISCHARGE.--17 years, 41.1 ft^3/s, 29,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 858 ft^3/s, June 26, 1971, gage height, 4.62 ft, from rating curve extended above 300 ft^3/s; minimum daily, 0.07 ft^3/s, Sept. 20-24, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 136 ft^3/s, May 11, gage height, 2.33 ft; minimum daily, 0.19 ft^3/s, Sept. 27-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	5.3	4.3	3.0	5.8	9.4	24	47	29	32	55	1.3
2	19	4.8	4.1	3.9	5.2	9.6	31	37	28	37	53	1.1
3	17	4.5	3.9	4.3	5.9	9.7	30	48	26	40	52	.99
4	18	4.5	3.7	4.0	5.9	12	21	66	25	40	49	.94
5	24	4.4	3.7	3.8	5.8	17	21	74	26	40	46	.90
6	28	4.4	3.9	3.6	6.6	18	26	72	27	40	41	.86
7	23	4.3	4.0	3.5	7.7	16	34	64	28	40	38	.82
8	20	4.3	3.9	3.4	7.9	15	37	83	25	39	34	.75
9	18	4.4	3.8	3.4	6.5	13	44	84	22	39	29	.73
10	17	4.4	3.8	3.4	8.8	12	51	85	21	39	23	.72
11	16	4.3	3.5	3.5	15	12	59	95	20	39	15	.70
12	13	4.2	3.4	3.5	13	13	50	91	19	38	9.9	.70
13	11	4.0	3.3	3.4	23	16	53	73	19	38	6.9	.70
14	9.3	3.8	3.3	3.4	21	14	69	70	18	38	5.2	.67
15	8.6	3.8	3.1	3.7	16	14	71	67	19	37	4.4	.64
16	8.0	3.9	3.3	4.0	14	12	70	72	17	42	4.1	.61
17	7.4	3.9	3.1	4.2	12	13	76	65	16	68	3.8	.58
18	7.4	3.8	3.0	4.4	11	16	58	50	15	69	3.6	.55
19	7.0	4.3	3.1	4.3	10	16	33	45	15	68	3.3	.51
20	6.4	28	3.3	4.1	9.6	13	34	46	14	67	3.0	.45
21	5.9	38	3.2	4.2	9.0	12	49	47	14	66	2.9	.41
22	5.6	35	3.1	4.2	8.7	11	64	38	13	65	2.7	.40
23	5.4	32	3.3	4.1	8.0	11	67	33	12	64	2.4	.37
24	5.2	29	3.3	5.8	7.8	11	73	32	12	63	2.1	.34
25	5.2	26	3.3	9.6	7.6	10	80	29	12	63	1.9	.31
26	5.1	20	3.1	8.4	7.5	11	88	29	12	62	1.7	.20
27	5.1	12	3.0	6.7	8.0	12	97	28	12	60	1.4	.19
28	5.6	7.2	2.9	8.6	8.6	11	90	27	12	59	1.3	.19
29	5.6	6.1	2.9	7.5	---	11	103	29	11	58	1.3	.19
30	5.9	5.5	2.7	6.2	---	15	92	30	12	57	1.2	.19
31	6.0	---	2.7	6.0	---	20	---	29	---	56	1.2	---
TOTAL	362.7	320.1	105.0	146.1	275.9	405.7	1695	1685	551	1563	499.3	18.01
MEAN	11.7	10.7	3.39	4.71	9.85	13.1	56.5	54.4	18.4	50.4	16.1	.60
MAX	28	38	4.3	9.6	23	20	103	95	29	69	55	1.3
MIN	5.1	3.8	2.7	3.0	5.2	9.4	21	27	11	32	1.2	.19
AC-FT	719	635	208	290	547	805	3360	3340	1090	3100	990	36

CAL YR 1986 TOTAL 19665.00 MEAN 53.9 MAX 275 MIN 2.7 AC-FT 39010
WTR YR 1987 TOTAL 7626.81 MEAN 20.9 MAX 103 MIN .19 AC-FT 15130

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 mi^2.

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 flash boards. 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 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, 8,670 acre-ft, June 9, 1987, gage height, 22.9 ft; minimum observed, 234 acre-ft, Jan. 2, 1987, gage height, 0.9 ft.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 8,670 acre-ft, June 9, gage height, 22.9 ft; minimum observed, 234 acre-ft, Jan. 2, gage height, 0.9 ft.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Based on survey by Pacific Gas & Electric Co., dated Mar. 19, 1941)

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	23.0	8,710

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5225	3054	830	---		---	714	---	8590	7815	---	---
2	---	---	801	234		---	---	---	8590	7765	6488	3386
3	---	2838	772	---		---	---	---	8590	7740	---	---
4	---	---	772	---		---	---	7086	8590	---	---	3127
5	---	2625	772	---		---	---	---	8590	7646	6396	---
6	5139	2520	---	---		---	---	7505	8590	7599	6350	---
7	---	2450	685	---		---	---	---	8630	7552	---	---
8	---	---	---	---		---	1300	7740	---	7505	6212	2730
9	5096	---	---	---		---	---	---	8670	7458	6120	2660
10	---	---	---	---		---	1630	---	8630	7411	6074	2590
11	---	---	---	---		---	---	8590	8590	7364	5982	---
12	5010	---	---	---		---	2108	---	8590	7317	5890	2450
13	---	1912	---	---		---	2312	8590	8590	7293	5755	---
14	---	1848	---	---		---	---	---	8540	7270	---	---
15	---	---	---	---		---	2838	8490	8540	7224	5530	---
16	4930	1660	---	---		---	---	8540	8490	7178	---	---
17	4850	---	---	---		---	---	8390	8440	---	5225	2346
18	---	---	456	---		---	---	8490	8415	7086	5117	---
19	---	1450	428	---		---	3802	8540	8365	7040	4970	---
20	4571	1390	---	---		---	3916	8490	---	6994	---	---
21	4415	---	---	---		---	---	8540	8290	---	4650	---
22	4298	1270	---	---		---	4259	8540	8215	6902	---	---
23	4144	---	---	---		---	---	8590	8190	---	4454	---
24	3954	1150	---	---		---	---	8590	8140	6856	---	2210
25	3878	1091	---	---		---	5010	---	8090	6810	4220	2142
26	3726	1033	344	---		656	---	8540	8040	---	4106	---
27	3612	---	---	---		---	---	8540	---	6741	---	2108
28	3498	---	316	---		---	---	8540	7940	---	3878	---
29	3386	888	---	---		---	6212	8540	7890	6672	---	---
30	3275	---	---	---		---	---	8540	7865	---	3650	2074
31	3182	---	260	---		---	---	8540	---	6580	---	---
MAX	---	---	---	---		---	---	---	---	---	---	---
MIN	---	---	---	---		---	---	---	---	---	---	---

SACRAMENTO RIVER BASIN

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 mi^2.

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 (station 11436500) 0.25 mi east of station. For leakage from Silver Lake, refer to listed 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE (adjusted for leakage from Silver Lake bypassing the gage).--65 years, 39.9 ft^3/s, 28,910 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,160 ft^3/s, Feb. 19, 1986, gage height, 6.22 ft, from rating curve extended above 430 ft^3/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, 243 ft^3/s, May 12, gage height, 4.75 ft; minimum daily, 0.01 ft^3/s, Jan. 4, 18, 20-24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.2	65	19	2.3	.03	7.7	5.9	5.4	5.0	5.0	3.5	63
2	4.3	64	12	3.0	.03	7.4	3.5	5.4	5.0	4.9	3.6	62
3	4.5	62	4.4	.69	.03	6.8	3.7	5.3	5.0	4.7	3.7	61
4	4.5	61	4.4	.01	.04	6.5	3.9	5.1	5.0	4.5	3.6	59
5	4.4	59	9.9	.15	.05	6.9	4.0	5.1	5.0	4.4	13	58
6	4.3	58	17	1.7	.06	6.6	4.3	4.1	5.0	4.2	19	57
7	4.2	56	16	3.8	.07	5.7	4.5	3.1	5.4	3.9	18	56
8	4.2	55	15	5.7	.09	5.8	4.7	3.4	6.5	3.7	22	41
9	7.1	54	14	6.1	.13	6.0	5.0	4.5	6.5	3.8	25	33
10	24	52	11	4.2	.21	6.1	4.0	7.0	6.0	3.9	33	42
11	24	51	12	3.6	.33	6.2	2.5	13	5.5	3.7	45	41
12	15	49	12	3.4	.49	6.3	3.1	168	5.1	3.6	55	24
13	5.2	48	11	2.5	.84	6.8	3.9	193	4.9	4.0	65	6.0
14	5.1	46	9.9	2.0	.94	6.9	4.0	140	4.8	4.5	69	5.9
15	5.1	45	9.2	.43	.91	7.2	4.1	105	4.8	4.2	70	5.9
16	9.5	43	8.5	.52	1.1	7.2	4.0	97	4.8	3.8	71	5.8
17	17	41	7.8	.96	1.2	7.2	3.6	53	4.6	3.3	73	5.7
18	73	40	7.3	.01	.92	7.3	3.1	19	4.6	3.9	75	5.7
19	72	38	6.9	.02	.91	7.4	3.0	14	5.0	4.7	74	5.7
20	76	36	6.7	.01	1.2	7.4	3.0	16	5.4	4.5	73	5.7
21	81	35	6.1	.01	1.0	7.4	3.1	19	5.2	4.4	72	5.7
22	90	33	5.7	.01	1.4	7.4	3.3	21	5.0	4.2	72	5.6
23	91	32	5.4	.01	2.2	7.5	3.3	30	4.9	4.0	70	5.6
24	82	31	5.0	.01	4.3	7.6	3.4	33	4.8	3.9	70	17
25	73	28	4.6	.02	6.8	7.7	3.6	28	4.6	3.6	69	16
26	70	25	4.3	.02	6.5	7.6	3.7	25	4.5	3.5	69	5.6
27	69	22	4.0	.02	8.4	7.6	3.5	15	4.3	3.5	68	5.6
28	69	21	3.6	.02	8.3	7.6	3.6	6.4	4.2	3.6	67	5.6
29	68	20	3.3	.02	---	7.6	3.7	5.0	4.3	3.5	66	5.5
30	68	20	3.0	.02	---	7.7	4.7	5.0	4.5	3.3	65	5.5
31	66	---	2.8	.03	---	7.9	---	5.0	---	3.5	64	---
TOTAL	1194.6	1290	261.8	41.29	48.48	219.0	113.7	1058.8	150.2	124.2	1566.4	721.1
MEAN	38.5	43.0	8.45	1.33	1.73	7.06	3.79	34.2	5.01	4.01	50.5	24.0
MAX	91	65	19	6.1	8.4	7.9	5.9	193	6.5	5.0	75	63
MIN	4.2	20	2.8	.01	.03	5.7	2.5	3.1	4.2	3.3	3.5	5.5
AC-FT	2370	2560	519	82	96	434	226	2100	298	246	3110	1430
a	54	0	0	0	0	0	16	791	871	531	179	0

CAL YR 1986 TOTAL 22854.23 MEAN 62.6 MAX 543 MIN .73 AC-FT 45330 MEAN a 3.27 AC-FT a 2370
WTR YR 1987 TOTAL 6789.57 MEAN 18.6 MAX 193 MIN .01 AC-FT 13470 MEAN a 3.37 AC-FT a 2440
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 mi^2.
PERIOD OF RECORD.--October 1985 to current year. Unpublished records for water years 1981-85 available in files of U.S. Geological Survey.
GAGE.--Water-stage recorder. Datum of gage is 7,894.0 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Gas & Electric Co.). Prior to Oct. 15, 1986, nonrecording gage 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 flashboards. 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. Records, including extremes, represent total contents at 2400 hours. See schematic diagram of South Fork American River basin.
COOPERATION.--Records were collected by Pacific Gas & Electric Co., under general supervision of 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 June and July 1986, gage height, 62.0 ft; minimum, 2,427 acre-ft, Mar. 30, 31, 1987, gage height, 20.7 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 12,788 acre-ft, Oct. 1, gage height, 46.5 ft; minimum contents, 2,427 acre-ft, Mar. 30, 31, gage height 20.7 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12788	10703	7527	4553	2759	2553	2454	5890	11351	12326	11776	10965
2	12778	10583	7428	4472	2734	2542	2454	5975	11400	12321	11776	10941
3	12768	10489	7315	4472	2720	2536	2481	6169	11448	12321	11766	10906
4	12758	10372	7215	4396	2688	2536	2481	6327	11545	12286	11756	10870
5	12748	10253	7139	4310	2657	2536	2481	6606	11643	12276	11741	10858
6	12737	10066	7052	4243	2629	2536	2508	6810	11791	12266	11731	10846
7	12729	9880	6985	4158	2610	2536	2536	7014	11889	12251	11683	10834
8	12721	9694	6888	4088	2596	2536	2564	7265	11939	12241	11663	10822
9	12712	9511	6785	4014	2593	2508	2593	7475	11988	12231	11628	10798
10	12696	9314	6696	3925	2590	2508	2677	7732	12037	12206	11604	10774
11	12679	9133	6594	3860	2590	2508	2734	8211	12037	12191	11579	10750
12	12663	8957	6487	3778	2601	2508	2790	8608	12142	12186	11550	10726
13	12656	8786	6375	3706	2643	2508	2878	8831	12181	12186	11516	10697
14	12649	8630	6240	3634	2635	2536	2966	9101	12211	12171	11492	10669
15	12641	8519	6130	3561	2643	2508	3083	9420	12286	12147	11458	10640
16	12626	8431	6030	3482	2632	2508	3174	9834	12286	12137	11448	10612
17	12601	8329	5918	3400	2624	2508	3296	10112	12316	12092	11405	10583
18	12591	8233	5820	3314	2635	2508	3419	10253	12326	12077	11400	10566
19	12586	8158	5726	3235	2632	2508	3513	10442	12341	12052	11368	10549
20	12561	8114	5627	3159	2615	2481	3577	10536	12331	12032	11335	10532
21	12545	8080	5514	3077	2615	2508	3640	10679	12326	12003	11303	10514
22	12510	8023	5394	3001	2607	2481	3834	10726	12326	11983	11267	10497
23	12435	7970	5280	2930	2613	2508	3965	10822	12326	11959	11230	10480
24	12311	7927	5177	2898	2610	2481	4131	10870	12326	11939	11218	10489
25	12122	7848	5081	2866	2593	2481	4334	10965	12326	11929	11206	10419
26	11939	7797	5009	2843	2579	2481	4542	11013	12331	11899	11158	10396
27	11668	7741	4924	2849	2564	2454	4788	11061	12336	11865	11134	10372
28	11458	7646	4848	2858	2564	2454	5038	11109	12331	11845	11109	10348
29	11255	7625	4777	2852	---	2454	5442	11206	12331	11811	11061	10324
30	11037	7604	4692	2819	---	2427	5707	11255	12326	11806	11013	10300
31	10822	---	4615	2790	---	2427	---	11303	---	11806	10989	---
MAX	12788	10703	7527	4553	2759	2553	5707	11303	12341	12326	11776	10965
MIN	10822	7604	4615	2790	2564	2427	2454	5890	11351	11806	10989	10300
a	42.5	35.4	27.7	22.0	21.2	20.7	30.7	43.5	45.6	44.5	42.9	41.4
b	-2060	-3218	-2989	-1825	-226	-137	+3280	+5596	+1023	-520	-817	-689

CAL YR 1986 MAX 21581 MIN 4615 b -2752
WTR YR 1987 MAX 12788 MIN 2427 b -2582
a Gage height, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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 mi^2.

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. 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, capacity, 19,751 acre-ft at spillway level and 21,581 acre-ft with 3 ft of flashboards. 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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--(including flow over Caples Lake spillway).--65 years, 37.7 ft^3/s, 27,310 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum combined daily discharge for outlet and spillway, 669 ft^3/s, June 3, 1969; minimum daily, 0.1 ft^3/s, Mar. 25-31, 1944, Nov. 27, 28, 1956.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 112 ft^3/s, Oct. 25, gage height, 2.50 ft; minimum daily, 3.5 ft^3/s, Jan. 28.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	56	39	44	15	7.5	7.8	6.8	7.9	8.0	8.0	15
2	7.5	56	57	43	15	7.5	7.8	6.8	7.9	8.0	8.0	15
3	7.5	56	56	43	15	7.5	7.6	6.9	7.8	8.0	8.0	15
4	7.3	56	56	43	15	7.5	7.7	7.0	7.8	8.0	8.0	12
5	7.4	70	49	43	15	7.6	7.8	7.0	7.9	8.0	8.0	7.6
6	7.3	93	42	42	15	7.6	8.1	7.0	7.9	8.0	8.0	7.5
7	7.3	93	46	42	11	7.6	8.2	7.0	7.9	8.0	8.0	7.5
8	7.3	92	51	41	7.7	7.6	8.2	7.1	7.9	8.1	8.0	7.5
9	7.3	92	51	41	7.6	7.6	8.0	7.1	7.9	8.1	7.9	7.5
10	7.3	91	50	41	7.6	7.6	6.6	7.1	7.9	8.1	7.9	7.5
11	7.3	91	55	41	7.7	7.5	5.7	7.2	7.9	8.1	7.9	7.5
12	7.3	90	60	40	7.6	7.5	5.8	7.3	7.9	8.0	7.9	7.5
13	7.3	90	60	40	7.6	7.6	6.0	7.3	8.0	8.0	7.9	7.5
14	7.3	75	60	40	7.6	7.5	6.1	7.5	8.0	8.0	7.9	7.5
15	7.4	55	59	43	7.6	7.5	6.1	7.5	8.0	8.2	7.9	7.5
16	7.5	54	59	45	7.6	7.5	6.2	7.5	8.0	8.2	7.9	7.5
17	7.5	54	59	45	7.6	7.5	6.3	7.6	8.0	8.2	7.9	7.5
18	7.5	54	59	45	7.6	7.6	6.1	7.6	8.0	8.2	10	7.5
19	7.5	39	58	44	7.6	7.5	6.1	7.7	8.0	8.2	12	7.5
20	7.5	25	58	44	7.6	7.6	6.1	7.7	8.0	8.2	12	7.5
21	7.5	25	58	44	7.6	7.5	6.2	7.7	8.0	8.2	12	7.5
22	33	25	57	44	7.5	7.4	6.3	7.7	8.0	8.2	12	7.5
23	71	25	57	44	7.5	7.5	6.3	7.7	8.0	8.2	12	7.5
24	78	25	57	32	7.5	7.5	6.4	7.7	8.0	8.1	12	13
25	98	25	56	21	7.5	7.5	6.5	7.7	8.0	8.2	12	14
26	110	24	47	14	7.5	7.5	6.5	7.7	8.0	8.2	12	7.5
27	110	24	39	3.6	7.5	7.5	6.5	7.7	8.0	8.1	12	7.5
28	109	24	42	3.5	7.5	7.5	6.6	7.7	8.0	8.0	12	7.5
29	109	24	44	9.4	---	7.5	6.7	7.7	8.0	8.0	12	7.5
30	108	24	44	15	---	7.6	6.9	7.8	8.1	8.0	14	7.5
31	106	---	44	15	---	7.6	---	7.7	---	8.0	15	---
TOTAL	1087.3	1627	1629	1095.5	260.1	233.5	203.2	229.5	238.7	250.8	306.1	264.1
MEAN	35.1	54.2	52.5	35.3	9.29	7.53	6.77	7.40	7.96	8.09	9.87	8.80
MAX	110	93	60	45	15	7.6	8.2	7.8	8.1	8.2	15	15
MIN	7.3	24	39	3.5	7.5	7.4	5.7	6.8	7.8	8.0	7.9	7.5
AC-FT	2160	3230	3230	2170	516	463	403	455	473	497	607	524

CAL YR 1986 TOTAL 22129.0 MEAN 60.6 MAX 396 MIN 5.1 AC-FT 43890
WTR YR 1987 TOTAL 7424.8 MEAN 20.3 MAX 110 MIN 3.5 AC-FT 14730

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 mi^2.

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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

AVERAGE DISCHARGE.--River only: 65 years (water years 1923-87), 305 ft^3/s, 221,000 acre-ft/yr.
Combined river and diversion: 65 years (water years 1923-87), 419 ft^3/s, 303,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 17,400 ft^3/s, Dec. 23, 1964, gage height, 10.92 ft, from rating curve extended above 6,300 ft^3/s on basis of contracted-opening measurement at gage height 10.40 ft; minimum daily, 0.13 ft^3/s, Nov. 26, 1977.
Combined flow: Maximum discharge, 17,500 ft^3/s, Dec. 23, 1964; minimum daily, 10 ft^3/s, Oct. 17, 19, 1929.
EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 1,070 ft^3/s, May 11, gage height, 4.71 ft; minimum daily, 11 ft^3/s, Sept. 5, 11, 12.
Combined flow: Maximum discharge, 1,230 ft^3/s, May 11; minimum daily, 20 ft^3/s, Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	57	56	53	50	51	146	379	38	21	20	15
2	80	56	61	52	51	51	193	241	28	20	19	12
3	70	56	52	54	51	50	235	250	22	20	20	12
4	68	56	52	52	48	50	140	321	19	21	20	12
5	73	77	52	59	48	102	131	358	20	21	20	11
6	88	62	52	57	50	157	153	367	20	19	20	13
7	82	53	52	66	50	124	182	296	31	23	20	13
8	73	52	52	57	50	97	206	363	21	22	20	12
9	69	52	52	64	50	79	243	431	20	21	20	12
10	58	52	55	74	50	68	300	411	20	21	20	12
11	53	52	60	77	52	57	354	482	20	21	20	11
12	63	52	51	70	51	71	348	718	20	21	20	11
13	61	53	51	69	273	125	305	620	21	21	20	29
14	52	55	51	59	145	65	411	486	20	20	19	27
15	51	54	51	59	74	51	437	402	21	21	19	20
16	49	54	51	58	51	49	452	403	20	21	18	20
17	55	54	51	90	50	85	490	359	20	21	21	20
18	57	53	51	80	53	60	440	204	20	23	21	20
19	54	53	51	48	60	50	203	157	20	27	20	19
20	52	53	51	32	57	53	176	159	20	22	20	19
21	56	53	51	32	55	51	267	205	20	21	20	19
22	54	53	51	32	57	54	385	175	21	20	20	19
23	78	53	51	31	54	56	392	144	21	20	20	19
24	53	53	52	32	49	55	419	122	21	20	20	18
25	58	54	52	48	48	56	464	98	21	20	20	16
26	60	54	52	58	50	57	523	93	21	20	20	13
27	53	54	52	52	51	57	543	94	21	19	20	17
28	50	54	52	52	51	58	545	66	21	20	19	31
29	49	54	52	43	---	59	587	52	21	20	19	21
30	48	54	51	41	---	59	651	46	21	20	19	20
31	52	---	52	48	---	93	---	40	---	20	19	---
TOTAL	1912	1642	1623	1699	1779	2150	10321	8542	650	647	613	513
MEAN	61.7	54.7	52.4	54.8	63.5	69.4	344	276	21.7	20.9	19.8	17.1
MAX	93	77	61	90	273	157	651	718	38	27	21	31
MIN	48	52	51	31	48	49	131	40	19	19	18	11
AC-FT	3790	3260	3220	3370	3530	4260	20470	16940	1290	1280	1220	1020

CAL YR 1986 TOTAL 199713 MEAN 547 MAX 6400 MIN 38 AC-FT 396100
WTR YR 1987 TOTAL 32091 MEAN 87.9 MAX 718 MIN 11 AC-FT 63650

SACRAMENTO RIVER BASIN

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 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	173	66	71	53	70	217	537	196	77	90	79
2	80	145	87	69	56	75	266	399	187	90	86	78
3	70	142	80	80	54	73	314	409	179	91	85	75
4	68	139	77	64	50	83	218	481	172	90	82	73
5	73	136	80	76	52	164	209	517	171	91	78	67
6	89	169	80	67	54	225	237	512	167	88	86	63
7	82	172	77	68	57	192	303	454	195	85	83	63
8	73	170	80	59	56	165	355	523	170	85	79	61
9	69	168	80	66	52	147	396	590	155	84	82	56
10	81	166	74	77	57	137	457	570	144	83	78	84
11	105	163	77	80	105	125	509	641	141	82	79	84
12	97	160	84	76	107	146	503	878	132	82	77	83
13	68	158	84	76	359	229	459	777	123	81	80	50
14	59	156	83	62	218	188	570	645	125	80	83	30
15	58	116	79	68	146	157	598	563	127	80	81	23
16	56	111	79	61	108	139	611	567	123	77	83	23
17	62	111	78	95	98	133	649	520	109	104	81	23
18	98	109	80	100	86	181	598	365	101	116	87	23
19	125	110	81	77	78	159	356	318	97	117	88	22
20	123	96	80	70	71	133	328	317	94	115	88	21
21	134	126	74	79	70	136	423	363	90	113	85	21
22	134	116	80	73	69	120	544	335	87	112	85	21
23	202	109	79	72	68	128	551	306	83	110	82	21
24	198	103	74	85	68	118	578	284	79	107	81	20
25	200	98	75	71	64	117	623	260	75	105	79	53
26	215	91	75	65	67	120	682	255	74	103	77	52
27	213	80	62	58	67	134	702	256	72	99	78	42
28	212	72	58	56	68	134	703	228	72	98	76	35
29	210	72	63	47	---	134	746	215	70	96	75	24
30	207	66	58	47	---	145	810	208	67	94	75	23
31	205	---	66	51	---	184	---	200	---	92	77	---
TOTAL	3760	3803	2350	2166	2458	4391	14515	13493	3680	2927	2526	1393
MEAN	121	127	75.8	69.9	87.8	142	484	435	123	94.4	81.5	46.4
MAX	215	173	87	100	359	229	810	878	196	117	90	84
MIN	56	66	58	47	50	70	209	200	67	77	75	20
AC-FT	7460	7540	4660	4300	4880	8710	28790	26760	7300	5810	5010	2760

CAL YR 1986 TOTAL 237891 MEAN 652 MAX 6400 MIN 46 AC-FT 471900
WTR YR 1987 TOTAL 57462 MEAN 157 MAX 878 MIN 20 AC-FT 114000

SACRAMENTO RIVER BASIN

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 mi^2.
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.

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, 148,500 acre-ft, Oct. 11, elevation, 4,816.9 ft; minimum, 31,500 acre-ft, Sept. 30, elevation, 4,713.0 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	148100	141900	128900	107200	105500	94100	108600	135300	136900	111800	79200	45900
2	148100	141600	128500	106900	104900	93400	109000	136000	136300	110400	79100	44300
3	148100	141600	127700	106900	104100	92600	109800	136700	135700	109200	77500	43900
4	148100	141000	127300	106800	103000	92000	110200	137200	134700	108900	76400	43100
5	147900	140300	126200	106000	101400	92100	111000	137700	133400	108600	75300	42600
6	147900	139000	125300	105300	100400	92400	111900	137500	132100	107300	74600	42200
7	148100	138300	124500	104900	99400	92200	112500	137500	131900	105900	73300	41900
8	148100	137400	123500	104600	99400	92600	113300	137300	131100	104600	72300	41200
9	148300	137100	122700	104400	98600	93600	114100	137900	130300	103200	72200	41000
10	148300	136700	121700	104400	97800	94500	115100	138700	129500	101800	71000	40700
11	147900	136200	120700	104100	97100	95400	116900	139100	128600	101000	69800	40200
12	147500	135800	119600	104400	96800	96800	118100	139300	128600	100800	68600	39600
13	147300	135300	118900	104600	99700	98200	119100	139300	128100	99800	67200	39200
14	147100	134900	118000	104600	100400	99000	120700	139200	127600	98500	66200	38700
15	146900	134600	117000	104600	100600	99900	122000	139400	126800	97400	65500	38200
16	146400	134400	115900	104600	100100	100800	123200	139600	126600	96300	65100	37600
17	146600	134000	115100	104300	99600	101400	124000	140000	125800	95100	63800	36800
18	146000	133700	114200	104100	99000	102600	125000	140100	124800	94700	62500	35800
19	145600	133300	113100	104100	98500	103100	125700	139800	123700	94400	61100	35300
20	145300	132800	112500	104100	97600	103700	126000	140100	122600	93200	59500	34800
21	145100	132600	111700	104300	96900	104100	126500	140100	122100	92100	58000	35400
22	145300	132100	110500	104400	96900	104600	127200	140200	121000	90600	57200	35800
23	144700	131600	109600	104600	96300	105200	127800	140300	120100	89400	57000	36000
24	144000	131400	109500	104400	96000	105200	128500	140200	119000	87900	55600	35200
25	143600	131300	109200	104400	95600	105300	129700	140200	118000	87300	54800	34600
26	143200	131300	109500	104600	95300	105500	130700	139900	117100	87300	53400	34000
27	142900	130700	109600	104900	94900	106000	131600	139400	116200	86400	52100	33500
28	142700	130200	109500	105300	94400	106500	132500	139000	116200	84700	50900	32700
29	142500	129700	108700	105200	---	106900	133300	138300	114700	83000	49900	32500
30	142700	129400	108000	105300	---	107500	134600	137700	113100	81200	49500	31500
31	142100	---	107400	105300	---	108300	---	137300	---	80100	47700	---
MAX	148300	141900	128900	107200	105500	108300	134600	140300	136900	111800	79200	45900
MIN	142100	129400	107400	104100	94400	92000	108600	135300	113100	80100	47700	31500
a	4813.5	4806.3	4792.5	4791.1	4783.3	4793.1	4809.3	4810.8	4796.2	4772.0	4738.5	4713.0
b	-5800	-12700	-22000	-2100	-10900	+13900	+26300	+2700	-24200	-33000	-32400	-16200
c	20710	21580	34480	12470	25150	7820	12440	16540	35620	39060	38950	22840

CAL YR 1986 MAX 27440 MIN 107400 b -39500 c 554500
WTR YR 1987 MAX 148300 MIN 31500 b -116400 c 287700
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.

SACRAMENTO RIVER BASIN

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 mi^2.

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 ft^3/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.

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, 34,900 acre-ft, June 7, elevation, 5,433.3 ft; minimum, 16,300 acre-ft, Jan. 30 to Feb. 6, elevation, 5,396.9 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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30300	25900	24000	19600	16300	17500	19400	28600	34400	31700	28500	25100
2	30200	25800	23800	19600	16300	17500	19600	28800	34500	31500	28400	24900
3	30000	25700	23600	19700	16300	17500	19700	29000	34600	31300	28300	24800
4	29800	25600	23400	19700	16300	17600	19800	29300	34600	31300	28100	24600
5	29900	25400	23200	19800	16300	17600	19900	29500	34700	31300	27900	24600
6	29800	25200	23200	19800	16300	17700	20100	29800	34800	31100	27800	24600
7	29600	25000	23200	19800	16400	17800	20200	30000	34900	30900	27700	24600
8	29400	24800	23000	19800	16400	17900	20400	30200	34800	30700	27700	24400
9	29300	24800	22800	19500	16400	18000	20700	30600	34700	30500	27600	24200
10	29100	24800	22600	19200	16400	18000	21000	30900	34600	30200	27400	24100
11	29100	24800	22400	19300	16500	18100	21300	31300	34500	30200	27300	23900
12	29100	24800	22200	19000	16600	18200	21600	31800	34200	30200	27100	23900
13	28900	24700	22200	18800	16700	18300	22000	32100	34300	30000	26900	23900
14	28700	24700	22200	18500	16800	18400	22400	32300	34300	29800	26700	23800
15	28500	24700	21900	18300	17000	18500	22700	32500	34200	29600	26700	23600
16	28300	24700	21700	18100	17000	18500	23100	32700	34000	29400	26700	23400
17	28200	24600	21600	18100	17100	18600	23500	32800	33700	29200	26600	23300
18	28200	24600	21600	18100	17200	18600	23900	33000	33400	29100	26400	23200
19	28200	24600	21500	17900	17200	18700	24100	33100	33200	29100	26300	23200
20	28000	24600	21500	17700	17200	18800	24300	33300	33200	28900	26100	23200
21	27800	24700	21500	17500	17200	18800	24600	33500	33200	28700	26000	22900
22	27600	24700	21400	17300	17300	18900	24900	33600	33000	28700	26000	22700
23	27400	24700	21300	17100	17300	19000	25300	33700	32700	28700	25900	22500
24	27200	24700	21200	17200	17300	19000	25600	33800	32400	28700	25800	22400
25	27000	24500	20900	17200	17400	19000	26000	33900	32100	28700	25600	22200
26	26900	24200	20700	16900	17400	19100	26500	34000	31900	28700	25500	22200
27	26800	24200	20400	16700	17400	19100	26900	34100	31900	28600	25300	22200
28	26600	24200	20200	16600	17400	19200	27300	34100	31900	28600	25200	22100
29	26400	24200	20000	16400	---	19200	27800	34200	31900	28600	25200	21900
30	26200	24200	19800	16300	---	19300	28300	34300	31900	28600	25100	21800
31	26000	---	19600	16300	---	19400	---	34300	---	28600	25100	---
MAX	30300	25900	24000	19800	17400	19400	28300	34300	34900	31700	28500	25100
MIN	26000	24200	19600	16300	16300	17500	19400	28600	31900	28600	25100	21800
a	5417.2	5413.7	5404.3	5396.9	5399.6	5403.8	5421.7	5432.4	5428.2	5422.2	5415.6	5408.8
b	-4400	-1800	-4600	-3300	+1100	+2000	+8900	+6000	-2400	-3300	-3500	-3300

CAL YR 1986 MAX 43600 MIN 19600 b -700
WTR YR 1987 MAX 34900 MIN 16300 b -8600
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 mi^2.

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.--Estimated daily discharges: Apr. 20-23. 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). Diversion to Jones Fork powerplant is shown as a line item below this table. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE (prior to diversion to Jones Fork powerplant).--60 years (1925-84), 78.1 ft^3/s, 56,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,940 ft^3/s, Dec. 23, 1955, gage height, 6.71 ft, site and datum then in use, from rating curve extended above 540 ft^3/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 ft^3/s, May 26, 1982, gage height, 5.74 ft, from rating curve extended above 730 ft^3/s on basis of computation of flow over dam at gage height 5.66 ft; minimum daily, 1.2 ft^3/s, Mar. 17-19, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 334 ft^3/s, Aug. 26, gage height, 4.17 ft; minimum daily, 3.0 ft^3/s, Jan. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	12	5.0	5.1	3.7	3.6	5.9	6.8	6.7	5.9	5.2	5.7
2	12	12	5.5	4.2	3.8	3.6	5.9	6.7	6.7	5.9	5.3	5.7
3	13	12	5.4	3.5	3.9	3.7	6.1	6.8	6.7	5.9	5.2	5.7
4	12	12	5.2	3.3	3.8	3.7	5.9	6.9	6.6	5.9	5.2	5.7
5	12	12	5.1	3.2	3.8	4.3	5.9	6.7	6.7	5.9	5.1	5.7
6	12	12	5.0	3.2	3.8	4.1	5.9	6.7	6.7	5.9	5.6	5.7
7	12	12	4.9	3.2	3.9	3.9	5.9	6.9	6.7	5.9	5.2	5.7
8	12	12	4.8	3.1	3.8	4.0	5.9	6.7	6.6	5.9	5.2	5.7
9	12	12	5.0	3.1	3.8	3.9	5.9	6.8	6.6	5.6	5.2	5.5
10	12	12	5.0	3.1	4.1	3.8	5.9	7.0	6.5	5.1	5.3	5.4
11	12	12	5.0	3.0	4.6	3.9	5.9	7.0	6.6	5.2	5.6	5.4
12	12	11	5.0	3.4	4.4	4.7	5.9	7.0	6.7	5.2	5.7	5.5
13	12	11	5.0	3.9	6.8	4.7	5.9	7.0	6.7	5.2	5.5	5.7
14	12	11	5.0	3.9	4.6	4.1	5.9	7.0	6.7	5.2	5.4	5.7
15	12	11	5.0	3.8	4.3	4.1	5.9	7.0	6.7	5.2	5.5	5.7
16	13	11	5.2	3.6	4.1	4.2	5.9	7.0	6.7	5.3	5.7	5.6
17	13	7.8	5.1	3.6	3.9	4.3	5.9	7.0	6.7	5.2	5.7	5.5
18	13	4.2	5.0	3.6	3.7	4.7	6.0	7.0	6.7	5.2	5.5	5.6
19	13	4.3	5.0	3.6	3.7	4.3	5.9	6.9	6.7	5.2	5.5	5.4
20	13	4.5	5.0	3.6	3.7	4.1	5.8	7.0	6.7	5.2	6.3	5.4
21	13	4.8	5.1	3.7	3.7	4.1	5.8	6.7	6.8	5.2	6.4	5.4
22	13	4.7	5.2	3.6	3.6	4.1	5.8	6.9	6.8	5.2	5.9	5.7
23	13	4.7	5.0	3.6	3.7	4.2	6.0	7.0	6.5	5.4	5.9	5.5
24	13	4.7	5.0	4.1	3.6	4.2	6.2	6.7	6.1	5.4	5.8	5.4
25	13	4.7	5.0	4.1	3.6	4.2	6.2	6.7	5.9	5.5	5.7	5.4
26	13	4.6	5.0	3.9	3.6	4.2	6.6	6.7	5.9	5.4	10	5.4
27	13	4.7	5.0	3.9	3.6	4.1	6.7	6.7	5.9	5.4	5.9	5.3
28	13	4.7	5.1	4.0	3.6	4.1	6.9	6.7	6.0	5.4	5.7	5.2
29	13	4.9	5.2	3.8	---	4.1	6.7	6.7	6.1	5.5	5.7	5.2
30	13	5.0	5.2	3.7	---	4.1	7.1	6.7	5.9	5.4	5.7	5.3
31	13	---	4.9	3.7	---	4.8	---	6.7	---	5.5	5.7	---
TOTAL	392	255.3	156.9	113.1	111.2	127.9	182.2	212.1	195.3	169.3	177.3	165.8
MEAN	12.6	8.51	5.06	3.65	3.97	4.13	6.07	6.84	6.51	5.46	5.72	5.53
MAX	15	12	5.5	5.1	6.8	4.8	7.1	7.0	6.8	5.9	10	5.7
MIN	12	4.2	4.8	3.0	3.6	3.6	5.8	6.7	5.9	5.1	5.1	5.2
AC-FT	778	506	311	224	221	254	361	421	387	336	352	329
a	4700	1610	4350	3510	0	2.0	40	115	3480	2980	3000	3020

CAL YR 1986 TOTAL 5016.3 MEAN 13.7 MAX 649 MIN 2.8 AC-FT 9950
WTR YR 1987 TOTAL 2258.4 MEAN 6.19 MAX 15 MIN 3.0 AC-FT 4480

a Diversion, in acre-feet, to Jones Fork powerplant, provided by Sacramento Municipal Utility District.

SACRAMENTO RIVER BASIN

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 mi^2.

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).--27 years, 96.7 ft^3/s, 70,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,800 ft^3/s, Feb. 17, 1986, gage height, 11.70 ft, from rating curve extended above 4,700 ft^3/s on basis of slope-area measurement at gage height 11.28 ft; minimum daily, 1.0 ft^3/s, Nov. 1, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 67 ft^3/s, Feb. 13, gage height, 3.58 ft; minimum daily, 9.6 ft^3/s, Dec. 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	16	12	12	14	14	16	12	12	10	10	11
2	22	13	12	12	14	14	13	12	11	11	10	11
3	23	12	12	15	15	14	13	12	11	11	10	11
4	23	12	12	13	14	14	13	12	11	11	11	11
5	22	12	12	12	14	15	13	12	12	11	10	11
6	23	12	12	12	14	16	12	12	12	11	11	11
7	23	12	12	12	14	16	12	12	12	11	10	11
8	22	12	12	12	14	17	12	12	11	11	11	11
9	22	12	11	12	14	17	13	12	11	11	11	11
10	22	12	12	12	14	17	12	12	11	11	11	11
11	22	11	12	12	16	17	12	12	11	11	11	11
12	22	10	12	12	17	23	12	12	11	11	11	11
13	22	10	11	12	53	37	12	12	11	11	11	11
14	22	10	11	12	30	31	12	12	11	11	11	11
15	22	11	12	12	26	28	12	12	11	11	11	11
16	22	11	12	12	22	25	12	12	11	10	11	11
17	22	10	12	12	20	24	12	12	12	10	11	11
18	22	10	12	12	19	24	12	12	12	11	10	11
19	22	11	12	12	17	23	12	12	12	11	10	11
20	22	10	12	12	16	22	12	12	12	11	11	11
21	23	10	12	13	16	21	12	12	12	10	10	11
22	23	10	12	13	16	20	12	12	12	10	11	11
23	22	10	12	13	15	21	12	12	12	10	11	11
24	22	11	12	14	15	20	12	12	12	11	11	11
25	21	11	12	14	15	20	12	11	12	11	10	11
26	21	11	12	13	14	20	12	11	12	11	10	11
27	21	11	12	13	14	20	12	11	12	10	11	11
28	21	12	12	15	14	19	12	11	12	10	11	11
29	21	12	11	14	---	19	12	11	11	11	10	11
30	21	12	9.6	14	---	18	13	11	10	10	11	11
31	21	---	11	14	---	18	---	12	---	10	11	---
TOTAL	682	339	364.6	394	496	624	370	366	345	331	330	330
MEAN	22.0	11.3	11.8	12.7	17.7	20.1	12.3	11.8	11.5	10.7	10.6	11.0
MAX	23	16	12	15	53	37	16	12	12	11	11	11
MIN	21	10	9.6	12	14	14	12	11	10	10	10	11
AC-FT	1350	672	723	781	984	1240	734	726	684	657	655	655

CAL YR 1986	TOTAL	76927.7	MEAN 211	MAX 9810	MIN 9.4	AC-FT	152600
WTR YR 1987	TOTAL	4971.6	MEAN 13.6	MAX 53	MIN 9.6	AC-FT	9860

SACRAMENTO RIVER BASIN

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 mi^2.

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. 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. There are diversions to Camino powerplant and El Dorado powerplant (stations 11441895 and 11439300) which bypass this station. Refer to listed monthly figures below. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE (unadjusted).--17 years, 544 ft^3/s, 394,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,500 ft^3/s, Jan. 13, 1980, gage height, 17.83 ft, from rating curve extended above 13,000 ft^3/s; minimum daily, 9.6 ft^3/s, Oct. 19, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,160 ft^3/s, Feb. 13, gage height, 7.47 ft; minimum daily, 28 ft^3/s, Sept. 3-6, 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138	96	96	104	103	120	246	520	71	42	36	35
2	137	90	101	113	108	119	288	343	67	42	36	33
3	123	90	94	162	124	119	344	314	56	42	35	28
4	115	90	92	136	113	119	279	376	49	42	36	28
5	114	110	97	123	102	154	233	422	45	43	36	28
6	127	115	97	106	101	360	247	446	44	42	36	28
7	133	90	95	113	102	294	284	385	48	41	35	29
8	123	88	93	108	103	249	304	359	56	45	35	30
9	116	88	93	104	103	229	325	521	46	44	35	30
10	111	88	92	104	103	195	396	481	44	41	35	29
11	98	88	102	116	137	183	443	512	44	41	35	29
12	94	87	92	118	140	193	481	761	43	41	35	28
13	114	87	92	130	754	543	402	723	44	40	35	36
14	96	87	92	106	499	379	493	581	44	40	35	55
15	93	87	92	99	325	316	541	479	47	39	35	47
16	92	87	92	67	231	264	548	452	47	39	35	41
17	91	87	92	85	190	279	566	473	45	38	35	38
18	101	87	94	144	164	261	584	290	45	39	37	37
19	98	88	103	130	162	255	335	224	45	44	37	36
20	98	88	106	109	153	217	270	210	45	48	36	36
21	99	96	95	110	141	217	323	263	45	42	36	36
22	98	90	95	116	135	198	446	256	44	40	36	35
23	121	90	97	102	138	214	470	207	44	39	36	34
24	100	90	94	92	125	206	486	177	44	38	36	34
25	99	90	93	96	120	195	520	155	44	37	35	34
26	103	90	92	119	117	189	582	135	44	37	35	33
27	99	90	92	108	119	185	588	145	43	37	36	29
28	96	90	92	148	121	182	636	124	43	37	35	34
29	94	102	91	122	---	175	619	97	43	36	34	49
30	93	95	91	98	---	169	756	85	43	37	34	38
31	92	---	88	100	---	183	---	79	---	36	34	---
TOTAL	3306	2741	2927	3488	4833	6961	13035	10595	1412	1249	1097	1037
MEAN	107	91.4	94.4	113	173	225	435	342	47.1	40.3	35.4	34.6
MAX	138	115	106	162	754	543	756	761	71	48	37	55
MIN	91	87	88	67	101	119	233	79	43	36	34	28
AC-FT	6560	5440	5810	6920	9590	13810	25850	21020	2800	2480	2180	2060
a	22440	22580	34720	14280	28730	14520	15560	17690	35680	38520	37870	22600
b	2990	3660	1340	188	1250	5030	8110	8380	3950	1990	1240	352

CAL YR 1986 TOTAL 346441 MEAN 949 MAX 19600 MIN 77 AC-FT 687200 AC-FT a 632700 AC-FT b 68460
WTR YR 1987 TOTAL 52681 MEAN 144 MAX 761 MIN 28 AC-FT 104500 AC-Ft a 305200 AC-FT b 38490

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

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 mi^2.

PERIOD OF RECORD.-- May to September 1987. Unpublished records for water years 1969-86 available in files of 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.

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 U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission Project.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 16,400 acre-ft, Sept. 21, elevation, 1,848.76 ft; minimum, 13,700 acre-ft, May 26, elevation, 1,835.93 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 (AC-FT), WATER YEAR MAY 1987 TO SEPTEMBER 1987
INSTANTANEOUS OBSERVATIONS AT 2400

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	14100	14600	13800	14600
2	---	---	---	---	---	---	---	---	13800	14700	13900	14600
3	---	---	---	---	---	---	---	---	13900	14900	14300	14800
4	---	---	---	---	---	---	---	---	14000	14600	14700	15300
5	---	---	---	---	---	---	---	---	14800	14300	15300	15100
6	---	---	---	---	---	---	---	---	14900	14400	15800	14700
7	---	---	---	---	---	---	---	---	15000	14600	15500	14700
8	---	---	---	---	---	---	---	---	15100	14800	15200	14900
9	---	---	---	---	---	---	---	---	15000	15000	14900	14700
10	---	---	---	---	---	---	---	---	15100	15200	15100	14700
11	---	---	---	---	---	---	---	---	15100	15100	14900	14800
12	---	---	---	---	---	---	---	---	14600	14800	15200	14700
13	---	---	---	---	---	---	---	---	14700	15100	15400	14700
14	---	---	---	---	---	---	---	---	14500	15300	15600	14800
15	---	---	---	---	---	---	---	---	14400	15500	15300	15000
16	---	---	---	---	---	---	---	---	15000	15600	14800	15500
17	---	---	---	---	---	---	---	---	15100	15700	15000	15900
18	---	---	---	---	---	---	---	---	15200	15500	15000	16000
19	---	---	---	---	---	---	---	---	15300	15300	15200	16100
20	---	---	---	---	---	---	---	---	15200	15500	15500	16300
21	---	---	---	---	---	---	---	---	14900	15700	15600	16400
22	---	---	---	---	---	---	---	---	15000	15900	15500	15200
23	---	---	---	---	---	---	---	---	15000	15900	15100	15200
24	---	---	---	---	---	---	---	---	15100	15700	15200	15400
25	---	---	---	---	---	---	---	---	15000	14800	15000	15600
26	---	---	---	---	---	---	---	13700	14900	14300	15000	15600
27	---	---	---	---	---	---	---	14100	14900	14100	15100	15400
28	---	---	---	---	---	---	---	14400	14500	14300	14900	15200
29	---	---	---	---	---	---	---	14700	14300	14200	14800	15200
30	---	---	---	---	---	---	---	14600	14400	13800	14500	15000
31	---	---	---	---	---	---	---	14600	---	14000	14600	---
MAX	---	---	---	---	---	---	---	---	15300	15900	15800	16400
MIN	---	---	---	---	---	---	---	---	13800	13800	13800	14600
a								1839.96	1839.07	1836.63	1839.86	1841.97
b									-200	-400	+600	+400

a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.

SACRAMENTO RIVER BASIN

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. Prior to May 26, 1987, at site 1,000 ft downstream.
DRAINAGE AREA.--493 mi^2.
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. See WSP 2131 for history of changes prior to Oct. 12, 1966.
REMARKS.--Estimated daily discharges, June 3, 4. Records fair October to May 25. Estimated daily discharges computed by U.S. Geological Survey and are poor. Flow regulated by six reservoirs, total usable capacity, 347,000 acre-ft. Since 1967 diversion from Slab Creek Dam to White Rock powerplant (station 11433450) 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 ft^3/s May to October, and about 7 ft^3/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 May 26 to Sept. 30, under general supervision of 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 ft^3/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 ft^3/s, 769,400 acre-ft/yr; 20 years (water years 1968-87), 156 ft^3/s, 113,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,800 ft^3/s, Dec. 23, 1955, gage height, 32.6 ft, from floodmarks, site and datum then in use, from rating curve extended above 24,000 ft^3/s, on basis of computation of peak flow over dam; minimum daily, 1.3 ft^3/s, Aug. 24, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 72 ft^3/s, June 3; minimum daily, 11 ft^3/s, many days March to May.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	38	37	37	38	36	13	11	37	36	36	36
2	38	38	37	37	37	23	13	11	36	36	36	36
3	38	38	37	37	37	12	13	11	42	36	36	36
4	38	38	37	37	37	11	12	11	52	36	36	36
5	38	38	37	37	37	11	13	11	36	36	36	36
6	38	38	37	37	37	11	13	11	36	36	36	36
7	38	38	37	37	37	11	13	11	36	36	36	36
8	38	38	37	37	37	11	13	11	36	36	36	36
9	38	37	37	37	37	11	13	11	36	36	36	36
10	37	37	37	37	37	11	13	11	36	36	36	36
11	37	37	37	37	38	11	13	11	36	36	36	36
12	36	37	37	37	38	12	13	14	36	36	36	36
13	36	37	37	37	39	12	13	11	36	36	36	36
14	36	37	37	37	38	11	13	11	36	36	36	36
15	37	37	37	37	38	11	12	11	36	36	36	36
16	37	37	37	37	37	11	12	11	36	36	36	36
17	37	37	37	37	37	11	12	11	36	36	36	36
18	37	37	37	37	37	11	12	11	36	36	36	36
19	37	37	37	37	37	12	12	12	36	36	36	36
20	37	37	37	37	37	12	12	14	36	36	36	36
21	37	37	37	37	37	12	12	13	36	36	36	36
22	37	37	37	37	37	12	12	12	36	36	36	36
23	37	37	37	37	37	12	11	12	36	36	36	36
24	37	37	37	37	36	12	11	12	36	36	36	36
25	37	37	37	37	36	12	12	12	36	36	36	36
26	37	37	37	37	36	12	11	12	36	36	36	36
27	37	37	37	38	36	12	11	11	36	36	36	36
28	37	37	37	38	36	12	11	11	36	36	36	36
29	37	37	37	38	---	12	11	11	36	36	36	36
30	38	37	37	38	---	12	11	11	36	36	36	36
31	38	---	37	38	---	12	---	19	---	36	36	---
TOTAL	1155	1118	1147	1152	1038	394	366	363	1103	1116	1116	1080
MEAN	37.3	37.3	37.0	37.2	37.1	12.7	12.2	11.7	36.8	36.0	36.0	36.0
MAX	38	38	37	38	39	36	13	19	52	36	36	36
MIN	36	37	37	37	36	11	11	11	36	36	36	36
AC-FT	2290	2220	2280	2280	2060	781	726	720	2190	2210	2210	2140
a	28600	31550	39060	18890	39020	31940	46200	44640	39880	40530	38780	21980

CAL YR 1986 TOTAL 121673 MEAN 333 MAX 20200 MIN 26 AC-FT 241300 MEAN a 1597 AC-FT a 1156000
WTR YR 1987 TOTAL 11148 MEAN 30.5 MAX 52 MIN 11 AC-FT 22110 MEAN a 582 AC-FT a 421100
a Diversion, in acre-feet, to White Rock powerplant, provided by Sacramento Municipal Utility District.

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--August 1911 to July 1920, July 1964 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 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.--No estimated daily discharges. Flow regulated by storage, diversions, and powerplants. 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 ft^3/s, 820,100 acre-ft/yr; 23 years (water years 1965-87), 1,550 ft^3/s, 1,123,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,300 ft^3/s, Dec. 23, 1964, gage height, 17.4 ft, from floodmarks, from rating curve extended above 18,000 ft^3/s on basis of computations of flow over dam of peak flow; minimum daily, 0.2 ft^3/s, Nov. 12, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,100 ft^3/s, Feb. 13, gage height, 7.03 ft; minimum daily, 108 ft^3/s, Sept. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	612	575	559	767	542	455	529	1070	868	801	1050	933
2	409	597	564	122	1150	614	639	1070	1170	768	603	905
3	249	519	571	463	770	549	1030	911	705	778	411	492
4	436	974	718	591	704	1010	521	681	999	730	435	450
5	473	1030	889	497	1170	1150	422	1140	718	478	434	437
6	470	1040	601	355	675	984	836	1320	460	524	544	456
7	802	1090	593	285	842	1010	893	1430	560	936	1150	366
8	654	902	977	443	497	424	608	1000	594	679	536	464
9	1010	525	987	568	556	116	838	767	943	890	488	427
10	481	512	930	445	826	122	1110	655	751	798	866	438
11	571	577	959	402	571	390	641	1250	1020	574	596	463
12	1030	602	904	126	724	412	823	1060	653	430	875	424
13	144	719	569	216	1870	2010	1120	1040	572	665	804	426
14	198	728	580	448	1710	1440	1160	1390	562	825	615	395
15	292	492	925	357	1610	487	1480	784	837	689	666	564
16	301	527	1160	415	1230	935	770	963	735	1150	716	330
17	872	715	972	456	749	690	663	807	766	450	692	108
18	797	720	889	408	913	627	486	757	868	699	909	355
19	773	624	855	136	774	621	1070	756	928	663	840	378
20	166	572	863	369	826	569	698	1110	503	553	797	434
21	141	574	638	326	732	528	950	919	497	1100	809	175
22	149	387	624	330	601	474	659	631	1040	657	580	832
23	581	546	1090	348	467	503	882	550	930	718	721	135
24	460	503	592	445	1010	577	1140	520	713	932	493	136
25	611	587	457	505	556	625	960	534	1210	1040	859	436
26	934	576	487	270	473	536	1000	538	635	799	991	421
27	539	606	383	346	555	251	912	689	715	825	706	401
28	561	400	327	623	597	541	1260	555	563	999	1140	398
29	485	439	356	805	---	447	1230	477	917	643	688	628
30	403	517	928	490	---	652	1020	774	794	1210	628	616
31	606	---	653	340	---	303	---	504	---	583	756	---
TOTAL	16210	19175	22600	12697	23700	20052	26350	26652	23226	23586	22398	13423
MEAN	523	639	729	410	846	647	878	860	774	761	723	447
MAX	1030	1090	1160	805	1870	2010	1480	1430	1210	1210	1150	933
MIN	141	387	327	122	467	116	422	477	460	430	411	108
AC-FT	32150	38030	44830	25180	47010	39770	52270	52860	46070	46780	44430	26620

CAL YR 1986	TOTAL	812901	MEAN	2227	MAX	28200	MIN 141	AC-FT	1612000
WTR YR 1987	TOTAL	250069	MEAN	685	MAX	2010	MIN 108	AC-FT	496000

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharge: June 11. Records good. Flow regulated by storage, diversions, and powerplants. See schematic diagram of South Fork American River basin.

AVERAGE DISCHARGE.--11 years (water years 1952-62, prior to extensive regulation and transbasin diversion), 1,109 ft^3/s, 802,900 acre-ft/yr; 25 years (water years 1963-87), 1,581 ft^3/s, 1,145,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,800 ft^3/s, Dec. 23, 1955, gage height, 21.37 ft; minimum daily, 14 ft^3/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 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,080 ft^3/s, Feb. 13, gage height, 8.09 ft; minimum daily, 124 ft^3/s, Sept. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	675	597	588	883	564	519	540	1020	746	790	981	1010
2	543	620	590	196	1070	648	600	1040	1150	738	649	867
3	306	594	591	491	957	609	1120	887	815	785	439	452
4	476	888	741	667	716	1020	628	666	920	835	438	506
5	499	1010	879	571	1060	1120	468	1040	836	480	427	408
6	493	1040	666	438	850	1430	817	1080	472	486	482	442
7	773	1080	627	327	874	1150	907	1570	503	852	979	364
8	775	980	967	461	553	604	609	954	594	667	668	442
9	1020	536	998	566	600	209	800	764	928	894	510	425
10	644	533	952	484	873	197	1160	628	708	812	788	425
11	615	609	975	423	663	436	682	986	1040	579	576	439
12	880	583	931	168	782	510	761	1100	635	443	833	416
13	395	710	610	200	1960	2130	1180	976	670	578	808	423
14	184	759	621	450	1970	1870	1010	1420	512	756	601	388
15	327	587	937	426	1860	950	1470	921	793	678	589	436
16	338	490	1010	426	1420	894	871	933	828	1080	663	334
17	502	714	943	454	817	981	746	841	538	575	709	124
18	1230	729	1020	428	1040	739	544	755	909	709	882	327
19	615	677	965	167	816	711	905	704	856	664	854	359
20	392	598	890	381	886	672	822	971	716	509	790	419
21	173	621	673	345	811	631	750	1040	497	927	764	184
22	183	470	665	346	785	570	830	632	908	743	572	755
23	458	504	1100	369	512	608	851	587	810	760	724	172
24	611	526	654	409	1020	646	996	525	809	699	476	138
25	552	608	516	552	655	720	866	564	1080	1180	773	405
26	957	667	568	347	538	627	1130	515	724	815	969	408
27	552	556	423	366	615	332	719	687	721	846	648	385
28	590	495	359	640	650	609	1410	570	621	903	1080	361
29	565	462	331	833	---	512	991	547	815	658	755	610
30	432	482	927	542	---	716	1130	756	715	1030	577	597
31	556	---	636	388	---	415	---	471	---	748	639	---
TOTAL	17311	19725	23353	13744	25917	23785	26313	26150	22869	23219	21643	13021
MEAN	558	658	753	443	926	767	877	844	762	749	698	434
MAX	1230	1080	1100	883	1970	2130	1470	1570	1150	1180	1080	1010
MIN	173	462	331	167	512	197	468	471	472	443	427	124
AC-FT	34340	39120	46320	27260	51410	47180	52190	51870	45360	46050	42930	25830

CAL YR 1986 TOTAL 875987 MEAN 2400 MAX 42300 MIN 173 AC-FT 1738000
WTR YR 1987 TOTAL 257050 MEAN 704 MAX 2130 MIN 124 AC-FT 509900

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, and since February 1970.

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, 21.0 °C, Sept. 17, 21, 23; minimum recorded, 3.0 °C, Jan. 16-19.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	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 (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CACO3)
DEC									
11...	1010	376	28	6.8	6.5	750	10.5	93	9
MAR									
10...	1305	198	62	7.5	8.5	745	10.2	96	26
JUN									
11...	1050	371	28	7.3	15.0	765	8.6	102	9
SEP									
17...	1045	116	30	7.3	18.5	745	8.2	90	11

DATE	HARD-NESS NONCARB WH WAT TOT FLD 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)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER WHOLE IT-FLD MG/L)	ALKA-LINITY, CARBON-ATE IT-FLD (MG/L CACO3)
DEC									
11...	0	2.3	0.80	0.2	26	0.2	0.5	15	12
MAR									
10...	0	5.6	3.0	0.3	19	0.3	0.5	34	28
JUN									
11...	0	2.5	1.7	0.3	27	0.3	0.6	15	12
SEP									
17...	0	3.1	1.7	0.2	24	0.2	0.6	25	20

DATE	ALKA-LINITY WH WAT TOTAL 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)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)
DEC									
11...	12	1.6	1.4	<0.10	6.4	30	22	0.04	<0.010
MAR									
10...	28	4.4	2.9	<0.10	9.7	35	46	0.05	<0.010
JUN									
11...	13	1.2	1.4	0.10	7.2	26	23	0.03	<0.010
SEP									
17...	21	1.6	1.1	0.10	6.4	--	28	0.04	<0.010

See footnote at end of table.

SACRAMENTO RIVER BASIN

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)
DEC							
11...	<0.100	<0.010	<0.010	0.50	<0.010	<0.010	<0.010
MAR							
10...	<0.100	<0.010	<0.010	0.70	<0.010	<0.010	<0.010
JUN							
11...	<0.100	--	<0.010	1.0	0.050	<0.010	<0.010
SEP							
17...	<0.100	0.010	0.010	0.60	0.010	<0.010	<0.010

< Actual value is known to be less than the value shown.

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	15.5	13.5	13.0	10.5	8.0	6.5	6.5	6.5	6.0	5.0	7.0	4.5
2	15.0	13.0	12.5	10.5	8.0	6.5	7.0	6.5	6.0	5.0	7.5	6.5
3	15.5	13.5	12.5	10.0	8.0	6.5	7.0	6.5	6.5	5.0	7.5	6.0
4	15.5	13.0	12.5	10.5	7.5	7.0	7.0	6.5	6.5	5.0	7.0	6.0
5	15.5	13.5	12.0	10.0	8.0	7.5	7.0	6.0	6.5	4.5	6.5	6.0
6	15.5	13.5	11.5	9.5	8.5	7.5	6.5	6.0	6.5	4.5	7.5	6.0
7	16.0	13.5	11.5	9.0	8.0	6.5	7.0	6.0	6.5	5.0	8.0	6.5
8	15.5	13.0	11.5	9.5	7.5	6.0	6.0	5.0	6.5	5.0	7.5	6.5
9	15.5	13.0	11.0	9.0	7.5	6.0	6.0	5.0	7.0	6.0	10.0	7.0
10	15.5	13.0	11.0	9.0	7.5	6.0	6.0	4.5	7.5	6.0	9.5	8.0
11	15.0	14.0	11.0	9.0	7.5	6.0	5.5	5.0	7.5	6.5	10.0	8.5
12	15.0	13.0	10.5	8.5	7.0	6.5	5.5	4.5	7.0	6.5	9.0	8.0
13	15.5	13.0	10.5	8.5	7.5	6.5	6.0	5.0	9.0	6.5	9.0	7.0
14	16.0	13.5	10.0	8.5	7.5	7.5	5.0	4.0	7.0	6.0	7.5	7.0
15	15.0	13.5	10.0	8.5	7.5	7.0	4.5	3.5	7.5	6.5	9.0	7.0
16	14.5	13.5	10.0	8.5	7.5	6.0	4.5	3.0	7.5	5.5	9.5	7.0
17	14.5	13.5	10.0	8.0	7.5	6.5	4.5	3.0	8.0	6.0	9.5	6.5
18	14.5	13.0	10.0	8.5	7.5	7.0	4.5	3.0	8.0	6.0	9.0	8.0
19	14.5	12.0	10.5	9.5	8.0	7.0	5.0	3.0	7.5	5.0	8.5	7.0
20	14.5	12.0	11.0	9.5	8.0	7.0	4.5	3.5	7.5	5.0	8.5	6.0
21	15.0	12.5	10.5	9.5	7.5	6.5	4.5	3.5	6.5	5.0	8.0	7.0
22	15.0	12.5	9.5	8.5	7.5	6.5	5.0	4.0	7.0	5.0	9.0	6.0
23	14.0	12.5	9.5	8.5	8.0	7.0	5.5	5.0	6.5	5.5	8.5	7.5
24	14.0	12.5	9.5	8.0	7.5	6.5	5.5	5.0	6.5	4.5	9.5	7.0
25	14.0	12.5	9.0	8.0	7.0	6.5	6.5	5.5	6.5	4.5	9.5	6.5
26	14.0	12.0	9.0	7.5	7.0	6.5	7.0	5.0	6.5	4.0	10.0	7.0
27	14.5	12.0	9.0	7.5	7.0	6.0	6.0	5.5	6.5	4.5	11.0	7.5
28	13.5	12.0	8.0	7.5	7.0	6.5	6.5	5.5	7.0	4.5	10.0	8.0
29	13.5	12.0	9.0	8.0	7.0	6.0	6.0	5.0	---	---	10.5	7.5
30	13.5	12.5	8.0	7.0	7.0	6.5	6.0	5.0	---	---	10.5	8.0
31	13.0	11.5	---	---	7.0	6.0	6.0	5.0	---	---	11.0	8.0
MONTH	16.0	11.5	13.0	7.0	8.5	6.0	7.0	3.0	9.0	4.0	11.0	4.5

SACRAMENTO RIVER BASIN

11445500 SOUTH FORK AMERICAN RIVER NEAR LOTUS, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	12.5	9.0	13.0	11.0	17.5	14.5	17.0	13.5	17.5	15.5	---	---
2	10.5	8.5	14.0	11.0	17.0	13.0	17.5	13.5	---	---	---	---
3	9.0	8.0	15.0	11.0	17.5	13.5	17.5	13.5	---	---	20.5	18.0
4	10.5	7.0	16.0	12.0	17.5	14.5	17.0	13.5	---	---	20.0	18.0
5	11.0	8.5	15.5	13.0	16.0	13.5	17.5	15.0	---	---	20.0	18.0
6	10.5	9.0	15.5	12.0	16.5	14.5	18.0	15.5	---	---	19.5	18.0
7	11.0	8.5	15.5	12.0	17.5	15.0	18.5	15.5	---	---	20.0	18.0
8	11.5	8.5	16.0	13.0	18.0	15.5	18.0	14.0	---	---	20.5	18.5
9	12.5	9.0	16.0	13.0	17.0	15.0	17.0	15.0	---	---	20.5	18.0
10	11.5	9.0	17.0	14.5	17.5	14.0	17.0	14.5	---	---	20.5	18.0
11	12.0	9.5	17.0	14.5	17.0	13.5	18.0	15.0	---	---	20.5	18.0
12	12.0	8.5	18.0	12.5	18.0	13.0	18.5	15.5	---	---	20.0	18.0
13	12.5	9.0	17.0	13.0	18.0	14.5	19.5	17.0	---	---	20.0	18.0
14	13.0	9.5	16.5	13.0	18.0	15.5	18.5	16.0	---	---	20.0	18.0
15	12.5	9.5	17.0	13.5	16.0	14.5	19.0	15.0	---	---	20.5	18.0
16	13.5	9.5	16.5	15.0	16.5	13.0	17.5	15.0	---	---	20.5	18.0
17	13.5	10.0	16.5	14.0	17.0	14.5	16.0	13.5	---	---	21.0	17.5
18	13.0	11.0	17.0	14.0	17.0	13.0	16.5	14.5	---	---	20.5	18.0
19	13.0	10.0	16.0	14.5	17.5	13.0	16.5	13.5	---	---	20.5	18.0
20	13.5	9.5	16.0	14.5	17.0	13.0	17.5	15.0	---	---	20.0	18.0
21	14.5	10.5	16.0	13.5	17.5	15.0	16.5	14.5	---	---	21.0	18.0
22	13.5	10.0	17.5	13.5	17.0	14.5	17.0	13.0	---	---	20.5	17.5
23	13.0	11.5	17.5	14.0	17.0	13.0	16.5	13.5	---	---	21.0	18.0
24	13.5	10.0	17.0	15.0	17.5	13.0	16.5	14.5	---	---	20.5	18.0
25	14.0	10.0	16.0	15.0	17.0	14.0	16.5	13.0	---	---	20.5	18.5
26	15.0	10.5	15.5	15.0	17.5	13.0	16.5	13.5	---	---	20.0	17.5
27	15.0	12.0	17.5	14.0	17.5	14.0	17.0	14.0	---	---	20.0	17.5
28	13.0	11.0	17.5	14.0	17.0	14.5	17.0	14.5	---	---	20.5	17.5
29	13.5	11.5	17.0	15.0	17.5	15.5	17.5	13.5	---	---	20.0	17.5
30	12.0	11.0	16.5	15.5	17.5	14.0	17.0	14.0	---	---	20.0	17.5
31	---	---	17.5	15.0	---	---	17.5	13.5	---	---	---	---
MONTH	15.0	7.0	18.0	11.0	18.0	13.0	19.5	13.0	---	---	---	---

SACRAMENTO RIVER BASIN

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 mi^2.
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.
COOPERATION.--Records provided by U.S. Bureau of Reclamation, not reviewed by U.S. Geological Survey.
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, 742,200 acre-ft, May 17, elevation, 440.94 ft; minimum, 429,700 acre-ft, Sept. 30, elevation, 405.08 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by U.S. Bureau of Reclamation, from 1955 Survey)

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 (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	653400	555700	505900	465000	456200	546500	663000	719600	735200	702300	595600	516300
2	648300	553100	504300	462900	458200	546900	665100	721300	735600	698100	593600	514900
3	642300	550100	502300	462300	460300	547900	668400	723000	735800	694300	591000	512900
4	636600	547800	502200	463000	461800	549500	670300	723900	735400	690300	588800	511600
5	631800	546400	501400	462400	463400	556000	671700	725500	735400	685300	585600	510400
6	626700	545500	500100	462400	465000	567100	673500	727000	733400	679200	582200	508500
7	622700	545600	497700	462000	466100	573000	675600	729800	731300	674400	579100	506000
8	619300	544900	495900	461000	466900	576400	677200	731300	729300	670200	577000	503500
9	616500	542900	494300	460600	467200	578700	679200	732700	727700	666200	573000	502300
10	613100	541000	493000	460600	468500	580500	682000	733200	725800	662800	569100	501000
11	610400	539200	491700	460200	470100	582300	684000	734100	725000	658600	565500	499600
12	607900	537500	490700	459400	472900	585500	684500	735700	723500	653700	562300	498700
13	604600	536000	489100	458500	492500	598800	688700	737300	722000	648400	559500	496600
14	601200	534500	487000	458100	507000	608900	690900	739300	719900	644300	555200	493300
15	598400	532900	485500	457400	516000	617200	694300	741000	718100	641100	550900	491400
16	595600	530500	485200	456800	522100	622600	696500	741500	717400	638000	546900	489700
17	592600	529300	484600	456700	525800	627100	698800	742200	716100	634600	542600	487800
18	592000	528700	484500	456500	529200	631300	700700	742000	715800	631300	538700	486000
19	589700	528000	484100	455500	531300	635100	702500	741400	715600	627700	536200	484600
20	587000	526700	483600	454900	533400	638100	704100	741300	715800	623300	533900	483000
21	583800	525700	482300	454400	535400	640700	705300	741900	714400	620300	532000	479100
22	580800	523700	481100	454600	536900	643200	706300	741500	713500	617700	529900	475700
23	577900	521300	480600	454500	538200	646100	706900	741000	713300	615100	527700	469600
24	575800	518900	479200	453500	540600	649000	707800	740300	713800	611800	524200	463100
25	573400	517300	477300	453500	542500	651500	708900	739600	714700	609600	523500	457300
26	571800	516100	475400	453200	543700	653700	710200	738800	714900	606700	523500	452200
27	569600	514200	473400	453300	545000	655000	710700	738500	714300	603400	522200	446000
28	567300	511800	470900	453900	545800	656900	713200	737900	712000	601500	522500	439200
29	564300	509700	468600	455400	---	658500	714100	737300	709500	599900	522100	434100
30	561400	507800	467100	455900	---	660400	717100	736900	706200	598600	519900	429700
31	558500	---	465600	456100	---	661500	---	736000	---	597300	517300	---
MAX	653400	555700	505900	465000	545800	661500	717100	742200	735800	702300	595600	516300
MIN	558500	507800	465600	453200	456200	546500	663000	719600	706200	597300	517300	429700
a	421.19	415.15	409.84	408.60	419.71	432.60	438.39	440.31	437.27	425.60	416.31	405.08
b	-94700	-50700	-42200	-9500	+89700	+115700	+55600	+18900	-29800	-108900	-80000	-87600
c	2850	1640	420	760	1240	2020	4090	5720	6570	6250	5290	3780

CAL YR 1986 b -130000
WTR YR 1987 b -223500
a Elevation, in feet NGVD, at end of month.
b Change in contents, in acre-feet.
c Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--November 1904 to current year. Monthly discharge only for some periods, published in WSP 1315-A.
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.--Estimated daily discharges: Mar. 9-18. 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 above station for irrigation, municipal, and domestic water supply. Diversions of 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.

AVERAGE DISCHARGE.--50 years (water years 1905-55, prior to regulation by Folsom Lake), 3,741 ft^3/s, 2,708,000 acre-ft/yr; 32 years (water years 1956-87, unadjusted for storage or diversion), 3,947 ft^3/s, 2,860,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 180,000 ft^3/s, Nov. 21, 1950, gage height, 31.85 ft, site and datum then in use; minimum, 3.6 ft^3/s, Aug. 16, 1924. Maximum discharge since construction of Folsom Dam in 1953, 134,000 ft^3/s, Feb. 19, 1986, gage height, 27.96 ft, present datum; minimum, 86 ft^3/s, Apr. 7, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,360 ft^3/s, Oct. 2, gage height, 7.65 ft; minimum daily, 985 ft^3/s, June 23.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1250	1970	1820	1590	1020	1050	1060	1070	1070	2960	1970	1940
2	3960	1970	1820	1570	1030	1060	1070	1070	1110	2970	1920	1930
3	4200	1980	1810	1550	1030	1050	1070	1070	1120	2920	1950	1480
4	4210	1970	1820	1550	1040	1040	1070	1080	1100	2970	1970	1460
5	3630	1980	1860	1520	1040	1090	1060	1070	1060	2970	2420	1470
6	3630	2030	1880	1020	1030	1320	1070	1070	1540	3480	2400	1460
7	3060	2010	1890	1020	1020	1020	1080	1080	1530	3500	2460	1430
8	2980	2000	1910	1020	1020	1020	1080	1080	1530	2960	2390	1450
9	3040	2010	1860	1030	1020	1020	1080	1080	1520	2950	2420	1450
10	3050	2020	1800	1030	1020	1030	1070	1080	1510	2650	2410	1450
11	2570	2020	1790	1020	1030	1030	1070	1080	1510	2960	2360	1420
12	2550	2030	1780	1020	1020	1040	1080	1080	1500	2960	2560	1440
13	2550	2040	1780	1030	1050	1040	1090	1090	1510	2960	2910	1950
14	2140	2010	1780	1010	1030	1050	1090	1080	1510	2960	2880	1930
15	1970	1990	1760	1030	1040	1060	1090	1080	1500	2460	2880	1700
16	1990	1980	1560	1020	1040	1070	1080	1090	1490	2410	2830	1500
17	2000	1780	1560	1000	1040	1070	1070	1080	1490	2410	2860	1470
18	2030	1780	1560	1020	1030	1080	1070	1070	1480	2430	2950	1490
19	2030	1790	1560	1030	1050	1080	1070	1110	1260	2500	2390	1480
20	2020	1800	1570	1000	1050	1070	1060	1090	1250	2400	2340	1460
21	1990	1820	1580	1000	1050	1070	1110	1090	1240	2410	1990	1930
22	2000	1830	1580	1000	1050	1080	1610	1080	1220	2400	1990	2420
23	1990	1840	1590	1000	1060	1080	1620	1090	985	2430	1950	3360
24	1960	1830	1580	1000	1050	1090	1610	1090	986	2440	1930	3440
25	1940	1810	1580	1010	1060	1080	1610	1070	1010	2450	1470	3410
26	2000	1810	1580	1020	1060	1090	1610	1080	1010	2430	1470	3480
27	1980	1810	1580	1010	1060	1090	1610	1080	1270	2400	1470	3480
28	1980	1810	1580	1020	1060	1090	1610	1080	1510	1930	1460	3490
29	1950	1820	1590	1030	---	1090	1610	1080	1740	1900	1510	2960
30	1960	1820	1580	1040	---	1080	1090	1070	2380	1910	1950	2940
31	1970	---	1590	1030	---	1070	---	1070	---	1890	1940	---
TOTAL	76580	57360	52580	34240	29100	33200	36570	33480	40941	81370	68400	62270
MEAN	2470	1912	1696	1105	1039	1071	1219	1080	1365	2625	2206	2076
MAX	4210	2040	1910	1590	1060	1320	1620	1110	2380	3500	2950	3490
MIN	1250	1780	1560	1000	1020	1020	1060	1070	985	1890	1460	1420
AC-FT	151900	113800	104300	67920	57720	65850	72540	66410	81210	161400	135700	123500

CAL YR 1986 TOTAL 2257827 MEAN 6186 MAX 131000 MIN 617 AC-FT 4478000
WTR YR 1987 TOTAL 606091 MEAN 1661 MAX 4210 MIN 985 AC-FT 1202000

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA
(National stream-quality accounting network station)

LOCATION.--Lat 38°27'15", long 121°29'54", 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 heights collected in the vicinity of "at Sacramento" gage November 1879 to May 1888 and December 1890 to September 1963 are contained in reports of National Weather Service.

GAGE.--Water-stage recorder and acoustic velocity system. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Nov. 16, 1956, nonrecording gage and water-stage recorder at various sites in vicinity of I Street Bridge in Sacramento 13 mi upstream at datum of low-water mark of Oct. 23, 1856, 0.12 ft NGVD. Nov. 17, 1956, to Sept. 30, 1979, at site 1,000 ft upstream from I Street Bridge.

REMARKS.--Estimated daily discharges: Oct. 1 to Mar. 5. Records good. Natural flow of stream affected by storage reservoirs, power development, diversions for irrigation, return flow from irrigated areas, and tide. Floodflows bypass station through Yolo Bypass (stations 11426000 and 11453000). Flows are considered equivalent to those at I Street Bridge.

AVERAGE DISCHARGE.--39 years (water years 1949-87), 24,300 ft^3/s, 17,605,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (since 1949).--Maximum discharge, 117,000 ft^3/s, Feb. 19, 1986, elevation, 25.00 ft; minimum daily, 3,970 ft^3/s, Oct. 15, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge known prior to Nov. 21, 1950, 103,000 ft^3/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, 39,400 ft^3/s Mar. 17, elevation, 7.73 ft; minimum daily, 8,200 ft^3/s, May 29. At I Street Bridge, maximum elevation 10.93 ft, Mar. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20800	12400	13600	12400	15400	10600	12400	11200	10200	13300	15500	13300
2	22000	12600	13400	12800	15200	10500	12000	10900	10000	13700	15100	12600
3	21000	12600	13400	13400	16600	10600	11300	10700	9720	13400	15500	12100
4	21000	12800	13600	16000	19400	10400	11200	11100	9430	14300	15700	11700
5	20400	12600	13800	18000	18800	12500	11700	10900	9240	14600	16400	11900
6	19600	12400	13800	20400	17600	15900	12100	10100	8590	15100	15600	11400
7	18600	12000	13800	18200	16000	26400	12100	9250	8250	15400	15400	11900
8	18700	11800	14000	16000	14400	30400	11100	8650	9090	15700	15500	12000
9	18800	11600	13800	14400	13200	25800	10400	8550	9850	15400	15000	11500
10	18600	12200	13600	12800	12400	21200	9690	9030	10300	15000	14400	12200
11	18200	12400	13500	12400	12000	18400	10400	9820	10300	15300	13700	12100
12	17600	12600	13400	12000	12600	16400	11000	10900	10800	15300	14100	12000
13	16800	12400	13600	11800	15400	18300	11600	11300	9820	15700	13800	12500
14	15800	12800	13400	11800	26400	29900	11500	11100	10400	15600	14600	13000
15	15000	13000	13200	11800	33600	36100	11700	11700	11200	15900	14500	12500
16	14000	13000	12800	11600	32500	38000	11300	11900	10700	14700	14500	11800
17	13400	12800	12700	11400	30000	37800	10600	12100	11100	15200	14500	11600
18	12800	12600	12700	10800	24000	34200	12200	11600	11300	15000	14500	11500
19	12400	13400	12800	10900	20400	29800	12300	10500	10500	15200	15000	11000
20	12600	13000	12800	10600	18200	26700	11800	10200	10400	14800	14600	10200
21	12400	13200	12900	10200	16000	24300	12700	10000	10800	15400	14100	9840
22	11800	13200	12800	10400	14400	22300	13500	9930	10700	15500	13900	9910
23	11600	13000	12700	10600	13400	21300	13300	9160	10600	15400	14200	10500
24	11400	12800	12800	11000	12800	21200	13500	8840	10600	15700	14200	10500
25	11500	12600	12600	11400	12400	20900	13100	8770	9730	16000	13900	11100
26	11600	12800	12800	12000	11800	20200	12700	8500	9170	15700	13600	11300
27	11800	12800	12500	13800	11400	18500	12800	8390	8840	15800	14000	11700
28	12000	13000	12400	13800	11000	16800	11800	8460	9080	15400	13700	11700
29	12200	12400	12200	14200	---	15600	11600	8200	9810	15100	12900	11700
30	12400	13600	12400	16200	---	14600	11400	8430	11500	15300	12300	11700
31	12000	---	12600	15200	---	13300	---	9700	---	15500	12900	---
TOTAL	478800	380400	406400	408300	487300	668900	354790	309880	302020	469400	447600	348750
MEAN	15450	12680	13110	13170	17400	21580	11830	9996	10070	15140	14440	11630
MAX	22000	13600	14000	20400	33600	38000	13500	12100	11500	16000	16400	13300
MIN	11400	11600	12200	10200	11000	10400	9690	8200	8250	13300	12300	9840
AC-FT	949700	754500	806100	809900	966600	1327000	703700	614600	599100	931100	887800	691700

CAL YR 1986	TOTAL	9199000	MEAN	25200	MAX	115000	MIN	9400	AC-FT	18250000
WTR YR 1987	TOTAL	5062540	MEAN	13870	MAX	38000	MIN	8200	AC-FT	10040000

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1959 to current year.
CHEMICAL DATA: Water year 1959 to current year.
BIOLOGICAL DATA: Water years 1974-81.
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: June 1960 to June 1963, February 1974 to July 1975.
WATER TEMPERATURE: June 1960 to current year.
SUSPENDED-SEDIMENT DISCHARGE: October 1956 to current year.

INSTRUMENTATION.--Temperature recorder since June 1960.

REMARKS.--Temperature recorder located on right bank 1.9 mi northwest of Freeport and 7.4 mi southwest of State Capitol Building in Sacramento. Records of sediment discharge from 1957 to 1979 were obtained at Sacramento and are considered equivalent. Period of missing temperature record due to recorder malfunction.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded, 27.0 °C, Sept. 8, 1977; minimum recorded, 4.5 °C, Dec. 12-15, 1972.
SEDIMENT CONCENTRATION: Maximum daily mean, 1,960 mg/L, Dec. 24, 1964; minimum daily mean, 6 mg/L, Nov. 30, Dec. 15, 18, 1986.
SEDIMENT LOAD: Maximum daily, 525,000 tons, Dec. 24, 1964; minimum daily, 151 tons, Oct. 21, 22, 1977.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded, 23.0 °C, May 8-12, 15, 16; minimum recorded, 6.0 °C, Dec. 16-20.
SEDIMENT CONCENTRATION: Maximum daily mean, 438 mg/L, Mar. 15; minimum daily mean, 6 mg/L, Nov. 30, Dec. 15, 18.
SEDIMENT LOAD: Maximum daily, 42,700 tons, Mar. 15; minimum daily, 206 tons, Dec. 18.

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
DEC 09...	1020	13000	146	7.7	10.0	765	9.6	10.5	93
MAR 12...	1130	17800	146	7.8	13.0	765	27	10.2	96
JUN 10...	1420	15400	166	7.6	24.0	765	14	8.6	102
SEP 15...	1000	16000	206	8.0	20.0	765	21	8.2	90

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD 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)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO
DEC 09...	K12	K38	55	0	12	6.1	8.9	25	0.5
MAR 12...	K60	K25	62	0	13	7.2	11	27	0.6
JUN 10...	K20	--	57	0	12	6.5	10	27	0.6
SEP 15...	93	K38	77	0	15	9.5	14	28	0.7

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER WHOLE IT-FLD (MG/L)	ALKA-LINITY, CARBON-ATE IT-FLD (MG/L CACO3)	ALKA-LINITY WH WAT TOTAL 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)
DEC 09...	1.6	72	59	59	7.9	4.9	<0.10	20	92
MAR 12...	1.3	66	54	56	13	8.6	<0.10	19	104
JUN 10...	1.4	75	62	62	9.5	6.4	0.10	19	100
SEP 15...	1.3	106	87	87	12	8.7	0.10	19	121

See footnotes at end of table

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	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)
DEC								
09...	97	0.13	<0.010	0.180	0.020	<0.010	0.60	0.060
MAR								
12...	110	0.14	<0.010	0.230	0.050	0.030	0.60	0.110
JUN								
10...	100	0.14	<0.010	<0.100	0.020	0.010	0.90	0.100
SEP								
15...	130	0.16	<0.010	<0.100	0.050	0.040	0.80	0.050

DATE	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	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)
DEC								
09...	0.040	0.030	20	2	21	<0.5	<1	<1
MAR								
12...	0.080	0.080	50	1	24	<0.5	1	<1
JUN								
10...	0.040	0.040	<10	2	23	<0.5	<1	<1
SEP								
15...	0.040	0.040	10	2	29	<0.5	<1	<1

DATE	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)
DEC							
09...	<3	7	--	<5	<4	7	<0.1
MAR							
12...	<3	3	45	<5	<4	4	<0.1
JUN							
10...	<3	4	7	<5	<4	3	<0.1
SEP							
15...	<3	2	30	<5	<4	2	0.1

DATE	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							
09...	<10	<1	<1	<1	80	<6	9
MAR							
12...	<10	2	<1	<1	100	<6	14
JUN							
10...	<10	<1	<1	<1	89	<6	10
SEP							
15...	<10	2	<1	<1	120	<6	6

DATE	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 DIS-SOLVED, EXTRAC-TION (UG/L)
DEC								
09...	--	--	--	--	--	--	--	--
MAR								
12...	<0.4	<0.4	1.5	0.8	1.3	0.8	0.03	0.15
JUN								
10...	--	--	--	--	--	--	--	--
SEP								
15...	1.1	0.6	1.3	0.9	1.0	0.9	0.01	0.32

K Results based on colony count outside the acceptable range (non-ideal count).
< Actual value is known to be less than the value shown.

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	SEDIMENT, SUSPENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR										
12...*	1040	175	142	7.8	13.5	765	10.1	96	69	94
12...*	1045	296	145	7.8	13.5	765	10.4	99	63	95
12...*	1055	371	148	7.9	13.0	765	10.2	96	64	95
12...*	1110	461	146	7.9	13.0	765	10.2	96	61	96
12...*	1120	538	146	7.9	13.0	765	10.2	96	58	94
JUN										
10...*	1410	175	166	7.6	24.0	765	8.6	102	32	96
10...*	1415	296	165	7.6	24.0	765	8.6	102	28	98
10...*	1419	371	166	7.6	24.0	765	8.4	99	28	98
10...*	1425	461	166	7.6	24.0	765	8.6	102	30	99
10...*	1430	538	166	7.6	24.0	765	8.8	104	31	99

* Instantaneous streamflow at the time of cross-sectional measurements: March 12, 17,800 ft^3/s; June 10, 15,400 ft^3/s.

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.0	16.0	15.0	14.5	10.5	10.5	9.0	9.0	10.0	10.0	11.0	10.5
2	16.0	16.0	14.5	14.0	10.5	10.5	9.5	9.0	10.0	10.0	11.5	11.0
3	16.0	16.0	14.5	14.0	10.5	10.0	9.5	9.5	10.0	10.0	12.0	11.5
4	16.0	16.0	14.0	14.0	10.5	10.0	9.5	9.5	10.5	10.0	12.5	12.0
5	16.5	16.0	14.0	14.0	10.5	10.5	9.5	9.5	10.0	10.0	12.5	12.5
6	17.0	16.5	14.0	13.5	11.0	10.5	9.5	9.5	10.0	10.0	13.0	12.5
7	17.5	17.0	13.5	13.0	11.0	10.5	9.5	9.0	10.5	10.0	13.0	12.5
8	18.0	17.5	13.0	13.0	10.5	10.5	9.0	9.0	11.0	10.5	12.5	12.5
9	18.0	17.5	13.0	12.5	10.5	10.5	9.0	8.5	11.5	11.0	13.0	12.5
10	18.0	18.0	12.5	12.5	10.5	10.0	8.5	8.5	12.0	11.5	13.0	13.0
11	18.0	17.5	12.5	12.5	10.0	10.0	8.5	8.0	12.5	12.0	13.5	13.0
12	17.5	17.0	13.0	12.5	10.0	9.5	8.0	8.0	12.5	12.5	13.5	13.0
13	17.5	17.0	13.0	12.5	9.5	9.5	8.0	7.5	12.5	12.5	13.0	13.0
14	17.0	16.5	13.0	12.5	9.5	9.5	7.5	7.5	12.5	12.5	13.0	12.5
15	17.0	16.5	13.0	12.5	9.5	9.5	7.5	7.0	12.5	12.0	12.0	12.0
16	17.0	16.5	13.0	13.0	9.5	9.5	7.0	6.0	11.5	11.5	12.0	11.5
17	16.5	16.0	13.0	12.5	9.5	9.5	6.5	6.0	11.5	11.0	12.0	11.5
18	16.0	15.5	13.0	12.5	9.5	9.5	6.0	6.0	11.0	11.0	12.5	12.0
19	15.5	15.5	13.0	12.5	10.0	9.5	6.5	6.0	11.0	11.0	12.5	12.5
20	15.5	15.5	13.0	13.0	10.0	10.0	6.5	6.0	11.0	11.0	13.0	12.5
21	15.5	15.5	13.0	13.0	10.0	10.0	7.0	6.5	11.0	10.5	13.0	12.5
22	16.0	15.5	13.0	12.5	10.0	9.5	7.0	6.5	11.0	10.5	12.5	12.5
23	16.0	15.5	12.5	12.5	10.0	9.5	7.5	7.0	10.5	10.5	12.5	12.5
24	16.0	15.5	12.5	12.5	10.0	9.5	8.0	7.5	11.0	10.0	12.5	12.0
25	16.0	15.5	12.5	12.0	9.5	9.0	9.0	8.0	10.5	10.0	12.5	12.0
26	16.5	16.0	12.0	11.5	9.0	9.0	9.5	8.5	10.5	10.0	13.0	12.5
27	16.5	16.5	11.5	11.5	9.5	9.0	9.5	9.5	10.5	10.0	13.5	13.0
28	16.5	16.5	11.5	11.0	9.0	9.0	10.0	9.5	10.5	10.0	14.0	13.5
29	16.5	16.0	11.0	11.0	9.0	9.0	10.0	10.0	---	---	14.5	14.0
30	16.0	16.0	11.0	10.5	9.0	9.0	10.0	10.0	---	---	15.0	14.5
31	16.0	15.0	---	---	9.0	9.0	10.0	10.0	---	---	16.0	15.0
MONTH	18.0	15.0	15.0	10.5	11.0	9.0	10.0	6.0	12.5	10.0	16.0	10.5

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	16.5	15.5	---	---			---	---	21.5	21.0		
2	17.0	16.5	---	---			---	---	21.5	21.5		
3	17.0	16.5	---	---			---	---	22.0	21.5		
4	17.0	16.5	---	---			---	---	22.0	22.0		
5	17.0	17.0	---	---			---	---	22.0	22.0		
6	17.5	17.0	20.5	19.5			---	---	22.0	22.0		
7	18.0	17.5	22.0	20.5			---	---	22.0	22.0		
8	18.5	18.0	23.0	21.5			22.5	21.5	22.0	22.0		
9	19.0	18.0	23.0	22.0			22.5	22.5	22.0	22.0		
10	18.5	18.5	23.0	22.5			22.5	22.5	22.0	22.0		
11	---	---	23.0	22.0			22.5	22.0	21.5	21.5		
12	---	---	23.0	22.5			22.0	22.0	21.5	21.5		
13	---	---	22.5	22.5			22.0	22.0	21.5	21.0		
14	---	---	22.5	22.5			22.5	22.0	21.0	20.5		
15	---	---	23.0	22.5			22.5	22.5	20.5	20.5		
16	---	---	23.0	22.0			22.5	22.5	20.5	20.5		
17	---	---	22.0	21.0			22.5	22.0	20.5	20.0		
18	---	---	21.0	20.5			22.0	21.0	21.0	20.5		
19	---	---	20.5	20.5			21.0	20.5	21.0	21.0		
20	---	---	20.5	20.5			20.5	20.0	21.0	21.0		
21	---	---	21.0	20.5			20.0	19.5	21.0	21.0		
22	---	---	21.0	20.0			19.5	19.0	21.0	21.0		
23	---	---	21.0	20.5			20.0	19.0	21.0	21.0		
24	---	---	20.5	20.0			20.0	19.5	---	---		
25	---	---	20.0	19.5			20.0	19.5	---	---		
26	---	---	---	---			20.0	20.0	---	---		
27	---	---	---	---			20.0	20.0	---	---		
28	---	---	---	---			20.5	20.0	---	---		
29	---	---	---	---			20.5	20.5	---	---		
30	---	---	---	---			20.5	20.5	---	---		
31	---	---	---	---			21.0	20.5	---	---		
MONTH	---	---	---	---			---	---	---	---		

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	20800	30	1680	12400	14	469	13600	8	294
2	22000	32	1900	12600	16	544	13400	10	362
3	21000	28	1590	12600	14	476	13400	12	434
4	21000	27	1530	12800	12	415	13600	14	514
5	20400	34	1870	12600	10	340	13800	16	596
6	19600	22	1160	12400	8	268	13800	18	671
7	18600	14	703	12000	8	259	13800	17	633
8	18700	16	808	11800	8	255	14000	16	605
9	18800	9	457	11600	7	219	13800	14	522
10	18600	19	954	12200	8	264	13600	12	441
11	18200	16	786	12400	8	268	13500	10	365
12	17600	20	950	12600	8	272	13400	10	362
13	16800	16	726	12400	10	335	13600	9	330
14	15800	12	512	12800	12	415	13400	8	289
15	15000	13	527	13000	14	491	13200	6	214
16	14000	14	529	13000	15	527	12800	8	276
17	13400	14	507	12800	16	553	12700	10	343
18	12800	13	449	12600	12	408	12700	6	206
19	12400	20	670	13400	9	326	12800	8	276
20	12600	14	476	13000	10	351	12800	10	346
21	12400	10	335	13200	11	392	12900	12	418
22	11800	9	287	13200	12	428	12800	13	449
23	11600	8	251	13000	12	421	12700	16	549
24	11400	16	492	12800	13	449	12800	12	415
25	11500	14	435	12600	12	408	12600	11	374
26	11600	12	376	12800	11	380	12800	10	346
27	11800	10	319	12800	10	346	12500	10	338
28	12000	14	454	13000	8	281	12400	10	335
29	12200	12	395	12400	8	268	12200	10	329
30	12400	10	335	13600	6	220	12400	8	268
31	12000	12	389	---	---	---	12600	10	340
TOTAL	478800	---	22852	380400	---	11048	406400	---	12240
DAY		JANUARY			FEBRUARY			MARCH	
1	12400	11	368	15400	57	2370	10600	17	487
2	12800	12	415	15200	78	3200	10500	18	510
3	13400	20	724	16600	68	3050	10600	19	544
4	16000	35	1510	19400	57	2990	10400	22	618
5	18000	56	2720	18800	115	5840	12500	25	844
6	20400	61	3360	17600	104	4940	15900	48	2060
7	18200	57	2800	16000	68	2940	26400	156	11200
8	16000	52	2250	14400	53	2060	30400	234	19200
9	14400	43	1670	13200	37	1320	25800	180	12500
10	12800	26	899	12400	33	1100	21200	115	6580
11	12400	15	502	12000	36	1170	18400	72	3580
12	12000	16	518	12600	47	1600	16400	58	2570
13	11800	12	382	15400	78	3240	18300	58	2870
14	11800	13	414	26400	156	11100	29900	282	23800
15	11800	14	446	33600	414	37600	36100	438	42700
16	11600	15	470	32500	396	34700	38000	399	40900
17	11400	17	523	30000	322	26100	37800	322	32900
18	10800	18	525	24000	250	16200	34200	218	20100
19	10900	19	559	20400	178	9800	29800	148	11900
20	10600	20	572	18200	130	6390	26700	128	9230
21	10200	20	551	16000	93	4020	24300	97	6360
22	10400	19	534	14400	54	2100	22300	83	5000
23	10600	18	515	13400	43	1560	21300	87	5000
24	11000	16	475	12800	32	1110	21200	68	3890
25	11400	15	462	12400	27	904	20900	64	3610
26	12000	15	486	11800	22	701	20200	63	3440
27	13800	15	559	11400	19	585	18500	57	2850
28	13800	15	559	11000	18	535	16800	43	1950
29	14200	17	652	---	---	---	15600	36	1520
30	16200	21	919	---	---	---	14600	33	1300
31	15200	33	1350	---	---	---	13300	32	1150
TOTAL	408300	---	28689	487300	---	189225	668900	---	281163

SACRAMENTO RIVER BASIN

11447650 SACRAMENTO RIVER AT FREEPORT, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	12400	30	1000	11200	28	847	10200	16	441
2	12000	34	1100	10900	38	1120	10000	30	810
3	11300	28	854	10700	30	867	9720	16	420
4	11200	30	907	11100	20	599	9430	18	458
5	11700	34	1070	10900	22	647	9240	18	449
6	12100	26	849	10100	25	682	8590	20	464
7	12100	30	980	9250	12	300	8250	20	446
8	11100	18	539	8650	10	234	9090	22	540
9	10400	14	393	8550	16	369	9850	24	638
10	9690	13	340	9030	18	439	10300	20	556
11	10400	12	337	9820	16	424	10300	26	723
12	11000	26	772	10900	14	412	10800	11	321
13	11600	22	689	11300	10	305	9820	18	477
14	11500	19	590	11100	10	300	10400	19	534
15	11700	29	916	11700	12	379	11200	20	605
16	11300	26	793	11900	18	578	10700	20	578
17	10600	22	630	12100	24	784	11100	22	659
18	12200	32	1050	11600	28	877	11300	24	732
19	12300	34	1130	10500	24	680	10500	20	567
20	11800	18	573	10200	20	551	10400	17	477
21	12700	28	960	10000	28	756	10800	16	467
22	13500	24	875	9930	26	697	10700	14	404
23	13300	23	826	9160	24	594	10600	12	343
24	13500	22	802	8840	24	573	10600	10	286
25	13100	22	778	8770	23	545	9730	10	263
26	12700	20	686	8500	22	505	9170	11	272
27	12800	18	622	8390	12	272	8840	12	286
28	11800	24	765	8460	18	411	9080	14	343
29	11600	23	720	8200	25	554	9810	16	424
30	11400	22	677	8430	17	387	11500	20	621
31	---	---	---	9700	16	419	---	---	---
TOTAL	354790	---	23223	309880	---	17107	302020	---	14604
DAY		JULY			AUGUST			SEPTEMBER	
1	13300	28	1010	15500	40	1670	13300	24	862
2	13700	37	1370	15100	30	1220	12600	22	748
3	13400	38	1370	15500	26	1090	12100	20	653
4	14300	36	1390	15700	22	933	11700	16	505
5	14600	33	1300	16400	25	1110	11900	16	514
6	15100	34	1390	15600	18	758	11400	17	523
7	15400	30	1250	15400	30	1250	11900	17	546
8	15700	28	1190	15500	44	1840	12000	18	583
9	15400	26	1080	15000	36	1460	11500	10	311
10	15000	24	972	14400	26	1010	12200	20	659
11	15300	22	909	13700	28	1040	12100	30	980
12	15300	20	826	14100	29	1100	12000	27	875
13	15700	19	805	13800	28	1040	12500	23	776
14	15600	23	969	14600	26	1020	13000	16	562
15	15900	28	1200	14500	22	861	12500	27	911
16	14700	32	1270	14500	24	940	11800	28	892
17	15200	34	1400	14500	25	979	11600	30	940
18	15000	36	1460	14500	20	783	11500	32	994
19	15200	32	1310	15000	24	972	11000	24	713
20	14800	28	1120	14600	28	1100	10200	14	386
21	15400	25	1040	14100	30	1140	9840	16	425
22	15500	24	1000	13900	32	1200	9910	18	482
23	15400	23	956	14200	36	1380	10500	16	454
24	15700	22	933	14200	39	1500	10500	14	397
25	16000	22	950	13900	33	1240	11100	12	360
26	15700	19	805	13600	26	955	11300	16	488
27	15800	24	1020	14000	22	832	11700	20	632
28	15400	29	1210	13700	26	962	11700	26	821
29	15100	34	1390	12900	27	940	11700	28	885
30	15300	39	1610	12300	28	930	11700	24	758
31	15500	44	1840	12900	26	906	---	---	---
TOTAL	469400	---	36345	447600	---	34161	348750	---	19635
YEAR	5062540		690292						

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	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
DEC						
09...	1020	13000	10.0	16	562	94
MAR						
12...	1045	18500	13.5	63	3150	95
JUN						
10...	1530	15400	24.0	20	832	98
SEP						
15...	1015	16000	20.0	27	1170	96

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE WATER (DEG C)	NUMBER OF SAM-PLING POINTS	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM
MAR						
25...	1000	20900	12.5	5	1	4

DATE	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM
MAR						
25...	12	59	90	98	99	100

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Oct. 7-13, Aug. 3 to Sept. 15 and Sept. 19-30. Records good except for estimated daily discharges, which are fair. Some minor diversions above station.

AVERAGE DISCHARGE.--41 years, 75.8 ft^3/s, 54,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,200 ft^3/s, Jan. 26, 1983, gage height, 13.31 ft; maximum gage height, 13.48 ft, Jan. 5, 1965; minimum daily, 0.18 ft^3/s, Aug. 15-23, 25, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft^3/s, and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 12	1630	*2,710	*9.46				

Minimum daily, 0.83 ft^3/s, Aug. 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	7.0	7.2	30	28	19	32	15	6.3	2.5	2.0	.85
2	5.6	6.7	7.2	36	163	20	30	14	5.8	2.5	1.9	.92
3	5.4	6.6	7.2	136	87	89	30	13	5.2	2.5	1.8	1.1
4	5.4	6.7	7.7	52	51	56	28	12	5.0	2.5	1.8	.92
5	5.0	6.7	14	33	39	508	26	12	4.9	2.5	1.6	1.0
6	5.3	6.8	9.9	24	31	183	25	11	4.9	2.5	1.3	1.1
7	6.1	6.9	8.1	23	26	107	24	10	4.6	2.3	1.3	1.1
8	5.4	7.1	7.5	18	23	81	23	9.7	4.6	2.2	1.3	1.2
9	5.3	7.0	7.2	17	22	65	22	10	4.4	2.2	1.2	1.1
10	5.5	7.1	7.1	15	24	81	21	9.9	4.3	2.1	1.3	1.3
11	5.8	7.0	7.1	14	83	106	21	9.2	4.1	2.1	1.2	1.4
12	5.6	7.0	7.0	14	238	1210	20	8.6	3.9	2.0	.96	1.5
13	5.5	6.9	8.2	13	777	518	19	8.3	3.5	2.0	.93	1.6
14	5.6	7.1	11	12	151	253	18	7.9	3.6	1.9	.92	1.6
15	6.2	7.1	8.9	12	222	168	17	7.6	4.2	1.9	.91	1.9
16	6.2	7.1	9.6	11	109	123	17	7.6	4.4	1.9	.90	2.0
17	5.5	7.2	8.5	11	76	97	17	7.7	4.2	1.8	.98	1.9
18	5.9	7.2	13	11	60	82	17	7.9	3.9	1.9	1.2	1.8
19	5.7	7.3	17	10	50	71	16	7.8	3.7	2.0	1.1	1.8
20	5.6	7.2	20	10	42	62	16	7.8	3.5	2.2	1.2	1.8
21	5.3	7.6	12	9.7	38	68	15	7.6	3.6	2.3	.86	1.8
22	5.3	7.3	17	10	34	63	15	7.5	3.6	2.4	.83	1.7
23	5.7	7.2	16	20	31	85	14	7.1	3.3	2.6	.94	1.7
24	8.0	7.2	11	48	29	70	14	7.0	3.0	2.5	.94	1.7
25	8.8	7.2	9.7	44	26	59	14	7.5	2.8	2.3	.93	1.7
26	7.1	7.1	9.0	32	23	53	13	7.9	2.6	2.2	.92	1.6
27	6.7	7.1	8.7	31	22	47	13	7.9	2.5	2.1	.91	1.6
28	6.6	7.1	8.3	110	21	43	13	7.2	2.5	2.1	.90	1.6
29	7.0	7.7	8.3	49	---	39	13	6.9	2.6	2.1	.88	1.6
30	9.6	7.5	8.3	43	---	36	14	6.7	2.6	2.0	.87	1.8
31	7.9	---	11	35	---	34	---	6.6	---	2.0	.86	---
TOTAL	190.6	212.7	312.7	933.7	2526	4496	577	276.9	118.1	68.1	35.64	44.69
MEAN	6.15	7.09	10.1	30.1	90.2	145	19.2	8.93	3.94	2.20	1.15	1.49
MAX	9.6	7.7	20	136	777	1210	32	15	6.3	2.6	2.0	2.0
MIN	5.0	6.6	7.0	9.7	21	19	13	6.6	2.5	1.8	.83	.85
AC-FT	378	422	620	1850	5010	8920	1140	549	234	135	71	89

CAL YR 1986 TOTAL 41668.30 MEAN 114 MAX 6020 MIN 2.7 AC-FT 82650
WTR YR 1987 TOTAL 9792.13 MEAN 26.8 MAX 1210 MIN .83 AC-FT 19420

SACRAMENTO RIVER BASIN

11450000 CLEAR LAKE AT LAKEPORT, CA

LOCATION.--Lat 39°02'21", long 122°54'44", in NE 1/14 NE 1/14 sec.25, T.14 N., R.10 W., Lake County, Hydrologic Unit 18020116, in concrete block building at 410 Esplanada Street in Lakeport.

DRAINAGE AREA.--528 mi^2.

PERIOD OF RECORD.--1874-1900 (incomplete), January 1913 to April 1982, Oct. 12, 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 from which it is diverted for irrigation (station 11451000).

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, 4.87 ft, Apr. 15; minimum daily, 1.06 ft, Sept. 29, 30.

GAGE HEIGHT, IN FEET, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.90	1.69	1.54	1.71	2.15	3.13	4.85	4.72	4.33	3.55	2.47	1.79
2	1.88	1.67	1.53	1.75	2.24	3.14	4.84	4.71	4.32	3.51	2.45	1.76
3	1.87	1.67	1.54	1.80	2.30	3.18	4.84	4.72	4.31	3.46	2.43	1.73
4	1.86	1.67	1.54	1.85	2.32	3.20	4.84	4.72	4.29	3.43	2.40	1.69
5	1.85	1.67	1.56	1.85	2.34	3.31	4.84	4.73	4.26	3.40	2.39	1.67
6	1.84	1.64	1.56	1.86	2.34	3.41	4.85	4.72	4.26	3.37	2.37	1.63
7	1.83	1.59	1.56	1.86	2.35	3.46	4.85	4.71	4.25	3.33	2.36	1.62
8	1.81	1.60	1.56	1.86	2.36	3.49	4.85	4.70	4.24	3.27	2.34	1.60
9	1.81	1.60	1.55	1.87	2.37	3.53	4.86	4.70	4.22	3.26	2.31	1.56
10	1.81	1.61	1.55	1.87	2.40	3.55	4.84	4.69	4.20	3.23	2.29	1.52
11	1.80	1.61	1.55	1.87	2.43	3.59	4.84	4.68	4.20	3.20	2.27	1.48
12	1.79	1.61	1.54	1.86	2.48	3.78	4.85	4.66	4.18	3.18	2.25	1.45
13	1.78	1.61	1.55	1.86	2.64	4.11	4.86	4.65	4.16	3.16	2.21	1.44
14	1.78	1.60	1.55	1.85	2.77	4.26	4.86	4.63	4.11	3.14	2.19	1.40
15	1.77	1.60	1.57	1.87	2.87	4.35	4.87	4.62	4.08	3.11	2.17	1.38
16	1.73	1.58	1.55	1.85	2.96	4.44	4.86	4.62	4.09	3.05	2.16	1.36
17	1.69	1.58	1.55	1.85	3.00	4.46	4.82	4.60	4.00	2.95	2.15	1.32
18	1.69	1.58	1.58	1.85	3.04	4.50	4.78	4.58	3.97	2.92	2.12	1.30
19	1.71	1.59	1.61	1.85	3.08	4.55	4.82	4.55	3.93	2.91	2.10	1.27
20	1.71	1.57	1.62	1.85	3.09	4.58	4.82	4.55	3.87	2.89	2.09	1.25
21	1.71	1.56	1.63	1.85	3.07	4.62	4.82	4.54	3.84	2.80	2.06	1.24
22	1.70	1.55	1.66	1.85	3.09	4.64	4.82	4.52	3.82	2.78	2.02	1.21
23	1.70	1.56	1.66	1.90	3.07	4.70	4.81	4.50	3.79	2.76	1.98	1.19
24	1.70	1.54	1.66	1.97	3.11	4.74	4.80	4.45	3.78	2.73	1.96	1.16
25	1.70	1.55	1.67	1.99	3.12	4.77	4.80	4.44	3.75	2.69	1.94	1.14
26	1.70	1.56	1.67	2.01	3.12	4.80	4.80	4.42	3.72	2.66	1.91	1.10
27	1.70	1.55	1.66	2.02	3.12	4.81	4.80	4.41	3.70	2.62	1.89	1.08
28	1.71	1.54	1.67	2.08	3.12	4.82	4.78	4.38	3.67	2.58	1.87	1.07
29	1.69	1.54	1.67	2.11	---	4.83	4.76	4.37	3.63	2.55	1.84	1.06
30	1.67	1.54	1.68	2.12	---	4.84	4.74	4.34	3.59	2.51	1.82	1.06
31	1.68	---	1.69	2.14	---	4.85	---	4.32	---	2.50	1.80	---
MEAN	1.76	1.59	1.60	1.90	2.73	4.14	4.83	4.58	4.02	3.02	2.15	1.38
MAX	1.90	1.69	1.69	2.14	3.12	4.85	4.87	4.73	4.33	3.55	2.47	1.79
MIN	1.67	1.54	1.53	1.71	2.15	3.13	4.74	4.32	3.59	2.50	1.80	1.06

SACRAMENTO RIVER BASIN

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 mi^2.

PERIOD OF RECORD.--May 1944 to current year.

GAGE.--Water-stage recorder and rain gage. Elevation of gage is 1,280.34 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated by Clear Lake (station 11450150) 500 ft upstream.

AVERAGE DISCHARGE (unadjusted).--43 years, 382 ft^3/s, 276,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft^3/s, Feb. 24, 1958, gage height, 9.40 ft; no flow Nov. 8-20, 1977, Apr. 5, 6, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 566 ft^3/s, May 11, gage height, 4.25 ft; no flow Apr. 5, 6.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	3.5	2.7	.98	.89	1.0	.75	.70	1.3	249	241	126
2	47	3.5	2.6	.96	.96	1.0	.54	.73	1.3	249	240	111
3	57	3.5	2.6	1.1	.95	1.0	.47	.68	1.3	247	213	126
4	74	3.6	2.5	1.0	.95	1.1	.30	.66	1.4	246	5.4	135
5	92	3.6	2.5	.97	5.2	1.3	0	.66	1.4	244	5.5	124
6	88	3.5	2.5	.97	3.4	1.1	0	1.2	1.4	243	6.8	117
7	77	3.4	2.3	.95	3.3	1.2	.80	.78	1.3	242	5.7	108
8	36	3.3	2.3	.95	3.3	1.2	1.1	.68	1.3	242	5.8	101
9	3.9	3.3	2.2	.95	3.2	1.1	.88	.57	1.3	241	5.7	222
10	5.1	3.3	2.2	.95	3.1	1.5	.86	.74	1.3	241	5.4	246
11	4.3	3.2	2.2	.98	3.1	1.1	.98	94	1.2	242	5.3	233
12	4.1	3.3	2.0	1.0	3.2	1.5	1.0	1.1	1.3	244	5.2	230
13	54	3.2	1.5	1.0	3.2	1.2	1.5	1.0	1.3	246	5.2	208
14	63	3.3	1.4	1.0	3.1	1.1	.81	.95	15	246	5.2	181
15	65	3.3	1.3	.98	3.1	1.1	.81	.89	195	244	5.2	169
16	65	3.2	1.4	.96	3.0	1.1	.85	.96	241	241	5.3	179
17	25	3.1	1.4	.96	3.5	1.0	.85	1.3	242	243	5.3	187
18	3.9	3.0	1.3	1.0	2.6	1.0	5.2	2.4	244	244	5.3	200
19	3.7	2.9	1.2	1.0	1.1	1.1	1.3	1.1	244	243	5.2	206
20	3.7	3.0	1.1	.96	1.0	1.0	1.1	1.3	243	242	5.1	206
21	3.7	2.9	1.0	.95	1.1	.99	1.0	1.3	243	239	228	206
22	3.7	2.9	1.1	.96	1.2	.94	.91	1.3	242	242	270	194
23	3.7	2.9	.97	.97	1.1	.97	.88	1.3	242	241	244	212
24	3.6	3.0	.95	.97	1.1	.95	.89	1.2	241	240	251	232
25	3.8	2.8	.97	.94	1.0	.97	.88	1.2	242	240	258	233
26	3.8	2.6	1.0	.95	1.1	.98	.84	.98	241	242	263	205
27	3.7	2.7	.95	.97	1.1	.87	.83	.85	245	243	219	157
28	3.6	2.8	.95	.95	1.0	.82	.80	1.3	250	242	200	129
29	3.6	2.6	.96	.88	---	.81	.74	1.6	250	242	187	122
30	3.7	2.7	.95	.91	---	.81	.72	1.5	249	242	171	94
31	3.5	---	.96	.88	---	.87	---	1.4	---	241	157	---
TOTAL	859.1	93.9	49.96	29.95	60.85	32.68	28.59	126.33	3886.1	7533	3234.6	5199
MEAN	27.7	3.13	1.61	.97	2.17	1.05	.95	4.08	130	243	104	173
MAX	92	3.6	2.7	1.1	5.2	1.5	5.2	94	250	249	270	246
MIN	3.5	2.6	.95	.88	.89	.81	0	.57	1.2	239	5.1	94
AC-FT	1700	186	99	59	121	65	57	251	7710	14940	6420	10310
a	.32	.01	1.62	2.98	3.78	6.20	.06	.06	0	0	0	0

CAL YR 1986 TOTAL 266300.17 MEAN 730 MAX 4920 MIN .16 AC-FT 528200
WTR YR 1987 TOTAL 21134.06 MEAN 57.9 MAX 270 MIN 0 AC-FT 41920

a Precipitation, in inches.

SACRAMENTO RIVER BASIN

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 mi^2.

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 above station.

AVERAGE DISCHARGE.--16 years, 107 ft^3/s, 77,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft^3/s, Feb. 17, 1986, gage height, 12.84 ft, from rating curve extended above 2,700 ft^3/s on basis of slope-area measurement at gage height 11.23 ft; no flow for many days in 1972, 1976-77, and 1987.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 13	0130	1,730	6.73	Mar. 12	2030	*2,240	*7.32

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	4.0	3.3	28	24	28	51	18	7.3	1.1	.20	0
2	4.0	3.4	3.3	23	110	27	47	19	6.4	1.1	.14	0
3	3.9	3.4	3.3	80	77	51	46	17	6.3	1.1	.11	0
4	3.8	3.4	3.6	41	43	42	45	16	5.7	1.1	.04	0
5	3.2	3.2	5.7	25	32	288	42	16	5.3	1.1	0	0
6	3.6	3.4	4.8	19	26	202	39	15	5.3	1.1	0	0
7	4.1	3.4	3.9	16	22	140	39	14	4.9	.83	0	0
8	3.8	3.5	3.8	13	20	114	36	13	4.9	.57	0	.09
9	3.8	3.2	3.8	12	19	96	35	13	4.5	.57	0	.17
10	4.0	3.2	3.8	11	19	91	34	14	4.0	.57	0	.21
11	4.1	3.3	3.8	11	51	100	33	12	3.7	.56	0	.21
12	3.5	3.3	3.8	9.9	160	637	31	11	3.6	.48	0	.21
13	3.4	3.2	3.8	9.9	544	423	31	10	3.3	.48	0	.26
14	3.4	3.3	3.8	9.3	157	219	29	10	3.0	.38	0	.34
15	3.5	3.2	3.8	8.9	242	177	28	9.6	3.0	.38	0	.44
16	3.3	2.9	3.8	18	160	142	27	8.5	3.0	.24	.05	.48
17	3.3	2.7	3.8	8.5	114	122	25	8.5	3.0	.07	.05	.48
18	3.4	3.0	4.9	8.5	90	111	25	8.5	2.8	.10	0	.48
19	3.2	3.2	7.0	8.4	72	103	24	8.5	2.6	.18	0	.48
20	3.2	3.3	7.8	7.2	61	93	23	10	2.4	.21	0	.48
21	3.1	3.3	6.2	7.2	54	90	23	13	2.1	.35	0	.36
22	3.1	3.3	6.8	7.2	48	83	23	12	2.1	1.1	0	.14
23	3.2	3.3	7.2	9.7	44	97	22	9.6	2.1	.77	0	.14
24	5.8	3.3	6.7	97	40	93	20	9.1	2.0	.64	0	.14
25	4.3	3.3	5.9	53	36	82	20	8.5	1.8	.48	0	.14
26	3.1	3.3	5.9	37	33	75	19	8.5	1.6	.46	0	.14
27	2.9	3.3	5.4	28	31	70	18	8.5	1.4	.38	0	.14
28	2.8	3.3	4.9	79	29	64	18	8.4	1.3	.38	0	.15
29	3.6	3.3	4.8	45	---	60	17	7.4	1.1	.37	0	.21
30	4.5	3.3	4.8	36	---	56	17	7.4	1.1	.33	0	.21
31	4.1	---	5.4	29	---	54	---	7.4	---	.30	0	---
TOTAL	113.0	98.5	149.6	795.7	2358	4030	887	351.4	101.6	17.78	.59	6.10
MEAN	3.65	3.28	4.83	25.7	84.2	130	29.6	11.3	3.39	.57	.019	.20
MAX	5.8	4.0	7.8	97	544	637	51	19	7.3	1.1	.20	.48
MIN	2.8	2.7	3.3	7.2	19	27	17	7.4	1.1	.07	0	0
AC-FT	224	195	297	1580	4680	7990	1760	697	202	35	1.2	12
a	1.31	.11	2.86	7.02	7.43	8.08	.08	.62	.02	.15	0	0

CAL YR 1986 TOTAL 57311.97 MEAN 157 MAX 8340 MIN .14 AC-FT 113700
WTR YR 1987 TOTAL 8909.27 MEAN 24.4 MAX 637 MIN 0 AC-FT 17670

a Precipitation, in inches.

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: July 18-20. Records good below 1,000 ft^3/s and poor above. Flow completely regulated by Indian Valley Dam (capacity 300,000 acre-ft).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,390 ft^3/s, Mar. 12, 1986, gage height 9.80 ft.

EXTREMES OUTSIDE PERIOD OF RECORD--Flood of Jan. 26, 1983, reached a stage of 12.47 ft, present datum, discharge about 9,500 ft^3/s.

EXTREMES FOR CURRENT YEAR--Maximum discharge, 942 ft^3/s, Apr 27, gage height, 5.17 ft; minimum daily, 3.8 ft^3/s, Jan. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	11	13	13	12	12	115	804	636	391	247	190
2	13	11	13	13	12	12	118	789	659	391	234	190
3	12	11	13	13	11	12	118	776	661	382	252	191
4	12	11	12	13	11	12	118	768	647	374	416	191
5	12	12	12	12	10	12	118	770	632	373	420	191
6	12	11	12	12	10	12	118	788	644	365	431	191
7	12	12	12	12	10	12	244	818	619	377	438	191
8	12	12	12	12	10	12	378	843	662	425	437	193
9	13	12	12	12	10	12	451	865	733	452	437	53
10	13	12	12	12	10	12	471	866	769	458	426	7.0
11	13	12	12	12	10	12	498	771	786	437	418	6.4
12	12	12	12	12	10	13	529	837	790	416	397	6.5
13	12	12	12	12	11	14	578	828	767	416	382	6.6
14	12	12	12	12	11	13	638	828	754	396	361	6.6
15	12	12	12	12	11	13	684	834	621	374	369	6.6
16	12	12	12	12	11	13	712	817	523	371	378	6.6
17	12	12	12	12	11	13	734	791	476	363	404	6.9
18	12	12	12	12	11	13	720	749	441	339	418	7.2
19	12	12	12	12	11	13	693	695	426	330	412	7.6
20	12	12	12	11	11	13	682	658	412	328	390	8.1
21	12	12	12	11	11	13	686	632	391	322	201	8.3
22	12	12	12	11	11	13	740	571	381	352	112	8.5
23	12	12	12	8.0	10	14	774	533	426	314	116	8.8
24	12	12	12	6.1	10	14	801	547	481	296	115	8.8
25	12	12	12	6.9	10	13	829	564	534	297	118	8.8
26	11	12	12	6.1	11	13	845	583	556	282	120	8.8
27	12	12	12	3.8	11	13	841	587	526	269	171	8.8
28	12	12	175	5.2	11	12	827	568	489	269	190	8.8
29	12	12	229	5.2	---	43	814	564	433	255	180	12
30	12	18	132	4.1	---	120	823	575	396	254	191	8.9
31	11	---	13	11	---	117	---	597	---	251	190	---
TOTAL	375	361	876	321.4	299	635	16697	22216	17271	10919	9371	1747.6
MEAN	12.1	12.0	28.3	10.4	10.7	20.5	557	717	576	352	302	58.3
MAX	13	18	229	13	12	120	845	866	790	458	438	193
MIN	11	11	12	3.8	10	12	115	533	381	251	112	6.4
AC-FT	744	716	1740	637	593	1260	33120	44070	34260	21660	18590	3470
a	0.38	0.03	1.63	3.02	2.55	3.75	0.11	0.08	0.39	0	0	0

CAL YR 1986 TOTAL 55972.4 MEAN 153 MAX 4970 MIN 3.0 AC-FT 111000
WTR YR 1987 TOTAL 81089.0 MEAN 222 MAX 866 MIN 3.8 AC-FT 160800

a Precipitation, in inches.

SACRAMENTO RIVER BASIN

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 mi^2.

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.--Estimated daily discharges: Oct. 1-9, Dec. 8 to Jan. 16, June 14 to July 14, Sept. 27-30. Records good except those for periods of estimated daily discharge, which are poor. Some regulation by Clear Lake (station 11450000) beginning in 1915 and Indian Valley Reservoir beginning in 1974, capacity, 296,000 acre-ft. Diversions for irrigation of about 30,000 acres between Capay and Yolo, from data furnished by Clear Lake Water Co.

AVERAGE DISCHARGE.--85 years, 545 ft^3/s, 394,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,400 ft^3/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, 3,280 ft^3/s, Mar. 13, gage height, 56.06 ft; minimum daily, 5.3 ft^3/s, Aug. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	21	23	24	38	38	53	29	23	13	5.9	11
2	33	21	24	26	41	37	40	33	21	12	7.6	9.1
3	33	20	25	37	41	36	34	30	24	13	11	7.7
4	32	19	24	58	41	38	27	32	18	14	11	9.9
5	31	19	26	100	52	67	21	34	26	12	17	10
6	31	19	25	86	49	269	20	27	44	11	16	15
7	30	19	25	64	45	217	16	20	75	12	14	23
8	30	19	26	56	40	126	17	20	46	13	8.8	23
9	29	19	26	51	38	92	18	19	31	13	11	17
10	28	19	25	46	37	78	24	20	21	12	11	13
11	27	18	23	42	35	69	23	25	14	15	6.4	24
12	24	18	22	39	34	72	25	23	8.3	18	6.2	16
13	25	18	21	37	166	1750	29	17	7.2	22	6.8	11
14	24	18	23	35	704	799	22	9.4	7.0	30	7.5	10
15	22	19	22	33	247	411	25	15	12	22	8.2	12
16	23	20	22	32	202	292	26	15	24	16	12	10
17	27	21	22	30	182	212	30	13	30	12	13	12
18	29	20	23	29	126	164	26	21	25	12	7.1	14
19	29	20	24	28	101	140	24	37	21	17	5.3	13
20	28	22	29	27	82	125	39	39	18	23	6.1	15
21	29	24	37	26	73	121	33	35	15	27	6.2	21
22	30	23	35	23	64	118	27	35	17	28	17	25
23	29	21	33	25	59	129	25	35	15	26	46	31
24	26	21	31	26	55	128	21	25	14	23	21	34
25	22	21	29	27	49	150	19	24	13	18	16	24
26	21	21	27	26	46	118	22	29	15	17	11	20
27	20	22	25	32	42	98	23	37	17	18	7.8	18
28	19	22	25	38	41	88	20	38	19	23	6.1	16
29	19	24	24	38	---	80	19	32	16	12	7.0	14
30	20	23	24	39	---	72	21	28	13	8.1	13	13
31	20	---	24	41	---	48	---	25	---	7.0	15	---
TOTAL	824	611	794	1221	2730	6182	769	821.4	649.5	519.1	358.0	491.7
MEAN	26.6	20.4	25.6	39.4	97.5	199	25.6	26.5	21.7	16.7	11.5	16.4
MAX	34	24	37	100	704	1750	53	39	75	30	46	34
MIN	19	18	21	23	34	36	16	9.4	7.0	7.0	5.3	7.7
AC-FT	1630	1210	1570	2420	5410	12260	1530	1630	1290	1030	710	975

CAL YR 1986 TOTAL 414560.0 MEAN 1136 MAX 21100 MIN 18 AC-FT 822300
WTR YR 1987 TOTAL 15970.7 MEAN 43 MAX 1750 MIN 5.3 AC-FT 31680

SACRAMENTO RIVER BASIN

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 September 1977, October 1977 to current year (high flows 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.--Estimated daily discharge: Mar. 14-16. Records fair. Flow is from Cache Creek and Knights Landing Ridge Cut plus floodwater passing over Fremont weir. Beginning October 1977, only flows above 1,000 ft^3/s are computed.

AVERAGE DISCHARGE.--38 years (water years 1939-77), 3,765 ft^3/s, 2,728,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 374,000 ft^3/s, Feb. 20, 1986, gage height, 34.87 ft; no flow at times in several years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,780 ft^3/s, Feb. 16, gage height, 17.35 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---						
2						---						
3						---						
4						---						
5						---						
6						---						
7						---						
8						---						
9						---						
10						---						
11						---						
12						---						
13						---						
14						1150						
15						1690						
16						1660						
17						1230						
18						---						
19						---						
20						---						
21						---						
22						---						
23						---						
24						---						
25						---						
26						---						
27						---						
28						---						
29						---						
30						---						
31						---						
TOTAL						---						
MEAN						---						
MAX						---						
MIN						---						
AC-FT						---						

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 mi^2.
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 provided by U.S. Bureau of Reclamation was 203,743 acre-ft. Releases for irrigation began in May 1959. Records, including extremes, show total contents at 2400 hours.
COOPERATION.--Records provided by U.S. Bureau of Reclamation, not reviewed by U.S. Geological Survey.
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, 738,600 acre-ft, Nov. 20, 1977, elevation, 388.04 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,394,900 acre-ft, Mar. 26, elevation, 428.95 ft; minimum, 1,134,900 acre-ft, Sept. 30, elevation, 414.06 ft.

Capacity table (elevation, in feet NGVD, and contents, in acre-feet)
(Provided by U.S. Bureau of Reclamation, from 1956 survey)

380	632,400
390	765,700
400	911,200
410	1,068,100
420	1,236,000
430	1,414,200
450	1,799,900

RESERVOIR STORAGE (AC-FT), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1380800	1358000	1338600	1327300	1325700	1354000	1394200	1367200	1319500	1269200	1218000	1170000
2	1379500	1357400	1337900	1327900	1326400	1354000	1394200	1365700	1317900	1267600	1216200	1168700
3	1378600	1356900	1337000	1328600	1327100	1354200	1394200	1364300	1316300	1265800	1214500	1167300
4	1377500	1356400	1336400	1329100	1327300	1354700	1394000	1363200	1314600	1264300	1212800	1165600
5	1376600	1355800	1336100	1329500	1327300	1360900	1394000	1362100	1312700	1262700	1211100	1164100
6	1375900	1355300	1335700	1329600	1327300	1361900	1394000	1360900	1311100	1261300	1209600	1162800
7	1375100	1354600	1335200	1329500	1327100	1363200	1393800	1359400	1309500	1259400	1208000	1161600
8	1374200	1353800	1334500	1329300	1326800	1363900	1393500	1358000	1307900	1257800	1206300	1160400
9	1373100	1353100	1333800	1329100	1326600	1364100	1392900	1356500	1306200	1256200	1204600	1159100
10	1371900	1352400	1333200	1328900	1326600	1364100	1392400	1354700	1304400	1254500	1202900	1157700
11	1370800	1351900	1332700	1328800	1326800	1364100	1391700	1353500	1302800	1252800	1201200	1156400
12	1369700	1351300	1332500	1328400	1331800	1376600	1390900	1352000	1301200	1251200	1199400	1155000
13	1368800	1350600	1332100	1328000	1348300	1382400	1390200	1350600	1299400	1249600	1197700	1153700
14	1368100	1349900	1331800	1327700	1350600	1386200	1389500	1349000	1297700	1248100	1196000	1152300
15	1367400	1349200	1331600	1327000	1352900	1387500	1388800	1347400	1295900	1246300	1194500	1151000
16	1366600	1348600	1331300	1326100	1354000	1388600	1387800	1345800	1294100	1244800	1193000	1150000
17	1365900	1348100	1330900	1325500	1354400	1388900	1386800	1344100	1292500	1243000	1191400	1148800
18	1365200	1347600	1330700	1325000	1354600	1389300	1385300	1342500	1291000	1241500	1189900	1147700
19	1364800	1347000	1330500	1324300	1354900	1389800	1383300	1340900	1289400	1239700	1188400	1146600
20	1364300	1346500	1330400	1323700	1354900	1390200	1382200	1339300	1287800	1238200	1186800	1145600
21	1363600	1345800	1330200	1323400	1354900	1390900	1381300	1337500	1286200	1236400	1185300	1144600
22	1362500	1345000	1330000	1323400	1354900	1391800	1380000	1335700	1284600	1234700	1183900	1143500
23	1362300	1344300	1329800	1323400	1354700	1393100	1378600	1333900	1283200	1233000	1182400	1142300
24	1361900	1343600	1329600	1323700	1354600	1393800	1377300	1332100	1281600	1231200	1181100	1141100
25	1361400	1342900	1329300	1323700	1354200	1394400	1375900	1328800	1279900	1229500	1180000	1140000
26	1361000	1342200	1328800	1323700	1354000	1394900	1374400	1329100	1278100	1228000	1178700	1139000
27	1360500	1341400	1328400	1323700	1354000	1394800	1373200	1327500	1276200	1226400	1177200	1137900
28	1360000	1340700	1328000	1324600	1354000	1394600	1371900	1325700	1274400	1224900	1175800	1136800
29	1359600	1340000	1327900	1325400	---	1394400	1370400	1324100	1272700	1223100	1174500	1135800
30	1359200	1339300	1327500	1325700	---	1394400	1368800	1322700	1270900	1221400	1172900	1134900
31	1358700	---	1327300	1325700	---	1394200	---	1321100	---	1219700	1171400	---
MAX	1380800	1358000	1338600	1329600	1354900	1394900	1394200	1367200	1319500	1269200	1218000	1170000
MIN	1358700	1339300	1327300	1323400	1325700	1354000	1368800	1321100	1270900	1219700	1171400	1134900
a	426.95	425.87	425.20	425.11	426.69	428.91	427.51	424.85	422.01	419.06	416.23	414.06
b	-23400	-19400	-11900	-1600	+28300	+40200	-25400	-47800	-50100	-51300	-48300	-36400
c	4398	2601	982	1140	1848	3238	6194	9081	10946	10125	9442	7270

CAL YR 1986 b +132300
WTR YR 1987 b -247100

a Elevation, in feet NGVD, at end of month.
b Change in contents, in acre-feet.
c Evaporation, in acre-feet.

SACRAMENTO RIVER BASIN

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 mi^2.

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.

AVERAGE DISCHARGE.--26 years (water years 1931-56) prior to storage, 477 ft^3/s, 345,600 acre-ft/yr; 31 years (water years 1957-87), 606 ft^3/s, 439,000 acre-ft/yr, adjusted for change in contents and evaporation from Lake Berryessa; unadjusted flow for same period was 453 ft^3/s, 328,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81,000 ft^3/s, Feb. 27, 1940, gage height, 30.5 ft, present datum, from rating curve extended above 30,000 ft^3/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 ft^3/s, Mar. 2, 1983, gage height, 19.55 ft; minimum daily, 6.1 ft^3/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, 800 ft^3/s, June 25, gage height, 8.25 ft; minimum daily, 62 ft^3/s, Feb. 19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	269	146	274	95	89	87	148	730	686	702	709	653
2	299	127	274	231	117	116	147	681	699	702	687	616
3	320	182	319	175	150	167	148	663	700	693	699	606
4	320	163	334	75	151	141	147	628	725	650	688	599
5	320	177	312	93	154	79	149	604	748	604	669	562
6	339	195	237	93	151	76	186	652	733	606	715	515
7	418	219	202	93	151	88	214	704	680	639	683	461
8	454	247	206	93	118	123	209	716	665	680	661	522
9	478	269	207	93	89	172	219	677	691	705	657	543
10	457	269	187	93	88	174	327	653	703	733	649	565
11	414	277	201	118	88	150	377	646	736	702	658	584
12	393	292	191	164	90	121	360	634	720	666	694	534
13	367	314	181	168	127	80	371	644	689	670	691	477
14	324	333	181	145	90	63	416	669	668	690	651	462
15	322	312	180	145	124	109	450	679	653	675	620	476
16	259	280	199	145	160	151	490	680	624	651	593	489
17	201	269	218	146	160	151	558	680	638	629	571	488
18	201	269	145	213	124	112	583	680	664	607	551	488
19	201	270	187	265	62	87	568	675	651	570	572	478
20	201	311	163	202	74	87	578	694	629	561	590	468
21	242	321	163	157	88	87	596	715	621	617	576	464
22	233	285	180	157	121	120	626	705	657	668	563	457
23	229	265	195	122	149	149	648	650	673	688	556	457
24	289	263	131	91	149	120	686	645	713	712	550	465
25	235	271	95	121	148	87	694	673	778	672	593	476
26	196	274	95	151	114	87	664	695	779	620	632	439
27	195	301	95	151	87	87	653	695	733	664	638	403
28	185	342	95	124	87	87	653	683	698	726	652	391
29	141	342	95	90	---	121	653	683	687	726	670	391
30	125	305	95	89	---	149	708	704	702	736	629	387
31	200	---	95	89	---	149	---	704	---	743	628	---
TOTAL	8827	7890	5732	4187	3300	3577	13226	20941	20743	20707	19695	14916
MEAN	285	263	185	135	118	115	441	676	691	668	635	497
MAX	478	342	334	265	160	174	708	730	779	743	715	653
MIN	125	127	95	75	62	63	147	604	621	561	550	387
AC-FT	17510	15650	11370	8300	6550	7090	26230	41540	41140	41070	39070	29590

CAL YR 1986 TOTAL 289946 MEAN 794 MAX 6480 MIN 76 AC-FT 575100 MEAN a 1065 AC-FT a 770900
WTR YR 1987 TOTAL 143741 MEAN 394 MAX 779 MIN 62 AC-FT 285100 MEAN a 145 AC-FT a 105300

a Adjusted for change in contents and evaporation from Lake Berryessa. Adjustments provided by U.S. Bureau of Reclamation; evaporation adjustments not reviewed by U.S. Geological Survey.

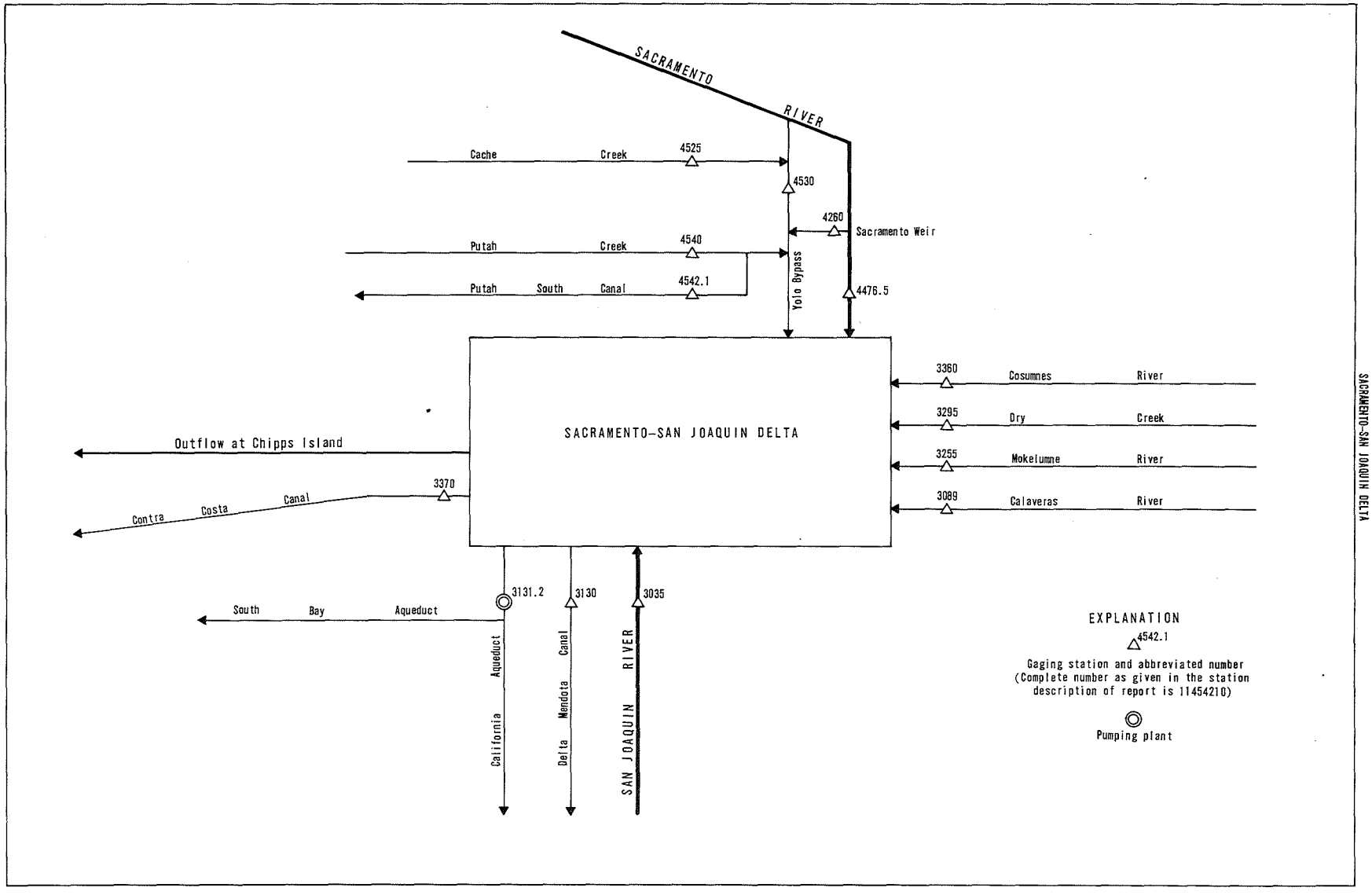

FIGURE 33.--Schematic diagram showing principal inflows and diversions, Sacramento-San Joaquin Delta.

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.

COOPERATION.--Records for Delta-Mendota, Contra Costa, and Putah South Canals provided by U.S. Bureau of Reclamation; California Aqueduct and Sacramento Weir spill by California Department of Water Resources.

SUMMARY OF PRINCIPAL INFLOWS AND DIVERSIONS IN THE SACRAMENTO-SAN JOAQUIN DELTA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

Inflows, in thousands of acre-feet

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Water year
11303500 SAN JOAQUIN RIVER NEAR VERNALIS												
230	167.1	227.9	141.7	118.6	210	170.6	133.9	118.4	100.3	100	95.01	1814
11308900 CALAVERAS RIVER BELOW NEW HOGAN DAM												
4.24	3.86	3.31	3.90	2.52	2.27	9.78	14.38	14.11	15	16.16	10.23	99.76
11325500 MOKELUMNE RIVER AT WOODBRIDGE												
43.28	37.53	28.21	19.51	5.81	6.78	2.28	1.74	2.64	3.02	2.75	2.70	156.3
11329500 DRY CREEK NEAR GALT												
.07	0	0	.41	6.06	13.23	1.20	.01	.02	0	0	0	21.02
11335000 COSUMNES RIVER AT MICHIGAN BAR												
2.50	2.30	3.14	4.77	13.07	28.93	10.68	5.36	1.46	.44	.11	.10	72.88
11426000 SACRAMENTO WEIR SPILL												
0	0	0	0	0	0	0	0	0	0	0	0	0
11447650 SACRAMENTO RIVER AT FREEPORT												
949.7	754.5	806.1	809.9	966.6	1327	703.7	614.6	599.1	931.1	887.8	691.7	10040
11453000 YOLO BYPASS NEAR WOODLAND[1]												
0	0	0	0	0	11.37	0	0	0	0	0	0	11.37
11454000 PUTAH CREEK NEAR WINTERS												
17.51	15.65	11.37	8.30	6.55	7.09	26.23	41.54	41.14	41.07	39.07	29.59	285.1
TOTAL												
1247	980.9	1080	988.5	1119	1607	924.5	811.5	776.9	1091	1046	829.3	12500

Diversions, in thousands of acre-feet

Month												
Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Water year
11313000 DELTA-MENDOTA CANAL												
246	219.7	246.6	246.2	223.8	146.3	258.2	184.3	178.4	272.1	280.7	254.9	2757
11313120 CALIFORNIA AQUEDUCT (DELTA PUMPING PLANT)												
207.9	180.8	188.1	132.3	151.2	189.6	153.3	122.9	119	265.1	305.2	272.2	2288
11337000 CONTRA COSTA CANAL												
8.24	8.80	9.07	7.44	6.03	8.14	10.95	14.65	14.50	15.09	14.73	13.35	131
11454210 PUTAH SOUTH CANAL												
15.16	13.15	9.48	6.23	4.54	4.42	21.97	37.22	36.24	34.34	33.26	25.69	241.7
TOTAL												
477.3	422.4	453.2	392.2	385.6	348.5	444.4	359.1	348.1	586.6	633.9	566.1	5418

[1]Flow not computed below 1,000 ft^3/s.
NOTE.--Minor inflow streams and diversions are not included.

DISCHARGE AT PARTIAL-RECORD STATIONS

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. Most of these measurements were made during periods of baseflow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which mesurements were made at the same or practically the same site.

Discharge measurements made at low-flow partial-record stations during water year 1987

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	1975-84, 1986-87	11-06-85*	4.93
					12-04-85*	56.1
					02-03-86*	580
					02-14-86*	1,160
					03-03-86*	73.0
					09-02-86*	3.12
					12-01-86	6.0
					02-02-87	52
					03-13-87	266
					05-04-87	18
					09-01-87	2.32

* Not previously published.

October 1, 1978

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
	Length	
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)
	Area	
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)
	Volume	
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)
	Flow	
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)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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